Lehi City Council Meeting
Agenda
September 19, 2023

5:30 PM - Lehi City Council Chambers (153 N. 100 E., Lehi, Utah)

Pre-Council, 5:30 p.m.

1. Welcome and Opening Comment

2. Presentations and Reports

   2.1. Fiber Network Update

   2.2. Radon Information Presentation from the Utah County Health Department

3. Agenda Questions
   The Mayor and City Council discuss and ask questions on items on the Regular Session agenda.

4. Administrative Report

5. Mayor and Council Reports
   Calendar items and outside Committee reports

6. Consideration of Adjourning into a Closed Session to discuss the purchase, exchange, or lease of real property.

Regular Session, 7:00 p.m.

1. Welcome, Roll Call, Pledge of Allegiance

2. Presentations and Reports

   2.1. Constitution Week Proclamation
   Proclamation for Mayor of Lehi.docx

   2.2. September Waterwise Yard of the Month Award

3. 20 Minute Citizen Input
   (for public comments on items not listed on the agenda. Comments limited to 3 minutes per person

with a time limit not to exceed 20 minutes for this item.)

4. Consent Agenda

4.1. Approve Purchase Orders
Requisition Request- Irby 8.28.2023.pdf

4.2. Approve Addendums 2 and 3 of the previously approved Real Estate Purchase Contract for 55 West Main Street.
55 West Main Street Addendum 2 and 3 signed.pdf
Commercial Real Estate Purchase Contract 55 West Main Street Signed and Addendum 1.pdf

4.3. Approve the First Amendment to the Interlocal Agreement with Utah County for the 2300 West roadway widening project.
FIRST AMENDMENT TO INTERLOCAL AGREEMENT 2022-224 - Lehi Revisions.pdf

Regular Agenda

5. Public hearing to receive input with respect to the issuance of electric revenue bonds to finance the construction of a power generation facility.
Petitioner: Lehi City
Hearing Notice - Lehi City Electric Revenue Bonds Series 2023.docx

6. Fee Schedule Amendment
a. Public Hearing
b. Consideration of Resolution #2023-61 amending the Lehi City Consolidated Fee Schedule for Recreation and Library Fees.

Petitioner: Lehi City
Res 2023-61.docx
FY 2024 Fee Amendments.pdf

7. Consideration of Resolution #2023-60 authorizing the Steel Solar 1A Project Second Amendment and Restated Transaction Schedule under the Master Firm Power Supply Agreement with Utah Association of Municipal Power Systems (UAMPS); and related matters.
Petitioner: Lehi City
Res 2023-60 Second Amended__FirmPowerSupplyAgrResolutionSteelSolar_Lehi.pdf

8. Consideration of Resolution #2023-59 a resolution of the Board of Canvassers certifying the official canvassers' report of the September 5, 2023 Primary Municipal Election.
Petitioner: Lehi City
Res 2023-59, Canvass Results.docx

9. Consideration of Resolution #2023-65 approving a facility usage agreement between Lehi City and Holbrook Community Center.
   Petitioner: Lehi City
   Res 2023-65.docx
   The Curtis Center Usage Agreement.docx

10. Consideration of Resolution #2023-62 approving a Development Agreement between Lehi City and Curb Cart Concrete
    Petitioner: Lehi City and Curb Cart Concrete
    Res 2023-62.docx
    Development_Agreement-Curb_Cart_Concrete.docx

11. Consideration of Ordinance #56-2023 approving the Skye Area Plan Second Amendment, adding 883 acres and 300 residential units to the Area Plan located at approximately SR-92 and Center Street.
    Petitioner: DR Horton
    CC Staff Report Skye Area Plan Second Amendment 09.19.23.docx
    Skye Area Plan Second Amendment Comprehensive DRC 08.02.23.docx
    Ord 56-2023.docx
    Skye Area Plan Amendment - Additional Narrative.docx
    Skye Area Plan Second Amendment.pdf
    Exhibit A - Skye Area Plan DR Horton TI Additional Changes Requested.pdf
    Exhibit B - Skye Area Plan DRC Exceptions Requested.pdf
    Proposed Parking Language.pdf
    Aerial Map.pdf
    General Plan Map.pdf
    Zoning Map.pdf

12. Consideration of Final subdivision approval of the Ridge Holding Plat, a 5-lot commercial subdivision with no improvements located at approximately Ridge Road and Triumph Boulevard.
    Petitioner: Howland Partners
    CC Staff Report Ridge Holdings Final Subdivision No Improvements 09.19.23.docx
    Ridge Holding Final Subdivision DRC 09.06.23.docx
    Ridge Holdings Plat.pdf
    Aerial Map.pdf
    General Plan Map.pdf
    Zoning Map.pdf

13. Consideration of Final subdivision approval of the Mountain Slopes Urban Living, a commercial subdivision with no improvements located at approximately Ridge Road and Stockton Lane.
    Petitioner: Howland Partners

CC Staff Report Mountain Slopes Final Subdivision No Improvements 09.19.23.docx
Mountain Slopes Urban Living DRC 08.16.23.docx
Mountain Slopes Urban Living Plat.pdf
Aerial Map.pdf
General Plan Map.pdf
Zoning Map.pdf

14. Consideration of Final subdivision approval of the Jordan Walk Towns Phase 2, a 33-unit residential subdivision located at approximately 3600 West Hardman Way.
Petitioner: Ivory Homes
CC Staff Report Jordan Walk Towns Phase 2 Final Subdivision 09.19.23.docx
Jordan Walk Towns Phase 2 Final DRC 08.16.23.docx
Jordan Walk Towns Phase 2 Narrative.pdf
Jordan Walk Towns Phase 2 Final Civil Plans.pdf
Aerial Map.pdf
General Plan Map.pdf
Zoning Map.pdf

15. Consideration of Ordinance #57-2023 a Development Code Amendment to Tables 05.040.A and Table O5.030.A, adding twin homes as a permitted use in the R-2 zone.
Petitioner: Lehi City
CC Staff Report Twin Homes Dev Code Amendment 09.19.23.docx
Table 05.040 Lot size requirement DRC 07.19.23.docx
Ord 57-2023.docx
TBL05.030-AResUses Twin Homes.pdf
TBL05.040-A ResBulkIntensity-Twin Homes.pdf

16. Consideration of Gary Cooper's request for final subdivision approval of Cedar Hollow Plat M, a 7-lot single family development located at 1475 East 1800 North in the RA-1 zone.

Zoning Map.pdf
Aerial Map.pdf
Cedar Hollow Plat M Final.pdf
General Plan Map.pdf
CC Staff Report Cedar Hollow Plat M Final Subdivision 09.19.23.docx
Cedar Hollow Plat M Final DRC 08.30.23.docx

17. Consideration of Resolution #2023-63 approving a cooperative agreement between UDOT and Lehi City for the preservation and establishment of a traffic signal and access control plan along US-89.
Petitioner: Lehi City
Res 2023-63.docx
US-89 Coop Agreement Lehi draft 3-13-23.pdf

18. Consideration of Resolution #2023-64 approving an amendment to the cooperative agreement between UDOT, Saratoga Springs, and Lehi City for the preservation and establishment of a corridor along SR-145.
    Petitioner: Lehi City
    Res 2023-64.docx
    SR-145 from SR-68 to I-15 Amendment #2 9-13-23.pdf

19. Adjournment

- Public is invited to attend all City Council Meetings
- In compliance with the Americans with Disabilities Act, persons in need of special accommodations should contact the City Recorder at 385-201-2269
- This agenda has been properly posted and a copy provided to the local news media.

Agenda Item No: 2.1

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Presentation
Agenda Section: Presentations and Reports

Subject:
Fiber Network Update

Suggested Action:

Attachments:

Agenda Item No: 2.2

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Presentation
Agenda Section: Presentations and Reports

Subject:
Radon Information Presentation from the Utah County Health Department

Suggested Action:

Attachments:

Agenda Item No: 2.1

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Action Item
Agenda Section: Presentations and Reports

Subject:
Constitution Week Proclamation

Suggested Action:

Attachments:

Proclamation for Mayor of Lehi.docx

Proclamation

WHEREAS: The Constitution of the United States of America, the guardian of our liberties, embodies the principles of limited government in a Republic dedicated to rule by law; and

WHEREAS: September 17, 2023, marks the two hundred thirty-sixth anniversary of the framing of the Constitution of the United States of America by the Constitutional Convention; and

WHEREAS: It is fitting and proper to accord official recognition to this magnificent document and its memorable anniversary, and to the patriotic celebrations which will commemorate it; and

WHEREAS: Public Law 915 guarantees the issuing of a proclamation each year by the President of the United States of America designating September 17 through 23 as Constitution Week,

NOW, THEREFORE I, Mark Johnson, by virtue of the authority vested in me as Mayor of the City of Lehi, Utah do hereby proclaim the week of September 17 through 23 as

CONSTITUTION WEEK

And ask our citizens to reaffirm the ideals the Framers of the Constitution had in 1787 by vigilantly protecting the freedoms guaranteed to us through this guardian of our liberties.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the City to be affixed this _____ day of September of the year of our Lord two thousand twenty-three.

Signed _____

SEAL Attest _____

Agenda Item No: 2.2

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Presentation
Agenda Section: Presentations and Reports

Subject:
September Waterwise Yard of the Month Award

Suggested Action:

Attachments:

Agenda Item No: 4.1

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Action Item
Agenda Section: Consent Agenda

Subject:
Approve Purchase Orders

Suggested Action:

Attachments:

Requisition Request- Irby 8.28.2023.pdf

Lehi City Purchase Requisition Request

Supplier	**Name**	STUART C. IRBY CO.		**Vender #**	
	Street	PO BOX 843959		**Date**	**8/28/2023**
	City	DALLAS	**State**	TX	
	Zip	75284	**Phone**	801-724-3000	

Dean Lundell

POWER	53-14-15	
Requesting Department	**Dept. Account No.**	**Department Head Signature**

Quanity	Unit	Materials and Description	Price	Total
686		PODP 29-6115-000 FAULT INDICATOR FOR	$204.00	$139,944.00
		1.57"-2.37" CABLE TIME/MANUAL 4HR RESET		
		THESE ITEMS ARE IN STOCK IN SALT LAKE CITY		
		ALL OTHER QUOTES ARE 8-10 WKS		
		PROJECTS UPCOMING		
		SKYE PROJECT		
		LOW HILLS BOOSTER PUMP		
		CEDAR HOLLOW WELL		
		FAMILY PARK WELL		
				$139,944.00

Justification:	Price Determination	
	Verbal Quote	
	Informal Bid	
	Written Bid	*
	State Bid	
	Other	

Quotation

STUART C IRBY BR 1093 SALT LAKE CTY
6312 WEST BEAGLEY ROAD
WEST VALLEY CITY UT 84128
385-285-3199

QUOTE DATE	ORDER NUMBER
08/25/23	S013699936

REMIT TO:
STUART C. IRBY CO.
POST OFFICE BOX 843959
DALLAS TX 75284

PAGE NO. 1

SOLD TO:
LEHI CITY CORP
153 NO 100 EAST
LEHI, UT 84043

SHIP TO:
LEHI CITY CORP
560 WEST GLENN CARTER DRIVE
LEHI, UT 84043
801-768-7100

ORDERED BY: KENNY

CUSTOMER NUMBER	CUSTOMER ORDER NUMBER	JOB/RELEASE NUMBER	OUTSIDE SALESPERSON
222013	FAULT INDICATORS		Gregory J McPhie

INSIDE SALESPERSON	REQD DATE	FRGHT ALLWD	SHIP VIA
Joseph C Rho	08/25/23	Yes	120 UTAH COUNTY

ORDER QTY	SHIP QTY	LINE	DESCRIPTION	Prc/Uom	Ext.Amt
			********* Shipping Instructions *********		
			* KENNY 385-201-2612 OFC	*	
			* 801-655-3042 MBL	*	
			* CLAY 801-900-0420	*	
			**********	*********	
686EA		1	+PODP 29-6115-000 FAULT INDICATOR FOR 1.57"-2.37" CABLE TIME/MANUAL 4HR RESET	204.000EA	139944.00

*** This is a quotation ***

Prices firm for acceptance within 30 days with the exception of commodity prices which are subject to change daily. Quotation is void if changed. Complete quote must be used unless authorized in writing.

Subtotal	139944.00
S&H CHGS	0.00
Sales Tax	0.00
TOTAL	139944.00

OUR PRODUCT AND SERVICES ARE SUBJECT TO, AND GOVERNED EXCLUSIVELY BY, OUR TERMS AND CONDITIONS OF SALE, WHICH ARE INCORPORATED HEREIN AND AVAILABLE AT www.irby.com/terms. ADDITIONAL OR CONFLICTING TERMS ARE REJECTED, VOID AND OF NO FORCE OR EFFECT.

** Reprint ** Reprint ** Reprint **

BORDER STATES

Quote

BSE Quote: 27183315
Sold-To Acct #: 141947
Valid From: 08/28/2023 **To:** 09/04/2023
PO No: meter
Payment Terms: 1.0 % 10th prox net 25th prox

Created By: Samuel Talbert
Tel No: 435-792-9324
Fax No:

Border States Electric - ORE
658 N. State Street
Orem UT 84057
Phone: 801-224-3450

LEHI CITY POWER
560 GLEN CARTER DR
LEHI UT 84043-3670

Inco Terms:
FOB ORIGIN

Ship-to:
LEHI CITY POWER
560 GLEN CARTER DR
LEHI UT 84043-3670

Cust Item	BSE Item	Material MFG - Description	Quantity	Price Per	UoM	Value
	000010	**2321136** PDP - 29-6115-000 UG FAULT INDICATOR 1.00-2.52 8-10 weeks	**200** EA	202.84 / 1	EA	40,568.00

Total $				40,568.00
State Tax $	0.000 %	0.00		
County Tax $	0.000 %	0.00		
Local Tax $	0.000 %	0.00		
Other Tax1 $	0.000 %	0.00		
Other Tax2 $	0.000 %	0.00		
Other Tax3 $	0.000 %	0.00		
Tax Subtotal $	0.000 %			0.00
Net Amount $				**40,568.00**

To access BSE's Terms and Conditions of Sale, please go to
https://www.borderstateselectric.com

The quoted sales tax is an estimate only based upon the information provided in this quote and will be finalized at the time of Invoice based upon the material purchased, quantity purchased, and delivery location.

Shipping and handling fees in this quote are an estimate only and will be finalized at the time of Invoice.

All clerical errors contained herein are subject to correction. In the event of any cost or price increases from manufacturers or other suppliers, caused by, but not limited to, currency fluctuations, raw material or labor prices, fuel or transportation cost increases, and any import tariffs, taxes, fees, or surcharges, BSE reserves the exclusive right to change its pricing at the time of shipping and will provide notice of any such change to its customers prior to costs being incurred.

Kenny Norris

From: Lobos, Rosie <rosie.lobos@anixter.wescodist.com>
Sent: Monday, August 28, 2023 11:43 AM
To: Kenny Norris
Subject: [External] RE: fault indicators

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Kenny

I do have 200 available in stock. price $206.26 ea. 29-6115-000

Thank you and let me know if you want them.



Rosie Lobos
Representative - Inside Sales
Wesco | Anixter

o. (801) 288-2831 | rosie.lobos@anixter.com
3130 S 1030 W, Suite #2, South Salt Lake, UT 84119

From: Kenny Norris <knorris@lehi-ut.gov>
Sent: Monday, August 28, 2023 11:23 AM
To: Lobos, Rosie <rosie.lobos@anixter.wescodist.com>
Subject: fault indicators

This Message Is From an External Sender
This message came from outside your organization.

Looking to see if you have any of the Power Delivery Products fault indicators 29-6115-000 price and if you have any in stock 200 each

This e-mail message and the documents attached to it, if any, are intended only for the use of the addressee and may contain information that is PRIVILEGED and CONFIDENTIAL. If you are not the intended recipient, you are hereby notified that any dissemination of this communication is strictly prohibited. If you have received this communication in

Agenda Item No: 4.2

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Action Item
Agenda Section: Consent Agenda

Subject:
Approve Addendums 2 and 3 of the previously approved Real Estate Purchase Contract for 55 West Main Street.

Suggested Action:

Attachments:

55 West Main Street Addendum 2 and 3 signed.pdf

Commercial Real Estate Purchase Contract 55 West Main Street Signed and Addendum 1.pdf

DocuSign Envelope ID: F98F8F47-C5A1-426C-A577-4C4BD599FFBA

DocuSign Envelope ID: 1FA41E4A-DA7E-446D-9880-F02D3E925378

ADDENDUM NO. 2

TO

REAL ESTATE PURCHASE CONTRACT

THIS IS AN [ ] **ADDENDUM** [x] **COUNTEROFFER** to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of August 22, 2023 including all prior addenda and counteroffers, between Mark Johnson as Buyer, and Faye Torgerson as Seller, regarding the Property located at 55 West Main Street Lehi, Utah. The following terms are hereby incorporated as part of the REPC.

1. Purchase price shall be $950,000.00
2. Terms of addendum 1 shall not apply. Buyer has the right to order an appraisal but the value provided by the appraisal shall not impact the purchase price.
3. Seller Disclosure Deadline shall be 10 days following contract acceptance.
4. Due Diligence Deadline shall be 30 days following contract acceptance.
5. Settlement Deadline shall be 45 days following contract acceptance.
6. Seller is BT Rentals LLC

BUYER AND SELLER AGREE THAT THE CONTRACT DEADLINES REFERENCED IN SECTION 24 OF THE REPC (CHECK APPLICABLE BOX): [ ] REMAIN UNCHANGED [x] ARE CHANGED AS FOLLOWS: See Above

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other items of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. [ ] **Seller** [x] **Buyer** shall have until 5 : 00 [ ] **AM** [x] **PM** Mountain time on August 28, 2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

DocuSigned by:
Ben Torgerson 8/23/2023
5CE09863A552465...

[ ] Buyer [x] Seller Signature (Date) (Time) [ ] Buyer [ ] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[ ] **ACCEPTANCE**: [ ] **Seller** [ ] **Buyer** hereby accepts the terms of this ADDENDUM

[✓] **COUNTEROFFER:** [ ] **Seller** [✓] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. 3

M Johnson 8/30/23 3:53pm

(Signature) (Date) (Time) (Signature) (Date) (Time)

[ ] **REJECTION**: [ ] **Seller** [ ] **Buyer** rejects the foregoing ADDENDUM

DocuSign Envelope ID: F98F8F47-C5A1-426C-A577-4C4BD599FFBA

DocuSign Envelope ID: 1FA41E4A-DA7E-446D-9880-F02D3E925378

(Signature) (Date) (Time) (Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL.

DocuSign Envelope ID: F98F8F47-C5A1-426C-A577-4C4BD599FFBA

ADDENDUM NO. 3
TO
REAL ESTATE PURCHASE CONTRACT

THIS IS AN [ ] ADDENDUM [☑] COUNTEROFFER to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of 08/22/2023, including all prior addenda and counteroffers, between Lehi City Corporation as Buyer, and BT Rentals LLC as Seller, regarding the Property located at 55 West Main Street, Lehi, UT 84043. The following terms are hereby incorporated as part of the REPC:

1. Purchase price shall be $910,000.
2. Terms of addendum 1 shall not apply. Buyer has right to order an appraisal but the value provided shall not impact the purchase price.
3. Buyer Agent shall/will not collect commission on sale/purchase of the property.
4. Seller Disclosure Deadline shall be 10 days following contract acceptance.
5. Due Diligence Deadline shall be 30 days following contract acceptance.
6. Settlement Deadline shall be 45 days following contract acceptance.
7. Extend Addendum 2 Acceptance/Counter Offer/Rejection to no later than Aug 30th, 2023 at 5:00pm.

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other terms of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. **[☑] Seller [ ] Buyer** shall have until 5:00 **[ ] AM [☑] PM** Mountain Time on 09/04/2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

[☑] Buyer [ ] Seller Signature (Date) (Time)	[ ] Buyer [ ] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[☒] ACCEPTANCE: [☒] **Seller** [ ] **Buyer** hereby accepts the terms of this ADDENDUM.

[ ] COUNTEROFFER: [ ] **Seller** [ ] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. ____.

DocuSigned by: Ben Torgerson 5CE09863A552465... 8/30/2023 (Signature) (Date) (Time)	(Signature) (Date) (Time)

[ ] REJECTION: [ ] **Seller** [ ] **Buyer** rejects the foregoing ADDENDUM.

(Signature) (Date) (Time)	(Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL, EFFECTIVE JANUARY 1, 2020. IT REPLACES AND SUPERSEDES ALL PREVIOUSLY APPROVED VERSIONS OF THIS FORM.

Utah Association of REALTORS®

COMMERCIAL REAL ESTATE PURCHASE CONTRACT

EQUAL HOUSING OPPORTUNITY

This is a legally binding contract. It has been prepared by the Utah Association of REALTORS® for the use of its members only, in their transactions with clients and customers. Parties to this Commercial Real Estate Contract ("Contract") may agree, in writing, to alter or delete provisions of this Contract. Seek advice from your attorney or tax advisor before entering into a binding contract.

EARNEST MONEY RECEIPT

On this 08/22/2023 ("Offer Reference Date") Mark Johnson ("Buyer") offers to purchase from Faye Torgerson ("Seller") the *Property* described below and hereby delivers to the Brokerage or Title/Escrow Company, as *Earnest Money*, the amount of $25,000 in the form of ACH Transfer which, upon Acceptance of this offer by all parties (as defined in Section 23), shall be deposited in accordance with state law.

Brokerage or Title/Escrow Company _____ Address _____

Received by: _____ on _____

(Signature above acknowledges receipt of Earnest Money) (Date)

OFFER TO PURCHASE

1. PROPERTY (General Description): 4,353 Square Foot Commercial Property

Address 55 West Main Street City Lehi

County UT State of Utah, ZIP 84043

County Tax I.D. # 01:027:0009 (the *"Property"*)

For a legal description **(Check Applicable Box):** ☐ **SEE ADDENDUM #** _____ ☐ **COMMITMENT FOR TITLE INSURANCE** as provided in Section 7(b).

1.1 INCLUDED ITEMS: Unless excluded herein, this sale includes all fixtures presently attached to the *Property*. The following personal property shall also be included in this sale and conveyed under separate *Bill of Sale* with warranties as to title:

_____

1.2 Excluded Items. These items are excluded from this sale:

_____

2. PURCHASE PRICE The Purchase Price for the *Property* is $900,000

The Purchase Price will be paid as follows:

$25,000.00 **(a) *Earnest Money Deposit.***

$_____ **(b) New Loan.** Buyer will apply for one or more of the following loans: ☐ **Conventional** ☐ **SBA** ☐ **Other** (specify) _____ Buyer shall have the right to approve the terms and conditions of the new loan as provided in *Section 8 (f)*.

$_____ **(c) Loan Assumption Addendum** (see attached *Assumption Addendum* if applicable)

$_____ **(d) Seller Financing** (see attached *Seller Financing Addendum* if applicable)

$_____ **(e) Other (specify)** _____

$875,000 **(f) Balance of Purchase Price in Cash at Settlement**

$900,000 **PURCHASE PRICE. Total of lines (a) through (f)**

3. SETTLEMENT AND CLOSING. Settlement shall take place on the Settlement Deadline referenced in *Section 24(c)*, or on a date upon which Buyer and Seller agree in writing. "Settlement" shall occur only when **all** of the following have been completed: (a) Buyer and Seller have signed and delivered to each other or to the escrow/closing office all documents required by this Contract, by the lender, by written escrow instructions or by applicable law; (b) any monies required to be paid by Buyer under these documents (except for the proceeds of any new loan) have been delivered by Buyer to Seller or to the escrow/closing office in the form of collected or cleared funds; and (c) any monies required to be paid by Seller under these documents have been delivered by Seller to Buyer or to the escrow/closing office in the form of collected or cleared funds. Seller and Buyer shall each

 Buyer's Initials [ ] Date 8/23/23 Seller's Initials [BT] Date 8/23/2023

pay one-half (½) of the fee charged by the escrow/closing office for its services in the settlement/closing process. Taxes and assessments for the current year, rents, and interest on assumed obligations shall be prorated at Settlement as set forth in this Section. Tenant deposits (including, but not limited to, security deposits and prepaid rents) shall be paid or credited by Seller to Buyer at Settlement. Prorations set forth in this Section shall be made as of the Settlement Deadline date referenced in *Section 24(c)*, unless otherwise agreed to in writing by the parties. Such writing could include the settlement statement. For purposes of this Contract, "Closing" means that: (i) Settlement has been completed; (ii) the proceeds of any new loan have been delivered by the lender to Seller or to the escrow/closing office; and (iii) the applicable Closing documents have been recorded in the office of the county recorder.

4. POSSESSION. Seller shall deliver physical possession to Buyer within: ☑ 6 **HOURS AFTER CLOSING;** ☐ _____ **DAYS AFTER CLOSING;** ☐ **OTHER (SPECIFY)** _____
Any rental of the *Property* prior to or after Closing, between Buyer and Seller, shall be by separate written agreement.

5. CONFIRMATION OF BROKERAGE FEES & AGENCY DISCLOSURE. Buyer and Seller acknowledge prior receipt of written agency disclosure provided by their respective Buyer's Agent or Seller's Agent that has disclosed the agency relationships that are confirmed below. Buyer and Seller further acknowledge that Brokerage Fees due as a result of this transaction are being paid based upon the terms of a separate written agreement. At the signing of this Contract:

Seller's Agent, Spencer Croshaw represents ☑ **Seller** ☐ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Seller's Brokerage, Colliers represents ☐ **Seller** ☐ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Buyer's Agent, W Marlin Eldred represents ☐ **Seller** ☑ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Buyer's Brokerage, Equity Solid Real Estate represents ☐ **Seller** ☑ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**

6. TITLE TO PROPERTY & TITLE INSURANCE.
(a) Seller represents that Seller has fee simple title to the Property and will convey good and marketable title to Buyer at Closing by: ☐ **GENERAL WARRANTY DEED** ☑ **SPECIAL WARRANTY DEED**, free of financial encumbrances except as provided under *Section 10.1.*
(b) At Settlement, Seller agrees to pay for a standard-coverage owner's policy of title insurance insuring Buyer in the amount of the Purchase Price. The title policy shall conform with Seller's obligations under *Section 10.1* and with the *Commitment for Title Insurance* as agreed to by Buyer under *Section 8.*
(c) ☐ **BUYER ELECTS TO OBTAIN A FULL-COVERAGE EXTENDED ALTA POLICY OF TITLE INSURANCE.** The cost of this coverage (including the ALTA survey), above that of the standard-coverage Owner's policy, shall be paid for at Settlement by: ☐ **BUYER** ☐ **SELLER** ☐ **OTHER** _____.

7. SELLER DISCLOSURES. No later than the Seller Disclosure Deadline referenced in *Section 24(a)*, Seller shall provide to Buyer the following documents which are collectively referred to as the "Seller Disclosures":
(a) a Seller property condition disclosure for the *Property*, signed and dated by Seller;
(b) a *Commitment for Title Insurance* on the *Property*;
(c) a copy of all leases and rental agreements now in effect with regard to the *Property* together with a current rent roll;
(d) operating statements of the Property for its last 2 full fiscal years of operation plus the current fiscal year through July 1, 2023 certified by the Seller or by an independent auditor;
(e) copies in Seller's possession, if any, of any studies and/or reports which have previously been done on the *Property*, including without limitation, environmental reports, soils studies, site plans and surveys;
(f) written notice of any claims and/or conditions known to Seller relating to environmental problems and building or zoning code violations; and
(g) Other (specify) Current Tenant Lease Agreements, past 5 years maintenance records

8. BUYER'S RIGHT TO CANCEL BASED ON BUYER'S DUE DILIGENCE. Buyer's obligation to purchase under this Contract (**check applicable boxes**):
(a) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of the content of all the *Seller Disclosures* referenced in *Section 7*;
(b) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of a physical condition inspection of the *Property*;
(c) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of a survey of the *Property* by a licensed surveyor ("Survey");
(d) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of applicable federal, state and local governmental laws, ordinances and regulations affecting the *Property*; and any applicable deed restrictions and/or CC&R's (covenants, conditions and restrictions) affecting the *Property*;

 Buyer's Initials [illegible] Date _____ Seller's Initials DS BT Date 8/23/2023

(e) ☑ IS ☐ IS NOT conditioned upon the *Property* appraising for not less than the Purchase Price.
(f) ☐ IS ☑ IS NOT conditioned upon Buyer's approval of the terms and conditions of any mortgage financing referenced in *Section 2*.
(g) ☐ IS ☐ IS NOT conditioned upon Buyer's approval of the following tests and evaluations of the *Property*: (specify)

_____

If any of the items *8(a) through 8(g)* are checked in the affirmative, then *Sections 8.1, 8.2, 8.3 and 8.4* apply; otherwise, they do not apply. The items checked in the affirmative above are collectively referred to as "Buyer's Due Diligence." Unless otherwise provided in this Contract, the Buyer's Due Diligence shall be paid for by Buyer and shall be conducted by individuals or entities of Buyer's choice. Buyer shall conduct Buyer's Due Diligence in such manner as not to unreasonably disrupt the activities and business of Seller, and shall indemnify Seller and hold Seller harmless from and against any and all liability, claim, or damages which arise from, is caused by, or is in any manner connected with Buyer's Due Diligence, including without limitation, claims for payment for inspection services, claims for mechanics liens, and physical damage to the Property. Seller agrees to cooperate with Buyer's Due Diligence and with a site inspection under *Section 11*.

8.1 Due Diligence Deadline. No later than the Due Diligence Deadline referenced in *Section 24(b)* Buyer shall: (a) complete all of Buyer's Due Diligence; and (b) determine if the results of the Buyer's Due Diligence are acceptable to Buyer.

8.2 Right to Cancel or Object. If Buyer, in Buyer's sole discretion, determines that the results of the Buyer's Due Diligence are unacceptable, Buyer may, no later than the Due Diligence Deadline, either: (a) cancel this Contract by providing written notice to Seller, whereupon the Earnest Money Deposit shall be released to Buyer; or (b) provide Seller with written notice of objections.

8.3 Failure to Respond. If by the expiration of the Due Diligence Deadline, Buyer does not: (a) cancel this Contract as provided in *Section 8.2*; or (b) deliver a written objection to Seller regarding the Buyer's Due Diligence, the results of the Buyer's Due Diligence shall be deemed approved by Buyer; and the contingencies referenced in *Sections 8(a) through 8(g)*, including but not limited to, any financing contingency, shall be deemed waived by Buyer.

8.4 Response by Seller. If Buyer provides written objections to Seller, Buyer and Seller shall have 5 **CALENDAR DAYS** after Seller's receipt of Buyer's objections (the "Response Period") in which to agree in writing upon the manner of resolving Buyer's objections. Except as provided in *Section 10*, Seller may, but shall not be required to, resolve Buyer's objections. If Buyer and Seller have not agreed in writing upon the manner of resolving Buyer's objections, Buyer may cancel this Contract by providing written notice to Seller no later than **THREE CALENDAR DAYS** after expiration of the *Response Period*; whereupon the *Earnest Money Deposit* shall be released to Buyer. If this Contract is not canceled by Buyer under this *Section 8.4*, Buyer's objections shall be deemed waived by Buyer. This waiver shall not affect those items warranted in *Section 10*.

9. ADDITIONAL TERMS. There ☑ **ARE** ☐ **ARE NOT** addenda to this Contract containing additional terms. If there are, the terms of the following addenda are incorporated into this Contract by this reference: ☑ **Addendum No.** 1
☐ **Seller Financing Addendum** ☐ **Assumption Addendum** ☑ **Lead-Based Paint Disclosure & Acknowledgement**
☐ **Other (specify):** _____

10. SELLER'S WARRANTIES & REPRESENTATIONS.

10.1 Condition of Title. Buyer agrees to accept title to the *Property* subject to the contents of the *Commitment for Title Insurance* as agreed to by Buyer under *Section 8*. Buyer also agrees to take the *Property* subject to existing leases affecting the *Property* and not expiring prior to Closing. Buyer agrees to be responsible for taxes, assessments, association fees and dues, utilities, and other services provided to the *Property* after Closing. Except for any loan(s) specifically assumed by Buyer under *Section 2*, Seller will cause to be paid off by Closing all mortgages, trust deeds, judgments, mechanic's liens, tax liens and warrants. Seller will cause all assessments to be paid current by Closing.

10.2 Condition of Property. Seller warrants that **ON THE DATE SELLER DELIVERS PHYSICAL POSSESSION TO BUYER**, the *Property* and improvements will be broom-clean and free of debris and personal belongings, and in the same general condition as they were on the date of *Acceptance*.

10.3 Other Seller Warranties. Seller further warrants that, to the best of Seller's knowledge, each of the following statements is true: (a) the consummation of the transactions contemplated by this Contract will not constitute a default or result in the breach of any term or provision of any contract or agreement to which Seller is a party so as to adversely affect the consummation of such transactions; (b) there is no action, suit, legal proceeding or other proceeding pending or threatened against Seller and/or the *Property* which may adversely affect the transactions contemplated by this Contract, in any court or before any arbitrator of any kind or before or by any governmental body which may adversely affect the transactions contemplated by this Contract; (c) all work which will be performed in, on or about the *Property* or materials furnished thereto which might in any circumstances give rise to a mechanic's or materialman's lien, will be paid and all necessary waivers of rights to a mechanic's or materialman's lien for such work will be obtained; (d) Seller has not received any written notice indicating that the *Property* is in violation of any Federal, State or local Environmental Law; (e) there are no Hazardous Substances on, under, or about the *Property*, nor has Seller undertaken, permitted, authorized or suffered, and will not undertake, permit, authorize or suffer the presence, use, manufacture, handling, generation, storage, treatment, discharge, release, burial or disposal on, under or about the *Property*, of any Hazadous Substances, or the transportation to or from the *Property*, of any Hazardous Substances. As used herein, "Hazardous Substance" shall mean any substance, material or matter that may give rise to liability under any Federal, State, or local Environmental Laws; and (f) Seller is not a "foreign person" as that term is defined in Section 1445 of the U.S. Internal

 Buyer's Initials [illegible] Date 8/23/23 Seller's Initials BT Date 8/23/2023

Revenue Code of 1986, as amended. (In that regard, Seller shall deposit into Escrow, at or prior to Closing, an affidavit in such form as may be required by the U.S. Internal Revenue Service, setting forth Seller's full name, address and taxpayer identification number and stating under penalty of perjury that Seller is not a "foreign person" as so defined).

11. FINAL PRE-CLOSING INSPECTION. Before Settlement, Buyer may, upon reasonable notice and at a reasonable time, conduct a final pre-closing inspection of the *Property* to determine **only** that the *Property* is "as represented," meaning that the items referenced in *Sections 1.1, 8.4 and 10.2 and 10.3* ("the items") are respectively present, repaired/changed as agreed, and in the warranted condition. If the items are not as represented, Seller will, prior to Settlement, replace, correct or repair the items or, with the consent of Buyer (and Lender if applicable), escrow an amount at Settlement to provide for the same. The failure to conduct a final pre-closing inspection or to claim that an item is not as represented, shall not constitute a waiver by Buyer of the right to receive, on the date of possession, the items as represented.

12. CHANGES DURING TRANSACTION. Seller agrees that from the date of Acceptance until the date of Closing, Seller shall not, without the prior written consent of Buyer: (a) make any changes in any existing leases; (b) enter into any new leases; (c) make any substantial alterations or improvements to the *Property*; or (d) incur any further financial encumbrances against the *Property*.

13. AUTHORITY OF SIGNERS. If Buyer or Seller is a corporation, partnership, trust, estate, limited liability company or other entity, the person executing this Contract on its behalf warrants his or her authority to do so and to bind Buyer and Seller. Seller further warrants that the execution and delivery of this Contract by Seller have been duly and validly authorized, and all requisite action has been taken to make this Contract binding upon Seller.

14. COMPLETE CONTRACT/ASSIGNMENT. This Contract together with its addenda, any attached exhibits, and Seller Disclosures, constitutes the entire Contract between the parties and supersedes and replaces any and all prior negotiations, representations, warranties, understandings or contracts between the parties. This Contract cannot be changed except by written agreement of the parties. This Contract ☐ **SHALL** ☑ **SHALL NOT** be assignable by Buyer. Except as so restricted, this Contract shall inure to the benefit of and be binding upon the heirs, personal representatives, successors and assigns of the parties.

15. MEDIATION. Any dispute relating to this Contract that arise prior to or after Closing:
☑ **SHALL**
☐ **MAY AT THE OPTION OF THE PARTIES**
first be submitted to mediation. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute informally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The parties will jointly appoint an acceptable mediator and will share equally in the cost of such mediation. The mediation, unless otherwise agreed, shall terminate in the event the entire dispute is not resolved **THIRTY (30) CALENDAR DAYS** from the date written notice requesting mediation is sent by one party to the other(s). If mediation fails, the other procedures and remedies available under this Contract shall apply. Nothing in this *Section 15* shall prohibit any party from seeking emergency equitable relief pending mediation.

16. DEFAULT. If Buyer defaults, Seller may elect either to retain the Earnest Money Deposit as liquidated damages, or to return it and sue Buyer to specifically enforce this Contract or pursue other remedies available at law. If Seller defaults, in addition to return of the Earnest Money Deposit, Buyer may elect either to accept from Seller a sum equal to the Earnest Money Deposit as liquidated damages, or may sue Seller to specifically enforce this Contract or pursue other remedies available at law.

17. ATTORNEY FEES AND COSTS. In the event of litigation or binding arbitration to enforce this Contract, the prevailing party shall be entitled to costs and reasonable attorney fees. However, attorney fees shall not be awarded for participation in mediation under *Section 15*.

18. NOTICES. Except as provided in *Section 23*, all notices required under this Contract must be: (a) in writing; (b) signed by the party giving notice; and (c) received by the other party or the other party's agent no later than the applicable date referenced in this Contract.

19. ABROGATION. Except for the provisions of *Sections 8.4, 10.1, 10.3, 15 and 17* and any other express warranties made in this Contract, the provisions of this Contract shall not apply after Closing.

20. RISK OF LOSS. All risk of loss to the *Property*, including physical damage or destruction to the *Property* or its improvements due to any cause except ordinary wear and tear and loss caused by a taking in eminent domain, shall be borne by Seller until Closing.

21. TIME IS OF THE ESSENCE. Time is of the essence regarding the dates set forth in this Contract. Extensions must be agreed to in writing by all parties. Unless otherwise explicitly stated in this Contract: (a) performance under each Section of this Contract

 Buyer's Initials [ ] Date 8/23/23 Seller's Initials [BT] (DS) Date 8/23/2023

which references a date shall absolutely be required by 5:00 PM Mountain Time on the stated date; and (b) the term "days" shall mean calendar days and shall be counted beginning on the day following the event which triggers the timing requirement (i.e., Acceptance, etc.). If the performance date falls on a Saturday, Sunday, State or Federal legal holiday, performance shall be required on the next business day. Performance dates and times referenced herein shall not be binding upon title companies, lenders, appraisers and others not parties to this Contract, except as otherwise agreed to in writing by such non-party.

22. FAX TRANSMISSION AND COUNTERPARTS. Facsimile (fax) transmission of a signed copy of this Contract, any addenda and counteroffers, and the retransmission of any signed fax shall be the same as delivery of an original. This Contract and any addenda and counteroffers may be executed in counterparts.

23. ACCEPTANCE. "Acceptance" occurs when Seller or Buyer, responding to an offer or counteroffer of the other: (a) signs the offer or counteroffer where noted to indicate acceptance; and (b) communicates to the other party or to the other party's agent that the offer or counteroffer has been signed as required.

24. CONTRACT DEADLINES. Buyer and Seller agree that the following deadlines shall apply to this Contract:

(a) Seller Disclosure Deadline	09/01/2023	(Date)
(b) Due Diligence Deadline	09/14/2023	(Date)
(c) Settlement Deadline	09/29/2023	(Date)

Buyer's Initials [ ] Date 8/23/23 Seller's Initials DS [BT] Date 8/23/2023

25. OFFER AND TIME FOR ACCEPTANCE. Buyer offers to purchase the *Property* on the above terms and conditions. If Seller does not accept this offer by: 5:00pm Mountain Time on 08/25/2023 (Date), this offer shall lapse; and the Brokerage or Title/Escrow Company shall return the *Earnest Money Deposit* to Buyer.

(Buyer's Signature)	(Title, if any)	(Date)	(Buyer's Signature)	(Title, if any)	(Date)
Mark Johnson	Mayor	8/23/23			

(Buyers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)
Mark Johnson	153 N 100 E Lehi, 84043-1852		8017198234	
(Buyers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

☐ **ACCEPTANCE OF OFFER TO PURCHASE:** Seller Accepts the foregoing offer on the terms and conditions specified above.

☒ **COUNTEROFFER:** Seller presents for Buyer's Acceptance the terms of Buyer's offer subject to the exceptions or modifications as specified in the attached ADDENDUM NO. 2

DocuSigned by:

(Seller's Signature)	(Date)	(Time)	(Seller's Signature)	(Date)	(Time)
Ben Torgerson SCE09803A352465...	8/23/2023				

(Sellers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)
Faye Torgerson	1526 W. Gordan Creek Rd, Price, UT 84501		801-702-4689	
(Sellers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)

☐ **REJECTION:** Seller Rejects the foregoing offer.

(Seller's Signature)	(Date)	(Time)	(Seller's Signature)	(Date)	(Time)

****

DOCUMENT RECEIPT

State law requires Broker to furnish Buyer and Seller with copies of this Contract bearing all signatures. (Fill in applicable section below.)

A. I acknowledge receipt of a final copy of the foregoing Contract bearing all signatures:

(Buyer's Signature)	(Date)	(Buyer's Signature)	(Date)

(Seller's Signature)	(Date)	(Seller's Signature)	(Date)

B. I personally caused a final copy of the foregoing Contract bearing all signatures to be ☐ **faxed** ☐ **mailed** ☐ **hand delivered** on _____, postage prepaid, to the ☐ **Seller** ☐ **Buyer.**

Sent/Delivered by (specify) _____

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UAR FORM 3

Buyer's Initials MJ Date 8/23/23 Seller's Initials DS BT Date 8/23/2023

DocuSign Envelope ID: 1FA41E4A-DA7E-446D-9880-F02D3E925378

ADDENDUM NO. 1
TO
REAL ESTATE PURCHASE CONTRACT

THIS IS AN [☑] ADDENDUM [☐] COUNTEROFFER to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of 08/22/2023, including all prior addenda and counteroffers, between Mark Johnson as Buyer, and Faye Torgerson as Seller, regarding the Property located at 55 West Main Street, Lehi, UT 84043. The following terms are hereby incorporated as part of the REPC:

Buyer will pay for an appraisal of the property through a licensed appraiser. Buyer will pay appraised value or $900,000 offer price whichever is the lesser amount. Seller shall have the option to obtain or provide an appraisal from a licensed appraiser within 30 days before or after of the offer date. If the two appraisals are different the appraisals will be added together and divided by 2 to come up with a blended appraisal. The blended appraisal or $900,000 offer price whichever is lower will become the settlement price or purchase price.

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other terms of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. [☒] **Seller** [☐] **Buyer** shall have until 5:00 [☐] **AM** [☒] **PM** Mountain Time on 8/25/2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

M Johnson 8/22/23 11:17 AM	
[☒] Buyer [☐] Seller Signature (Date) (Time)	[☐] Buyer [☐] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[☐] **ACCEPTANCE:** ☐ **Seller** ☐ **Buyer** hereby accepts the terms of this ADDENDUM.

[☒] **COUNTEROFFER:** [☒] **Seller** [☐] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. 2.

DocuSigned by: Ben Torgerson 5CE09863A552465... 8/23/2023	
(Signature) (Date) (Time)	(Signature) (Date) (Time)

☐ **REJECTION:** ☐ **Seller** ☐ **Buyer** rejects the foregoing ADDENDUM.

(Signature) (Date) (Time)	(Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL, EFFECTIVE JANUARY 1, 2020. IT REPLACES AND SUPERSEDES ALL PREVIOUSLY APPROVED VERSIONS OF THIS FORM.

Agenda Item No: 4.3

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Action Item
Agenda Section: Consent Agenda

Subject:
Approve the First Amendment to the Interlocal Agreement with Utah County for the 2300 West roadway widening project.

Suggested Action:

Attachments:

FIRST AMENDMENT TO INTERLOCAL AGREEMENT 2022-224 - Lehi Revisions.pdf

AGREEMENT NO. 2023-_____

FIRST AMENDMENT TO INTERLOCAL AGREEMENT 2022-224 BETWEEN UTAH COUNTY, UTAH, AND LEHI CITY FOR THE 2300 WEST ROADWAY WIDENING PROJECT

On this ____ day of September 2023, this First Amendment is made to the Interlocal Agreement 2022-224 between UTAH COUNTY, a political subdivision of the State of Utah, with principle offices located at 100 East Center St, Suite 2300, Provo, Utah 84606 ("County" and "Program Manager") and LEHI CITY, a political subdivision of the State of Utah, with principle offices located at 153 North 100 East, Lehi Utah, 84043 ("City" and "Project Sponsor"); and

WHEREAS, County and City entered into Agreement No. 2022-224; and

WHEREAS, County and City now desire to amend Agreement No. 2022-224 on account of additional funding and additional time needed for the 2300 West Roadway Widening Project.

NOW THEREFORE, in consideration of the foregoing, the mutual covenants made herein, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, County and City hereby amend Agreement No. 2022-224 as follows:

1. Section 4 of the Agreement is hereby amended to read as follows:

Section 4. EFFECTIVE DATE; DURATION.

"This Agreement shall become effective and shall enter into force within the meaning of the Interlocal Cooperation Act, upon the submission of this Agreement to, and the approval and execution hereof by the governing bodies of the Program Manager and the Project Sponsor. The term of this Agreement shall be from the date of execution of Agreement 2022-224 until the terms and obligations identified therein are completed, but in no event longer than 4 years from the execution date."

2. Section 6, paragraphs 8, 8b and 8c of the Agreement are hereby amended to read as follows:

Section 6: TERMS.

8) **Total Project Cost** - Both the Program Manager and Project Sponsor acknowledge that the Approved Project has been authorized by the Mountainland MPO Regional Planning Committee (Utah County Commission must also approve if county funds are used) to be funded at an amount not to exceed $12,616,300 (Total Project Cost) for the direct costs of the Approved Project.

b) Multi-Year Funding – Some projects require funding across multiple fiscal years. Reimbursement for Approved Project activities can only be made up to the available amount identified in a single fiscal year. Any balance from a prior year where available funds have not been expended for the Approved Project are then advanced to the next fiscal year and added to the funds available that fiscal year. Fiscal years for County Transportation Sales Tax Funds begin on January 1st. The Approved Project has been approved for $11,762,176 in 2023.

c) Reimbursement - The Project Sponsor, if desiring reimbursement for the direct costs of the Approved Project, will provide the Program Manager with quarterly or bi-annual itemized invoices detailing actual costs for the ROW acquisition, design, utility relocation, construction, or other approved elements of the project. Appropriate backup materials shall also be supplied. The Program Manager agrees to reimburse the Project Sponsor within 30 days of receiving acceptable itemized invoices establishing the validity of the direct costs of the Approved Project. The maximum amount of reimbursement from the Program Manager to the Project Sponsor shall not exceed $11,762,176 (Total Project Cost less Matching Funds). Any costs which exceed $11,762,176 shall be the sole responsibility of the Project Sponsor. The Program Manager will review and approve monthly each itemized invoice and will reimburse the total invoice amount less the required matching funds.

3. The remaining provisions of Agreement No. 2022-224 shall remain in full force and effect and are incorporated in this Amendment as if fully set forth herein.

The remaining portions and all remaining paragraphs of Agreement No. 2022-224 shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have caused this First Amendment to be duly executed on the date listed above.

BOARD OF COUNTY COMMISSIONERS,
UTAH COUNTY, UTAH

_____
AMELIA POWERS GARDNER, Chair

ATTEST:
AARON R. DAVIDSON
Utah County Clerk

By: _____
Deputy

APPROVED AS TO FORM AND LEGALITY:
JEFFREY S. GRAY
Utah County Attorney

By: _____
Deputy County Attorney

LEHI CITY
Authorized by Resolution No.
This ____ day of September, 2023.

LEHI CITY
UTAH COUNTY, UTAH

_____
Mayor

ATTEST:

_____
City Recorder

REVIEWED AS TO FORM AND
COMPATIBILITY WITH APPLICABLE
LAW:

By: _____
City Attorney

Agenda Item No: 5

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Public Hearing
Agenda Section: Regular Agenda

Subject:

Public hearing to receive input with respect to the issuance of electric revenue bonds to finance the construction of a power generation facility.

Suggested Action:

Attachments:

Hearing Notice - Lehi City Electric Revenue Bonds Series 2023.docx

LEHI CITY, UTAH
NOTICE OF PUBLIC HEARING WITH RESPECT TO
ELECTRIC REVENUE BONDS

PUBLIC NOTICE IS HEREBY GIVEN that the City Council (the *"Council"*) of Lehi City, Utah (the *"City"*), shall hold a public hearing to receive input from the public with respect to the issuance of its Electric Revenue Bonds (the *"Bonds"*) to finance all or a portion of the cost of acquiring and constructing certain improvements (the *"Project"*) to the City's electric utility system (the *"System"*), including the construction of a power generation facility, and the potential economic impact that the Project will have on the private sector, pursuant to the Local Government Bonding Act, Title 11, Chapter 14, Utah Code Annotated 1953, as amended (the *"Act"*).

PURPOSE FOR ISSUING BONDS

The City intends to issue the Bonds for the purpose of (a) financing all or a portion of the cost of acquiring and constructing certain improvements (the *"Project"*) to the City's electric utility system (the *"System"*), including the construction of a power generation facility, (b) funding all or a portion of any necessary reserves in connection with the Bonds, and (c) paying all or a portion of the costs incurred in connection with the issuance and sale of the Bonds.

MAXIMUM PRINCIPAL AMOUNT OF THE BONDS

The City intends to issue the Bonds in an aggregate principal amount not exceeding $21,000,000.

ELECTRIC REVENUES PROPOSED TO BE PLEDGED

The City proposes to pledge to the payment of the Bonds the net revenues from the System (the *"Net Revenues"*).

TIME, PLACE AND LOCATION OF PUBLIC HEARING

The City will hold a public hearing during its City Council meeting that begins at 7:00 p.m. on September 19, 2023. The public hearing will be held at the regular meeting place of the Council at 153 North 100 East, in Lehi, Utah. All members of the public are invited to attend and participate in the public hearing. Written comments may be submitted to the City, to the attention of the City Recorder, prior to the public hearing.

PURPOSE FOR HEARING

The purpose of the hearing is to receive input from the public with respect to the issuance of the Bonds and the potential economic impact that the Project will have on the private sector.

DATED August 8, 2023.

LEHI CITY, UTAH

Agenda Item No: 6

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Fee Schedule Amendment
a. Public Hearing
b. Consideration of Resolution #2023-61 amending the Lehi City Consolidated Fee Schedule for Recreation and Library Fees.

Suggested Action:

Attachments:

Res 2023-61.docx

FY 2024 Fee Amendments.pdf

RESOLUTION NO. 2023-61

A RESOLUTION AMENDING THE LEHI CITY CONSOLIDATED FEE SCHEDULE FOR RECREATION FEES.

WHEREAS, Ordinances enacted by the Lehi City Council provide for the establishment and revision of the City Fee Schedule by Resolution; and

WHEREAS, it is necessary, from time to time, to update said fee schedule; and

THEREFORE, BE IT RESOLVED by the City Council of Lehi City that the following rates be hereby adopted and implemented as outlined in Exhibit A.

Approved and Adopted by the City Council of Lehi City this 19th day of September, 2023

_____
Mark Johnson, Mayor

Attest:

_____
Teisha Wilson, City Recorder

Proposed Ice Rink Fees : 2023-2024

Services	Price	Time
Skating	$8.00	
Skate Rental	$6.00	
Helmet	$6.00	
Skate Aid Rental	$12.00	
School Groups	1/2 Off Staking & Skate Rental	1 hour
Youth Groups	$1 Off for 10 or More	
Company Rentals	$1,000.00	1 1/2 hour
Learn to skate lessons		
Resident	$40.00	
Non-Resident	$60.00	
Learn to skate camp		
Resident	$40.00	
Non-Resident	$60.00	

Pickleball Tournament

One Day Tournament		
Resident	$35.00	per team
Non-Resident	$42.00	per team

Library Card Fees

Non-Resident	$100.00
Non-Resident (6 months)	$50.00

Agenda Item No: 7

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-60 authorizing the Steel Solar 1A Project Second Amendment and Restated Transaction Schedule under the Master Firm Power Supply Agreement with Utah Association of Municipal Power Systems (UAMPS); and related matters.

Suggested Action:

Attachments:

Res 2023-60 Second Amended__FirmPowerSupplyAgrResolutionSteelSolar_Lehi.pdf

RESOLUTION NO. _____

A RESOLUTION AUTHORIZING THE STEEL SOLAR 1A PROJECT SECOND AMENDED AND RESTATED TRANSACTION SCHEDULE UNDER THE MASTER FIRM POWER SUPPLY AGREEMENT WITH UTAH ASSOCIATED MUNICIPAL POWER SYSTEMS; AND RELATED MATTERS.

***** ***** *****

WHEREAS, Lehi City (the *"Member"*) owns and operates a utility system for the provision of electric energy to its residents and others (the *"System"*) and is a member of Utah Associated Municipal Power Systems (*"UAMPS"*) pursuant to the provisions of the Utah Associated Municipal Power Systems Amended and Restated Agreement for Joint and Cooperative Action dated as of March 20, 2009, as amended (the *"Joint Action Agreement"*);

WHEREAS, the Member desires to purchase all or a portion of its requirements for electric power and energy from or through UAMPS and has entered into a Power Pooling Agreement with UAMPS to provide for the efficient and economic utilization of its power supply resources;

WHEREAS, the Member has previously entered into the Master Firm Power Supply Agreement with UAMPS in order to allow for UAMPS entering into various firm transactions for the purchase and sale of firm supplies of electric power and energy;

WHEREAS, UAMPS has investigated the Steel Solar 1A Project, a forty (40) megawatt (MW) solar photovoltaic generation facility to be located in Box Elder County, Utah, on behalf of its members and is now prepared to enter into a twenty-five (25) year second amended and restated power purchase agreement with Steel Solar LLC to secure the delivery of all the energy from the Project and associated environmental attributes; and

WHEREAS, the Member now desires to authorize and approve the Steel Solar 1A Second Amended and Restated Transaction Schedule ("Second Amended and Restated Transaction Schedule") attached hereto as Exhibit A for the Project subject to the parameters set forth in this Resolution.

NOW, THEREFORE, BE IT RESOLVED by the City Council of Lehi City as follows:

Section 1. Authorization of Steel Solar 1A Second Amended and Restated Transaction Schedule. The Second Amended and Restated Transaction Schedule, in substantially the form presented at the meeting at which this resolution is adopted, is hereby authorized and approved, and the Member Representative is hereby authorized, empowered and directed to execute and deliver the Second Amended and Restated Transaction Schedule on behalf of the Member. Promptly upon its execution, the Second Amended and Restated Transaction Schedule shall be filed in the official records of the Member.

Section 2. Other Actions. The Mayor, City Recorder, the Member Representative and other officers and employees of the Member shall take all actions necessary or reasonably required to carry out,

give effect to, and consummate the transactions contemplated hereby and shall take all actions necessary to carry out the execution and delivery of the Second Amended and Restated Transaction Schedule and the performance thereof.

Section 3. Miscellaneous; Effective Date. (a) All previous acts and resolutions in conflict with this resolution or any part hereof are hereby repealed to the extent of such conflict.

(b) In case any provision in this resolution shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(c) This resolution shall take effect immediately upon its adoption and approval.

ADOPTED AND APPROVED this _____ day of _____, 2023.

LEHI CITY

_____
Mayor

ATTEST AND COUNTERSIGN:

_____
City Recorder

[SEAL].

EXHIBIT A
STEEL SOLAR 1A SECOND AMENDED AND RESTATED TRANSACTION SCHEDULE

Agenda Item No: 8

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-59 a resolution of the Board of Canvassers certifying the official canvassers' report of the September 5, 2023 Primary Municipal Election.

Suggested Action:

Attachments:

Res 2023-59, Canvass Results.docx

RESOLUTION NO: 2023-59

A RESOLUTION OF THE BOARD OF CANVASSERS CERTIFYING THE OFFICIAL CANVASSERS' REPORT OF THE SEPTEMBER 5, 2023 PRIMARY MUNICIPAL ELECTION FOR LEHI CITY, UTAH.

WHEREAS, on September 5, 2023, a Primary Municipal Election for Lehi City, Utah was held to nominate 6 City Council candidates with the most votes; and

WHEREAS, this election was conducted by Lehi City through Ranked Choice Vote by Mail and administered by Utah County. Those results pertaining specifically to Lehi City's municipal election are included in this official canvass report.

WHEREAS, UCA 20A-4-301(2) provides as follows:

2(a) The Mayor and the municipal legislative body are the board of municipal canvassers for the municipality.

(b) The board of municipal canvassers shall meet to canvass the returns at the usual place of meeting of the municipal legislative body:

(i) for canvassing of returns from a municipal primary election, no sooner than seven days after the election and no later than 14 days after the election;

(c) Attendance of a simple majority of the municipal legislative body shall constitute a quorum for conducting the canvass.

The official results are attached as Exhibit A

City Council Candidates Paige Albrecht, Michelle Stallings, Heather Newall, Nicole Kunze, Kenneth Roberts, and K. Casey Glade received the highest number of votes through Ranked Choice Voting in this Primary Municipal Election and are hereby declared duly nominated to advance to the Lehi City General Municipal 2023 Election.

Approved and Adopted by the City Council of Lehi City this 19th day of September, 2023.

_____

Mayor Mark Johnson
Lehi City

Attest:

_____

Teisha Wilson, City Recorder

Agenda Item No: 9

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-65 approving a facility usage agreement between Lehi City and Holbrook Community Center.

Suggested Action:

Attachments:

Res 2023-65.docx

The Curtis Center Usage Agreement.docx

LEHI CITY

RESOLUTION NO. 2023-65

A RESOLUTION OF THE LEHI CITY COUNCIL APPROVING A FACILITY USAGE AGREEMENT BETWEEN HOLBROOK COMMUNITY CENTER ("HCC") AND LEHI CITY

WHEREAS, HCC is the owner of an approximately 5.21 acre parcel of undeveloped property located within the City upon which HCC is in the process of constructing a building, play area, parking lots, and all related infrastructure designed for use by people with disabilities, to be known as The Curtis Center for Arts and Education ("The Curtis Center");

WHEREAS, upon the completion of The Curtis Center, and subject to the terms and conditions set forth herein, HCC desires to convey The Curtis Center to the City, subject to the possibility of a reverter, and the City desires to accept such conveyance, on the terms and conditions set forth in an agreement;

WHEREAS, on September 19, 2023, the City Council held a duly noticed public meeting to ascertain the facts regarding this matter, which facts and comments are found in the meeting record; and,

WHEREAS, after considering the facts and comments presented to the City Council, the Council finds: (i) that it should approve the Facility Usage Agreement with HCC; and (ii) such action furthers the health, safety and welfare of the citizens of Lehi.

NOW, THEREFORE, be it resolved by the City Council of Lehi City, Utah, as follows:

1. The Facility Usage Agreement attached hereto as Exhibit "A" is hereby approved and the Mayor is authorized to execute the agreement and take all other such action as is necessary to make it effective.

2. This resolution shall take effect immediately.

Approved and Adopted by the City Council of Lehi City, Utah this 19th day of September, 2023.

LEHI CITY

_____

Mark Johnson, Mayor

ATTEST

_____

Teisha Wilson, City Recorder

EXHIBIT A

AGREEMENT REGARDING THE CURTIS CENTER FOR ARTS AND EDUCATION AND FACILITY USAGE

This *Agreement Regarding The Curtis Center for Arts and Education and Facility Usage* ("Agreement") is made effective as of the date signed by all parties, as shown on the signature page ("Effective Date"), by and between Holbrook Community Center, a Utah non-profit corporation ("HCC") doing business as The Curtis Center for Arts and Education, and Lehi City, a municipal subdivision of the State of Utah ("City").

RECITALS

A. HCC is the owner of an approximately 5.21 acre parcel of undeveloped property located within the City and identified as Utah County Parcel No. 58:020:510 (the "Real Property"), upon which HCC is in the process of constructing a building, play area, parking lots, and all related infrastructure ("Improvements") designed for use by people with disabilities, to be known as The Curtis Center for Arts and Education ("The Curtis Center" as used herein shall mean the Real Property and the Improvements).

B. Upon the completion of the Curtis Center, and subject to the terms and conditions set forth herein, HCC desires to convey The Curtis Center to the City, subject to the possibility of a reverter, and the City desires to accept such conveyance, on the terms and conditions set forth herein.

AGREEMENT

THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties do hereby agree as follows:

1. Recitals Incorporated. The foregoing recitals are hereby incorporated and made part of the parties' agreement.

2. Construction of Improvements. The parties agree to the following provisions with respect to the construction of the Improvements:

2.1. Contractors. HCC shall, in its sole discretion, engage, retain, supervise, and direct all contractors, subcontractors, suppliers, laborers, and other vendors necessary to construct the Improvements (collectively, the "Contractor Parties"). HCC will be responsible to pay all such Contractor Parties in a timely manner.

3. Naming/ Conveyance of The Curtis Center/ Possibility of Reverter.

3.1. Naming. HCC shall have the exclusive naming rights in The Curtis Center, including the playground area and shall have all authority to name any rooms in The Curtis Center after private donors in a manner that reflects the relative value of all such naming opportunities. HCC shall be entitled to receive all revenues, fees and income generated by and in association with such naming rights of The Curtis Center.

3.2. Conveyance of The Curtis Center/ Possibility of Reverter. Upon completion of the Improvements and the issuance of a certificate of occupancy from the City, HCC shall convey The Curtis Center to the City by a quit claim deed in substantially the form attached as Exhibit A (the "Deed"). The Deed shall expressly provide that The Curtis Center is to be held solely for the use and benefit of (a) the public as a programmed recreational and educational facility, and (b) HCC's affiliated non-profit Utah corporation, Just for Kids of Utah County ("Just for Kids"), as a programming facility for people with disabilities for so long as Just for Kids elects to utilize The Curtis Center under this Agreement. The ownership of The Curtis Center shall automatically revert back to HCC or its successors and assigns if the City ceases to use The Curtis Center for the purposes expressed in this Agreement or the Deed for a period of at least three hundred and sixty-five (365) consecutive days. In such event, the City shall timely execute and deliver to HCC a quit claim deed dulynotarized and in recordable form, conveying The Curtis Center back to HCC, free and clear of all monetary liens and encumbrances. The City agrees that HCC's reversionary interest is binding and legally enforceable against the City, and it is fair and reasonable given the charitable nature of the conveyance and the intended benefit to the public. HCC's reversionary interest shall expire on May 25, 2122. HCC shall have the right of specific performance to enforce its reversionary interest against the City. In the event HCC or its successors and assign ceases to use The Curtis Center as a programming facility for people with disabilities for a period of at least three hundred and sixty-five (365) consecutive days, ownership of The Curtis Center shall remain in the City and shall not revert back to HCC or its successors and assigns.

4. Maintenance and Operation of The Curtis Center. The City shall be responsible for all maintenance and operation of The Curtis Center upon its conveyance, except for those programs coordinated by Just for Kids as described herein, as follows:

4.1. Maintenance. The City shall maintain The Curtis Center to at least the same first-class level of maintenance provided at the Legacy Center and shall adhere to the same standards, maintenance policies and procedures of all other applicable City recreational facilities. HCC shall be entitled to review the standards and any

maintenance agreements entered into by the City and make recommendations. The City may adopt such recommendations at its sole discretion. HCC acknowledges that the City's obligations under this Section 4.1 may be constrained by the City's general budgetary obligations.

4.2. Operational Control. The City shall be responsible for operating The Curtis Center, including providing the following: i) water, ii) sewer, iii) power, iv) storm drain and vi) internet. Internet services provided by the City for non-City owned devices and HCC employees shall include access to a Lehi City guest network via hard line or wifi but shall not include access to the City's internal network. The City will not provide phone services to HCC, but will ensure that its information center has applicable HCC cellphone numbers in order to provide them to those who call the information center regarding HCC programming at The Curtis Center. The City shall pay any applicable taxes, assume premises liability as is typical for a building owner and carry levels of insurance to protect against such liability equivalent to the insurance levels it carries on other city recreational facilities. The City shall manage The Curtis Center in such a manner as to accomplish: i) HCC's purposes in building and dedicating The Curtis Center; and ii) maximize the public use of The Curtis Center for the City's recreational purpose in accepting the donation of The Curtis Center and the ongoing operation and maintenance responsibilities for The Curtis Center as set forth herein. The City shall have employment-related authority, but shall allow HCC's Executive Director or a designated member of HCC's Board of Directors to: i) review applications for the facilities manager position for The Curtis Center; ii) recommend candidates to interview; and iii) participate in the first round of interviews of qualified candidates and make recommendations as to who would move on in the City's hiring process. The City's authority to make operational decisions shall be subject to Exhibit B. HCC shall be entitled to review the City's proposed annual budget for The Curtis Center and recommend approval or revisions to the budget with the City's facility manager for The Curtis Center.

4.3. Capital Improvements. The City shall be responsible for all costs associated with any capital improvements, maintenance, and repairs to The Curtis Center. At its discretion, the City may add additional storage space on the south side (east end) of The Curtis Center. If the City elects to do so, the City shall pay all of the costs necessary to construct the additional storage space, at the same level of quality of the existing Improvements, and any and all costs necessary to reconfigure any existing improvement (sports field, basketball court, etc.). Notwithstanding the foregoing, the City shall not reconfigure or reduce the size of the current playground area without the express written approval of HCC, which approval may be exercised by HCC in its sole and absolute discretion of HCC.

5. Priority Facility Usage. A material reason for HCC to enter into this Agreement and convey the Real Property and Improvements to the City is the City's agreement that HCC may operate and have priority use rights for disability programming for Just for Kids in The Curtis Center. The use of The Curtis Center by the parties is detailed on the attached Exhibit B, which by this reference is hereby incorporated into this Agreement.

5.1. Schedule and Amendments to Exhibit B. The parties acknowledge that HCC runs and operates its Just for Kids' programming calendar from September 1st to August 31st each year. HCC shall have priority use of The Curtis Center for its Just for Kids' programing as set forth in Exhibit B. Unless otherwise amended as provided in this Section 5.1, HCC's use rights established in Exhibit B shall not be changed or modified.

5.2. Annual Meeting. The parties expressly acknowledge that circumstances, such as program priorities, scheduling, facility needs and budgets, often change for both parties. Accordingly, the parties shall each designate a representative and meet on at least an annual basis, preferably sometime between February 1 and March 31, to review Exhibit B and discuss any and all other relevant matters, including, but not limited to, scheduling concerns, operating procedures, and financial issues. In order to maximize the public's use of The Curtis Center, the City may request additional use of The Curtis Center during times identified on Exhibit B that are currently for Just for Kids' exclusive use. Approval of additional City use during these times shall be at the sole and absolute discretion of HCC. Any approved amendment to Exhibit B shall only be effective until the subsequent meeting of the parties. Once agreed to by the parties as evidenced by each party's authorized signature of an amendment, the amended Exhibit B will automatically become incorporated into this Agreement until the subsequent meeting of the parties. The City's Recreation Director and the Executive Director of Just for Kids or such other designated representatives shall be authorized to sign such an amendment. Either party may request an amendment to Exhibit B but the failure of the parties to agree on an amendment shall not be considered an event of default under this Agreement.

5.3. Coordination. Just for Kids will coordinate all programming and facility use for people with disabilities at The Curtis Center. The City may provide its own programming for people with disabilities but will not directly compete with programming provided by Just for Kids and will coordinate its programming with Just for Kids.

5.4. Classes and Educational Programming. Just for Kids will direct all classes, hire and pay all instructors, and provide educational programs for people with disabilities at its discretion at The Curtis Center.

5.5. Liability Insurance. Just for Kids shall procure and maintain for the duration of this Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the operations of the Just for Kids, its agents, representatives, employees or subcontractors as set forth in this Section 5.5. The cost of such insurance shall be borne by Just for Kids.

5.5.1. Required Insurance Policies and Bonds

Just for Kids shall maintain or cause to be maintained on its behalf insurance policies of the types required below with insurance companies authorized to do business in the State of Utah, (i) having a Best Insurance Reports rating of "A" or better and a financial size category of "X" or higher.

5.5.2. Workers' Compensation Insurance: Statutory workers' compensation insurance (Part A). Such insurance shall also include employer's liability (Part B) insurance in a limit of not less than $1,000,000 for each: accident, disease and employee. No owner or officer may be excluded.

Required Endorsements

☒ Waiver of transfer of rights of recovery against others to us (CG 24 04 or equivalent)

5.5.3. General Liability Insurance: Commercial General Liability insurance written on an occurrence basis, arising out of claims for bodily injury (including death), property damage, products liability, completed operations liability, personal injury, advertising injury, damage to premises rented to you, with not less than the below specified limits:

☒ $3,000,000 per occurrence / $3,000,000 aggregate

Required Endorsements

☒ Additional Insured – Ongoing Operations (CG 20 10 or equivalent)
☒ Primary and Noncontributory (CG 20 01 or equivalent)

☒ Waiver of transfer of rights of recovery against others to us (CG 24 04 or equivalent)

5.5.4. Sexual Abuse & Molestation Insurance: Liability insurance for Just for Kids's activities, in an amount not less than $1,000,000 each claim, $1,000,000 aggregate. Insurance may be provided through the General Liability policy or as a standalone policy.

5.5.5. Excess Liability Insurance: The amounts of insurance required in the foregoing subsections may be satisfied by Just for Kids purchasing coverage in the amounts specified or by any combination of primary and excess insurance, so long as the total amount of insurance meets the required limits specified above, and the Excess Liability policy includes/is excess of all required underlying endorsements. Evidence of excess liability or umbrella policies shall include a schedule of underling coverages.

Required Endorsements

☒ Additional Insured – Ongoing Operations (CG 20 10 or equivalent)
☒ Primary and Noncontributory (CG 20 01 or equivalent)
☒ Waiver of transfer of rights of recovery against others to us (CG 24 04 or equivalent)

5.6. Just for Kids will be responsible for the cost to repair any damage done to The Curtis Center by Just for Kids participants and invitees, reasonable wear and tear excepted. Any dispute arising over repair or damage responsibility in this Section 5.6.4, shall be determined in accordance with Section 10.9 (Dispute Resolution) below.

5.7. Management. The City will provide nonadaptive programs at The Curtis Center during the times designated for City use at its discretion. At its discretion, and subject to HCC's priority use rights, the City may offer recreation pass holders use of The Curtis Center during the times designated for City use on Exhibit B.

5.8. Implementation. The City will provide what is necessary for Just for Kids' access to The Curtis Center such as keys and door codes.

5.9. Rules and Regulations. Just for Kids and HCC will comply with facility rules and regulations established by the City. These rules will be more fully developed once The Curtis Center is in operation. The facility rules and regulations will be reviewed by both parties at least annually as part of a meeting held under Section 5.2.

5.10. Rentals. During the times the City has use of The Curtis Center as described on Exhibit B, the City will be allowed to rent space to third parties under facility rules that apply to third party rentals at other City-owned recreation facilities.

6. [Left Intentionally Blank]

7. Remedies for Default. Subject to Section 10.9 below, the parties shall be entitled to pursue all available rights and remedies for a breach of this Agreement. The parties acknowledge that due to the shared facility usage, specific performance is a permissible remedy. The provisions of this Section 7 shall apply to or effect any event triggering the operation of the reversionary interest under Section 3.2 or the Deed.

8. Non-Appropriation. The City acknowledges that the City's annual appropriation of sufficient funds to maintain and operate The Curtis Center consistent with the Maintenance Standards, Services Standards, Exhibit B, and this Agreement, is a material inducement to HCC to enter into this Agreement and convey The Curtis Center to the City. In the event that the Lehi City Council does not appropriate sufficient annual funds to maintain and operate The Curtis Center as required under the terms of this Agreement, the City shall give HCC 180-days written notice of its intent to terminate this Agreement. The City shall continue to maintain and operate The Curtis Center during this 180-day period as required under the terms of this Agreement. At the end of this period, ownership of The Curtis Center shall revert to HCC as described in Section 3.2 above. The Lehi City Council's failure to appropriate sufficient funds for the City to operate The Curtis Center shall not be considered a breach of this Agreement.

9. Intended Third Party Beneficiary. Just for Kids is an intended third-party beneficiary under this Agreement and is entitled to enforce all provisions benefitting Just for Kids and the City waives any argument to the contrary. HCC would not have entered into this Agreement and would not convey The Curtis Center to the City without such agreement.

10. Miscellaneous.

10.1. No Merger. The rights and obligations of each party under this Agreement shall not merge into the Deed.

10.2. No Partnership. Nothing in this Agreement shall create or imply a partnership or joint venture between the parties. Except as expressly provided herein, neither party will be agents of the other party or able to legally bind the other party.

10.3. Assignment. Neither party may assign its rights and obligations hereunder without the express written consent of the other party except that HCC may fully assign this Agreement to a corporate parent, a corporate affiliate or a subsidiary.

10.4. Severability and Reformation. If any one or more of the provisions or parts of a provision contained in this Agreement shall, for any reason, be held to be invalid, illegal, or unenforceable in any respect, such invalidity, illegality, or unenforceability shall not affect any other provision or part of a provision of this Agreement; and this Agreement shall, to the fullest extent lawful, be reformed and construed as if such invalid, illegal, or unenforceable provision, or part of a provision, had never been contained herein, and such provision or part be reformed so that it would be valid, legal, and enforceable to the maximum extent possible.

10.5. Headings. Headings and subheadings are for convenience only and shall not be deemed to be a part of this Agreement.

10.6. Amendments. This Agreement may not be amended or modified, in whole or in part, except by an instrument in writing signed by all parties hereto.

10.7. Counterparts. This Agreement may be executed in one or more counterparts which may be exchanged by traditional or electronic means, each of which shall constitute an original and all of which shall be deemed a single agreement.

10.8. Governing Law. This Agreement is governed by the laws of the State of Utah. Any action to interpret or enforce this Agreement shall be subject to the procedural laws applicable to the courts of the State of Utah. Venue for any legal action brought under this Agreement shall be in the Fourth District Court, Utah County, Utah.

10.9. Dispute Resolution. Except for any event triggering the operation of the reversionary interest under Section 3.2, if a claim, controversy, complaint, or dispute ("Dispute") arises out of or relates to this Agreement, or breach hereof, the parties will use good faith efforts to resolve the Dispute using the dispute resolution process described below.

10.9.1. Informal Meet and Confer. The party initiating the dispute resolution process shall prepare and send to the other party a notice of dispute that shall include the following information: (i) a statement of the facts of the dispute, including information regarding the party's prior attempt(s) to resolve the dispute; (ii) the specific sections of this Agreement that are in dispute; and (iii)

the specific resolution sought by the party. Within fifteen (15) calendar days from receipt of the notice of dispute, representatives of the parties shall meet in an informal setting to try to resolve the dispute.

10.9.2. Mediation. If the informal meet and confer fails to resolve the dispute, the parties shall attempt to mediate the dispute. Either party may request mediation. The parties shall act in good faith to attempt to resolve any dispute by mediation. If the parties cannot mutually agree upon a mediator within thirty (30) calendar days, the parties shall each designate a mediator, and those mediators shall select a third mediator who shall act as the neutral arbitrator of the parties' dispute. The parties shall pay their own costs in mediation and share equally the costs of the mediator. The mediation procedure shall be informal in nature; however, the parties may submit mediation briefs regarding the dispute at the request of the mediator. The rules of evidence shall not apply and no record of the proceedings will be made. If an agreement is reached, the agreement shall be reduced to writing and shall be signed by the parties.

10.9.3. Equitable or Injunctive Relief. Either party may seek equitable or injunctive relief prior to the mediation to preserve the status quo or prevent irreparable injury pending the completion of that process. Except for such an action to obtain equitable relief, neither party may commence a civil action with respect to the matters submitted to mediation until after the completion of the initial mediation session.

10.10. Enforcement. In the event of any action to interpret or enforce this Agreement, the prevailing party shall be entitled to an award of the costs incurred therein (including recovering any judgment issued to a party), including reasonable attorney fees.

10.11. Notices. All notices, requests, demands, and other communications required or permitted under this Agreement shall be in writing and sent by U.S.P.S. first class mail, postage pre-paid, or email transmission as follows:

If to the City: Lehi City Corporation
Attn: _____
153 North 100 East
Lehi, Utah 84043
Email: _____

If to HCC: Holbrook Community Center
Attn: Michelle Holbrook
1238 North 1200 West
Lehi, Utah 84043
Email: michelle.holbrook@msn.com

With a copy to: York Howell & Guymon
Attn: M. Thomas Jolley
10610 S. Jordan Gateway, Suite 200
South Jordan, Utah 84095
Telephone: 801-527-1040
Email: tom@yorkhowell.com

10.12. Force Majeure. Neither party will be liable for any failure or delay in performing an obligation under this Agreement that is due to causes beyond its reasonable control, such as natural catastrophes, governmental acts or omissions, laws or regulations, or pandemics. If any of these causes continue to prevent or delay performance for more than 180 days, the non-delaying party may terminate this Agreement, effective immediately upon notice to the delaying party. If due to a Force Majeure event the City finds it necessary to scale back its operations at The Curtis Center, doing so during the duration of the Force Majeure event shall not be considered an event of default.

10.13. Non-Waiver. No failure to exercise and no delay in exercising any right, remedy, or power under this Agreement shall operate as a waiver thereof, nor shall any single or partial exercise of any right, remedy, or power under this Agreement preclude any other or further exercise thereof, or the exercise of any other right, remedy or power provided herein or by law or in equity.

10.14. Time. Time is of the essence with this Agreement, as well as every term, covenant, and condition contained herein.

10.15. Drafting and Voluntary Execution. The negotiation and drafting of this Agreement have been accomplished collectively by each party hereto, and for all purposes this Agreement shall be deemed to have been drafted jointly by each such party. The parties acknowledge that they have been represented by counsel of their

choice in all matters connected with the negotiation and preparation of this Agreement, or that they have had the opportunity to be represented by counsel, and that they have reviewed this Agreement with their counsel, or that they have had the opportunity to review this Agreement with their counsel, and that they fully understand the terms of this Agreement and the consequences thereof. Furthermore, the parties hereto have been afforded the opportunity to negotiate as to any and all terms of this Agreement, and each party is executing this Agreement voluntarily and free of any undue influence, duress, or coercion. The parties further acknowledge that they have relied on their own judgment, belief, knowledge, and advice from their own representatives, consultants, affiliates, and agents, as to the extent and effect of the terms and conditions contained herein. The parties are not relying upon any statement or representation made by any other party or any officer, director, employee, agent, servant, adjustor, or attorney acting on behalf of another party, unless such a statement or representation is expressly set forth in this Agreement.

10.16. Entire Agreement. All agreements, covenants, representations and warranties – express or implied, oral or written – of the parties concerning the subject matter hereof are contained solely in this Agreement, subject to any implied warranties and conditions imposed upon the parties by Utah law. No other agreements, covenants, representations, or warranties – express or implied, oral or written – have been made by any party to any other party concerning the subject matter hereof. All prior and contemporaneous conversations, negotiations, possible and alleged agreements, representations, covenants, and warranties concerning the subject matter hereof are merged herein. This is an integrated agreement.

[End of Agreement. Remainder of Page Intentionally Blank. Signatures Follow.]

IN WITNESS WHEREOF, the parties hereto have executed this *Agreement Regarding The Curtis Center for Arts and Education and Facility Usage* as of the Effective Date.

HCC

HOLBROOK COMMUNITY CENTER
a Utah non-profit corporation

By: _____
Michelle Holbrook, _____
Date: _____

CITY

ATTEST

LEHI CITY CORPORATION,
a political subdivision of the State of Utah

_____
City Recorder

By: _____
Name: _____
Title: _____
Date: _____

APPROVED AS TO FORM

_____
City Attorney

EXHIBIT A
(Form of Quit Claim Deed)

After recording, mail to:
Holbrook Community Center
Attn: Michelle Holbrook
1238 North 1200 West
Lehi, Utah 84043

QUIT-CLAIM DEED WITH REVERSIONARY INTEREST
(Utah County Tax Parcel 58:020:510)

For valuable consideration received, Holbrook Community Center, a Utah non-profit corporation ("Grantor") hereby QUIT-CLAIMS to Lehi City Corporation, a political subdivision of the State of Utah ("Grantee"), whose address is 153 North 100 East, Lehi Utah 84043, as a charitable contribution, the following described parcel of real property, and all improvements thereon, located in Utah County, Utah (the "Property"), which Property shall be held solely by Grantee for the use and benefit of (a) the public as a recreation and educational facility, and (b) the non-profit Utah corporation, Just for Kids, as a facility for people with disabilities for so long as Just for Kids elects to utilize such facility under that certain *Agreement for The Curtis Center for Arts and Education and Facility Usage*. The Property is conveyed subject to the terms and provisions of said Agreement and is described as:

See Exhibit A, attached to this Quit-Claim Deed.

The ownership of The Curtis Center shall automatically revert to HCC or its successors and assigns if The Curtis Center ceases to be used for the purposes expressed in this Deed. Grantor's reversionary interest shall expire on May 25, 2122.

DATED this ____ day of _____, 2023.

GRANTOR:
HOLBROOK COMMUNITY CENTER

_____
Michelle Holbrook, _____

STATE OF UTAH)
:ss.
COUNTY OF UTAH)

The foregoing instrument was acknowledged before me this ____ day of _____, 2023, by Michelle Holbrook, as _____ of Holbrook Community Center, a Utah non-profit corporation.

_____

SEAL: NOTARY PUBLIC

EXHIBIT B

(Facility Use Schedule, Office Space, Supplies, Storage)

Exclusive to Just for Kids:

Entire Facility

- M-F; 9:30am to 3:00pm
- 1st and 3rd Saturdays from 6:00pm to 9:00pm
- Sundays

Music & Art rooms

- 24/7*

Gym/Stage

- Mondays from 6:00pm to 9:00pm*

Exclusive to Lehi City:

Entire Facility (except Music & Art rooms)

- M-F from 5:00am to 9:30am
- M-F from 3:00pm to 11:00pm
    - Except for the gym/stage Monday evening from 6:00pm to 9:00pm*
- Saturday all day
    - Except for the 1st and 3rd Saturdays between 6:00pm and 9:00pm

The Curtis Center will be open for holiday hours similar to other like recreational facilities owned by Lehi City.

*These are times that both JFK and the City will "share" the facility. Even then, each entity's use of that portion of the facility it is entitled to use will be exclusive. For example, when JFK has the gym/stage on Monday from 6-9 pm, the City may be in the rest of the facility but will not run programs in the gym/stage. Additionally, HCC will also be entitled to have access to the restroom and hallway during Lehi City's "exclusive" use of the rest of the facility. For shared space, each party will clean up after its own use has ended for that day, including, but not limited to, returning all furniture, equipment and other materials to their original location and the Gymnasium completely cleared of all equipment.

Each party shall be entitled to use the playground area, soccer field and basketball court during its exclusive use periods set forth in this Exhibit B.

Just for Kids will have:

- Exclusive use of the middle office

Just for Kids will provide:

- All furnishings necessary for any space used exclusively by JFK (i.e., middle office; Music and Art rooms, etc.)
- All office supplies necessary for its operations
- A copy machine for its operations, if needed
- All sports equipment necessary to run its programs***

City will have:

- Exclusive use of the offices on either end of the middle office
- Exclusive use of storage closet in the Tech room

City will provide:

- All office supplies necessary for its operations
- A copy machine for its operations
- All sports equipment necessary to run its programs****
- Gym storage closet will be shared after table, chairs and volleyball poles are stored
- No shared closets on the stage. The South closet – for use by City; the North closets is for use of HCC. The other closet is exclusively for the piano. Use of the piano will be limited to the parties taking care of it.

****HCC will purchase volleyball poles and share with the City. The parties will not share any other equipment.

Agenda Item No: 10

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-62 approving a Development Agreement between Lehi City and Curb Cart Concrete

Suggested Action:

Attachments:

Res 2023-62.docx

Development_Agreement-Curb_Cart_Concrete.docx

LEHI CITY

RESOLUTION NO. 2023-62

A RESOLUTION OF THE LEHI CITY COUNCIL APPROVING A DEVELOPMENT AGREEMENT BETWEEN CURB CART CONCRETE LLC ("DEVELOPER") AND LEHI CITY

WHEREAS, Developer has a legal interest in certain real property and desires to develop a concrete manufacture small haul operation on the property;

WHEREAS, on May 9, 2023, the Property was rezoned to Heavy Commercial. On July 11, 2023, Developer's request to amend the development code to allow Concrete Manufacture, Small Haul as a use in the Heavy Commercial zone was denied. Subsequent to the denial the City Council directed staff to prepare a development agreement that would allow this use in the current Heavy Commercial zone under certain conditions;

WHEREAS, on September 19, 2023, the City Council held a duly noticed public meeting to ascertain the facts regarding this matter, which facts and comments are found in the meeting record; and,

WHEREAS, after considering the facts and comments presented to the City Council, the Council finds: (i) that it should approve the Development Agreement with Developer; and (ii) such action furthers the health, safety and welfare of the citizens of Lehi.

NOW, THEREFORE, be it resolved by the City Council of Lehi City, Utah, as follows:

1. The Development Agreement attached hereto as Exhibit "A" is hereby approved and the Mayor is authorized to execute the agreement and take all other such action as is necessary to make it effective.

2. This resolution shall take effect immediately.

Approved and Adopted by the City Council of Lehi City, Utah this 19th day of September, 2023.

LEHI CITY

_____

Mark Johnson, Mayor

ATTEST

_____

Teisha Wilson, City Recorder

EXHIBIT A

DEVELOPMENT AGREEMENT

This DEVELOPMENT AGREEMENT ("Agreement") effective as of the date the last Party signs below ("Effective Date") by and among Lehi City, a political subdivision of the State of Utah ("City") and Curb Cart Concrete, LLC ("Developer"). The City and the Developer are hereinafter referred to individually as a "Party" and collectively as the "Parties."

RECITALS

A. City, acting pursuant to its authority under Municipal Land Use, Development, and Management Act, Utah Code Ann. §§ 10-9a-101, -803, as amended, and in furtherance of its land use policies, goals, objectives, ordinances, and regulations of Lehi City, in the exercise of its legislative discretion, has elected to approve and enter into this Agreement.

B. Developer has a legal interest in certain real property, as described in Exhibit A attached hereto ("Property") and currently operates a concrete manufacturing plant on the Property.

C. On May 9, 2023, the Property was rezoned to Heavy Commercial. On July 11, 2023, Developer's request to amend the development code to allow Concrete Manufacture, Small Haul as a use in the Heavy Commercial zone was denied. Subsequent to the denial the City Council directed staff to prepare a development agreement that would allow the Approved Use in the current Heavy Commercial zone.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises, covenants, and provisions set forth herein, the receipt and adequacy of which are hereby acknowledged, the Parties agree as follows:

ARTICLE 1

Use Approval. The City agrees, and this Agreement confirms, that a Concrete Manufacturing, Small Haul operation ("Approved Use") shall be a permitted use on the Property described herein on Exhibit "A" as of the Effective Date of this Agreement, subject to the terms of this Agreement.

ARTICLE 2

2.1 In consideration of the Approved Use, Developer agrees to the following:

2.1.1 Developer's hours of operation shall be limited to 8:00 am to 5:00 pm Monday through Saturday.

2.1.2 Developer will limit the total number of concrete carts on site to a maximum of 20.

2.1.3 The silos that hold the concrete mix shall be limited to a height of 20 feet.

2.1.4 Developer shall limit the size of the deliverable batches of concrete to no larger than 2 yards per vehicle.

2.1.5 Should Developer abandon the Approved Use for one full year at any time after the Effective Date, the Approved Use shall expire and only those uses allowed in the current Heavy Commercial Zone (or the then current zoning of the property) are allowed.

ARTICLE 3

3.1 Breach and Cure. Any material failure by any Party to perform any term or provision of this Agreement, which breach continues uncured for a period of ten (10) days following written notice of such failure from the non-defaulting Party, unless such period is extended by written mutual consent, shall constitute a default under this Agreement. Any notice given pursuant to the preceding sentence shall specify the nature of the alleged breach and, where appropriate, the manner in which said breach satisfactorily may be cured. If the nature of the alleged breach is such that it cannot reasonably be cured within such 10-day period, then the commencement of the cure within such time period, and the diligent prosecution to completion of the cure thereafter, shall be deemed to be a cure within such 10-day period. Upon the occurrence of an uncured breach or default under this Agreement as described above, the non-defaulting party may terminate this Agreement by written notice to the breaching party, and the non-defaulting Party may pursue any and all available legal or equitable remedies.

ARTICLE 4

4.1 Indemnification. Developer agrees to indemnify, hold harmless and defend the City from and against any and all loss, damage, or expense which the City may suffer or for which the City may be held liable by reason of any injury (including death) or damage to any property to the extent arising out of the Developer's breach of this Agreement. This indemnity provision shall not apply to claims arising from or attributable to the negligence or intentional conduct of the City.

4.2 No Agency, Joint Venture or Partnership. It is specifically understood and agreed to by and between the Parties that this Agreement does not create any form of agency relationship, joint venture, or partnership expressed or implied between them.

4.3 Severability. If any term or provision of this Agreement, or the application of any term or provision of this Agreement to a particular situation, is held by a court of competent jurisdiction to be invalid, void or unenforceable, the remaining terms and provisions of this Agreement, or the application of this Agreement to other situations, shall continue in full force and effect unless amended or modified by mutual consent of the Parties.

4.4 Other Necessary Acts. Each Party shall execute and deliver to the other any further instruments and documents as may be reasonably necessary to carry out the objectives and intent of this Agreement.

4.5 Construction/Interpretation. The Parties acknowledge that each has had the opportunity to have this Agreement reviewed and revised by legal counsel and no presumption or rule that ambiguities shall be construed against the drafting Party shall apply to the interpretation or enforcement of this Agreement.

4.6 Other Miscellaneous Terms. The singular shall include the plural; the masculine gender shall include the feminine; "shall" is mandatory; "may" is permissive.

4.7 Waiver. No action taken by any Party shall be deemed to constitute a waiver of compliance by such Party with respect to any representation, warranty, or condition contained in this Agreement. Any waiver by any Party of a breach of any provision of this Agreement shall not operate or be construed as a waiver by such Party of any subsequent breach, except as outlined in Article 4.1 above.

4.8 Utah Law. This Agreement shall be construed and enforced in accordance with the laws of the State of Utah.

4.9 Covenant of Good Faith and Fair Dealing. Each Party shall use its best efforts and take and employ all necessary actions in good faith consistent with this Agreement to ensure that the rights secured by the other Parties through this Agreement can be enjoyed.

4.10 Representations. Each Party hereby represents and warrants to each other Party that the following statements are true, complete and not misleading as regards the representing warranting Party;

(a) Such Party is duly organized, validly existing and in good standing under the laws of the state of its organization.

(b) Such Party has full authority to enter into this Agreement and to perform all of its obligations hereunder. The individual(s) executing this Agreement on behalf of such Party do so with the full authority of the Party that those individual(s) represent.

(c) This Agreement constitutes the legal, valid and binding obligation of such Party enforceable in accordance with its terms, subject to the rules of bankruptcy, moratorium and equitable principles.

4.11 No Third-Party Beneficiaries. This Agreement is between the City and the Developer. No other party shall be deemed a third-party beneficiary or have any rights under this Agreement.

4.12 Force Majeure. No liability or breach of this Agreement shall result from delay in performance or nonperformance caused, directly or indirectly, by circumstances beyond the reasonable control of the Party affected ("Force Majeure"), including, but not limited to, fire, extreme weather, terrorism, explosion, flood, war, power interruptions, pandemics and related governmental restrictions or actions, the act of other governmental bodies, accident, labor trouble or the shortage or inability to obtain material, service, personnel, equipment or transportation, failure of performance by a common carrier, failure of performance by a public utility, or vandalism.

4.13 Notices.

Any notice or communication required hereunder between the parties must be in writing, and may be given either personally or by registered or certified mail, return receipt requested. If

given by registered or certified mail, such notice or communication shall be deemed to have been given and received on the first to occur of (i) actual receipt by any of the addressees designated below as the Party to whom notices are to be sent, or (ii) five (5) days after a registered or certified letter containing such notice, properly addressed, with postage prepaid, is deposited in the United States mail. If personally delivered, a notice shall be deemed to have been given when delivered to the Party to whom it is addressed. Any Party may at any time, by giving ten (10) days written notice to the other Party, designate any other address to which notices or communications shall be given. Such notices or communications shall be given to the Parties at their addresses set forth below:

If to the City:
The Honorable Mayor Mark Johnson
Lehi City
153 North 100 East
Lehi, UT 84043

With Copies to:
Ryan Wood
Lehi City Attorney
153 North 100 East
Lehi, UT 84043

If to Developer:
Curb Cart Concrete
Attn: Jeff Olsen
4758 S. Commerce Drive
Murray, UT 84107

4.14 Entire Agreement, Counterparts and Exhibits. Unless otherwise noted herein, this Agreement is the final and exclusive understanding and agreement of the Parties and supersedes all negotiations or previous agreements between the Parties with respect to all or any part of the subject matter hereof. All waivers of the provisions of this Agreement shall be in writing and signed by the appropriate authorities of City and Developer. This Agreement may only be modified as mutually agreed by both Parties in a writing signed by appropriate authorities of City and Developer.

4.15 Non-Assignability; Agreement to Run with the Land. This Agreement shall not be assignable by Developer except upon the express written consent of the City in its sole discretion; provided however, that Developer may fully assign this Agreement to its corporate parent, a corporate affiliate or a subsidiary. This Agreement shall be recorded against the property described on Exhibit "A" and shall be deemed to run with the land and shall be binding on and inure to the benefit of the City and all successors and assigns of Developer in the ownership or development of any portion of such property.

IN WITNESS WHEREOF, this Agreement has been entered into by and between City, and Developer as of the Effective Date.

LEHI CITY CORPORATION

_____
By: Mark Johnson
Its: Mayor

ATTEST:

_____
Teisha Wilson
City Recorder

CURB CART CONCRETE

_____
By: _____
Its: _____

STATE OF UTAH)
ss:
COUNTY OF _____)

On this_____ day of _____, 2023 before me, _____ a notary public, personally appeared before me _____, whose identity is personally known to me (or proven on the basis of satisfactory evidence) and who by me duly sworn/affirmed, did say that he is the _____ of Curb Cart Concrete LLC and that said document was signed by him in behalf of said Company by Authority of its operating agreement, or member or manager consent, and said _____ acknowledged to me that said Company executed the same.

Witness my hand and official seal.

_____
Notary Public

(notary seal)

Exhibit "A"

Property Legal Description

850 West

Parcel 1

Commencing 205 feet West and 1247.50 feet North 44°59' West of the South Quarter Section of Section 5, Township 5 South, Range 1 East, Salt Lake Base and Meridian; thence North 8° East 242 feet; thence South 82° East 39 feet; thence South 8° West 271 feet; thence North 44°59' West 48 feet along the North side of State Road and place of beginning. Commencing 205 feet West and 1247.50 feet North 44°59' West of the South Quarter Section corner of Section 5, Township 5 South, Range 1 East, Salt Lake Base and Meridian; thence North 44°59' West 26.30 feet along the Northeast side of the State Road; thence North 8° East 226 feet; thence South 82° East 21 feet; thence South 8° West 242 feet to beginning.

Parcel 2

Commencing 2.93 chains West and 17 chains North 44 1/2° West and North 11° East 270 feet from the Southeast corner of the Southwest quarter of Section 5, Township 5 South, Range 1 East, Salt Lake Base and Meridian; thence North 82° West 70 feet; thence North 8° East 40 feet; thence North 82° West 39 feet; thence North 8° East 125 feet, more or less to freeway; thence South 48°27'50" East along Highway 163 feet, more or less East boundary; thence South 11° West 92.75 feet to the point of beginning.

Together with that portion conveyed within Boundary Line Agreement recorded September 23, 2016, as Entry No. 93435:2016, of Public Records.

830 West

COMMENCING AT A POINT IN THE NORTHERLY LINE OF U.S. HIGHWAY NO. 91; WHICH POINT OF BEGINNING IS NORTH 847.6 FEET AND WEST 1060.2 FEET FROM THE SOUTH QUARTER SECTION CORNER OF SECTION 5 OF TOWNSHIP 5 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN; AND RUNNING THENCE NORTH 10°37' EAST 222.28 FEET; THENCE SOUTH 79°38' EAST 77.4 FEET; THENCE SOUTH 11°00' WEST 274.9 FEET TO THE HIGHWAY AFORESAID; THENCE NORTH 45°13' WEST ALONG SAID HIGHWAY 91.2 FEET TO THE POINT OF BEGINNING.

Agenda Item No: 11

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Brittney Harris
Submitting Department: Planning Division
Item Type: Ordinance
Agenda Section: Regular Agenda

Subject:
Consideration of Ordinance #56-2023 approving the Skye Area Plan Second Amendment, adding 883 acres and 300 residential units to the Area Plan located at approximately SR-92 and Center Street.

Suggested Action:

Attachments:

CC Staff Report Skye Area Plan Second Amendment 09.19.23.docx

Skye Area Plan Second Amendment Comprehensive DRC 08.02.23.docx

Ord 56-2023.docx

Skye Area Plan Amendment - Additional Narrative.docx

Skye Area Plan Second Amendment.pdf

Exhibit A - Skye Area Plan DR Horton TI Additional Changes Requested.pdf

Exhibit B - Skye Area Plan DRC Exceptions Requested.pdf

Proposed Parking Language.pdf

Aerial Map.pdf

General Plan Map.pdf

Zoning Map.pdf

SKYE AREA PLAN SECOND AMENDMENTS

CITY COUNCIL REPORT

Applicant	DR Horton
Meeting Date	September 19, 2023
Requested Action/Purpose	Approval of a proposed area plan amendment
Decision Type	Legislative
Date of DRC Review	August 2, 2023
Date of Planning Commission Review	August 10, 2023
Assigned Planner	Brittney Harris

REQUIRED ACTION

Planning Commission	Review and recommendation
City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 06.010. Purpose and Intent.
The intent of the Planned Community Zone and this Chapter is to:

A. Allow the City to encourage and facilitate more detailed and specific planning and analysis for certain areas of the City.
B. Establish provisions and requirements which enable the City to address unique areas of the City or where other characteristics exist that warrant a comprehensive set of land use policies and standards which will encourage an efficient and imaginative development pattern.
C. Provide an opportunity for flexibility from the constraints of traditional zoning and allow for development on a performance basis. Higher density and intensity of uses may be achieved as higher quality development and performance standards are implemented within the zone.
D. Provide a consolidated and structured framework for the processing of preliminary and final subdivision plat(s), preliminary and final site plans, and other permits and licenses required by this Code.

An application for approval of a Planned Community Zone is a request by the applicant for additional flexibility beyond that allowed by the traditional zones within the City. It is the sole responsibility and burden of the applicant to convince the Planning Commission and City Council that the proposed Planned Community Zone is preferable to traditional zoning. Approval for use of the Planned Community Zone lies at the discretion of the City Council.

Section 06.020. Planned Community Description.
Each Planned Community Zone should include a cohesive mixture of land uses, including commercial and/or business park uses, which will provide services and employment opportunities to residents within the community. Residential uses should provide a range of housing types and densities to accommodate a variety of age and income groups and residential preferences, so that the community's demographic diversity is maintained. Commercial uses should focus on retail services for the residents of the community and must include a unifying design theme which compliments the residential areas. Residential and commercial land uses should be integrated to promote a walkable, sustainable community.
Development should promote creative lot configuration with usable public and private recreation areas, parks, trails and open space with assurance of maintenance. Preservation of open space and critical environmental areas is also highly encouraged through the use of clustering and other innovative development options where a standard lot pattern is not practical or desirable due to physical constraints.

Section 06.030 Design Compatibility.

Development within a Planned Community Zone should promote attractive, unified architectural design. Development should be planned as one complex land use with a common architectural design theme that provides variety within a context of architectural compatibility, rather than an aggregation of individual, unrelated buildings located on separate, unrelated lots. In order to ensure that development within the Planned Community Zone is compatible and meets the purposes of this Chapter, the Planning Commission may recommend and the City Council may require that certain design guidelines be employed as part of the approval of an Area Plan for a PC Zone. The design guidelines may include, but are not limited to, architectural controls, colors, materials, building mass, innovative design of buildings and access, and any other features deemed appropriate by the City Council. As part of the design guidelines for any Planned Community Zone each single family detached or attached dwelling shall include, as a minimum standard, an enclosed one (1) car garage.

REPORT ANALYSIS

The applicant requests approval of the Skye Area Plan Second Amendment. The first amendment was approved in August 2022 and recorded in December 2022. The second area plan amendment concept plan was also approved in August 2022. The second amendment adds an additional 883 acres of land and 300 Equivalent Residential Units (ERUs) to the Area Plan. The land included in the second amendment was previously in Draper City, but a Municipal Boundary Adjustment brought the land into Lehi City in December 2022. At least 500 acres of this additional land will be deeded to Lehi City and put in a conservation easement.

Most of the Area Plan language and material stayed the same. The technical details were updated to include the additional area, as well as the land use, transportation, and open space maps. This report will review the major changes that the City Council should consider as part of this area plan amendment approval.

Land Use Map

The land use map basically follows the approved concept plan. It contains mostly low-density residential development with some medium density and high density lower on the hillside. Having lower density in the hillside is in accordance with many important planning principles including reducing the impact on the natural environment, lowering the number of people who might have to evacuate in case of a fire or other natural disaster, and preserving open space. The land use plan also allows flexibility to transfer more density out of the hillside area into the lower areas as long as the overall number of units in the area plan is not exceeded.

The Land Use Map also labels one area as “Inverness” which is used in other areas of the area plan to talk about the area highest up in the hills.

Texas Instruments Buffer

The buffer between Texas Instruments and surrounding uses received a lot of discussion during the first area plan amendment approval process. In this amendment, the applicant provides a map that shows a 100-foot setback from Timpanogos Highway and a 300-foot buffer to the future Skye development areas.

The DRC left one comment to consider if the 100-foot buffer from Timpanogos Highway is sufficient.

This buffer cannot have any development including solar panels or other outbuildings in it.

Parking Changes

The applicant proposed some changes to the required parking requirements for residential projects in the Mixed-Use areas. The changes include reducing the number of units that require garages or covered parking spaces to 80 percent of the total number. They do state that 60 percent of those shall be in enclosed garages. Since Planning Commission, the applicant has expressed their intent to request that the City Council approve wording that they either meet the existing parking requirements or the alternative list. The DRC left a comment that this will equal about half of the units having an enclosed garage. The Development Code currently requires 100 percent of the units to have an enclosed garage. Having an enclosed garage can provide many benefits to the residents but also can create rows of garages.

The applicant also proposes allowing 10 percent of the parking spaces can be compact spaces. And they propose an electric vehicle charging station requirement of one station per 60 units.

For bicycle parking they state that it shall be provided at a rate of 10 percent the total vehicular parking stalls and that a minimum of 25 percent of the bicycle parking shall be in an interior bike storage area. This was more than the parking requirement at the time the applicant submitted it. However, since that time a Development Code Amendment was approved increasing the number of bicycle parking spots required is currently going through the approval process. The DRC left a comment that the applicant, Planning Commission and City Council should consider if the applicant should meet the new bicycle parking requirements instead of their proposal.

Subdivision Approval Changes
The applicant proposed language that would have the DRC, Planning Commission and City Council review Preliminary Subdivisions but not hold a public hearing. Staff left a comment to add a statement "unless required by State Code". State Code currently does not require preliminary subdivisions to include a public hearing. City Code requires it as a courtesy. Not requiring a public hearing for an area plan might make sense because the public has had the opportunity to make comments on the concept and area plan.

Trail Locations
The second amendment shows additional trails in the second amendment area. Some of the trails were adjusted from the original area plan to better align with the second amendment area. The trails are both natural surface and paved.

Road Cross Sections
The State approved legislation this year prohibiting cities from requiring more than 32-feet of asphalt on local roads. In response to that, the applicant updated their local road cross sections.

Changes Requested by Texas Instruments
During the last DRC review, the applicant brought up changes that Texas Instruments would like to see included in the plan. The applicant provided a list of these changes that were included with the packet, and were also considered by the Planning Commission.

DRC Comments
DRC reviewed the proposed second area plan amendment many times over the course of a few months. During the last review they had 11 comments. Many of these were discussed previously the additional comments include:

1. This section of 8" piping seems to be a bottleneck between the 10" piping on the East and West, should it be upsized to 10" as well? The culinary exhibit shows the larger line extending from the pump station to the tee intersection.
2. Remove these 2 bullet points from the area plan. This discussion has been had several times.
3. Revise this sentence to match the single exception.
4. Change to Cedar Hollow Well.
5. This looks like a duplicate page. Delete if it is a duplicate.
6. Water needs to be dedicated for the additional land and ERUs prior to recording this amendment.

Please consider including all DRC comments in your motion.

POSSIBLE MOTIONS AND FINDINGS

The City Council may approve or deny the proposed area plan amendment. Any motion should include findings. Possible findings include:

1. The proposed area plan amendment is/is not substantially similar to the approved concept plan.
2. The proposed area plan amendment will preserve 500 acres as open space.
3. The proposed area plan amendment will/will not provide a quality community in Lehi City.
4. The proposed area plan is consistent/is not consistent with the approved concept plan.

5. The proposed area plan does/does not meet the requirements of the Lehi City Development Code in regards to area plan approval.
6. Other findings based upon information presented during the public hearing.

PLANNING COMMISSION RECOMMENDATION

The Planning Commission reviewed the proposed area plan amendment on August 10, 2023. The minutes and motion from that meeting follow:

2.3) Public hearing and recommendation of DR Horton's request for review of the Skye Area Plan Second Amendment, adding 883 acres and 300 residential units to the Area Plan located at approximately SR-92 and Center Street.
Applicant Scott Bishop was available for questions. He passed out comments and concerns from DRC and the adjustments.

Chris Jenson with DR Horton shared the Skye Master plan. "

Chairman Newall opened the public comment.

Brian Patello-would like for DR Horton to give the residents ownership of property behind their homes because there are gophers, and no one is maintaining the area.

Chairman Newall closed the public hearing.

Staff and commissioners discussed what could be done with the open area that was brought forward by Officer Patello.

The commissioners continued to ask clarifying questions to DR Horton.

Jeff Stevenson with DR Horton clarified about the apartment properties and where they are bringing those in.

Motion: Commissioner Jackson moved to positive recommendation of **DR Horton's request for review of the Skye Area Plan Second Amendment, adding 883 acres and 300 residential units to the Area Plan located at approximately SR-92 and Center Street.** including all DRC comments and findings stated in the report; With the findings that the council strongly consider facilitating the sale of the small strip/pan handle of the Bermuda triangle to the private residents represented by Officer Patello. They recommend that the language on no restrictions be clarified with timing restrictions on applications. They cannot landscape or sell the property until they have water rights. The commissioners are comfortable with the discussion with the garages along with a 20% landscape. With the changes they would be striking #2 from the DRC comments. Commissioner Eyre seconded.

Vote: Commissioner Newall, yes; Commissioner Jackson, yes; Commissioner Everett, no; Commissioner Bunker, yes; Commissioner Eyre, yes. The motion passed.

Skye Area Plan Second Amendment
DRC Redline Comments

DR Horton- requests review of the Skye Area Plan Second Amendment including all sections.

DRC Members Present: Glade Kirkham, Garion Rowett, Ryan Allred, Kim Struthers, Gary Smith, Ross Dinsdale, James Farnsworth, Mike West
Assigned Planner: Brittney Harris
Representatives of the Applicant Present: Jeff Stephenson, Scott Bishop, Ben Tuckett
Date of Plans Reviewed: 7/25/23
Time Start: 1:29pm
Time End: 1:47pm

DRC REDLINE COMMENTS:
Glade – Power: No comments
Garion – Fire: No comments
Greg/Ryan – Water/Sewer:
1. This section of 8" piping seems to be a bottleneck between the 10" piping on the East and West, should it be upsized to 10" as well? The culinary exhibit shows the larger line extending from the pump station to the tee intersection.
2. Remove these 2 bullet points from the area plan. This discussion has been had several times.
3. Revise this sentence to match the single exception.
4. Change to Cedar Hollow Well.

James – Parks: No comments
Gary – Building/Inspections: No comments
Matt – Public Works: No comments
Ross – Engineering: No comments
Luke- Traffic: No comments
Kim – Planning:
5. Planning Commission and City Council may want to consider a 300' setback along SR-92.
6. This looks like a duplicate page. Delete if it is a duplicate.
7. Recommend adding "or parking structure" to allow flexibility.
8. Recommend meeting proposed bicycle parking requirements going to City Council for approval in August.
9. The Planning Commission and City Council should consider this proposal will allow for only half the units to have an enclosed garage. The City Code requires every unit to have one.
10. Add a sentence "unless required by State Code".
11. Water needs to be dedicated for the additional land and ERUs prior to recording this amendment.

PRIOR TO RECORDING OF AREA PLAN AMENDMENT:
1. Water dedication for Phase 2 needs to be taken care of.

GENERAL COMMENTS:
1. Staff to remember to add the current parking requirements to the Area Plan folder for future reference.
2. Staff needs to check with the County why the area that came in from Draper still shows in Draper.

THIS ITEM WILL BE SCHEDULED FOR PLANNING COMMISSION ON AUGUST 10th

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

ORDINANCE NO: 56-2023

AN ORDINANCE APPROVING AND ADOPTING THE SKYE PLAN AMENDMENT

WHEREAS, it has become necessary to amend the Skye Area Plan to add an additional 883 acres of land and 300 Equivalent Residential Units (ERUs): and

WHEREAS, the Lehi City Council, acting pursuant to its authority and Utah Code, and in furtherance of its land use policies, goals, objectives, ordinances and other requirements, has made certain determinations with respect to the proposals for the Skye Area Plan; all as set forth in that certain area plan designated as the Skye Area Plan, a copy of which has been filed with the office of the Lehi City Planning Division;

WHEREAS, following a public hearing on August 10, 2023, the Lehi City Planning Commission reviewed the proposed Area Plan Amendment and forwarded a positive recommendation that the City Council adopt the proposed request; and

WHEREAS, on February 14, 2023, the City Council held a duly noticed meeting to ascertain the facts regarding this matter, which facts and comments are found in the public record and which include the staff report, minutes from the Planning Commission meeting of January 12, 2023, and the recommendation of the Planning Commission; and,

WHEREAS, after considering the facts and comments presented to the Municipal Council, the Council finds: (i) the request for an Area Plan Amendment is consistent with the Lehi City General Plan Land Use Map adopted by the Lehi City Council on January 25, 2022 (and as subsequently amended); and (ii) such action furthers the health, safety and welfare of the citizens of Lehi.

NOW, THEREFORE, BE IT ORDAINED by the City Council of Lehi City, Utah as follows:

SECTION 1. The Area Plan Amendment, hereby summarized in Exhibit A, shall be incorporated into the "Skye Area Plan", copies of which are on file with the Planning Division of the Community Development Department.

SECTION 2. Unless specifically modified by the Skye Area Plan, the owner of the Subject Property or its assigned agents will be required to comply with all applicable requirements of Lehi City necessary for approval of the Project, including payment of fees and compliance with applicable ordinances, regulations, policies and procedures of Lehi City including but not limited to, the Lehi City Municipal Code, the Lehi City Development Code, and the Lehi City Design Standards and Public Improvements Specifications.

SECTION 3. The action of the City undertaken hereby is administrative in nature, falling within the general purpose and policy of the General Plan and zoning ordinances, and pursuant to the provisions of the Lehi City Development Code, and the obligations and requirements imposed on the City by ordinance and agreement.

SECTION 4. If a provision of this Ordinance -2023 conflicts with a provision of a previously adopted ordinance concerning the same title, chapter, and/or section number amended herein, the provision in this Ordinance shall prevail.

SECTION 5. This ordinance and its various section, clauses and paragraphs are hereby declared to be severable. If any part, sentence, clause or phrase is adjudged to be unconstitutional or invalid, the remainder shall not be affected thereby.

SECTION 6. This Ordinance adopting the Area Plan shall be effective immediately after being posted or published as required by law.

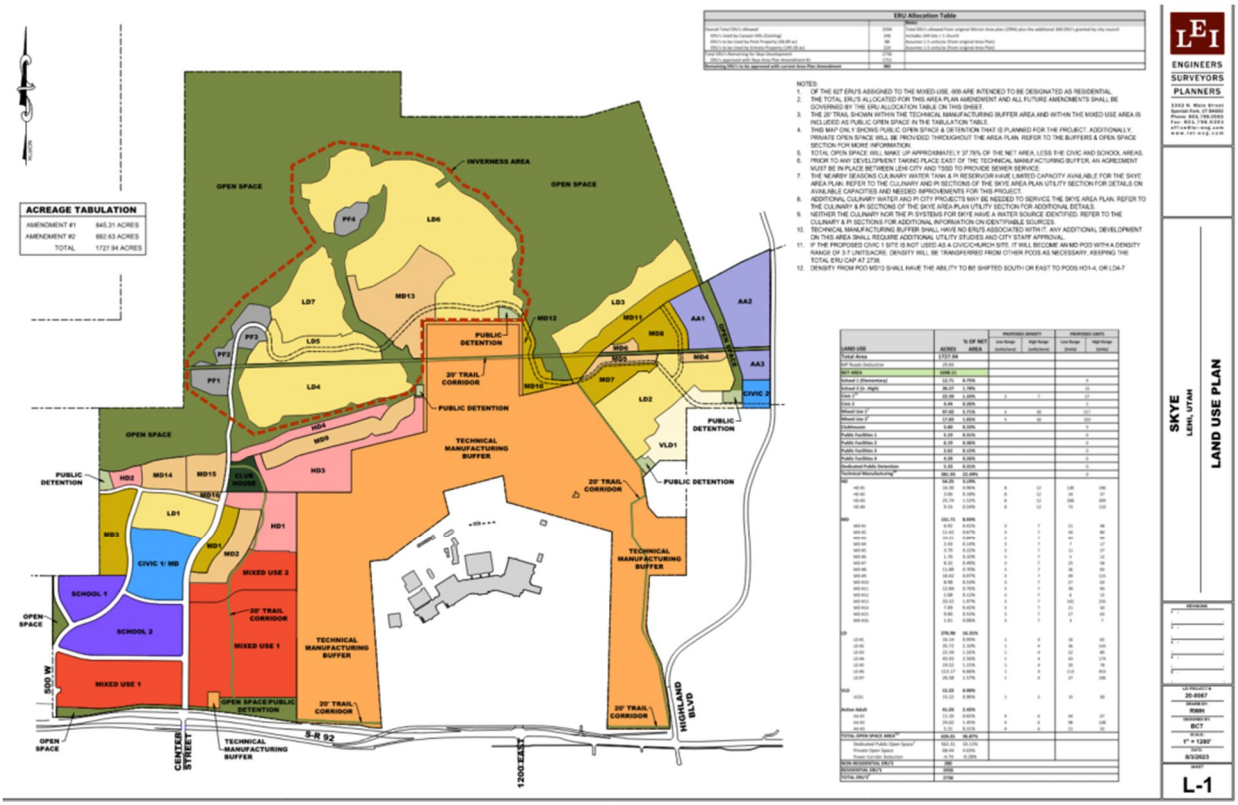
Approved and Adopted by the City Council of Lehi City this 19th day of September 2023.

ATTEST

_____ _____

Mark Johnson, Mayor Teisha Wilson, City Recorder

Exhibit A


ACREAGE TABULATION
AMENDMENT #1 845.31 ACRES
AMENDMENT #2 882.63 ACRES
TOTAL 1727.94 ACRES
ERU Allocation Table
NOTES:
1. OF THE 627 ERU'S ASSIGNED TO THE MIXED-USE, 699 ARE INTENDED TO BE DESIGNATED AS RESIDENTIAL.
2. THE TOTAL ERU'S ALLOCATED FOR THIS AREA PLAN AMENDMENT AND ALL FUTURE AMENDMENTS SHALL BE GOVERNED BY THE ERU ALLOCATION TABLE ON THIS SHEET.
3. THE 20' TRAIL SHOWN WITHIN THE TECHNICAL MANUFACTURING BUFFER AREA AND WITHIN THE MIXED USE AREA IS INCLUDED AS PUBLIC OPEN SPACE IN THE TABULATION TABLE.
4. THIS MAP ONLY SHOWS PUBLIC OPEN SPACE & DETENTION THAT IS PLANNED FOR THE PROJECT. ADDITIONALLY, PRIVATE OPEN SPACE WILL BE PROVIDED THROUGHOUT THE AREA PLAN. REFER TO THE BUFFERS & OPEN SPACE SECTION FOR MORE INFORMATION.
5. TOTAL OPEN SPACE WILL MAKE UP APPROXIMATELY 37.76% OF THE NET AREA, LESS THE CIVIC AND SCHOOL AREAS.
6. PRIOR TO ANY DEVELOPMENT TAKING PLACE EAST OF THE TECHNICAL MANUFACTURING BUFFER, AN AGREEMENT MUST BE IN PLACE BETWEEN LEHI CITY AND TSSD TO PROVIDE SEWER SERVICE.
7. THE NEARBY SEASONS CULINARY WATER TANK & PI RESERVOIR HAVE LIMITED CAPACITY AVAILABLE FOR THE SKYE AREA PLAN. REFER TO THE CULINARY AND PI SECTIONS OF THE SKYE AREA PLAN UTILITY SECTION FOR DETAILS ON AVAILABLE CAPACITIES AND NEEDED IMPROVEMENTS FOR THIS PROJECT.
8. ADDITIONAL CULINARY WATER AND PI CITY PROJECTS MAY BE NEEDED TO SERVICE THE SKYE AREA PLAN. REFER TO THE CULINARY & PI SECTIONS OF THE SKYE AREA PLAN UTILITY SECTION FOR ADDITIONAL DETAILS.
9. NEITHER THE CULINARY NOR THE PI SYSTEMS FOR SKYE HAVE A WATER SOURCE IDENTIFIED. REFER TO THE CULINARY & PI SECTIONS FOR ADDITIONAL INFORMATION ON IDENTIFIABLE SOURCES.
10. TECHNICAL MANUFACTURING BUFFER SHALL HAVE NO ERU'S ASSOCIATED WITH IT. ANY ADDITIONAL DEVELOPMENT ON THIS AREA SHALL REQUIRE ADDITIONAL UTILITY STUDIES AND CITY STAFF APPROVAL.
11. IF THE PROPOSED CIVIC 1 SITE IS NOT USED AS A CIVIC/CHURCH SITE, IT WILL BECOME AN MD POD WITH A DENSITY RANGE OF 3-7 UNITS/ACRE. DENSITY WILL BE TRANSFERRED FROM OTHER PODS AS NECESSARY, KEEPING THE TOTAL ERU CAP AT 2736.
12. DENSITY FROM POD MD13 SHALL HAVE THE ABILITY TO BE SHIFTED SOUTH OR EAST TO PODS HD1-4, OR LD4-7
OPEN SPACE
INVERNESS AREA
PUBLIC DETENTION
20' TRAIL CORRIDOR
TECHNICAL MANUFACTURING BUFFER
CLUB HOUSE
CIVIC 1/ MD
SCHOOL 1
SCHOOL 2
MIXED USE 1
MIXED USE 2
OPEN SPACE/PUBLIC DETENTION
CENTER STREET
SR 92
1200 EAST
HIGHLAND BLVD
ENGINEERS
SURVEYORS
PLANNERS
SKYE
LEHI, UTAH
LAND USE PLAN
L-1

D.R. Horton – Skye Area Plan Amendment Addi?onal Changes

As part of the submi?ed Skye Area Plan Amendment, D.R. Horton was requested to make some addi?onal changes by Texas Instruments that we would like the Planning Commission and City Council to consider and include in their vote/approval as follows:

1. **Land Use Sec?on 2: Sheet OS-3.1 – Add Note:** The Technical Manufacturing Buffer (TMB) will not be open to the public and, is not included in the private open space calcula?ons.
2. **Sec?on 1 Introduc?on: - Add Note:** Texas Instruments is in the process of execu?ng a LOT LINE Adjustment for the TM parcel to facilitate some poten?al development and expansion of the plant. Any proposed development within the TM parcel will be condi?oned upon prior approval by Lehi City and D.R. Horton as well as an approved amendment to the Skye Area Plan.
3. **Land Use Sec?on 2: Sheet OS-4.1 – Change:** Trail 1 shall be colored gold similar to Trail 10. (When Trail 1 is constructed ini?ally it will end at Texas Instrument's delivery entrance near our property boundary, not at a dead-end at the corner of the site.

The applicant is willing to include and comply with all the current DRC comments. However, we would like to propose to, and discuss with the Planning Commission and City Council to allow an excep?on to items #2 and #3 on the DRC comment sheet. The text in italics below include what is currently in the Area Plan. Items #2 and #3 on the DRC comment sheet refer to this text and request that we remove the last two bullet points below. We would like to keep the second bullet point in the Area Plan as it is wri?en, and we would also like to keep the third bullet point but to include the red text as a revision to what is currently wri?en. Lastly, we would like to include a fourth bullet point in red text to be added.

However, there are a few excep?ons to this restric?on described above as listed in the bullet points below:

- *Church / Civic 1 Site: This site has been sold to and is owned by the Church of Jesus Christ of La?er-Day Saints. There shall be no restric?ons on site plan approvals, plat approvals, recording of plats, building permits or the approval of cer?ficates of occupancy.*

- *D.R. Horton Office / Mixed Use 3 Site: Within the Mixed Use 2 site, D.R. Horton plans to build a local division office building on approximately 4 acres of this por?on of the Area Plan. There shall be no restric?ons on site plan approvals, plat approvals, recording of plats or building permits for this specific site and use. However, the cer?ficate of occupancy and final approval for use of the building shall not be granted un?l the water projects as described in the "U?lity - Water Sec?ons" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

- *60 Residen?al ERU's: One final plat containing a maximum of 60 ERU's shall be allowed with no restric?ons on site plan approvals, plat approvals, recording of plats, or building permits. However, the cer?ficate of occupancy and final approval for use of homes shall not be granted un?l the water projects as described in the "U?lity - Water Sec?ons" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

- *D.R. Horton Sky Clubhouse Site: D.R. Horton plans to build a Clubhouse and pool within the Area Plan. There shall be no restric?ons on site plan approvals, plat approvals, recording of plats or building permits for this specific site and use. However, the cer?ficate of occupancy and final approval for use of the building shall not be granted un?l the water projects as described in the "U?lity - Water Sec?ons" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

Skye Area Plan

(Second Amendment)

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Table of Contents

- **Section 1 - Introduction**
  - Executive Summary
    - History
    - Purpose of the Amendment
  - Introduction and Narrative
  - Boundary Description and Map (Missing)
- **Section 2 - Land Use**
  - Land Use Map
  - Technical Manufacturing Buffer Set Back Exhibit
  - Table of Uses – Mixed Use/Commercial Districts
  - Table of Bulk and Intensity Requirements Mixed use/Nonresidential
  - Table of Bulk and Intensity Requirements Mixed use/Nonresidential
  - Table of Bulk and Intensity Requirements Residential Districts
  - Residential Architectural Design Guidelines and Standards
  - Skye Area Plan Parking Requirements and Access Requirements
  - Buffers and Open Space Section
  - Active Transportation Plan (Map)
  - Open Space Summary Table
- **Section 3 - Utilities**
  - Power
  - Sewer
  - Storm Drain
  - Pressurized Irrigation
  - Culinary Water

- **Section 4 - Transportation**
    - Transportation Maps
    - TIS report and appendix
- **Section 5 - Geotechnical**
    - Geotech Table of Contents
    - Geotech Area 1
    - Geotech Area 2
    - Geotech Area 3
    - Geotech Area 4
    - Geotech Debris Flow Study
    - Geotech Fault Rupture Study
- **Section 6 – Fiscals**
    - Culinary Water
    - Pressurized Irrigation
    - Storm Water
    - Sewer Capital Improvements
    - Power Capital Improvements
    - Road Capital Improvements
    - Parks Improvements

Skye Area Plan

2nd Amendment

Section 1 – Introduction

- Executive Summary
- Introduction & Narrative
- Boundary Description & Map

Skye Area Plan – Amendment #2

Executive Summary

History

1. Micron created an Area Plan which was approved by Lehi City in 2012. However, Micron never moved forward with developing or platting the approved Area Plan Development.
2. Micron worked with the Alpine School District and sold them land to build an Elementary School and a Middle school within the approved Area Plan. The schools were built between 2017 and 2021.
3. Micron sold most of the land that was included in the approved Area Plan and included all vested density (ERU's) to D.R. Horton in 2021.
4. When DR Horton acquired the property, the property was in three jurisdictional boundaries, Lehi City, Draper City and Utah County. D.R. Horton is working to have the entire property annexed into Lehi City.
    a. D.R. Horton annexed the Utah County parcel into Lehi which was recorded in April of 2022. This portion of land that was contemplated to be a part of the Area Plan is now in Lehi City.
    b. D.R. Horton coordinated with Lehi and Draper to adjust the boundary line between the two cities and so that the rest of the property that was sold to D.R. Horton by Micron is in Lehi City. This "Boundary Adjustment Plat" was approved by both cities and was recorded on December 19, 2022.
5. In the end of 2021, Micron sold the rest of its property (including the Technical Manufacturing Buffer portions of the Area Plan) and the manufacturing plant to Texas Instruments. The plant and much of this property is not part of the Area Plan.
6. The Micron Area plan was amended and approved in August of 2022 and recorded in December of 2022. Amendment #1 renamed the Micron Area Plan to be called the Skye Area Plan.

Purpose of the Amendment

The purpose of this amendment is to add the remaining portion of the land (approximately 877 acres) that D.R. Horton originally purchased from Micron and that was, at the time, in Draper City's boundary into the current Skye Area Plan. As this land is added to the area plan, several sections of the area plan will have some modifications, A general list of the modifications that this amendment addresses are listed as follows:

1. Officially modify the total acres in the Area Plan from approximately 844 acres to 1,727 acres and, include the planning and utility design of this additional acreage
2. Officially modify the total ERU count from 2436 to 2736
3. Modify the approved local road cross sections
4. Update the fiscals to include the additional density
5. Update the utility, land use, geotechnical, traffic and transportation, and fiscal sections
6. Allow for ADUs per city and state law

Process and Procedure to this Second Amendment to the Area Plan

This currently proposed amendment will take place in the following steps

1. Concept Plan Approval: This was granted by Lehi City Council in August of 2022.
2. Lehi City DRC approval/recommendation.
Approval Date: _____
3. Lehi City Planning Commission approval/recommendation.
Approval Date: _____
4. Lehi City Council Approval.
Approval Date: _____
5. Recording of the Second Amendment to the Area Plan:
Approval Date:_____

Skye Area Plan Amendment #2

Introduction & Narrative

The Master Plan

D.R. Horton is pleased to have the opportunity to present a narrative of the development approach for its master-planned community in Lehi, Utah called the Skye Area Plan.

Our goal is to create a master-planned, resort style residential community with some high-quality office, professional, retail, and other mixed-use commercial areas. The entire area will be well-connected by trails, walkways and open space corridors that will allow access to both commercial and professional areas and to the foothills and other open space and native areas. The residential development area will be a well-planned cohesive community with a variety of home products and price points.

The site of approximately 1,727 acres is ideally situated in the “Silicon Slopes” area along the growing economic corridor framed by Salt Lake City and Provo. The location of this development allows for quick access to I-15 and SR 92 providing realistic commutes from and to both Salt Lake and Utah Counties. The master planned development will be an incredible place to work and live. It could easily be argued that there is no better or more centralized place to work or live in the metropolitan areas of the State of Utah.

Utah’s population today stands at approximately 3.3 million. Forecasts indicate that Utah is poised for continued rapid growth over the next several decades. Given Lehi’s ideal location described above, and the physical attributes of the site, this development will strengthen Lehi’s identification as a leading tech-industry and residential community destination. It will also provide homes for the many talented people and their families that work here now or in the future.

The master planning of this development contemplates the existing grades, landscape attributes and surrounding land uses to create an amazing place to live and work. The gem amenity of this development will be the trail systems and connectivity to residential, commercial, and natural/native areas of the land. The plan also allows for connectivity with adjacent properties to the North, West, and East. We are committed to these design concepts, as we are convinced that they will assure that we achieve an appropriately scaled, cohesive “workplace neighborhood” that is socially engaging, visually attractive, while providing a backdrop

for a high quality of life. The plan respects and enhances the natural landscape, fits with existing streets and intersections, and promotes walking and connection with adjacent trails.

Commercial Building Construction

The building and construction materials used for the commercial buildings will be those materials which are typically utilized in class "A" properties and considered environmentally sustainable. The construction process for these buildings will prioritize strategies and tactics that minimize the impact on the environment, improve the surroundings and enhance the workplace experience for building tenants. All buildings will be LEED designed and implement state of the art technology in energy efficiency. Architectural designs will reflect a timeless quality, preserving the value of individual buildings and other properties within the project with the use of materials that are environmentally friendly as well as aesthetically pleasing. Supporting parking areas will be heavily and sustainably landscaped, pervious where possible, sloped or terraced to minimize grading, and where slope permits tucked under buildings. Walkway easements will be utilized to allow ease of walking to and from the "social heart" for all occupants of the project. Commercial buildings will capitalize on this site's pristine location and be built and situated in a way that enhances tenants' views of the surrounding area's beauty, while simultaneously adding to that beauty.

Residential Construction

The plan envisions a wide variety of product types and designs, that will attract a diverse community of residents in various stages of life and income. Residential products of apartments, townhouses, active adult homes, small cottage-size single family homes and larger more custom homes will all be available within the development. The developer will control the architecture, materials, and colors to achieve compatibility and harmony with the over-all design of the community. In addition, water wise landscaping will be incorporated in the landscape design for common areas as well as on private residential lots.

Roadways and Access

Access to the site is primarily off SR-92 which borders to the South. Access points will be located at 500 West, Center Street, and Highland Boulevard (note - Highland Blvd., unlike the other addressing streets, is within Highland City) in addition, there will be access to adjacent properties to the West. There will not be any vehicular connectivity to Draper to or from the north but, there will be access to the neighboring property to the west.

Community Features

Given the variety of planned land uses in the project and the availability of community resources, achieving a highly functioning cohesive community will be easily achievable and will truly set the community apart. The resources need to address the need and market demand for a variety of housing options and price points. It also needs to address the educational, recreational, civic, and service needs of the community. To meet these needs, the Area Plan envisions the following facilities. First, approximately 43 acres has already provided for the development of a Middle School and an Elementary School. An additional 27 acres or so has been allocated for church/civic sites that will be a great benefit to the community. Approximately 70 acres will be dedicated to commercial, retail, office and mixed-use developments as the market demands in that area. Examples of these mixed-uses could include small grocery and pharmacy facilities, restaurants, dry cleaning/laundry, banks, misc. retail, and professional services such as lawyers, doctors, and accountants. There will be many types of residential home products for all sizes and types of families in all stages of life.

There will be both private and public parks, amenities and open space planned and developed throughout the community including a HOA owned community clubhouse.

Trail Corridors and Open space

A series of trails and trail corridors will follow existing site features such as natural drainage corridors and existing vegetation areas and along newly designed streets. The trail corridors will be dedicated to the City of Lehi and reserved for public access and use. The trails will lead to recreation areas, trails, and zones for native habitat. Landscaping and planting will be focused on native plantings and water-wise conservation practices. In total, over 500 acres of land will be dedicated as open space with a combination of both private and public amenities. Trail systems and corridors will tie all these spaces together and will also allow access to new trailheads that lead into the amazing foothills and natural space to the north of the development. Approximately 379 acres will remain as a technical manufacturing buffer for the purpose of providing space and to house the utilities for the currently Texas Instruments-owned plant operation. The public will not have access to this area for recreational purposes except for designated public trail corridors that may run through the restricted open space as shown on the area plan.

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LEGAL DESCRIPTION
PREPARED FOR DR HORTON
Job No. 2020-0067
(January 11, 2023)

MICRON AREA PLAN BOUNDARY

A portion of Sections 21, 22, 27, 28, 29, 32, 33 and 34 of Township 4 South, Range 1 East, Salt Lake Base and Meridian, described by survey as follows:

Beginning at the Southwest Corner of Section 21, Township 4 South, Range 1 East, Salt Lake Base & Meridian; thence N00°13'47"E along the section line 2,640.10 feet to the West Quarter Corner of Section 21; thence N00°13'28"E along the section line 1,346.52 feet; thence N89°59'41"E 3,420.94 feet to a point on the boundary of Maple Hollow 10, 11, & 13 at Suncrest; thence along said boundary the following three (3) courses: S00°00'19"E 715.98 feet; thence N89°59'41"E 2,900.00 feet; thence N73°56'41"E 899.58 feet; thence S19°19'38"E 3,047.04 feet; thence N61°40'44"E 697.56 feet; thence N65°46'11"E 502.33 feet; thence S00°10'29"W 1,181.60 feet; thence S00°06'11"W 1,328.11 feet to the north line of Phase 7, Dry Creek Highlands Subdivision; thence along the boundary of Phase 7, 8 & 6, Dry Creek Highlands Subdivisions the following two (2) courses: thence S89°49'52"W 1,322.57 feet; thence S00°02'55"W 828.20 feet; thence N89°59'48"W 421.32 feet; thence S45°00'12"W 374.79 feet; thence S09°32'45"E 475.39 feet; thence S41°14'37"E 221.15 feet; thence East 461.04 feet to the west line of Phase 4, Dry Creek Highlands Subdivision; thence S00°03'10"W along said line 927.68 feet; thence S89°51'49"W 581.93 feet; thence S03°50'00"W 760.59 feet; thence along the arc of a non-tangent curve to the left 195.97 feet with a radius of 398.77 feet through a central angle of 28°09'24", chord: S10°14'40"E 194.00 feet; thence S24°15'51"E 492.32 feet; thence S09°44'11"E 122.64 feet; thence S10°45'54"E 267.63 feet; thence S10°47'26"E 182.05 feet; thence N10°47'26"W 182.05 feet; thence S10°47'26"E 182.05 feet; thence South 51.79 feet; thence S09°46'20"E 185.38 feet; thence S00°00'38"W 220.14 feet to the right-of-way line of Timpanogos Highway; thence along said right-of-way line the following two (2) courses: thence S89°41'22"W 519.34 feet; thence S89°41'22"W 471.92 feet; thence N01°24'45"E 3,123.24 feet; thence N74°14'09"W 1,731.40 feet; thence N07°33'50"W 420.33 feet; thence S75°21'53"W 982.07 feet; thence S14°38'07"E 368.81 feet; thence S53°05'33"W 1,215.74 feet; thence S83°28'20"W 283.68 feet; thence S04°02'40"E 1,554.32 feet; thence S04°02'40"E 1,082.74 feet to the right-of-way line of Timpanogos Highway; thence along said right-of-way line the following seventeen (17) courses: thence N85°18'49"W 195.31 feet; thence N76°47'48"W 151.32 feet; thence N87°29'12"W 750.27 feet; thence N87°29'59"W 184.07 feet; thence N87°29'02"W 69.27 feet; thence N81°39'47"W 810.94 feet; thence along the arc of a curve to the left 967.46 feet with a radius of 9,520.00 feet through a central angle of 05°49'21", chord: N84°34'28"W 967.04 feet; thence N00°04'53"W 50.05 feet; thence along the arc of a non-tangent curve to the left 24.77 feet with a radius of 9,570.00 feet through a central angle of 00°08'54", chord: N87°34'24"W 24.77 feet; thence S00°04'53"E 50.05 feet; thence along the arc of a non-tangent curve to the left 42.75 feet with a radius of 9,520.00 feet through a central angle of 00°15'26", chord: N87°45'25"W 42.75 feet; thence N87°53'08"W 626.36 feet; thence S82°17'02"W 408.22 feet; thence S81°45'11"W 256.74 feet; thence S79°17'40"W 151.11 feet; thence S83°06'31"W 292.19 feet; thence N89°59'58"W 304.66 feet; thence N00°04'28"W 2,232.22 feet to the south line of Phase 1, Canyon Hills Subdivision; thence N89°51'04"E along said line 743.12 feet; thence N00°03'21"W along the east line of Phase 1, 3 and 8, Canyon Hills Subdivision 1,356.75 feet; thence N00°03'09"W 1,304.41 feet; thence N89°50'54"E 1,332.52 feet to the west line of Section 28, T4S, R1E, SLB&M; thence N00°10'43"E along the section line 1,325.48 feet to the point of beginning.

Contains: ± 1,727.94 acres.

• Civil Engineering
• Structural Engineering
• Surveying
• Land Planning
• Landscape Architecture

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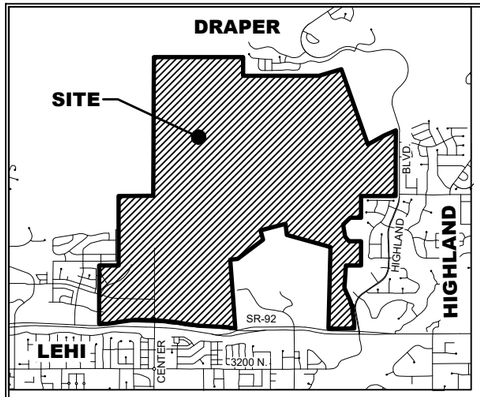

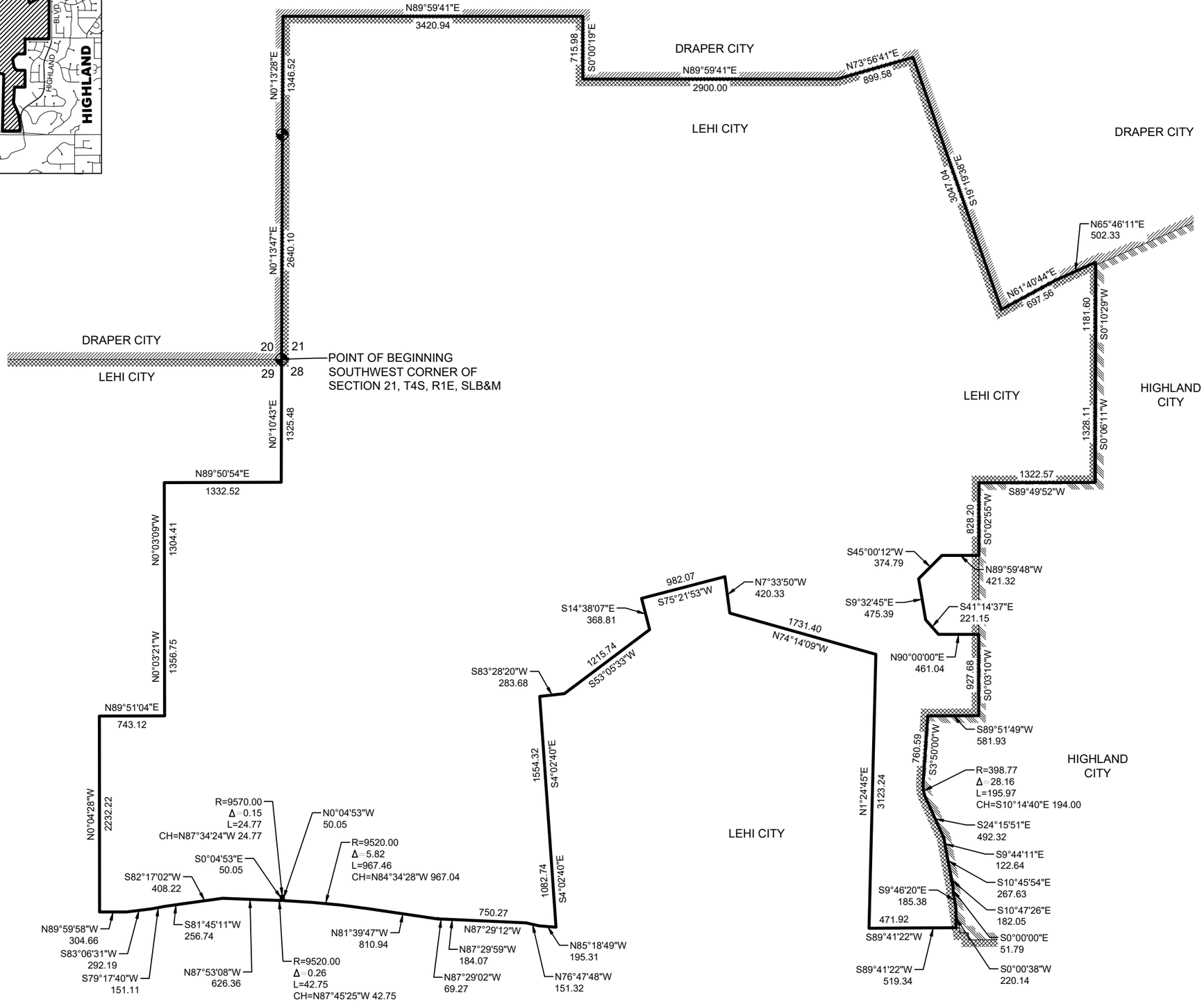

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office@lei-eng.com
www.lei-eng.com

94

SKYE
LEHI, UTAH

BOUNDARY EXHIBIT

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #:
2020-0067
DRAWN BY:
RWH
DESIGNED BY:
BCT
SCALE:
1" = 1200'
DATE:
01/10/2023

SHEET
1

L:\10_LEI PROJECTS\2020\2020--0067 DR HORTON LEHI PROJECT\CAD\DWG\AREA PLAN\20--0067 MORON 2 AREA PLAN BOUNDARY.DWG 1/11/2023 11:02 AM

Skye Area Plan

2nd Amendment

Section 2 – Land Use

- Land Use Map
- Technical Manufacturing Buffer Set Back Exhibit
- Table of Uses – Mixed Use/Commercial Districts
- Table of Bulk and Intensity Requirements Mixed use/Nonresidential
- Table of Bulk and Intensity Requirements Mixed use/Nonresidential
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- Active Transportation Plan (Map)
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- Plat and Site Plan Approval Processess

NORTH

ACREAGE TABULATION

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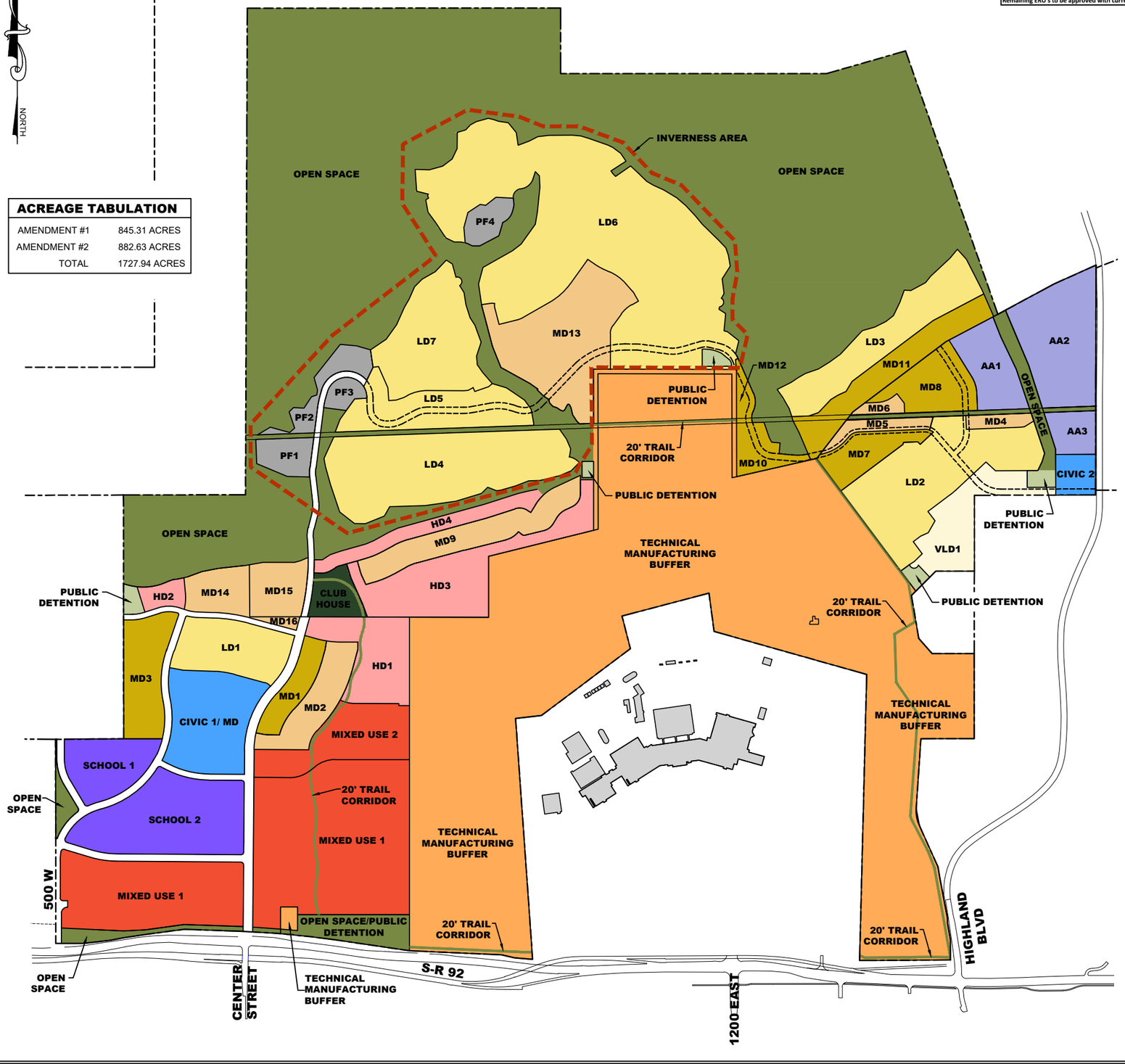

ERU Allocation Table		
		Notes
Overall Total ERU's Allowed	3294	Total ERU's allowed from original Micron Area plan (2994) plus the additional 300 ERU's granted by city council
ERU's Used by Canyon Hills (Existing)	246	Includes 244 lots + 1 church
ERU's to be Used by Peck Property (58.89 ac)	88	Assumes 1.5 units/ac (from original Area Plan)
ERU's to be Used by Entrata Property (149.28 ac)	224	Assumes 1.5 units/ac (from original Area Plan)
Total ERU's Remaining for Skye Development	2736	
ERU's approved with Skye Area Plan Amendment #1	1751	
Remaining ERU's to be approved with current Area Plan Amendment	**985**	

NOTES:

1. OF THE 827 ERU'S ASSIGNED TO THE MIXED-USE, 609 ARE INTENDED TO BE DESIGNATED AS RESIDENTIAL.
2. THE TOTAL ERU'S ALLOCATED FOR THIS AREA PLAN AMENDMENT AND ALL FUTURE AMENDMENTS SHALL BE GOVERNED BY THE ERU ALLOCATION TABLE ON THIS SHEET.
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5. TOTAL OPEN SPACE WILL MAKE UP APPROXIMATELY 37.76% OF THE NET AREA, LESS THE CIVIC AND SCHOOL AREAS.
6. PRIOR TO ANY DEVELOPMENT TAKING PLACE EAST OF THE TECHNICAL MANUFACTURING BUFFER, AN AGREEMENT MUST BE IN PLACE BETWEEN LEHI CITY AND TSSD TO PROVIDE SEWER SERVICE.
7. THE NEARBY SEASONS CULINARY WATER TANK & PI RESERVOIR HAVE LIMITED CAPACITY AVAILABLE FOR THE SKYE AREA PLAN. REFER TO THE CULINARY AND PI SECTIONS OF THE SKYE AREA PLAN UTILITY SECTION FOR DETAILS ON AVAILABLE CAPACITIES AND NEEDED IMPROVEMENTS FOR THIS PROJECT.
8. ADDITIONAL CULINARY WATER AND PI CITY PROJECTS MAY BE NEEDED TO SERVICE THE SKYE AREA PLAN. REFER TO THE CULINARY & PI SECTIONS OF THE SKYE AREA PLAN UTILITY SECTION FOR ADDITIONAL DETAILS.
9. NEITHER THE CULINARY NOR THE PI SYSTEMS FOR SKYE HAVE A WATER SOURCE IDENTIFIED. REFER TO THE CULINARY & PI SECTIONS FOR ADDITIONAL INFORMATION ON IDENTIFIABLE SOURCES.
10. TECHNICAL MANUFACTURING BUFFER SHALL HAVE NO ERU'S ASSOCIATED WITH IT. ANY ADDITIONAL DEVELOPMENT ON THIS AREA SHALL REQUIRE ADDITIONAL UTILITY STUDIES AND CITY STAFF APPROVAL.
11. IF THE PROPOSED CIVIC 1 SITE IS NOT USED AS A CIVIC/CHURCH SITE, IT WILL BECOME AN MD POD WITH A DENSITY RANGE OF 3-7 UNITS/ACRE. DENSITY WILL BE TRANSFERRED FROM OTHER PODS AS NECESSARY, KEEPING THE TOTAL ERU CAP AT 2736.
12. DENSITY FROM POD MD13 SHALL HAVE THE ABILITY TO BE SHIFTED SOUTH OR EAST TO PODS HD1-4, OR LD4-7

LAND USE	ACRES	% OF NET AREA	PROPOSED DENSITY Low Range (units/acre)	PROPOSED DENSITY High Range (units/acre)	PROPOSED UNITS Low Range (Units)	PROPOSED UNITS High Range (Units)
Total Area	**1727.94**					
MP Roads Deduction	29.83					
NET AREA	**1698.11**					
School 1 (Elementary)	**12.71**	**0.75%**			9	
School 2 (Jr. High)	**30.27**	**1.78%**			15	
Civic 1[11]	**22.59**	**1.33%**	3	7	27	
Civic 2	**4.44**	**0.26%**			2	
Mixed Use 1[1]	**97.02**	**5.71%**	4	30	517	
Mixed Use 2[1]	**17.83**	**1.05%**	4	30	310	
Clubhouses	**5.60**	**0.33%**			9	
Public Facilities 1	**5.19**	**0.31%**			0	
Public Facilities 2	**6.19**	**0.36%**			0	
Public Facilities 3	**2.62**	**0.15%**			0	
Public Facilities 4	**4.39**	**0.26%**			0	
Dedicated Public Detention	**5.33**	**0.31%**			0	
Technical Manufacturing[10]	**381.93**	**22.49%**			0	
HD	**54.25**	**3.19%**				
HD #1	16.30	0.96%	8	12	130	196
HD #2	3.06	0.18%	8	12	24	37
HD #3	25.74	1.52%	8	12	206	309
HD #4	9.16	0.54%	8	12	73	110
MD	**151.71**	**8.93%**				
MD #1	6.92	0.41%	3	7	21	48
MD #2	11.42	0.67%	3	7	34	80
MD #3	14.21	0.84%	3	7	43	99
MD #4	2.43	0.14%	3	7	7	17
MD #5	3.79	0.22%	3	7	11	27
MD #6	1.76	0.10%	3	7	5	12
MD #7	8.32	0.49%	3	7	25	58
MD #8	11.89	0.70%	3	7	36	83
MD #9	16.42	0.97%	3	7	49	115
MD #10	8.98	0.53%	3	7	27	63
MD #11	12.84	0.76%	3	7	39	90
MD #12	2.08	0.12%	3	7	6	15
MD #13	33.52	1.97%	3	7	101	235
MD #14	7.09	0.42%	3	7	21	50
MD #15	9.00	0.53%	3	7	27	63
MD #16	1.01	0.06%	3	7	3	7
LD	**276.90**	**16.31%**				
LD #1	16.14	0.95%	1	4	16	65
LD #2	35.72	2.10%	1	4	36	143
LD #3	22.34	1.32%	1	4	22	89
LD #4	43.43	2.56%	1	4	43	174
LD #5	19.52	1.15%	1	4	20	78
LD #6	113.17	6.66%	1	4	113	453
LD #7	26.58	1.57%	1	4	27	106
VLD	**15.22**	**0.90%**				
VLD1	15.22	0.90%	1	2	15	30
Active Adult	**41.03**	**2.42%**				
AA #1	11.10	0.65%	4	6	44	67
AA #2	24.62	1.45%	4	6	98	148
AA #3	5.31	0.31%	4	6	21	32
TOTAL OPEN SPACE AREA[4,5]	**626.01**	**36.87%**				
Dedicated Public Open Space[3]	562.31	33.11%				
Private Open Space	68.44	4.03%				
Power Corridor Deduction	-4.74	-0.28%				
NON-RESIDENTIAL ERU'S	**280**					
RESIDENTIAL ERU'S	**2456**					
TOTAL ERU'S[3]	**2736**					

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SKYE
LEHI, UTAH

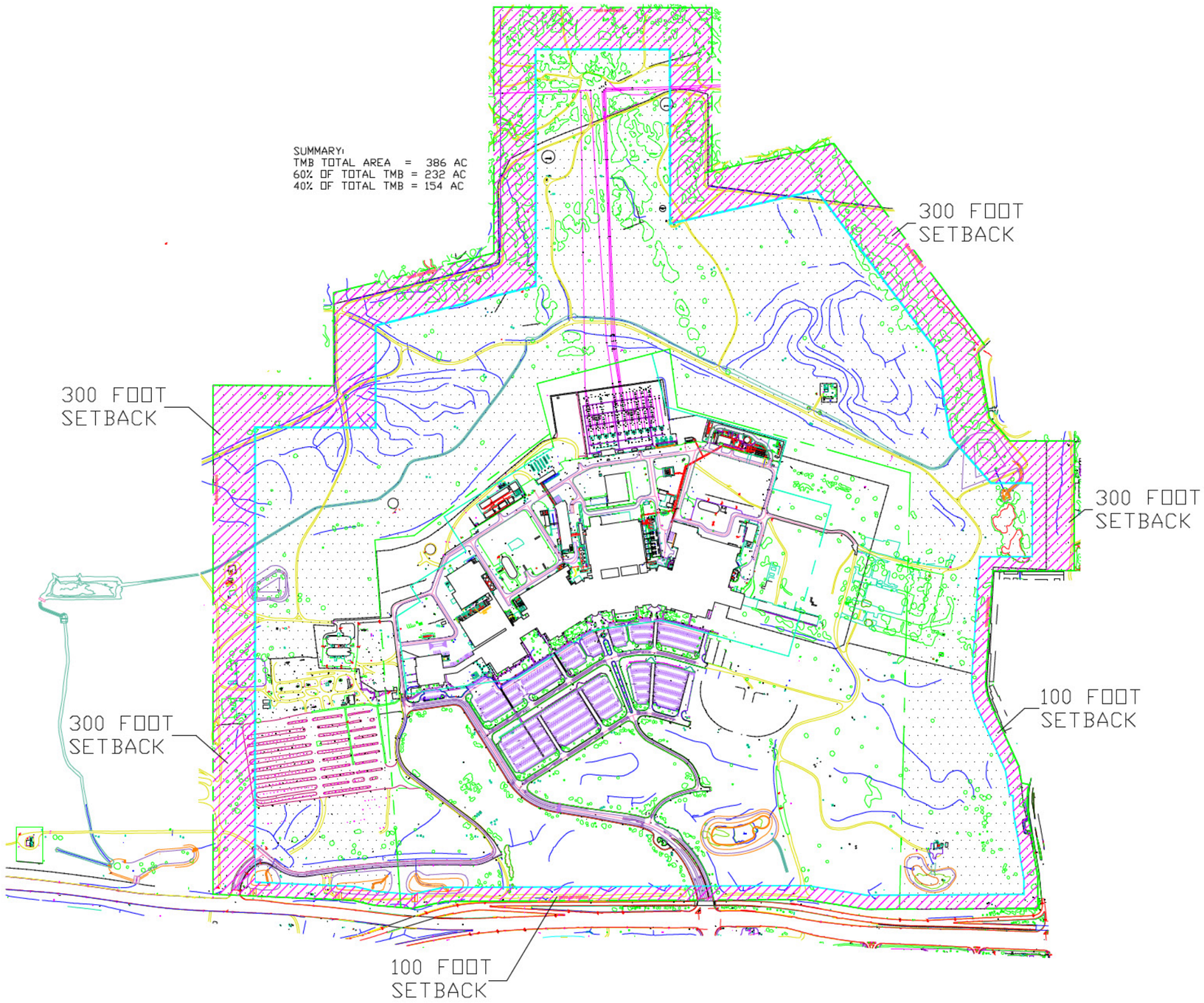
LAND USE PLAN

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 20-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1200'
DATE: 8/3/2023

SHEET
L-1

SUMMARY:
TMB TOTAL AREA = 386 AC
60% OF TOTAL TMB = 232 AC
40% OF TOTAL TMB = 154 AC



B99 SITE

TEXAS INSTRUMENTS

LEHI, UTAH

LFAB SITE SETBACKS

PROFESSIONAL LAND SURVEYOR
JOHN R. BERRY
7/19/23
STATE OF UTAH

Ruckhill

Project No:
Project Coord:
Eng. Coord:

	Date	Description	By

Approvals

EC	N/A	Arch	Struct
Mech	**Process**	**Elect**	**Control**

NOTE
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CADD File:

Scale: 1" = 800' ON 11X17

SITE
CIVIL PLANNING

99C1.0P

Skye Area Plan
Table of Uses - Mixed Use / Commercial Districts

RESIDENTIAL USES		
LAND AREA DESIGNATION	**MU**	**TMB**
Dwelling Unit for caretaker/security guard (Only to be used by caretaker and immediate family)	P	N
Group Home	P	N
Juvenile Group Facility	N	N
Mixed-use single family residential and commercial structure/project complying with the use and development standards	P	N
Townhouses/Condominiums	P	N
Multi-Family Dwellings (greater than four dwelling units)	P	N
Rehabilitation and Treatment Facilities [See Sec. 12.180]	C	N
Nursing Home, Assisted Living, or Retirement Home/Center	P	N
PUBLIC/CIVIC USES		
LAND AREA DESIGNATION	**MU**	**TMB**
Churches (places of worship)	P	N
Cultural and Artistic uses, such as Museums, Galleries, Libraries, Performing Arts Studios	P	N
Golf Courses, Country Clubs, and Putting Greens	C	N
Parks, Playgrounds, Open Space, Trails and Greenways	P	P
Parking lot or Parking Structure, Municipal or Joint Venture (public/private)	P	P
Public/Civic Buildings	P	N
Schools	P	N
Sporting Facilities, Arenas	P	N
Sports Fields	P	P
COMMUNICATION & UTILITIES		
LAND AREA DESIGNATION	**MU**	**TMB**
Communication Facilities and Towers [See Sec.12.140]	C	P
Electrical Substations and Power Transmission Lines, Municipal	P	P
Electrical Substations and Power Transmission Lines, ground and roof-mounted solar energy facilities Non-Municipal	C	P
Oil & Gas Transmission Lines	C	P
Public Facilities including but not limited to water tanks, irrigation ponds, pump stations, well houses and lift stations.	P	P
Public and Private (with franchise agreement) Utility Underground Lines, and Rights of Way	P	P
Public and Private (with franchise agreement) Utility Buildings and Other Above Ground, Structures	P	P
COMMERCIAL/NONRESIDENTIAL USES		
LAND AREA DESIGNATION	**MU**	**TMB**
Accessory Buildings and uses incidental to an authorized use	P	P
Adult Daycare	P	N
Artisan Shop	P	N
Athletic Instruction, including Dance, Gymnastics, and Martial Arts	P	N
Automobile Sales/Rental sites 1 acre or larger	N	N
Automobile Service and Repair	C	N
Bakery, Retail	P	N
Bed and Breakfast	P	N
Body Art Facility	P	N

Notes:
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C= Use allowed as a Conditional Use.
N= Use not allowed and is prohibited.

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Skye Area Plan
Table of Uses - Mixed Use / Commercial Districts

COMMERCIAL/NONRESIDENTIAL USES (continued)		
LAND AREA DESIGNATION	**MU**	**TMB**
Brew Pub	P	N
Building Maintenance Services	P	P
Car Wash	P	N
Check Cashing, Title Loans & other Credit Services	C	N
Child Daycare (Commercial)	P	N
Climate Controlled Indoor Storage	P	N
Commercial Laundries, Linen Service	P	N
Commercial Parking Lot/Structure (private)	P	P
Commercial Recreational Facility	P	N
Conference Center, Convention Center, Reception Center	P	N
Construction and Equipment Sales and/or Rental (No outdoor storage)	C	N
Construction Service (No outdoor storage)	C	N
Convenience Store, with Gasoline Sales	P	N
Dog Care Facility	C	N
Dry Cleaners	P	N
Financial Institutions and Services	P	N
Drive through facilities incidental to an allowed use	P	N
Funeral Home	C	N
Health Care Facility	P	N
Health/Fitness Club	P	N
Heliport	C	N
Hobby Garages	P	N
Hotels and Motels	P	N
Junk Yards and Salvage Yards	N	N
Laboratory - Medical, Dental, Optical	P	N
Launderette, Laundromat	P	N
Light Office/Warehouse Combination	P	N
Makerspace (flex space that is divided into separate units that can be used for a variety of purposes including storage, small business, retail, recreational use and non-permanent residential use.)	P	N
Manufactured Home Sales and Service	N	N
Medical and Dental Clinics	P	N
Medical Cannabis Pharmacy	P	N
Medical Research Facility	P	N
Moving and Storage Facilities	C	C
Nightclub	C	N
Offices, Professional	P	N
Office/Warehouse with no outside storage	P	P
Outdoor Sales and Display	P	N
Outdoor Storage of Materials, Products and Equipment incidental to an allowed use (excluding junk yards and salvage yards)	N	P
Pawn Shops (see Sec. 12.130 F)	N	N
Personal Services	P	N

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Skye Area Plan
Table of Uses - Mixed Use / Commercial Districts

COMMERCIAL/NONRESIDENTIAL USES (continued)		
LAND AREA DESIGNATION	**MU**	**TMB**
Personal Services including a Body Art Facility (See Definitions Chapter 39)	P	N
Pet Grooming Facility	P	N
Plant Nursery with Outside Display	P	N
Portable Storage Container	N	P
Public Dance Hall	C	N
Racetracks for Go-Carts, ATV and Motocross or other Motorized Sports Recreational Facilities (includes private or commercial)	C	N
Research and Development Facilities	P	N
Restaurant	P	N
Retail Facilities and Services accessory to a principal use	P	N
Retail Facilities and Services with drive-up window(s)	P	N
Retail Sales, General	P	N
Schools - Vocational and Technical	P	N
Storage Units [See Sec.12.130-A]	C	C
Indoor Storage, Vehicles [See Sec.12.130-A]	C	P
Temporary Construction Buildings & Yards (12 months maximum)	P	P
Theater	P	N
Tobacco Products Shop	N	N
Towing and Impound Yard [See Sec. 12.130-G]	N	N
Veterinary Office, operating entirely within an enclosed building and keeping animals overnight only for treatment purposes	P	N
LIFE SCIENCES		
LAND AREA DESIGNATION	**MU**	**TMB**
Brick Manufacture	N	N
Indoor Building Materials Storage and Wholesaling	P	P
Cabinet and Woodworking Shop	P	N
Cannabis Production	N	N
Commercial Storage or Distribution (excluding junkyards and salvage yards)	P	P
Concrete Block Manufacture	N	N
Concrete Manufacture	N	N
Indoor Contractor's Storage Yard	P	P
Food Processing including the slaughtering, processing and packaging of livestock (excluding feed lots, outdoor corrals or pens for the keeping of livestock, and animal rendering)	N	N
Gasoline and Oil Storage (wholesale, or Private)	N	P
Indoor Heavy Industrial Assembly	C	C
Light Manufacturing and Assembly which are not obnoxious or offensive by reason of emission of odor, dust, smoke, noxious gases, noise, vibration, glare, heat or other impacts, nor hazardous by way of materials, process, product, or waste, and which: a. Do not process animal, vegetable or fish products or the rendering and refining of fats and oils; b. Encloses all equipment, compressors, generators and other ancillary equipment within a building or structure.	P	N
Lumberyard	N	N
Manufacture, Processing or Packaging of food and beverage products, personal hygiene products and cosmetics, drugs and pharmaceuticals and which are not obnoxious or offensive by reason of emission of odor, dust, smoke, noxious gases, noise, vibration, glare, heat or other impacts, nor hazardous by way of materials, process, product, or waste and where all activities are conducted within a completely enclosed building and where all equipment, compressors, and other ancillary equipment is enclosed	C	N
Printing and Publishing Facilities	P	N

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Skye Area Plan
Table of Uses - Mixed Use / Commercial Districts

LIFE SCIENCES (continued)		
LAND AREA DESIGNATION	**MU**	**TMB**
Recycling Center	N	N
Rock, Sand and Gravel Storage and Distribution (private)	N	P
Rock, Sand, Gravel and Topsoil Commercial Screening and Sales	N	N
Tradesmen Shops with no outside storage	P	N
Truck and Large Equipment Sales and Rental	N	N
Truck and Large Equipment Repair	N	N
Truck Freight Terminal	N	N
Warehousing and Wholesale Distribution with no outside storage	P	P
Warehousing and Wholesale Distribution with outside storage	N	N
Indoor Welding Shop with no outside storage	C	C
RESOURCE PRODUCTION		
LAND AREA DESIGNATION	**MU**	**TMB**
Agriculture (Horticulture)	P	P

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Skye Area Plan
Table of Uses - Residential Districts

RESIDENTIAL DWELLING TYPES							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	***CIVIC 1***	***SCHOOL***
Single-Family Dwelling	P	P	P	P	P	P	N
Two-Family Dwelling [See Sec. 12.130]	P	P	N	N	P	P	N
Three-Family Dwelling [See Sec. 12.130]	P	P	N	N	P	P	N
Four-Family Dwelling [See Sec. 12.130]	P	P	N	N	P	P	N
Accessory Dwelling Unit (see Sec. 26.030)	N	As per current city and state code				N	N
Group Homes	P	P	P	P	P	P	N
Modular Home	N	N	N	N	N	N	N
Multi-Family Dwellings [>4 dwelling units; See Sec. 12.130]	P	P	N	N	P	P	N
Townhouses/Condominiums [See Sec.37.040]	P	P	N	N	P	P	N
PUBLIC/CIVIC USES							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	**CIVIC 1**	**SCHOOL**
Churches (places of worship)	P	P	P	P	P	P	P
Golf Courses & Country Clubs	P	P	P	P	P	N	N
Parks, Playgrounds, Open Space, Trails and Greenways	P	P	P	P	P	P	P
Public/Civic Buildings	P	P	P	P	P	P	P
Schools	P	P	P	P	P	P	P
Sporting Facilities, Arenas-Municipal	P	P	P	P	P	P	P
Sporting Facilities, Arenas-Non-Municipal	C	C	C	C	C	C	C
Sports Fields	P	P	P	P	P	P	P
UTILITIES							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	**CIVIC 1**	**SCHOOL**
Elect. Substations, Power Transmit Lines-Municipal	P	P	P	P	P	P	P
Elect. Substations, Power Transmit Lines-Non-Municipal	C	C	C	C	C	C	C

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Skye Area Plan
Table of Uses - Residential Districts

UTILITIES (continued)							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	**CIVIC 1**	**SCHOOL**
Ground-Mounted Solar Energy System (must follow Lehi City Code - see 19.020)	C	C	C	C	C	C	C
Hybrid Wind and Solar Energy Facility	C	C	C	C	C	C	C
Oil & Gas Transmission Lines	C	C	C	C	C	C	C
Public and Private (with franchise agreement) Utility Underground Lines, and Rights of Way	P	P	P	P	P	P	P
Public and Private (with franchise agreement) Utility Buildings and Other Above Ground, Structures	P	P	P	P	P	P	P
Roof-Mounted Solar Energy System	P	P	P	P	P	P	P
Roof-Mounted Wind Energy System	C	C	C	C	C	C	C
Small Wind Energy Facility	C	C	C	C	C	C	C

OTHER USES							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	**CIVIC 1**	**SCHOOL**
Adult Day Care	C	C	C	C	C	C	C
Agriculture (Horticulture)	P	P	P	P	P	P	P
Animal Rights - Category 1 [See Sec.12-120(D)]	P	P	P	P	P	N	N
Animal Rights - Category 2 [See Sec.12-120(D)]	P	P	P	P	P	N	N
Animal Rights - Category 3 [See Sec.12-120(D)]	P	P	P	P	P	N	N
Animal Rights - Category 4 [See Sec.12-120(D)]	P	P	P	P	P	N	N
Assisted Living Facility	C	C	C	C	C	C	C
Bed and Breakfast	N	N	N	N	N	N	N
Beekeeping [See Sec. 12-120(E)]	P	P	P	P	P	P	P
Cannabis Production Establishment	C	C	C	C	C	C	C
Café	C	C	C	C	C	C	C
Child Daycare (commercial)	C	C	C	C	C	N	C
Commercial Equestrian Riding Facilities	N	N	N	N	N	N	N
Dance Studio	C	C	C	C	C	C	C
Gravel Pits, Clay Pits	N	N	N	N	N	N	N

Notes:

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C. = Use allowed as a Conditional Use.

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Skye Area Plan
Table of Uses - Residential Districts

OTHER USES (continued)							
LAND AREA DESIGNATION	**HD**	**MD**	**LD**	**VLD**	**AA**	**CIVIC 1**	**SCHOOL**
Greenhouses (private, as an accessory use)	C	C	P	P	C	C	P
Greenhouses (commercial)	N	N	N	N	N	N	N
Medical/Dental Clinic	C	C	C	C	C	C	C
Model Home [See Sec.12.220]	P	P	P	P	P	P	P
Portable Storage Container [See Sec. 12.130-D]	C	C	P	P	C	C	C
Rest Home, Nursing Home	C	C	C	C	C	C	C
Retail Shop	C	C	C	C	C	C	C
Retirement Home/Retirement Center	C	C	C	C	C	C	C
Rock Crushers	N	N	N	N	N	N	N
Short Term Rental	P	P	P	P	P	P	N
Swimming Pools (private)/Private Recreation Facilities	P	P	P	P	P	P	P
Temporary Construction Buildings & Yards (12 months maximum)	P	P	P	P	P	P	P
Temporary Home Sales Office (12 months maximum)	P	P	P	P	P	P	P

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Skye Area Plan
Table of Bulk and Intensity Requirements
Mixed Use / Nonresidential Districts

	Mixed Use	Tech. Manufacturing Buffer (TMB)
Minimum Lot Area	N/A	N/A
Maximum Dwelling Units Per Acre		N/A
Minimum Lot Width/Frontage	N/A	N/A
Minimum Front Yard (Corner Lots)	No minimum requirement but must comply with the IBC.	No minimum requirement but must comply with the IBC.
Minimum Rear Yard	No minimum requirement but must comply with the IBC.	No minimum requirement but must comply with the IBC.
Minimum Rear Yard (Corner Lots)	No minimum requirement but must comply with the IBC.	No minimum requirement but must comply with the IBC.
Minimum Side Yard	No minimum requirement but must comply with the IBC.	No minimum requirement but must comply with the IBC.
Minimum Side Yard (Corner Lot)	No minimum requirement but must comply with the IBC.	No minimum requirement but must comply with the IBC.
Maximum Height of Occupied Structures	No maximum restriction but must comply with the IBC.	No maximum restriction but must comply with the IBC.
Maximum Height Of Unoccupied Structure	No maximum restriction but must comply with the IBC.	No maximum restriction but must comply with the IBC.
Minimum Ground Floor Area Per Residential Unit	N/A	N/A
Minimum Living Area Per Residential Unit Where Allowed Above Commercial	N/A	N/A
Minimum Landscape Requirement	N/A	N/A
Minimum Open Space / Native Area Requirement	N/A	See note at the bottom of this table.

The buffer is designated as such to 'buffer commercial and residential uses. Of the TMB some portions must be left as open space or remain essentially in its current native condition, while some may be used for solar power generation (or other uses allowed in the Table of Uses). See the "Skye Area Plan Technical Manufacturing Buffer Set Back Exhibit" that is in this section of the Area Plan for a depiction of the setback distances from adjacent properties where the land must remain as open-space and where no improvements, buildings or infrastructure will be allowed to be built or improved.

In addition to the restricted set back areas as noted above and on the exhibit: Of the total TMB, 40% must remain as native open space, 40% is allowed to be used for solar energy and related solar facilities and, 20% may be used for solar energy or any other purpose allowed by the Table of Uses.

Skye Area Plan

Table of Bulk and Intensity Requirements
Mixed Use / Residential Districts

	VLD	LD	MD	HD	Active Adult	Civic	Schools
Minimum Lot Area	Single-Family dwelling 15,000 Sq. Ft. Other allowed uses 15,000 Sq. Ft.	Single-Family dwellings and Twin homes 6,000 Sq. Ft.	Single-Family attached, clustered, or stacked units with density controlling # of units.	No minimum lot size with density controlling # of units.	Single-Family attached, clustered, or stacked units with density controlling # of units.	N/A ***	N/A
Maximum Dwelling Units Per Acre	2	4	7	12	6	N/A	N/A
Minimum Lot Width/Frontage	Residential uses 80 Ft. (irregular lots min. 50 Ft. measured at the setback line)	Residential uses 60 Ft. (irregular lots min. 40 Ft. measured at the setback line). Other residential uses N/A	Residential uses 40 Ft. (irregular lots min. 30 Ft. measured at the setback line). Other residential uses N/A	No minimum as allowed by IBC	No minimum as allowed by IBC	60 Ft. unless otherwise approved by DRC, PC and CC ***	60 Ft. unless otherwise approved by DRC, PC and CC ***
Minimum Front Yard	20 Ft.	15 Ft. min. to structure, 20 Ft. min. to garage (providing a 20 Ft. min. driveway)	15 Ft. min. to structure, 20 Ft. min. to garage (providing a 20 Ft. min. driveway).	5 Ft.	5 Ft.	No minimum as allowed by IBC	No minimum as allowed by IBC
Minimum Rear Yard	20 Ft.	20 Ft.	10 Ft.	5 Ft.	5 Ft.	No minimum as allowed by IBC	No minimum as allowed by IBC
Minimum Rear Yard for Rear-Loaded Driveways	N/A	N/A	4 Ft. min. (Driveways should be either 5 Ft. or less or, 20 Ft. or more)	4 Ft. min. (Driveways should be either 5 Ft. or less or, 20 Ft. or more)	4 Ft. min. (Driveways should be either 5 Ft. or less or, 20 Ft. or more)	N/A	N/A
Minimum Side Yard	10 Ft. for residential uses	10 Ft. for residential uses	5 Ft. for residential uses	5 Ft. for residential uses. 0 Ft. if attached	5 Ft. for residential uses. 0 Ft. if attached	As allowed by IBC and must recognize any easements and comply with Chapter 12-080	As allowed by IBC and must recognize any easements and comply with Chapter 12-080
Minimum Side Yard (Corner Lot)	20 Ft.	20 Ft.	18 Ft.	18 Ft.	18 Ft.	As allowed by IBC and must recognize any easements and comply with Chapter 12-080	As allowed by IBC and must recognize any easements and comply with Chapter 12-080
Height	3 stories max.	3 stories max.	3 stories max.	4 stories max.	3 stories max.	As allowed by IBC	3 stories max.
Minimum Ground Floor Area Per Residential Unit	1,500 Sq. Ft. for 1 story. 1,000 Sq. Ft. for multiple stories	1,300 Sq. Ft. for 1 story. 800 Sq. Ft. for multiple stories	800 Sq. Ft. for 1 story. 500 Sq. Ft. for multiple stories	700 Sq. Ft. for 1 story. 300 Sq. Ft. for multiple stories	700 Sq. Ft. for 1 story. 300 Sq. Ft. for multiple stories	N/A ***	N/A
Notes:	*** If this area is not used as a civic/religious site, the area may be used as a MD residential district. All buildings shall be placed outside of all Public Utility Easements.						

SKYE AREA PLAN

RESIDENTIAL ARCHITECTURAL DESIGN GUIDELINES & STANDARDS

PREPARED BY:
P3-PLANNING AND DESIGN SERVICES
2022

AMERICA'S #1 HOME BUILDER SINCE 2002

12351 S. Gateway Park Place · Suite D-100 · Draper, Utah 84020 O 801.571.7101 · F 801.571.7102 · drhorton.com

ARCHITECTURAL DESIGN GUIDELINES AND STANDARDS
TABLE OF CONTENTS

1. INTRODUCTION TO SKYE AREA PLAN

   1.1 Background
   1.2 Purpose
   1.3 How to Understand the Design Guidelines

2. COMMUNITY VISION & CHARACTER

   2.1 Skye Area Plan Vision
   2.2 Design Approach
   2.3 Key Development & Design Patterns
   2.4 Style and Details

3. ARCHITECTURAL STYLES – RESIDENTIAL

   3.1 Purpose
   3.2 Objectives
   3.3 General Building Massing, Form and Orientation
   3.4 Massing for Single Level and Two-Story Homes
   3.5 Front Façade/Entry Scale, Massing and Design
   3.6 Rear/Side Façade Massing and Design
   3.7 Building Height
   3.8 Roof Forms
   3.9 Roof Pitch
   3.10 Roof Span
   3.11 Roof Overhangs
   3.12 Fascia Width
   3.13 Roof Surfacing Materials
   3.14 Roof Appurtenances
   3.15 Main Entry Porches and Front Doors
   3.16 Garages and Garage Doors
   3.17 Windows
   3.18 Exterior Materials

3.19 Primary Wall Finishes
3.20 Accent/Secondary Wall Finishes
3.21 Number of Wall Materials
3.22 Color Palette
3.23 Balconies and Decks
3.24 Gutters and Downspouts
3.25 Chimneys and Vents
3.26 Exterior Lighting
3.27 Residential Address Numbers

4. ARCHITECTURAL GUIDELINES – RESIDENTIAL

4.1 Farmhouse
4.2 Craftsman
4.3 Prairie
4.4 Transitional
4.5 Modern

5. APPENDICES

5.1 Definitions
5.2 Architectural Style Photos and Supplements

Introduction to the Skye Area Plan

1.1 BACKGROUND

Our goal is to create a master-planned, resort style residential community with some high-quality office, professional, retail, and other mixed-use commercial areas. The entire area will be well-connected by trails, walkways and open space corridors that will allow access to both commercial and professional areas as well as to the foothills and other native areas. The residential development area will be a well- planned cohesive community with a variety of home products and price points.

1.2 PURPOSE

The Skye Area Plan Design Guidelines (the “Guidelines”) have been created to provide a range of unique but complimentary architectural styles that together contribute to a unified community design. The Guidelines explain the architectural aesthetics, allowed styles and site considerations that are to guide the design and construction of all new single-family homes and townhomes, and home additions and future remodels within the Skye Area Plan, and in full compliance with the general standards and requirements of Lehi City. Illustrations and photos are included throughout the Guidelines to help convey the thoughts and concepts described in the document’s text. These images are intended to express general design concepts and are not meant to impose specific plans or design solutions.

***These Guidelines are meant to serve as a replacement for Section 37.020 Multi-Family Residential Design Standards specifically for Single-Family and for Townhomes (not including apartments or condos) with the exception of the site design standards (Section 37.020 C) which remains the standard for the Skye Area Plan. Section 37.020 C.1 is also modified due to the steep topography of the Skye Area Plan as follows: The minimum requirement of 50% of the total townhomes that are required to be rear loaded is modified to be 40%. The definition of a rear-loaded townhome is: A townhome that has the appearance of a front door and includes the same types of finished materials as a front elevation that is on the opposite side the townhome's garage door.

The architectural styles and characteristics found herein in the Guidelines shall be incorporated into all single-family and townhome design submittals in the Skye Area Plan. To this end, DR Horton will establish an Architectural Review Committee (ARC) to ensure that the design standards herein are adhered to and enforced. The ARC will be made up of a 3-member panel of DRH employees (or consultants), after 100 homes are closed DR Horton will seek a resident volunteer to participate on the ARC. Upon completion of the development the HOA will review home modifications and landscape plans for existing residences according to the Codes Covenants and Restrictions (CC&Rs).

No development within the Technical Manufacturing Buffer area which occurs consistent with the Skye Area Plan Table of Uses shall be subject to the Guidelines set forth herein, and furthermore, shall not be subject to any review or approval by the Architectural

Review Committee referred to above. Any review of proposed developments within such Technical Manufacturing Buffer area shall be subjected to and shall occur consistent with Lehi City Code.

Please note that all other chapters and sections of the Lehi City Code, as well as Building Code standards, still apply and shall be followed unless specifically modified in this document. This includes all provisions of building review, landscape plans, setbacks, drainage, fire code, etc.

1.3 HOW TO UNDERSTAND THE DESIGN GUIDELINES

The Guidelines are organized into the following chapters and Appendices:

Introduction – Chapter 1 describes the goals and objectives for design within the community. A brief description of the allowed architectural styles (Craftsman, Prairie, Farmhouse, Modern, Transitional) for both single family homes and attached townhomes is also provided.

Community Vision & Character – Chapter 2 describes the overall vision for the Skye Area Plan and the design approach envisioned.

Architectural Design Guidelines – Chapter 3 provides Guidelines and standards for construction, remodeling, renovation, and/or alteration of any building improvements for single family homes and townhomes. This section includes standards on building massing, height, color, and exterior finish design for each of the allowed architectural styles. A description of appropriate architectural influences is included in the chapter.

Architectural Styles – Chapter 4 consists of an in-depth description of each of the architectural styles allowed at S e Area Plan, including the defining characteristics and exterior materials and colors typical of them. The styles, when utilized throughout the community, will create a complimentary palette of homes that will present a fresh, unified approach.

Appendices – The appendices include current and future additions of style designs and details to further assist owners and builders with understanding and implementing the Skye Area Plan vision.

2.0 Community Vision & Character

2.1 THE SKYE AREA PLAN VISION

The vision of the Skye Area Plan is to create a high quality, diverse community with a variety of established architectural styles to provide a fresh and unique blend of designs. This will in turn create a place that is visually appealing and unique in the area while offering residents a variety of complimentary home styles and types to choose from. The Skye Area Plan offers the opportunity to combine an amazing mountain foothill site with quality architecture and planning. The following principles are at the core of the design philosophy as part of the Skye Area Plan:

- Quality architecture and design
- Mix of established architectural styles and types
- Emphasis on simplified design and flexibility with design elements to create unique sense of place
- Traditional neighborhood structure
- Focus on style and creativity over codified specific requirements

2.2 DESIGN APPROACH

Design in the Skye Area Plan draws inspiration from a variety of architectural traditions, which when combined form a visually cohesive, unified community design standard. A diversity of complimentary home types and styles are combined to provide an appealing aesthetic and interesting vernacular architecture.

Five established architectural types are permitted as part of the Skye Area Plan, each with its own set of recognized design elements and criteria. This will result in each street having its own unique mix of homes with its own architectural look and feel within the community, while also forming a cohesive architectural statement. The Guidelines are intended to offer some flexibility in interpretation of the architectural style options to allow for various design approaches.

The overall design aesthetic at the Skye Area Plan is a fresh and updated expression and interpretation of timeless architectural design and traditional neighborhood architecture.

2.3 KEY DEVELOPMENT & DESIGN PATTERNS

The Skye Area Plan incorporates a localized level of design and planning detail to ensure that each home is connected to the community fabric in a meaningful way. Homes and associated entries are oriented to the street, to parks or to open spaces whenever possible to invite outdoor living and foster relationships with neighbors. Front porches and courtyards are incorporated to invite outdoor living and conversation. The pedestrian experience and connection to area trails are important considerations to development and design.

All the architectural styles allowed under the Skye Area Plan offer design elements and features that foster this type of connection. These elements will be encouraged in all the traditional architectural styles as well as the more modern ones.

2.4 STYLE AND DETAILS

The architectural styles approved under the Skye Area Plan are listed in the following sections of these Guidelines. A strict and detailed interpretation of any individual style is not necessary, as long as the basic elements of design, massing and detailing are followed. Diversity of interpretation is encouraged to create an end result of a cohesive dynamic community that characterizes many interpretations of many styles.

Authentic architectural styles and details are encouraged under the Skye Area Plan. A diversity of styles, colors and materials is also encouraged, much as is seen in traditional towns and villages around the country.

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Architectural Design Guidelines

3.1 PURPOSE

This section is intended to provide general design criteria and guidance for development of all single-family homes and townhomes at the Skye Plan Area, including how to interpret and utilize the five architectural design alternatives. The Guidelines are not meant to be overly restrictive, but to provide guidance in the design and implementation of a higher level of design quality and direction.

Although there are five (5) architectural design alternatives in the Skye Plan Area, the overall design approach is generally simple in form, regardless of the style. There are few overly complex roof structures, architectural features or excessive use of siding types or colors. New homes should be cohesive with existing homes in their simplicity, in order to maintain and enhance the look and feel of the neighborhood. Building form and massing should be authentic to the style and location, and sensitive with regard to scale.

Residential architecture within the Skye Area Plan should be centered on an authentic, integrated design approach. Residential design standards have been established that apply to all of the residential units without regard to their particular style. These standards, found in the following sections, carry across all architectural styles and help to foster the quality standard for which the project will be known.

3.2 OBJECTIVES

The Skye Area Plan design aesthetic is intended to be authentic and comprehensive, to create a unified mix of homes in the community. Single-family homes and townhomes will comprise a variety of one to two story dwellings, which should be integrated seamlessly into the neighborhood.

In general, the active living portions of the house or townhouse shall be pulled forward with articulated design elements so that they dominate and invigorate the street scene. Front entries and porches, terraces and main living areas shall be oriented to the street where possible.

A major objective is for the authentic styles of architecture to be emphasized that are compatible yet varied enough to create visual interest and diversity. An engaging and dynamic streetscape should be created through variation in architectural styles, floor plans, and elevation plotting.

Groupings or “pods” of same-style architecture are preferred when possible in order to create a more cohesive streetscape. However, no adjacent homes shall be the same floor plan or the same color scheme. Across the street, exact elevation groupings must be staggered by at least one (1) lot from the exact home elevation across the street.

Exterior color variation is encouraged across and within each architectural style, assuming the colors are appropriate to that particular style. Two homes carrying the same color scheme shall be

separated by at least one home with different color schemes in order to provide variation along the street and to maintain individual distinction for each home. Each architectural style shall have five approved color schemes.

3.3 GENERAL BUILDING MASSING, FORM AND ORIENTATION

It is important that the massing of homes and townhomes in the Skye Area Plan be scaled in such a way that they relate to the relative size of the lots located there and harmonize with the area as much as possible.

The massing of homes and townhomes should be expressed simply and authentically in both mass and form. The building form, placement and architectural detailing greatly impact how a residential structure contributes to the perception of a quality, inviting neighborhood. Placement of homes should respect existing landforms and contour as much as possible with the existing slope and land massing.

The buildings must not become overpowering. Changing the planes of walls, changing direction, and providing some variety in the roof form provide diversity and visual interest. Massing should generally step down from a central roof form or massing element. Simple box massing shall be avoided. Long expanses of walls or roof ridgelines and large expanses of unbroken single or two-story facades are not permitted. Varying heights are encouraged.

3.4 MASSING FOR SINGLE-LEVEL AND TWO-STORY HOMES

As mentioned, varying heights of single and two-story homes should be utilized to create diversity and visual interest. Single story homes should utilize one or one and a half level massing depending on the architectural style to create a staggered height along the street. Elements such as shed roofs, dormers, roof gables and towers can provide such relief and emphasize a particular style at the same time. Façade breaks can also provide appropriate relief for single story massing.

With two-story homes, the form of the building should be seen as a series of interlocking masses rather than a multi-level box. Various design elements from each architectural style can provide such relief. Second story and higher massing shall be stepped down and recessed to improve the bulk of the massing and improve the street scene. Unbroken two-story façade faces shall be avoided on the front elevation of the home. The utilization of at least one of the following shall be incorporated to soften the massing or each home - porches and porch roofs, balconies, pop out features, dormers and/or other design elements.

3.5 FRONT FAÇADE/ENTRY SCALE, MASSING AND DESIGN

The front façade and entry elements are probably the most critical components of quality home design, as they provide the focal point to the home and help create the relationship with the street and surrounding properties. The entry should be human scaled and appropriate to the larger massing of the home as well as embrace the architectural style. Front entries should emphasize and reinforce the front porch and door area as single-story elements.

3.6 REAR/SIDE FAÇADE MASSING AND DESIGN

Rear and side elevations of homes and townhomes are visible from adjoining homes and streets and should be given ample attention and detailing in massing, design and detail. This is especially important with the exposed side elevation of homes on corner lots. Massing on sides and rear should be consistently proportioned with the rest of the home. Design elements of the selected architectural style shall be consistently applied whenever possible to create a cohesive design for the home. This style shall be expressed authentically around the perimeter, and materials and colors shall be consistently applied whenever possible. Corner-lot homes shall have the same material applications as the primary street façade for consistency across all streetscapes.

3.7 BUILDING HEIGHT

Building heights within the Skye Area Plan must comply with Lehi City Code and Building Code. In addition, the building height and expression should be consistent with the chosen architectural style of the home.

3.8 ROOF FORMS

The following roof types are permitted within the Skye Area Plan (depending on architectural style of home):

1. Partial hip roof
2. Gable roof
3. Full hip roof
4. Flat roof
5. Shed roof or Split shed roof

The following roof types are not permitted:

1. Conical roof
2. Mansard roof
3. Fake Mansard roof
4. Gambrel roof

Roof form and shape is important in terms of expressing the architectural style of the home and organizing the massing elements. The objective in determining roof shape is to enhance the style and establish a visual order to the home.

3.9 ROOF PITCH

Roof slopes at the Skye Plan Area should generally be between 2/12 and 8/12. Refer to each of the architectural styles for guidelines. Flat or shed roofs are appropriate on Modern style homes or as possible accent roof areas on other homes, depending on style.

3.10 ROOF SPAN

In general, long, unbroken roof spans are discouraged. Roof massing should enhance the style of the home. Roof variations on the front of the homes shall be permitted and suggested.

3.11 ROOF OVERHANGS

All of the approved architectural styles allow for roof overhangs. Roof overhangs protect walls and wall openings from rain and snow and contribute to a building's character.

Roof overhangs must be contained entirely within the property. The width of roof overhangs should be consistent with the architectural style of the single-family or multifamily home, and generally range between 6" and 24". Overhangs of up to 36" may be allowed if they are consistent with the architectural style of the home. (i.e. Prairie Style)

3.12 FASCIA WIDTH

Roof fascia, when utilized, must have a minimum width of 4" – 12". The incorporation of roof fascia must be consistent with the chosen architectural style of the home or townhome.

3.13 ROOF SURFACING MATERIALS

Roof surfacing materials are important as a means of articulating the architectural style of a home and of blending the new construction into the existing character of the area. Careful selection of these materials can help to relate the buildings to their surroundings.

From a functional standpoint, the choice of materials depends on the slope and assembly of the roof. The objective is to choose roof surfacing materials that help the building blend with its site and its climate conditions, and which are also functionally appropriate. All roofing surfacing materials should be non-reflective.

The following materials may be used as roof surfacing materials without coating or other finish:

- Asphalt
- Solar shingles
- Eco-shake
- Ceramic tiles (if appropriate to style)
- Architectural composition shingles
- Corten steel
- Copper
- Zinc
- “Green” roofs
- Steel
- Corrugated metal

Roof murals are not permitted. All roof flashing must be of a color harmonious with roof and/or upper wall surfacing. All types of barrel or “s” tiles, asphalt roll roofing, or reflective metal surfaces are prohibited.

3.14 ROOF APPURTENANCES

Roof appurtenances, such as dormers, clerestories, and skylights, can create interesting, pleasant interior spaces. Their location on the roof is critical to avoiding an over-decorated, visually confusing appearance.

Snow diverters and retainers may be necessary installations on roofs. They should be handled as an integral part of the roofscape. Rooftop access stairways, elevator shafts, vent shafts, mechanical equipment areas, antennae, etc., shall be confined within the roof and within roof dormers, and shall not protrude from the roof to form awkward-looking appurtenances. Cold roof ridge ventilators are permitted.

Skylights are allowed if they appear to be integral to roof structure; skylights may not be highly reflective and must be placed flush against the roof. They should not extend to the eave line. Bubble type sky lights or those that protrude from the roof are prohibited.

Chimney structures, if used, must be complimentary to and proportional with the massing, style and exterior materials of the home. Chimney caps should be in proper proportion with the chimney structure.

All pipe penetrations shall match the flashing or roofing.

3.15 MAIN ENTRY PORCHES AND FRONT DOORS

Main entries and front porches should be prominent and integrated into the architecture of the home as a primary focal point. Porches should be covered with support posts, columns and railings that match the design of the home. Wrap-around porches are encouraged on corner lots. If possible, porches should be deep and wide enough for the placement of chairs to create a gathering spot for conversing with neighbors. Porch width should be proportional to the width of the front of the home.

The front door and entry should be oriented to the street and front sidewalk whenever possible, but side entry front doors are also allowed. The door should be made of quality materials and be designed to complement the architectural design of the home.

3.16 GARAGES AND GARAGE DOORS

Garages should be set back if possible and secondary to the front entry area of the home. The visual impact of garage massing should be minimized from the front view as much as possible. Garage size and capacity should be proportional to the size of the lot and should not dominate the front elevation of the home.

Garage doors should be comprised of quality wood or metal, and should complement the design, exterior materials, and colors found on the home. The door should be appropriate to the architectural style of the home. Architecturally appropriate windows are encouraged to be incorporated in garage doors to provide natural light and visual interest.

3.17 WINDOWS

Windows should be appropriately scaled to the massing and architectural style of the home. They should be recessed when possible and encourage natural light and ventilation. Windows should be generally of the same style and pattern and not appear to be placed randomly.

Windows may be quality constructed of wood, wood clad with color-fast vinyl, aluminum, or fiberglass. Metal or metal-covered windows are permitted if coated with an approved finish. All-vinyl windows are also permitted.

Windows should generally be rectangular or square in shape. Angular windows that follow the slope of the roof are also allowed subject to the architectural style of the home. Circular, triangular, elliptical, round, and “fishbowl” windows are not permitted.

3.18 EXTERIOR MATERIALS

A critical component of articulated architectural design is the selection of appropriate exterior materials. The exterior materials of a home should be cohesive and highlight the architectural style. Design, textures, and materials should be visually appealing and complimentary. Corner-lot homes shall have the same material applications as the primary street façade for consistency across all streetscapes. This includes lots backing and facing major roads and open spaces.

Exterior siding elements should incorporate quality materials and a variety of complimentary colors and accents consistent with the architectural style of the home. Exterior material transitions should occur at inside corners or appropriate massing breaks rather than at outside corners. With the exception of corner lots, façade materials shall wrap a minimum of 2’ on side elevations. Exterior columns and supports should appear to be visually proportional to the roof features they are supporting.

Acceptable exterior material wall finishes are shown in the sections below. Prohibited exterior materials include the following: plastic or vinyl siding, concrete block, plywood siding, aluminum siding, lava rock, asphalt siding, and slumpbloc weeping mortar.

3.19 PRIMARYWALL FINISHES

The exterior wall materials should convey a sense of scale and harmony with the selected architectural style.

Approved materials include:

- Wood siding or wood shingles
- Stone
- Stucco
- Brick, new or used
- Synthetic stone
- Corrugated steel
- Plate steel
- Concrete or composite siding
- Adobe

3.20 ACCENT/SECONDARY WALL MATERIALS

Secondary or accent materials can be used to enhance the appearance of the home and help strengthen the architectural design. Accent materials should be cohesive with the primary wall materials and other design elements of the home design. Accent materials should be used to enhance the architectural style of the home.

Accents used will vary as the architectural styles all have different identifying features (as described in the previous section). The colors and finishes of accent materials should be consistent with other exterior materials.

Approved secondary materials include:

- Wood siding or wood shingles
- Stone
- Stucco
- Brick, new or used
- Synthetic stone
- Corrugated steel
- Plate steel
- Concrete or composite siding
- Adobe

3.21 NUMBER OF WALL MATERIALS

Changes in wall material can lend visual interest to a building; too many changes can make the wall visually discordant. The objective is to create walls that are interesting, but not in competition with their surroundings.

Individual walls can be surfaced with two or three (3) different materials, depending on the architectural style of the home. Some architectural styles, such as Modern, may utilize only two exterior materials, while others such as Craftsman should incorporate three.

3.22 COLOR PALETTE

In general, exterior colors should be appropriate for the architectural style of the home and enhance the related design features. For exterior colors, the predominant tone should be toward hues that are not overly bright or flashy, regardless of the style. This will help the home to contrast yet be complimentary with the other homes on the street.

Slightly brighter tones may be utilized on select architectural elements such as front doors but should still be complimentary with the main exterior home colors. Entry door colors shall be approved by the Architectural Review Committee.

3.23 BALCONIES AND DECKS

Balcony and deck designs should be simple and consistent with the architectural style of the home. Balconies and decks should be integrated into the massing of the home and not appear as if they were added on later.

The use of long vertical or horizontal bands of balcony space are discouraged. Balconies should be proportional to the front façade of the home and enhance, not detract, from the main entry area.

Deck columns and railings should also match the design of the home. Designs such as Cottage or Craftsman should have more traditional railings, while Modern could incorporate more modern railings such as cable. Columns should in general be proportional to the roof areas they are supporting. Deck materials should generally consist of wood and/or composite.

Exterior staircases should incorporate materials and finishes that match those on the home. Staircases must be contained within building pads and outside setback areas.

3.24 GUTTERS AND DOWNSPOUTS

Gutters and downspouts, where utilized, shall be integrated into the design of the home as a continuous architectural element. They should not be visually intrusive to the overall design aesthetic of the home.

Gutters and downspouts should be comprised of metal or aluminum and match the exterior color scheme of the home. Plastic gutters and downspouts are not allowed.

3.25 CHIMNEYS AND VENTS

When utilized, exterior chimney elements must be proportional and consistent with the architectural style of the home and with approved exterior materials and colors. “False” chimneys used for ventilation must be consistent with real chimneys in look and proportions.

Chimney and roof vents must be painted to blend in. Reflective and shiny metal finishes may not be used and shall meet the requirements of section 3.14.

3.26 EXTERIOR LIGHTING

Exterior light fixtures should be appropriate to the architectural style of the home and enhance the overall design. Light fixtures should be limited to what is needed for safety and security but not be excessively distributed.

Exterior light fixtures are encouraged to be night sky-friendly, with light sources shielded from direct view and directionally pointed downward. Such compliant fixtures are readily available in all of the architectural styles offered in the Skye Area Plan.

3.27 RESIDENTIAL ADDRESS NUMBERS

Each residence should maintain address identification numerals in plain view on the front elevation of the home. Numbers should be proportionally appropriate to the massing of the front entry area of the home as well as the architectural style.

Address identification should not be placed on freestanding signs or markers, nor painted on curbs. The numbers should be mounted near the front entry where they can be seen from the street and shall meet the IRC R319.1 requirements.

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4 Architectural Styles

The five architectural styles allowed under the Skye Area Plan will together create a community that is visually varied but cohesive, with buildings that complement one another but still have individual expression. This mix of styles builds on the history and long-term success of traditional neighborhoods in town planning, forming a desirable community that will continue to remain relevant. Each style is encouraged to incorporate a simplified design without overly expressed forms, colors and details. The style of the home will determine the architectural expression utilized, including roof pitch, window size and shape, and other architectural detailing.

Allowed architectural styles for Skye Area Plan single-family homes and multi-family housing include the following:

- Farmhouse
- Craftsman
- Prairie (n/a for multi-family)
- Transitional
- Modern

Owners and Builders are encouraged to utilize a mix of styles and variety of plans and elevations. Multi-family buildings to be a single style per building. Groupings or “pods” of same style architecture to be used throughout the community where possible in order to create a more cohesive streetscape. While architectural styles can be grouped, specific plans and elevations shall be varied in order to avoid repetitive homes adjacent to or across the street from one another.

4.1 FARMHOUSE

Background and Characteristics

Known for warmth, invitational draw and traditional design, the farmhouse-style has been popular for a very long time. The roots of farmhouse architecture have humble beginnings in the modest rural houses built by American pioneers throughout the 1700s and 1800s. Farmhouse-style homes were traditionally simple and one to two story in form, which made additions on the sides or back quite easy for growing families. The style usually features a front porch that connects the inside to out.

The modern take on this design is slightly stepped up from tradition, with clean contemporary lines and simplistic features. The front porch is still integral to the design. Vaulted ceilings and larger windows are now common to the style.



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Main Elements of Farmhouse Style design shall include the following:

- Simple forms without excessive ornamentation
- 1 to 2 stories with steeper pitched roofs
- Forward facing gable roof with side wings that are shed, gabled or hip forms
- Large covered front porch with lower slope (2:12 – 4:12), sometimes wrap around; entry and porch oriented to the street
- Simple siding types, usually horizontal/clapboard siding, stucco or vertical board and batten
- Windows are generally vertically oriented single or double-hung windows; bay windows are also utilized; windows centered are common
- Simple square posts/columns and railings (see standard Farmhouse column design)
- Traditional Farmhouse exterior color palette should be single color with additional trim color is common. Although main color and trim can be the same in certain instances. Colors and trim schemes will be submitted and approved by the ARC.
- Typical main roof pitches shall be 6:12 to 12:12 slopes

*Architectural Review Committee shall review variances on a case-by-case basis.

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4.2 CRAFTSMAN

Background and Characteristics

The American Craftsman style developed out the British Arts and Crafts movement, which dates back to the 1860s during the industrial revolution. This movement included not only architectural design, but interior design, landscape design, applied arts and decorative arts. The Craftsman architectural style was most widely used in small to medium sized Southern California single-family homes from about 1905, so the smaller scale Craftsman style became known alternately as “California bungalow”. The style spread throughout the country and remained popular into the 1930s and has seen a recent revival.

Craftsman style is known for traditional simplicity, the use of natural materials, and moderate detailing. The style incorporates a visibly sturdy structure of clean lines and a prominent front porch with tapered columns. The roof has a shallow to mid-level pitch on a 1 ½ to 2 story home. Exterior materials include brick and hand-crafted wood, or stonework are common.



Main Elements of Craftsman style design shall include the following:

• Thicker, accentuated base with thick tapered columns supporting front porch (see standard Craftsman style columns)
• Gabled roofs incorporating dormers and/or deep overhangs (2’ minimum)
• Asymmetrical massing with horizontal proportions
• Expressive but simplified elements such as exposed rafters, knee braces, brackets and tapered columns (see standard Craftsman style columns)
• Double hung windows are common, larger horizontal windows utilized in front
• Stucco, stone, brick and shingles are common exterior materials, usually n t all used together (limit palette to a single masonry and up to two “siding” materials)
• Single, rectilinear entry door is common
• Traditional Craftsman colors are appropriate. Colors and trim schemes will be submitted and approved by the ARC.
• Typical main roof pitches shall be 4:12 to 8:12 slopes

*Architectural Review Committee shall review variances on a case-by-case basis.

4.3 PRAIRIE

Background and Characteristics

The Prairie style emerged in Chicago around 1900 from the work of a group of young architects, including Frank Lloyd Wright, and was inspired to evoke the native prairie landscape. The architects melded the ideals of the Arts and Crafts movement, with its emphasis on nature, craftsmanship and simplicity, and the work and writings of architect Louis Sullivan.

This style is defined by a strong horizontal orientation, hip roofs, well-defined front porches and simple detailing found in simple horizontal banding and Arts & Crafts-style divided light windows.



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Main Elements of Prairie style design shall include the following:

- One or two-story with strong horizontal orientation and banding, usually below windows
- One-story projections off of two-story center is common
- Lower-pitched roof, usually hip form, broad, overhanging eaves (2' min. but as much as 3')
- Wide, prominent front porches are common
- Ribbons of windows emphasize horizontality of overall design
- Entry door and porch integrated into design, thick square columns (see standard Prairie style column design)
- Windows done in horizontal groupings in divided light form; sometimes wrap around corners
- Brick, stucco or siding (horizontal only) exterior, railings can be masonry walls
- Simple, less bright earth-tone colors are best. Colors and trim schemes will be submitted and approved by the ARC.
- Typical main roof pitches shall be 3:12 to 6:12 slopes

*Architectural Review Committee shall review variances on a case-by-case basis.

4.4 TRANSITIONAL

Background and Characteristics

Transitional architectural style is a blending of Traditional style with more contemporary or modern design styles. The combined styles create a cohesive feeling that facilitates modern living.

Transitional homes are classic with a contemporary twist. They combine elements of both traditional and modern styles to create a seamless balance between both worlds. The result is an elegantly enduring design that boasts comfort, clean lines, and a strong presence. Traditional style is updated with simplified elements, clean lines, larger windows, and an inviting overall look and feel.



Main Elements of Transitional style design shall include the following:

- Elements of multiple styles, traditional mixed with contemporary
- Clean lines and minimalistic approach
- Oversized, often asymmetrical window arrangements
- Gables roofs for primary and upper stories, and hip or flat roofs for lower and secondary elements are typical
- Masonry bases with siding and/or stucco at upper masses
- Porch posts can be steel, stucco, wood or have stone clad bases
- Wide variety of colors possible, from traditional to lighter and brighter, but higher contrast color schemes are common. Colors and trim schemes will be submitted and approved by the ARC.
- Typical main roof pitches shall be flat roof to 12:12 slopes
- Large gable faces to be accented with “slit” style gable vents

*Architectural Review Committee shall review variances on a case-by-case basis.

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4.5 MODERN

Background and Characteristics

Modern architecture (or Contemporary architecture) evolved from the early Arts and Crafts movement and later the Prairie home movement and progressed over time along with improvement in contemporary building techniques. It has been around for most of the last century and responded and adapted to the progress of modern technology.

Modern homes are designed with simple, clean lines, open spaces with large windows, and a strong connection between indoors and outdoors. Ornamentation is limited, letting the form and function of the structure stand out. Natural light and simple, natural exterior materials are emphasized. Roof forms are simplified as well, with flat or gently sloped roofs incorporated in the minimalist design.



Main Elements of Modern style design shall include the following:

- Emphasis on indoor/outdoor living and functional living spaces
- Simple clean lines and massing of home
- Roof forms are flat, shed, or simple gable in form (no hip roofs)
- Large windows (no mullions or divided lights) offer connection to outdoors and bring in natural light; corner windows are common as are asymmetrical ones
- Porch columns have focus on structure and lightness, such as steel, wood or siding
- Stucco, masonry, or siding (typically horizontal) exterior palette shall be used
- Lighter, brighter home colors with higher contrasting schemes shall be used. Colors and trim schemes will be submitted and approved by the ARC.
- One masonry and two exterior siding and/or stucco materials are appropriate
- Typical main roof pitches shall be flat roof to 6:12 slopes

*Architectural Review Committee shall review variances on a case-by-case basis.

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5 Appendices

5.1 DEFINITIONS

The terms defined herein shall have meanings as defined below, as set forth in the Design Guidelines for the Skye Area Plan:

1. Architect: A licensed Architect or Designer engaged by an Owner to provide professional architectural services

2. Association: The Skye Area Plan Homeowners Association.

3. City: City of Lehi, Utah.

4. Contractor(s): An Owner's licensed and insured general contractor or builder (including any and all of such Contractor's personnel, subcontractors, agents, suppliers, and other Person working in conjunction with the construction of improvements on Owner's lot.)

5. Developer: The DR Horton development team, their successors, and assigns, also referred to in the governing documents as the "Declarant" for the Project.

6. Landscape Architect: A licensed Landscape Architect engaged by an Owner to provide professional landscape design services for a home or building project.

7. Plans: Any and all site plans, floor plans, elevations, drawings, specifications, models, photos and/or other items submitted.

8. Project: All subject areas included in the Skye Area Plan community.

9. Site: The specific Lot or parcel of real property within the Project.

10. Survey: A technical, topographical study of a Site by a Licensed Surveyor required as part of the home design process.

Skye Area Plan Parking Requirements

Parking stalls that are accessed from the city public streets but that are perpendicular with the street shall be allowed to be counted as off-street parking and can be used to meet the city's guest parking requirements.

All other parking requirements shall meet city code as of date of the recording of this document.

Mixed Use 1&2 Residential Parking Requirements

To create more variety in parking options and offer a more desirable experience for the residents, an appropriate mix of enclosed garage spaces will be provided. Including, covered parking spaces, surface parking spaces, EV charging spaces, bicycle and/or micro-mobility spaces, and interior bike storage spaces. Greater variety in parking offerings leads to more options, both financially and in lifestyle choices, for residents. Optimizing the mix of parking styles and options will also help enhance the overall look and experience of the community and will increase open space, site connectivity, visibility, safety, function, and aesthetics. Parking for residential areas of the mixed use zones shall meet the following parking requirements:

- Min. 80% of units shall have access to either an enclosed garage or a covered parking space.
- Min. 60% of the total enclosed garages and covered parking spaces shall be enclosed garages.
- Max. 10% of the total number of parking spaces shall be compact surface parking.
- Min. of (1) EV charging station for every (60) units shall be provided.
- Bicycle and/or micro-mobility parking stalls shall be provided at a min. of 10% of the total vehicular parking stalls required.
- Min. 25% of bicycle parking stalls provided shall be in an interior bike storage area.

Skye Area Plan Access Requirements

The required number of site vehicle access points (roads) to multi-family sites shall be determined by Appendix D Fire Apparatus Access Roads – Section D106, of the International Fire Code edition adopted by the City of Lehi.

Skye Area Plan
Amendment #2

BUFFERS AND OPEN SPACE SECTION

7/18/2023

Prepared By:

ENGINEERS
SURVEYORS
PLANNERS

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(801) 798-0555

PROJECT BUFFERS

NORTH

The north side of Skye will include residential development located in the foothills above the Texas Instruments facility. This upper development will be buffered entirely by native hills and vegetation, parts of which will be located and preserved in a land conservation easement. Landscape buffers will be placed along the edge of development as necessary to provide fire access roads. All lots that are located adjacent to native vegetation must also comply with all Wildland Urban Interface and residential fire sprinkler regulations.

EAST

Highland Boulevard and an existing residential subdivision buffer the Skye area plan to the east. There will be three access points on Highland Boulevard, and a masonry fence and landscaping will be installed along the road. Larger estate lots will also border the existing subdivision and provide a landscape buffer with the larger backyards. The east side of the development will also be buffered by a trail connection.

SOUTH

The south side of the development will be buffered by the SR-92 highway and by an additional Technical Manufacturing buffer that will maintain native vegetation separating the development from the Texas Instruments facility. A park which will also detain storm water will provide a buffer of open space between the development and the SR-92 highway.

WEST

The west side buffer consists of existing residential developments and roadways. A triangular parcel on the west will remain as unimproved open space and will act as a buffer between an existing subdivision and the new development. An open space will also be maintained on the west of the project to act as a similar buffer to the Canyon Hills development.

INTERIOR BUFFERING

No buffers will be used between separate residential pods because they will be built in ways that are harmonious with each other. However, a 12’ landscape barrier will be required between all commercial and residential areas unless otherwise approved by the reviewing departments and Planning Commission. Privacy fencing will also be installed per city standard to separate commercial and residential areas.

OPEN SPACE AREAS

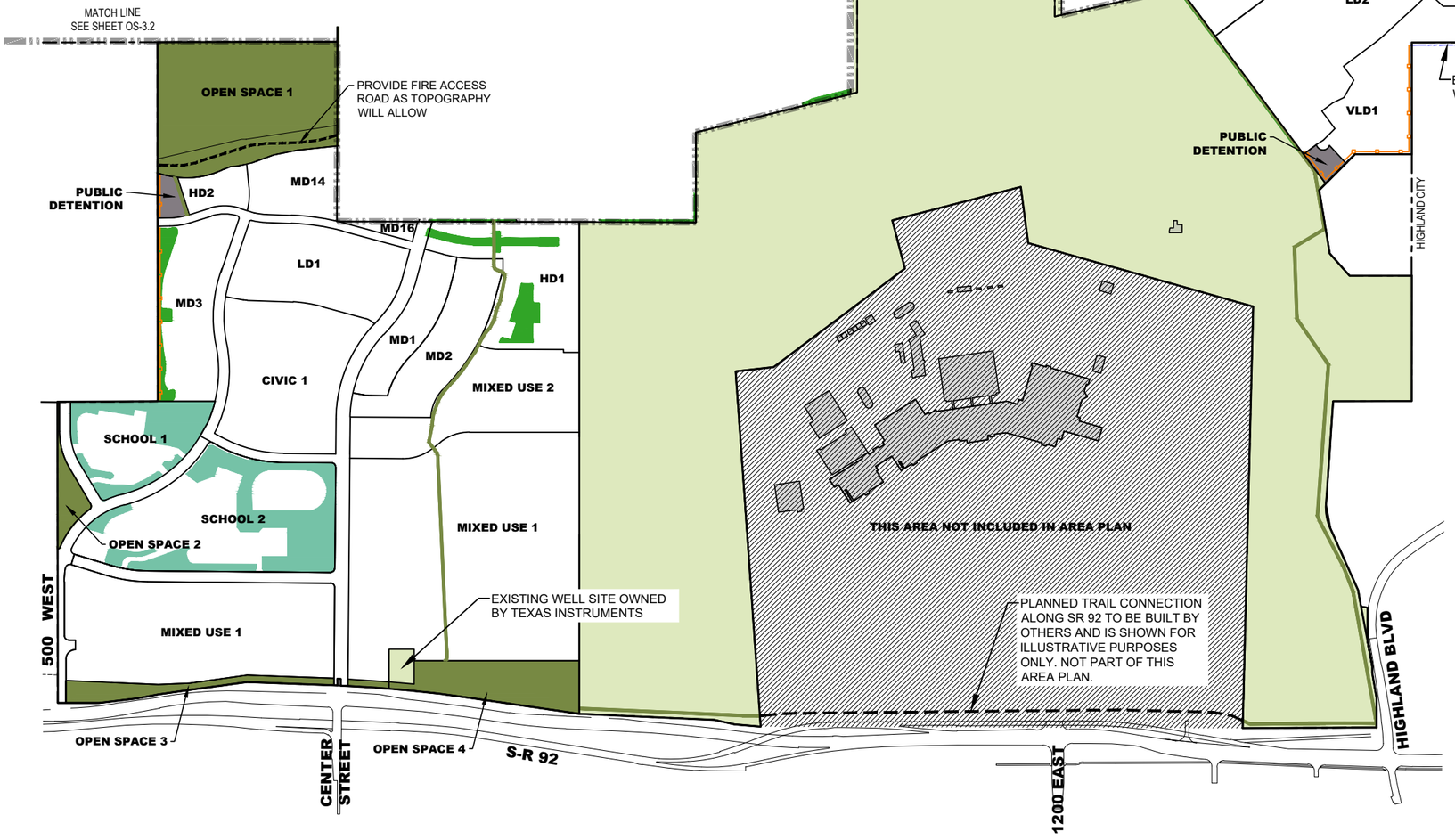
Improved and unimproved open space will be placed in pod areas throughout the development to provide beauty and recreation to residents. A portion of this will be dedicated as public open space and the rest will be designated as privately owned and maintained. The intent of the project is to have usable open space dispersed throughout the development so that there is open space within ½ mile of all residences. Public open space parcels will be dedicated to the city as adjacent pod areas are developed. Any disturbed land shall be hydro-seeded according to the re-vegetation detail shown on Sheet OS-3.1 prior to the dedication. Once dedicated, the public parcels shall not be disturbed with any construction equipment or material, except as approved by the city. The table in Appendix A provides a summary showing the approximate amount of open space that will be provided throughout the project based on the latest concept plan. Refer to Sheets OS-3.1 - OS-3.3 for a map showing the design intent of the buffers and open spaces.
Private parks and private open spaces shall be platted and developed simultaneously and proportionately with the entire development.

TRAILS

Trails will be constructed throughout the project to provide connectivity from existing trails on the south up to the city's master planned trails to the north. All master plan trails will be constructed by the developer. Any master plan trails that do not sit along roadways will be reimbursed by Lehi City. All trails shall be designed and constructed as each adjacent phase develops. The development of any given phase shall serve as a trigger to develop the adjacent section of trail. Refer to Sheets OS-4.1 - OS-4.3 for the locations of all planned trails within the development as well as required cross section standards for all types of trails.

NOTES

1. OPEN SPACE WILL BE PROVIDED THROUGHOUT THE DEVELOPMENT SO THAT ALL DWELLINGS ARE LESS THAN 1/2 MILE FROM THE NEAREST OPEN SPACE AMENITY.
2. REFER TO SHEET OS-4.1 and OS-4.2 FOR LOCATION AND DETAILS OF ALL MASTER PLANNED TRAILS IN THE DEVELOPMENT.
3. ALL CUT SLOPES AND DISTURBED OPEN SPACE AREAS TO BE RE-SEEDED ACCORDING TO SEED MIX DETAIL PROVIDED ON THIS SHEET.
4. ALL LOTS LOCATED NEAR THE WILDLAND URBAN INTERFACE SHALL MAINTAIN AT LEAST A 30' BUFFER BETWEEN NATIVE VEGETATION AND NEW STRUCTURES. ANY BUILDINGS THAT DO NOT MAINTAIN THIS BUFFER WILL BE REQUIRED TO INSTALL FIRE SPRINKLERS.
5. IN LIEU OF MAKING IMPROVEMENTS TO OPEN SPACE 2, THE DEVELOPER WILL BE ALLOWED TO MAKE ADDITIONAL OPEN SPACE IMPROVEMENTS ELSEWHERE WITHIN THE SKYE AREA PLAN AS MUTUALLY AGREED UPON BY BOTH THE CITY AND THE DEVELOPER.



OPEN SPACE MAINTENANCE TABLE

OPEN SPACE ID	LANDSCAPE TYPE	LANDSCAPE MAINTAINED BY
1	NATIVE VEGETATION	CITY
2	NATIVE VEGETATION	CITY
3	NATIVE VEGETATION	CITY
4	LANDSCAPED*	CITY
5	NATIVE VEGETATION	CITY
6	NATIVE VEGETATION	CITY
7	NATIVE VEGETATION	CITY

* LANDSCAPED AREAS ARE TO BE IMPROVED WITH EITHER GRASS/SPRINKLERS OR APPROVED EQUIVALENT VALUE OF OPEN SPACE IMPROVEMENT.

RE-VEGETATIVE SEED MIX

SPECIES	%
SLENDER WHEATGRASS	15
WESTERN WHEATGRASS	17.5
BLUEBUNCH WHEATGRASS	16.25
SHEEP FESCUE	3.5
SANDBERG BLUEGRASS	2.75
INDIAN RICEGRASS	10
RUBBER RABBIT BRUSH	5
WESTERN SAGE	5
BLANKET FLOWER	5
BLUE FLAX	10
CALIFORNIA POPPY	10

NOTES:
1. SEEDING RATE IS 20 LBS PER ACRE
2. SEEDMIX PROVIDED BY GRANITE SEED, LEHI, UT

LEGEND

- TECHNICAL MANUFACTURING BUFFER
- IMPROVED PRIVATE OPEN SPACE
- PUBLIC OPEN SPACE
- SCHOOL GREEN SPACE
- 6' PRIVACY FENCE
- MASONRY WALL - PROPOSED
- MASONRY WALL - EXISTING

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BUFFER & OPEN SPACE PLAN

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3 -
4 -
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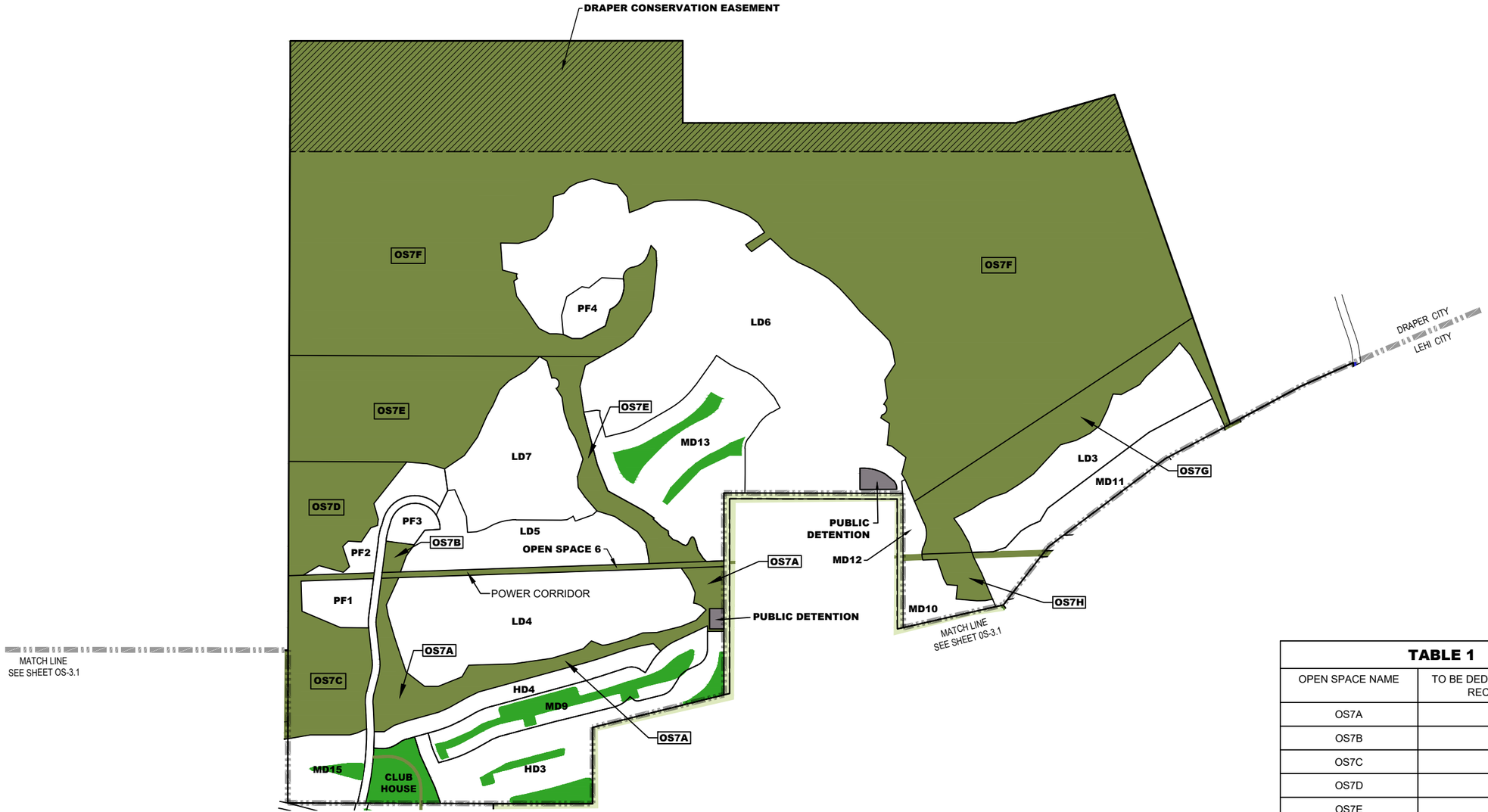
LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 8/3/2023

SHEET
OS-3.1



NOTES

1. OPEN SPACE 7 WILL BE DEDICATED TO THE CITY ACCORDING TO THE SCHEDULE IN TABLE 1 ON THIS SHEET. OPEN SPACE PODS SHALL BE DEDICATED AT THE TIME OF RECORDING OF THE ADJACENT PLAT.
2. ALL OF OPEN SPACE 7 SHALL BE PLACED IN A CONSERVATION EASEMENT.
3. OPEN SPACE 7 BOUNDARIES ARE APPROXIMATE AND WILL BE DETERMINED AT FINAL PLAT. THE TOTAL AREA FOR OPEN SPACE 7 SHALL NOT BE LESS THAN 500 ACRES.

TABLE 1

OPEN SPACE NAME	TO BE DEDICATED AT TIME OF RECORDING OF:
OS7A	LD4
OS7B	PF3
OS7C	PF1
OS7D	PF2
OS7E	LD7
OS7F	LD6
OS7G	LD3
OS7H	MD10
OS6 (WEST SECTION)	LD5

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SHEET
OS-3.2



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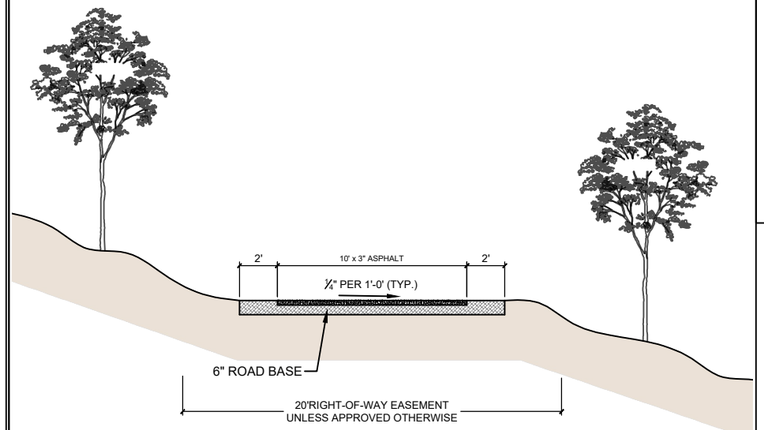
SHEET
OS-3.3

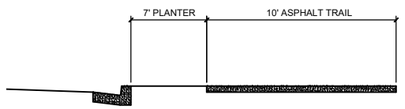


NOTES:

1. CROSS SECTION MAY BE ADJUSTED DEPENDING ON EXISTING CONSTRAINTS AS APPROVED BY THE LEHI CITY ENGINEER.
2. 2' COMPACTED SHOULDER MUST SLOPE AT A 6:1 MAX SLOPE ON EACH SIDE OF THE PAVED TRAIL.
3. SLOPE TRAIL AS NECESSARY TO AVOID PONDING. PROVIDE DRAINAGE IMPROVEMENTS ALONG TRAIL AS REQUIRED TO CONVEY POSSIBLE STORM FLOWS.
4. CONTRACTOR SHALL REMOVE ALL FOLIAGE, ROOTS AND WASTE MATERIALS WITHIN A 12" ZONE BENEATH BASE COURSE. 12" ZONE SHALL THEN BE COMPACTED PRIOR TO PLACEMENT OF ROAD BASE COURSE. CONTRACTOR SHALL ALSO PLACE GROUND STERILANT PRIOR TO PLACEMENT OF ROAD BASE.
5. ALL PEDESTRIAN TRAIL DESIGN PLANS SHALL BE REVIEWED AND APPROVED BY LEHI CITY STAFF PRIOR TO CONSTRUCTION.

LEHI CITY STANDARD TRAIL DETAIL

DETAIL 1

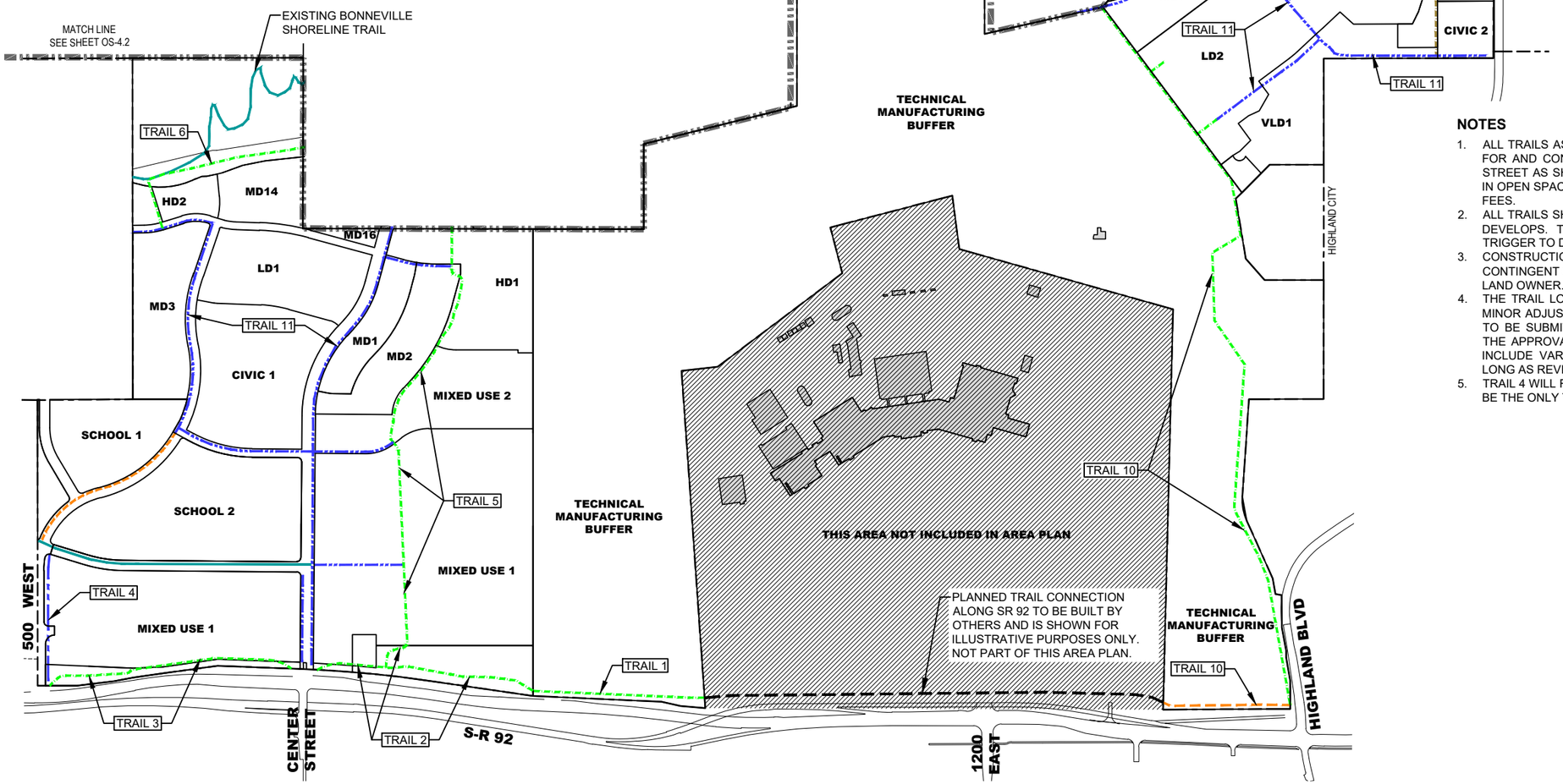


DETAIL 2 - R.O.W. TRAIL

TRAIL MAINTENANCE TABLE

TRAIL ID	LOCATION DESCRIPTION	ROW WIDTH (FT)	TRAIL WIDTH (FT)	TRAIL SURFACE	TRAIL MAINTAINED BY	LANDSCAPE TYPE	LANDSCAPE MAINTAINED BY
1	T/M BUFFER ZONE - WEST SIDE	20	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
2	OPEN SPACE 4 PARCEL	20	10	ASPHALT	CITY	LANDSCAPED*	CITY
3	OPEN SPACE 3 PARCEL	20	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
4	EAST SIDE OF 500 W	17	10	ASPHALT	CITY	LANDSCAPED*	HOA
5	MIXED USE 2 PARCEL/HD1 PARCELS	20	10	CONCRETE/ASPHALT	CITY	LANDSCAPED*	HOA
6	OPEN SPACE 1 PARCEL	20	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
7	WEST SIDE POWER CORRIDOR	50	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
8	EAST SIDE POWER CORRIDOR	50	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
9	OPEN SPACE 5 & 7 PARCELS	TBD	TBD	DIRT	CITY	NATIVE VEGETATION	CITY
10	T/M BUFFER ZONE - EAST SIDE	20	10	ASPHALT	CITY	NATIVE VEGETATION	CITY
11	ANY TRAILS ALONG PUBLIC ROW'S	17	10	ASPHALT	CITY	LANDSCAPED*	HOA
12	OPEN SPACE 7 PARCEL	20	10	ASPHALT	CITY	NATIVE VEGETATION	CITY

* LANDSCAPED AREAS ARE TO BE IMPROVED WITH EITHER GRASS/SPRINKLERS OR APPROVED EQUIVALENT VALUE OF OPEN SPACE IMPROVEMENT.



NOTES

1. ALL TRAILS AS SHOWN HERE ARE MASTER PLANNED TRAILS AND SHALL BE PAID FOR AND CONSTRUCTED BY THE DEVELOPER. ANY TRAILS LOCATED ALONG A STREET AS SHOWN IN DETAIL 2 CANNOT BE REIMBURSED. ANY TRAILS LOCATED IN OPEN SPACE AS SHOWN IN DETAIL 1 SHALL BE REIMBURSED THROUGH IMPACT FEES.
2. ALL TRAILS SHALL BE DESIGNED AND CONSTRUCTED AS EACH ADJACENT PHASE DEVELOPS. THE DEVELOPMENT OF ANY GIVEN PHASE SHALL SERVE AS A TRIGGER TO DEVELOP THE ADJACENT SECTION OF TRAIL.
3. CONSTRUCTION OF TRAILS IN THE TECHNICAL MANUFACTURING BUFFER AREA IS CONTINGENT ON EASEMENTS BEING GRANTED TO LEHI CITY FROM THE CURRENT LAND OWNER.
4. THE TRAIL LOCATIONS AS SHOWN ON THIS MAP ARE CONCEPTUAL IN NATURE. MINOR ADJUSTMENTS TO THEIR LOCATIONS MAY BE ALLOWED WITHOUT HAVING TO BE SUBMITTED TO PLANNING COMMISSION OR CITY COUNCIL, SUBJECT TO THE APPROVAL OF THE LEHI CITY REVIEWING DEPARTMENTS. THESE CHANGES INCLUDE VARIATIONS IN LOCATION DUE TO TOPOGRAPHY, UTILITIES, ETC, SO LONG AS REVIEWING DEPARTMENTS HAVE APPROVED THE CHANGE.
5. TRAIL 4 WILL REPLACE THE EXISTING SIDEWALK THAT RUNS ALONG 500 W. IT WILL BE THE ONLY TRAIL ALONG A ROW THAT WILL BE REIMBURSABLE BY THE CITY.

LEGEND

- PROPOSED TRAIL (TO BE CONSTRUCTED BY CITY AT SOME FUTURE TIME OR TO BE CONSTRUCTED BY DEVELOPER AND REIMBURSED THROUGH FUNDS OTHER THAN SKYE IMPACT FEES)
- EXISTING TRAILS
- PROPOSED R.O.W. TRAIL (TO BE CONSTRUCTED BY DEVELOPER) (SEE DETAIL 2 ABOVE)
- PROPOSED 20' TRAIL CORRIDOR (SEE DETAIL 1 ABOVE)
- PROPOSED MULTI-USE NATURAL SURFACE TRAIL (TO BE CONSTRUCTED BY DEVELOPER)

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144

SKYE
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ACTIVE TRANSPORTATION PLAN

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LEI PROJECT #: 2020-0067
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DESIGNED BY: BCT
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SHEET
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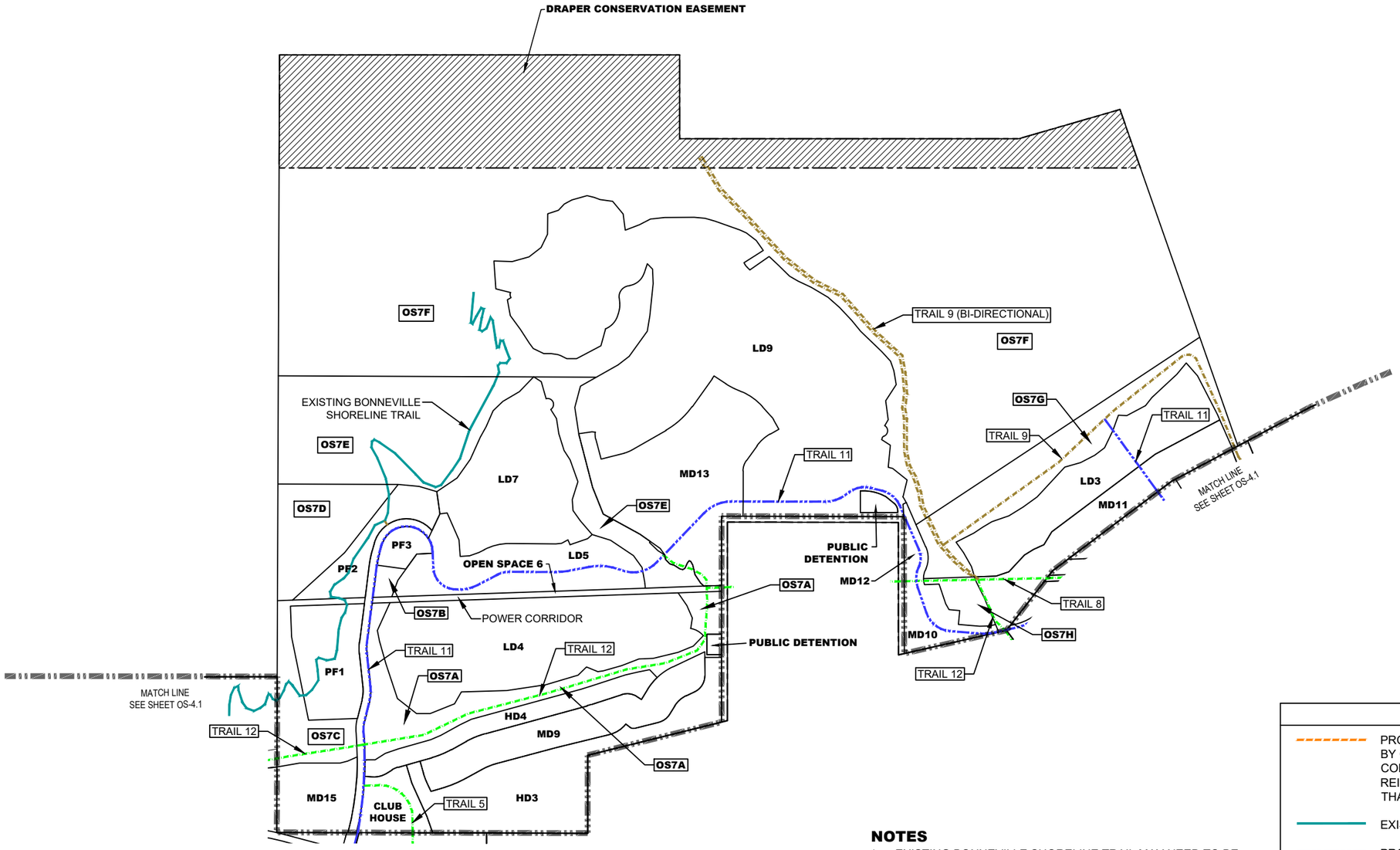

NOTES

1. EXISTING BONNEVILLE SHORELINE TRAIL MAY NEED TO BE RELOCATED AROUND PROPOSED UTILITIES, INCLUDING A POWER SUBSTATION, WATER STORAGE TANKS, AND OTHER POSSIBLE INFRASTRUCTURE.

LEGEND

- PROPOSED TRAIL (TO BE CONSTRUCTED BY CITY AT SOME FUTURE TIME OR TO BE CONSTRUCTED BY DEVELOPER AND REIMBURSED THROUGH FUNDS OTHER THAN SKYE IMPACT FEES)
- EXISTING TRAILS
- PROPOSED R.O.W. TRAIL (TO BE CONSTRUCTED BY DEVELOPER) (SEE DETAIL 2 ABOVE)
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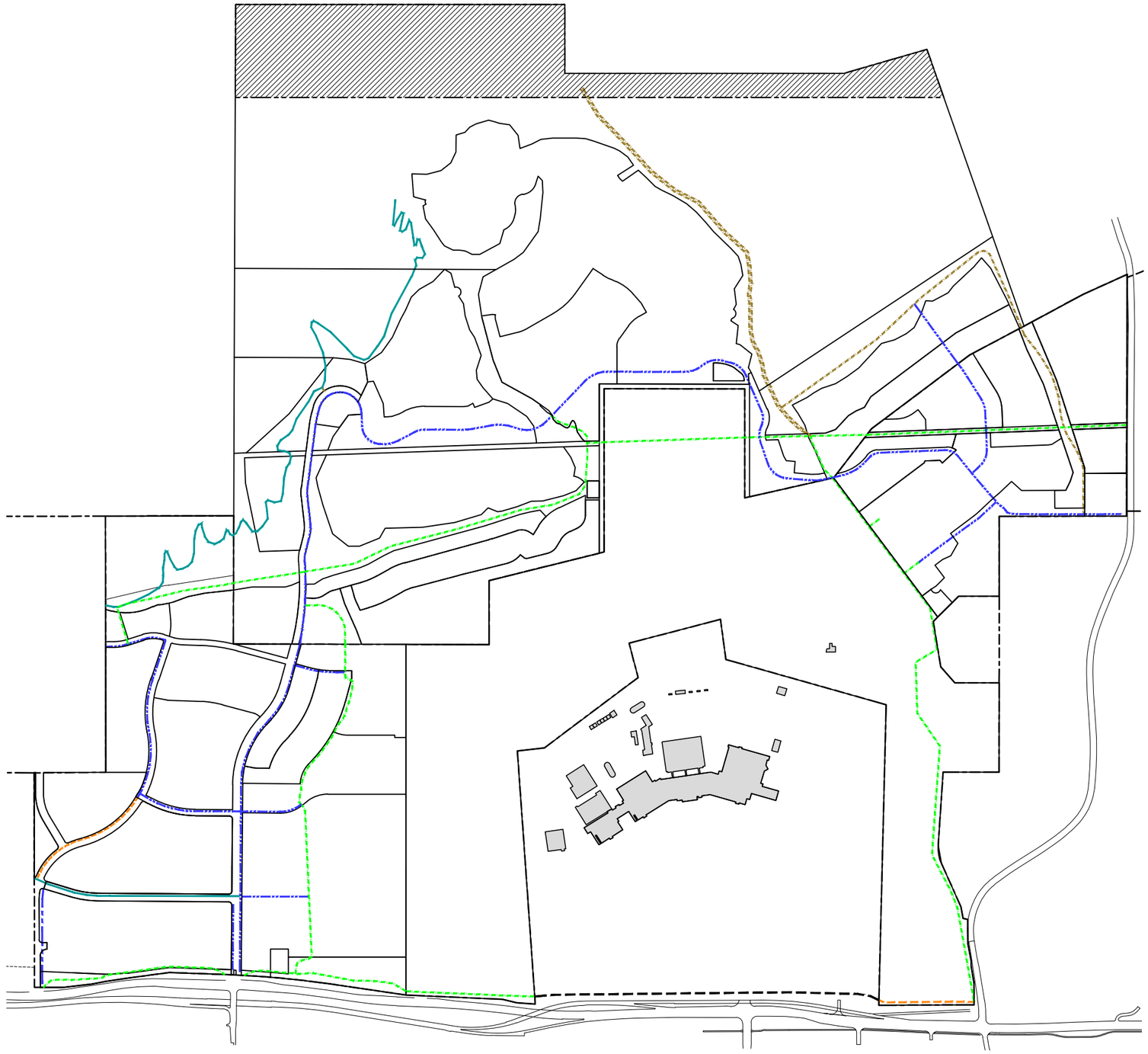

NORTH

LEGEND

- PROPOSED TRAIL (TO BE CONSTRUCTED BY CITY AT SOME FUTURE TIME OR TO BE CONSTRUCTED BY DEVELOPER AND REIMBURSED THROUGH FUNDS OTHER THAN SKYE IMPACT FEES)
- EXISTING TRAILS
- PROPOSED R.O.W. TRAIL (TO BE CONSTRUCTED BY DEVELOPER) (SEE DETAIL 2 ABOVE)
- PROPOSED 20' TRAIL CORRIDOR (SEE DETAIL 1 ABOVE)
- PROPOSED MULTI-USE NATURAL SURFACE TRAIL (TO BE CONSTRUCTED BY DEVELOPER)

LEI
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www.lei-eng.com

ACTIVE TRANSPORTATION PLAN

SKYE
LEHI, UTAH

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 8/3/2023

SHEET
OS-4.3

Appendix A: Open Space Summary Table

Private Open Space			
Pod Name	**Approximate Landscaped Area (ac)**	**Total Pod Area (ac)**	**% of Landscaping**
AA1	2.46	11.10	22.20%
AA2	4.51	24.62	18.32%
AA3	0.91	5.31	17.17%
HD1	3.98	16.30	24.40%
HD2	1.52	3.06	49.55%
HD3	9.73	25.74	37.80%
HD4	3.42	9.16	37.37%
LD1	0.00	16.14	0.00%
LD2	2.09	35.72	5.85%
LD3	0.00	22.34	0.00%
LD4	0.00	43.43	0.00%
LD5	0.00	19.52	0.00%
LD6	0.00	113.17	0.00%
LD7	0.00	26.58	0.00%
MD1	0.10	6.92	1.45%
MD2	2.22	11.42	19.43%
MD3	2.55	14.21	17.93%
MD4	0.73	2.43	30.03%
MD5	0.00	3.79	0.00%
MD6	0.18	1.76	10.10%
MD7	0.08	8.32	1.01%
MD8	1.58	11.89	13.26%
MD9	8.79	16.42	53.53%
MD10	0.00	8.98	0.00%
MD11	0.00	12.84	0.00%
MD12	0.00	2.08	0.00%
MD13	4.81	33.52	14.33%
MD14	0.00	7.09	0.00%
MD15	2.30	9.00	25.50%
MD16	0.00	1.01	0.00%
Mixed Use 1[2]	9.70	97.02	10.00%
Mixed Use 2[2]	1.78	17.83	10.00%
VLD1	1.08	15.22	7.13%
Clubhouse	3.92	5.60	70.00%
School 1[3]	N/A	12.71	N/A
School 2[3]	N/A	30.27	N/A
Civic 1[4]	N/A	22.59	N/A
Civic 2[4]	N/A	4.44	N/A
Total Private Open Space (ac)	**68.44**	**4.13% of Gross Area (1657.93 ac)**	

Public Open Space		
Open Space Location	**Area (ac)**	
Open Space 1	27.39	
Open Space 2	2.26	
Open Space 3	3.71	
Open Space 4	9.14	
Open Space 5	5.79	
Open Space 6 (Power Corridors)	8.80	
Open Space 7	498.60	
Public Trails[1]	6.62	
Power Corridor Deduction	-4.74	
Total Public Open Space (ac)	**557.57**	**33.63% of Gross Area (1657.93 ac)**

Total Open Space Provided (ac)	**626.01**	**37.76% of Gross Area (1657.93 ac)**
Total Open Space Required (ac)	**165.79**	**10.00% of Gross Area (1657.93 ac)**

Notes:

1. Public Trails area includes trail easement through technical manufacturing buffer and the trails going through the project on the west side
2. Landscaped areas for these pods were assumed to be the minumum requirement of 10%.
3. School pods are existing and are assumed to have already met the minumum landscaping requirement of 10%. School pods have been omitted from these open space area plan calculations, including the total open space provided and the gross area.
4. The landscaping within civic pods is not considered to be usable or public open space. Therefore, civic pods have been omitted from these open space area plan calculations, including the total open space provided and the gross area.

Plat and Site Plan Approval Processes

The following items on the Lehi City checklist for Preliminary plat will not be required for the Skye Area Plan.

• Application Submittal Procedures 2c ,copy of the drainage study with narrative (already submitted with area plan amendment),
• Application Requirements: 17 location and extent of all cuts and fills exceeding (3) feet any where on the project and any associated retaining wall (all ready included in grading permit), 28 Only show existing and proposed trunk lines including anticipated size, do not show depths, inlets, manholes, etc.,42 a surveyors plat (to be provided at final plat) 44 detailed information regarding proposed features including building elevations etc (alternative ARC process).

The approval process for the Skye Area Plan plat approval will be as follows:

• A Preliminary Plat application and fees will be filed along with a preliminary plat that follows the guidelines listed on the City Checklist with the exceptions listed above. Preliminary Plats will need to be approved by DRC, Planning Commission and City Council. However, there will not be any public comment for preliminary plat approval.
• Final plans and plats will be prepared and submitted to the City. Lehi City DRC will review and approve the final plats. Final plats will not be required to go to Planning Commission or City Council for approvals.

Site Plan Approval Process

• Section 11.240 (Site Plan Approval Process) is to be modified as follows:
All site plans will only need approval by the DRC except in the case that the site plan is a conditional use or is seeking an exception from the Area Plan or City's Development Code.

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Timing Restrictions of Approvals, Plat Recordations and Construction

Due to limitations on the City's water systems and infrastructure, there are restrictions that apply to the development within the Skye Area Plan. Any site plans, preliminary plats or final plats shall be allowed to be submitted, reviewed and approved, bonded for and to be developed and improved at any time within the Area Plan. **However any plats that have ERU's attached shall be restricted from being recorded until the water projects as described in the "Utility - Water Sections" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.**

However there are a few exceptions to this restriction described above as listed in the bullet points below:

- Church / Civic 1 Site: This site has been sold to and is owned by the Church of Jesus Christ of Latter-Day Saints. There shall be no restrictions on site plan approvals, plat approvals, recording of plats, building permits or the approval of certificates of occupancy.
- D.R. Horton Office / Mixed Use 3 Site: Within the Mixed Use 2 site, D.R. Horton plans to build a local division office building on approximately 4 acres of this portion of the Area Plan. There shall be no restrictions on site plan approvals, plat approvals, recording of plats or building permits for this specific site and use. However, the certificate of occupancy and final approve for use of the building shall not be granted until the water projects as described in the "Utility - Water Sections" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.
- 60 Residential ERU's: One final plat containing a maximum of 60 ERU's shall be allowed with no restrictions on site plan approvals, plat approvals, recording of plats, building permits or the approval of certificates of occupancy.

AMERICA'S #1 HOME BUILDER SINCE 2002
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Skye Area Plan

2nd Amendment

Section 3 – Utilities

- Power
- Sewer
- Storm Drain
- Pressurized Irrigation
- Culinary Water

Skye Development—Full Development Load & Trigger Points for Required Power System Projects

November 30, 2022

For: D. R. Horton, Lehi Power Department

RE: Skye Development

By: Michael Anderson, P.E. Utah 10652558-2202

Active Power Engineering, LLC

Executive Summary: The estimated load of the Skye development is 12.57 MW (13.23 MVA) depending on the final unit types and unit numbers that are ultimately built. The estimated load of the other approved Area Plan development is 1.51 MVA depending on the final unit types and unit numbers that are ultimately built. To serve the total 14.74 MVA estimated load of this development an additional substation and feeders are needed. There is available capacity on the existing Littlefield substation and feeders in the area for part of the load. The number of equivalent residential units (ERUs) from all development in the Area Plan that can be connected to the existing feeders before projects are required (the "trigger" points) was analyzed. Either Project #2, to connect feeder 812 to 821, or Project #3, the new substation and feeders, is required for more than 435 ERUs to be connected. Project #3 is required for more than 996 ERUs to be built. Both Project #2 and Project #3 are required for more than 2,700 ERUs to be built.

Scope: This study estimates the load of the full Skye Site development and the load of other approved Area Plan ERUs, and analyzes the ERU "trigger points" for the projects identified in the previous power study ("Area Master Plan/Load Study for Micron Site Development", August 16, 2021) that are required to connect the proposed load.

Proposed Connected Load Estimate: D.R. Horton proposed to connect 2,736 ERUs, an estimated 12.57 MW of load (13.23 MVA at 0.95 power factor) for residential units, mixed use units, parks, churches, and schools. These load estimates were first developed in the previous power study and revised for the additional units proposed in the full D.R. Horton Skye development. They were based on the type and number of units proposed as provided in the information from D.R. Horton (refer to "Tabulations" on Figure A1 in the Appendix) and additional information provided. The typical loads for the various types of units are the same as those used for other developments proposed in Lehi. The total load for the development was estimated using the typical unit loads, the number of units, and a coincidence factor, as shown in Table 1 (original study) and Table 2 (this study). The load calculations were based on gas water heating and gas space heating. A demand coincidence factor was applied to account for the peak power use not occurring at the same time for all the units.

The value of one ERU was determined by dividing the total estimated load by the number of ERUs considered in the total load. For this analysis 4.84 kVA was the value used for one ERU.

$$Total\ Est. Load\ (kVA) \div Total\ \#\ Units\ or\ ERUs = kVA\ value\ per\ ERU$$

$$13{,}230\ kVA \div 2{,}736\ Units\ or\ ERUs\ = 4.84\ kVA\ value\ per\ ERU$$

Table 1 -- Skye Site Development Load Estimate (From previous power study)

Load Estimate based on:		Gas Heat				
Use/Type	**# Units (or ERUs)**	**kW per**	**Coincidence Factor**		**Total MW**	**Total MVA (0.95 p.f.)**
Mixed Use	464	6.2	0.72		2.07	2.18
Townhomes	565	5.5	0.68		2.11	2.22
Cottage	129	6	0.7		0.54	0.57
Horton Plus	205	7.5	0.7		1.08	1.13
Emerald	199	8	0.7		1.11	1.17
Estate	129	10	0.7		0.90	0.95
Active Adult	370	6	0.7		1.55	1.64
Parks and Open Space	16	10	1		0.16	0.17
Civic (Church/School)	170	8	0.8		1.09	1.15
Total	**2,247**			**Total**	**10.62**	**11.18**

Table 2 -- Skye Site Load Estimate for Full Development

Load Estimate based on:		Gas Heat				
Use/Type	**# Units (or ERUs)**	**kW per**	**Coincidence Factor**		**Total MW**	**Total MVA (0.95 p.f.)**
Mixed Use Comm	222	6.2	0.72		0.99	1.04
Mixed Used Res	572	5.5	0.68		2.14	2.25
Townhomes	638	5.5	0.68		2.39	2.51
Cottage	123	6	0.7		0.52	0.54
Horton Plus	208	7.5	0.7		1.09	1.15
Emerald	245	8	0.7		1.37	1.44
Estate	289	10	0.7		2.02	2.13
Active Adult	370	6	0.7		1.55	1.64
Parks and Open Space	16	10	1		0.16	0.17
Civic (Church/School)	53	8	0.8		0.34	0.36
Total	**2,736**			**Total**	**12.57**	**13.23**

Actual load of this development may be higher or lower than the estimate provided in this report based on the final unit types and unit numbers that are ultimately built.

There is other property in the Area Plan that is not under the control of D.R. Horton/Gardner Company that needs to be considered in the planning of the power system in the area. Figure 1 shows the D.R. Horton development areas and the other area with their associated ERU's. The 224 ERUs on the Entrata Property and 88 ERUs on the Peck Property are estimated to add 1.51 MVA.

$$4.84\ kVA\ per\ ERU \times (224 + 88)\ ERUs\ \div 1{,}000\ kVA\ per\ MVA\ = 1.51\ MVA$$

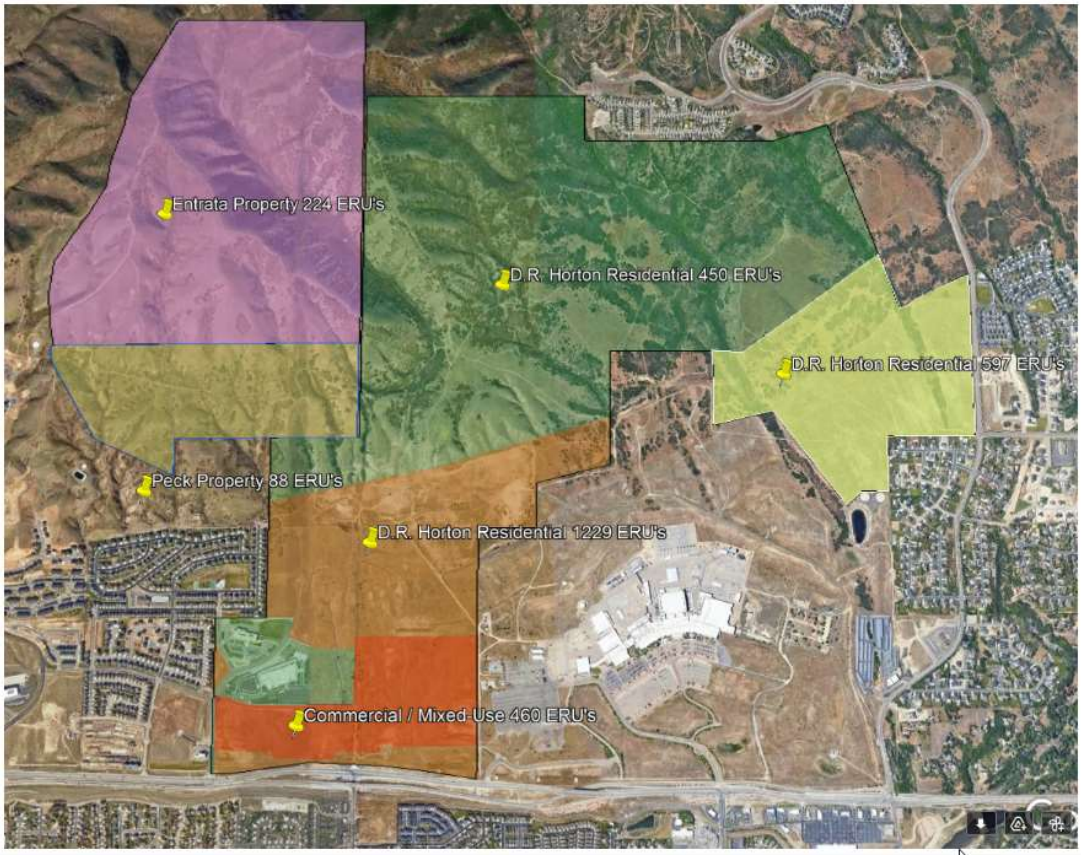


Figure 1--ERU Distribution Based on Current Lehi City Approvals (from Nov. 7, 2022, email from Scott Bishop)

A total of 3,048 ERUs are considered in this study.

$$(2{,}736\ D.R.Horton\ ERUs + 224\ Entrata\ ERUs + 88\ Peck\ ERUs\ ) = 3{,}048\ ERUs$$

Total power estimate for the study area is 14.74 MVA:

$$(13.23\ MVA, for\ D.R.Horton\ ERUs + 1.51\ MVA, for\ Entrata\ \&\ Peck\ ERUs) = 14.74\ MVA$$

Available Power Facilities: There are four Lehi City 12.47 kV distribution feeders and one Lehi City substation in the area that were evaluated for serving the proposed load (see Figure A2 in the Appendix). Lehi City Power uses a design criteria of loading substation transformers

and feeders to no more than 60% of rated capacity in normal operation. Substations in the area that are projected to already be heavily load were not considered for serving the proposed load.

Littlefield substation has two transformers that are each rated 33 MVA. There are three distribution feeders for each transformer, but only four feeders are located where they can serve the development area. Table A in the Appendix shows the load recorded in 2022 on each substation transformer and the feeders that could serve the new load, as well as the forecasted 2023-2032 loading on each.

Analysis of Development Load Addition: The Skye site development is estimated to add a total of about 2,736 ERUs—13.23 MVA (613 amps) of load--to whatever substation transformers and feeders they are fed from. The other development in the area is estimated to add 312 ERUs—1.51 MVA (70 amps) of load to the same transformers and feeders.

The total ERUs and the total associated load need to be considered in the power system planning in this area. The power system capacity (substation, transformer, feeders) that is required to be added will serve the entire load in the area regardless of the who does the development. Handling of the financial responsibility for the cost of the required power system additions is not within the scope of this study.

Analysis of the load addition in increments over multiple years (as assumed in the previous study) shows the trigger ERU points when new capacity is needed. Littlefield substation transformer T2, and feeders 821 and 822 have capacity for 435 ERUs. For development of more than 435 ERUs there are two projects identified that provide the capacity needed:

- Project #2—Extend feeder 812 to offload the Littlefield T2 transformer and feeder 821;
- Project #3—Build a new substation with four feeders.

  (Note-- The project numbering has been maintained to match the prior power studies. Project #1 was part of the original power study for the development. It has been completed by Lehi City so it is not included in this list.)

To develop more than 435 ERUs in the area the power system capacity in the area needs to be increased. The two projects listed will both ultimately need to be built. The order in which they are built does not matter. The capacity additions they provide are different: Project #2, extending feeder 812 across Timpanogos Highway provides capacity for a total of 996 ERUs (includes the initial 435 ERUs); and Project #3, a new substation with four feeders provides for a total of 2,700 ERUs (also, includes the initial 435 ERUs).

Since the total number of ERUs in the Area Plan currently approved by Lehi City is 3,294 ERUs, both projects are required. [NOTE: 246 ERUs have already been built and connected—these are not included in the initial 435 ERUs.] The extension of feeder 812 and the new substation with

additional feeders are needed in the area to achieve the capacity required by the Lehi Power design criteria and serve the area's load at full buildout. Table A in the appendix shows this analysis.

The new substation with four feeders is limited to serving a total of 2,700 ERUs by the capacity of Littlefield T2 transformer to back-up the load in the case where the new substation transformer is not available to serve load. By having Project #2 built and in-service some load is transferred from Littlefield T2 transformer, and the limitation is resolved. Then the total 3,294 ERUs in the Area Plan currently approved by Lehi City can be served in normal operation and be backed-up during the off-normal condition of the outage of the new substation.

Required System Additions: The system improvements and additions that are required in this area for connecting the estimated 2,736 ERUs – 12.57 MW (13.23 MVA) of load—for the Skye site development are the same as those that were identified in the previous power study. The same system improvements and additions are required for connecting the additional estimated 312 ERUs—1.51 MVA of load—for the other approved development in the area. The projects, the ERU trigger points, and ERU capacity available after the projects (determined in this analysis) are listed in Table 3.

Table 3--Required System Additions (from previous Power Study)

#	Project Description	Total ERU Trigger Point	Total ERUs Capacity Available After Project	Summary
1	*COMPLETED* Cross SR-92 with 822 & tie to 813	*COMPLETED*	*COMPLETED*	Bore under SR-92 and two aqueducts. Tie 822 and 813. Feed new load from 822. *This project was COMPLETED in 2022 by Lehi Power.*
2	Connect 812 to 821	435 ERUs	996 ERUs	Extend 812 along Bull River Rd. Bore under SR-92 and two aqueducts. Tie 812 and 821. Transfer load from 821 to 812. Feed new development load from 821.
3	New Substation with 4 new feeders	435 ERUs (or 996 ERUs if Project #2 is built and in service first)	2,700 ERUs	Build a new substation with one 33 MVA transformer and 4 new feeders. Tap the RMP 138 kV transmission line and connect to the new substation. Tie two new feeders from the new substation to 821 and 822. Use the other two new feeders to serve load east of new substation.

Projects #2 installs a new crossing of SR-92, Timpanogos Highway, extending Littlefield substations feeder 812 to a point on the north side of SR-92 where it can be used to off-load feeder 821 so feeder 821 will have capacity to serve the load of the development. This project includes crossing two aqueducts, also.

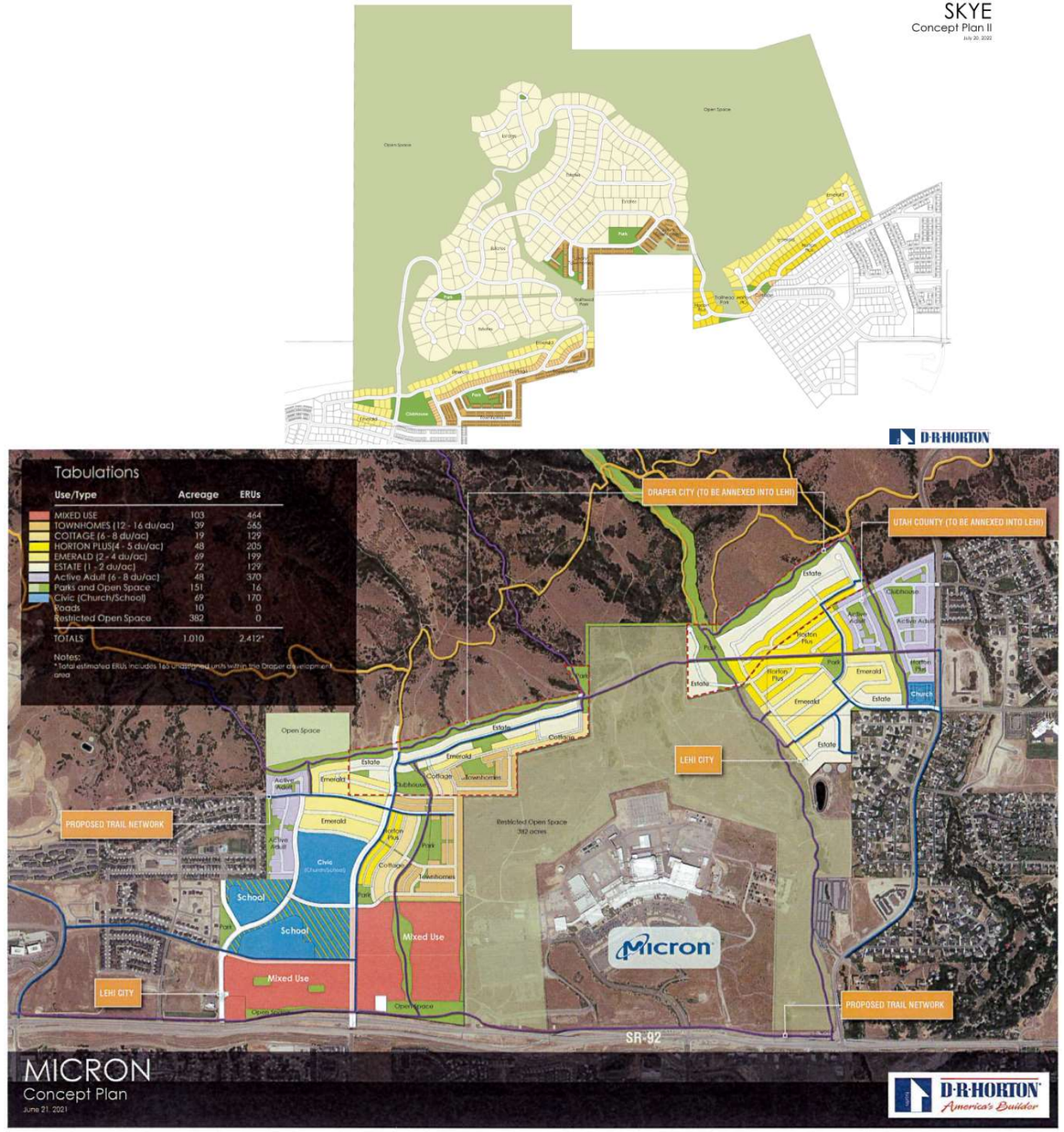
Project #3 is an additional substation with new transformer and four new feeders that is needed to serve the development load. Property for the substation—zoned as public facilities—will need to be provided. A transmission interconnection agreement with Rocky Mountain Power for tapping a 138 kV transmission line will be needed to feed the new substation. Two of the four new feeders from the substation feed the area east of the new substation. The two other feeders from the new substation are needed to tie to feeders 821 and 822 and feed the development area south and west of the new substation. Two additional feeder conduits for spares or future feeders should also be installed with this project.

All feeders need to be installed in public utility easements where they are accessible to Lehi City Power's heavy equipment. Figure A3 in the Appendix shows most feeders following the roads in the development concept. One route shown to connect new feeders to the area east of the new substation is shown following the proposed trail network since this was the only improvement indicated in the area. This route will need to be built to be accessible to the utility's heavy equipment, or another suitable route must be identified. Connection of power and other utilities (water, sewer, etc.) to the east area of the development will likely follow the same route.

The drawings in the Appendix are based on the development layouts provided by D.R. Horton and have been marked-up to show existing and required substations and power distribution feeders. Final layouts are subject to change before final approval. The drawings in this report are preliminary and not for construction.

Summary: The estimated load of the Skye development is 12.57 MW (13.23 MVA) depending on the final unit types and unit numbers that are ultimately built. The estimated load of the other approved Area Plan development is 1.51 MVA depending on the final unit types and unit numbers that are ultimately built. To serve the total 14.74 MVA estimated load of this development an additional substation and feeders are needed. There is available capacity on the existing Littlefield substation and feeders in the area for part of the load. The number of ERUs from all development in the Area Plan that can be connected to the existing feeders before projects are required (the "trigger" points) was analyzed. Either Project #2, to connect feeder 812 to 821, or Project #3, the new substation and feeders, is required for more than 435 ERUs to be connected. Project #3 is required for more than 996 ERUs to be built. Both Project #2 and Project #3 are required for more than 2,700 ERUs to be built.

Figure A1. Skye Development Concept Maps and ERU Tables



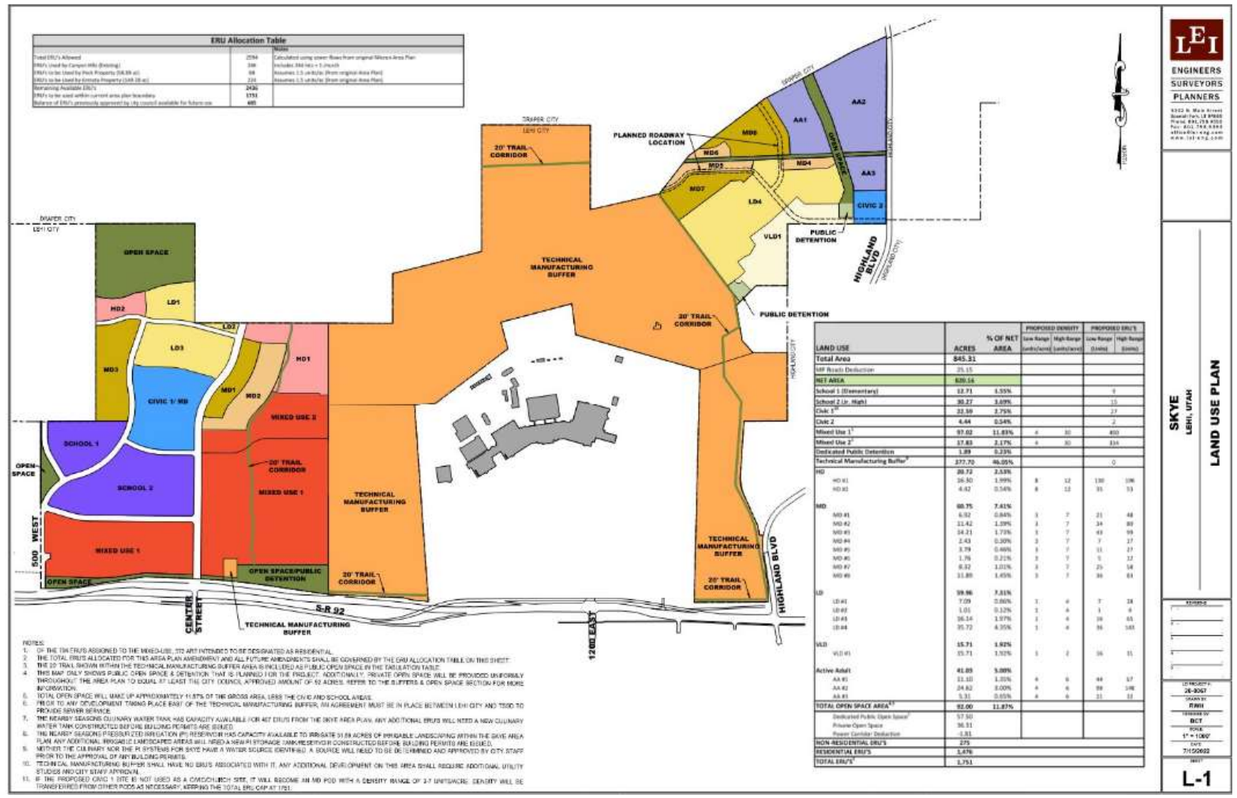


Figure A2. Lehi City Power Substations and Feeders

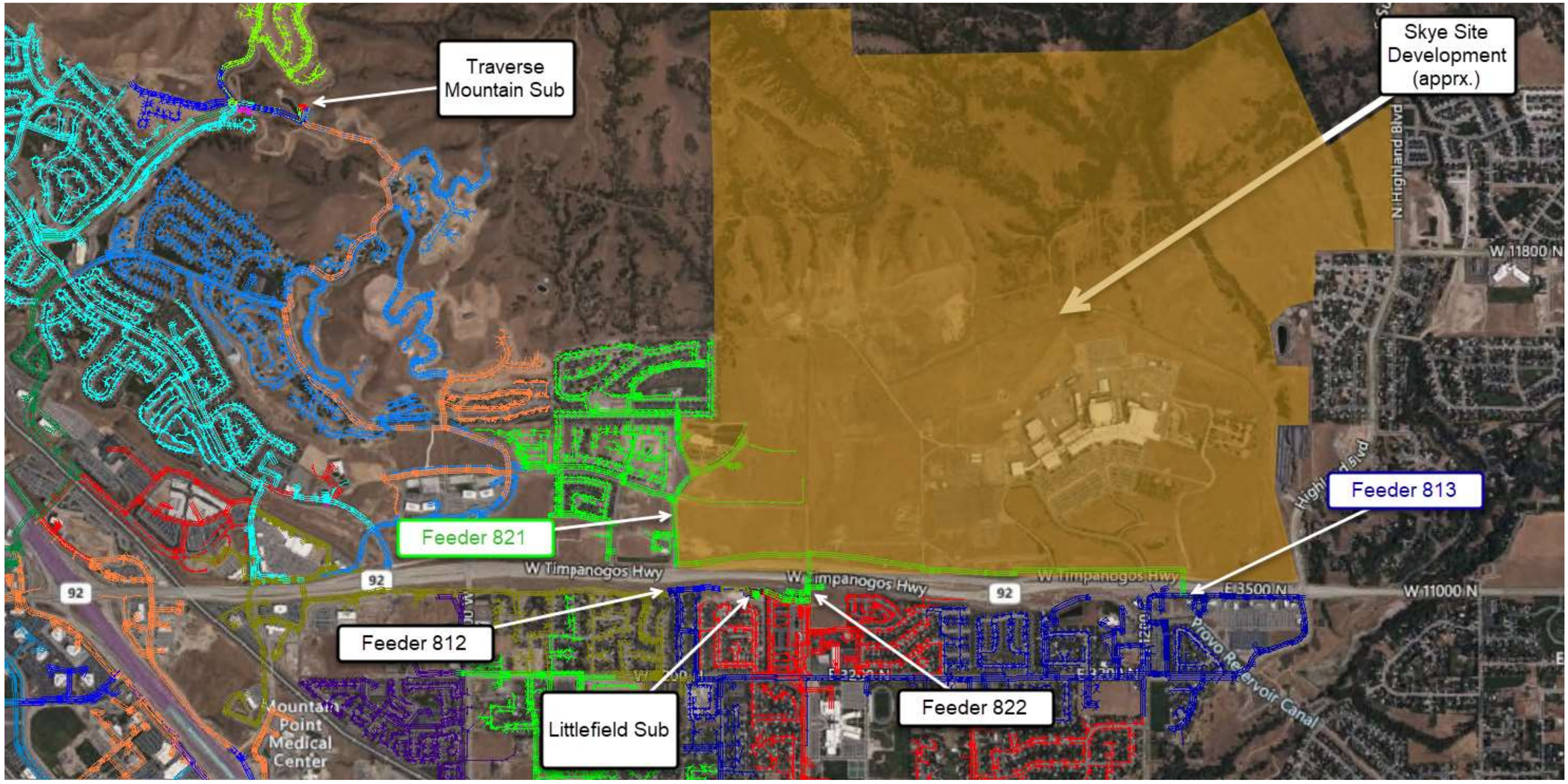


Figure A3. New Substation and Feeders Required at Full Buildout (#s represent project locations)

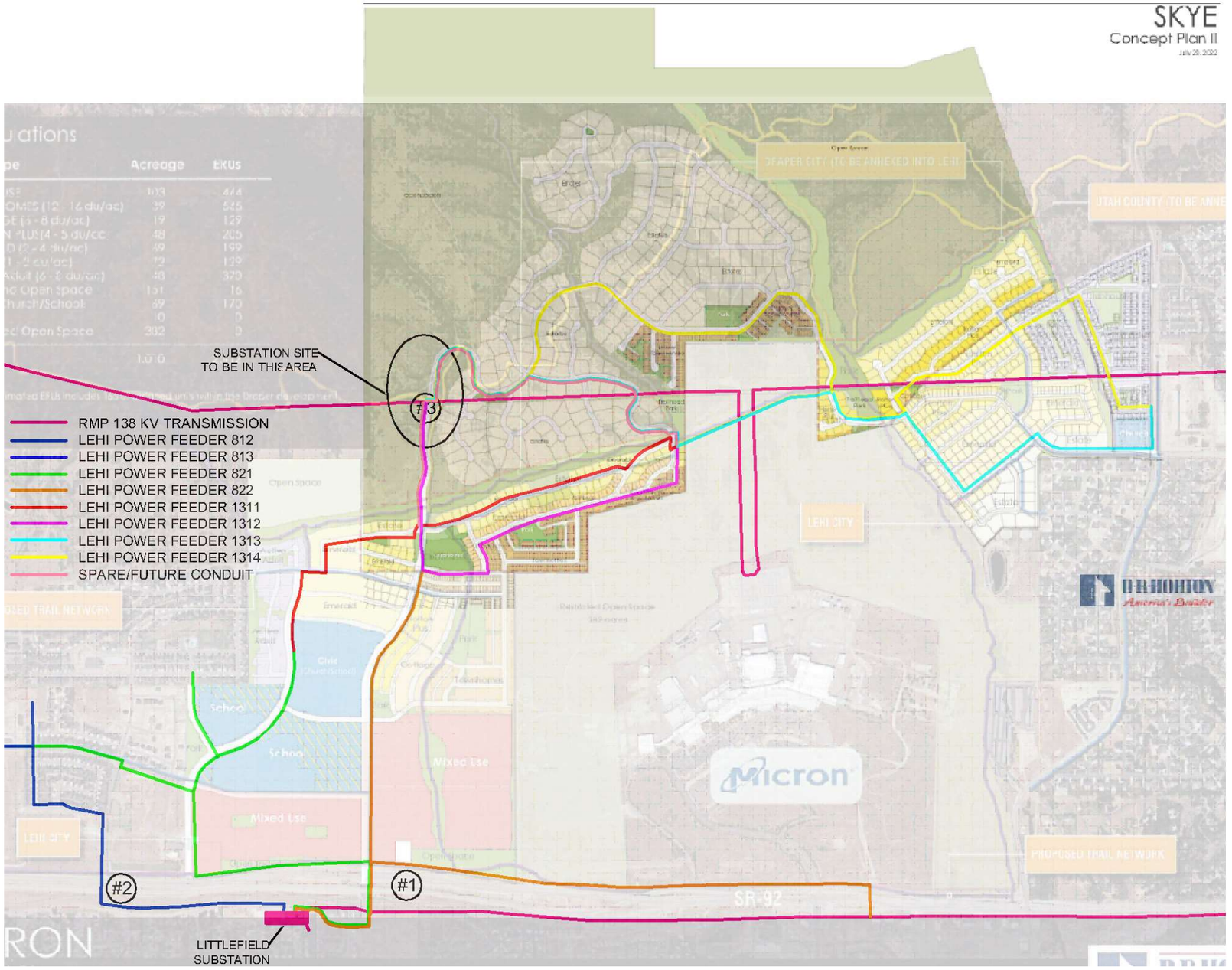


Table A. Substation and Feeder Loading Analysis (September 21, 2022)

Substation/Circuit	New Load or Transfer	Growth Rate	Transformer/Circuit Rating (MVA/Amps)	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Utilization
Littlefield			66 MVA												
T1			33 MVA	8.90	11.58	12.13	12.69	13.26	13.60	13.95	14.21	14.59	14.98	15.38	47%
811	base yr. peak	3%	500 Amps	173	179	185	191	197	203	210	217	224	232	239	
	Transfer from 522				73										
	Innovation Office Bldg 4				24										
	Traverse Mountain Offices-2,0(				8										
	Ridge Office #2-3,750 kVA					11									
	Ridge Office #2-3,750 kVA						11								
	Ridge Office #2-3,750 kVA							11							
	Transfer to 513										-54				
	Transfer from 712										83				
	Transfer to 511										-34				
	Adjusted load		Amps	173	284	301	318	335	341	348	350	357	365	372	74%
812	base yr. peak	3%	500 Amps	0	0	0	0	0	0	0	0	0	0	0	
	Adjusted load		Amps	0	0	0	0	0	0	0	0	0	0	0	0%
813	base yr. peak	3%	500 Amps	250	258	267	276	285	294	304	314	324	335	346	
	Transfer to 822			-54											
	Transfer from 823			47											
	Center Pointe lot 22a & Dubois				1										
	Adjusted load		Amps	243	252	261	270	279	288	298	308	318	329	340	68%
T2			33 MVA	9.91	16.13	19.71	20.14	16.91	17.37	17.84	18.33	18.83	19.35	19.88	60%
821	base yr. peak	3%	500 Amps	167	173	178	184	190	196	203	210	217	224	231	
	Transfer from 721				67										
	Dry Crk Lake Park				0										
	Traverse Mountain Apartments				40										
	VUE Apartments-1,200 kVA				6										
	VUE Apartments-1,200 kVA				6										
	Micron Site Yr 1 of 7					23									
	Traverse Mountain Apartments					40									
	Transfer to 1311							-170							
	Adjusted load		Amps	167	292	360	366	202	208	215	222	229	236	243	49%
822	base yr. peak	3%	500 Amps	48	50	51	53	55	56	58	60	62	64	66	
	Transfer from 813			54											
	VASA				24										
	Micron Site Yr 1 of 7					74									
	Center pointe towns 3237 N Ce					4									
	Adjusted load		Amps	102	128	207	209	211	212	214	216	218	220	222	44%
823	base yr. peak	3%	600 Amps	347	358	370	382	395	408	422	436	450	465	480	
	Transfer to 813			-47											
	Ivory Ridge towns 100 E Club Vi				16										
	Vivian Estates "D" + 600 E					6									
	Adjusted load		Amps	300	327	345	357	370	383	397	411	425	440	455	76%
Littlefield Sub Total			MVA	18.81	27.70	31.84	32.83	30.17	30.97	31.79	32.54	33.42	34.33	35.27	
DRHorton Micron			33 MVA												
T1			33 MVA	0.00	0.00	0.00	0.00	6.83	8.40	10.78	13.15	14.73	15.51	16.26	49%
1311	base yr. peak	3%	550 Amps	0	0	0	0	0	0	0	0	0	0	0	
	Transfer from 821							170							
	Micron Site Yr 3 of 7							33							
	Adjusted load		Amps	0	0	0	0	203	203	203	203	203	203	203	37%
1312	base yr. peak	3%	550 Amps	0	0	0	0	0	0	0	0	0	0	0	
	Micron Site Yr 2 of 7							50							
	Micron Site Yr 3 of 7							40							
	Micron Site Yr 2 of 7							23							
	Micron Site Yr 4 of 7								73						
	Prop by Micron Site Yr 5 of 7									37					
	Micron Site Yr 5 of 7									73					
	Adjusted load		Amps	0	0	0	0	113	186	296	296	296	296	296	54%
1313	base yr. peak	3%	550 Amps	0	0	0	0	0	0	0	0	0	0	0	
	Prop by Micron Site Yr 6 of 7										37				
	Micron Site Yr 6 of 7										73				
	Micron Site Yr 8 of 7												36		
	Adjusted load		Amps	0	0	0	0	0	0	0	110	110	146	146	27%
1314	base yr. peak	3%	550 Amps	0	0	0	0	0	0	0	0	0	0	0	
	Micron Site Yr 7 of 7											73			
	Micron Site Yr 9 of 7													35	
	Adjusted load		Amps	0	0	0	0	0	0	0	0	73	73	108	20%
DRHorton Micron Sub Total			MVA	0.00	0.00	0.00	0.00	6.83	8.40	10.78	13.15	14.73	15.51	16.26	

* Lehi Power design criteria limits normal operating capacity of transformers and feeders to 60%.
Feeder 821 capacity limit taken as 360 amps (60% of 600 amps) for this study.

Skye Area Plan

Amendment #2

SEWER SECTION

July 27, 2023

Prepared By:

ENGINEERS
SURVEYORS
PLANNERS

3302 N Main Street
Spanish Fork, UT 84660
(801) 798-0555

Skye

Sewer

Design Criteria:

Minimum Pipe Size: 8”

Minimum Slope: 0.34%

Design Flow:

Residential	100 gallons per person per day (UT R317-3-2.2.B.1) 3.8 capita / Dwelling Unit
Mixed Use	827 ERUs allocated with Land Use Plan 3.8 capita / ERU 100 gpd / capita
Civic	29 ERUs allocated with Land Use 3.8 capita / ERU 100 gpd / capita
School	24 ERUs allocated with Land Use Plan 3.8 capita / ERU 100 gpd / capita
Peak Factor	3.0

Refer to Appendix A for an exhibit showing each pipe location and Appendix B for a detailed breakdown of sewer flows and pipe sizing.

Allowable Flows:

West Side:
The original Micron area plan called for an allowable discharge of 1,851 gallons per minute (gpm) into the existing sewer system in 500 W, as well as 62 gpm into the existing outfall near 600 E. The new sewer design will remain consistent with this area plan amendment. 62 gpm will be allowed to flow into the 600 E outfall, while the rest of the west side flow will be routed to the 500 W outfall, including the flow from the additional 300 units from the upper area allowed by the city council. The overall total projected peak flow into this outfall is expected to be 2,054 gpm.

East Side:
The maximum allowable flow on the east side of Skye was determined based on an agreement between Lehi City and the Timpanogos Special Service District (TSSD). This agreement states that a maximum average flow of 227,000 gallons per day (GPD) is allowed to flow into the existing sewer system. Using a peaking factor of 3, this converts to approximately 473 gpm, or in other words, 597 ERU’s. The upper area being added to this area plan is sloped such that some of it will need to sewer down to the east side. This area plan amendment proposes to discharge the flow from approximately 621 ERU’s (492 gpm) as approved by TSSD.

Methodology:

All pipes were designed according to the Utah administrative Rules as listed below:

R317-3-2. Sewers.

2.1. General. Construction of a new sewer system project may not begin unless the applicant has submitted an engineering report detailing the design, and construction plans to the executive secretary for review and approval evidenced by a construction permit. The executive secretary will not normally review construction plans for extensions of the existing sewer systems to new areas or replacement of sanitary sewers in the existing sewer systems unless requested or required by state or federal funding programs. Rain water from roofs, streets, and other areas, and ground water from foundation drains must not be allowed to enter the sewer system through planning, design and construction quality assurance and control measures.

2.2. Basis of Design

A. Planning Period. Sewers should be designed for the estimated ultimate tributary population or the 50-year planning period, whichever requires a larger capacity. The executive secretary may approve the design for reduced capacities provided the capacity of the system can be readily increased when required. The maximum anticipated capacity required by institutions, industrial parks, etc. must be considered in the design.

B. Sewer Capacity. The required sewer capacity shall be determined on the basis of maximum hourly domestic sewage flow; additional maximum flow from industrial plants; inflow; ground water infiltration; potential for sulfide generation; topography of area; location of sewage treatment plant; depth of excavation; and pumping requirements.

1. Per Capita Flow. New sewer systems shall be designed on the basis of an annual average daily rate of flow of 100 gallons per capita per day (0.38 cubic meter per capita per day) unless there are data to indicate otherwise. The per capita rate of flow includes an allowance for infiltration/inflow. The per capita rate of flow may be higher than 100 gallons per day (0.38 cubic meter per day) if there is a probability of large amounts of infiltration/inflow entering the system.

2. Design Flow

a. Laterals and collector sewers shall be designed for 400 gallons per capita per day (1.51 cubic meters per capita per day).

b. Interceptors and outfall sewers shall be designed for 250 gallons per capita per day (0.95 cubic meter per capita per day), or rates of flow established from an approved infiltration/inflow study.

c. The executive secretary will consider other rates of flow for the design if such basis is justified on the basis of supporting documentation.

C. Design Calculations. Detailed computations, such as the basis of design and hydraulic calculations showing depth of flow, velocity, water surface profiles, and gradients shall be submitted with plans.

2.3. Design and Construction Details

A. Minimum Size

1. No gravity sewer shall be of less than eight inches (20 centimeters) in diameter.
2. A 6-inch (15 centimeters) diameter pipe may be permitted when the sewer is serving only one connection, or if the applicant justifies the need for such diameter on the basis of supporting documentation.

B. Depth. Sewers should be sufficiently deep to receive sewage from basements and to prevent freezing. Insulation shall be provided for sewers that cannot be placed at a depth sufficient to prevent freezing.

C. Odor and Sulfide Generation. The design shall incorporate features to control and mitigate odor and sulfide generation in sewers. Such features may include steeper slope to achieve higher velocity, reaeration through induced turbulence, etc.

D. Slope

1. The pipe diameter and slope shall be selected to obtain velocities to minimize settling problems.
2. All sewers shall be designed and constructed to give mean velocities of not less than 2 feet per second (0.61 meter per second), when flowing full, based on Manning's formula using an n value of 0.013.
3. Sewers shall be laid with uniform slope between manholes.
4. Table R317-3-2.3(D)(4) shows the minimum slopes which shall be provided; however, slopes greater than these are desirable.

Appendix A: Pipe Location Exhibit

LEI
ENGINEERS
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Phone: 801.798.0555
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NORTH

OPEN SPACE
PUBLIC DETENTION
HD2
MD14
MD16
MATCH LINE SEE SHEET A–1.1
MD3
LD1
MD1
MD2
HD1
CIVIC 1/ MD
SCHOOL 1
SCHOOL 2
MIXED USE 1.1
MIXED USE 1.2
MIXED USE 2
A
B
C
OPEN SPACE/PUBLIC DETENTION
TECHNICAL MANUFACTURING BUFFER
MD8
MD7
MD6
MD5
MD4
AA1
AA2
AA3
OPEN SPACE
LD2
VLD1
CIVIC 2
PUBLIC DETENTION
#1
#3
#4
#5
#6
#7
#8
#9
#10
#11
#12
#13
#14
#24
#24A
#25
#26
#27
#28
#29
#30
#31
#32
#33
#34
#35
#36
#37
#38
#39
OFFSITE 1 (558 ADDITIONAL ERU'S FROM OTHER PROPERTIES WITHIN LEHI): 442 GPM (PEAK)
500 W DISCHARGE: 2,054 GPM (PEAK) (2,595 ERU'S)
600 E DISCHARGE: 62 GPM (PEAK) (78 ERU'S)
HIGHLAND BLVD DISCHARGE TO TSSD SYSTEM: 492 GPM (PEAK) (621 ERU'S)
CENTER STREET
S-R 92
1200 EAST
HIGHLAND BLVD

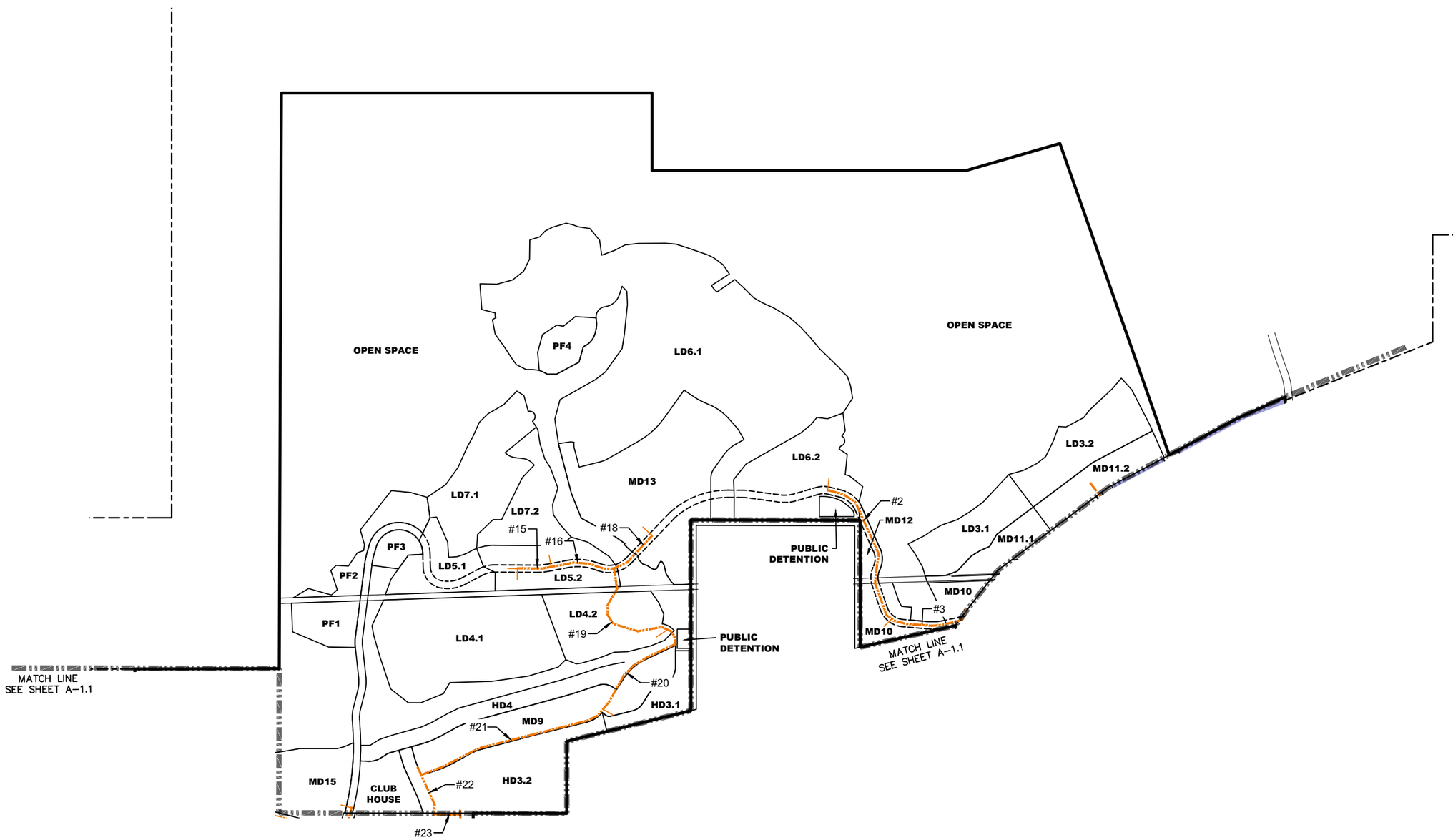
SKYE
LEHI, UTAH

SEWER PLAN

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 07/27/2023

SHEET
A-1.1



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SKYE
LEHI, UTAH

SEWER PLAN

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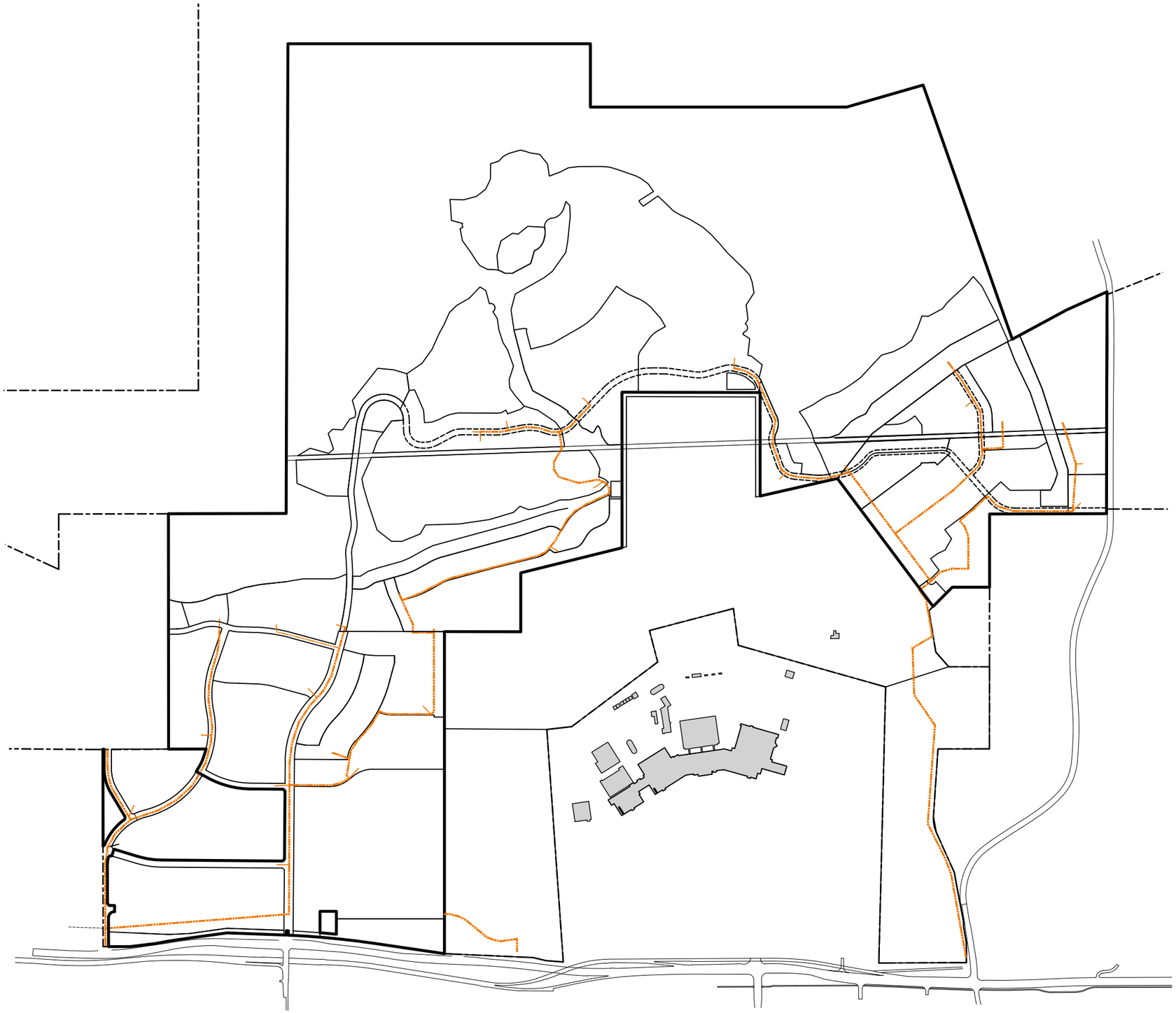
LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 07/27/2023

SHEET
A-1.2



NORTH

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SKYE
LEHI, UTAH

SEWER PLAN

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LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 07/27/2023

SHEET
A-1.3

Appendix B: Detailed Pipe Flows and Pipe Sizing

SKYE AREA PLAN

Sewer Flows - West Side A

Land Use	Area (acres)	Residential Units or ERU's (units)	Capita/ERU (capita/unit)	Capita (capita)	Flow/Capita (gpd/capita)	Average Flow (gpd)	Peak Factor	Peak Hourly Flow (gpd)	Peak Hourly Flow (gpm)
Mixed Use	106.29	749	3.8	2,846	100	284,600	3.0	853,800	593
Civic	22.59	27	3.8	103	100	10,300	3.0	30,900	21
LD	188.05	282	3.8	1,073	100	107,300	3.0	321,900	224
HD	54.75	516	3.8	1,961	100	196,100	3.0	588,300	409
MD	25.18	86	3.8	326	100	32,600	3.0	97,800	68
MD	78.47	347	3.8	1,319	100	131,900	3.0	395,700	275
School	42.98	24	3.8	91	100	9,100	3.0	27,300	19
Clubhouse	5.97	6	3.8	22	100	2,200	3.0	6,600	5
Offsite 1	290.18	558	3.8	2,120	100	212,040	3.0	636,120	442
Total West Side A		**2,595**		**9,861**		**986,140**		**2,958,420**	**2,054**

Sewer Flows - East Side B

Land Use	Area (acres)	Residential Units or ERU's (units)	Capita/ERU (capita/unit)	Capita (capita)	Flow/Capita (gpd/capita)	Average Flow (gpd)	Peak Factor	Peak Hourly Flow (gpd)	Peak Hourly Flow (gpm)
AA	41.03	231	3.8	878	100	87,800	3.0	263,400	183
Civic	4.44	2	3.8	8	100	800	3.0	2,400	2
LD	113.98	170	3.8	646	100	64,600	3.0	193,800	135
VLD	15.22	18	3.8	68	100	6,800	3.0	20,400	14
MD	7.99	48	3.8	182	100	18,200	3.0	54,600	38
MD	40.99	152	3.8	578	100	57,800	3.0	173,400	120
Total East Side B		**621**		**2,360**		**236,000**		**708,000**	**492**

Sewer Flows - West Side C

Land Use	Area (acres)	Residential Units or ERU's (units)	Capita/ERU (capita/unit)	Capita (capita)	Flow/Capita (gpd/capita)	Average Flow (gpd)	Peak Factor	Peak Hourly Flow (gpd)	Peak Hourly Flow (gpm)
Mixed Use	9.70	78	3.8	296	100	29,600	3.0	88,800	62
Total West Side C		**78**		**296**		**29,600**		**88,800**	**62**

Sewer Flows - Offsite Detailed

Offsite Area	Land Use	Area (acres)	Residential Units or ERU's (units)	Capita/ERU (capita/unit)	Capita (capita)	Flow/Capita (gpd/capita)	Average Flow (gpd)	Peak Factor	Peak Hourly Flow (gpd)	Peak Hourly Flow (gpm)
Offsite 1	Canyon Hills (Existing)	78.67	244	3.8	927	100	92,720	3.0	278,160	193
	Peck Property (Lehi - 1.5 units/ac)	58.89	88	3.8	334	100	33,440	3.0	100,320	70
	Entrata (Draper - 1.5 units/ac))	149.28	224	3.8	851	100	85,120	3.0	255,360	177
	Canyon Hills Church	3.34	2	3.8	8	100	760	3.0	2,280	2
Total Offsite			**558**		**2,120**		**212,040**		**636,120**	**442**

Skye Area Plan
Sewer Pipe Sizing

Pipe ID.	Contributing Area (ac)	Peak Hourly Flow (gpm)	Peak Hourly Flow (cfs)	Pipe Dia. (inches)	Min Slope (%)	Qpipe (cfs)	Velocity (fps)	Pipe Check
1	**MU1.2 (600 E outfall)**	**62**	**0.14**	**8**	**0.34**	**0.71**	**2.02**	**OK**
2	LD6.2	19	0.04	8	0.34	0.71	2.02	OK
3	LD6.2, MD12, MD10	36	0.08	8	0.34	0.71	2.02	OK
4	LD6.2, MD12, MD10, LD3.1, MD11.1, MD5, MD6, MD7	126	0.28	8	0.34	0.71	2.02	OK
5	LD3.2, MD11.2	47	0.10	8	0.34	0.71	2.02	OK
6	LD3.2, MD11.2, MD8	86	0.19	8	0.34	0.71	2.02	OK
7	AA1	49	0.11	8	0.34	0.71	2.02	OK
8	AA1, MD4	59	0.13	8	0.34	0.71	2.02	OK
9	LD3.2, MD11.2, MD8, AA1, MD4	146	0.32	8	0.34	0.71	2.02	OK
10	LD6.2, MD12, MD10, LD3.1, MD11.1, MD5, MD6, MD7, LD3.2, MD11.2, MD8, AA1, MD4	272	0.61	8	0.34	0.71	2.02	OK
11	AA2	110	0.25	8	0.34	0.71	2.02	OK
12	AA2, AA3	134	0.30	8	0.34	0.71	2.02	OK
13	AA2, AA3, CIV 2	135	0.30	8	0.34	0.71	2.02	OK
14	**Full Build-out (East Side)**	**492**	**1.10**	**8**	**0.82**	**1.10**	**3.14**	**OK**
15	LD5.1, LD4.1, LD7.1	61	0.14	8	0.34	0.71	2.02	OK
16	LD5.1, LD4.1, LD7.1, LD7.2	73	0.16	8	0.34	0.71	2.02	OK
18	LD6.1, MD13	162	0.36	8	0.34	0.71	2.02	OK
19	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2	265	0.59	8	0.34	0.71	2.02	OK
20	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2	277	0.62	8	0.34	0.71	2.02	OK
21	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1	319	0.71	8	0.35	0.72	2.05	OK
22	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4	456	1.02	8	0.71	1.02	2.92	OK
23	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE	459	1.02	8	0.72	1.03	2.95	OK
24	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2	621	1.38	8	1.31	1.39	3.97	OK
24a	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1	748	1.67	8	1.89	1.67	4.77	OK
25	MD1, MD2	95	0.21	8	0.34	0.71	2.02	OK
26	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1, MD1, MD2	843	1.88	8	2.41	1.88	5.39	OK
27	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1, MD1, MD2, MU2	1088	2.42	12	0.47	2.45	3.12	OK
28	MD15	20	0.04	8	0.34	0.71	2.02	OK
29	MD14	16	0.04	8	0.34	0.71	2.02	OK
30	MD15, MD14, MD16	39	0.09	8	0.34	0.71	2.02	OK
31	MD15, MD14, MD16, LD1	71	0.16	8	0.34	0.71	2.02	OK
32	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1, MD1, MD2, MU2, MD15, MD14, MD16, LD1, CIV1	1181	2.63	12	0.55	2.65	3.37	OK
33	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1, MD1, MD2, MU2, MD15, MD14, MD16, LD1, CIV1, SCH2	1193	2.66	12	0.56	2.67	3.40	OK
34	LD5.1, LD4.1, LD7.1, LD7.2, LD6.1, MD13, LD5.2, LD4.2, HD3.1, MD9, HD4, CLUBHOUSE, HD3.2, HD1, MD1, MD2, MU2, MD15, MD14, MD16, LD1, CIV1, SCH2, MU1.1, MU1.2	1540	3.43	18	0.11	3.56	2.01	OK
35	HD2	20	0.04	8	0.34	0.71	2.02	OK
36	HD2, MD3	66	0.15	8	0.34	0.71	2.02	OK
37	OFFSITE 1	442	0.98	8	0.66	0.98	2.82	OK
38	HD2, MD3, OFFSITE 1, SCH1	514	1.15	12	0.20	1.60	2.03	OK
39	**All Pipes on West Side**	**2054**	**4.58**	**18**	**0.19**	**4.59**	**2.60**	**OK**

Note:

1. Offsite 1 is composed of the following properties - Canyon Hills, Peck Property, Entrata, and Canyon Hills Church (See Sewer Flows table on previous page for a detailed breakdown of offsite flows)

Skye Second Area Plan

STORM DRAIN SECTION

May 12, 2023

Prepared By:

ENGINEERS
SURVEYORS
PLANNERS

3302 N Main Street
Spanish Fork, UT 84660
(801) 798-0555

Skye

Storm Drainage

Design Criteria:	• Area west of Texas Instruments Property – Maximum allowable discharge into existing storm system in SR-92 to be 196 cfs (See exhibits A and B in Appendix B) • Area east of Texas Instruments Property – *Ponds 2 and 5*: Maximum allowable discharge rate for native ground: 0.1 cfs/acre; Maximum allowable discharge rate for developed ground: 0.2 cfs/acre *Pond 3*: Maximum allowable discharge into existing storm system to be 72.65 cfs per historic rates as indicated by capacity of existing pipe • *Area north of Texas Instruments Property – Pond 4*: Maximum allowable discharge rate for native ground: 0.1 cfs/acre. Maximum allowable discharge rate for developed ground: 0.2 cfs/acre. Infiltration – Assumed through bottom of ponds as recommended by geotechnical report. Specific pond infiltration rates can be found in Table 2. The infiltration report is provided in Appendix C. All ponds were sized to handle the runoff from the 100-year 24-hour storm and will be designed to retain the 80th percentile storm to comply with local and state MS4 requirements. All trunklines and pipes were sized to accommodate the runoff from a 10-year storm. Pipes and inlets that discharge to the detention ponds were sized for the 100-year storm to ensure that all storm runoff is captured and conveyed to the ponds.
Minimum pipe size: Pipe Type:	12” Pipe type per Lehi City design standards.
Summary of Results:	Five ponds will be required to detain the runoff flows from the project. Four of the five ponds are proposed, and the other is existing and will need to be expanded to fit the projected runoff. See Appendix E for exhibits showing the locations of all ponds, pipes, and contributing areas. • Pond 1 is an existing pond that will need to be resized to detain the excess runoff from the new development. • Ponds 2, 3, 4, and 5 are proposed ponds to be placed within the project. Pond 2 will discharge into the existing Maple Hollow drainage; Pond 3 will discharge into an existing pipeline constructed for upstream historic flows. Ponds 4 and 5 will be placed in the upper portion of the development. Pond 4 will discharge into the proposed storm drain system by way of the existing cut-off ditch on Texas Instruments’ property while Pond 5 will discharge into an existing channel that leads to the Maple Hollow Drainage. Seven other detention ponds are currently located on or near the existing Texas Instruments property: • Pond A will be removed with the new development, and all discharge from the contributing area will be caught in pipes and directed through the project to be detained in Pond 1. • Ponds B-D will remain undisturbed. It is assumed that they have been constructed with sufficient capacity to handle all flows from the Texas Instruments facility as well as any applicable upstream flows. • Pond E is an existing pond located in Canyon Hills. The discharge used in this study is the design discharge from the subdivision, which includes pass-through flows from the upper areas labeled as Offsite 1 and Offsite 2. • Pond F is an existing detention pond that will be removed with the new development. A portion of the flows going to this pond will be conveyed directly to the existing system at 500 West. • Pond G is an existing detention pond that will be removed with the new development. All flows previously discharging to this pond will be conveyed to and detained in Pond 1.

Methodology:

All basin and runoff modeling was done with the Autodesk Storm and Sanitary Analysis software (SSA). The model was run using the Soil Conservation Service (SCS) Technical Release-55 (TR-55) method. Subbasins were entered into the model based on each land use "pod". Each subbasin in the model was assigned a curve number and time of concentration based on soil type, slope, and proposed land use. Table 1 on the following page provides a summary of each subbasin and its corresponding area, curve number, and time of concentration. Refer to the exhibits in Appendix E for the location of all subbasins and pipes.

Curve Numbers: The TR-55 method uses curve numbers (CN) to represent the amount of rainfall that will runoff a particular surface. The curve number is based on the ground cover as well as the hydrologic soil classification. Using local hydrologic soil groups published by the Natural Resources Conservation Service (NRCS), as well as recommended curve numbers for land use from *Stormwater Conveyance Modeling and Design* from Haestad and Durrans, each subbasin was assigned a composite curve number for use in calculating runoff. Refer to Appendix D for the NRCS soil map and CN values.

Time of Concentration: The time of concentration is the time it takes for the rainfall to travel from the hydraulically most distant point of each subbasin to the bottom, or outfall, of that subbasin. The time of concentration was calculated based on the methodology outlined in TR-55 published by the United States Department of Agriculture (USDA), dated June 1986. Based on this methodology, Manning's Kinematic Equation was used for the first 300 feet of overland flow to find the sheet flow time. For the next section of flow, which is represented by shallow concentrated flow, the velocity of the flow was determined using the equation $v = 16.1345 * \sqrt{S}$ for offsite/open space areas and $v = 20.3282 * \sqrt{S}$ for developed areas. The third and final section of flow is the open channel flow once the runoff enters and is conveyed by the storm drain pipes or channels. For this section, assumed velocities of 3-5 feet per second (fps) was used to estimate the travel time. Once all these separate times were calculated they were added up as the total time of concentration. For smaller subbasins, a minimum time of concentration of 6 minutes was used per guidelines within the SCS method.

Design Rainfall and Storm Depth: The storm depth is necessary to estimate the total amount of rain that will fall during a specific storm event. Based on the TR-55 methodology the storm was modeled using the SCS type 2 storm event. All five new detention ponds were sized to accommodate the 24-hour 100-year storm. Rainfall depths were chosen based on NOAA Atlas 14, Volume 1, Version 5, and are located in Appendix A.

Subbasin Discharge: The peak discharge from each subbasin was calculated within the model as described above using the SCS method. Certain subbasins were assumed to detain runoff onsite and discharge into the proposed system at a specified rate. School 1 and School 2 have existing detention systems onsite. Therefore, all of School 1 and the west side of School 2 were modeled to discharge into the system at a rate of 0.2 cfs/acre. The discharge from the east side of the School 2 site is being caught in existing underground retention. Additionally, Mixed Use 1, Mixed Use 2, and the civic sites will be required to detain storm water onsite at a rate of 0.2 cfs/acre. Mixed Use 3, which is composed of an apartment area and DR Horton's office building, will freely discharge into the system. Offsite 1 and Offsite 2 flow into the existing Canyon Hills stormwater system, which discharges at a controlled rate of approximately 27.6 cfs based on the original design of that system.

Table 1: Summary of Subbasins with Associated Areas, Curve Numbers, and Times of Concentration

Subbasin Name	Area (ac)	Curve Number	Tc (min)
AA1	11.17	89.89	20.08
AA2	21.54	89.27	28.92
AA3	5.31	89.43	22.80
Berm 2	34.71	77.59	31.66
Center Street 1	53.79	57.33	33.06
Center Street 2	13.91	82.64	35.78
Civic 1	22.58	82.64	35.78
Civic 2	4.47	86.88	6.00
Clubhouse	6.03	61.00	50.62
Ditch	135.95	67.85	60.37
HD1	4.42	84.08	14.38
HD2	3.02	89.00	17.51
HD3	10.87	82.00	18.55
HD6	6.72	85.00	13.17
HD7	15.35	85.04	25.07
HD8	4.17	85.00	11.86
HD9	2.83	85.00	15.99
HD10	7.11	85.00	22.78
Inverness HD5	17.06	90.00	34.67
Inverness LD1	17.06	82.00	26.09
Inverness LD2	17.34	81.81	49.31
Inverness LD3	10.16	81.85	42.47
Inverness LD4	43.41	82.00	35.02
Inverness LD5	72.49	78.44	45.91
Inverness LD6	33.99	75.69	35.98
Inverness Offsite 1	25.34	55.00	24.50
Inverness Offsite 2	77.40	67.53	31.72
LD1	7.08	74.44	24.29
LD2	1.01	72.00	23.88
LD3	16.14	77.79	27.55
LD4	23.96	80.69	33.00
LD5	9.11	81.00	44.96
LD6	3.51	77.66	17.48
LD7	4.48	75.00	17.64
LD8	15.44	72.18	47.96
LD9	13.52	72.28	31.05
MD1	14.20	79.30	22.33
MD2	6.76	82.76	21.75
MD3	10.55	85.35	22.76
MD4	8.28	80.26	26.53

MD5	3.86	76.63	25.10
MD6	1.76	75.03	18.23
MD7	11.82	80.88	31.56
MD8	2.44	85.00	28.08
MD9	4.51	75.00	25.20
MD10	11.92	82.00	25.94
MD11	7.58	75.00	20.51
MD12	9.39	75.00	33.76
MD13	5.79	75.13	24.02
MU1	17.87	92.67	6.39
MU2	15.91	93.87	6.00
MU3	19.33	87.33	14.51
MU4	30.31	93.56	10.87
MU5	33.65	92.13	8.80
Offsite 1	162.20	59.97	41.72
Offsite 2	94.34	75.00	30.00
Offsite 4	131.80	78.39	35.39
Offsite 5A	17.05	75.14	18.39
Offsite 5B	1.14	90.18	10.56
Offsite 5C	11.20	59.45	49.53
Offsite 5D	0.74	90.18	6.00
Open Space 1	0.28	61.00	6.00
Open Space 2	2.25	73.67	6.54
Open Space 3	3.71	72.50	21.19
Open Space 4	9.08	70.23	18.68
Open Space 5	1.65	65.21	13.96
Open Space 6	7.36	69.29	24.60
Open Space 7	1.07	74.00	6.00
Open Space 8	0.74	70.90	6.00
Open Space 10	0.72	91.00	11.15
Park 1	1.65	61.00	7.67
Park 2	2.62	70.38	28.99
Park 3	3.10	74.00	33.93
Road Left 1	0.87	97.00	6.00
Road Left 2	2.67	97.00	7.43
Road Left 3	3.93	97.00	7.48
Road Left 4	2.41	97.00	8.17
Road North	1.61	97.00	6.00
Road Right 1a	1.67	97.00	7.60
Road Right 1b	0.89	97.00	6.00
Road Right 2	4.47	97.00	10.21
Road Right 3	3.54	97.00	10.94

Road Right 4	**5.58**	**97.00**	**16.93**
School 1	**12.71**	**80.95**	**6.00**
School 2a	**14.66**	**80.29**	**7.88**
VLD1	**10.53**	**80.00**	**47.18**
VLD2	**5.2**	**80.00**	**43.44**

System Discharges:

West Side

According to a study done by MW Brown, the Lehi City allowable discharge for the area west of the Texas Instruments facility, including adjacent properties, is **196.0 cfs** (See Drainage Agreement Exhibit B – Allowable Flow Rate in Appendix B). The SR-92 storm drain trunk line was designed to handle the 196.0 cfs peak offsite discharge from the Skye property and surrounding areas. The model in this study has been developed to size the detention pond with the appropriate discharge rate and provide a proposed drainage plan that will not exceed the 196.0 cfs of offsite drainage. Pond 1 and the existing outfall at 500 West will make up the west discharge of Skye. Pond 1 will detain flows and discharge into the existing system at a rate of 66.89 cfs. The existing detention pond near 500 W will be removed and the 100-year discharge from 500 W will flow undetained into the existing system at a rate of 67.5 cfs, still under the outfall capacity of 76.28 cfs as shown in the drainage agreement in Appendix B. The new drainage concept is intended to utilize the existing pipes in 500 W as much as possible to route the flows to the existing outfall in SR-92. Part of the existing pipe system routes drainage across the street into the pond through a series of smaller pipes. With the removal of the pond, new 36" pipes will need to be installed to extend the system past the pond and into the outfall in SR 92. The existing orifice near the pond will be removed and all pipes leading to the pond and running through the pond will be abandoned or removed as well. The combined discharge of Pond 1 and the 500 W outfall will be approximately 134.39 cfs, well under the allowed 196.0 cfs discharge. Pond 4 will be located in the upper development and will detain runoff and discharge at rates specified above in the design criteria section. This discharge will be routed to Pond 1. Refer to Table 2 below for a summary of discharges from each pond.

The Utah Department of Transportation (UDOT) has directed that the maximum allowable discharge into SR-92 is 0.2 cfs/acre. The 134.39 cfs discharge outlined above represents a discharge rate of 0.14 cfs/acre, well below the 0.2 cfs/acre allowed.

East Side

Pond 2

The east side drainage to Pond 2 will be restricted in a similar way the original area plan specified – 0.1 cfs/acre and 0.2 cfs/acre for native ground and developed ground, respectively. The pond will discharge into the existing Maple Hollow drainage that sits to the west. See Table 2 below for a summary of each discharge from the project.

Pond 3

There is an existing storm drain line that captures historic drainage from the east side of the Skye area plan, as well as native areas above. It sits just to the north of the Dry Creek Highlands subdivision. Pond 3 will capture the runoff from the upstream area and discharge into this existing storm drain line at or below the existing pipe capacity (72.65 cfs), which is assumed to be the historic flow. Discharge from

Pond 3 will not exceed this capacity and will remain consistent with historic flows. See Table 2 below for a summary of each discharge from the project.

Pond 5

The drainage from the east side of the upper development will discharge in Pond 5, which will detain and discharge at the rates specified in the design criteria section above. See Table 2 below for a summary of each discharge from the project.

Table 2: Discharge Information

Pond	Contributing Area (acres)	Infiltration Rate (in./hr)	Peak Inflow (cfs)	Required Volume (cf)	Required Volume (acre-ft)	100-Year Peak Detained Discharge (cfs)	Allowable Discharge (cfs)
Pond 4[1]	86.83	8.0	36.76	52,350	1.20	10.07	14.83
Pond 1	510.97	10.0	188.17	226,258	5.19	66.89	
500 W Discharge	366.37	-	67.50	N/A	N/A	67.50 (un-detained)	
Total	**964.17**					**134.39**	**196**
Pond 2	131.57[2]	10.8	52.98	71,377	1.64	20.28	26.31
Pond 3[3]	188.63	15.0	133.41	121,217	2.78	72.61	72.65
Pond 5	227.42	8.0	80.07	113,699	2.61	28.37	37.74

Notes:

1. *The discharge from Pond 4 will flow into Pond 1. The total west side discharge is the sum of the discharge from Pond 1 and the 500 W discharge.*
2. *Pond 2 has no undeveloped contributing areas.*
3. *Discharge of Pond 3 is capped at 72.65 cfs per existing pipe capacity.*

Low Impact Development (LID) Requirement:

The storm drain system for the new development will follow local & state requirements for the MS4 program. This will include designing all detention ponds with the ability to retain the 80th percentile volume while releasing historic discharge into the existing system. Any commercial sites within the development that will need to detain onsite will be required to retain the 80th percentile storm and will be encouraged to implement other LID practices.

Pond Sizing:

The sizing of the ponds for the development depended largely on the maximum allowable discharges mentioned above, as well as infiltration into the ground. The geotechnical report provided infiltration rates near the areas of Ponds 1, 2, and 3. A factor of safety of 2.5 was applied to the rates at Pond 2 and 3 for a more conservative estimate. The infiltration rate for Pond 1 was exceptionally high (240 in/hr), so a large factor of safety was applied to provide a more reasonable and conservative rate consistent with the other ponds. Infiltration tests have not yet been done in the upper development, but it is expected that the soil in those areas will drain similarly to what has been tested down below. An infiltration rate of 8 in/hr has been assigned to Ponds 4 and 5 for this study. Additional testing will be done and pond sizing for this upper area

will be re-evaluated at final design. These rates were used in calculating ground infiltration through the bottom of the pond. Refer to the infiltration test results in Appendix C for more details. All ponds are designed to detain the runoff from the 100-year 24-hour storm and to discharge within the maximum allowable discharge requirements presented above.

Pipe and Channel Sizing:

All pipes were sized for the 10-year peak flows using the Manning's Equation within the SSA model. According to this method, pipe size is based on peak inflow from contributing areas, the approximate slope of the project based on existing contours, and an assumed manning's n value of 0.013. Table 3 below shows all expected pipe sizing within the model. See Appendix E for locations of each pipe. All channels shown in the model are existing channels that will be used to convey water to and from detention ponds. Dimensions of the existing channels were modeled to ensure that they had sufficient capacity for the flows. See Table 4 below for channel sizing and Appendix F for channel cross section designs.

Debris Basins:

Debris basins will be required above the project to prevent debris from coming into the development during flood events. These basins were sized and designed in collaboration with GeoStrata geotechnical engineers to capture all debris and storm runoff. The debris basins will be owned and maintained by the HOA. An exhibit from the geotechnical report showing the proposed locations of the debris basins can be seen in Appendix G. These locations are subject to change as the development and final grading design progress.

Conclusion:

An SSA model was developed to size detention basins and trunk lines for the Skye development. One existing pond will be upsized, two ponds will be added with the north development, and two ponds will be added on the east side. All discharges from the project will remain under the allowable rates.

Table 3: Pipe Lengths, Slopes, Sizes, and Flows

Pipe Number	Pipe Diameter (in)	Peak Flow (cfs)	Design Flow Capacity (cfs)
102	18	3.58	17.31
106*	24	33.45	52.87
109	18	2.40	27.12
110	24	10.77	44.50
113	15	8.12	11.42
114	18	8.65	10.15
115	12	1.26	10.26
116*	36	54.62	82.82
117*	36	133.20	165.67
119*	24	36.46	60.47
123*	30	35.17	69.98
124*	24	47.28	55.46
125	12	0.53	10.14
127	15	3.41	18.13
130	18	4.86	10.11
131	12	0.27	11.24
132	12	0.65	11.66
135	12	0.31	8.75
139*	30	67.50	102.65
141	12	1.10	5.86
142*	24	9.48	19.84
145*	24	43.76	59.84
146	36	22.46	198.25
147	18	2.36	32.21
148	18	6.74	27.85
149	18	3.69	29.03
150*	30	43.76	57.69
152	30	14.56	104.53
154	15	2.77	22.76
155	18	0.00	0.58
156	15	2.50	12.92
157	18	0.00	26.33
158	24	16.34	61.62
159	24	16.31	67.30
161	15	0.01	16.40
165	18	3.35	15.34
166	18	9.29	33.12
168	12	2.24	10.05
169	18	10.35	17.40
171	24	15.02	55.79
172	12	2.68	9.34

173	24	14.99	17.98
174	18	5.56	25.80
65	30	13.85	103.28
89	18	0.00	38.31
90	24	7.92	62.06
92	18	6.12	26.76
93	18	1.41	29.86

*Denotes pipes that have been sized for 100-year flows.

Table 4: Channel Dimensions and Flows

Channel Segment	Average Slope (%)	Channel Height (ft)	Channel Width (ft)	Peak Flow (cfs)	Design Flow Capacity (cfs)
143*	4.35	1.5	55	115.12	234.29
144*	7.60	1.0	50	120.98	143.30
153*	5.70	1.0	50	85.85	124.10

Appendix A: NOAA Rainfall Data

NOAA Atlas 14, Volume 1, Version 5
Location name: Lehi, Utah, US*
Coordinates: 40.4394, -111.8468
Elevation: 4973ft*
* source: Google Maps

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.130 (0.115–0.151)	0.165 (0.146–0.191)	0.227 (0.198–0.263)	0.283 (0.244–0.329)	0.371 (0.313–0.435)	0.454 (0.372–0.535)	0.549 (0.437–0.656)	0.661 (0.506–0.803)	0.842 (0.610–1.05)	1.01 (0.699–1.28)
10-min	0.198 (0.174–0.230)	0.252 (0.222–0.291)	0.345 (0.302–0.400)	0.431 (0.372–0.501)	0.565 (0.476–0.662)	0.691 (0.566–0.814)	0.835 (0.664–0.997)	1.01 (0.770–1.22)	1.28 (0.929–1.59)	1.53 (1.06–1.95)
15-min	0.246 (0.216–0.285)	0.312 (0.275–0.361)	0.428 (0.374–0.496)	0.534 (0.461–0.620)	0.701 (0.590–0.820)	0.856 (0.702–1.01)	1.04 (0.823–1.24)	1.25 (0.955–1.52)	1.59 (1.15–1.98)	1.90 (1.32–2.42)
30-min	0.331 (0.290–0.383)	0.420 (0.370–0.486)	0.576 (0.504–0.667)	0.719 (0.621–0.836)	0.943 (0.795–1.11)	1.15 (0.945–1.36)	1.39 (1.11–1.67)	1.68 (1.29–2.04)	2.14 (1.55–2.66)	2.56 (1.77–3.25)
60-min	0.410 (0.359–0.474)	0.519 (0.458–0.602)	0.713 (0.624–0.826)	0.890 (0.769–1.03)	1.17 (0.984–1.37)	1.43 (1.17–1.68)	1.73 (1.37–2.06)	2.08 (1.59–2.53)	2.65 (1.92–3.29)	3.16 (2.20–4.03)
2-hr	0.512 (0.464–0.580)	0.640 (0.576–0.723)	0.836 (0.748–0.945)	1.02 (0.902–1.16)	1.31 (1.13–1.50)	1.58 (1.33–1.82)	1.90 (1.55–2.22)	2.27 (1.78–2.70)	2.87 (2.14–3.51)	3.42 (2.44–4.28)
3-hr	0.595 (0.543–0.663)	0.736 (0.672–0.818)	0.931 (0.845–1.03)	1.11 (0.999–1.24)	1.39 (1.23–1.56)	1.64 (1.42–1.86)	1.95 (1.63–2.23)	2.31 (1.88–2.73)	2.90 (2.25–3.55)	3.44 (2.57–4.33)
6-hr	0.785 (0.728–0.854)	0.965 (0.892–1.05)	1.17 (1.08–1.28)	1.36 (1.25–1.49)	1.64 (1.48–1.79)	1.87 (1.66–2.06)	2.13 (1.86–2.38)	2.44 (2.09–2.77)	3.02 (2.50–3.58)	3.53 (2.84–4.37)
12-hr	1.01 (0.929–1.10)	1.23 (1.14–1.34)	1.49 (1.37–1.62)	1.71 (1.56–1.87)	2.02 (1.83–2.23)	2.28 (2.04–2.53)	2.56 (2.25–2.87)	2.87 (2.47–3.26)	3.35 (2.81–3.90)	3.75 (3.07–4.44)
24-hr	1.13 (1.05–1.21)	1.38 (1.29–1.49)	1.65 (1.54–1.77)	1.87 (1.75–2.01)	2.17 (2.02–2.33)	2.40 (2.23–2.57)	2.63 (2.44–2.90)	2.89 (2.64–3.30)	3.39 (2.91–3.94)	3.79 (3.10–4.48)
2-day	1.35 (1.26–1.45)	1.65 (1.55–1.77)	1.98 (1.85–2.11)	2.24 (2.09–2.39)	2.59 (2.42–2.77)	2.87 (2.66–3.06)	3.15 (2.90–3.36)	3.42 (3.14–3.67)	3.79 (3.45–4.08)	4.07 (3.68–4.53)
3-day	1.48 (1.37–1.59)	1.81 (1.68–1.95)	2.16 (2.01–2.33)	2.46 (2.29–2.64)	2.86 (2.65–3.08)	3.18 (2.93–3.42)	3.50 (3.21–3.77)	3.82 (3.49–4.13)	4.26 (3.85–4.62)	4.59 (4.13–5.07)
4-day	1.60 (1.48–1.73)	1.96 (1.82–2.13)	2.35 (2.18–2.54)	2.68 (2.48–2.89)	3.13 (2.89–3.38)	3.48 (3.20–3.77)	3.85 (3.52–4.17)	4.22 (3.84–4.58)	4.72 (4.25–5.15)	5.11 (4.57–5.61)
7-day	1.90 (1.76–2.07)	2.33 (2.16–2.53)	2.79 (2.58–3.02)	3.16 (2.92–3.42)	3.67 (3.38–3.97)	4.06 (3.73–4.40)	4.46 (4.08–4.83)	4.86 (4.43–5.28)	5.39 (4.87–5.88)	5.80 (5.20–6.35)
10-day	2.15 (1.99–2.32)	2.63 (2.44–2.84)	3.13 (2.90–3.37)	3.52 (3.27–3.80)	4.05 (3.74–4.36)	4.44 (4.09–4.78)	4.82 (4.44–5.20)	5.20 (4.77–5.62)	5.69 (5.18–6.17)	6.04 (5.48–6.57)
20-day	2.83 (2.62–3.06)	3.48 (3.22–3.75)	4.11 (3.81–4.43)	4.61 (4.26–4.95)	5.23 (4.83–5.62)	5.68 (5.24–6.11)	6.11 (5.63–6.57)	6.52 (6.00–7.02)	7.02 (6.44–7.59)	7.38 (6.74–7.99)
30-day	3.42 (3.17–3.68)	4.19 (3.88–4.51)	4.93 (4.58–5.31)	5.51 (5.11–5.93)	6.26 (5.79–6.73)	6.80 (6.28–7.32)	7.33 (6.75–7.90)	7.83 (7.19–8.46)	8.46 (7.73–9.16)	8.90 (8.11–9.67)
45-day	4.27 (3.97–4.59)	5.22 (4.86–5.62)	6.13 (5.71–6.59)	6.83 (6.36–7.34)	7.73 (7.19–8.30)	8.38 (7.78–9.00)	9.00 (8.35–9.67)	9.59 (8.87–10.3)	10.3 (9.49–11.1)	10.8 (9.92–11.7)
60-day	5.07 (4.70–5.44)	6.19 (5.76–6.67)	7.26 (6.75–7.80)	8.08 (7.51–8.67)	9.12 (8.46–9.79)	9.85 (9.14–10.6)	10.6 (9.77–11.4)	11.2 (10.4–12.1)	12.0 (11.0–13.0)	12.5 (11.5–13.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

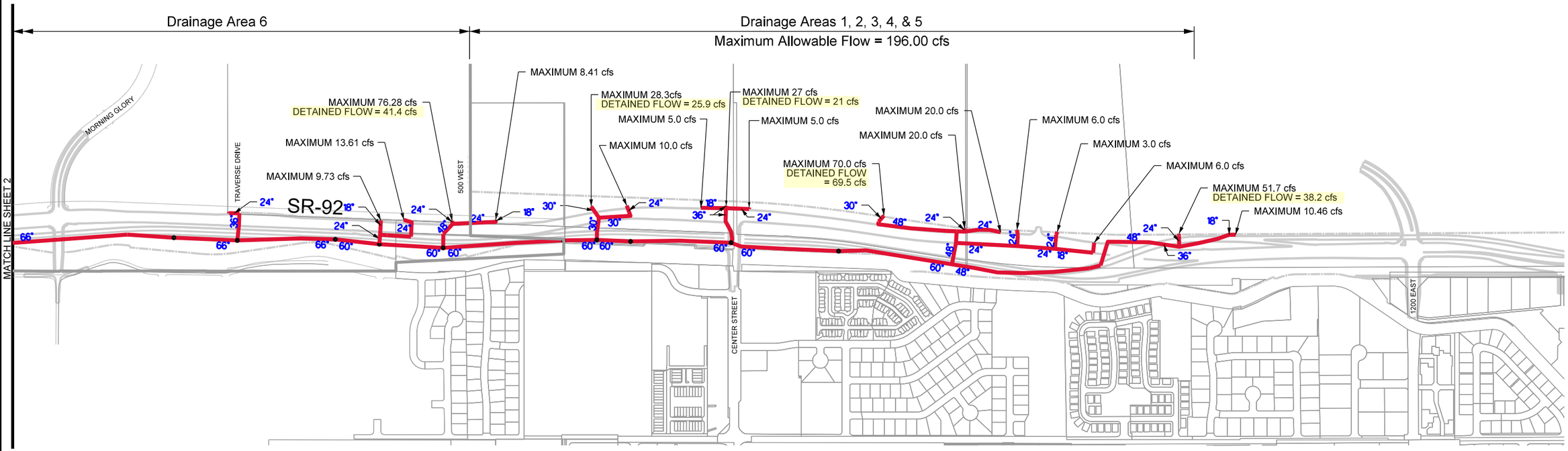
Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

Appendix B: Allowable Discharge Exhibits



NOTES

1- DOES NOT INCLUDE UDOT FLOWS.

2- MAXIMUM DETAINED FLOWS ARE DETAINED 100 YR FLOWS.

SCALE (FEET)

0 400 800 1200 1600

MW BROWN ENGINEERING, INC
Office: (801) 377-1790 Fax: (801) 377-1789
578 East 770 North, Orem UT 84097

REGISTERED PROFESSIONAL ENGINEER
NO. 174774
MATT W. BROWN
STATE OF UTAH

No.	Date	By	Notes
REVISIONS			

Designed
Drawn J.M. MYERS
Checked M.W. BROWN
Date 4-09-2013

Title: DRAINAGE AGREEMENT EXHIBIT B
Client: LEHI CITY ALLOWABLE FLOW RATE
Drawing Name: REVISED - AUG 13, 2013

PROJECT NO.
2012.059

SHEET NO.
2

SCALE (FEET)
0 900 1800 2700 3600

DRAPER CITY LIMTS
DRAPER CITY LIMTS
LEHI CITY LIMITS
SALT LAKE CO. LIMITS
UTAH CO. LIMITS
LEHI CITY LIMITS
DRAPER CITY LIMITS
DRAPER CITY LIMITS
LEHI CITY LIMITS
SALT LAKE CO. LIMITS
UTAH CO. LIMITS
LEHI CITY LIMITS
DRAPER CITY LIMITS
LEHI CITY LIMITS

DRAINAGE AREA #5
450 ACRES
0.07 CFS PER ACRE

DRAINAGE AREA #3
DIVERTED FLOW
222 ACRES
0.07 CFS PER ACRE

DRAINAGE AREA #4
304 ACRES
0.07 CFS PER ACRE

DRAINAGE AREA #1
624 ACRES
0.2 CFS PER ACRE

DRAINAGE AREA #2
43 ACRES
0.07 CFS PER ACRE

DRAINAGE AREA #6
872 ACRES
0.4 CFS PER ACRE

DIVERSION DITCH

MICRON
EXIST. DETENTION
PONDS

MURDOCK CANAL
LEHI CITY LIMITS
RAILROAD R-O-W
DETENTION AREA
INTERSTATE 15
MURDOCK CANAL
SR-92
RAILROAD ROW
SR-92
MURDOCK CANAL

72" STORM DRAIN ALLOWABLE FLOW RATES

- TIMPANOGOS HIGHWAY CONTRIBUTING AREA (SR-92) DIRECT FLOW 10 YEAR, 24 HOUR STORM (120 ACRES)
- MURDOCK CANAL (FULL RETENTION)
- RAILROAD R-O-W (EXISTING FLOW) (62 ACRES)
- I-15 (DIRECT FLOW) 10 YEAR, 24 HOUR STORM PEAK DISCHARGE = 99.08 CFS

- DRAINAGE AREA #1 (624 ACRES) (0.2 CFS PER ACRE)
- DRAINAGE AREA #4 (304 ACRES) (0.07 CFS PER ACRE)
- DRAINAGE AREA #5 (450 ACRES) (0.07 CFS PER ACRE)
- DRAINAGE AREA #6 (872 ACRES) (0.4 CFS PER ACRE)
- DRAINAGE AREA #2 (43 ACRES) (0.07 CFS PER ACRE)
- DRAINAGE AREA #3 (222 ACRES) (0.07 CFS PER ACRE)
- DRAINAGE SYSTEM (STORM DRAIN PIPE)

MW BROWN ENGINEERING, INC
Office: (801) 377-1790 Fax: (801) 377-1789
578 East 770 North, Orem UT 84097

No.	Date	By	REVISIONS	Notes

Designed
Drawn D.A. BUPPO
Checked M.W. BROWN
Date JANUARY 27, 2010

Title: EXHIBIT "A" LEHI CITY ALLOWABLE FLOW RATE
Client:
DATE JANUARY 4, 2013

PROJECT NO. 2012.059

SHEET NO. 1

J:\Lehi City (Ut)\2012\Drainage Options\Allowable Flow Rates.dgn
Jan 04, 2013 - 11:17:06
mwbrown

Appendix C: Geotechnical Report with Infiltration Testing

GeoStrata 14425 S Center Point Way, Bluffdale, Utah 84065
T: (801) 501-0583 ~ info@geostrata-llc.com

To: **D.R. Horton**
Attention: Dan Mitchell
12351 South Gateway Park Place
Draper, Utah 84020

From: **Caleb R. Allred, P.E.**
Project Geotechnical Engineer

Date: **June 23, 2021**

Subject: **Micron Property – Infiltration Testing**
Approximately 500 West and State Road 92
Lehi, Utah
GeoStrata Job No. 589-100

Mr. Mitchell;

At your request, GeoStrata has completed infiltration testing in general accordance with Appendix C of the Utah Administrative Code R317-4 for the proposed retention pond areas as highlighted on an Exhibit Map provided by LEI within the Micron Property located in the Lehi, Utah. Due fencing and limited site access one of the infiltration locations was more north along the same drainage. The location of the infiltration testing is shown on Plate A-1, *Infiltration Test Location Map*.

GeoStrata completed the infiltration testing generally according to Appendix C of the Utah Administrative Code R317-4, because this method provides guidelines of how to prepare the infiltration hole and how to perform the test and complete the test. The problem with infiltration testing is the testing is very difficult to reproduce. A relatively small change in elevation or location can provide produce a variety of results. We recommend that during the design of the retention areas that the infiltration rates provided in the letter have a factor of safety applied, and the infiltration rates used in design are compared to published documents for similar soil types such as Utah City Engineers Association, Saturated Hydraulic Conductivity Rate According to Soil Types (https://www.ucea.net/copy-of-wet-swales-7).

On June 17th, 2021, the test pits were excavated at the four locations as shown in Plate A-1 and the infiltration tests were performed at depths of between 4 feet 10 inches and 5 feet 6 inches below the existing ground surface. Subsurface soils at the site varied dramatically across the property. Logs of the subsurface conditions, as encountered in the explorations, were recorded at the time of excavation by a qualified representative of GeoStrata and are presented on Plates B-1 through B-4. GeoStrata has elected to classify the soils according to both USCS and USDA methods. To aid with the soil classification we have completed laboratory testing, results of the laboratory testing are included on Plates B-1 to B-4.

INFILTRATION TEST RESULTS

The infiltration testing was completed by excavating a hole that was approximately 4 inches in diameter and between 14 to 20 inches in depth. The excavated hole was then prepared to remove the smeared soils and 2 to 3 inches of gravel was placed in the bottom of the hole. The hole was then filled to a minimum of 12 inches above the gravel. According to Appendix C of the Utah Administrative Code R317-4 the infiltration tests at IT-2, IT-3, and IT-4 consisted of Type 1 or Type 2 soils, (12 inches of water seeps away in 10 minutes, two times in succession. As such, the Test Procedure for Type 1 and Type 2 soils was completed for this location.

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Infiltration Test Location IT-1 did not meet the Type 1 or Type 2 soil classification and the 4-hour saturation period, and minimum 16-hour swell period was achieved prior to running the final infiltration test. A summary of the results of our infiltration testing is as follows;

Micron Property Lehi, Utah Location: IT-1 Soils: CL-ML (Sandy Clay Loam) Test Elevations: 5-ft to 5-ft 6-in Diameter: 4 inches				
Depth	Time Difference (minutes)	Depth Difference (inches)	Infiltration Rate	
			(min/in)	(in/hour)
5-5½	30	7	4.29	14.00
5-5½	30	6	5.00	12.00
5-5½	30	5	6.00	10.00
5-5½	30	4.75	6.32	9.50
5-5½	30	4.5	6.67	9.00
5-5½	30	4.5	6.67	9.00
Finalized Rate			6.67	9.00

Micron Property Lehi, Utah Location: IT-2 Soils: SM (Loamy Sand) Test Elevations: 4-ft 6-in to 5-ft Diameter: 4 inches				
Depth	Time Difference (minutes)	Depth Difference (inches)	Infiltration Rate	
			(min/in)	(in/hour)
4½-5	2	8	0.25	240.00
4½-5	2	8	0.25	240.00
4½-5	2	8	0.25	240.00
Finalized Rate			0.25	240.00

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Micron Property Lehi, Utah Location: IT-3 Soils: Sandy SILT (Loam) Test Elevations: 5-ft to 5-ft 6 inches Diameter: 4 inches				
Depth	Time Difference (minutes)	Depth Difference (inches)	Infiltration Rate	
			(min/in)	(in/hour)
4½-5	10	5.25	1.90	31.50
4½-5	10	5	2.00	30.00
4½-5	10	4.75	2.11	28.50
4½-5	10	4.5	2.22	27.00
4½-5	10	4.5	2.22	27.00
Finalized Rate			2.22	27.00

Micron Property Lehi, Utah Location: IT-4 Soils: Clayey SAND (Sandy Loam) Test Elevations: 5-ft to 5-ft 6 inches Diameter: 4 inches				
Depth	Time Difference (minutes)	Depth Difference (inches)	Infiltration Rate	
			(min/in)	(in/hour)
5-5½	5	3.5	1.43	42.00
5-5½	5	3.5	1.43	42.00
5-5½	5	3.25	1.54	39.00
5-5½	5	3.125	1.60	37.50
5-5½	5	3.125	1.60	37.50
5-5½	5	3.125	1.60	37.50
Finalized Rate			1.60	37.50

It should be noted that the tests were performed using clean water. Sediment collected from runoff may reduce the performance of the retention ponds resulting in slower than observed infiltration rates. If possible, sediment should be settled/filtered out of the flow prior to entering the drainage area.

The results of the testing contained in this memorandum are based on the information available to us at the time of our evaluation, the results of our field observations, our limited subsurface exploration and our understanding of the proposed site development. This memorandum was prepared in accordance with the generally accepted standard of practice at the time the report was written. No other warranty, expressed or implied, is made.

This memorandum was written for the exclusive use of D.R. Horton and only for the proposed project described herein. It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this memorandum in its entirety. We are not responsible for the technical interpretations by others of the information described or documented in this memorandum. The use of information contained in this memorandum for bidding purposes should be done at the Contractor's option and risk.

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ATTACHMENTS

Appendix A

Plate A-1	Infiltration Test Location Map

Appendix B

Plate B-1 to B-4	Test Pit Logs

Copyright © 2021 GeoStrata



400 0 400 800 1200 1600 ft

1:20000

N

GeoStrata

Copyright, 2020

Legend

Infiltration Test Locations

D.R. Horton
Mircon Property - Infiltration Testing
Lehir, Utah
Project Number: 589-100

Infiltration Test Location Map

Plate A-1

DATE
STARTED: 6/17/21
COMPLETED: 6/18/21
BACKFILLED: 6/18/21

D.R. Horton
Micron Property Infiltration Testing
Lehi, Utah
Project Number 589-100

GeoStrata Rep: C. Allred
Rig Type: Track-hoe

TEST PIT NO:
IT-1
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0				SM	Silty SAND - slightly moist, light brown, some organics thoughout						
					CL-ML	Silty CLAY with sand - medium stiff, moist, brown (Sandy Clay Loam)						
1												
	5					Bottom of Test Pit @ 5.5 Feet						
2												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 1

2020 LOG OF TEST PIT - PLATE (B) INFILTRATION TESTING.GPJ GEOSTRATA.GDT 6/23/21

DATE
STARTED: 6/17/21
COMPLETED: 6/17/21
BACKFILLED: 6/17/21

D.R. Horton
Micron Property Infiltration Testing
Lehi, Utah
Project Number 589-100

GeoStrata Rep: C. Allred
Rig Type: Track-hoe

TEST PIT NO:
IT-2
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0				SP	Poorly Graded SAND - slightly moist, brown, some organic thoughout					
					GM	Silty GRAVEL with sand - medium dense, moist, brown, 3-inch minus materials					
1					SM	Silty SAND - medium dense, moist, brown (Loamy Sand)		7.5	38.8		
5						Bottom of Test Pit @ 5 Feet					
2											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) INFILTRATION TESTING.GPJ GEOSTRATA.GDT 6/23/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 2

DATE
STARTED: 6/17/21
COMPLETED: 6/17/21
BACKFILLED: 6/17/21

D.R. Horton
Micron Property Infiltration Testing
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. Flores
Rig Type: Track-hoe

TEST PIT NO:
IT-3
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0				SC	Clayey SAND - medium dense, slightly moist, brown, some organics thoughout					
					CL	Lean CLAY with sand - medium stiff, moist, dark brown, trace amount of organic material					
1					ML	Sandy SILT - medium dense, moist, light brown, some iron staining (Loam)		11.0	76.3		
5						Bottom of Test Pit @ 5.3 Feet					
2											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) INFILTRATION TESTING.GPJ GEOSTRATA.GDT 6/23/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 3

DATE
STARTED: 6/17/21
COMPLETED: 6/17/21
BACKFILLED: 6/17/21

D.R. Horton
Micron Property Infiltration Testing
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. Flores
Rig Type: Track-hoe

TEST PIT NO:
IT-4
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0				SC	Clayey SAND - medium dense, slightly moist to moist, brown to gray-brown, some organics in the top 6 inches (Sandy Loam)		2.5	26.2			
1	5					Bottom of Test Pit @ 5.5 Feet						
2												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 4

GeoStrata

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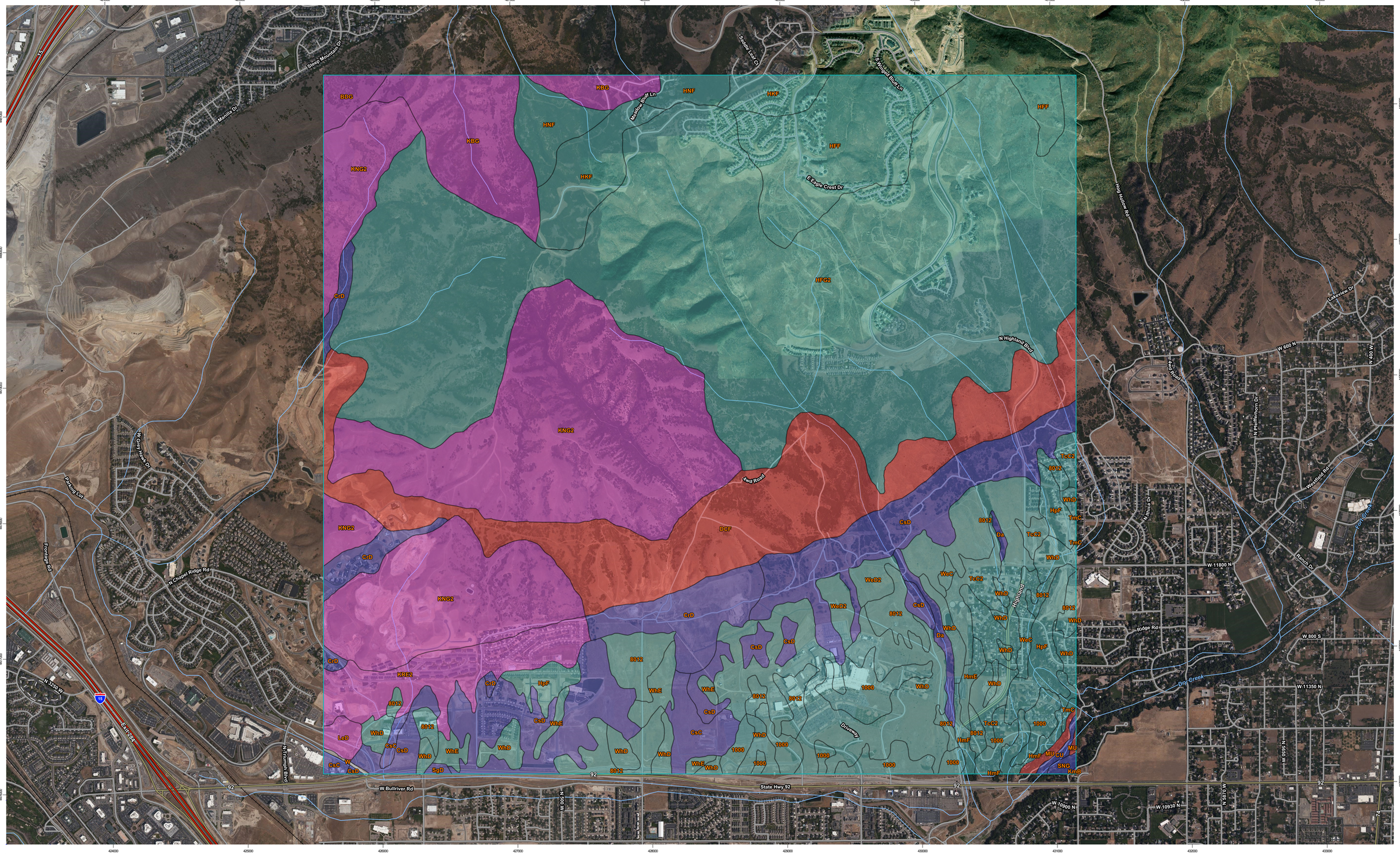
2020 LOG OF TEST PIT - PLATE (B) INFILTRATION TESTING.GPJ GEOSTRATA.GDT 6/23/21

Appendix D: NRCS Soil Group Map and Curve Numbers

Hydrologic Soil Group—Salt Lake Area, Utah, and Utah County, Utah - Central Part
(Micron)



Map Scale: 1:12,800 if printed on D landscape (34" x 22") sheet.

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

4/23/2021
Page 1 of 5

198

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Salt Lake Area, Utah
Survey Area Data: Version 13, Jun 8, 2020

Soil Survey Area: Utah County, Utah - Central Part
Survey Area Data: Version 13, Jun 8, 2020

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 19, 2016—Sep 14, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table 5.5 Runoff curve numbers for urban areas (Mockus, 1969)[a]

Cover Description	Average Percent Impervious Area[b]	Curve Numbers for Hydrologic Soil Group			
Cover Type and Hydrologic Condition		**A**	**B**	**C**	**D**
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[c]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious area only)[d]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1 to 2 in. sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre (506 m^2) or less (town houses)	65	77	85	90	92
1/4 acre (1,012 m^2)	38	61	75	83	87
1/3 acre (1,349 m^2)	30	57	72	81	86
1/2 acre (2,023 m^2)	25	54	70	80	85
1 acre (4,047 m^2)	20	51	68	79	84
2 acres (8,094 m^2)	12	46	65	77	82
Developing urban areas					
Newly graded area (pervious areas only, no vegetation)[e]		77	86	91	94
Idle lands (CNs are determined using cover types similar to those in Table 5.6)					

a. Average runoff condition, and $I_a = 0.2S$.

b. The average percent impervious area shown was used to develop the composite *CN*s. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a *CN* of 98, and pervious areas are considered equivalent to open space in good hydrologic condition.

c. *CN*s shown are equivalent to those of pasture. Composite *CN*s may be computed for other combinations of open space cover type.

d. Composite *CN*s for natural desert landscaping should be computed using Figure 2.3 or 2.4 (in TR-55) based on the impervious area percentage (*CN* = 98) and the pervious area *CN*. The pervious area *CN*s are assumed equivalent to desert shrub in poor hydrologic condition.

e. Composite *CN*s to use for the design of temporary measures during grading and construction should be computed using Figure 2.3 or 2.4 (in TR-55) based on the degree of development (impervious area percentage) and the *CN*s for the newly graded pervious areas.

Table 5.7 Runoff curve numbers for other agricultural lands[a] (Mockus, 1969)

Cover Description		Curve Numbers for Hydrologic Soil Group			
Cover Type	Hydrologic Condition	A	B	C	D
Pasture, grassland, or range-continuous forage for grazing[b]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow-continuous grass, protected from grazing and generally mowed for hay		30	58	71	78
Brush—brush-weed grass mixture with brush the major element[c]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30[d]	48	65	73
Woods-grass combination (orchard or tree farm)[e]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods[f]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30[d]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots		59	74	82	86

a. Average runoff condition, and $I_a = 0.2S$

b. *Poor:* less than 50% ground cover or heavily grazed with no mulch. *Fair:* 50 to 75% ground cover and not heavily grazed. *Good:* more than 75% ground cover and lightly or only occasionally grazed

c. *Poor:* less than 50% ground cover. *Fair:* 50 to 75% ground cover. *Good:* more than 75% ground cover

d. Actual curve number is less than 30; use $CN = 30$ for runoff computations

e. *CN*s shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the *CN*s for woods and pasture.

f. *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning. *Fair:* Woods are grazed but not burned, and some forest litter covers the soil. *Good:* Woods are protected from grazing, and litter and brush adequately cover the soil

Table 5.8 Runoff curve numbers for arid and semiarid rangelands[a] (Mockus, 1969)

Cover Description		Curve Numbers for Hydrologic Soil Group:			
Cover Type	Hydrologic Condition[b]	A[c]	B	C	D
Herbaceous-mixture of grass, weeds, and low-growing brush, with brush the minor element	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen-mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper-pinyon, juniper, or both; grass understory	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub-major plants include saltbush, greasewood, creosote-bush, blackbrush, bursage, palo verde, mesquite, and cactus	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

a. Average antecedent moisture condition, and $I_a = 0.2S$. For range in humid regions, use Table 5.7.

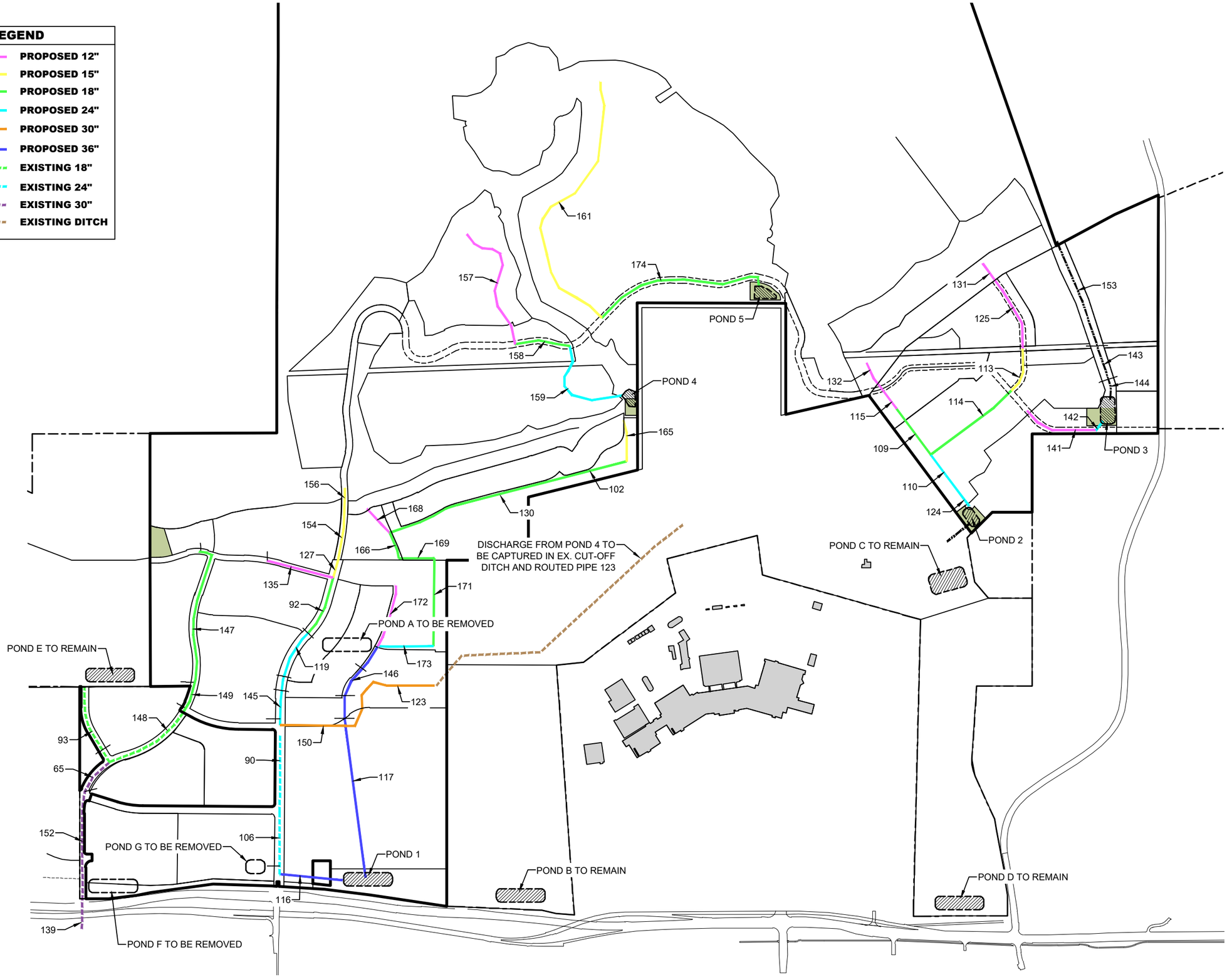
b. *Poor:* less than 30% ground cover (litter, grass, and brush overstory). *Fair:* 30 to 70% ground cover. *Good:* more than 70% ground cover.

c. Curve numbers for group A have been developed for desert shrub.

Appendix E: Pond and Pipe Location Exhibit

LEGEND

- PROPOSED 12"
- PROPOSED 15"
- PROPOSED 18"
- PROPOSED 24"
- PROPOSED 30"
- PROPOSED 36"
- EXISTING 18"
- EXISTING 24"
- EXISTING 30"
- EXISTING DITCH



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Phone: 801.798.0555
Fax: 801.798.9393
office@lei-eng.com
www.lei-eng.com

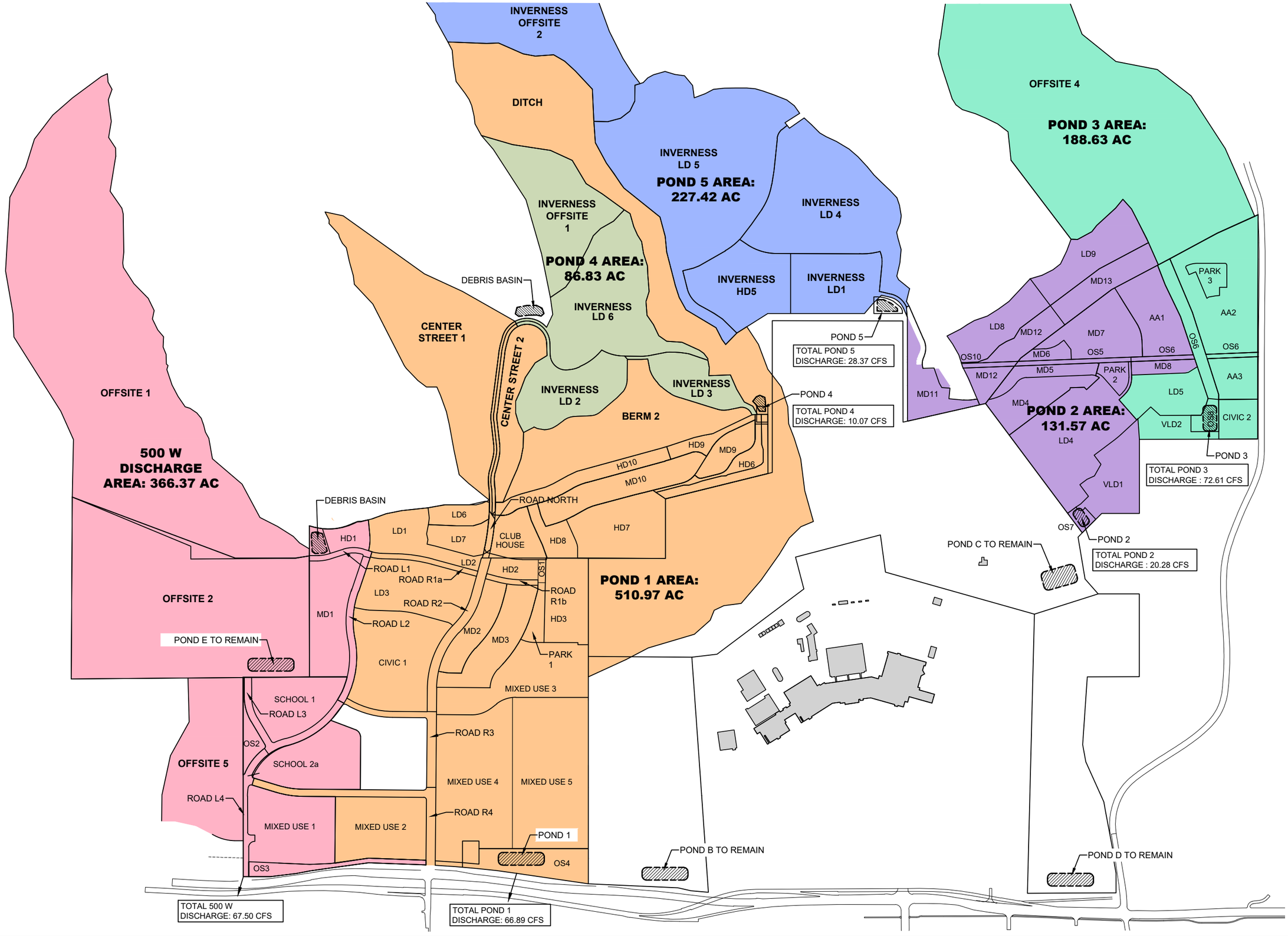
SKYE
LEHI, UTAH

POND & PIPE EXHIBIT

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2011-0066
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 04/4/2023

SHEET
E1



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SKYE
LEHI, UTAH

LOWER CONTRIBUTING AREA EXHIBIT

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2011-0066
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1" = 1000'
DATE: 05/12/2023

SHEET
E2

Appendix F: Channel Cross Section Designs

Channel Report

Channel 143

Triangular

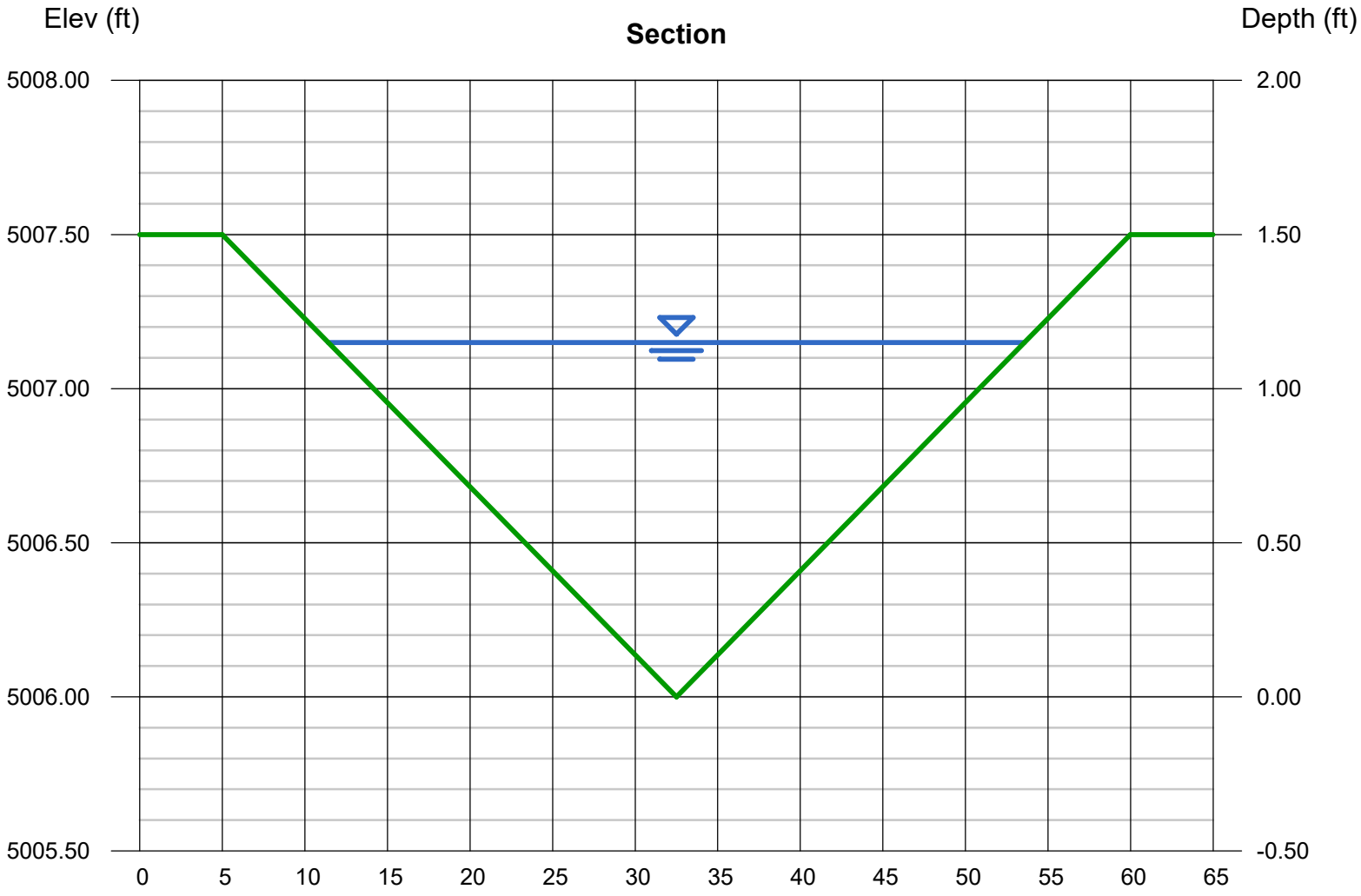
Side Slopes (z:1)	= 18.33, 18.33
Total Depth (ft)	= 1.50
Invert Elev (ft)	= 5006.00
Slope (%)	= 4.35
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 115.17

Highlighted

Depth (ft)	= 1.15
Q (cfs)	= 115.17
Area (sqft)	= 24.24
Velocity (ft/s)	= 4.75
Wetted Perim (ft)	= 42.22
Crit Depth, Yc (ft)	= 1.20
Top Width (ft)	= 42.16
EGL (ft)	= 1.50



Channel Report

Channel 144

Triangular

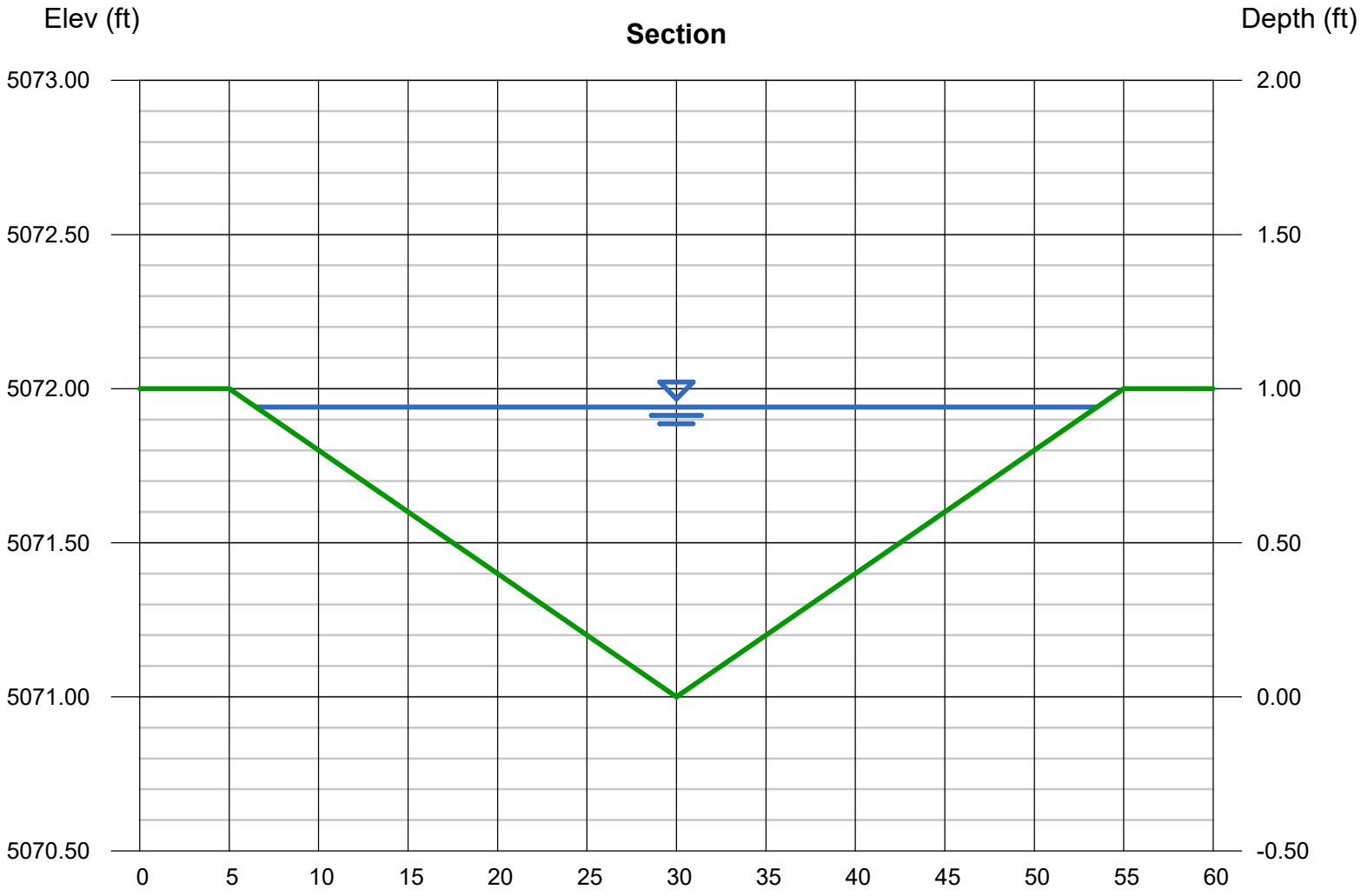
Side Slopes (z:1)	= 25.00, 25.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 5071.00
Slope (%)	= 7.60
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 121.03

Highlighted

Depth (ft)	= 0.94
Q (cfs)	= 121.03
Area (sqft)	= 22.09
Velocity (ft/s)	= 5.48
Wetted Perim (ft)	= 47.04
Crit Depth, Yc (ft)	= 1.00
Top Width (ft)	= 47.00
EGL (ft)	= 1.41



Channel Report

Channel 153

Triangular

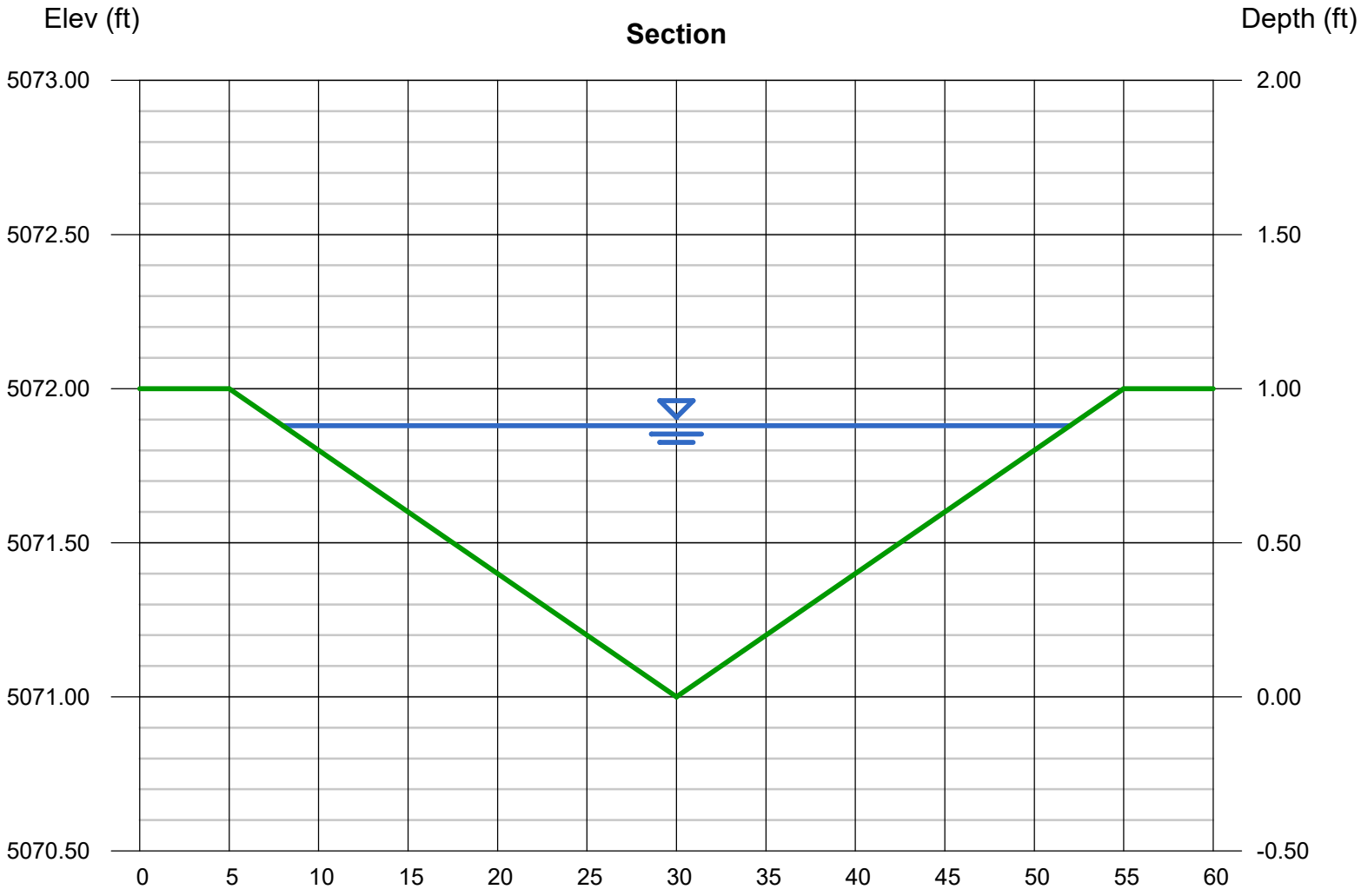
Side Slopes (z:1)	= 25.00, 25.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 5071.00
Slope (%)	= 5.70
N-Value	= 0.045

Calculations

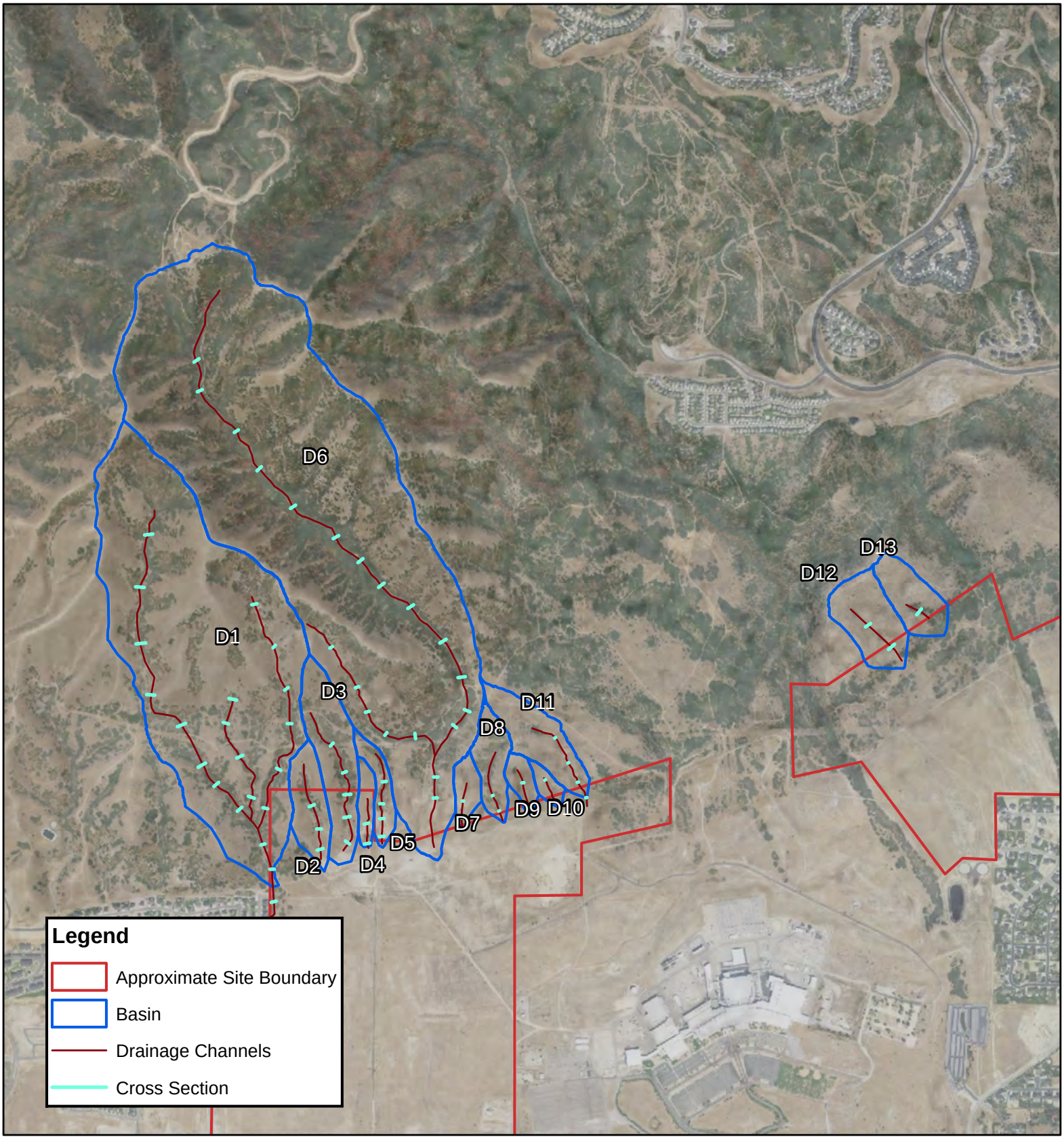
Compute by:	Known Q
Known Q (cfs)	= 85.89

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 85.89
Area (sqft)	= 19.36
Velocity (ft/s)	= 4.44
Wetted Perim (ft)	= 44.04
Crit Depth, Yc (ft)	= 0.95
Top Width (ft)	= 44.00
EGL (ft)	= 1.19



Appendix G: Debris Basin Exhibit



0 500 1,000 2,000 3,000 4,000 Feet

1:20,000

Basemap:
2012 12.5 cm HRO aerial imagery and hillshades derived from DEMs provided by the State of Utah AGRC

N

GeoStrata

Copyright, 2021

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Debris Flow Assessment Map

Plate A-8

SKYE AREA PLAN

PRESSURIZED IRRIGATION SECTION

(HAL Project No.: 432.07.300)



July 2023

HANSEN ALLEN & LUCE INC
ENGINEERS

INTRODUCTION

The pressurized irrigation (PI) element of the Skye Area development includes all the infrastructure needed to provide a reliable supply of irrigation water to a total of 339 irrigated acres. This includes four pressure zones located adjacent to the Texas Instruments (formerly Micron) facility in Lehi, Utah. 218 irrigated acres are located in the lower three pressure zones and 122 irrigated acres are in the higher pressure zone.

DR Horton is proposing to establish HOA requirements restricting the amount of sod allowed and reduce the water required for outdoor irrigation.

The system includes a well, two storage reservoirs, two pump stations, pipelines, and pressure reducing stations (see Figures 1 and 2.1). In addition to irrigation water, the system will provide fire protection for residential units within the development.

Water Source

The Skye development has a PI water source demand requirement of 1,187 gallons per minute (gpm). Of this capacity, 759 gpm is in the three lower pressure zones and 427 gpm is in the upper pressure zone. Lehi City is requiring the developer to construct a new well at approximately 1500 North and 1200 East (see Figure 2.1).

Pump Stations

A new 1,187 gpm pump station will be constructed near the existing Lower Hills reservoir to provide PI water to the development and provide redundancy to other areas of the City (see Figure 1). An additional outlet with an appropriately sized screen out of the Low Hills reservoir will be required to feed the pump station.

A new 427 gpm pump station will be constructed near the proposed Upper Maple Hollow reservoir to provide PI water to the upper pressure zone (see Figure 1).

Storage Reservoirs

A new 1.3-million-gallon (4.0 acre-feet) water storage reservoir will be constructed to serve the three lower pressure zones. The elevation of the overflow will match the overflow elevation of the existing Seasons PI Reservoir, which is located west of the Skye area.

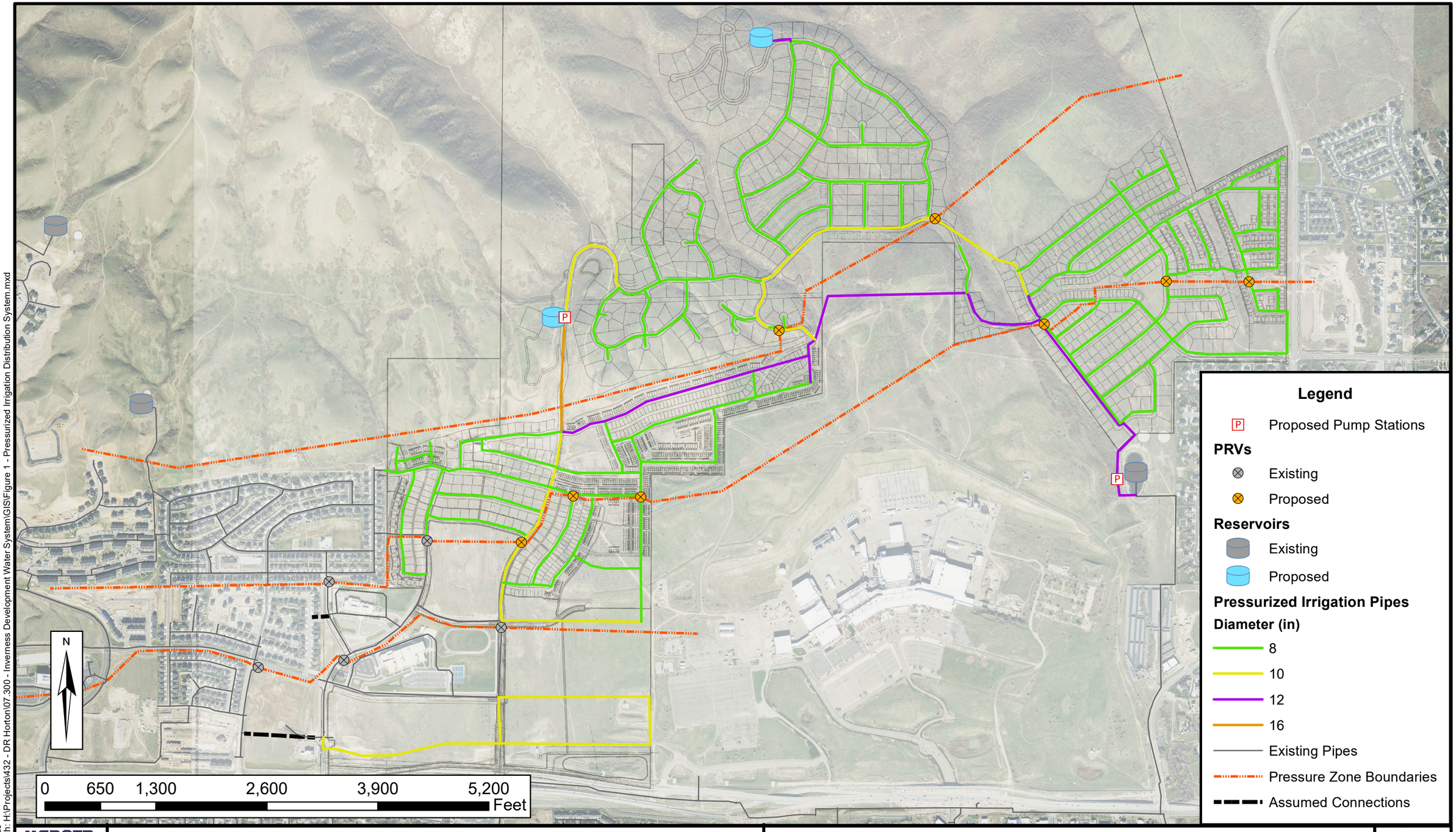
A new 800,000-gallon water storage reservoir will be constructed to serve the upper pressure zone.

Pressure Reducing Stations

For the three lower pressure zones the plan includes six new pressure reducing stations (PRVs) and 3 existing PRVs that will provide redundancy to the pressure zones. For long term redundancy and efficiency, it is recommended that all pressure zones be connected to existing pressure zones and the PRVs be set to only open in an emergency.

For the upper pressure zone, the plan includes two new PRVs that can be used for redundancy and allow water to flow from the upper to the lower pressure zones if needed in an emergency.

The pressure reducing stations will use a 20-foot by 18-foot buried concrete vault that will



Date: 6/28/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 1 - Pressurized Irrigation Distribution System.mxd

HANSEN ALLEN & LUCE inc ENGINEERS

DR HORTON
SKYE AND INVERNESS DEVELOPMENT

PRESSURIZED IRRIGATION DISTRIBUTION SYSTEM

FIGURE
1

To access the first 400 ERUs from Seasons Tank,
either all of the City's 5 projects must be finished, or
all of the following DR Horton projects:
- Family Park Well
- Cedar Hollow Well
- Low Hills Pump Station
- Pipeline from Low Hills Pump Station to connect to Seasons

Texas Instruments

P

N

0 1,200 2,400 4,800 7,200 9,600 Feet

Legend

- Phase 1
- Proposed Pump Stations
- Proposed DW Well - 866 gpm
- Proposed PI Well - 1187 gpm

PRVs

- Existing
- Proposed

Reservoirs

- Existing

Phase 1 Pressurized Irrigation Pipes

Diameter (in)

- 8
- 10
- 12
- 16
- Existing PI Pipes

Date: 7/27/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.1 - Pressurized Irrigation Phase 1.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

DR HORTON
SKYE AREA PLAN

PRESSURIZED IRRIGATION
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 1 (400 ERUs)

FIGURE
2.1

contain valves for both the culinary water system and the PI system. The vaults will be constructed outside the street right-of-way in a public utility easement according to Lehi City standards.

Distribution Pipelines

Distribution pipelines ranging from 8-inches to 16-inches in diameter will provide for distribution of PI water throughout the Skye development in accordance with Lehi City pressure requirements (see Figure 1). Distribution pipelines 12-inches in diameter and smaller will use PVC C-900 pipe materials for all pipelines within Lehi City street rights-of-way. Pipelines 16-inches in diameter and pipelines constructed within easements on privately-owned land will use Class 350 Ductile Iron Pipe.

Recommended System Enhancements

Even though not required, there are recommended connections made with the Skye development to the west with the existing PI water system (see Figure 1). Making pressure zones compatible and combining them with these connections would allow for more redundancy, reduced pumping and reduced energy demand, and provide easier operation across the pressure zones.

Project Phasing

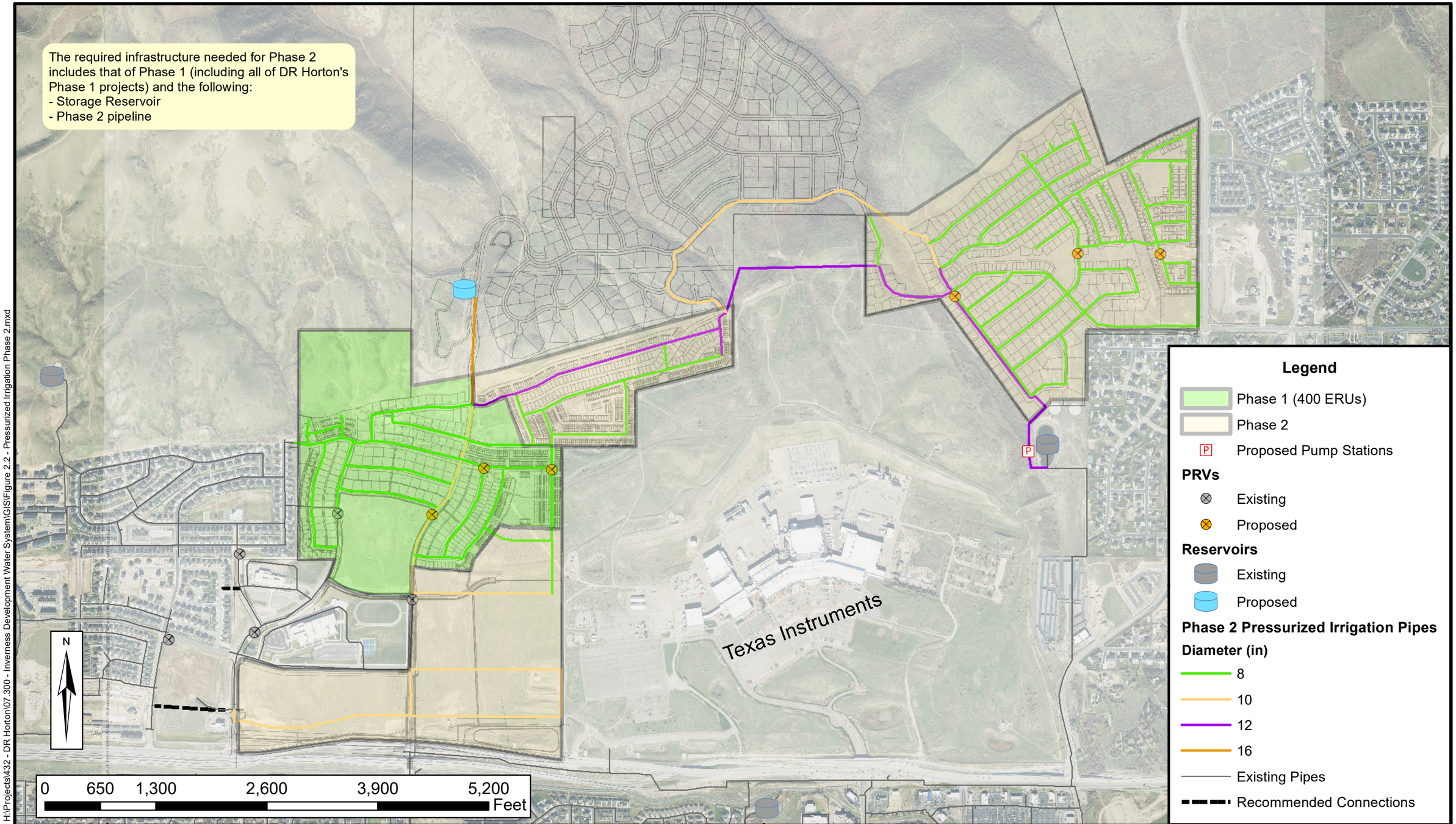
The long-term plan for the Skye development includes four potential phases as shown in Figures 2.1, 2.2, and 2.3.

Phase 1 represents the area to be constructed first (see Figure 2.1). This phase includes 56 irrigated acres and relies on borrowing storage capacity in the Seasons PI reservoir for 56 irrigated acres. To access this storage capacity, the City's five projects must be completed **or** all of DR Horton's projects listed in Table 1 must be finished.

Table 1
Projects Required to be Completed Before Accessing 56 Irrigated Acres (400 ERUs) from Seasons Tank

Entity	Required Infrastructure
Lehi City	Vialetto PI Reservoir
	Vialetto PI Pump Station
	Flight Park Reservoir (PI)
	Point of the Mountain Well (PI)
	Sand Pit Well (DW)
OR	
DR Horton	Family Park Well (2200 N 600 E) (DW)
	Cedar Hollow Well (1500 N 1200 E) (PI)
	Low Hills Pump Station (DW & PI)
	Pipelines from Low Hills Pump Station to connect to Seasons Tank

The required infrastructure needed for Phase 2 includes that of Phase 1 (including all of DR Horton's Phase 1 projects) and the following:
- Storage Reservoir
- Phase 2 pipeline



Legend

- Phase 1 (400 ERUs)
- Phase 2
- Proposed Pump Stations

PRVs

- Existing
- Proposed

Reservoirs

- Existing
- Proposed

Phase 2 Pressurized Irrigation Pipes

Diameter (in)

- 8
- 10
- 12
- 16
- Existing Pipes
- Recommended Connections

Date: 7/27/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.2 - Pressurized Irrigation Phase 2.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

DR HORTON
SKYE AREA PLAN

PRESSURIZED IRRIGATION
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 2

FIGURE
2.2

The required infrastructure needed for Phase 3 includes that of Phase 1 and Phase 2 and the following:
- Pump Station
- Storage Reservoir

Texas Instruments

N

0 650 1,300 2,600 3,900 5,200 Feet

Legend

- Phase 1 (400 ERUs)
- Phase 2
- Phase 3
- Proposed Pump Stations

PRVs

- Existing
- Proposed

Reservoirs

- Existing
- Proposed

Phase 3 Pressurized Irrigation Pipes

Diameter (in)

- 8
- 10
- 12
- 16
- Existing Pipes
- Recommended Connections

Date: 7/27/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.3 - Pressurized Irrigation Phase 3.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

DR HORTON
SKYE AREA PLAN

PRESSURIZED IRRIGATION
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 3

FIGURE
2.3

Phase 2 represents the rest of the lower three pressure zones of the Skye development and includes an additional 162 irrigated acres to the 56 irrigated acres for a total of 218 irrigated acres. The infrastructure required for Phase 2 includes all of DR Horton's projects shown in Table 1, plus the 1.3-million-gallon (4.0 acre-feet) water storage reservoir and redundant pipelines (see Figure 2.2). This pipeline would go up through the upper Skye area to provide redundancy for the east side of Phase 2. This pipeline would initially have lower pressure and no homes connected on it until Phase 3 when it would then have higher pressure but continue to provide redundancy through PRVs.

Phase 3 represents the upper Skye area that is located north of Phases 1 and 2 and includes 122 irrigated acres. The infrastructure required for Phase 3 includes all the infrastructure required for Phase 2 plus a storage reservoir and pump station to serve the upper pressure zone (see Figure 2.3). Capacity for these phases has been included in determining source, transmission, pump stations, and storage capacities as listed in Table 2.

Table 2 - Skye Area Pressurized Irrigation Water System
Design Criteria and System Requirements

	Lehi City Design Criteria	Results	Phase
Irrigated Acres:		56 irr. acres	1
		162 irr. acres	2
		122 irr. acres	3
		- irr. acres	4
		339 irr. acres	Total
Average Flow:	3.5 gpm/acre	194 gpm	1
		565 gpm	2
		427 gpm	3
		- gpm	4
		1,187 gpm	Total
Peak Hourly Flow:	6.78 gpm/acre	376 gpm	1
		1,095 gpm	2
		827 gpm	3
		- gpm	4
		2,298 gpm	Total
Irrigation Storage:	5,040 gal./acre	279,720 gal.	1
		813,960 gal.	2
		614,880 gal.	3
		- gal.	4
		1,093,680 gal.	Total of 1 and 2
		614,880 gal.	Total of 3 and 4
Source:	**3.5 gpm/acre**	194 gpm	1
		565 gpm	2
		427 gpm	3
		- gpm	4
		1,187 gpm	Total
Fire Storage[1]:	1,500 gpm - 2 hrs.	180,000 gal.	
Total Storage:		**1,273,680 gal.**	Total of 1 and 2
Total Storage:		**794,880 gal.**	Total of 3 and 4
Fire Flow[2]:	1,500 gpm	1,500 gpm	

1. Assumes all commercial and civic buildings are sprinklered

2. Residential only. Assumes all commercial and civic buildings are sprinklered.

SKYE AREA PLAN

DRINKING WATER SECTION

(HAL Project No.: 432.07.300)



July 2023

HANSEN ALLEN & LUCE INC
ENGINEERS

INTRODUCTION

The drinking water element of the Skye Area development includes all the infrastructure needed to provide a reliable supply of drinking water to a total of 2,736 equivalent residential units (ERU). This includes four pressure zones located adjacent to the Texas Instruments (formerly Micron) facility in Lehi, Utah. 2,274 ERUs are located in the lower three pressure zones and 462 ERUs are in the higher pressure zone.

The system includes a well, two storage tanks, two pump stations, pipelines, and pressure reducing stations (see Figures 1 and 2.1). The drinking water system will provide fire protection water service to commercial and institutional buildings that will be constructed with sprinkler fire protection systems. Additionally, any home exceeding 5,000 square feet will require an automatic fire sprinkler system, per municipal code 10-3-1.

Water Source

The Skye development has a drinking water source demand requirement of 866 gallons per minute (gpm). Of this capacity, 720 gpm is in the three lower pressure zones and 146 gpm is in the upper pressure zone. Lehi City is requiring the developer to construct a new well within Family Park at approximately 2200 North and 600 East (see Figure 2.1). The well will be constructed according to drinking water standards.

Pump Stations

A new 866 gpm pump station will be constructed near the existing Lower Hills Tanks to provide drinking water to the development and provide redundancy to other areas of the City (see Figure 1).

A new 146 gpm pump station will be constructed near the proposed Maple Hollow Tank to provide drinking water to the upper pressure zone (see Figure 1).

Storage Tanks

A new 1.1-million-gallon (MG) water storage tank will be constructed to serve the three lower pressure zones. The elevation of the floor and overflow will match the floor and overflow elevation of the existing Seasons Tank, which is located west of the Skye area.

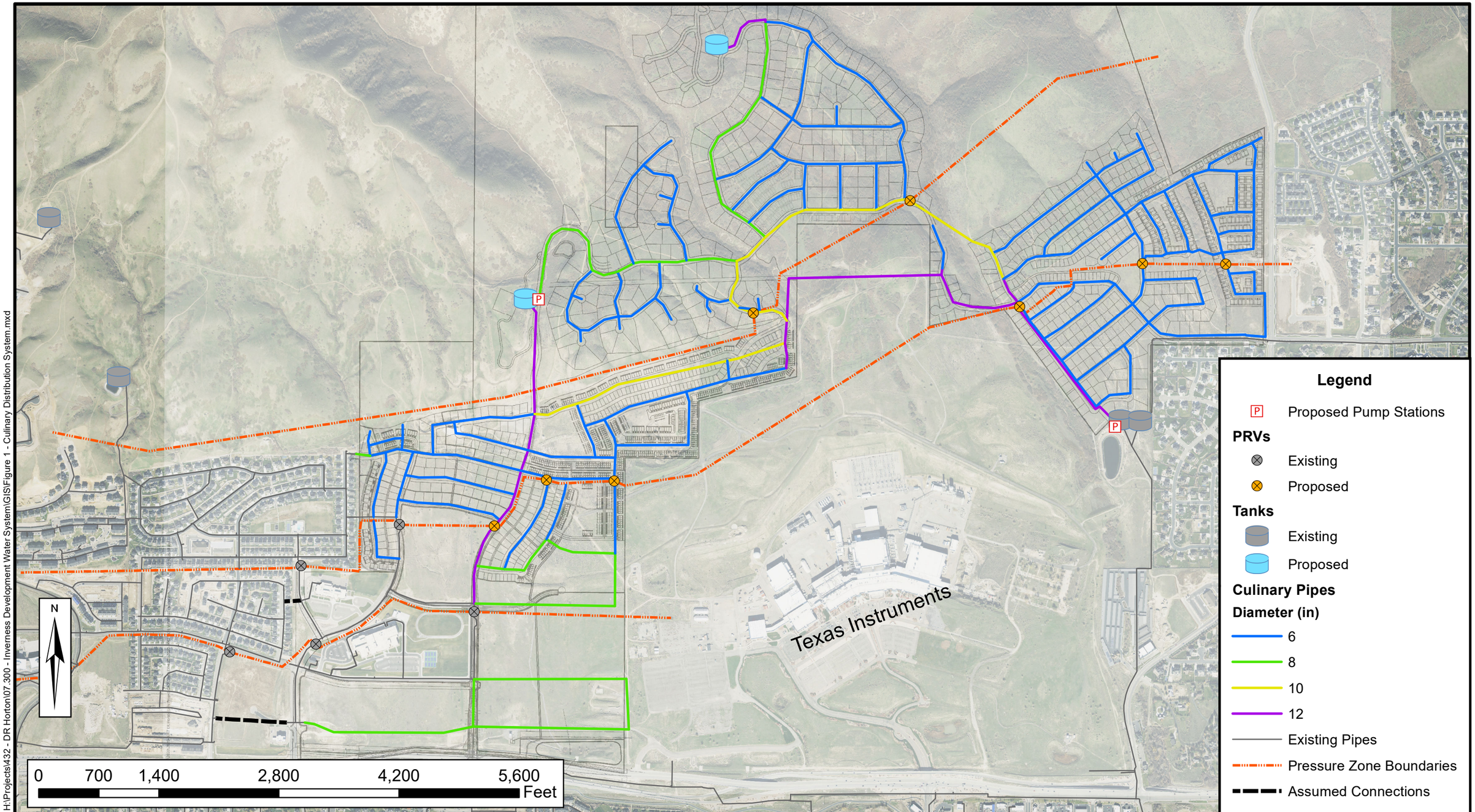
A new 222,000-gallon water storage tank will be constructed to serve the upper pressure zone.

Pressure Reducing Stations

For the three lower pressure zones the plan includes six new pressure reducing stations (PRVs) and 3 existing PRVs that will provide redundancy to the pressure zones. For long term redundancy and efficiency, it is recommended that all pressure zones be connected to existing pressure zones and the PRVs be set to only open in an emergency.

For the upper pressure zone, the plan includes two new PRVs that can be used for redundancy and allow water to flow from the upper to the lower pressure zones if needed in an emergency.

The pressure reducing stations will use a 20-foot by 18-foot buried concrete vault that will contain valves for both the culinary water system and the pressurized irrigation system. The vaults will be constructed outside the street right-of-way in a public utility easement according



Date: 6/28/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 1 - Culinary Distribution System.mxd

HANSEN ALLEN & LUCE inc ENGINEERS

DR HORTON
SKYE AREA PLAN

CULINARY WATER DISTRIBUTION SYSTEM

FIGURE
1

To access the first 400 ERUs from Seasons Tank,
either all of the City's 5 projects must be finished, or
all of the following DR Horton projects:
- Family Park Well
- Cedar Hollow Well
- Low Hills Pump Station
- Pipeline from Low Hills Pump Station to connect to Seasons

Texas Instruments

P

N

0 1,200 2,400 4,800 7,200 9,600 Feet

Legend

- Phase 1 (400 ERUs)
- Proposed Pump Stations
- Proposed DW Well - 866 gpm
- Proposed PI Well - 1187 gpm

PRVs

- Existing
- Proposed

Tanks

- Existing

Phase 1 Culinary Pipes

Diameter (in)

- 6
- 8
- 10
- 12
- Existing DW Pipes

Date: 7/27/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.1 - Culinary Phase 1.mxd

HANSEN ALLEN & LUCE inc ENGINEERS

DR HORTON
SKYE AREA PLAN

CULINARY WATER
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 1 (400 ERUs)

FIGURE
2.1

to Lehi City standards.

Distribution Pipelines

Distribution pipelines ranging from 6-inches to 12-inches in diameter will provide for distribution of water throughout the Skye development in accordance with Lehi City pressure requirements (see Figure 1). Distribution pipelines will use PVC C-900 pipe materials for all pipelines within Lehi City street rights-of-way. Pipelines constructed within easements on privately-owned land will use Class 350 Ductile Iron Pipe.

Recommended System Enhancements

Even though not required, there are recommended connections made with the Skye development to the west with the existing drinking water system (see Figure 1). Making pressure zones compatible and combining them with these connections would allow for more redundancy, reduced pumping and reduced energy demand, and provide easier operation across the pressure zones.

Project Phasing

The long-term plan for the Skye development includes four potential phases as shown in Figures 2.1, 2.2, and 2.3.

Phase 1 represents the area to be constructed first (see Figure 2.1). This phase includes 400 ERUs and relies on borrowing storage capacity in Seasons Tank for 400 ERUs. To access this storage capacity, the City's five projects must be completed **or** all of DR Horton's projects listed in Table 1 must be finished.

Table 1
Projects Required to be Completed Before Accessing 400 ERUs from Seasons Tank

Entity	Required Infrastructure
Lehi City	Vialetto PI Reservoir
	Vialetto PI Pump Station
	Flight Park Reservoir (PI)
	Point of the Mountain Well (PI)
	Sand Pit Well (DW)
OR	
DR Horton	Family Park Well (2200 N 600 E) (DW)
	Cedar Hollow Well (1500 N 1200 E) (PI)
	Low Hills Pump Station (DW & PI)
	Pipelines from Low Hills Pump Station to connect to Seasons Tank

The required infrastructure needed for Phase 2 includes that of Phase 1 (including all of DR Horton's Phase 1 projects) and the following:
- Storage Tank
- Phase 2 pipeline

Texas Instruments

N

0 700 1,400 2,800 4,200 5,600 Feet

Legend

- Phase 1 (400 ERUs)
- Phase 2
- Proposed Pump Stations

PRVs

- Existing
- Proposed

Tanks

- Existing
- Proposed

Phase 2 Culinary Pipes

Diameter (in)

- 6
- 8
- 10
- 12
- Existing Pipes
- Recommended Connections

Date: 7/7/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.2 - Culinary Phase 2.mxd

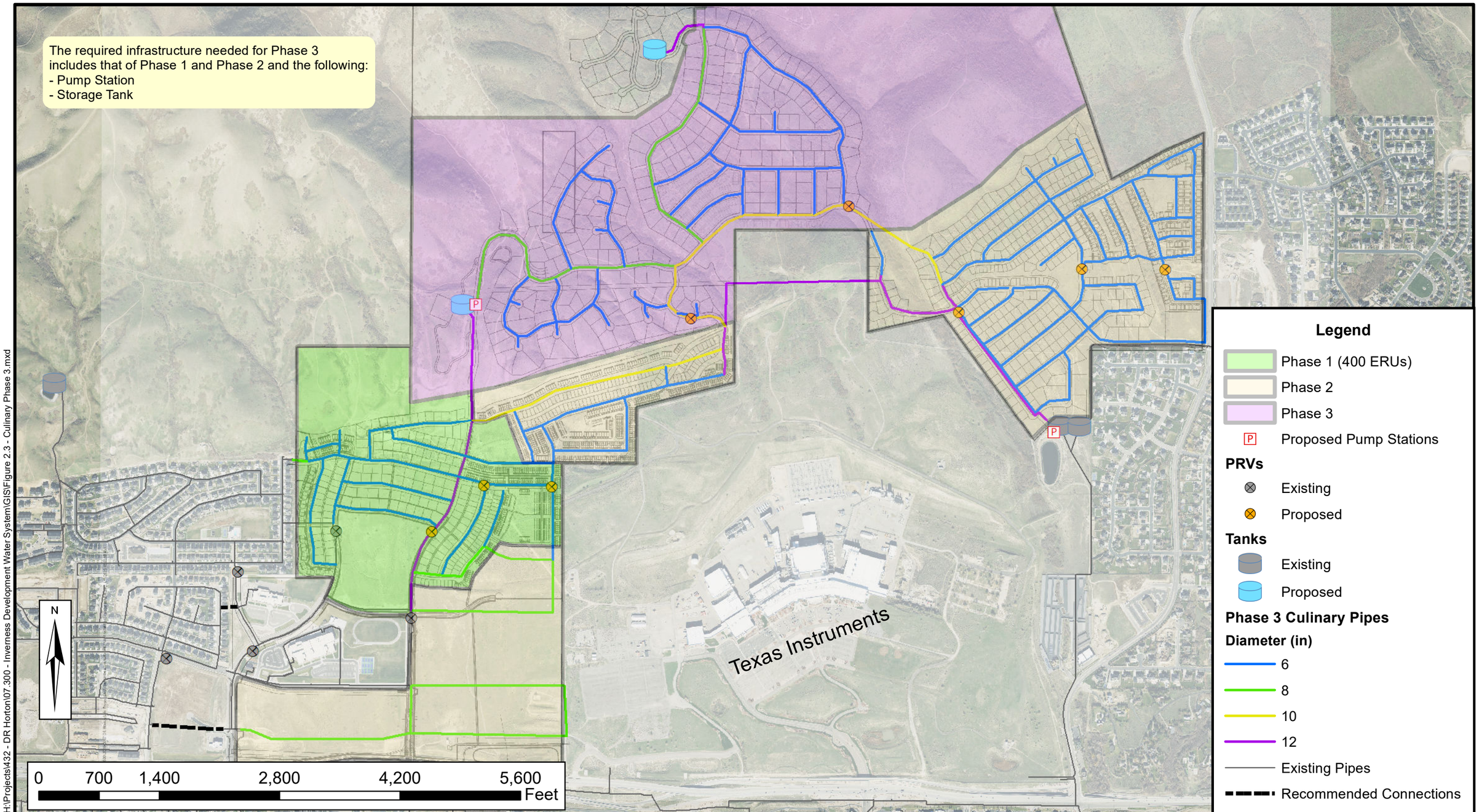
HANSEN ALLEN & LUCE INC ENGINEERS

DR HORTON
SKYE AREA PLAN

CULINARY WATER
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 2

FIGURE
2.2

The required infrastructure needed for Phase 3 includes that of Phase 1 and Phase 2 and the following:
- Pump Station
- Storage Tank



Legend

- Phase 1 (400 ERUs)
- Phase 2
- Phase 3
- Proposed Pump Stations

PRVs

- Existing
- Proposed

Tanks

- Existing
- Proposed

Phase 3 Culinary Pipes

Diameter (in)

- 6
- 8
- 10
- 12
- Existing Pipes
- Recommended Connections

Date: 7/27/2023
Document Path: H:\Projects\432 - DR Horton\07.300 - Inverness Development Water System\GIS\Figure 2.3 - Culinary Phase 3.mxd

HANSEN ALLEN & LUCE INC ENGINEERS

DR HORTON
SKYE AREA PLAN

CULINARY WATER
DR HORTON INFRASTRUCTURE REQUIRED FOR PHASE 3

FIGURE
2.3

Phase 2 represents the rest of the lower three pressure zones of the Skye development and includes an additional 1,874 ERUs to the 400 Phase 1 ERUs for a total of 2,274. The infrastructure required for Phase 2 includes all of DR Horton's projects shown in Table 1, plus the 1.1 MG storage tank and redundant pipelines (see Figure 2.2). This pipeline would go up through the upper Skye area to provide redundancy for the east side of Phase 2. This pipeline would initially have lower pressure and no homes constructed on it until Phase 3 when it would then have higher pressure but continue to provide redundancy through PRVs.

Phase 3 represents the upper Skye area that is located north of Phases 1 and 2 and includes 462 ERUs. The infrastructure required for Phase 3 includes all the infrastructure required for Phase 2 plus a storage tank and pump station to serve the upper pressure zone (see Figure 2.3). Capacity for these phases has been included in determining source, transmission, pump stations, and storage capacities as listed in Table 2.

Table 2 - Skye Area Culinary Water System
Design Criteria and System Requirements

	Lehi City Design Criteria	Results	Phase
ERUs:		400 ERU	1
		1,874 ERU	2
		462 ERU	3
		- ERU	4
		2,736 ERU	Total
Source (Peak Daily Flow):	**456 gpd/ERU**	127 gpm	1
		593 gpm	2
		146 gpm	3
		- gpm	4
		866 gpm	Total
Peak Hourly Flow:	0.80 gpm / ERU	320 gpm	1
		1,499 gpm	2
		370 gpm	3
		- gpm	4
		2,189 gpm	Total
Peak Instantaneous:	1.00 gpm/ERU	400 gpm	1
		1,874 gpm	2
		462 gpm	3
		- gpm	4
		2,736 gpm	Total
Equalization Storage:	400 gallons/ERU	160,000 gal.	1
		749,600 gal.	2
		184,800 gal.	3
		- gal.	4
		909,600 gal.	Total of 1 and 2
		184,800 gal.	Total of 3 and 4
Emergency Storage:	20% EQ Storage	32,000 gal.	1
		149,920 gal.	2
		36,960 gal.	3
		- gal.	4
		181,920 gal.	Total of 1 and 2
		36,960 gal.	Total of 3 and 4
Total Culinary Storage:		**1,091,520 gal.**	Total of 1 and 2
Total Culinary Storage:		**221,760 gal.**	Total of 3 and 4
Fire Flow[1]:	550 gpm	550 gpm	

1. Interior sprinkler flows are not intended to provide for tall stacks or high sprinkler rates.

Skye Area Plan

2nd Amendment

Section 4 – Transportation

- Transportation Maps
- TIS report and appendix

NOTES:

1. PROJECT WILL MEET CITY CONNECTIVITY STANDARDS AND BE EVALUATED AT PRELIMINARY PLAT.
2. A NEW TRAFFIC SIGNAL SHALL BE CONSTRUCTED AT THE INTERSECTION OF 11800 S. AND HIGHLAND BOULEVARD. A DEDICATED NORTHBOUND LEFT-TURN LANE SHALL BE CONSTRUCTED ON HIGHLAND BOULEVARD AS WELL AS A DEDICATED WESTBOUND LEFT-TURN LANE ON 11800 SOUTH. REFER TO THE TRAFFIC STUDY FOR DETAILS.
3. A NEW NORTH LEG WILL BE ADDED TO THE EXISTING TRAFFIC SIGNAL AT THE INTERSECTION OF CENTER STREET AND SR 92. THE NEW LEG WILL REQUIRE A DEDICATED RIGHT-TURN LANE, A DEDICATED THRU LANE, AND TWO DEDICATED LEFT-TURN LANES. THE EXISTING SOUTH LEG WILL REQUIRE A SHARED THRU-RIGHT TURN LANE. THE EXISTING WEST LEG WILL REQUIRE A NEW DEDICATED LEFT-TURN LANE. REFER TO THE TRAFFIC STUDY FOR DETAILS. ALL IMPROVEMENTS LISTED HERE ARE PROPOSED BUT ARE SUBJECT TO REVIEW AND APPROVAL BY UDOT.
4. ACCESS ONTO THE BLUE AND YELLOW SECTIONS OF CENTER STREET SHALL BE RESTRICTED TO RIGHT IN/RIGHT OUT ENTRANCES. $\frac{3}{4}$ ACCESSES MAY BE ALLOWED IF RECOMMENDED BY A TRAFFIC STUDY AND APPROVED BY CITY STAFF.
5. CHANGES OF A MINOR OR TECHNICAL NATURE MAY BE MADE TO THE TRANSPORTATION PLAN WITHOUT HAVING TO BE SUBMITTED TO PLANNING COMMISSION OR CITY COUNCIL SUBJECT TO THE APPROVAL OF THE LEHI CITY REVIEWING DEPARTMENTS. THESE CHANGES INCLUDE VARIATIONS IN LOCATION DUE TO TOPOGRAPHY, UTILITIES, ETC., SO LONG AS REVIEWING DEPARTMENTS HAVE APPROVED THE CHANGE. LOCATION OF TURN POCKETS, MEDIAN LANDSCAPING, INTERSECTION TREATMENTS, ROADWAY STRIPING, ETC., WILL BE DETERMINED WITH PRELIMINARY DESIGN AND WILL BE ADJUSTED TO MEET THE NEEDS OF ADJACENT LAND USES.

NORTH

OPEN SPACE
LD6
OPEN SPACE
DRAPER CITY
LD7
MD13
MD12
LD3
MD11
AA1
AA2
LD5
MD8
MD6
MD5
MD4
OPEN SPACE
HIGHLAND CITY
AA3
LD4
MD10
MD7
LD2
CIVIC 2
TRAFFIC SIGNAL LOCATION
(SEE NOTE #2 THIS SHEET)
11800 S
DRAPER CITY
LEHI CITY
OPEN SPACE
HD4
MD9
VLD1
PUBLIC DETENTION
HIGHLAND BLVD
(HIGHLAND CITY)
TECHNICAL MANUFACTURING BUFFER
HD2
MD14
MD15
OPEN SPACE
CLUB HOUSE
HD3
PUBLIC DETENTION
MD16
LD1
HD1
HIGHLAND CITY
MD3
MD1
MD2
CIVIC 1/ MD
SCHOOL 1
OPEN SPACE
SCHOOL 2
MIXED USE 2
TECHNICAL MANUFACTURING BUFFER
CENTER STREET
500 WEST
MIXED USE 1
TRAFFIC SIGNAL LOCATION
(SEE NOTE #3 THIS SHEET)
TECHNICAL MANUFACTURING BUFFER
PUBLIC DETENTION OPEN SPACE
OPEN SPACE
1200 EAST
TECHNICAL MANUFACTURING BUFFER
HIGHLAND BLVD
S-R 92

LEGEND

- 65' LOCAL ROAD
- 67' LOCAL ROAD
- 69' MINOR COLLECTOR
- 73' MAJOR COLLECTOR
- 88' MAJOR COLLECTOR (MIDDLE CENTER STREET)
- 73' MAJOR COLLECTOR (TRAVERSE TERRACE DRIVE)
- 80' MAJOR ARTERIAL
- 80' MAJOR ARTERIAL
- 94' MAJOR ARTERIAL

SEE DETAILED CROSS SECTIONS ON SHEETS T-2 TO T-5

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TRANSPORTATION PLAN

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3 -
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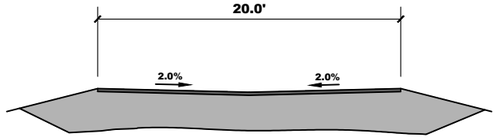
SHEET
T-1

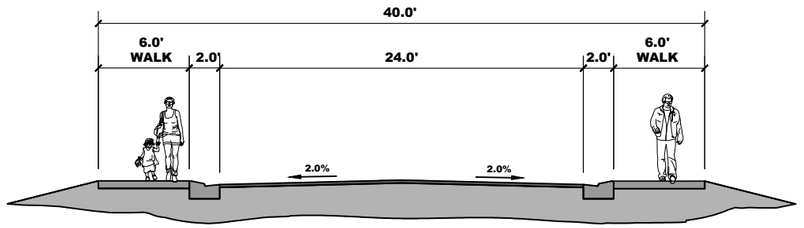


NOTES

1. ALLEYWAYS TO BE USED ONLY ON REAR LOAD UNITS THAT FRONT ONTO A PUBLIC STREET.
2. NO PARKING SHALL BE ALLOWED ON PRIVATE ALLEYWAYS.

20' PRIVATE ALLEY

(NOT SHOWN ON MAP)

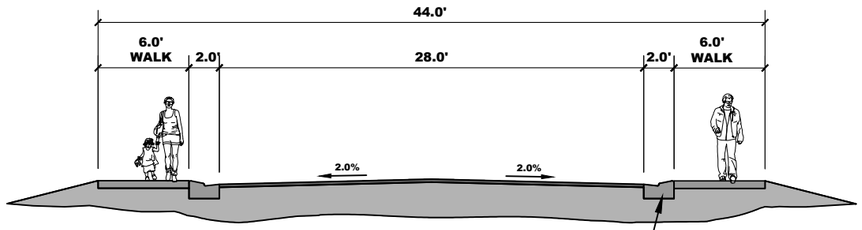


NOTES

1. NO PARKING SHALL BE ALLOWED ON THIS STREET.
2. 15' PUE SHALL BE REQUIRED BEHIND THE SIDEWALK ON BOTH SIDES OF THIS STREET.

40' PRIVATE ROAD

(NOT SHOWN ON MAP)



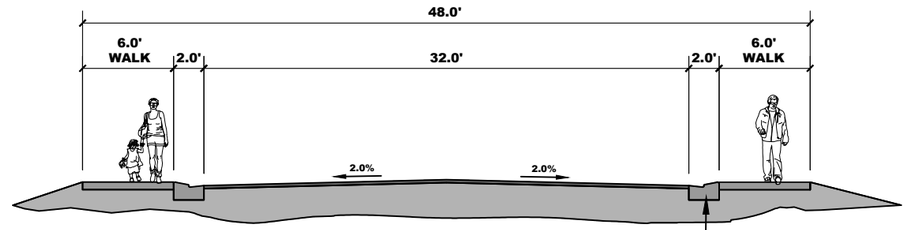
NOTES

1. PARKING SHALL BE ALLOWED ON ONE SIDE OF THIS STREET AS LONG AS DRIVEWAYS AND PERPENDICULAR PARKING DO NOT CONFLICT.
2. 15' PUE SHALL BE REQUIRED BEHIND THE SIDEWALK ON BOTH SIDES OF THIS STREET.

44' PRIVATE ROAD

(NOT SHOWN ON MAP)

MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL PUBLIC ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL PUBLIC ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.



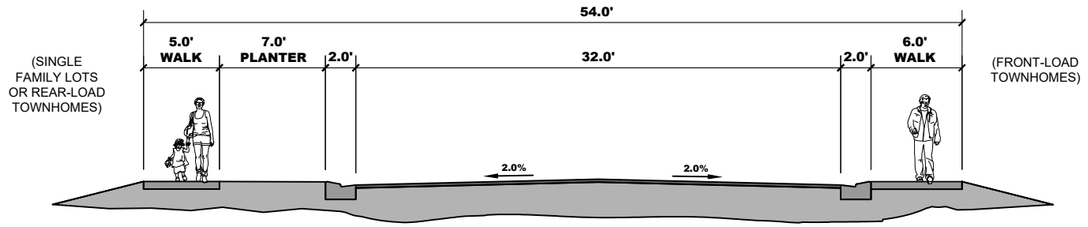
48' PUBLIC ROAD

(NOT SHOWN ON MAP)

MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL PUBLIC ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL PUBLIC ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.

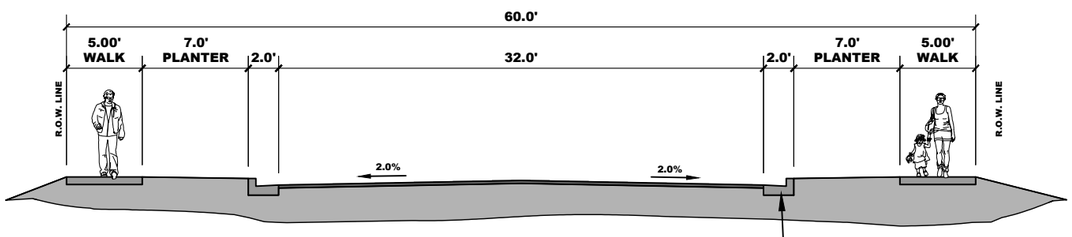
NOTES

1. THIS CROSS SECTION IS TO ONLY BE USED WHERE FRONT-LOAD TOWNHOMES SIT ACROSS THE STREET FROM EITHER SINGLE FAMILY LOTS OR FROM REAR-LOAD TOWNHOMES.
2. PARKING SHALL ONLY BE ALLOWED ON THE SIDE OPPOSITE OF THE FRONT-LOAD TOWNHOMES.
3. THE 7' PLANTER SHALL BE ON THE SIDE OPPOSITE OF THE FRONT-LOAD TOWNHOMES.
4. A 15' PUE SHALL BE REQUIRED BEHIND THE 6' SIDEWALK.



54' PUBLIC ROAD

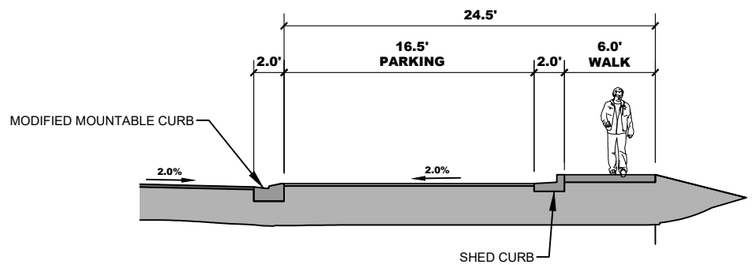
(NOT SHOWN ON MAP)



MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL PUBLIC ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.

60' LOCAL ROAD

(NOT SHOWN ON MAP)



PARKING STALL OPTION

NOTES

1. PARKING STALLS PERPENDICULAR TO THE ROADWAY SHALL BE PRIVATELY OWNED AND MAINTAINED

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TRANSPORTATION PLAN CROSS SECTIONS 1

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2 -
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4 -
5 -

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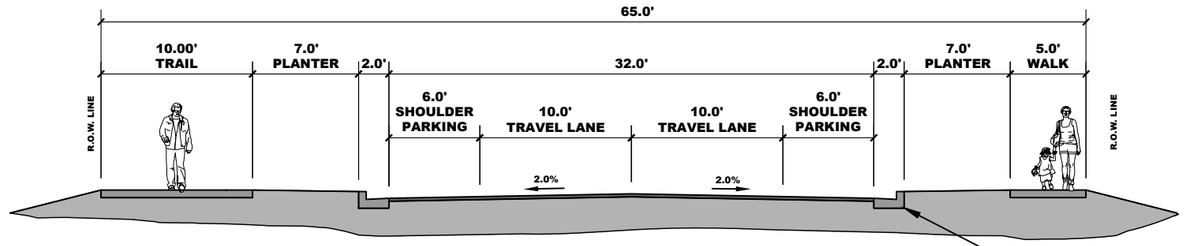
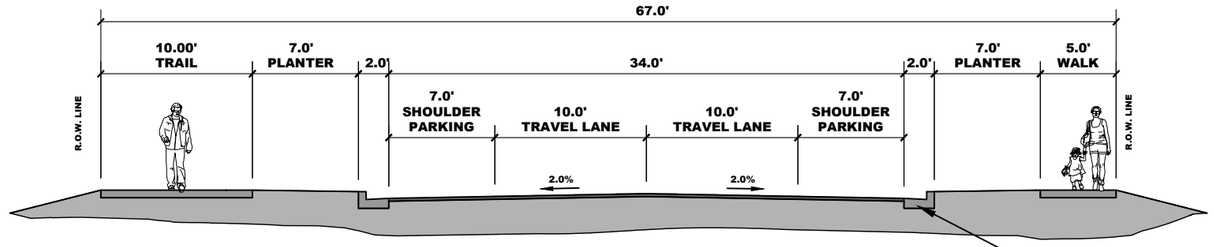
SHEET
T-2



65' LOCAL ROAD

(EAST SIDE ROADS, UPPER CENTER STREET)

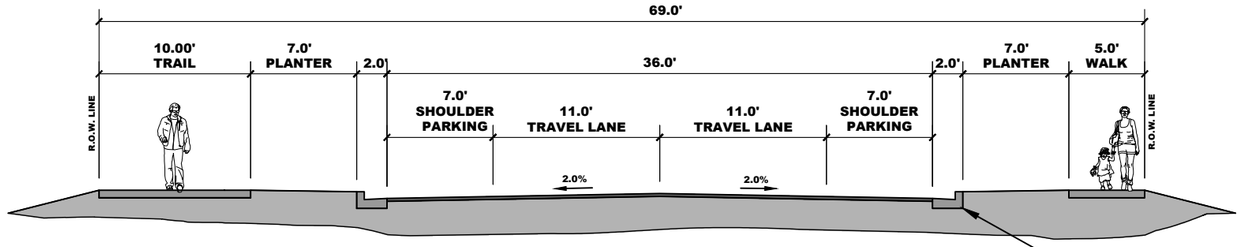
MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.



67' LOCAL ROAD

(4330 NORTH, UPPER 500 WEST)

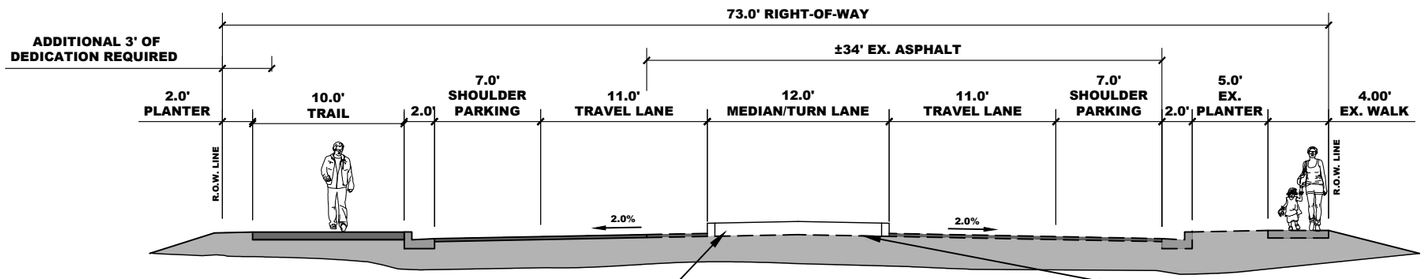
MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.



69' LOCAL ROAD

(UPPER CENTER STREET)

MODIFIED MOUNTABLE CURB SHALL BE ALLOWED ON LOCAL ROADS WITHIN HD AND MIXED-USE DEVELOPMENTS. MODIFIED MOUNTABLE CURB SHALL ALSO BE ALLOWED ON ANY LOCAL ROADS THAT PROVIDE ACCESS TO OFF-STREET PARKING STALLS.



POSSIBLE XERISCAPED WATER-WISE MEDIAN TO BE MAINTAINED BY THE HOA. LOCATION OF AND LANDSCAPING IN MEDIANS TO BE REVIEWED AND APPROVED AT PRELIMINARY

73' MAJOR COLLECTOR

(3950 NORTH)

RAISED MEDIAN SHALL BE DESIGNED TO GRANT MAINTENANCE-TRUCK ACCESS TO ANY MANHOLE LOCATED THERE. DESIGN TO BE REVIEWED AT PRELIMINARY.

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TRANSPORTATION PLAN CROSS SECTIONS 2

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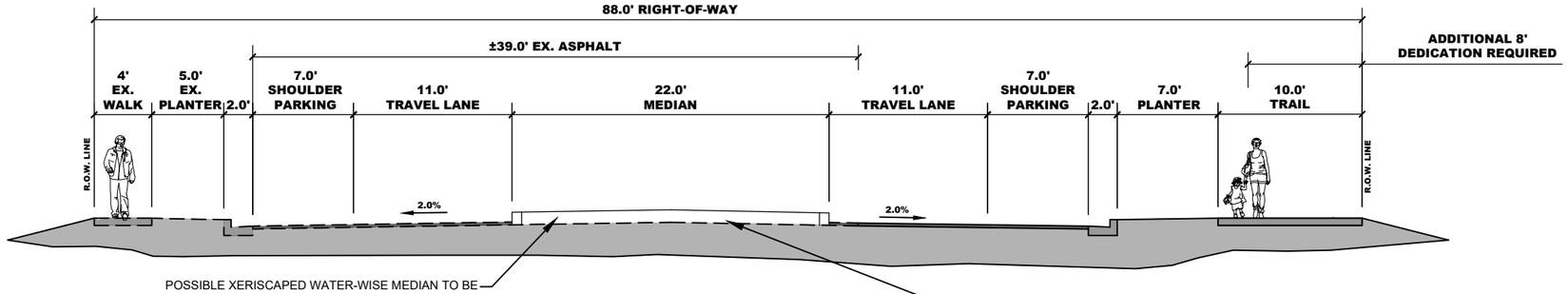
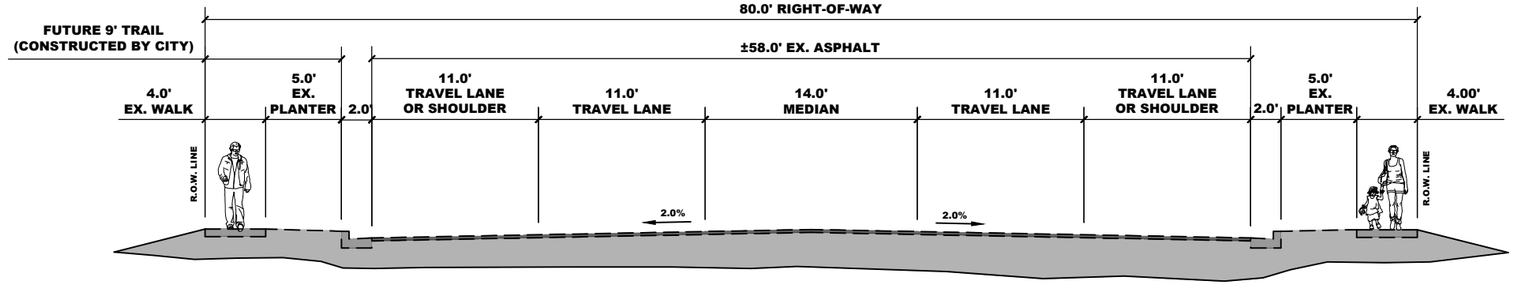
SHEET
T-3



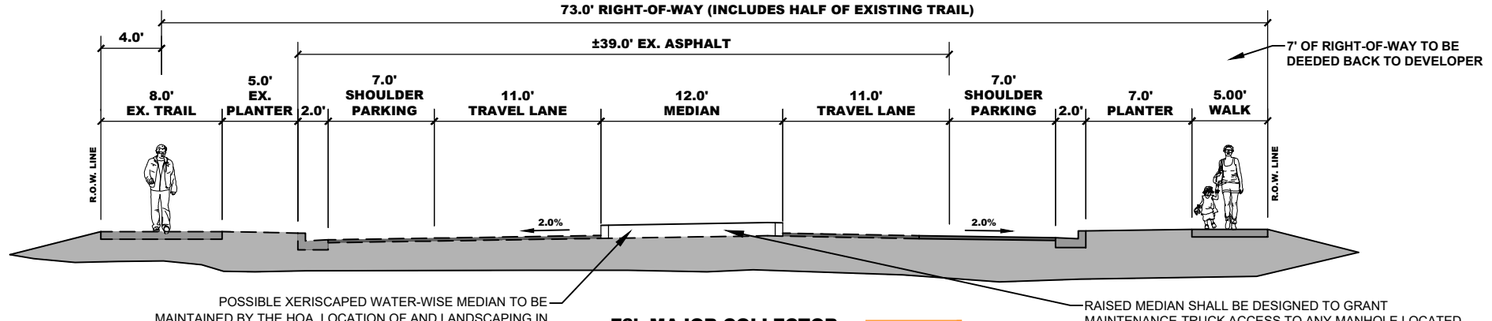
88' MAJOR COLLECTOR

(MIDDLE CENTER STREET)



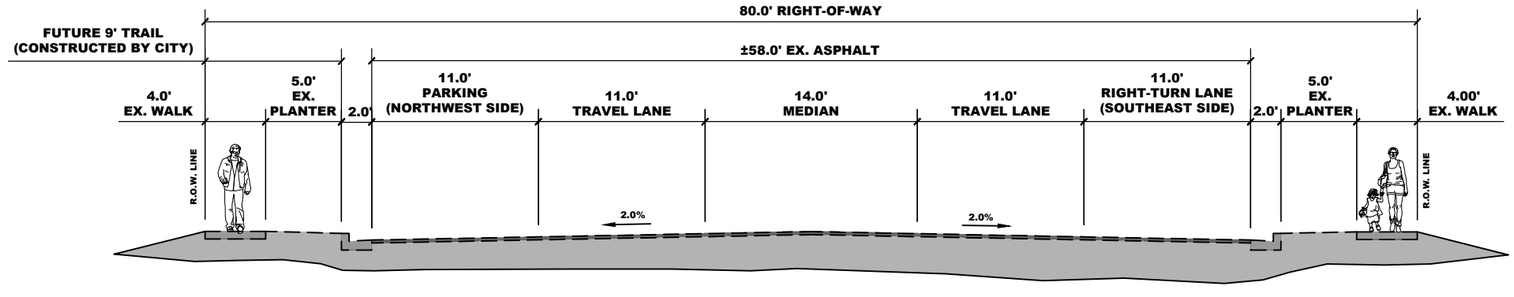
80' MAJOR ARTERIAL

(LOWER 500 WEST)



73' MAJOR COLLECTOR

(TRAVERSE TERRACE DRIVE)



80' MAJOR ARTERIAL

(MIDDLE 500 WEST)

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TRANSPORTATION PLAN CROSS SECTIONS 3

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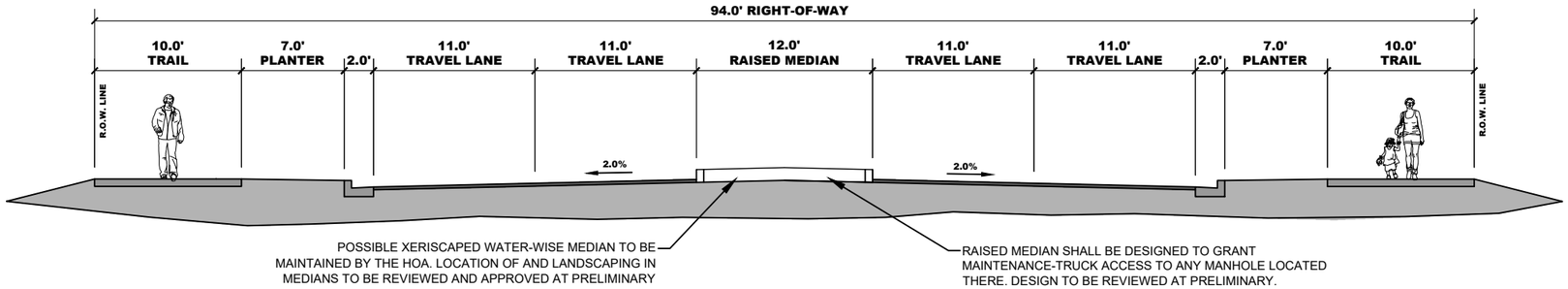
SHEET
T-4



94' MAJOR ARTERIAL

(LOWER CENTER STREET)

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TRANSPORTATION PLAN CROSS SECTIONS 4

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SHEET
T-5



Skye Area Plan, 2nd Amendment (MICRON) TIS

LEHI, UT

SEPTEMBER 27, 2022 PROJECT # UT-CV-3498-21

Table of Contents

List of Figures....ii
List of Tables....ii
Introduction....1
Purpose of Report and Study Objectives....1
Executive Summary....1
Conclusions and Recommendations....2
Proposed Development....4
Site Location....4
Site Plan and Preferred Access....5
Study Area....6
Study Area....6
Analysis of Existing Conditions....8
Study Intersection Level of Service....8
Existing Intersection Operations....9
Crash Data....9
Mitigations....9
Analysis of 2026 Background Conditions....12
Growth Rates....12
2026 Background Conditions....12
Mitigations....13
Project Traffic Volumes....16
Trip Generation....16
Trip Distribution....17
Center Street & SR-92....21
Analysis of 2026 Background Plus Project Conditions....22
2026 Background Plus Project Conditions....22
Mitigations....22
Analysis of 2050 Background Conditions....27
2050 Volume Projection....27
Intersection Operations....28
Mitigations....29
Analysis of 2050 Background plus Project Conditions....32
Intersection Operations....32
Mitigations....33
Conclusions and Recommendations....36

List of Figures

Figure 1: Project Location 4
Figure 2: Site Plan 5
Figure 3: UDOT Roadway Classification Map 7
Figure 4: LOS example 8
Figure 5: Existing AM & PM Movement Volumes (West) 10
Figure 6: Existing AM & PM Movement Volumes (East) 11
Figure 7: 2026 AM & PM Background with Mitigations Traffic Peak Hour Volumes (West) 14
Figure 8: 2026 AM & PM Background with Mitigations Traffic Peak Hour Volumes (East) 15
Figure 9: Zone Map 19
Figure 10: Trip Distribution 20
Figure 11: North Leg Geometry 21
Figure 12: 2026 Background Plus Project AM & PM Peak Hour Traffic Volumes (West) 23
Figure 13: 2026 Background Plus Project AM & PM Peak Hour Traffic Volumes (East) 24
Figure 14: Project Only AM & PM Peak Hour Traffic Volumes (West) 25
Figure 15: Project Only AM & PM Peak Hour Traffic Volumes (East) 26
Figure 16: 2050 Background & Mitigations Traffic AM & PM Peak Hour Volumes (West) 30
Figure 17: 2050 Background & Mitigations Traffic AM & PM Peak Hour Volumes (East) 31
Figure 18: 2050 Plus Project with Mitigations Traffic AM & PM Peak Hour Volumes (West) 34
Figure 19: 2050 Plus Project with Mitigations Traffic AM & PM Peak Hour Volumes (East) 35

List of Tables

Table 1: Level of Service Criteria 8
Table 2: Existing Peak Hour Traffic Analysis 9
Table 3: 2026 Background Peak Hour Conditions 12
Table 4: 2026 Background with Mitigation Peak Hour Conditions 13
Table 5: ITE Trip Generation 18
Table 6: 2026 Background plus Project Peak Hour Conditions 22
Table 7: 2050 Background Peak Hour Traffic Analysis 28
Table 8: 2050 Background plus Mitigations Peak Hour Conditions 29
Table 9: 2050 Background plus Project Peak Hour Traffic Analysis 32
Table 10: 2050 Background plus Project with Mitigations Peak Hour Conditions 33

Introduction

PURPOSE OF REPORT AND STUDY OBJECTIVES

The purpose of this Traffic Impact Study (TIS) is to identify the traffic impacts for the proposed development, located in Lehi, Utah. The study objectives are: (1) To define the study intersections, (2) estimate trip generation and distribution for the site before and after development, (3) analyze AM and PM peak traffic conditions with and without the project traffic in 2026 and 2050, (4) perform capacity analysis, (5) signal warrant analysis, and (6) recommend improvements to mitigate traffic impacts if necessary.

EXECUTIVE SUMMARY

Site Location and Study Area – The location for the proposed development site is on the north side of SR-92, also known as Timpanogos Highway, and approximately two miles east of I-15 (see **Figure 1**). The proposed development is located to the west and north of Micron plant in Lehi, Utah. This study will address the following intersections near the study area.

- Highland Blvd & Grant Blvd
- Highland Blvd & SR-92
- Highland Blvd & SR-92 Commuter Lane On-Ramp
- Center St/8000 West & SR-92
- SR-92 & 500 West
- 500 West & Traverse Terrace Drive
- 3900 North & Canyon Hills Rd
- Canyon Hills Rd & 4050 North
- Highland Blvd & 11800 North
- SR-92 & 1200 East

Signal Warrant Analysis

Horrocks recommends the stop-control of the following intersections to be upgraded to a signal:

- 11800 North & Highland Boulevard in 2026
- 500 West & Traverse Terrace Drive in 2050

Signal warrant analysis was performed at this intersection. This analysis can be found in the APPENDIX.

Development Description:

The proposed development will have 2,424 residential housing units consisting of townhomes, single-family homes, and estates. The site also has an elementary school, a middle school, two churches, and areas for mixed use development. The mixed-use development will consist of both residential and commercial space. The annexed portion will consist largely of estates.

CONCLUSIONS AND RECOMMENDATIONS

1. Existing Conditions: - All study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 29.0 sec/veh in the AM and a LOS D and a delay of 48.5 sec/veh in the PM. No recommended mitigations currently.

2. 2026 Background Conditions: - Traffic volumes were projected over five-years from 2021 to 2026 by adding a 10% growth rate to existing traffic conditions. This 10% growth rate (or 2% per year) was generated using UDOT's historic AADT counts. All study intersections perform at an acceptable LOS except for Highland Blvd & 11800 North. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 31.3 sec/veh in the AM and Highland Blvd & 11800 North with a LOS E and a delay of 39.7 sec/veh in the PM.

   Recommended Mitigations:
   - Highland Blvd & 11800 North
     - Upgrade intersection from stop control to signal
     - Modify westbound shared left/right to dedicated left and right.

   After mitigations, all study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 28.6 sec/veh in the AM, and a LOS D with a delay of 41.0 sec/veh in the PM. No recommended mitigations currently.

3. Project Trip Generation: - Horrocks estimates the proposed development to generate approximately 30,793 new external daily trips with 2,541 during the AM peak and 2,852 during the PM peak, respectively.

4. 2026 Background plus Project Conditions: - Horrocks added project traffic to the 2026 Background conditions to create 2026 Background plus Project Conditions. All study intersections perform at an acceptable LOS. The study intersection with the highest delay is 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS D with a delay of 53.3 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

5. 2050 Background Conditions: - Traffic volumes were projected over thirty-years from 2021 to 2050 using the Travel Demand Model for the area. All study intersections perform at an acceptable LOS except Highland Blvd & Grant Blvd. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & Grant Blvd with a LOS F with a delay of 43.5 sec/veh in the PM. This scenario includes all previous mitigations.

   Recommended Mitigations:
   - Highland Blvd & Grant Blvd
     - Upgrade intersection from stop-control to signalized

   After mitigations, all study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & SR-92 with a LOS D with a delay of 46.9 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

6. 2050 Background plus Project conditions: - Horrocks added project traffic to 2050 Background conditions to create 2050 Background plus Project Conditions. All study intersections perform at an acceptable LOS except for Highland Blvd & SR-92 and 500 West & Traverse Terrace Drive. The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and 500 West & Traverse Terrace Drive with a LOS E and a delay of 88.1 sec/veh in the PM. This scenario includes all previous mitigations.

   Recommended Mitigations:

   - 500 West & Traverse Terrace Drive
     - Upgrade intersection from stop-control to signalized
   - Highland Blvd & SR-92
     - Add additional westbound left-turn lane
     - Add additional southbound left-turn lane
     - Add additional thru lane for a total of 2 lanes

   With these mitigations, all intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay 36.6 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS D with a delay of 50.0 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

7. Safety History: - There was a total of 736 crashes on SR-2 from 2016 through 2021. The types of vehicle crashes are as follows:

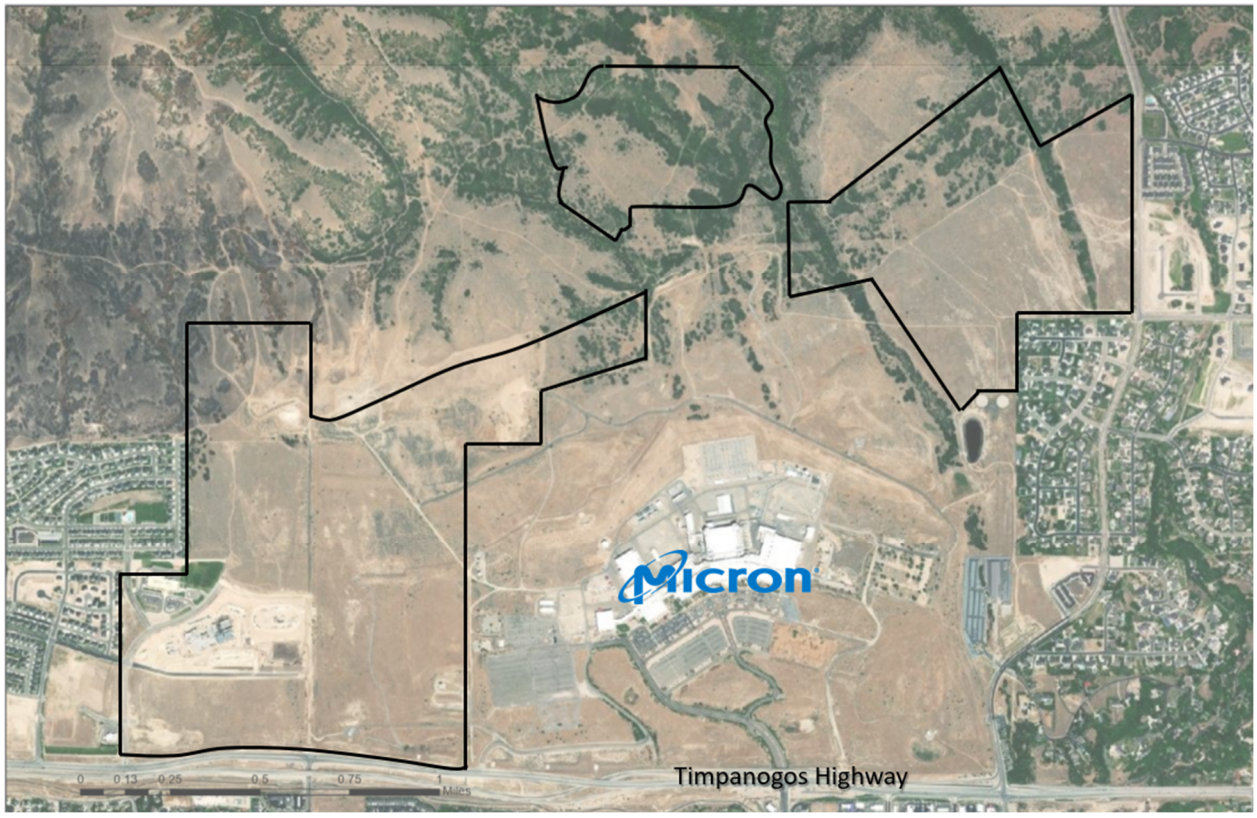
   - Two fatal crashes
   - 68 Suspected minor injury crashes
   - 131 Possible injury crashes
   - 535 Property damage only crashes

Proposed Development

SITE LOCATION

Figure 1 shows the location for the development surrounding Micron in Lehi, Utah. The project is located on the north side of Timpanogos Highway and approximately two miles east of I-15 in Lehi, Utah.

Figure 1: Project Location



SITE PLAN AND PREFERRED ACCESS

The proposed site will have three major accesses from SR-92**.** There are two accesses on the west side of Micron, at 500 West and Center Street. Highland Boulevard serves as an access on the east side of Micron. **Figure 2** shows the site plan for the development.

Figure 2: Site Plan



Study Area

STUDY AREA

The major streets potentially impacted by the Micron development is Timpanogos Highway (S.R. 92), 500 West, and Highland Boulevard. The functional classification map, seen in **Figure 3**, shows the functional classification of roadways surrounding the project area. The speed limits listed in the description are the currently posted speed limits.

Roadway Descriptions

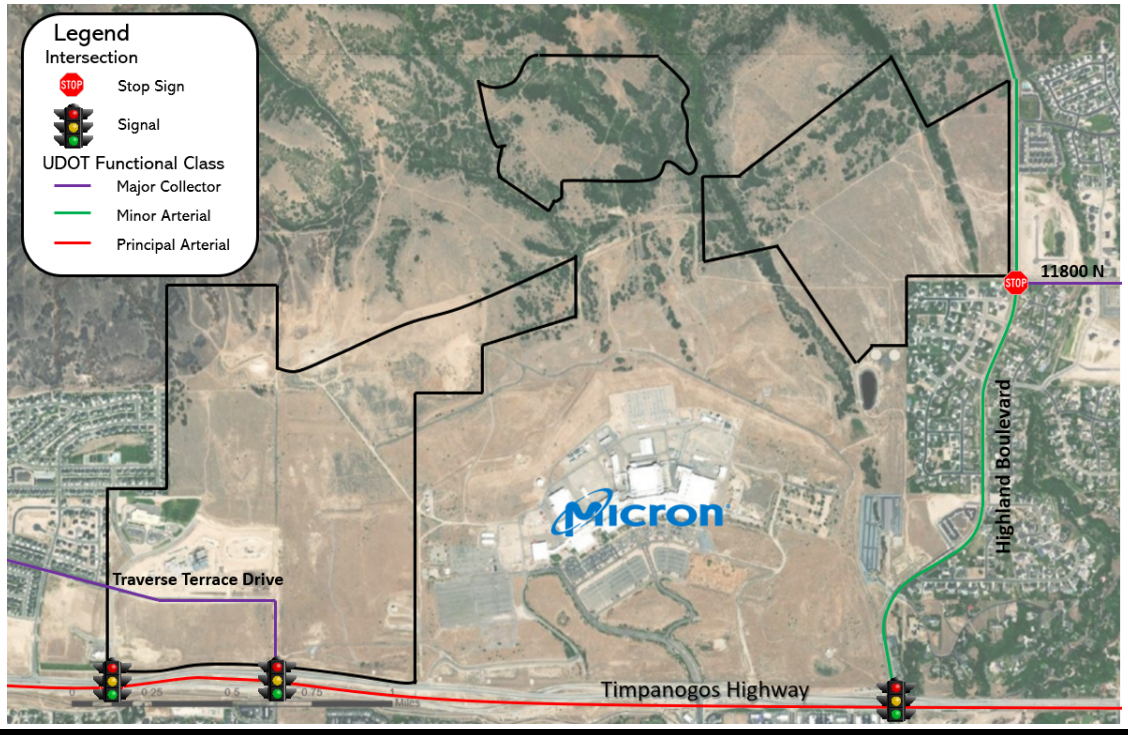
- Timpanogos Highway (S.R. 92): is a west/east running road classified as a primary arterial with a speed limit of 55 mph except for the section of the roadway east of 1000 East where the speed limit is 50 mph. This primary arterial is a four-lane roadway with two dedicated thru lanes for each direction separated by a center left turn lane. It has dedicated left and right turning lanes at intersections and is characterized by nearby one lane commuter lanes going both directions.
- Highland Boulevard: is a north/south running road classified as a minor arterial with a speed limit of 35 mph. This minor arterial is a two-lane roadway with one dedicated thru lane for each direction separated by a vegetated median. It has dedicated left turning lanes at intersections.
- 500 West: is a north/south running road classified as a collector with a speed limit of 30 mph. This collector is a four-lane roadway with two dedicated thru lanes for each direction separated by a center left turn lane.

Intersection Descriptions

- 500 West / SR-92: is a signalized High-T-intersection. The southbound lane geometry has one dedicated left-turn lane and one dedicated right-turn lane. The eastbound lane geometry has two dedicated thru lanes and one dedicated left-turn lane. The westbound lane geometry has two dedicated thru-lanes and a dedicated right-turn lane.
- 500 West / Traverse Terrace Drive: is a two-way stop-controlled intersection. The northbound and southbound lane geometries are the same with one dedicated left-turn lane, one dedicated thru lane, and a shared thru-right lane. The westbound and eastbound lane geometries are the same with one dedicated left-turn and a shared thru-right. The westbound and eastbound lanes are stop-controlled, while the northbound and southbound lanes are not.
- 500 West / Canyon Hills Road: is a T-intersection with Canyon Hills Road being stop-controlled at 500 West. The southbound lane geometry is a shared left-turn and one dedicated right-turn lane. The eastbound lane geometry has two dedicated thru lanes and one dedicated left-turn lane. The westbound lane geometry has one dedicated thru-lane and a shared thru-right.
- Canyon Hills Road / 4050 North: is a two-way stop-controlled intersection. The lane geometries of all approaches are shared left-thru-right. The eastbound and westbound lanes are stop-controlled, while the northbound and southbound lanes are not.
- Grant Boulevard / Highland Boulevard: is a T-intersection with Grant Boulevard being stop-controlled at Highland Boulevard. The northbound and westbound lane geometries are the same with a shared left-thru-right lane. The southbound lane geometry has one dedicate thru-lane and one dedicate left-turn lane.

- 11800 North / Highland Boulevard: is a T-intersection with 11800 North being stop-controlled at Highland Boulevard. The northbound and westbound lane geometries are the same with a shared left-thru-right lane. The southbound lane geometry has one dedicate thru-lane and one dedicate left-turn lane.
- Commuter Lane On-ramp / Highland Boulevard: The southbound lane geometry has two dedicated thru-lanes and one dedicated right-turn lane onto the westbound SR-92 commuter lane. The northbound lane geometry has two dedicated thru-lanes.
- Highland Boulevard / SR-92 is a signalized intersection. The southbound lane geometry has one dedicated left-turn lane, one dedicated thru lane, and a channelized right-turn lane. The northbound lane geometry has one dedicated left-turn lane, one dedicated thru lane, and one dedicated right-turn lane. The eastbound lane geometry has two dedicated left-turn lanes, three dedicated thru lanes, and one dedicated right-turn lanes. The westbound lane geometry has one dedicated left-turn lane, two dedicated thru lanes, and one dedicated right-turn lane.
- 1200 East / SR-92: is a signalized intersection. The northbound lane geometry has two dedicated left-turn lane, two dedicated thru lanes, and one dedicated right-turn lane. The southbound lane geometry has two dedicated left-turn lanes, two dedicated thru lanes, and one channelized right-turn lane. The eastbound lane geometry has two dedicated left-turn lanes, three dedicated thru lanes, and one dedicated right-turn lane. The westbound lane geometry has one dedicated left-turn lane, two dedicated thru lanes, and one dedicated right-turn lane.
- Center Street (8000 West) / SR-92: is a signalized intersection. The northbound lane geometry has two dedicated left-turn lanes and one right-turn lane. The eastbound lane geometry has two dedicated thru lanes and one right-turn lane. The westbound lane geometry has two dedicated left-turn lanes and two thru lanes.

Figure 3: UDOT Roadway Classification Map



Analysis of Existing Conditions

STUDY INTERSECTION LEVEL OF SERVICE

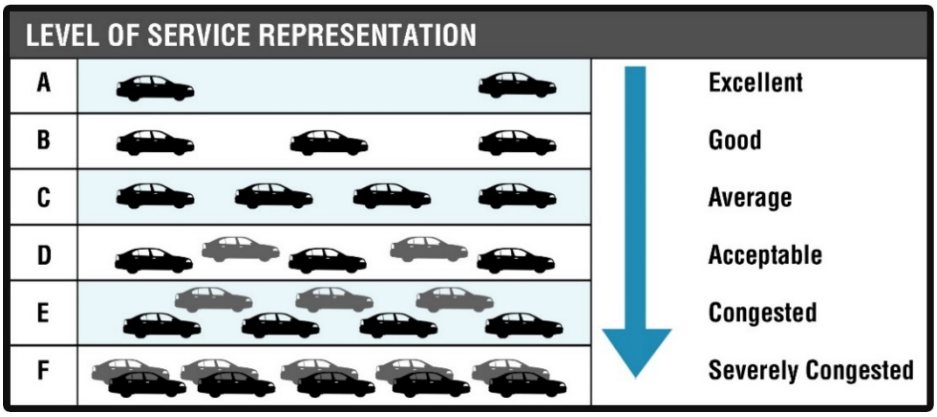
Level of Service (LOS) is a term used by the *Highway Capacity Manual* (HCM) to describe the traffic operations of an intersection, based on congestion and delay. It ranges from LOS A (almost no congestion or delays) to LOS F (traffic demand is above capacity and the intersection experiences long queues and delays). LOS C is generally considered acceptable for rural intersections, while LOS D is acceptable for urbanized intersections. LOS E is the threshold when the intersection reaches capacity. For two-way stop-controlled intersections, average intersection-wide delay and LOS are not defined by the HCM. **Table 1** summarizes LOS delay criteria for stop-controlled movements at unsignalized and signalized intersections. A visual representation of this is shown in **Figure 4.**

Table 1: Level of Service Criteria

Level of Service	Average Control Delay (sec/veh)	
	Signalized	Unsignalized
A	≤ 10	≤ 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

Source: *Highway Capacity Manual (HCM) 6*

Figure 4: LOS example.



EXISTING INTERSECTION OPERATIONS

Horrocks performed the AM and PM peak hour traffic counts for the study intersections in May 2021 and balanced the counts where needed. **Figure 5** and **Figure 6** show the balanced turnings movements. All study intersections perform at an acceptable LOS, as shown in **Table 2**. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 29.0 sec/veh in the AM and a LOS D and a delay of 48.5 sec/veh in the PM.

Table 2: Existing Peak Hour Traffic Analysis

Intersection Number	Intersection	AM Peak Hour		PM Peak Hour	
		Average Control Delay (sec/veh)	Level of Service	Average Control Delay (sec/veh)	Level of Service
Existing Peak Hour Conditions					
1	Highland Blvd & Grant Blvd	11.9	**B**	13.3	**B**
2	Highland Blvd & 11800 North	16.4	**C**	26.9	**D**
3	Highland Blvd & SR-92	22.1	**C**	32.0	**C**
4	1200 East & SR-92	29.0	**C**	48.5	**D**
5	Center St/8000 West & SR-92	18.5	**B**	20.4	**C**
6	SR-92 & 500 West	18.0	**B**	12.9	**B**
7	500 West & Traverse Terrace Drive	14.7	**B**	10.1	**B**
8	3900 North & Canyon Hills Rd	10.3	**B**	8.6	**A**
9	Canyon Hills Rd & 4050 North	18.8	**C**	9.1	**A**

Source: HCM Methodologies using Synchro Software

Control delay for unsignalized intersections shown for the worst approach only per the HCM.

CRASH DATA

Horrocks received crash data for SR-92 from the Utah Department of Public Safety website. There was a total of 736 total crashes on SR-92 in a 5-year span from 2016 to 2021. The highway experienced the following types of crashes:

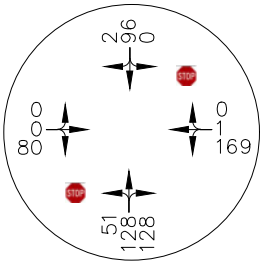
- Two fatal crashes
- 68 Suspected minor injury crashes
- 131 Possible injury crashes
- 535 No injury crashes

MITIGATIONS

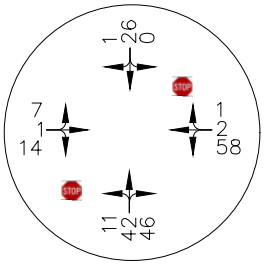
No recommended mitigation currently.



1 AM PEAK HOUR



1 PM PEAK HOUR



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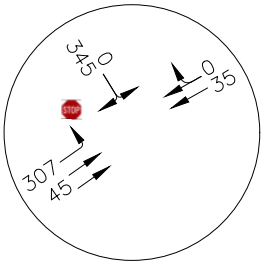

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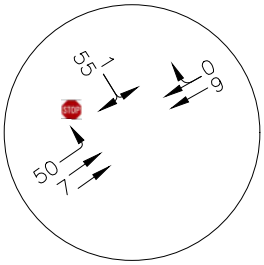

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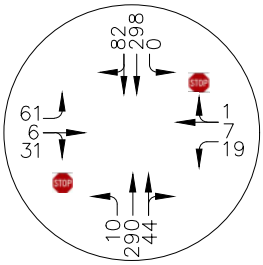

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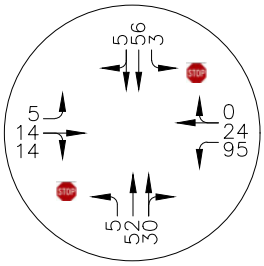

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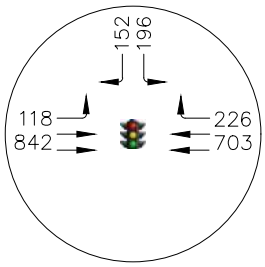

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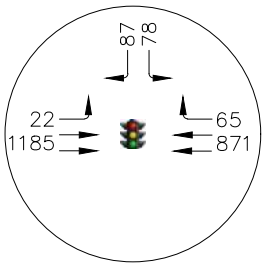

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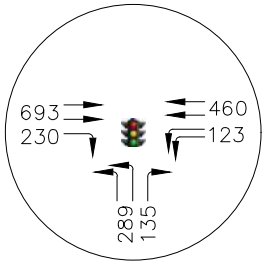
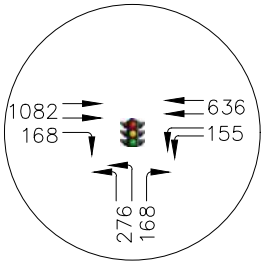


5 PM PEAK HOUR



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West of Micron
Existing AM & PM Peak Hour Traffic Volumes

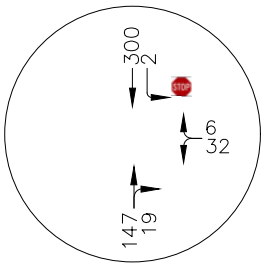
FIGURE 5

SCALE: N/A

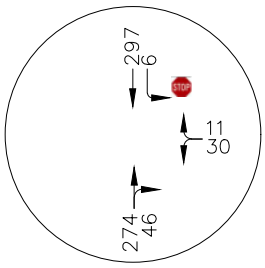
DA--
9/2



6 AM PEAK HOUR



6 PM PEAK HOUR



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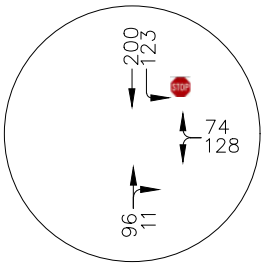
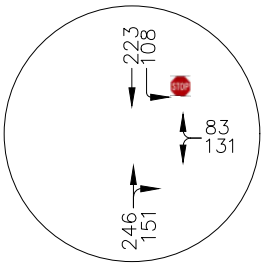
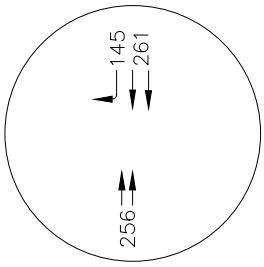


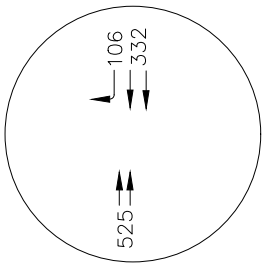
7 PM PEAK HOUR



8 AM PEAK HOUR



8 PM PEAK HOUR



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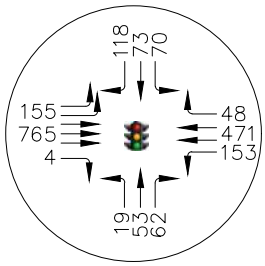
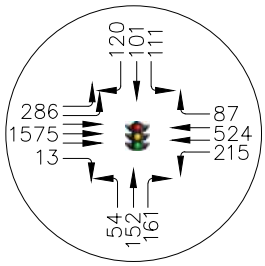
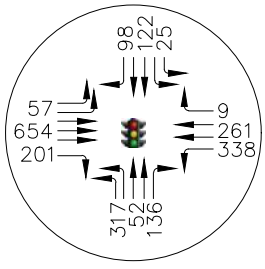


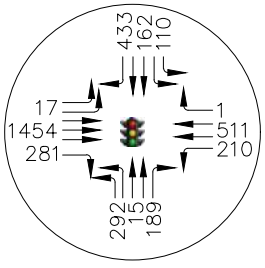
9 PM PEAK HOUR



10 AM PEAK HOUR



10 PM PEAK HOUR



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East of Micron
Existing AM & PM Peak Hour Traffic Volumes

FIGURE 6

SCALE: N/A

DA 9/2

Analysis of 2026 Background Conditions

GROWTH RATES

For the 2026 background condition, Horrocks obtained historical traffic data from UDOT at locations surrounding the project. Using the UDOT historical traffic data, an annual background growth factor of 2% will be used for the analysis. The APPENDIX contains the traffic data used to determine the growth.

2026 BACKGROUND CONDITIONS

Existing traffic was grown by 2% annually to create a 2026 background traffic scenario, as shown in **Figure 7** and **Figure 8.** All study intersections perform at an acceptable LOS except for Highland Blvd & 11800 North. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 31.3 sec/veh in the AM and Highland Blvd & 11800 North with a LOS E and a delay of 39.7 sec/veh in the PM, as shown in **Table 3.**

Table 3: 2026 Background Peak Hour Conditions

Intersection Number	Intersection	AM Peak Hour			PM Peak Hour		
		Average Control Delay (sec/veh)	Difference from Existing	Level of Service	Average Control Delay (sec/veh)	Difference from Existing	Level of Service
2026 Background Peak Hour Conditions							
1	Highland Blvd & Grant Blvd	12.4	+0.5	**B**	14.3	+1.0	**C**
2	Highland Blvd & 11800 North	19.3	+5.5	**C**	39.7	+12.8	**E**
3	Highland Blvd & SR-92	23.9	+1.8	**C**	31.5	-0.6	**C**
4	1200 East & SR-92	31.3	+2.3	**C**	41.0	-6.7	**D**
5	Center St/8000 West & SR-92	19.0	+0.5	**B**	21.2	+0.6	**C**
6	SR-92 & 500 West	20.8	+2.8	**C**	12.3	+0.6	**B**
7	500 West & Traverse Terrace Drive	15.9	+1.2	**C**	10.4	+0.3	**B**
8	3900 North & Canyon Hills Rd	10.6	+0.3	**B**	8.6	+0.0	**A**
9	Canyon Hills Rd & 4050 North	22.5	+3.7	**C**	9.2	+0.1	**A**

Source: HCM Methodologies using Synchro Software

Control delay for unsignalized intersections shown for the worst approach only per the HCM.

MITIGATIONS

Highland Blvd & 11800 North

- Upgrade intersection from stop control to signal
- Modify westbound shared left/right to dedicated left and right.

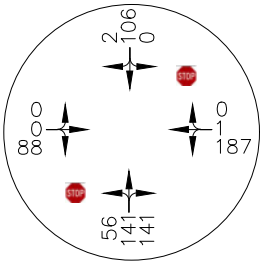
With these mitigations, all intersections operate at an acceptable LOS, as shown in **Table** 4. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 28.6 sec/veh in the AM, and a LOS D with a delay of 41.0 sec/veh in the PM. Signal warrant report included in the APPENDIX. The red arrows in the figures below show the recommended mitigations.

Table 4: 2026 Background with Mitigation Peak Hour Conditions

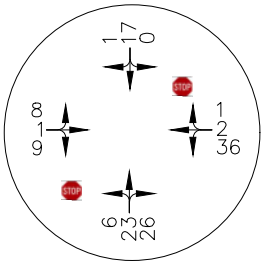
Intersection Number	Intersection	AM Peak Hour		PM Peak Hour	
		Average Control Delay (sec/veh)	Level of Service	Average Control Delay (sec/veh)	Level of Service
2026 Background with Mitigation Peak Hour Conditions					
1	Highland Blvd & Grant Blvd	12.4	**B**	14.3	**B**
2	Highland Blvd & 11800 North	7.3	**A**	7.9	**A**
3	Highland Blvd & SR-92	23.9	**C**	31.5	**C**
4	1200 East & SR-92	28.6	**C**	41.0	**D**
5	Center St/8000 West & SR-92	19.0	**B**	21.2	**C**
6	SR-92 & 500 West	20.8	**C**	12.3	**B**
7	500 West & Traverse Terrace Drive	15.9	**C**	10.4	**B**
8	3900 North & Canyon Hills Rd	10.6	**B**	8.6	**A**
9	Canyon Hills Rd & 4050 North	22.5	**C**	9.2	**A**



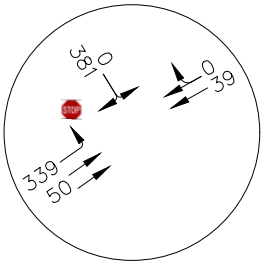
1 AM PEAK HOUR



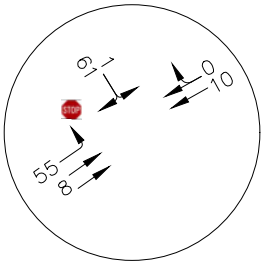
1 PM PEAK HOUR



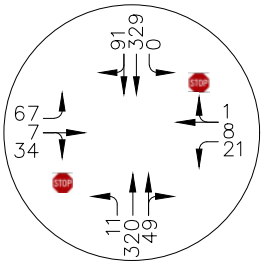
2 AM PEAK HOUR



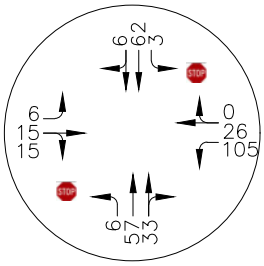
2 PM PEAK HOUR



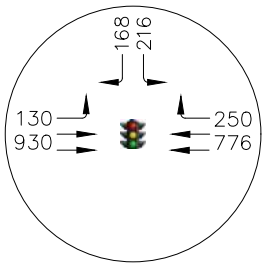
3 AM PEAK HOUR



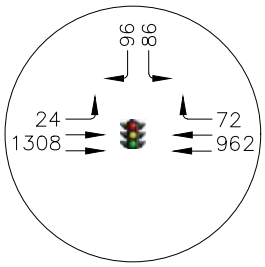
3 PM PEAK HOUR



4 AM PEAK HOUR



4 PM PEAK HOUR



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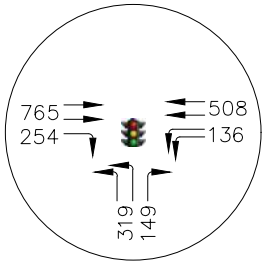
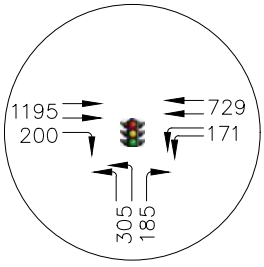


5 PM PEAK HOUR



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West of Micron
2026 Background with Mitigation AM & PM Peak Hour Traffic Volumes

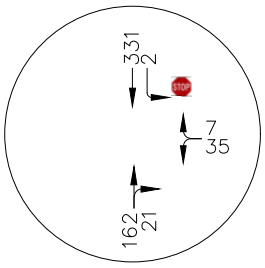
FIGURE 7

SCALE: N/A

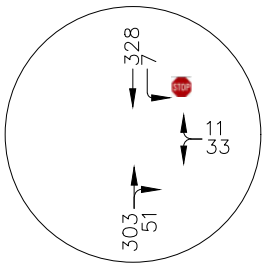
DA 9/2



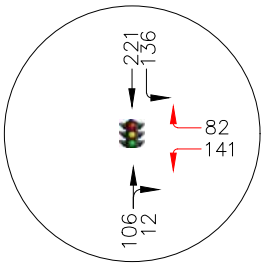
6 AM PEAK HOUR



6 PM PEAK HOUR



7 AM PEAK HOUR



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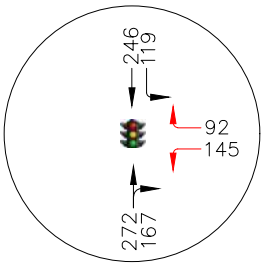
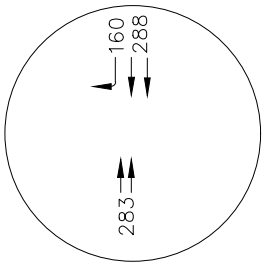
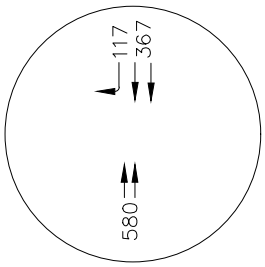


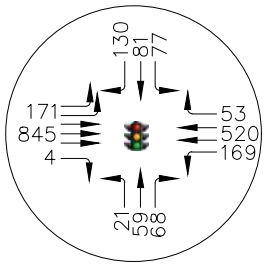
8 AM PEAK HOUR



8 PM PEAK HOUR



9 AM PEAK HOUR



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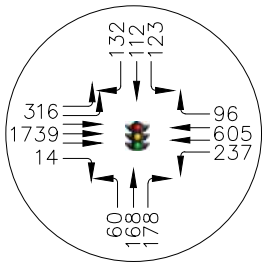

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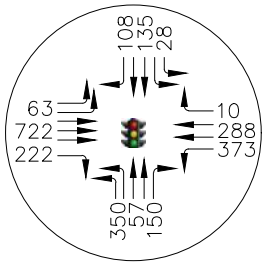

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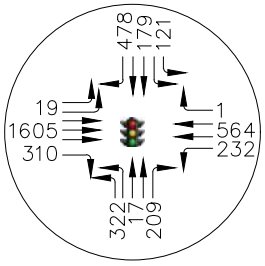

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East of Micron
2026 Background with Mitigation AM & PM Peak Hour Traffic Volumes

FIGURE 8

SCALE: N/A

DA 9/2

Project Traffic Volumes

Project traffic volumes were estimated and distributed using the industry-standard trip generation literature and using existing traffic counts and engineering judgment to distribute project traffic to the existing road network.

TRIP GENERATION

The trip generation was estimated using the *ITE Trip Generation Manual 10th Edition*. The following land use from the manual was used:

- *Single-Family Detached Housing (ITE 210)* – Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.
- *Multifamily Housing (Mid-Rise) (ITE 221)* – Mid-rise multifamily housing includes apartments, townhomes, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (Floors). Multifamily housing (low-rise) (Land Use 220), multifamily housing (high-rise) (Land Use 222), off-campus student apartment (Land Use 225), and mid-rise residential with 1st-floor commercial (Land Use 231) are related land uses.
- *Public Park (ITE 411)* – Public parks are owned and operated by a municipal, county, state, or federal agency. The parks surveyed vary widely as to location, type, and number of facilities, including boating or swimming facilities, beaches, hiking trails, ball fields, soccer fields, campsites, and picnic facilities. Seasonal use of the individual sites differs widely because of the varying facilities and local conditions, such as weather. For example, some of the sites are used primarily for boating or swimming; others are used for softball games. Soccer complex (Land Use 488) is a related use.
- *Elementary School (ITE 520)* – An elementary school typically serves students attending kindergarten through the fifth or sixth grade. Elementary schools are usually centrally located in residential communities to facilitate student access and have no student drivers. This land use consists of schools where bus service is usually provided to students living beyond a specified distance from the school. Both public and private elementary schools are included in this land use. Middle school/junior high school (Land Use 522), high school (Land Use 530), private school (K-8) (Land Use 534), private school (K-12) (Land Use 536), and charter elementary school (Land Use 537) are related uses.
- *Middle School/Junior High School (ITE 522)* – A middle or junior high school serves students who have completed elementary school and have not yet entered high school. Both public and private middle schools/junior high schools are included in this land use. Elementary school (Land Use 520), high school (Land Use 530), private school (K-8) (Land Use 534), private school (K-12) (Land Use 536), and charter elementary school (Land Use 537) are related uses.
- *Church (ITE 560)* – A church is a building in which public worship services are held. A church houses an assembly hall or sanctuary; it may also house meeting rooms, classrooms, and, occasionally, dining, catering, or party facilities. Synagogue (Land Use 561) and mosque (Land Use 562) are related uses.
- *Shopping Center (ITE 820)* – A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's

composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Factory outlet center (Land Use 823) is a related use.

Based on the ITE methodology, the development within the study area is estimated to generate approximately 30,793 new external daily trips, with 2,541 trips, and 2,852 trips occurring during the AM peak and PM peak hours, respectively. The land use descriptions are on the previous page and copies of the ITE Trip Generation 10th Edition land use descriptions and rates used in this project are in the APPENDIX. **Table 5** contains a summary of the calculated trip generation for the project. **Figure 9** shows the location of the development zones.

TRIP DISTRIBUTION

The estimated new trips from the proposed development were distributed onto the roadway network based on the proposed site access locations, existing turning movements, traffic patterns, and proximity to major roadways, as shown in **Figure 10**. Horrocks used the origin/destination approach for this distribution. Horrocks used the collected traffic count data to distribute project trips to and from the project area. Horrocks assumed that all trips will be made by non-transit vehicles, so modal split was not necessary.

- 35% - West on SR-92
- 15% - South on Center Street
- 15% - South on 1200 East
- 30% - East on SR-92
- 5% - North on Highland Boulevard

Table 5: ITE Trip Generation

Micron TIS											
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 1	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.75**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%
	Dwelling Units	225	1,225	612	612	81	21	60	99	60	39
	Shopping Center (ITE 820)		**37.75**	**37.75**	50%	50%	**0.94**	62%	38%	**3.81**	48%
	1000 Sq. Ft. GFA	50	3,752	1,876	1,876	47	29	18	325	156	169
	Total Internal Capture						5	3		19	45
	Total New Trips		**4,977**	**2,488**	**2488**	**128**	**45**	**75**	**424**	**197**	**163**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 2	**Middle School/Junior High School (ITE 522)**		**20.17**	50%	50%	**6.73**	55%	45%	**3.33**	45%	55%
	1000 Sq. Ft. GFA	117	2,360	1,180	1,180	787	433	354	390	175	214
	Total Internal Capture							4	4	0	11
	Total New Trips		**2,360**	**1,180**	**1,180**	**787**	**429**	**351**	**390**	**165**	**208**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 3	**Single-Family Detached Housing (ITE 210)**		**Ln(T)=0.92Ln(x)+2.71**	50%	50%	**T=0.71(x)+4.80**	25%	75%	**Ln(T)=0.96Ln(x)+0.20**	63%	37%
	Dwelling Units	255	2,460	1,230	1,230	186	46	139	250	157	92
	Multifamily Housing (Mid-Rise) (ITE 221)		**T=5.45(x)-1.75**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%
	Dwelling Units	517	2,816	1,408	1,408	186	48	138	227	139	89
	Elementary School (ITE 520)		**19.52**	50%	50%	**6.97**	55%	45%	**1.37**	45%	55%
	1000 Sq. Ft. GFA	46	898	449	449	321	176	144	63	28	35
	Church (ITE 560)		**6.95**	50%	50%	**T=0.36(x)-0.74**	60%	40%	**0.49**	45%	55%
	1000 Sq. Ft. GFA	290	2,016	1,008	1,008	104	62	41	142	64	78
	Total Internal Capture						2	2		6	2
	Total New Trips		**8,189**	**4,095**	**4,095**	**788**	**326**	**455**	**682**	**369**	**287**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 4	**Single-Family Detached Housing (ITE 210)**		**Ln(T)=0.92Ln(x)+2.71**	50%	50%	**T=0.71(x)+4.80**	25%	75%	**Ln(T)=0.96Ln(x)+0.20**	63%	37%
	Dwelling Units	258	2,487	1,243	1,243	188	47	141	252	159	93
	Multifamily Housing (Mid-Rise) (ITE 221)		**T=5.45(x)-1.75**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%
	Dwelling Units	324	1,764	882	882	117	30	86	143	87	56
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%
	Acres	4	91	45	46	0	0	0	0	0	0
	Total Internal Capture						1	2		10	3
	Total New Trips		**4,342**	**2,171**	**2,171**	**305**	**77**	**225**	**395**	**231**	**145**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 5	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.75**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%
	Dwelling Units	225	1,225	612	612	81	21	60	99	60	39
	Shopping Center (ITE 820)		**37.75**	50%	50%	**0.94**	62%	38%	**3.81**	48%	52%
	1000 Sq. Ft. GFA	50	3,752	1,876	1,876	47	29	18	325	156	169
	Total Internal Capture						5	3		19	45
	Total New Trips		**4,977**	**2,488**	**2488**	**128**	**45**	**75**	**424**	**197**	**163**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 6	**Single-Family Detached Housing (ITE 210)**		**Ln(T)=0.92Ln(x)+2.71**	50%	50%	**T=0.71(x)+4.80**	25%	75%	**Ln(T)=0.96Ln(x)+0.20**	63%	37%
	Dwelling Units	267	2,566	1,283	1,283	194	49	146	261	164	96
	Church (ITE 560)		**6.95**	50%	50%	**T=0.36(x)-0.74**	60%	40%	**0.49**	45%	55%
	1000 Sq. Ft. GFA	97	674	337	337	34	21	14	48	21	26
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%
	Acres	4	91	45	46	0	0	0	0	0	0
	Total Internal Capture						0	1		7	2
	Total New Trips		**3,332**	**1,666**	**1,666**	**228**	**69**	**158**	**309**	**176**	**120**
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
Zone 7	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.75**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%
	Dwelling Units	226	1,230	615	615	81	21	60	99	61	39
	Single-Family Detached Housing (ITE 210)		**Ln(T)=0.92Ln(x)+2.71**	50%	50%	**T=0.71(x)+4.80**	25%	75%	**Ln(T)=0.96Ln(x)+0.20**	63%	37%
	Dwelling Units	127	1,296	648	648	95	24	71	128	81	47
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%
	Acres	5	92	46	46	0	0	0	1	0	0
	Total Internal Capture						0	1		5	2
	Total New Trips		**2,617**	**1,309**	**1,309**	**176**	**45**	**130**	**228**	**133**	**84**
Total Development Trips			**30,793**	**15,396**	**15,397**	**2,541**	**1,034**	**1,469**	**2,852**	**1,468**	**1,169**

Figure 9: Zone Map

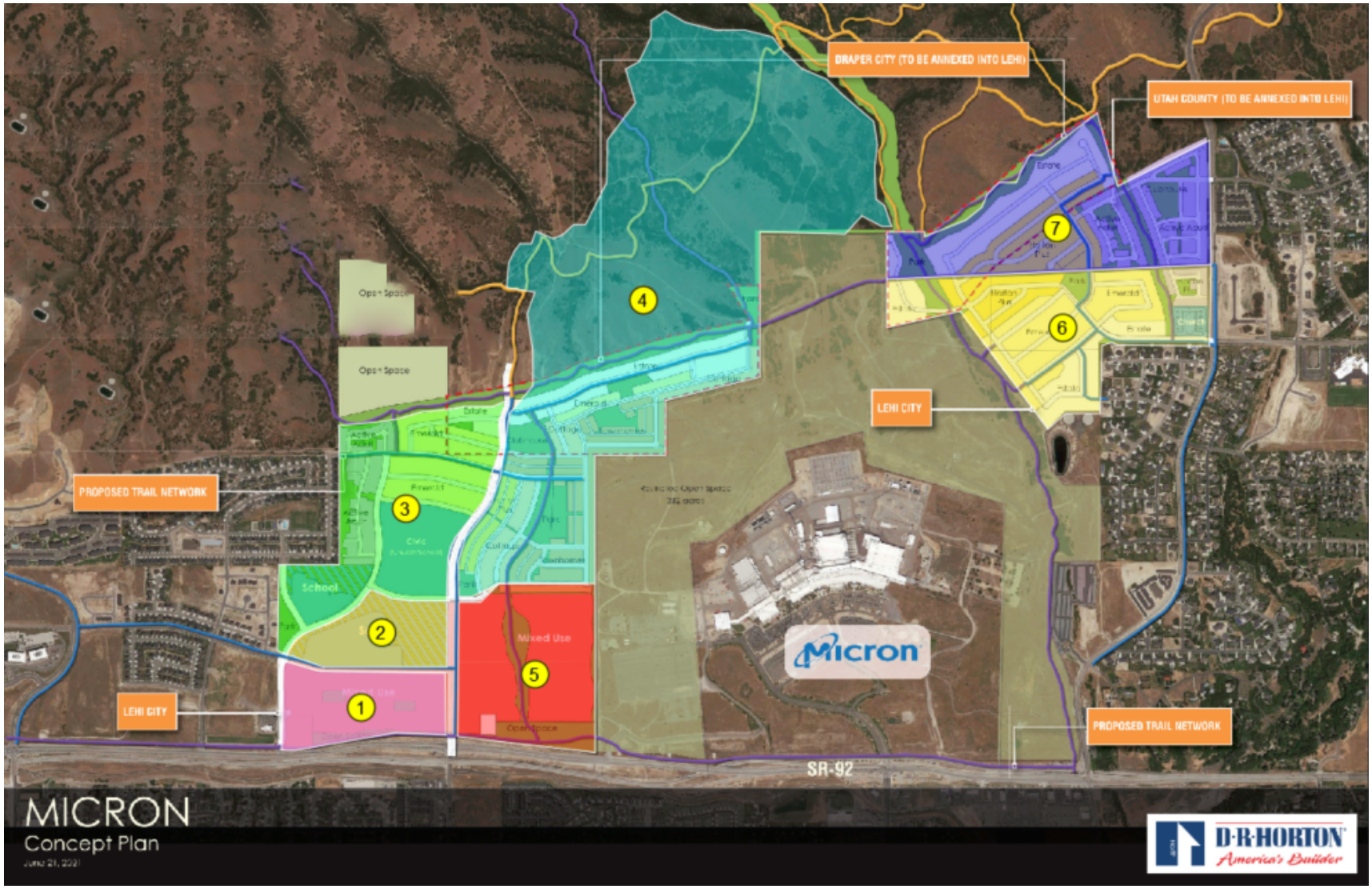
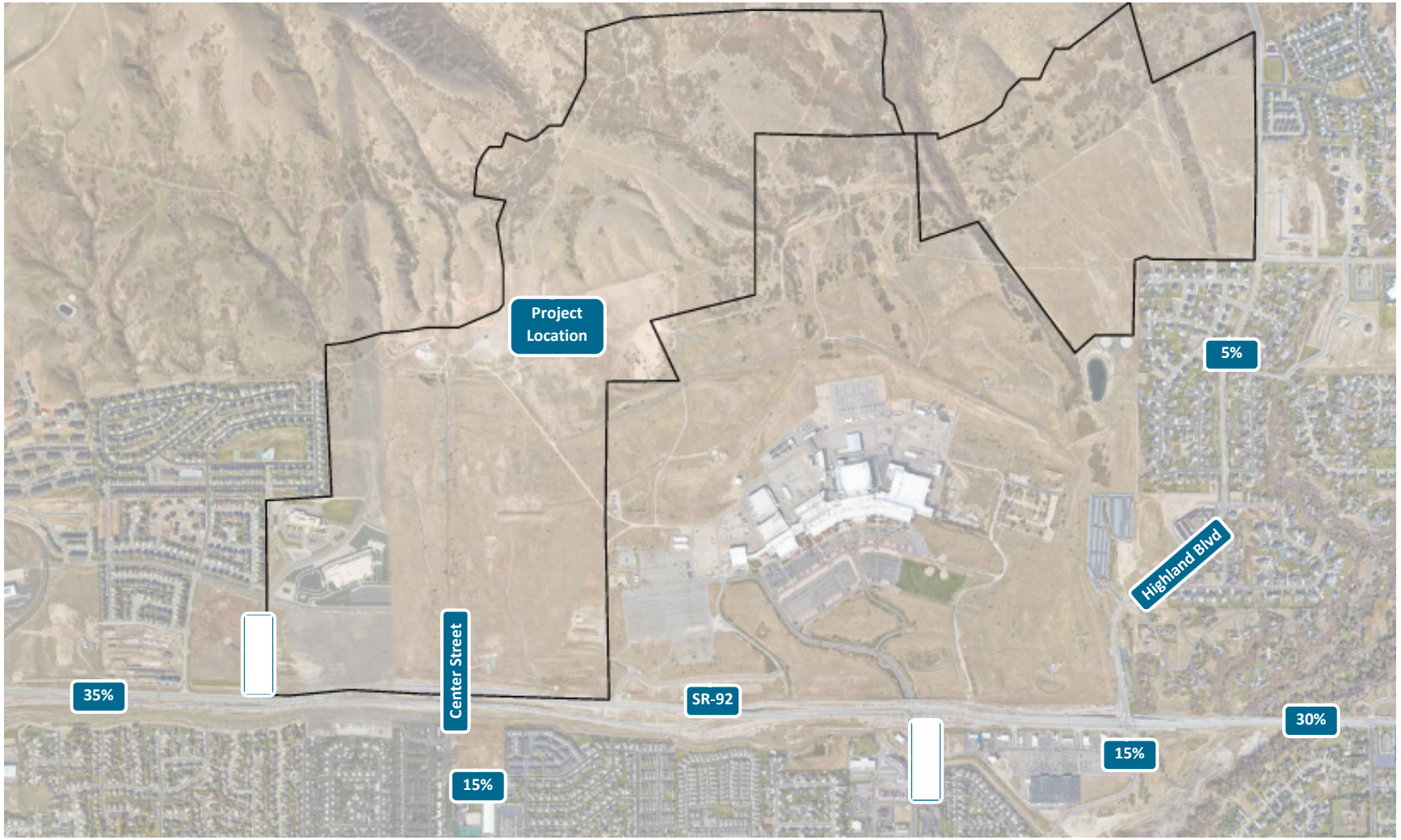


Figure 10: Trip Distribution



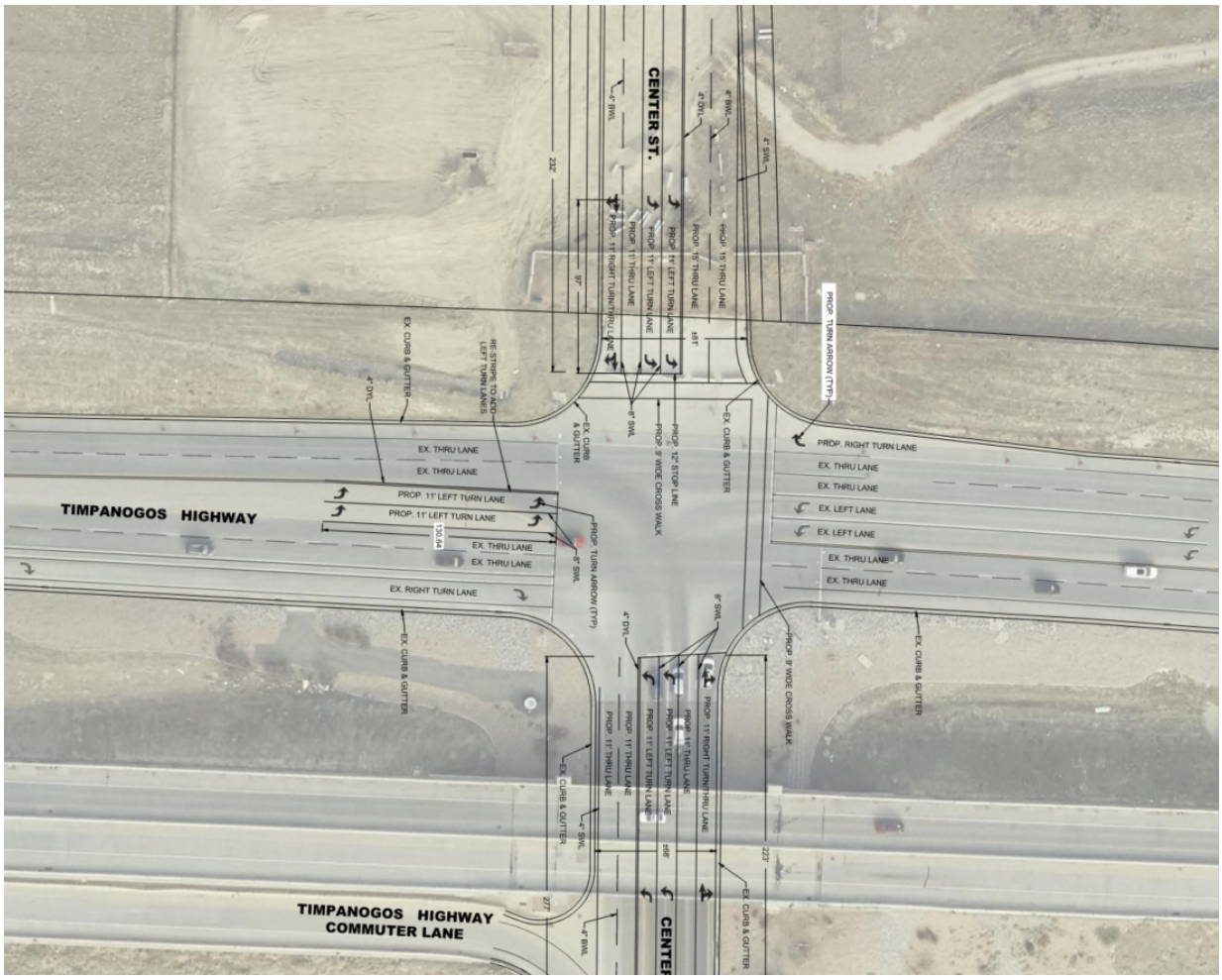
CENTER STREET & SR-92

The Center Street/8000 West & SR-92 intersection will have a new north leg (southbound approach) when the project is constructed. DR Horton is coordinating with UDOT in conjunction with LEI. The intersection is being constructed to a handle a higher volume of traffic on all approaches in anticipation of higher future traffic volumes. This intersection will perform at an improved Level of Service than the minimum required due to these improvements done above and beyond what is required. The lane geometry for the new approach is two dedicated left-turn lanes, one dedicated thru lane, and one dedicated right-turn lane. The updated lane geometry for the existing approaches are as follows:

- Southbound Approach: Two dedicated left-turn lanes, a thru lane, and one shared thru-right lane.
- Eastbound Approach: Two dedicated left-turn and thru lanes, and one dedicated right-turn lane.
- Westbound Approach: Two dedicated left-turn and thru lanes, and one dedicated right-turn lane.
- Northbound Approach: Two dedicated left-turn lanes, a thru lane, and one shared thru-right lane.

Figure 11 shows the updated lane geometry for the intersection.

Figure 11: North Leg Geometry



Analysis of 2026 Background Plus Project Conditions

2026 BACKGROUND PLUS PROJECT CONDITIONS

Horrocks applied the project conditions from the proposed development with the annexation to the 2026 Background Conditions to create the 2026 Background plus Project conditions, as shown in **Figure 12** and **Figure 13**. Traffic generated by the project site is shown in **Figure 14** and **Figure 15**. All study intersections perform at an acceptable LOS. The study intersection with the highest delay is 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS F with a delay of 53.5 sec/veh in the PM, as shown in **Table 6**. This scenario includes all previous mitigations.

Table 6: 2026 Background plus Project Peak Hour Conditions

Intersection Number	Intersection	AM Peak Hour			PM Peak Hour		
		Average Control Delay (sec/veh)	Difference from 2026 Background	Level of Service	Average Control Delay (sec/veh)	Difference from 2026 Background	Level of Service
2026 Background plus Project Peak Hour Conditions							
1	Highland Blvd & Grant Blvd	21.6	+9.2	**C**	30.7	+16.4	**D**
2	Highland Blvd & 11800 North	9.5	+2.2	**A**	13.3	+5.4	**B**
3	Highland Blvd & SR-92	33.6	+9.7	**C**	48.3	+16.8	**D**
4	1200 East & SR-92	52.2	+23.6	**D**	36.2	-4.8	**D**
5	Center St/8000 West & SR-92	41.7	+22.7	**D**	53.3	+32.1	**D**
6	SR-92 & 500 West	40.3	+19.5	**D**	27.9	+15.6	**C**
7	500 West & Traverse Terrace Drive	34.5	+18.6	**D**	17.3	+6.9	**B**
8	3900 North & Canyon Hills Rd	13.4	+2.8	**B**	9.2	+0.6	**A**
9	Canyon Hills Rd & 4050 North	17.1	-5.4	**C**	10.4	+1.2	**B**

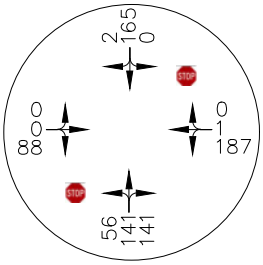
Source: HCM Methodologies using Synchro Software
Control delay for unsignalized intersections shown for the worst approach only per the HCM.

MITIGATIONS

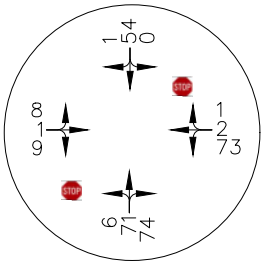
No recommended mitigation currently.



1 AM PEAK HOUR



1 PM PEAK HOUR



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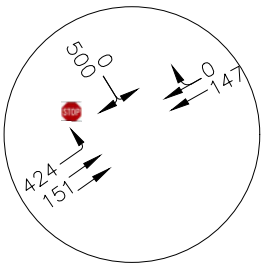
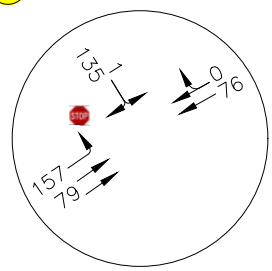
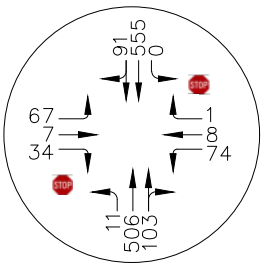


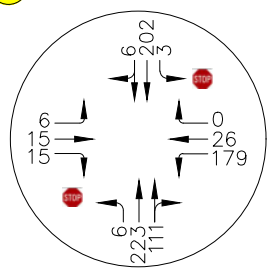
2 PM PEAK HOUR



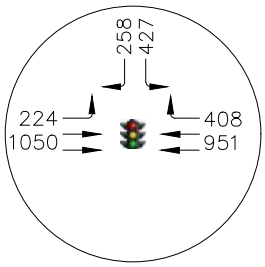
3 AM PEAK HOUR



3 PM PEAK HOUR



4 AM PEAK HOUR



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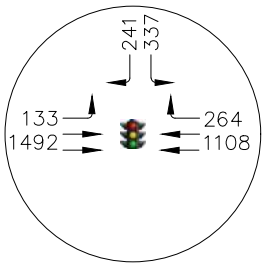
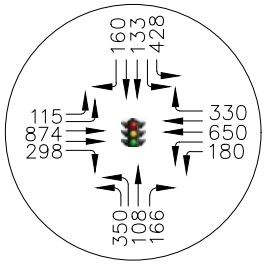
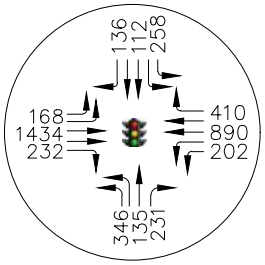


5 AM PEAK HOUR



5 PM PEAK HOUR



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West of Micron
2026 Background plus Project with Mitigations AM & PM Peak Hour Traffic Volumes

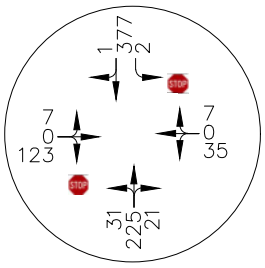
FIGURE 12

SCALE: N/A

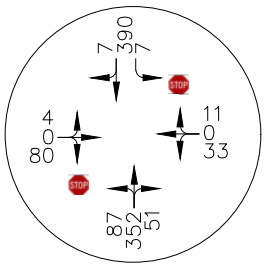
DA 9/2



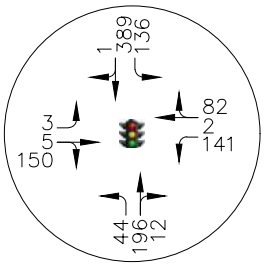
6 AM PEAK HOUR



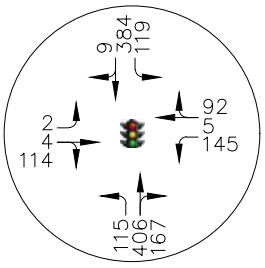
6 PM PEAK HOUR



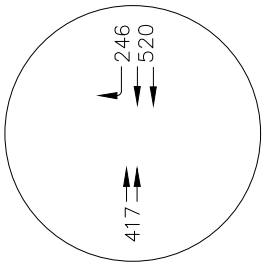
7 AM PEAK HOUR



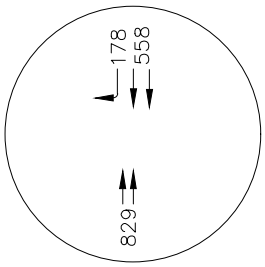
7 PM PEAK HOUR



8 AM PEAK HOUR



8 PM PEAK HOUR



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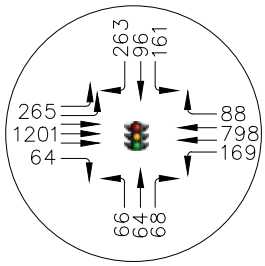

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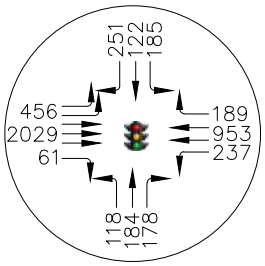

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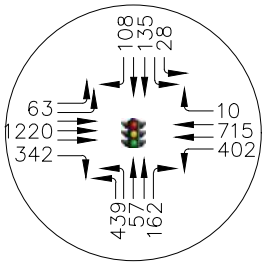

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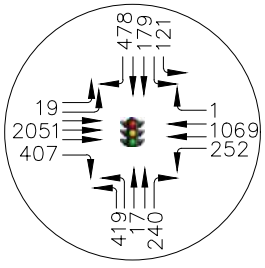

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2026 Background plus Project with Mitigation AM & PM Peak Hour Traffic Volumes

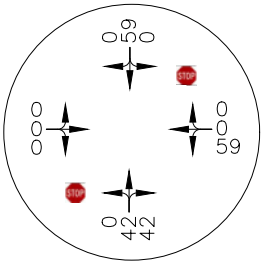
FIGURE 13

SCALE: N/A

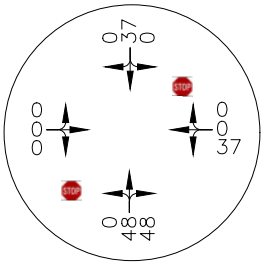
DA 9/2



1 AM PEAK HOUR



1 PM PEAK HOUR



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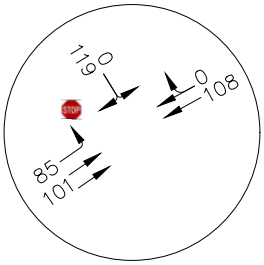

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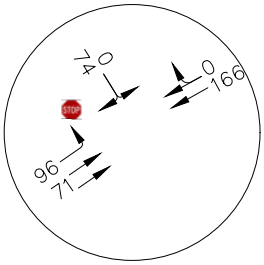

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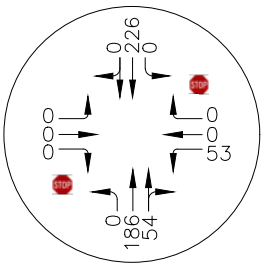

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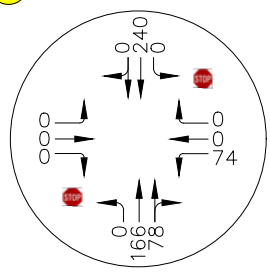

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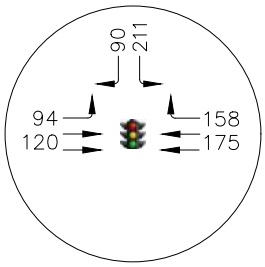

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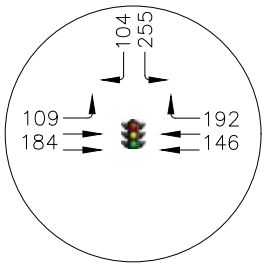

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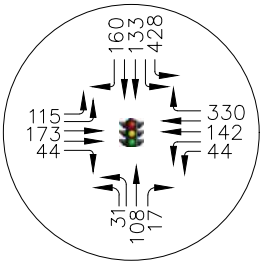

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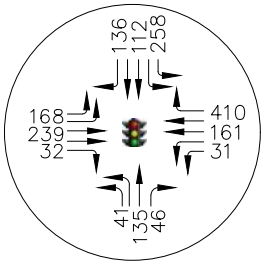

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Project Only AM & PM Peak Hour Traffic Volumes

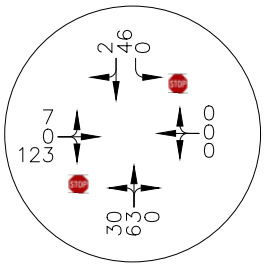
FIGURE 14

SCALE: N/A

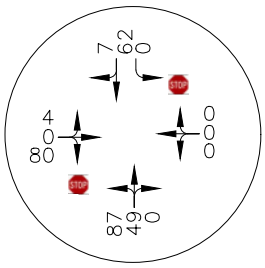
DA 9/2



6 AM PEAK HOUR



6 PM PEAK HOUR



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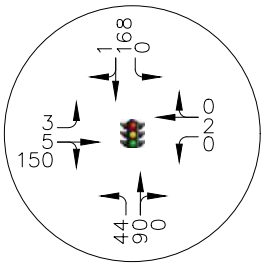

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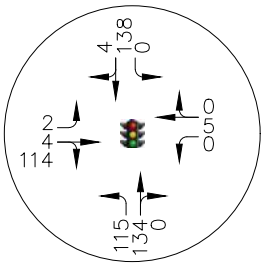
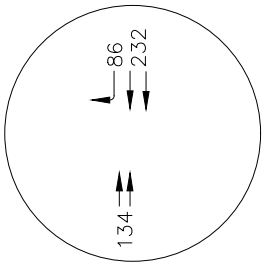


8 AM PEAK HOUR



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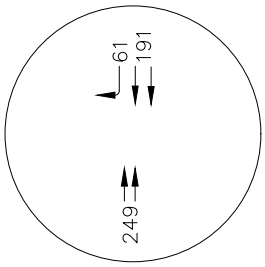

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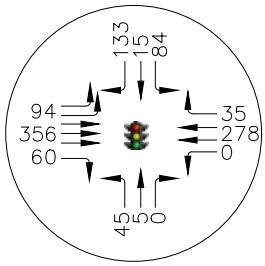

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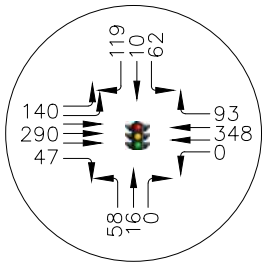

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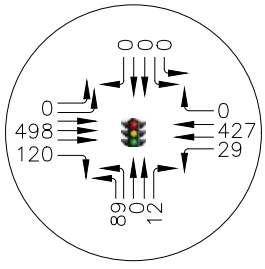

10 PM PEAK HOUR

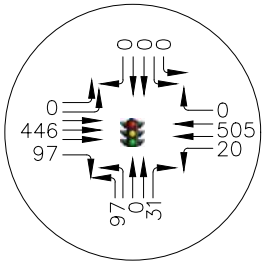

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FIGURE 15

SCALE: N/A

DA 9/2

Analysis of 2050 Background Conditions

2050 VOLUME PROJECTION

For the 2050 background condition, Horrocks used the Regional Travel Demand Model (TDM) for the area to obtain the 2050 volumes, as shown in **Figure 16** and **Figure 17**. The APPENDIX contains the traffic data used to determine the growth.

Regional Travel Demand Model (TDM)

MAG is the designated Metropolitan Planning Organization (MPO) for Summit, Utah, and Wasatch counties in Utah. MAG works in partnership with UDOT, Utah Transit Authority (UTA), local governments, and other stakeholders to develop long-range transportation plans for the communities within their jurisdictions. As part of its transportation planning work, MAG, in collaboration with the Wasatch Front Regional Council (WFRC), maintains a regional Travel Demand Model (TDM) for its jurisdictional area (currently version 8.3.1). References to "the model" in this report refer to the scripts and data maintained by MAG/WFRC, not to the Cube software.

The TDM is a state-of-the-practice tool that allows transportation analysts to input various land use and growth scenarios for different road and transit networks to forecast the expected traffic for each scenario. At its core, the TDM uses the common four-step modeling process, which consists of trip generation, trip distribution, mode split, and trip assignment.

Specific inputs to the TDM include socioeconomic forecasts and transportation system data. The socioeconomic data includes population, households, employment, and average household income. Household data is further classified by household size (one person to 6+ persons), number of workers (0 to 3+ persons), and income quartiles. Employment data is classified into 12 categories that include subcategories for retail, industrial, and office. Public school enrollment is classified into elementary, middle, and high school. Special trip generation tables are included for colleges, the Salt Lake City International Airport, and Lagoon. Transportation system data include both roadway and transit networks. The roadway network includes freeways, arterial routes, and collector routes. The transit network includes commuter rail, light rail, bus rapid transit, express bus routes, and many local bus routes. New to version 8 of the model is a freight component that estimates truck traffic. Bicycle and pedestrian trips are tracked internally by the model, but do not have any specific inputs.

The geographical area of the TDM is split into individual Traffic Analysis Zones (TAZs), which in turn hold the socioeconomic source data. The model uses the information in each TAZ for trip generation, trip distribution, and mode split. Trips generated by each TAZ are loaded onto the roadway network using special links called centroid connectors. The model then uses the roadway network in an iterative process to assign routes for each trip destination.

MAG TransPlan50 is the RTP using 2030, 2040, and 2050 for the timeline of Phase 1, Phase 2, and Phase 3 projects, respectively. The TDM has roadway and transit networks associated with each of these phases. This study uses these networks as the assumed base conditions depending on the year being analyzed.

INTERSECTION OPERATIONS

All study intersections perform at an acceptable LOS except Highland Blvd & Grant Blvd. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & Grant Blvd with a LOS F with a delay of 43.5 sec/veh in the PM, as shown in **Table 7**.

Table 7: 2050 Background Peak Hour Traffic Analysis

Intersection Number	Intersection	AM Peak Hour			PM Peak Hour		
		Average Control Delay (sec/veh)	Difference from 2026 Background plus Mitigation	Level of Service	Average Control Delay (sec/veh)	Difference from 2026 Background plus Mitigation	Level of Service
2050 Background Peak Hour Conditions							
1	Highland Blvd & Grant Blvd	16.0	+3.6	**C**	43.5	+29.2	**F**
2	Highland Blvd & 11800 North	8.6	+1.3	**A**	15.2	+7.3	**B**
3	Highland Blvd & SR-92	27.1	+3.2	**C**	46.9	+15.4	**D**
4	1200 East & SR-92	32.4	+3.8	**C**	40.1	+0.9	**D**
5	Center St/8000 West & SR-92	19.0	+0.0	**B**	30.7	+9.5	**C**
6	SR-92 & 500 West	12.2	-8.6	**B**	25.9	+13.6	**C**
7	500 West & Traverse Terrace Drive	10.1	-5.8	**B**	13.8	+3.4	**D**
8	3900 North & Canyon Hills Rd	8.9	-1.7	**A**	9.3	+0.7	**A**
9	Canyon Hills Rd & 4050 North	10.0	-12.5	**B**	10.9	+1.7	**B**

Source: HCM Methodologies using Synchro Software
Control delay for unsignalized intersections shown for the worst approach only per the HCM.

MITIGATIONS

Highland Blvd & Grant Blvd

- Upgrade intersection from stop-control to signalized

Horrocks did not perform a signal warrant analysis on the intersection of Highland Blvd & Grant Blvd. Horrocks recommends this intersection's stop-control upgrade to a signal based on the unacceptable LOS occurring in the 2050 Background conditions. A signal warrant analysis should be performed as the years draw closer to 2050.

With this mitigation all intersections operate at an acceptable LOS, as shown in **Table 8**. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & SR-92 with a LOS D with a delay of 46.9 sec/veh in the PM. The red arrows in figures below show the recommended mitigations.

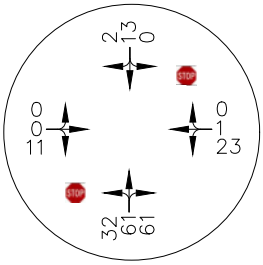
Table 8: 2050 Background plus Mitigations Peak Hour Conditions

Intersection Number	Intersection	AM Peak Hour		PM Peak Hour	
		Average Control Delay (sec/veh)	Level of Service	Average Control Delay (sec/veh)	Level of Service
2050 Background plus Mitigations Peak Hour Conditions					
1	Highland Blvd & Grant Blvd	5.7	**A**	5.9	**A**
2	Highland Blvd & 11800 North	8.6	**A**	15.2	**B**
3	Highland Blvd & SR-92	27.1	**C**	46.9	**D**
4	1200 East & SR-92	32.4	**C**	40.1	**D**
5	Center St/8000 West & SR-92	19.0	**B**	30.7	**C**
6	SR-92 & 500 West	12.2	**B**	25.9	**C**
7	500 West & Traverse Terrace Drive	10.1	**B**	13.8	**B**
8	3900 North & Canyon Hills Rd	8.9	**A**	9.3	**A**
9	Canyon Hills Rd & 4050 North	10.0	**B**	10.9	**B**

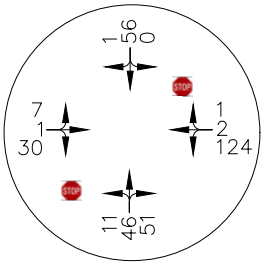
Source: HCM Methodologies using Synchro Software
Control delay for unsignalized intersections shown for the worst approach only per the HCM.



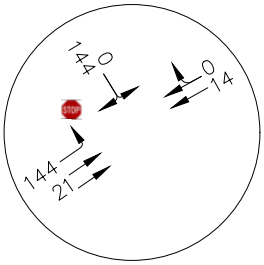
1 AM PEAK HOUR



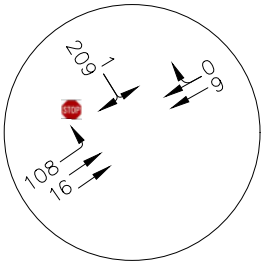
1 PM PEAK HOUR



2 AM PEAK HOUR



2 PM PEAK HOUR



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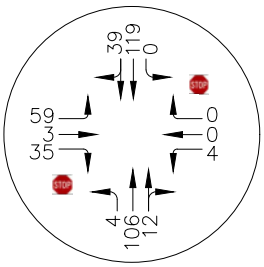
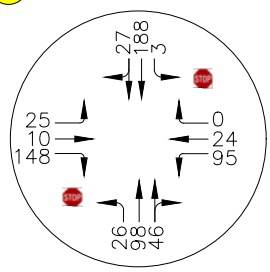


3 PM PEAK HOUR



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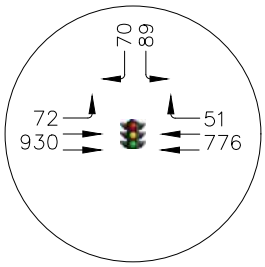
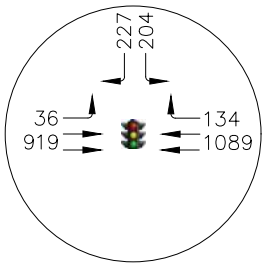
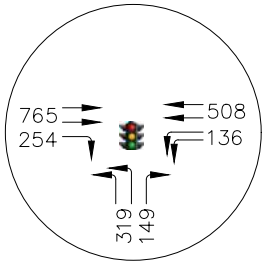


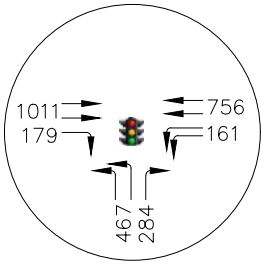
4 PM PEAK HOUR



5 AM PEAK HOUR



5 PM PEAK HOUR



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2050 Background with Mitigations AM & PM Peak Hour Traffic Volumes

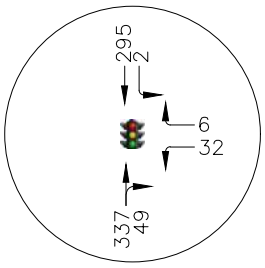
FIGURE 16

SCALE: N/A

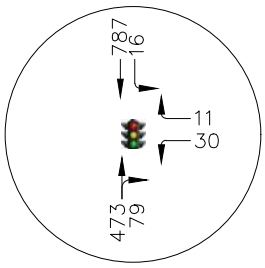
DA 9/2



6 AM PEAK HOUR



6 PM PEAK HOUR



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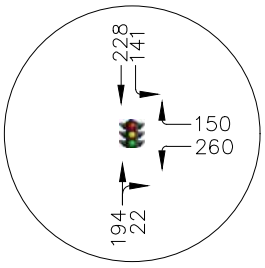

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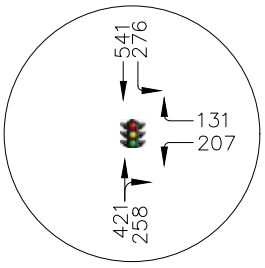
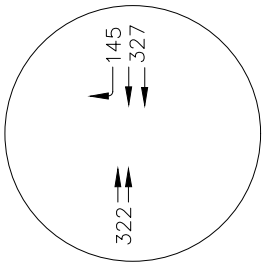


8 AM PEAK HOUR



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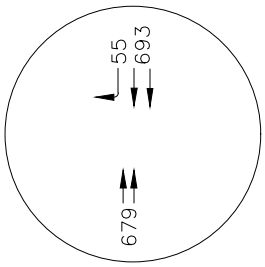
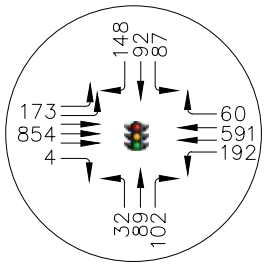


9 AM PEAK HOUR



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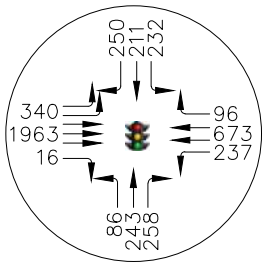

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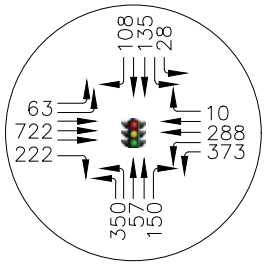

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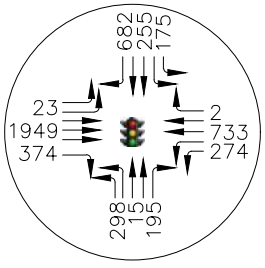

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East of Micron
2050 Background AM & PM Peak Hour Traffic Volumes

FIGURE 17

SCALE: N/A

DA 9/2

Analysis of 2050 Background plus Project Conditions

INTERSECTION OPERATIONS

Horrocks applied the project conditions from the proposed development with the annexation to the 2050 Background Conditions to create the 2050 Background plus Project, as shown in **Figure 18** and **Figure 19**. All study intersections perform at an acceptable LOS except for Highland Blvd & SR-92, 500 West & Traverse Terrace Drive, and Center St/8000 West & SR-92, as shown in **Table 9.** The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and 500 West & Traverse Terrace Drive with a LOS E and a delay of 88.1 sec/veh in the PM. This scenario includes all previous mitigations.

Table 9: 2050 Background plus Project Peak Hour Traffic Analysis

Intersection Number	Intersection	AM Peak Hour			PM Peak Hour		
		Average Control Delay (sec/veh)	Difference from 2050 Background Mitigation	Level of Service	Average Control Delay (sec/veh)	Difference from 2050 Background Mitigation	Level of Service
2050 Background plus Project Peak Hour Conditions							
1	Highland Blvd & Grant Blvd	21.6	+15.9	**C**	7.3	+0.0	**A**
2	Highland Blvd & 11800 North	9.5	+0.9	**A**	14.5	+0.7	**B**
3	Highland Blvd & SR-92	33.6	+6.5	**C**	88.1	+41.2	**F**
4	1200 East & SR-92	52.2	+19.8	**D**	39.0	+1.1	**D**
5	Center St/8000 West & SR-92	42.4	+23.4	**D**	54.1	+23.4	**D**
6	SR-92 & 500 West	40.3	+28.1	**D**	36.8	+10.9	**D**
7	500 West & Traverse Terrace Drive	30.5	+20.4	**D**	34.5	+20.7	**C**
8	3900 North & Canyon Hills Rd	13.4	+4.5	**B**	10.4	+1.1	**B**
9	Canyon Hills Rd & 4050 North	27.0	+17.0	**D**	13.7	+2.8	**C**

Source: HCM Methodologies using Synchro Software
Control delay for unsignalized intersections shown for the worst approach only per the HCM.

MITIGATIONS

500 West & Traverse Terrace Drive

- Upgrade intersection from stop-control to signalized

Horrocks did not perform a signal warrant analysis on the intersection of 500 West & Traverse Terrace Drive. Horrocks recommends this intersection's stop-control upgrade to a signal based on the unacceptable LOS occurring in the 2050 Background plus Project conditions. A signal warrant analysis should be performed as the years draw closer to 2050.

Highland Blvd & SR-92

- Add additional westbound left-turn lane
- Add additional southbound left-turn lane
- Add additional northbound thru lane for a total of 2 lanes

With these mitigations, all intersections operate at an acceptable LOS, as shown in **Table 10**. The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay 52.2 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS D with a delay of 50.0 sec/veh in the PM. This scenario includes all previous mitigations. The red arrows in figures below show the recommended mitigations.

Table 10: 2050 Background plus Project with Mitigations Peak Hour Conditions

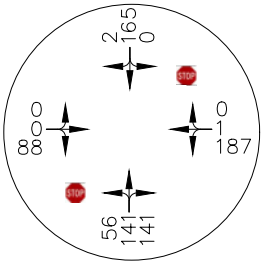
Intersection Number	Intersection	AM Peak Hour		PM Peak Hour	
		Average Control Delay (sec/veh)	Level of Service	Average Control Delay (sec/veh)	Level of Service
2050 Background plus Project with Mitigations Peak Hour Conditions					
1	Highland Blvd & Grant Blvd	21.6	**C**	8.8	**A**
2	Highland Blvd & 11800 North	9.5	**A**	19.8	**B**
3	Highland Blvd & SR-92	31.9	**C**	50.0	**D**
4	1200 East & SR-92	52.2	**D**	40.4	**D**
5	Center St/8000 West & SR-92	42.4	**D**	46.3	**D**
6	SR-92 & 500 West	40.3	**D**	34.0	**C**
7	500 West & Traverse Terrace Drive	6.7	**A**	8.7	**A**
8	3900 North & Canyon Hills Rd	13.4	**B**	10.4	**B**
9	Canyon Hills Rd & 4050 North	27.0	**D**	13.7	**B**

Source: HCM Methodologies using Synchro Software

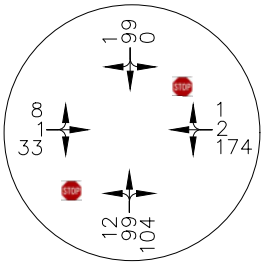
Control delay for unsignalized intersections shown for the worst approach only per the HCM.



1 AM PEAK HOUR



1 PM PEAK HOUR



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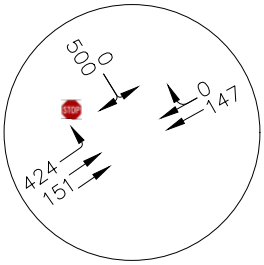
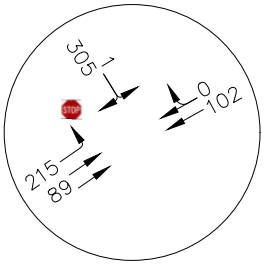


2 PM PEAK HOUR



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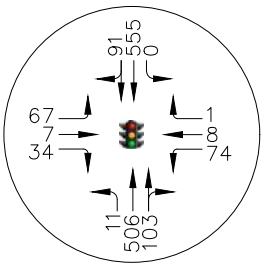

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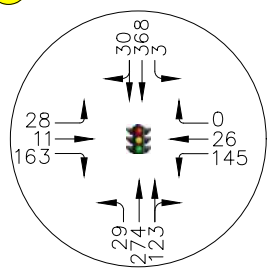

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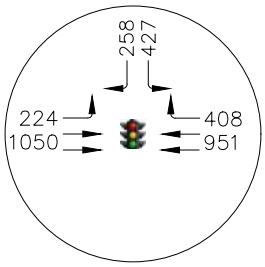

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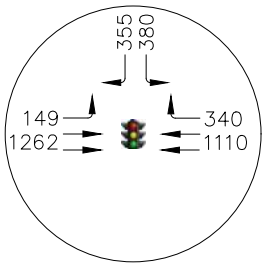

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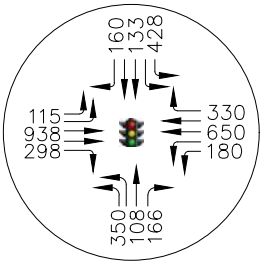
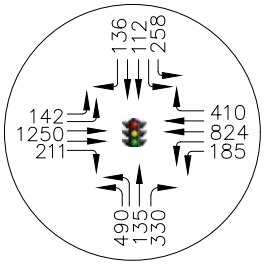


5 PM PEAK HOUR



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West of Micron
2050 Background plus Project with Mitigations AM & PM Peak Hour Traffic Volumes

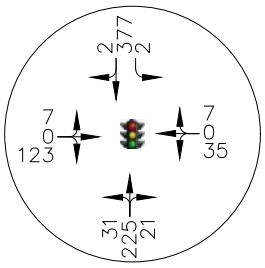
FIGURE 18

SCALE: N/A

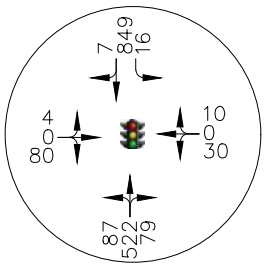
DA



6 AM PEAK HOUR



6 PM PEAK HOUR



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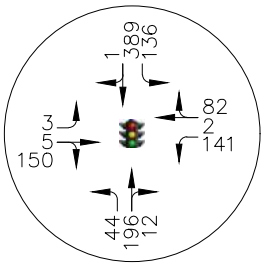
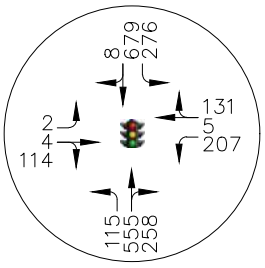
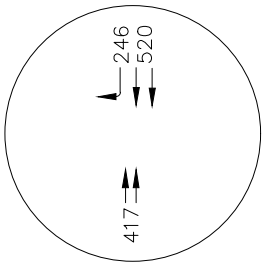


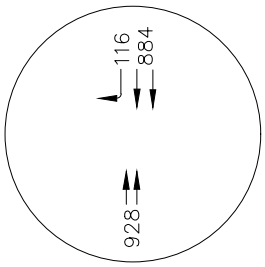
7 PM PEAK HOUR



8 AM PEAK HOUR



8 PM PEAK HOUR



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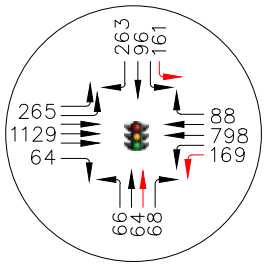

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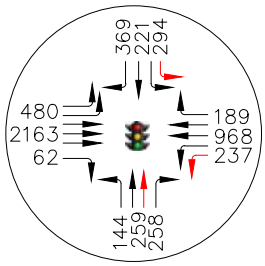

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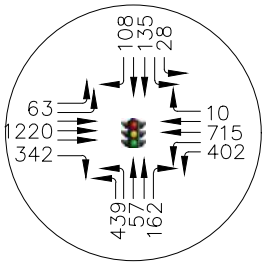

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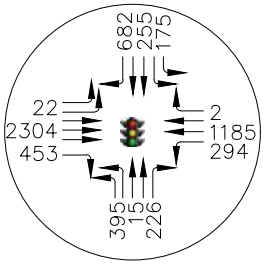

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2050 Background plus Project with Mitigations AM & PM Peak Hour Traffic Volumes

FIGURE 19

SCALE: N/A

DA 9/2

CONCLUSIONS AND RECOMMENDATIONS

1. Existing Conditions: - All study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 29.0 sec/veh in the AM and a LOS D and a delay of 48.6 sec/veh in the PM. No recommended mitigations currently.

2. 2026 Background Conditions: - Traffic volumes were projected over five-years from 2021 to 2026 by adding a 10% growth rate to existing traffic conditions. This 10% growth rate (or 2% per year) was generated using UDOT's historic AADT counts. All study intersections perform at an acceptable LOS except for Highland Blvd & 11800 North. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 31.3 sec/veh in the AM and Highland Blvd & 11800 North with a LOS E and a delay of 39.7 sec/veh in the PM.

   Recommended Mitigations:
   - Highland Blvd & 11800 North
     - Upgrade intersection from stop control to signal
     - Modify westbound shared left/right to dedicated left and right.

   After mitigations, all study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 28.6 sec/veh in the AM, and a LOS D with a delay of 41.0 sec/veh in the PM. No recommended mitigations currently.

3. Project Trip Generation: - Horrocks estimates the proposed development to generate approximately 30,793 new external daily trips with 2,541 during the AM peak and 2,852 during the PM peak, respectively.

4. 2026 Background plus Project Conditions: - Horrocks added project traffic to the 2026 Background conditions to create 2026 Background plus Project Conditions. All study intersections perform at an acceptable LOS. The study intersection with the highest delay is 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS D with a delay of 53.5 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

5. 2050 Background Conditions: - Traffic volumes were projected over thirty-years from 2021 to 2050 using the Travel Demand Model for the area. All study intersections perform at an acceptable LOS except Highland Blvd & Grant Blvd. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & Grant Blvd with a LOS F with a delay of 43.5 sec/veh in the PM. This scenario includes all previous mitigations.

   Recommended Mitigations:
   - Highland Blvd & Grant Blvd
     - Upgrade intersection from stop-control to signalized

   After mitigations, all study intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS C and a delay of 32.4 sec/veh in the AM and Highland Blvd & SR-92 with a LOS D with a delay of 44.9 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

6. 2050 Background plus Project conditions: - Horrocks added project traffic to 2050 Background conditions to create 2050 Background plus Project Conditions. All study intersections perform at an acceptable LOS except for Highland Blvd & SR-92 and 500 West & Traverse Terrace Drive. The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay of 52.2 sec/veh in the AM and 500 West & Traverse Terrace Drive with a LOS E and a delay of 247.6 sec/veh in the PM. This scenario includes all previous mitigations.

   Recommended Mitigations:

   - 500 West & Traverse Terrace Drive
     - Upgrade intersection from stop-control to signalized
   - Highland Blvd & SR-92
     - Add additional westbound left-turn lane
     - Add additional southbound left-turn lane
     - Add additional thru lane for a total of 2 lanes

   With these mitigations, all intersections operate at an acceptable LOS. The study intersections with the highest delay are 1200 East & SR-92 with a LOS D and a delay 52.2 sec/veh in the AM and Center St/8000 West & SR-92 with a LOS D with a delay of 54.8 sec/veh in the PM. This scenario includes all previous mitigations. No recommended mitigations currently.

7. Safety History: - There was a total of 736 crashes on SR-2 from 2016 through 2021. The types of vehicle crashes are as follows:

   - Two fatal crashes
   - 68 Suspected minor injury crashes
   - 131 Possible injury crashes
   - 535 Property damage only crashes

HORROCKS ENGINEERS



Skye Area Plan, 2nd Amendment (Micron) TIS

LEHI, UT

UT-CV-3498-21

SEPTEMBER 26, 2022 PROJECT

Table of Contents

TRAFFIC COUNTS....1
TDM OUTPUTS....24
SITE LAYOUT....29
TRIP GENERATION....31
SYNCHRO REPORTS....34
EXISTING TRAFFIC....35
2026 BACKGROUND TRAFFIC....74
2026 BACKGROUND PLUS PROJECT....142
2050 BACKGROUND....335
2050 BACKGROUND PLUS PROJECT....434
SIGNAL WARRANTS....625
2026 SIGNAL WARRANTS....626
2050 SIGNAL WARRANT....629

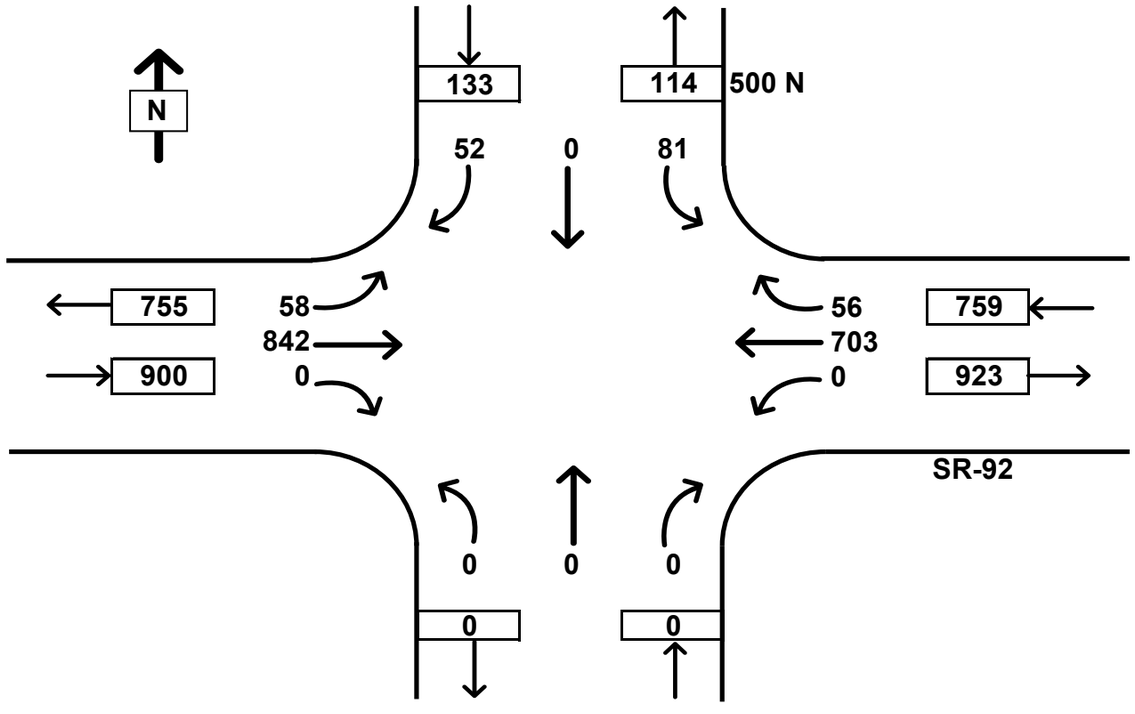
TRAFFIC COUNTS

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **500 N**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	6	0	3		0	71	10		0	0	0		13	117	0		220	
07:15 AM	07:30 AM	12	0	2		0	106	10		0	0	0		15	163	0		308	
07:30 AM	07:45 AM	23	0	10		0	135	16		0	0	0		10	256	0		450	
07:45 AM	08:00 AM	32	0	24		0	206	25		0	0	0		35	226	0		548	1526
08:00 AM	08:15 AM	18	0	15		0	192	11		0	0	0		8	185	0		429	1735
08:15 AM	08:30 AM	8	0	3		0	170	4		0	0	0		5	175	0		365	1792
08:30 AM	08:45 AM	10	0	5		0	146	6		0	0	0		11	146	0		324	1666
08:45 AM	09:00 AM	19	0	19		0	159	13		0	0	0		21	183	0		414	1532



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
81	0	52	0	703	56	0	0	0	58	842	0
133			759			0			900		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		7:30:00 AM			8:30 AM	Peak Vol:		1792	PHF:		0.82

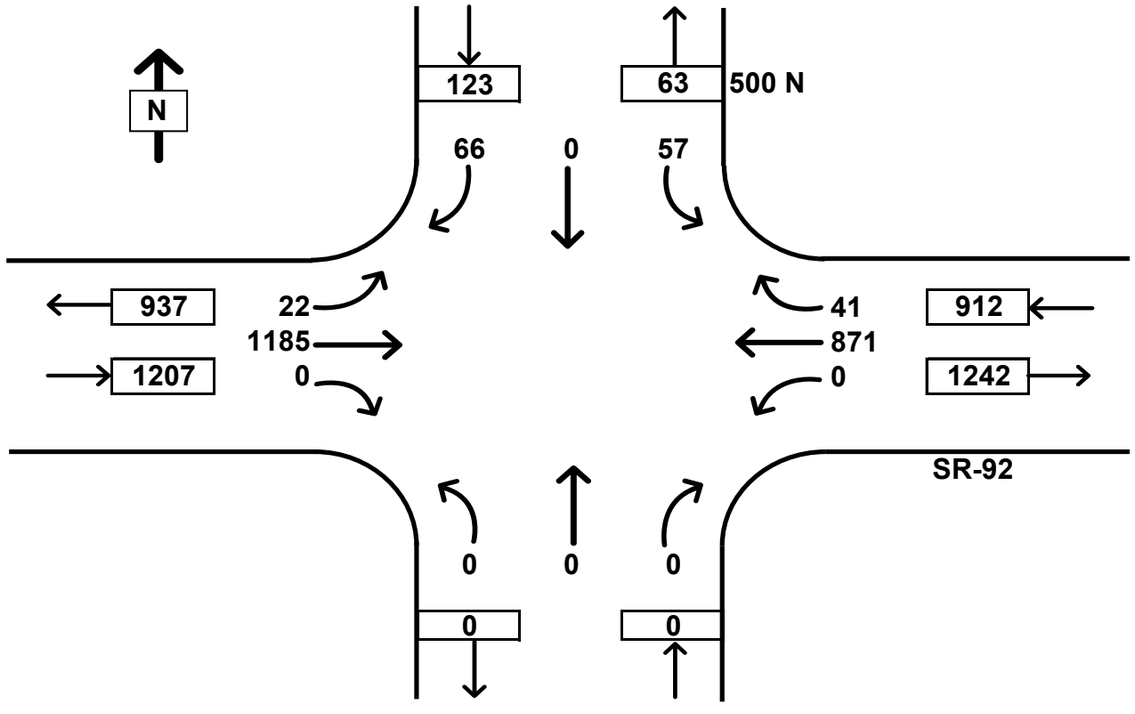
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **500 N**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	12	0	13		0	213	11		0	0	0		0	231	0		480	
04:15 PM	04:30 PM	5	0	8		0	188	5		0	0	0		3	227	0		436	
04:30 PM	04:45 PM	13	0	10		0	219	10		0	0	0		5	217	0		474	
04:45 PM	05:00 PM	17	0	15		0	193	15		0	0	0		5	318	0		563	1953
05:00 PM	05:15 PM	14	0	37		0	239	8		0	0	0		3	269	0		570	2043
05:15 PM	05:30 PM	14	0	4		0	250	8		0	0	0		9	302	0		587	2194
05:30 PM	05:45 PM	12	0	10		0	189	10		0	0	0		5	296	0		522	2242
05:45 PM	06:00 PM	14	0	7		0	179	9		0	0	0		2	283	0		494	2173



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
57	0	66	0	871	41	0	0	0	22	1185	0
123			912			0			1207		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:45:00 PM			5:45 PM	Peak Vol:		2242	PHF:		0.95

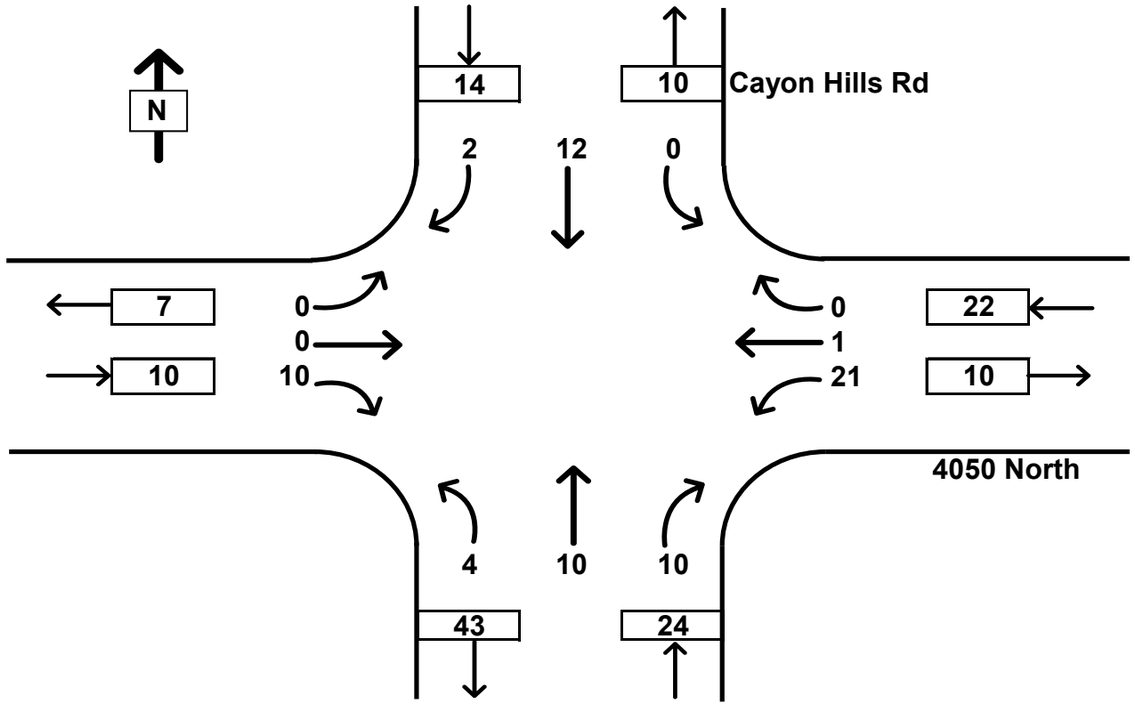
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Cayon Hills Rd**
E-W Street: **4050 North**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	0	2	0	1	5	0	0	0	0	2	3	0	0	0	1	0	13	
07:15 AM	07:30 AM	0	2	0	1	1	0	0	0	0	1	0	1	0	0	1	0	5	
07:30 AM	07:45 AM	0	5	0	1	5	0	0	2	1	3	0	10	0	0	2	9	16	
07:45 AM	08:00 AM	0	3	1	0	9	0	0	3	2	6	4	0	0	0	5	0	30	64
08:00 AM	08:15 AM	0	3	1	0	5	0	0	0	1	1	2	0	0	0	2	0	15	66
08:15 AM	08:30 AM	0	1	0	0	2	1	0	0	0	0	4	0	0	0	1	0	9	70
08:30 AM	08:45 AM	0	4	0	0	5	0	0	2	0	4	2	0	0	0	0	2	15	69
08:45 AM	09:00 AM	0	9	0	0	7	0	0	0	1	8	1	0	0	0	4	0	30	69



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	12	2	21	1	0	4	10	10	0	0	10
14			22			24			10		
Trucks:		7%	Trucks:		23%	Trucks:		42%	Trucks:		90%
Peak Hour:		7:30:00 AM			8:30 AM	Peak Vol:		70	PHF:		0.58

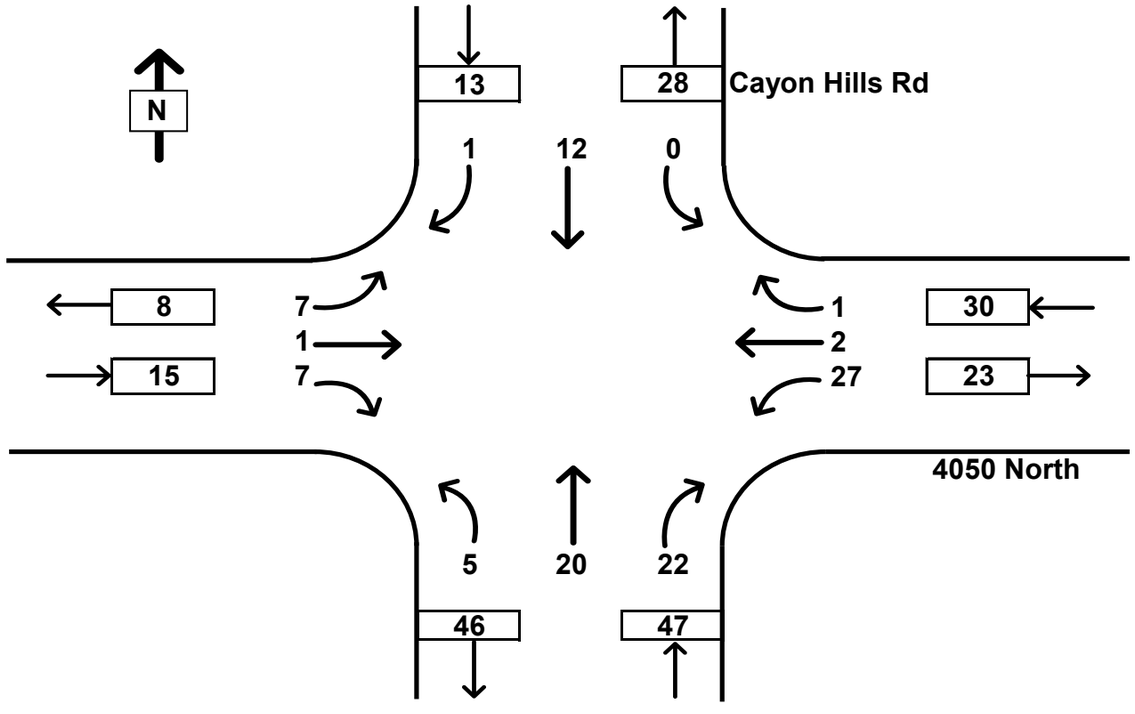
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Cayon Hills Rd**
E-W Street: **4050 North**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	0	2	0	0	3	0	0	0	0	6	1	0	0	1	0	0	13	
04:15 PM	04:30 PM	1	2	1	0	2	0	0	0	0	7	0	0	0	0	0	0	13	
04:30 PM	04:45 PM	0	2	0	0	6	0	0	0	3	3	3	0	0	0	2	0	19	
04:45 PM	05:00 PM	0	1	0	1	9	0	0	0	1	6	5	0	0	0	2	0	24	69
05:00 PM	05:15 PM	0	3	0	0	7	0	0	0	1	5	4	0	0	0	1	0	21	77
05:15 PM	05:30 PM	0	3	0	0	3	1	1	0	2	4	7	0	1	0	3	0	25	89
05:30 PM	05:45 PM	0	5	1	0	8	1	0	0	1	5	6	0	6	1	1	0	35	105
05:45 PM	06:00 PM	0	2	0	0	9	1	0	0	0	2	1	0	0	0	1	0	16	97



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	12	1	27	2	1	5	20	22	7	1	7
13			30			47			15		
Trucks:		8%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:45:00 PM			5:45 PM	Peak Vol:		105	PHF:		0.75

OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

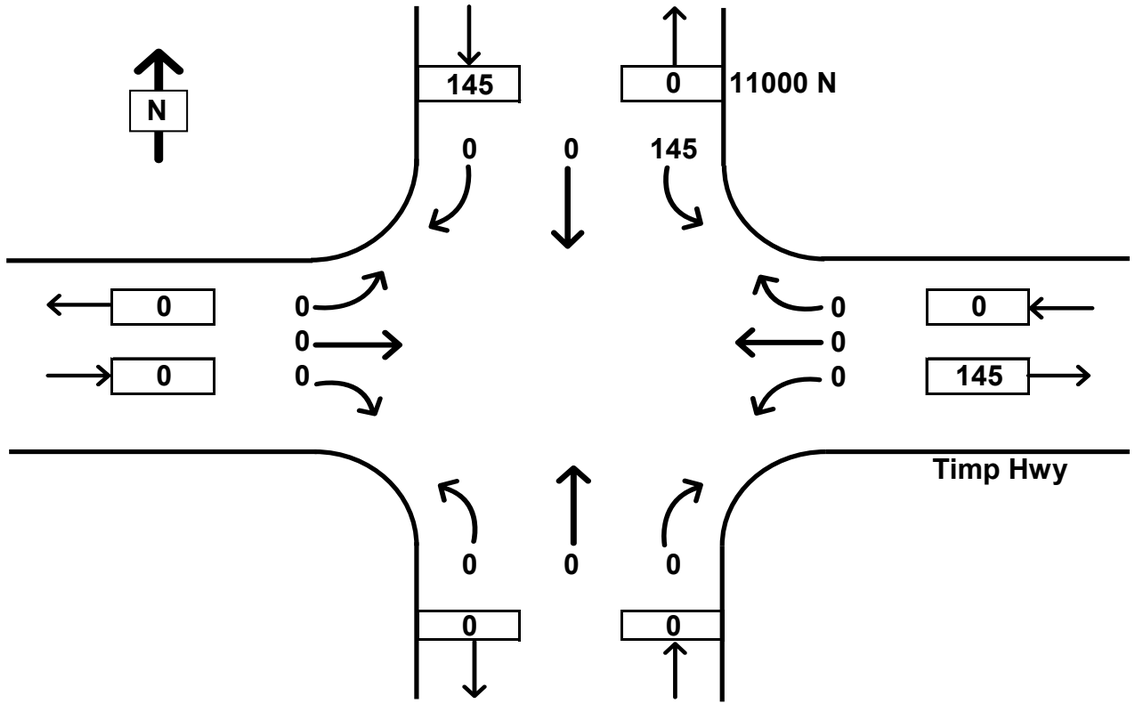
TRAFFIC COUNT SUMMARY

City: **Micron**
N-S Street: **11000 N**
Date: **Tuesday, May 11, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

E-W Street: **Timp Hwy**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	30	0	0	0													30	
07:15 AM	07:30 AM	31	0	0	0													31	
07:30 AM	07:45 AM	25	0	0	0													25	
07:45 AM	08:00 AM	36	0	0	0													36	122
08:00 AM	08:15 AM	29	0	0	0													29	121
08:15 AM	08:30 AM	33	0	0	0													33	123
08:30 AM	08:45 AM	40	0	0	0													40	138
08:45 AM	09:00 AM	43	0	0	0													43	145



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
145	0	0	0	0	0	0	0	0	0	0	0
145			0			0			0		
Trucks:		0%	**Trucks:**		0%	**Trucks:**		0%	**Trucks:**		0%
Peak Hour:		8:00:00 AM			9:00 AM	**Peak Vol:**		145	**PHF:**		0.84

OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

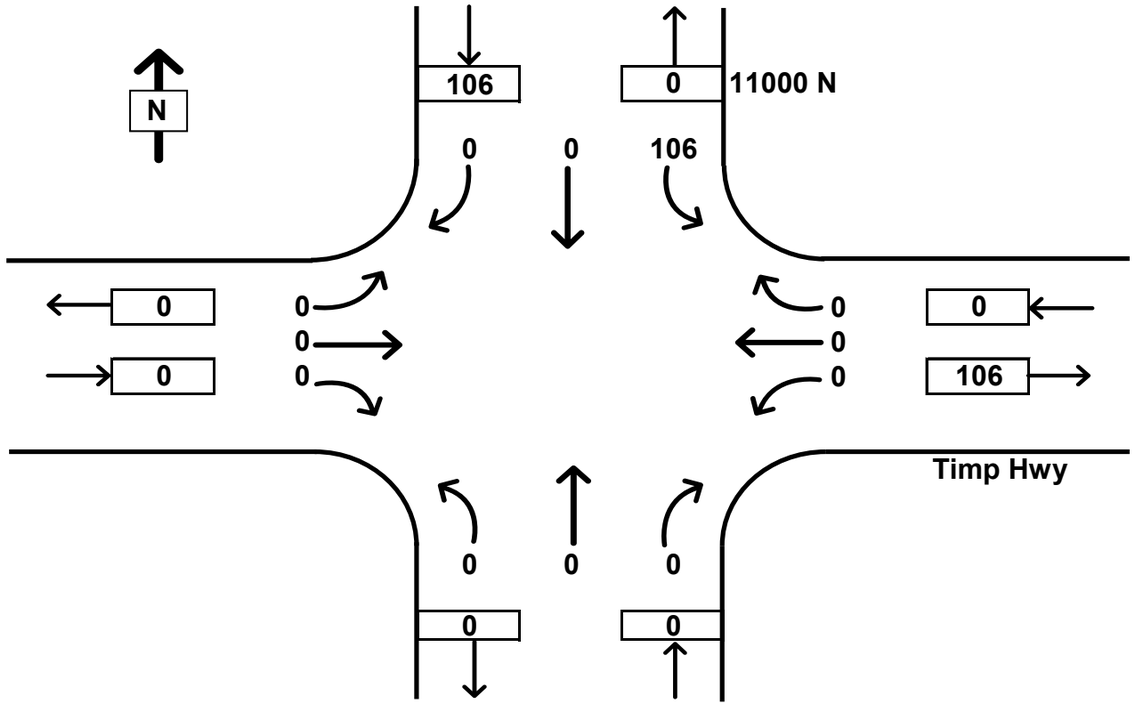
TRAFFIC COUNT SUMMARY

City: **Micron**
N-S Street: **11000 N**
Date: **Tuesday, May 11, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

E-W Street: **Timp Hwy**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	24	0	0	0													24	
04:15 PM	04:30 PM	26	0	0	0													26	
04:30 PM	04:45 PM	27	0	0	0													27	
04:45 PM	05:00 PM	25	0	0	0													25	102
05:00 PM	05:15 PM	28	0	0	0													28	106
05:15 PM	05:30 PM	22	0	0	0													22	102
05:30 PM	05:45 PM	29	0	0	0													29	104
05:45 PM	06:00 PM	26	0	0	0													26	105



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
106	0	0	0	0	0	0	0	0	0	0	0
106			0			0			0		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:15:00 PM			5:15 PM	Peak Vol:		106	PHF:		0.95

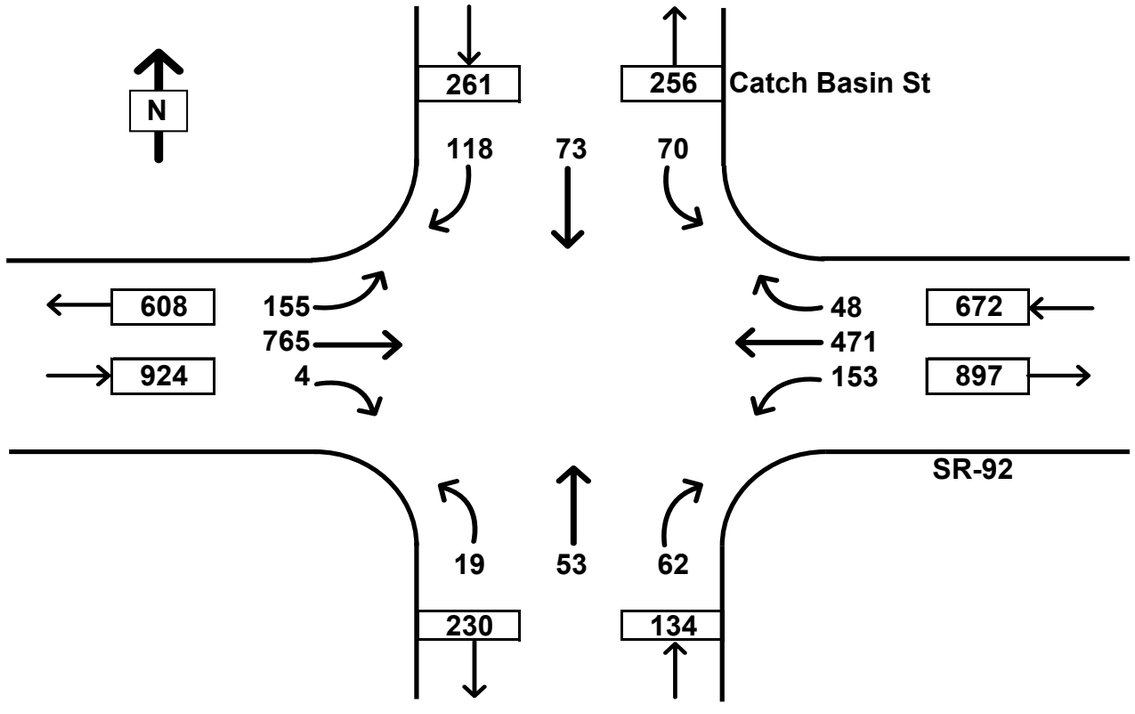
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Catch Basin St**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	22	13	13		25	48	8		2	4	14		17	125	2		293	
07:15 AM	07:30 AM	41	23	16		29	64	9		1	10	19		22	157	0		391	
07:30 AM	07:45 AM	30	20	36		24	105	22		1	3	15		35	163	1		455	
07:45 AM	08:00 AM	24	19	30		33	138	17		3	10	17		33	209	3		536	1675
08:00 AM	08:15 AM	8	16	34		44	128	15		3	11	12		50	197	0		518	1900
08:15 AM	08:30 AM	20	14	26		31	103	7		0	17	19		35	183	1		456	1965
08:30 AM	08:45 AM	21	22	24		40	109	14		9	15	15		19	164	2		454	1964
08:45 AM	09:00 AM	21	21	34		38	131	12		7	10	16		51	221	1		563	1991



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
70	73	118	153	471	48	19	53	62	155	765	4
261			672			134			924		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		8:00:00 AM			9:00 AM	Peak Vol:		1991	PHF:		0.88

OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

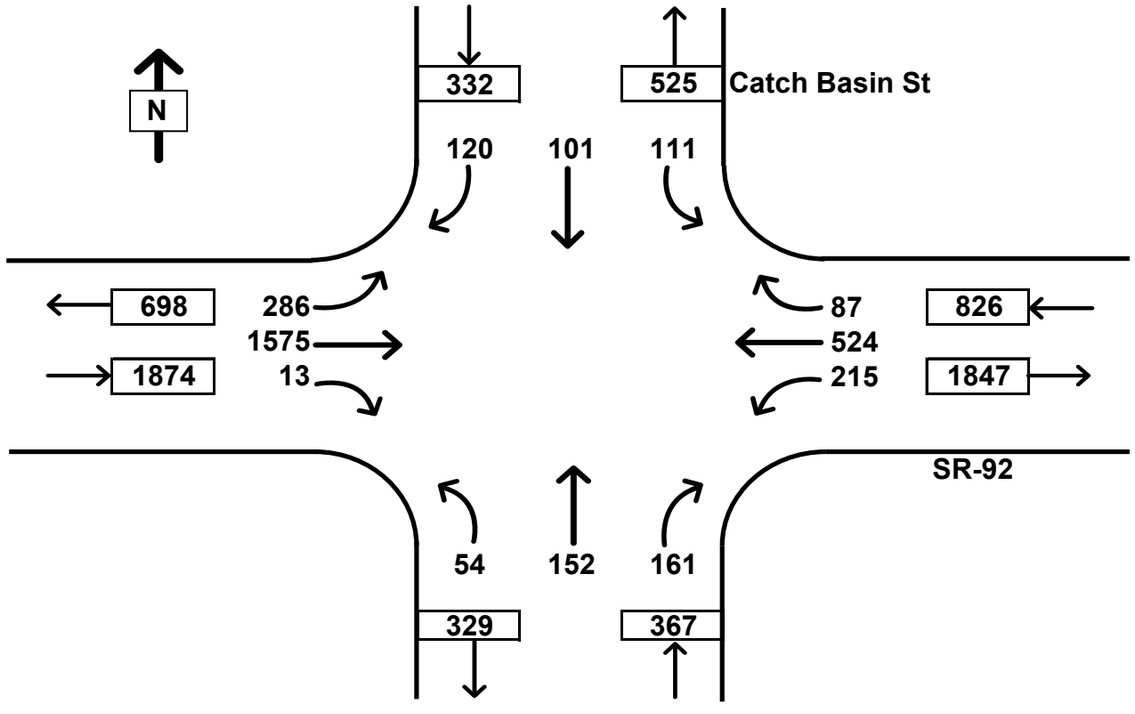
TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Catch Basin St**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

E-W Street: **SR-92**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	16	22	29		47	126	19		10	18	33		78	367	5		770	
04:15 PM	04:30 PM	23	24	27		51	150	13		9	27	33		49	289	4		699	
04:30 PM	04:45 PM	20	29	23		59	126	24		10	30	45		62	391	1		820	
04:45 PM	05:00 PM	27	23	46		47	104	16		11	34	48		59	364	2		781	3070
05:00 PM	05:15 PM	28	17	27		58	129	24		18	68	43		79	373	4		868	3168
05:15 PM	05:30 PM	21	27	38		46	160	22		11	32	35		67	368	3		830	3299
05:30 PM	05:45 PM	22	26	30		42	114	25		10	20	34		85	434	5		847	3326
05:45 PM	06:00 PM	40	31	25		69	121	16		15	32	49		55	400	1		854	3399



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
111	101	120	215	524	87	54	152	161	286	1575	13
332			826			367			1874		
Trucks:		0%	**Trucks:**		0%	**Trucks:**		0%	**Trucks:**		0%
Peak Hour:		5:00:00 PM			6:00 PM	**Peak Vol:**		3399	**PHF:**		0.98

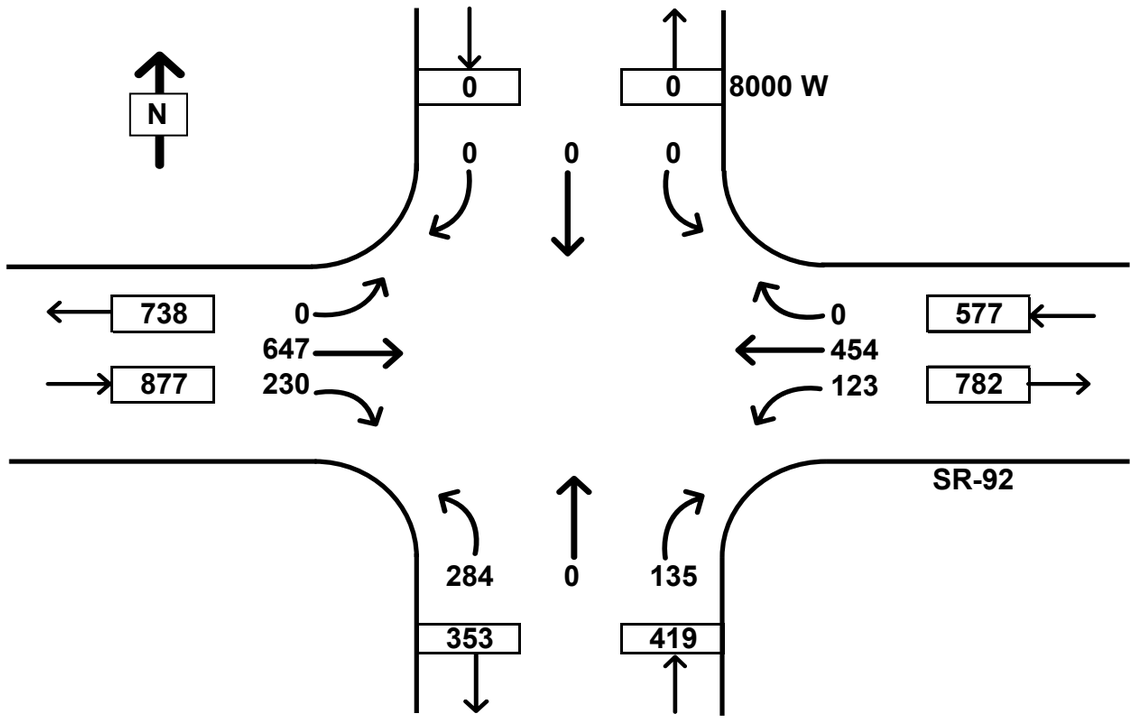
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **8000 W**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	0	0	0	0	14	58	0	0	25	0	22	0	0	98	13	0	230	
07:15 AM	07:30 AM	0	0	0	0	18	60	0	0	43	0	35	0	0	99	59	0	314	
07:30 AM	07:45 AM	0	0	0	0	42	82	0	0	80	0	41	0	0	140	111	0	496	
07:45 AM	08:00 AM	0	0	0	0	32	127	0	0	91	0	42	0	0	199	61	0	552	1592
08:00 AM	08:15 AM	0	0	0	0	27	128	0	0	65	0	32	0	0	161	38	0	451	1813
08:15 AM	08:30 AM	0	0	0	0	22	117	0	0	48	0	20	0	0	147	20	0	374	1873
08:30 AM	08:45 AM	0	0	0	0	26	116	0	0	35	0	25	0	0	128	18	0	348	1725
08:45 AM	09:00 AM	0	0	0	0	26	100	0	0	50	0	34	0	0	150	27	0	387	1560



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	123	454	0	284	0	135	0	647	230
0			577			419			877		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%

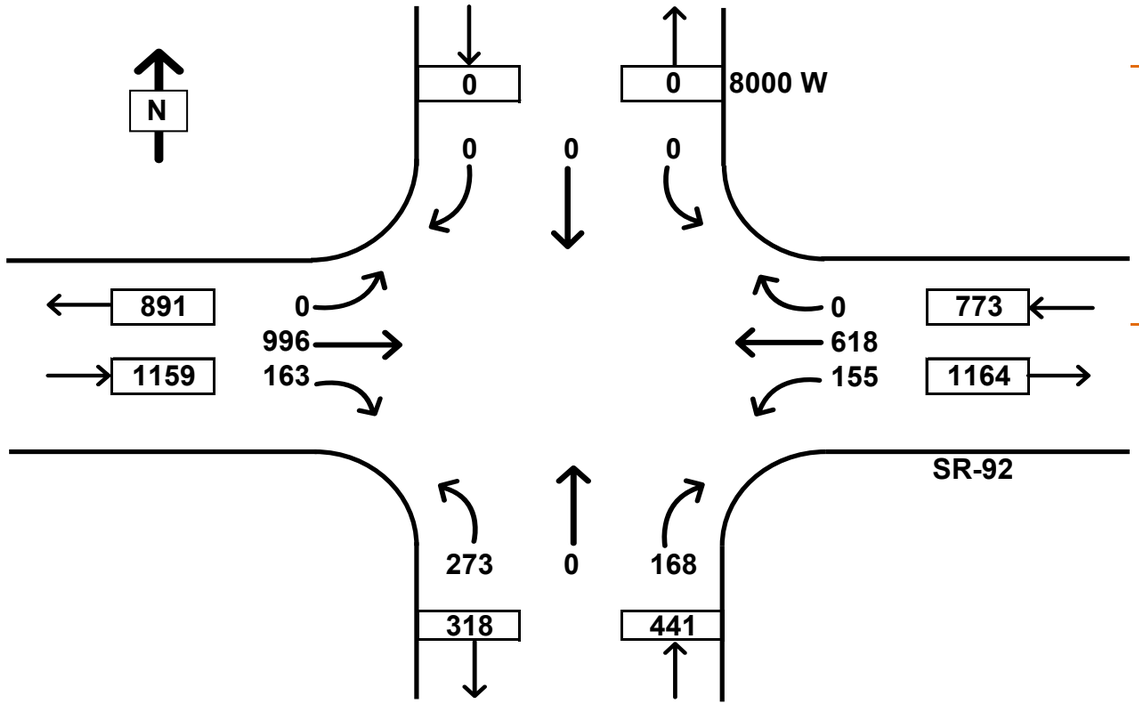
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **8000 W**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	0	0	0	0	29	161	0	0	54	0	38	0	0	228	25	0	535	
04:15 PM	04:30 PM	0	0	0	0	38	158	0	0	41	0	30	0	0	186	27	0	480	
04:30 PM	04:45 PM	0	0	0	0	26	184	0	0	50	0	50	0	0	211	31	0	552	
04:45 PM	05:00 PM	0	0	0	0	29	127	0	0	73	0	44	0	0	259	42	0	574	2141
05:00 PM	05:15 PM	0	0	0	0	33	186	0	0	55	0	28	0	0	244	39	0	585	2191
05:15 PM	05:30 PM	0	0	0	0	53	182	0	0	80	0	48	0	0	233	41	0	637	2348
05:30 PM	05:45 PM	0	0	0	0	40	123	0	0	65	0	48	0	0	260	41	0	577	2373
05:45 PM	06:00 PM	0	0	0	0	47	131	0	0	49	0	33	0	0	203	26	0	489	2288



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	155	618	0	273	0	168	0	996	163
0			773			441			1159		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:45:00 PM			5:45 PM	Peak Vol:		2373	PHF:		0.93

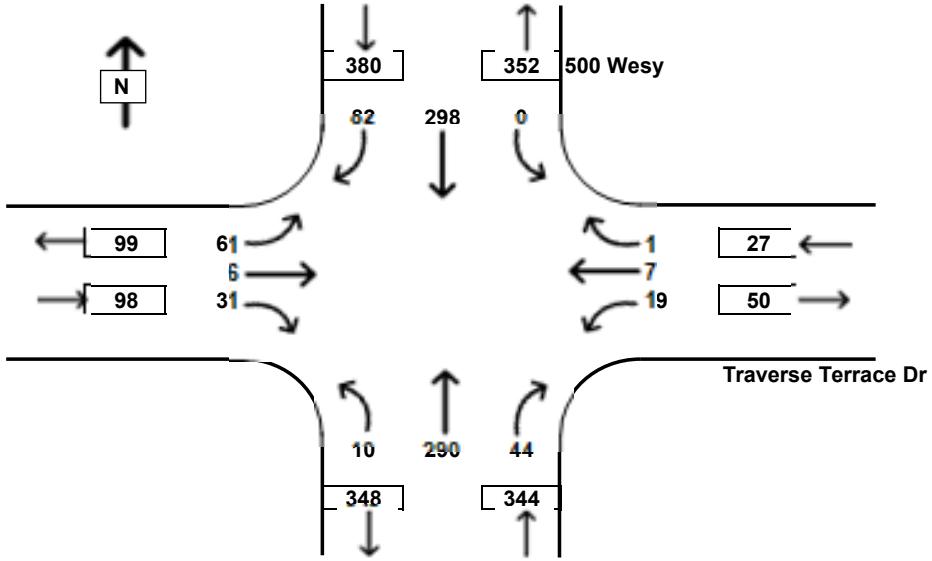
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **500 Wesy**
E-W Street: **Traverse Terrace Dr**
Date: **Wednesday, September 7, 2022**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	1	4	0	0	1	0	0	0	2	6	24	0	1	2	4	0	45	
07:15 AM	07:30 AM	0	4	1	3	5	3	0	0	1	17	28	0	0	1	6	0	66	
07:30 AM	07:45 AM	0	16	0	11	7	2	0	0	3	45	22	0	10	0	8	0	113	
07:45 AM	08:00 AM	0	96	20	70	0	0	0	0	4	122	2	0	24	1	9	3	278	502
08:00 AM	08:15 AM	0	134	52	35	0	0	0	0	3	106	12	0	24	1	11	1	343	800
08:15 AM	08:30 AM	0	52	10	1	12	5	1	0	0	17	8	0	3	4	3	0	115	849
08:30 AM	08:45 AM	0	8	3	1	4	4	0	0	1	18	5	0	11	3	5	0	62	798
08:45 AM	09:00 AM	1	56	20	0	7	1	2	0	1	56	10	0	46	0	1	0	201	721



ADJUSTED PEAK HOUR TRAFFIC VOLUMES												
Southbound			Westbound			Northbound			Eastbound			
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
0	298	82	19	7	1	10	290	44	61	6	31	
380			27			344			98			
Trucks:		5%	Trucks:		7%	Trucks:		6%	Trucks:		0%	
Peak Hour:		7:30:00 AM			8:30 AM	Peak Vol:		849	Intersection PHF:		0.62	

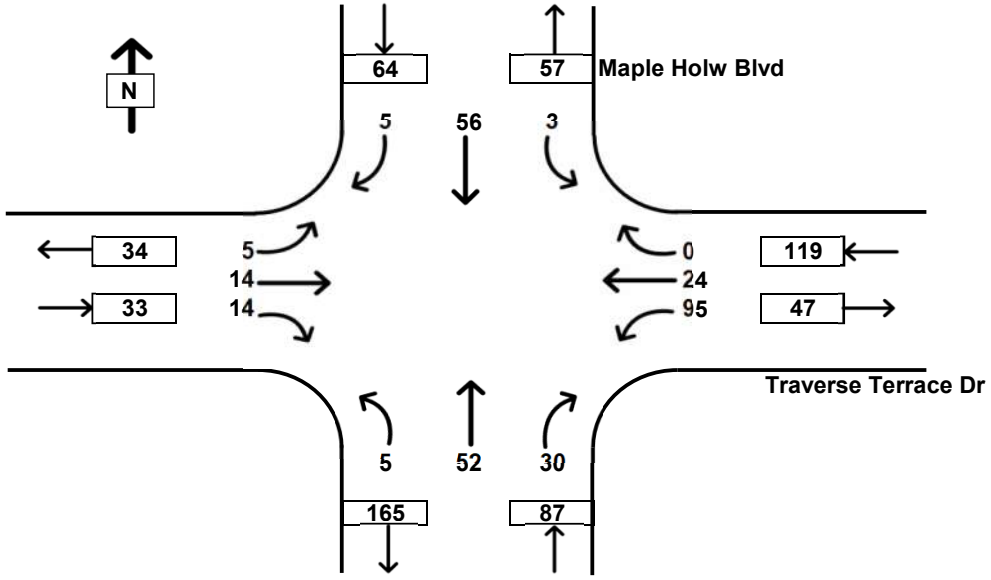
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Highland**
N-S Street: **Maple Holw Blvd**
E-W Street: **Traverse Terrace Dr**
Date: **Tuesday, September 6, 2022**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	2	24	1	2	58	19	0	0	1	11	17	0	1	7	6	0	147	
04:15 PM	04:30 PM	0	11	0	1	18	2	0	0	2	9	4	0	0	4	3	0	53	
04:30 PM	04:45 PM	0	9	2	0	10	1	0	0	1	13	4	0	0	2	1	0	43	
04:45 PM	05:00 PM	1	12	2	0	9	2	0	0	1	19	5	0	4	1	4	0	60	303
05:00 PM	05:15 PM	0	12	5	0	4	0	1	0	6	16	2	0	5	1	8	0	60	216
05:15 PM	05:30 PM	1	17	1	2	5	2	0	0	3	15	9	0	2	9	4	0	68	231
05:30 PM	05:45 PM	1	11	4	0	3	3	0	0	4	14	12	0	2	2	7	0	63	251
05:45 PM	06:00 PM	2	12	2	0	10	1	0	0	3	21	13	0	5	3	2	0	74	265



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
3	56	5	95	24	0	5	52	30	5	14	14
64			119			87			33		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:00:00 PM			5:00 PM	Peak Vol:		303	PHF:		0.52

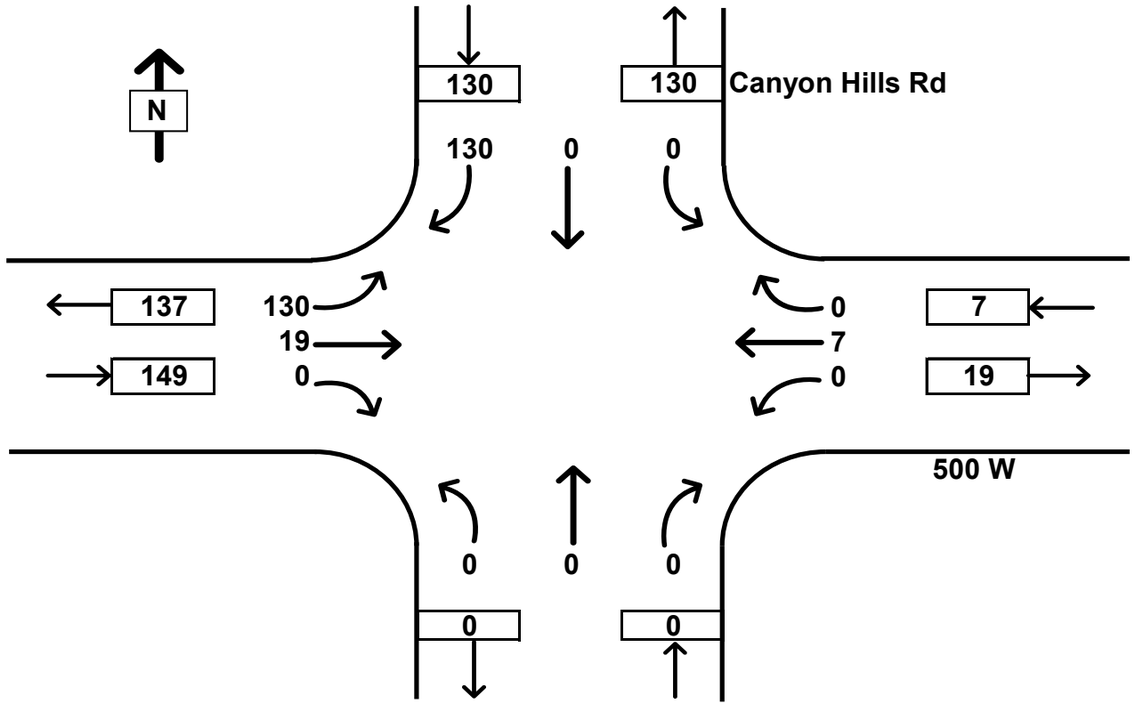
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Micron**
N-S Street: **Canyon Hills Rd**
E-W Street: **500 W**
Date: **Wednesday, May 12, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	0	0	3	0	0	0	0	0					5	7	0	0	15	
07:15 AM	07:30 AM	0	0	6	0	0	0	0	0					8	10	0	0	24	
07:30 AM	07:45 AM	0	0	20	0	0	3	0	0					34	3	0	0	60	
07:45 AM	08:00 AM	0	0	71	0	0	4	0	0					73	5	0	0	153	252
08:00 AM	08:15 AM	0	0	33	0	0	0	0	0					15	1	0	0	49	286
08:15 AM	08:30 AM	0	0	7	0	0	0	0	0					4	6	0	0	17	279
08:30 AM	08:45 AM	0	0	4	0	0	0	0	0					5	2	0	0	11	230
08:45 AM	09:00 AM	4	0	23	0	0	5	4	0					21	13	0	0	70	147
		1	0	0	0	1	0	0	0					0	0	1	0		



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	130	0	7	0	0	0	0	130	19	0
130			7			0			149		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		7:15:00 AM			8:15 AM	Peak Vol:		286	PHF:		0.47

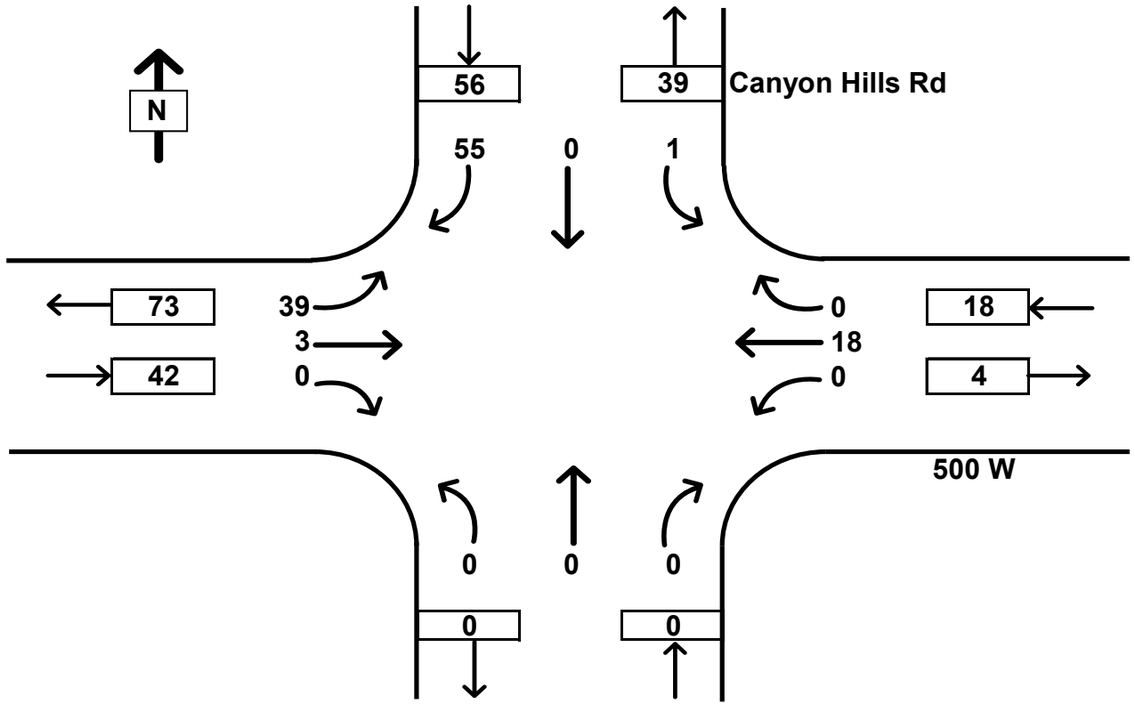
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Micron**
N-S Street: **Canyon Hills Rd**
E-W Street: **500 W**
Date: **Wednesday, May 12, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	0	0	20	0	0	6	0						7	0	0	0	33	
04:15 PM	04:30 PM	0	0	8	0	0	7	0						10	0	0	0	25	
04:30 PM	04:45 PM	0	0	13	0	0	2	0						11	2	0	0	28	
04:45 PM	05:00 PM	1	0	14	0	0	3	0						11	1	0	0	30	116
05:00 PM	05:15 PM	0	0	8	0	0	2	0						20	0	0	0	30	113
05:15 PM	05:30 PM	0	0	3	0	0	1	0						10	0	0	0	14	102
05:30 PM	05:45 PM	0	0	13	0	0	0	0						6	0	0	0	19	93
05:45 PM	06:00 PM	0	0	9	0	0	2	0						9	1	0	0	21	84
		0	0	0	0	0	0	0											



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1	0	55	0	18	0	0	0	0	39	3	0
56			18			0			42		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		4:00:00 PM			5:00 PM	Peak Vol:		116	PHF:		0.88

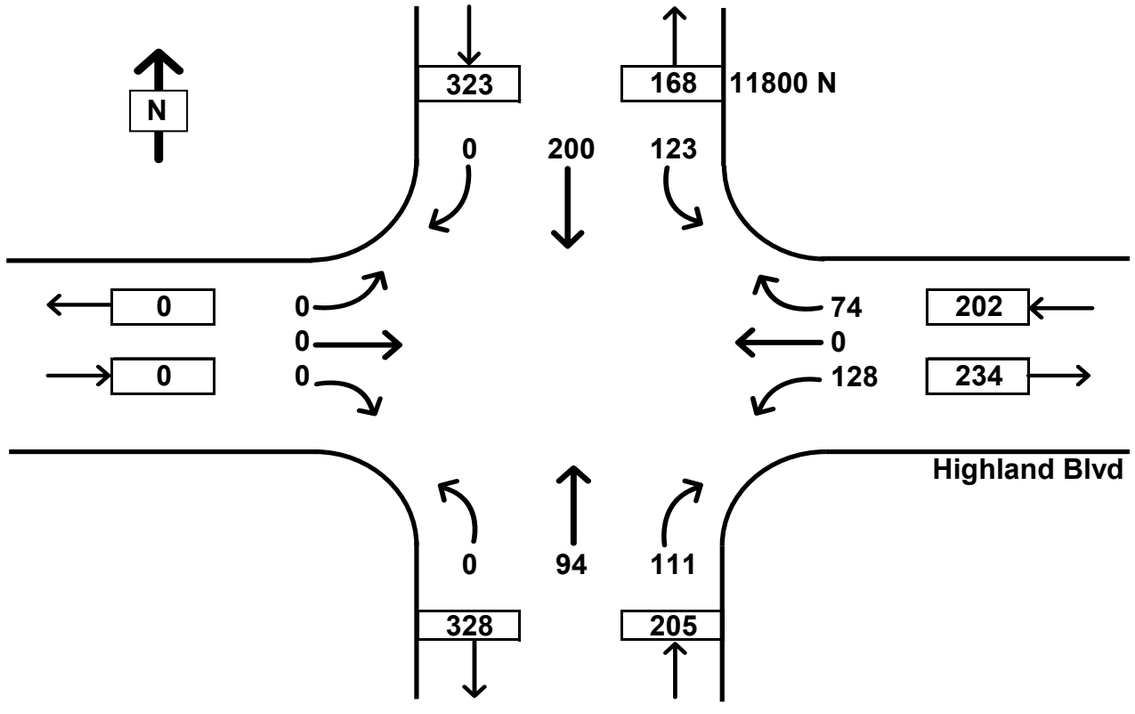
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **11800 N**
E-W Street: **Highland Blvd**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	8	36	0		27	0	6		0	11	10		0	0	0		98	
07:15 AM	07:30 AM	16	53	0		27	0	7		0	15	28		0	0	0		146	
07:30 AM	07:45 AM	30	56	0		33	0	5		0	23	26		0	0	0		173	
07:45 AM	08:00 AM	45	57	0		32	0	25		0	24	40		0	0	0		223	640
08:00 AM	08:15 AM	25	36	0		38	0	20		0	22	23		0	0	0		164	706
08:15 AM	08:30 AM	23	51	0		25	0	24		0	25	22		0	0	0		170	730
08:30 AM	08:45 AM	15	45	0		29	0	11		0	22	18		0	0	0		140	697
08:45 AM	09:00 AM	25	48	0		37	0	9		0	34	31		0	0	0		184	658



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
123	200	0	128	0	74	0	94	111	0	0	0
323			202			205			0		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		7:30:00 AM			8:30 AM	Peak Vol:		730	PHF:		0.82

OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

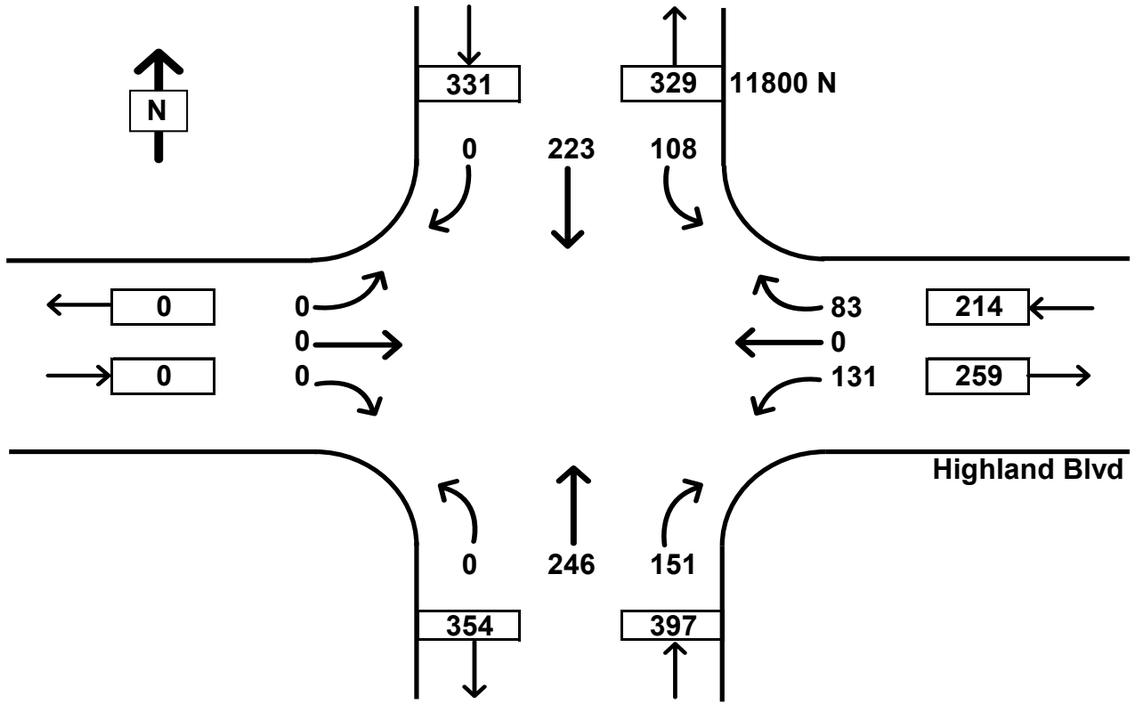
TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **11800 N**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

E-W Street: **Highland Blvd**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	18	46	0		31	0	15		0	51	29		0	0	0		190	
04:15 PM	04:30 PM	23	43	0		33	0	17		0	57	23		0	0	0		196	
04:30 PM	04:45 PM	20	43	0		43	0	15		0	51	33		0	0	0		205	
04:45 PM	05:00 PM	28	65	0		23	0	21		0	49	27		0	0	0		213	804
05:00 PM	05:15 PM	25	50	0		33	0	23		0	64	35		0	0	0		230	844
05:15 PM	05:30 PM	28	53	0		35	0	27		0	68	37		0	0	0		248	896
05:30 PM	05:45 PM	22	62	0		27	0	21		0	59	44		0	0	0		235	926
05:45 PM	06:00 PM	33	58	0		36	0	12		0	55	35		0	0	0		229	942



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
108	223	0	131	0	83	0	246	151	0	0	0
331			214			397			0		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		5:00:00 PM			6:00 PM	Peak Vol:		942	PHF:		0.95

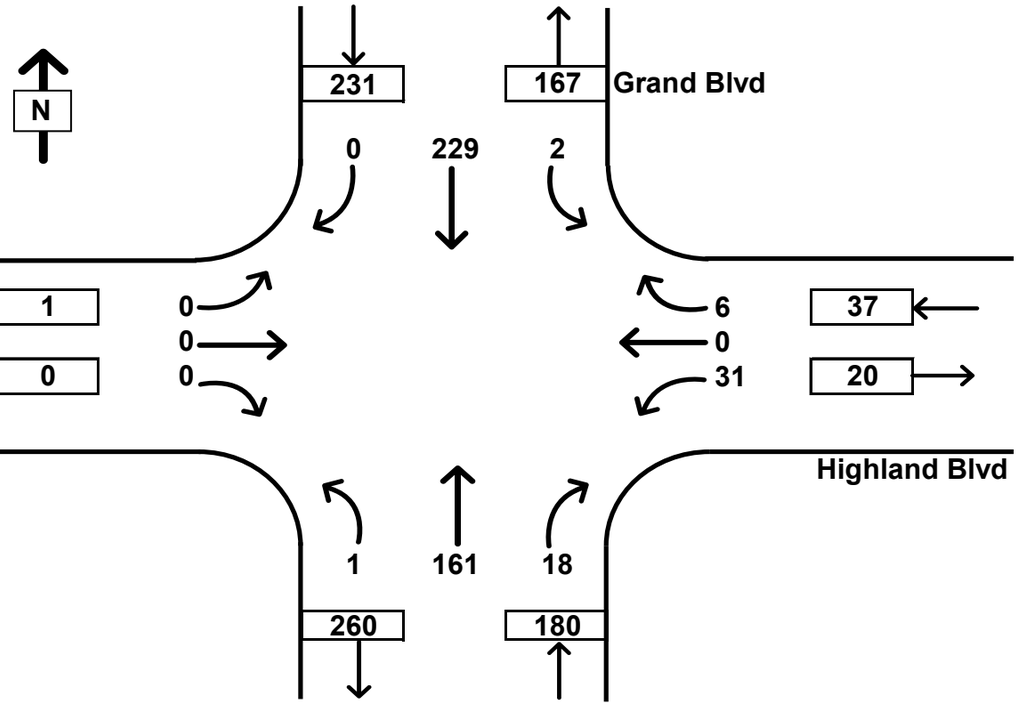
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Grand Blvd**
E-W Street: **Highland Blvd**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM	0	19	0	0	7	0	1	2	0	11	5	0	0	0	0	0	43	
07:15 AM	07:30 AM	0	31	0	0	6	0	0	0	0	25	2	0	0	0	0	0	64	
07:30 AM	07:45 AM	1	56	0	0	5	0	0	0	0	24	4	0	0	0	0	0	90	
07:45 AM	08:00 AM	0	82	0	0	6	0	1	2	0	55	5	0	0	0	0	9	149	346
08:00 AM	08:15 AM	0	56	0	0	9	0	2	0	1	41	5	0	0	0	0	0	114	417
08:15 AM	08:30 AM	1	41	0	0	12	0	3	0	0	27	5	0	0	0	0	0	89	442
08:30 AM	08:45 AM	1	50	0	0	4	0	0	1	0	38	3	0	0	0	0	0	96	448
08:45 AM	09:00 AM	3	63	0	0	16	0	3	1	0	34	7	0	0	0	0	0	126	425



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
2	229	0	31	0	6	1	161	18	0	0	0
231			37			180			0		
Trucks:		0%	Trucks:		8%	Trucks:		0%	Trucks:		0%
Peak Hour:		7:45:00 AM			8:45 AM	Peak Vol:		448	PHF:		0.75

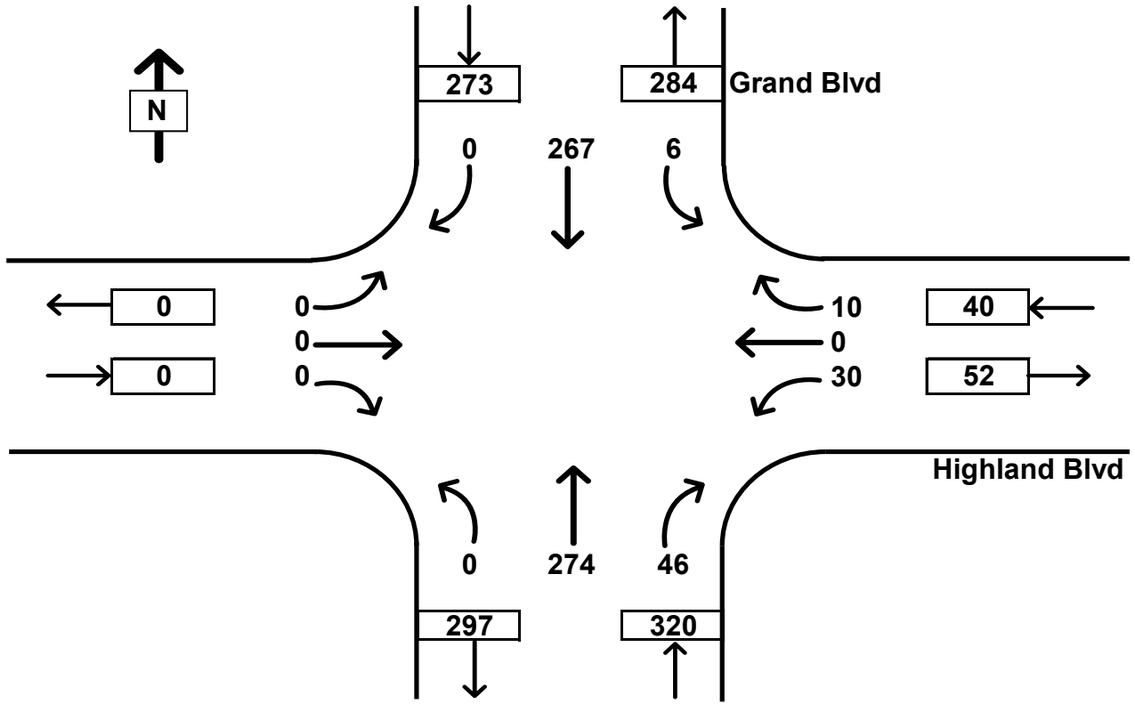
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **Grand Blvd**
E-W Street: **Highland Blvd**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM	2	52	0	0	10	0	1	0	0	54	15	0	0	2	0	0	136	
04:15 PM	04:30 PM	2	62	0	0	12	0	1	0	0	61	15	0	0	0	0	0	153	
04:30 PM	04:45 PM	3	47	0	0	7	0	1	0	0	59	7	0	0	0	0	0	124	
04:45 PM	05:00 PM	1	66	0	0	8	0	2	0	0	56	8	0	0	0	0	0	141	554
05:00 PM	05:15 PM	0	58	0	0	9	0	3	0	0	67	11	0	0	0	0	0	148	566
05:15 PM	05:30 PM	5	73	0	0	7	0	2	0	0	71	10	0	0	0	0	0	168	581
05:30 PM	05:45 PM	0	59	0	0	12	0	2	0	0	78	11	0	0	0	0	0	162	619
05:45 PM	06:00 PM	1	77	0	0	2	0	3	0	0	58	14	0	0	0	0	0	155	633



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
6	267	0	30	0	10	0	274	46	0	0	0
273			40			320			0		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		5:00:00 PM			6:00 PM	Peak Vol:		633	PHF:		0.94

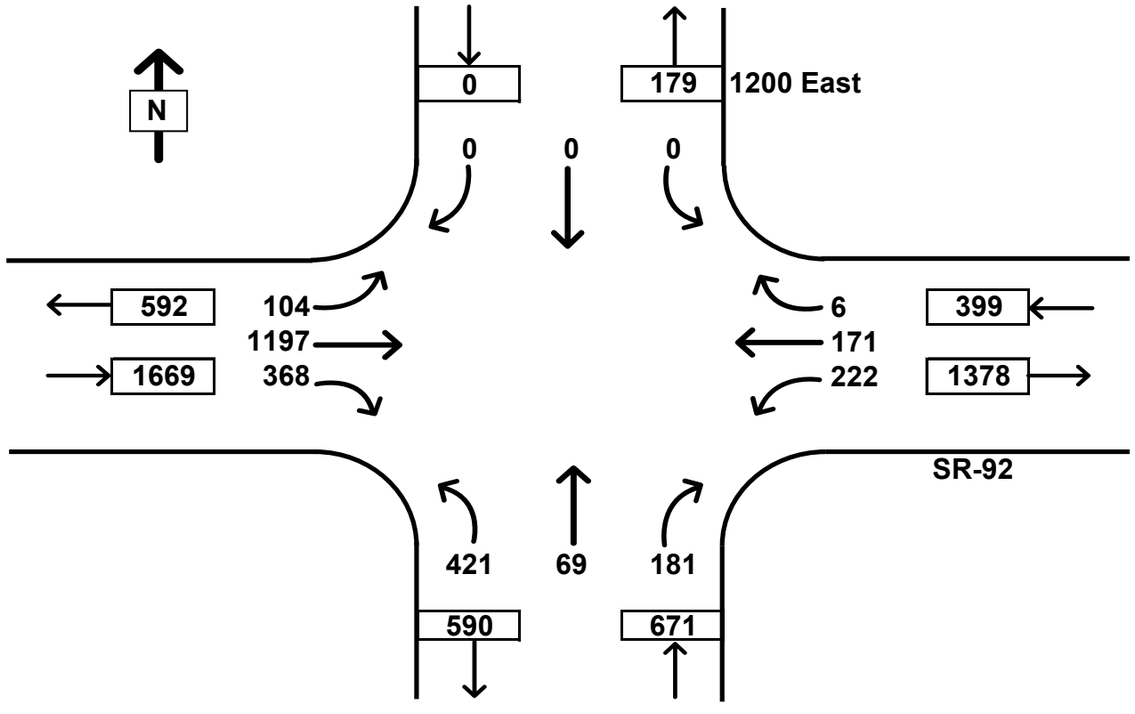
OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **1200 East**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **07:00 AM**
Interval Length: **15 min**

HORROCKS ENGINEERS

Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
07:00 AM	07:15 AM																	0	
07:15 AM	07:30 AM																	0	
07:30 AM	07:45 AM																	0	
07:45 AM	08:00 AM																	0	0
08:00 AM	08:15 AM																	0	0
08:15 AM	08:30 AM																	0	0
08:30 AM	08:45 AM																	0	0
08:45 AM	09:00 AM																	0	0



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	222	171	6	421	69	181	104	1197	368
0			399			671			1669		
Trucks:		0%	**Trucks:**		0%	**Trucks:**		0%	**Trucks:**		0%
Peak Hour:		12:00:00 AM			1:00 AM	**Peak Vol:**		2739	**PHF:**		#DIV/0!

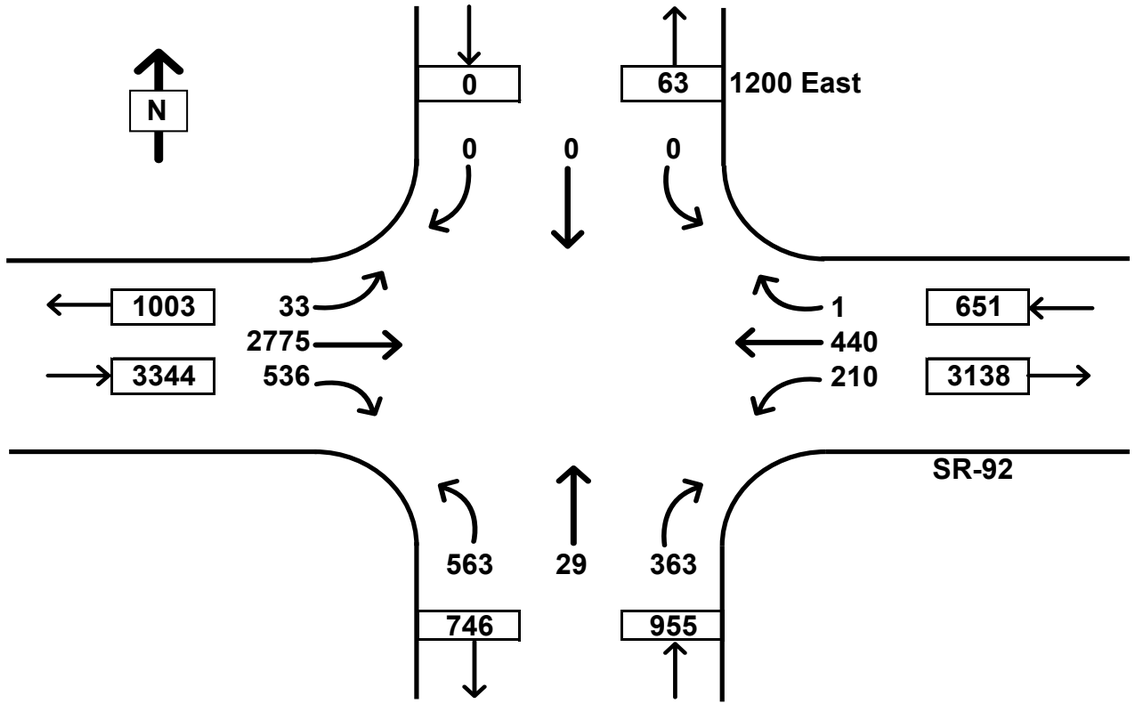
OPTIONAL Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TRAFFIC COUNT SUMMARY

City: **Lehi**
N-S Street: **1200 East**
E-W Street: **SR-92**
Date: **Tuesday, May 4, 2021**
Begin Time: **04:00 PM**
Interval Length: **15 min**

HORROCKS ENGINEERS

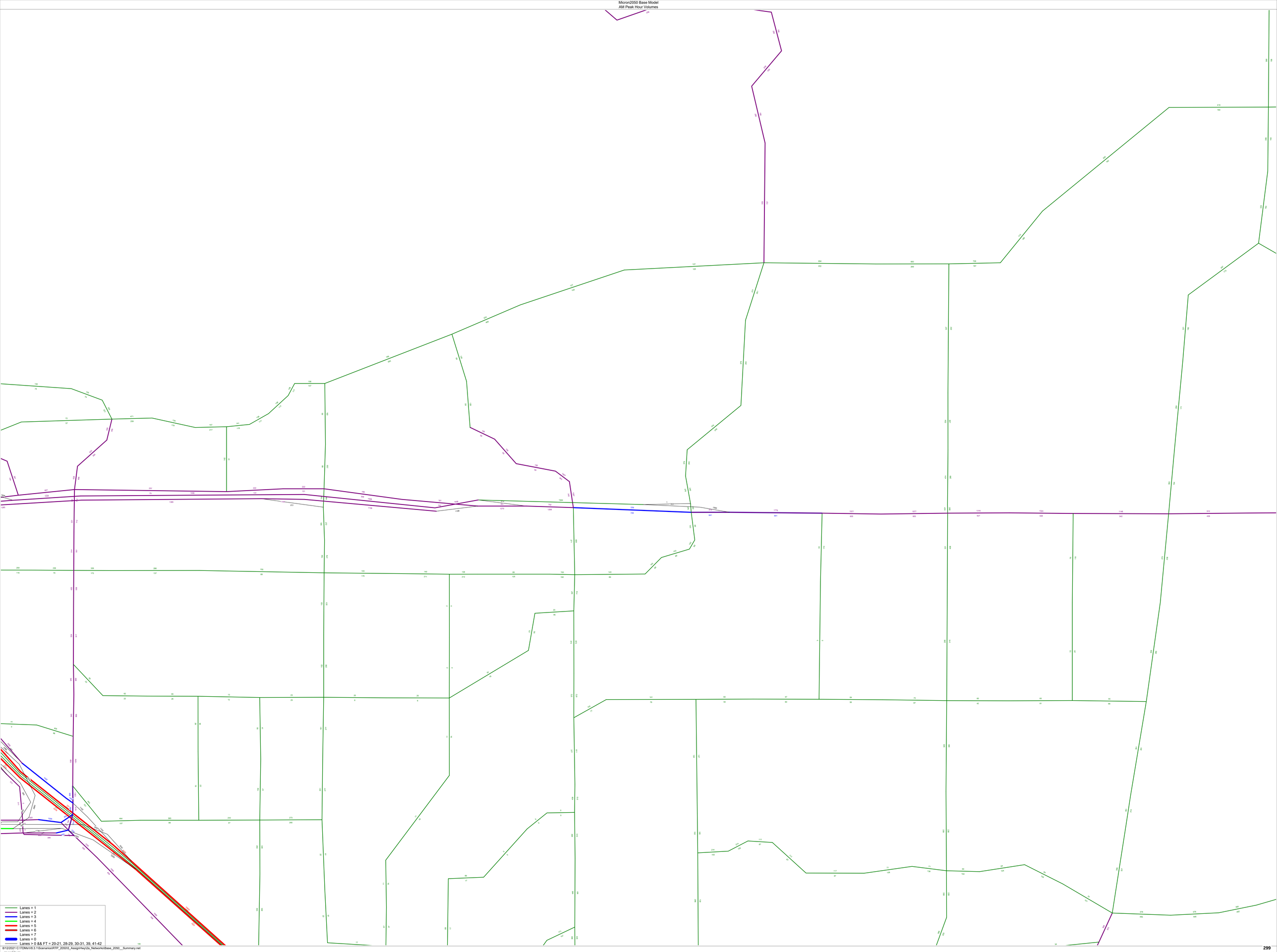
Time Interval		SB				WB				NB				EB				Total	Hourly
		Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	Left	Thru	Right	Trucks	All Moves	Totals
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		
04:00 PM	04:15 PM																	0	
04:15 PM	04:30 PM																	0	
04:30 PM	04:45 PM																	0	
04:45 PM	05:00 PM																	0	0
05:00 PM	05:15 PM																	0	0
05:15 PM	05:30 PM																	0	0
05:30 PM	05:45 PM																	0	0
05:45 PM	06:00 PM																	0	0



ADJUSTED PEAK HOUR TRAFFIC VOLUMES											
Southbound			Westbound			Northbound			Eastbound		
Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
0	0	0	210	440	1	563	29	363	33	2775	536
0			651			955			3344		
Trucks:		0%	Trucks:		0%	Trucks:		0%	Trucks:		0%
Peak Hour:		12:00:00 AM		1:00 AM		Peak Vol:		4950	PHF:		#DIV/0!

OPTIONAL	
Adjustment Factor	
Monthly:	1.00
Daily:	1.00
Interval:	1.00
Count:	1.00
Total:	1

TDM OUTPUTS



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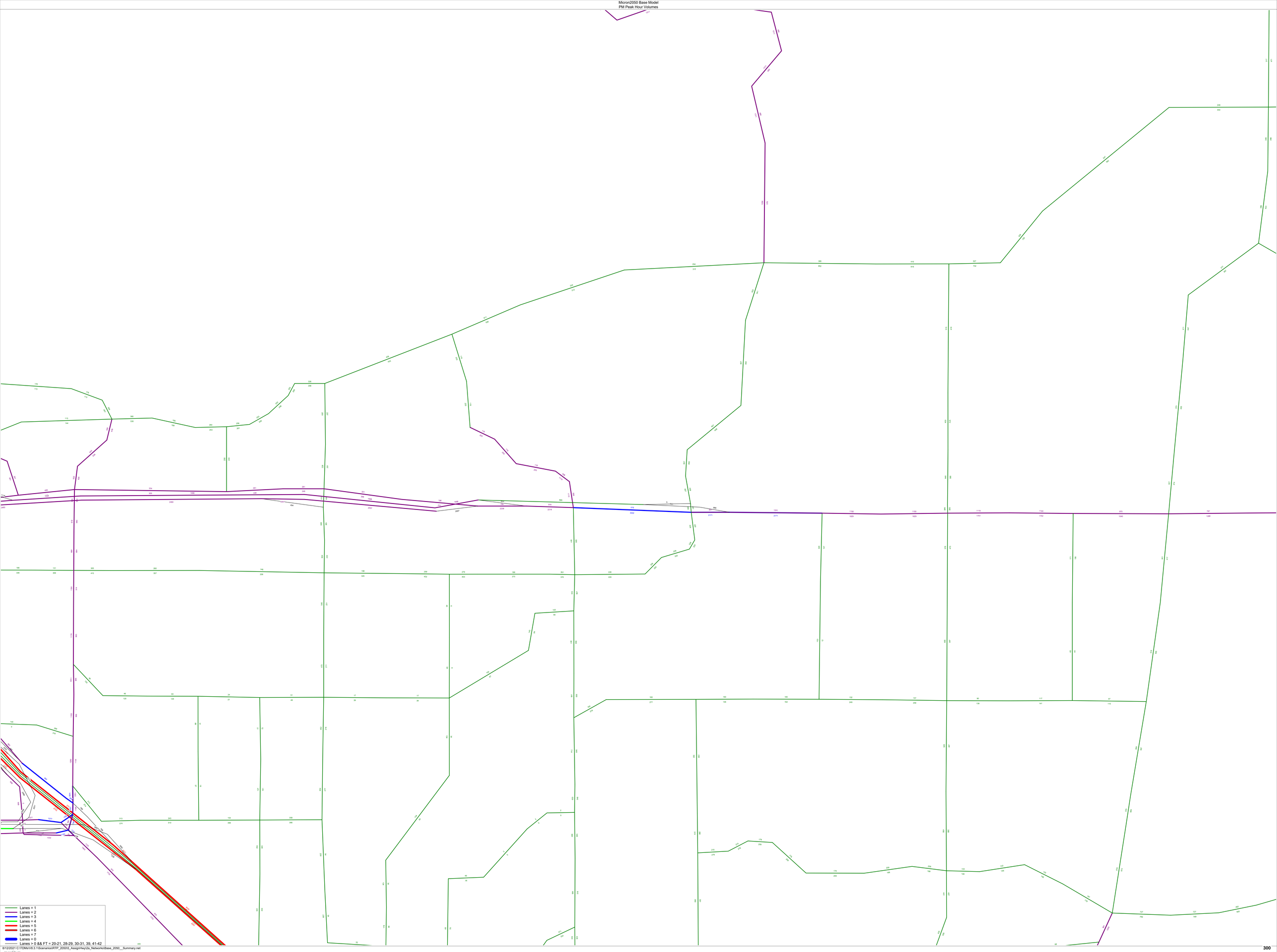

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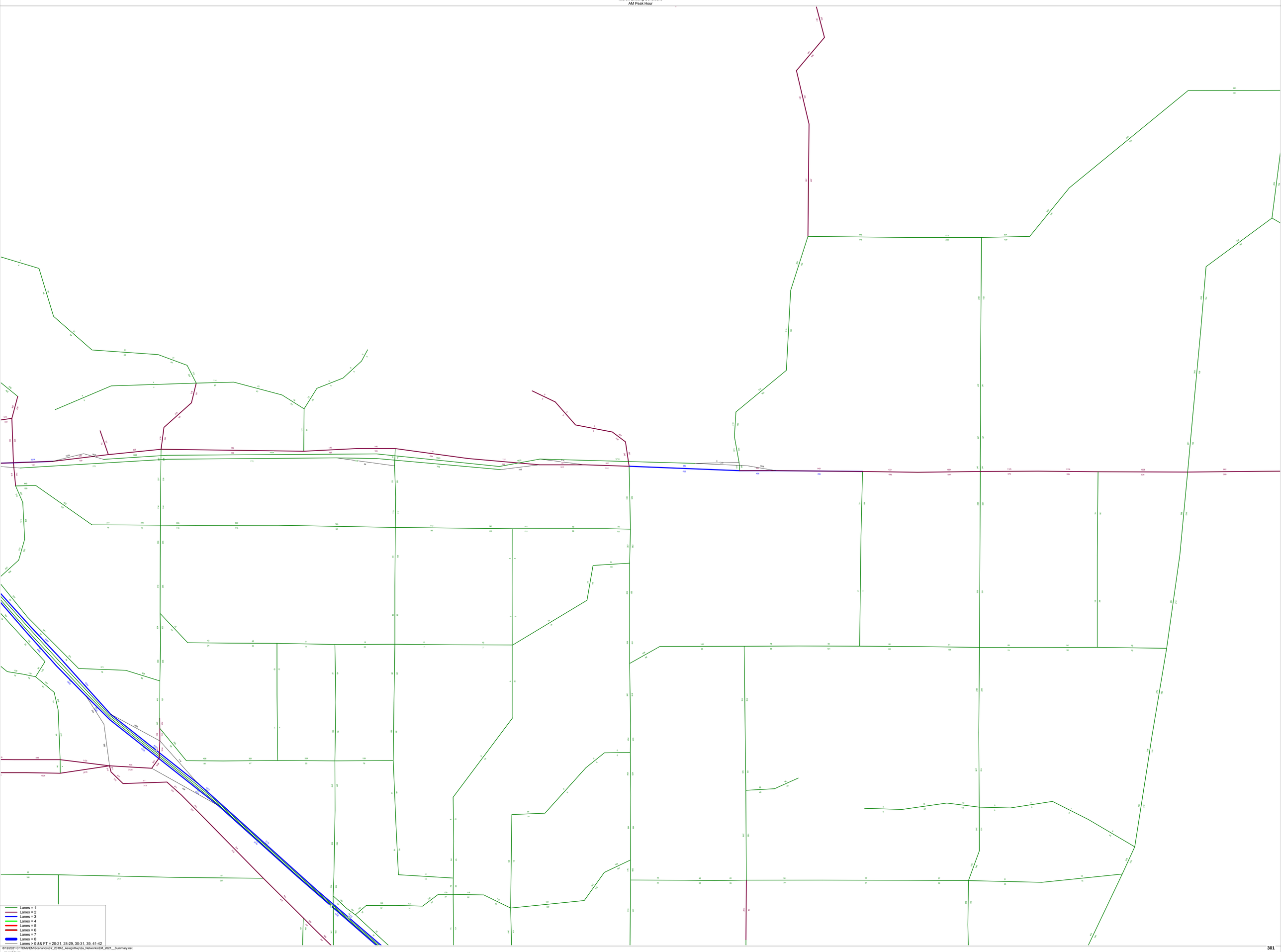

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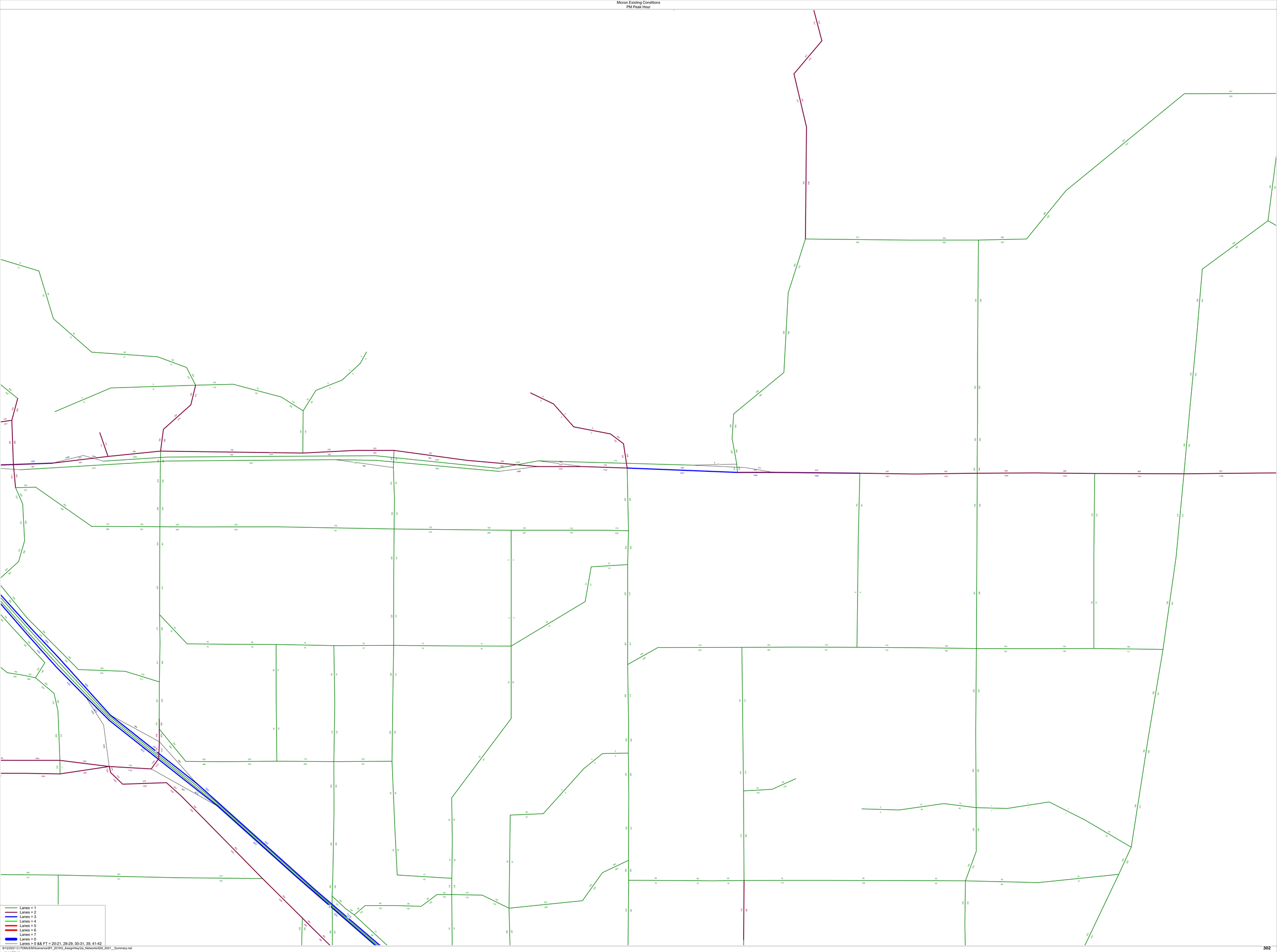

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SITE LAYOUT

LEI
- A Utah Corporation -
ENGINEERS
SURVEYORS
PLANNERS
3302 N. Main Street
Spanish Fork, UT 84660
Phone: 801.798.0555
Fax: 801.798.9393
office@lei-eng.com
www.lei-eng.com

NOT FOR CONSTRUCTION

SKYE
LEHI, UTAH

UDOT TIMPANOGOS HIGHWAY EXHIBIT

REVISIONS
1 -
2 -
3 -
4 -
5 -

LEI PROJECT #: 2020-0067
DRAWN BY: RWH
DESIGNED BY: BCT
SCALE: 1"=40'
DATE: 04/21/2022

SHEET 1

N:\00_LEI PROJECTS\2020\2020-0067 SR HORTON LEH PROJECT\CAD\DWG\EXHIBITS\20-0067 EXHIBIT_CENTER STREET UDOT.DWG 4/21/2022 11:47 AM

Tabulations

Use/Type	Acreage	ERUs
MIXED USE	103	464
TOWNHOMES (12 - 16 du/ac)	39	565
COTTAGE (6 - 8 du/ac)	19	129
HORTON PLUS(4 - 5 du/ac)	48	205
EMERALD (2 - 4 du/ac)	69	199
ESTATE (1 - 2 du/ac)	72	129
Active Adult (6 - 8 du/ac)	48	370
Parks and Open Space	151	16
Civic (Church/School)	69	170
Roads	10	0
Restricted Open Space	382	0
TOTALS	1,010	2,412*

Notes:
* Total estimated ERUs includes 165 unassigned units within the Draper development area

DRAPER CITY (TO BE ANNEXED INTO LEHI)

UTAH COUNTY (TO BE ANNEXED INTO LEHI)

LEHI CITY

PROPOSED TRAIL NETWORK

Restricted Open Space
382 acres

SR-92

MICRON
Concept Plan
e 21, 2021

TRIP GENERATION

Micron TIS												
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 1	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.7**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%	
	Dwelling Units	225	1,225	612	612	81	21	60	99	60	39	
	Shopping Center (ITE 820)		**37.75**	50%	50%	**0.94**	62%	38%	**3.81**	48%	52%	
	1000 Sq. Ft. GFA	50	3,752	1,876	1,876	47	29	18	325	156	169	
	Total Internal Capture						5	3		19	45	
	Total New Trips		**4,977**	**2,488**	**2,488**	**128**	**45**	**75**	**424**	**197**	**163**	
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 2	**Middle School/Junior High School (ITE 522)**		**20.17**	50%	50%	**6.73**	55%	45%	**3.33**	45%	55%	
	1000 Sq. Ft. GFA	117	2,360	1,180	1,180	787	433	354	390	175	214	
	Total Internal Capture						4	4		11	6	
	Total New Trips		**2,360**	**1,180**	**1,180**	**787**	**429**	**351**	**390**	**165**	**208**	
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 3	**Single-Family Detached Housing (ITE 210)**		**)=0.92Ln(x)+**	50%	50%	**=0.71(x)+4.8**	25%	75%	**)=0.96Ln(x)+**	63%	37%	
	Dwelling Units	255	2,460	1,230	1,230	186	46	139	250	157	92	
	Multifamily Housing (Mid-Rise) (ITE 221)		**=5.45(x)-1.7**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%	
	Dwelling Units	517	2,816	1,408	1,408	186	48	138	227	139	89	
	Elementary School (ITE 520)		**19.52**	50%	50%	**6.97**	55%	45%	**1.37**	45%	55%	
	1000 Sq. Ft. GFA	46	898	449	449	321	176	144	63	28	35	
	Church (ITE 560)		**6.95**	50%	50%	**0.33**	60%	40%	**0.49**	45%	55%	
	1000 Sq. Ft. GFA	290	2,016	1,008	1,008	96	57	38	142	64	78	
	Total Internal Capture						3	4		19	6	
	Total New Trips		**8,189**	**4,095**	**4,095**	**788**	**326**	**455**	**682**	**369**	**287**	
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 4	**Single-Family Detached Housing (ITE 210)**		**)=0.92Ln(x)+**	50%	50%	**=0.71(x)+4.8**	25%	75%	**)=0.96Ln(x)+**	63%	37%	
	Dwelling Units	258	2,487	1,243	1,243	188	47	141	252	159	93	
	Multifamily Housing (Mid-Rise) (ITE 221)		**=5.45(x)-1.7**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%	
	Dwelling Units	324	1,764	882	882	117	30	86	143	87	56	
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%	
	Acres	4	91	45	46	0	0	0	0	0	0	
	Total Internal Capture						1	2		15	4	
	Total New Trips		**4,342**	**2,171**	**2,171**	**305**	**77**	**225**	**395**	**231**	**145**	
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 5	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.7**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%	
	Dwelling Units	225	1,225	612	612	81	21	60	99	60	39	
	Shopping Center (ITE 820)		**37.75**	50%	50%	**0.94**	62%	38%	**3.81**	48%	52%	
	1000 Sq. Ft. GFA	50	3,752	1,876	1,876	47	29	18	325	156	169	
	Total Internal Capture						5	3		19	45	
	Total New Trips		**4,977**	**2,488**	**2,488**	**128**	**45**	**75**	**424**	**197**	**163**	
	Variable	Quantity	Daily			AM Peak Hour			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 6	**Single-Family Detached Housing (ITE 210)**		**)=0.92Ln(x)+**	50%	50%	**=0.71(x)+4.8**	25%	75%	**)=0.96Ln(x)+**	63%	37%	
	Dwelling Units	267	2,566	1,283	1,283	194	49	146	261	164	96	
	Church (ITE 560)		**6.95**	50%	50%	**0.33**	60%	40%	**0.49**	45%	55%	
	1000 Sq. Ft. GFA	97	674	337	337	34	20	14	48	21	26	
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%	
	Acres	4	91	45	46	0	0	0	0	0	0	
	Total Internal Capture						0	1		10	3	
	Total New Trips		**3,332**	**1,666**	**1,666**	**228**	**69**	**158**	**309**	**176**	**120**	
	Variable	Quantity	Daily			4			PM Peak Hour			
			Total	In	Out	Total	In	Out	Total	In	Out	
Zone 7	**Multifamily Housing (Mid-Rise) (ITE 221)**		**T=5.45(x)-1.7**	50%	50%	**0.36**	26%	74%	**0.44**	61%	39%	
	Dwelling Units	226	1,230	615	615	81	21	60	99	61	39	
	Single-Family Detached Housing (ITE 210)		**)=0.92Ln(x)+**	50%	50%	**=0.71(x)+4.8**	25%	75%	**)=0.96Ln(x)+**	63%	37%	
	Dwelling Units	127	1,296	648	648	95	24	71	128	81	47	
	Public Park (ITE 411)		**0.78**	50%	50%	**0.02**	59%	41%	**0.11**	55%	45%	
	Acres	5	92	46	46	0	0	0	1	0	0	
	Total Internal Capture						0	1		8	3	
	Total New Trips		**2,617**	**1,309**	**1,309**	**176**	**45**	**130**	**228**	**133**	**84**	
Total Development Trips			**30,793**	**15,396**	**15,397**	**2,541**	**1,034**	**1,469**	**2,852**	**1,468**	**1,169**	

SYNCHRO REPORTS

EXISTING TRAFFIC

Intersection	
Int Delay, s/veh	1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	32	6	147	19	2	300
Future Vol, veh/h	32	6	147	19	2	300
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	7	160	21	2	326

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	501	171	0	0	181	0
Stage 1	171	-	-	-	-	-
Stage 2	330	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	530	873	-	-	1394	-
Stage 1	859	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	529	873	-	-	1394	-
Mov Cap-2 Maneuver	529	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	564	1394	-
HCM Lane V/C Ratio	-	-	0.073	0.002	-
HCM Control Delay (s)	-	-	11.9	7.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

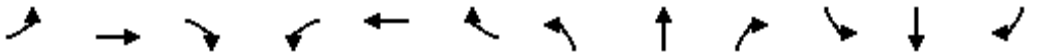
Intersection	
Int Delay, s/veh	6.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	128	74	96	11	123	200
Future Vol, veh/h	128	74	96	11	123	200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	139	80	104	12	134	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	595	110	0	0	116	0
Stage 1	110	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	467	943	-	-	1473	-
Stage 1	915	-	-	-	-	-
Stage 2	619	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	943	-	-	1473	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	563	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	2.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1473	-
HCM Lane V/C Ratio	-	-	0.413	0.091	-
HCM Control Delay (s)	-	-	16.4	7.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	765	4	153	471	48	19	53	62	70	73	118
Future Volume (veh/h)	155	765	4	153	471	48	19	53	62	70	73	118
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	168	832	4	166	512	52	21	58	67	76	79	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	236	2180	677	710	2163	965	164	204	173	174	204	
Arrive On Green	0.07	0.43	0.43	0.24	0.61	0.61	0.11	0.11	0.11	0.11	0.11	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1320	1870	1585	1266	1870	1585
Grp Volume(v), veh/h	168	832	4	166	512	52	21	58	67	76	79	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1320	1870	1585	1266	1870	1585
Q Serve(g_s), s	4.8	11.2	0.1	0.0	6.6	1.3	1.5	2.9	3.9	5.9	3.9	0.0
Cycle Q Clear(g_c), s	4.8	11.2	0.1	0.0	6.6	1.3	5.4	2.9	3.9	8.7	3.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	236	2180	677	710	2163	965	164	204	173	174	204	
V/C Ratio(X)	0.71	0.38	0.01	0.23	0.24	0.05	0.13	0.28	0.39	0.44	0.39	
Avail Cap(c_a), veh/h	467	2180	677	710	2163	965	382	512	434	383	512	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.6	19.6	16.5	13.1	8.9	7.9	44.0	41.0	41.4	45.0	41.4	0.0
Incr Delay (d2), s/veh	1.5	0.5	0.0	0.1	0.3	0.1	0.1	0.3	0.5	0.6	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	4.1	0.1	1.9	2.2	0.4	0.5	1.3	1.6	1.9	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.1	20.1	16.5	13.2	9.2	8.0	44.1	41.2	42.0	45.6	41.9	0.0
LnGrp LOS	D	C	B	B	A	A	D	D	D	D	D	
Approach Vol, veh/h		1004			730			146			155	
Approach Delay, s/veh		24.6			10.0			42.0			43.7	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	68.2		18.5	31.5	50.0		18.5				
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6				
Max Green Setting (Gmax), s	* 14	* 38		27.4	* 8.9	* 43		27.4				
Max Q Clear Time (g_c+I1), s	6.8	8.6		7.4	2.0	13.2		10.7				
Green Ext Time (p_c), s	0.1	1.8		0.2	0.0	3.1		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		22.1
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	693	230	123	460	289	135
Future Volume (veh/h)	693	230	123	460	289	135
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	753	250	134	500	314	147
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2189	976	199	2657	395	181
Arrive On Green	0.62	0.62	0.06	0.75	0.11	0.11
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	753	250	134	500	314	147
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	10.3	7.2	3.8	4.1	8.9	9.1
Cycle Q Clear(g_c), s	10.3	7.2	3.8	4.1	8.9	9.1
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2189	976	199	2657	395	181
V/C Ratio(X)	0.34	0.26	0.67	0.19	0.79	0.81
Avail Cap(c_a), veh/h	2189	976	574	2657	702	322
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.4	8.8	46.2	3.7	43.1	43.2
Incr Delay (d2), s/veh	0.4	0.6	1.5	0.2	1.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	2.2	1.6	1.0	3.9	7.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	9.8	9.4	47.7	3.9	44.5	46.5
LnGrp LOS	A	A	D	A	D	D
Approach Vol, veh/h	1003			634	461	
Approach Delay, s/veh	9.7			13.1	45.1	
Approach LOS	A			B	D	

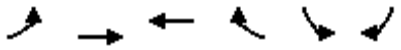
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		81.9		18.1	13.2	68.7
Change Period (Y+Rc), s		* 7.1		* 6.7	* 7.4	7.1
Max Green Setting (Gmax), s		* 66		* 20	* 17	41.9
Max Q Clear Time (g_c+I1), s		6.1		11.1	5.8	12.3
Green Ext Time (p_c), s		1.8		0.4	0.1	3.2

Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	0	703	226	196	152
Future Volume (veh/h)	118	0	703	226	196	152
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	128	0	764	246	213	165
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	455	0	2245	1001	249	221
Arrive On Green	0.05	0.00	0.63	0.63	0.14	0.14
Sat Flow, veh/h	1781	128	3647	1585	1781	1585
Grp Volume(v), veh/h	128	6.3	764	246	213	165
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	2.5		10.1	6.8	11.7	10.0
Cycle Q Clear(g_c), s	2.5		10.1	6.8	11.7	10.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	455		2245	1001	249	221
V/C Ratio(X)	0.28		0.34	0.25	0.86	0.75
Avail Cap(c_a), veh/h	529		2245	1001	392	349
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.2		8.6	8.0	42.0	41.3
Incr Delay (d2), s/veh	0.1		0.4	0.6	6.3	1.9
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7		3.3	2.0	5.5	4.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.3		9.0	8.6	48.3	43.2
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h			1010		378	
Approach Delay, s/veh			8.9		46.1	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	10.9	69.2				20.0
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	9.0	51.0				22.0
Max Q Clear Time (g_c+I1), s	4.5	12.1				13.7
Green Ext Time (p_c), s	0.0	2.5				0.3

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	61	6	31	19	7	1	10	290	44	0	298	82
Future Vol, veh/h	61	6	31	19	7	1	10	290	44	0	298	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	66	7	34	21	8	1	11	315	48	0	324	89

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	553	754	207	527	774	182	413	0	0	363	0	0
Stage 1	369	369	-	361	361	-	-	-	-	-	-	-
Stage 2	184	385	-	166	413	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	416	337	799	434	328	829	1142	-	-	1192	-	-
Stage 1	623	619	-	630	624	-	-	-	-	-	-	-
Stage 2	800	609	-	820	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	405	334	799	407	325	829	1142	-	-	1192	-	-
Mov Cap-2 Maneuver	405	334	-	407	325	-	-	-	-	-	-	-
Stage 1	617	619	-	624	618	-	-	-	-	-	-	-
Stage 2	782	603	-	777	592	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	14.7	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1142	-	-	405	652	407	352	1192	-	-
HCM Lane V/C Ratio	0.01	-	-	0.164	0.062	0.051	0.025	-	-	-
HCM Control Delay (s)	8.2	-	-	15.6	10.9	14.3	15.5	0	-	-
HCM Lane LOS	A	-	-	C	B	B	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	0.2	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	307	45	35	0	0	345
Future Vol, veh/h	307	45	35	0	0	345
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	334	49	38	0	0	375

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	38	0	-	0	731	19
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	693	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1571	-	-	-	357	1055
Stage 1	-	-	-	-	980	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1571	-	-	-	281	1055
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	771	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	SB
HCM Control Delay, s	6.9	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1571	-	-	-	1055
HCM Lane V/C Ratio	0.212	-	-	-	0.355
HCM Control Delay (s)	7.9	-	-	-	10.3
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.8	-	-	-	1.6

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	80	169	1	0	51	128	128	0	96	2
Future Vol, veh/h	0	0	80	169	1	0	51	128	128	0	96	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	87	184	1	0	55	139	139	0	104	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	424	493	105	468	425	209	106	0	0	278	0	0
Stage 1	105	105	-	319	319	-	-	-	-	-	-	-
Stage 2	319	388	-	149	106	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	540	477	949	505	521	831	1485	-	-	1285	-	-
Stage 1	901	808	-	693	653	-	-	-	-	-	-	-
Stage 2	693	609	-	854	807	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	521	456	949	443	498	831	1485	-	-	1285	-	-
Mov Cap-2 Maneuver	521	456	-	443	498	-	-	-	-	-	-	-
Stage 1	860	808	-	662	624	-	-	-	-	-	-	-
Stage 2	661	582	-	776	807	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	18.8	1.2	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1485	-	-	949	443	1285	-	-
HCM Lane V/C Ratio	0.037	-	-	0.092	0.417	-	-	-
HCM Control Delay (s)	7.5	0	-	9.2	18.8	0	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	30	11	274	46	6	297
Future Vol, veh/h	30	11	274	46	6	297
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	33	12	298	50	7	323

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	660	323	0	0	348	0
Stage 1	323	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	428	718	-	-	1211	-
Stage 1	734	-	-	-	-	-
Stage 2	723	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	425	718	-	-	1211	-
Mov Cap-2 Maneuver	425	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	719	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	477	1211	-
HCM Lane V/C Ratio	-	-	0.093	0.005	-
HCM Control Delay (s)	-	-	13.3	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

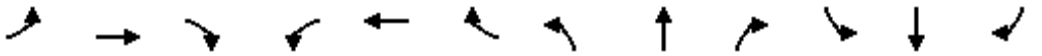
Intersection	
Int Delay, s/veh	7.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	131	83	246	151	108	223
Future Vol, veh/h	131	83	246	151	108	223
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	142	90	267	164	117	242

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	825	349	0	0	431	0
Stage 1	349	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	342	694	-	-	1129	-
Stage 1	714	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	306	694	-	-	1129	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	714	-	-	-	-	-
Stage 2	560	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.9	0	2.8
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	391	1129	-
HCM Lane V/C Ratio	-	-	0.595	0.104	-
HCM Control Delay (s)	-	-	26.9	8.6	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	3.7	0.3	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	286	1575	13	215	548	87	54	152	161	111	101	120
Future Volume (veh/h)	286	1575	13	215	548	87	54	152	161	111	101	120
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	311	1712	14	234	596	95	59	165	175	121	110	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	369	2455	762	346	1800	803	264	390	330	197	390	
Arrive On Green	0.11	0.48	0.48	0.13	0.51	0.51	0.21	0.21	0.21	0.21	0.21	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1283	1870	1585	1040	1870	1585
Grp Volume(v), veh/h	311	1712	14	234	596	95	59	165	175	121	110	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1283	1870	1585	1040	1870	1585
Q Serve(g_s), s	10.6	31.4	0.6	6.4	11.9	3.8	4.9	9.2	11.8	13.7	5.9	0.0
Cycle Q Clear(g_c), s	10.6	31.4	0.6	6.4	11.9	3.8	10.8	9.2	11.8	22.9	5.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	369	2455	762	346	1800	803	264	390	330	197	390	
V/C Ratio(X)	0.84	0.70	0.02	0.68	0.33	0.12	0.22	0.42	0.53	0.61	0.28	
Avail Cap(c_a), veh/h	475	2455	762	346	1800	803	290	427	362	218	427	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.6	24.3	16.3	43.5	17.6	15.5	44.5	41.2	42.3	51.2	39.9	0.0
Incr Delay (d2), s/veh	8.6	1.7	0.0	4.3	0.5	0.3	0.2	0.3	0.5	2.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	12.0	0.2	6.6	4.7	1.3	1.6	4.3	4.7	3.7	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.2	26.0	16.4	47.9	18.0	15.8	44.6	41.5	42.8	53.8	40.1	0.0
LnGrp LOS	E	C	B	D	B	B	D	D	D	D	D	
Approach Vol, veh/h		2037			925			399			231	
Approach Delay, s/veh		31.3			25.4			42.5			47.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.3	68.1		32.6	22.4	65.0		32.6				
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6				
Max Green Setting (Gmax), s	* 17	* 55		27.4	* 14	* 58		27.4				
Max Q Clear Time (g_c+I1), s	12.6	13.9		13.8	8.4	33.4		24.9				
Green Ext Time (p_c), s	0.2	2.2		0.5	0.0	7.7		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			32.0									
HCM 6th LOS			C									

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	1454	281	210	511	1	292	15	189	110	162	433
Future Volume (veh/h)	17	1454	281	210	511	1	292	15	189	110	162	433
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	18	1580	305	228	555	1	317	16	205	120	176	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	609	2602	808	165	1493	666	372	460	205	174	235	
Arrive On Green	0.18	0.51	0.51	0.09	0.42	0.42	0.11	0.13	0.13	0.05	0.07	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	18	1580	305	228	555	1	317	16	205	120	176	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	26.4	7.6	11.1	12.9	0.0	10.8	0.5	15.5	4.1	5.8	0.0
Cycle Q Clear(g_c), s	0.5	26.4	7.6	11.1	12.9	0.0	10.8	0.5	15.5	4.1	5.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	609	2602	808	165	1493	666	372	460	205	174	235	
V/C Ratio(X)	0.03	0.61	0.38	1.38	0.37	0.00	0.85	0.03	1.00	0.69	0.75	
Avail Cap(c_a), veh/h	609	2602	808	165	1493	666	541	460	205	536	323	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	40.9	20.9	5.3	54.5	23.9	10.7	52.6	45.7	52.2	56.1	55.0	0.0
Incr Delay (d2), s/veh	0.0	1.1	1.3	205.7	0.7	0.0	6.1	0.0	62.9	1.8	3.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	9.8	4.8	14.2	5.3	0.0	5.0	0.2	9.7	1.8	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	22.0	6.6	260.2	24.6	10.7	58.7	45.7	115.1	57.9	58.6	0.0
LnGrp LOS	D	C	A	F	C	B	E	D	F	E	E	
Approach Vol, veh/h		1903			784			538			296	
Approach Delay, s/veh		19.7			93.1			79.8			58.3	
Approach LOS		B			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.8	57.0	12.4	21.7	17.0	68.8	19.1	15.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 50	18.6	* 12	11.1	* 54	18.8	* 11
Max Q Clear Time (g_c+I1), s	2.5	14.9	6.1	17.5	13.1	28.4	12.8	7.8
Green Ext Time (p_c), s	0.0	1.9	0.0	0.0	0.0	7.5	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	48.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1082	200	155	660	276	168
Future Volume (veh/h)	1082	200	155	660	276	168
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1176	217	168	717	300	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2220	990	224	2670	462	212
Arrive On Green	0.62	0.62	0.06	0.75	0.13	0.13
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	1176	217	168	717	300	183
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	22.3	7.1	5.7	7.5	9.9	13.6
Cycle Q Clear(g_c), s	22.3	7.1	5.7	7.5	9.9	13.6
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2220	990	224	2670	462	212
V/C Ratio(X)	0.53	0.22	0.75	0.27	0.65	0.86
Avail Cap(c_a), veh/h	2220	990	363	2670	959	440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	12.6	9.8	55.2	4.6	49.3	50.9
Incr Delay (d2), s/veh	0.9	0.5	1.9	0.2	0.6	4.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	2.3	2.5	2.1	4.3	11.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	13.5	10.3	57.0	4.9	49.9	54.9
LnGrp LOS	B	B	E	A	D	D
Approach Vol, veh/h	1393			885	483	
Approach Delay, s/veh	13.0			14.8	51.8	
Approach LOS	B			B	D	

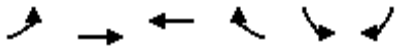
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		97.3		22.7	15.2	82.1
Change Period (Y+Rc), s		* 7.1		* 6.7	* 7.4	7.1
Max Green Setting (Gmax), s		* 73		* 33	* 13	52.9
Max Q Clear Time (g_c+I1), s		9.5		15.6	7.7	24.3
Green Ext Time (p_c), s		2.8		0.5	0.1	5.5

Intersection Summary	
HCM 6th Ctrl Delay	20.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	22	0	871	65	78	87
Future Volume (veh/h)	22	0	871	65	78	87
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	0	947	71	85	95
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	466	0	2667	1190	136	121
Arrive On Green	0.02	0.00	0.75	0.75	0.08	0.08
Sat Flow, veh/h	1781	24	3647	1585	1781	1585
Grp Volume(v), veh/h	24	3.7	947	71	85	95
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	0.4		10.9	1.4	5.6	7.1
Cycle Q Clear(g_c), s	0.4		10.9	1.4	5.6	7.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	466		2667	1190	136	121
V/C Ratio(X)	0.05		0.36	0.06	0.62	0.78
Avail Cap(c_a), veh/h	589		2667	1190	341	304
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.6		5.1	3.9	53.7	54.4
Incr Delay (d2), s/veh	0.0		0.4	0.1	1.7	4.1
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1		3.1	0.4	2.6	3.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.7		5.5	4.0	55.5	58.5
LnGrp LOS	A		A	A	E	E
Approach Vol, veh/h			1018		180	
Approach Delay, s/veh			5.4		57.1	
Approach LOS			A		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	8.8	96.1				15.2
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	11.0	68.0				23.0
Max Q Clear Time (g_c+I1), s	2.4	12.9				9.1
Green Ext Time (p_c), s	0.0	3.1				0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.9
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	14	14	95	24	0	5	52	30	3	56	5
Future Vol, veh/h	5	14	14	95	24	0	5	52	30	3	56	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	100	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	5	15	15	103	26	0	5	57	33	3	61	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	122	170	33	128	156	45	66	0	0	90	0	0
Stage 1	70	70	-	84	84	-	-	-	-	-	-	-
Stage 2	52	100	-	44	72	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	840	722	1033	832	735	1015	1534	-	-	1503	-	-
Stage 1	932	836	-	915	824	-	-	-	-	-	-	-
Stage 2	954	811	-	965	834	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	814	718	1033	803	731	1015	1534	-	-	1503	-	-
Mov Cap-2 Maneuver	814	718	-	803	731	-	-	-	-	-	-	-
Stage 1	929	834	-	912	822	-	-	-	-	-	-	-
Stage 2	921	809	-	932	832	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	10.1	0.4	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1534	-	-	814	847	803	731	1503	-	-
HCM Lane V/C Ratio	0.004	-	-	0.007	0.036	0.129	0.036	0.002	-	-
HCM Control Delay (s)	7.4	-	-	9.5	9.4	10.1	10.1	7.4	-	-
HCM Lane LOS	A	-	-	A	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	7	9	0	1	55
Future Vol, veh/h	50	7	9	0	1	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	8	10	0	1	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	10	0	-	0	122	5
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	112	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1608	-	-	-	860	1076
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	900	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1608	-	-	-	831	1076
Mov Cap-2 Maneuver	-	-	-	-	831	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	900	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1608	-	-	-	1070
HCM Lane V/C Ratio	0.034	-	-	-	0.057
HCM Control Delay (s)	7.3	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	1	8	33	2	1	5	21	24	0	15	1
Future Vol, veh/h	7	1	8	33	2	1	5	21	24	0	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	9	36	2	1	5	23	26	0	16	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	65	76	17	68	63	36	17	0	0	49	0	0
Stage 1	17	17	-	46	46	-	-	-	-	-	-	-
Stage 2	48	59	-	22	17	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	929	814	1062	925	828	1037	1600	-	-	1558	-	-
Stage 1	1002	881	-	968	857	-	-	-	-	-	-	-
Stage 2	965	846	-	996	881	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	924	812	1062	915	826	1037	1600	-	-	1558	-	-
Mov Cap-2 Maneuver	924	812	-	915	826	-	-	-	-	-	-	-
Stage 1	999	881	-	965	854	-	-	-	-	-	-	-
Stage 2	959	843	-	987	881	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.7	9.1	0.7	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1600	-	-	979	913	1558	-	-
HCM Lane V/C Ratio	0.003	-	-	0.018	0.043	-	-	-
HCM Control Delay (s)	7.3	0	-	8.7	9.1	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

2026 BACKGROUND TRAFFIC

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	7	162	21	2	331
Future Vol, veh/h	35	7	162	21	2	331
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	8	176	23	2	360

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	552	188	0	0	199	0
Stage 1	188	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	495	854	-	-	1373	-
Stage 1	844	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	495	854	-	-	1373	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	702	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1373	-
HCM Lane V/C Ratio	-	-	0.086	0.002	-
HCM Control Delay (s)	-	-	12.4	7.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	7.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	141	82	106	12	136	221
Future Vol, veh/h	141	82	106	12	136	221
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	153	89	115	13	148	240

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	658	122	0	0	128	0
Stage 1	122	-	-	-	-	-
Stage 2	536	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	429	929	-	-	1458	-
Stage 1	903	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	385	929	-	-	1458	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	903	-	-	-	-	-
Stage 2	527	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.3	0	3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	491	1458	-
HCM Lane V/C Ratio	-	-	0.494	0.101	-
HCM Control Delay (s)	-	-	19.3	7.7	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	2.7	0.3	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	845	4	169	520	53	21	59	68	77	81	130
Future Volume (veh/h)	171	845	4	169	520	53	21	59	68	77	81	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	186	918	4	184	565	58	23	64	74	84	88	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	1976	613	711	2109	940	170	222	188	181	222	
Arrive On Green	0.07	0.39	0.39	0.27	0.59	0.59	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1309	1870	1585	1251	1870	1585
Grp Volume(v), veh/h	186	918	4	184	565	58	23	64	74	84	88	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1309	1870	1585	1251	1870	1585
Q Serve(g_s), s	5.3	13.4	0.2	0.0	7.7	1.5	1.7	3.1	4.3	6.6	4.4	0.0
Cycle Q Clear(g_c), s	5.3	13.4	0.2	0.0	7.7	1.5	6.0	3.1	4.3	9.7	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1976	613	711	2109	940	170	222	188	181	222	
V/C Ratio(X)	0.73	0.46	0.01	0.26	0.27	0.06	0.14	0.29	0.39	0.46	0.40	
Avail Cap(c_a), veh/h	674	1976	613	711	2109	940	282	382	323	288	382	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	22.9	18.8	16.2	9.8	8.6	43.6	40.2	40.8	44.7	40.8	0.0
Incr Delay (d2), s/veh	1.5	0.8	0.0	0.1	0.3	0.1	0.1	0.3	0.5	0.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.1	0.1	2.5	2.6	0.5	0.5	1.4	1.7	2.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	23.7	18.9	16.3	10.1	8.7	43.7	40.5	41.3	45.3	41.2	0.0
LnGrp LOS	D	C	B	B	B	A	D	D	D	D	D	
Approach Vol, veh/h		1108			807			161			172	
Approach Delay, s/veh		27.5			11.4			41.3			43.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.9	66.6		19.4	34.6	46.0		19.4				
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6				
Max Green Setting (Gmax), s	* 20	* 39		20.4	* 20	* 39		20.4				
Max Q Clear Time (g_c+I1), s	7.3	9.7		8.0	2.0	15.4		11.7				
Green Ext Time (p_c), s	0.2	2.0		0.1	0.0	3.4		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		23.9
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	254	136	508	319	149
Future Volume (veh/h)	765	254	136	508	319	149
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	832	276	148	552	347	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2139	954	214	2622	429	197
Arrive On Green	0.60	0.60	0.06	0.74	0.12	0.12
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	832	276	148	552	347	162
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	12.2	8.4	4.2	4.8	9.8	10.0
Cycle Q Clear(g_c), s	12.2	8.4	4.2	4.8	9.8	10.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2139	954	214	2622	429	197
V/C Ratio(X)	0.39	0.29	0.69	0.21	0.81	0.82
Avail Cap(c_a), veh/h	2139	954	505	2622	736	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	9.6	46.0	4.1	42.6	42.7
Incr Delay (d2), s/veh	0.5	0.8	1.5	0.2	1.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.6	1.8	1.2	4.3	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.9	10.4	47.5	4.2	44.0	46.0
LnGrp LOS	B	B	D	A	D	D
Approach Vol, veh/h	1108			700	509	
Approach Delay, s/veh	10.7			13.4	44.7	
Approach LOS	B			B	D	

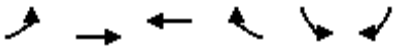
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		80.9		19.1	13.6	67.3
Change Period (Y+Rc), s		* 7.1		* 6.7	* 7.4	7.1
Max Green Setting (Gmax), s		* 65		* 21	* 15	42.9
Max Q Clear Time (g_c+I1), s		6.8		12.0	6.2	14.2
Green Ext Time (p_c), s		2.0		0.4	0.1	3.7

Intersection Summary	
HCM 6th Ctrl Delay	19.0
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	0	776	250	216	168
Future Volume (veh/h)	130	0	776	250	216	168
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	0	843	272	235	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	413	0	2204	983	269	239
Arrive On Green	0.05	0.00	0.62	0.62	0.15	0.15
Sat Flow, veh/h	1781	141	3647	1585	1781	1585
Grp Volume(v), veh/h	141	7.1	843	272	235	183
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	2.8		11.8	7.9	12.9	11.1
Cycle Q Clear(g_c), s	2.8		11.8	7.9	12.9	11.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	413		2204	983	269	239
V/C Ratio(X)	0.34		0.38	0.28	0.87	0.77
Avail Cap(c_a), veh/h	557		2204	983	321	285
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.9		9.5	8.7	41.5	40.8
Incr Delay (d2), s/veh	0.2		0.5	0.7	18.0	7.8
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8		3.9	2.4	7.0	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1		10.0	9.4	59.6	48.5
LnGrp LOS	A		A	A	E	D
Approach Vol, veh/h			1115		418	
Approach Delay, s/veh			9.8		54.7	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	10.9	68.0				21.1
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	51.0				18.0
Max Q Clear Time (g_c+I1), s	4.8	13.8				14.9
Green Ext Time (p_c), s	0.1	2.8				0.2

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	7	34	21	8	1	11	320	49	0	329	91
Future Vol, veh/h	67	7	34	21	8	1	11	320	49	0	329	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	8	37	23	9	1	12	348	53	0	358	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	611	833	229	582	856	201	457	0	0	401	0	0
Stage 1	408	408	-	399	399	-	-	-	-	-	-	-
Stage 2	203	425	-	183	457	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	378	303	774	396	294	806	1100	-	-	1154	-	-
Stage 1	591	595	-	598	601	-	-	-	-	-	-	-
Stage 2	780	585	-	801	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	366	300	774	367	291	806	1100	-	-	1154	-	-
Mov Cap-2 Maneuver	366	300	-	367	291	-	-	-	-	-	-	-
Stage 1	584	595	-	591	594	-	-	-	-	-	-	-
Stage 2	759	579	-	753	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	15.9	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1100	-	-	366	610	367	313	1154	-	-
HCM Lane V/C Ratio	0.011	-	-	0.199	0.073	0.062	0.031	-	-	-
HCM Control Delay (s)	8.3	-	-	17.3	11.4	15.5	16.9	0	-	-
HCM Lane LOS	A	-	-	C	B	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	339	50	39	0	0	381
Future Vol, veh/h	339	50	39	0	0	381
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	368	54	42	0	0	414

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	42	0	-	0	805	21
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	763	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1565	-	-	-	320	1051
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	245	1051
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	7	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1565	-	-	-	1051
HCM Lane V/C Ratio	0.235	-	-	-	0.394
HCM Control Delay (s)	8	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	1.9

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	88	187	1	0	56	141	141	0	106	2
Future Vol, veh/h	0	0	88	187	1	0	56	141	141	0	106	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	61	153	153	0	115	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	468	544	116	516	469	230	117	0	0	306	0	0
Stage 1	116	116	-	352	352	-	-	-	-	-	-	-
Stage 2	352	428	-	164	117	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	446	936	470	492	809	1471	-	-	1255	-	-
Stage 1	889	800	-	665	632	-	-	-	-	-	-	-
Stage 2	665	585	-	838	799	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	484	423	936	406	467	809	1471	-	-	1255	-	-
Mov Cap-2 Maneuver	484	423	-	406	467	-	-	-	-	-	-	-
Stage 1	844	800	-	631	600	-	-	-	-	-	-	-
Stage 2	630	555	-	752	799	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	22.5	1.3	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	936	406	1255	-	-
HCM Lane V/C Ratio	0.041	-	-	0.102	0.503	-	-	-
HCM Control Delay (s)	7.6	0	-	9.3	22.5	0	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2.7	0	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	11	303	51	7	328
Future Vol, veh/h	33	11	303	51	7	328
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	12	329	55	8	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	730	357	0	0	384	0
Stage 1	357	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	389	687	-	-	1174	-
Stage 1	708	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	386	687	-	-	1174	-
Mov Cap-2 Maneuver	386	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	433	1174	-
HCM Lane V/C Ratio	-	-	0.11	0.006	-
HCM Control Delay (s)	-	-	14.3	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-

Intersection	
Int Delay, s/veh	10.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	145	92	272	167	119	246
Future Vol, veh/h	145	92	272	167	119	246
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	158	100	296	182	129	267

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	912	387	0	0	478	0
Stage 1	387	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	304	661	-	-	1084	-
Stage 1	686	-	-	-	-	-
Stage 2	593	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	661	-	-	1084	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	686	-	-	-	-	-
Stage 2	522	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	39.7	0	2.9
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	348	1084	-
HCM Lane V/C Ratio	-	-	0.74	0.119	-
HCM Control Delay (s)	-	-	39.7	8.8	-
HCM Lane LOS	-	-	E	A	-
HCM 95th %tile Q(veh)	-	-	5.7	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	1739	14	237	605	96	60	168	178	123	112	132
Future Volume (veh/h)	316	1739	14	237	605	96	60	168	178	123	112	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	343	1890	15	258	658	104	65	183	193	134	122	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	2282	709	363	1716	765	233	344	292	168	344	
Arrive On Green	0.12	0.45	0.45	0.15	0.48	0.48	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1269	1870	1585	1007	1870	1585
Grp Volume(v), veh/h	343	1890	15	258	658	104	65	183	193	134	122	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1269	1870	1585	1007	1870	1585
Q Serve(g_s), s	9.7	32.5	0.5	7.8	11.8	3.6	4.7	8.8	11.3	9.6	5.7	0.0
Cycle Q Clear(g_c), s	9.7	32.5	0.5	7.8	11.8	3.6	10.4	8.8	11.3	18.4	5.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	2282	709	363	1716	765	233	344	292	168	344	
V/C Ratio(X)	0.83	0.83	0.02	0.71	0.38	0.14	0.28	0.53	0.66	0.80	0.35	
Avail Cap(c_a), veh/h	536	2282	709	384	1716	765	233	344	292	168	344	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.1	24.3	15.4	37.5	16.4	14.3	40.2	36.9	37.9	46.6	35.6	0.0
Incr Delay (d2), s/veh	6.7	3.6	0.1	4.7	0.7	0.4	0.2	0.8	4.4	21.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	12.3	0.2	5.7	4.4	1.3	1.5	4.1	4.7	4.3	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	27.9	15.5	42.2	17.1	14.7	40.4	37.7	42.3	67.9	35.8	0.0
LnGrp LOS	D	C	B	D	B	B	D	D	D	E	D	
Approach Vol, veh/h		2248			1020			441			256	
Approach Delay, s/veh		31.2			23.2			40.1			52.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	18.4	55.6		26.0	22.0	52.0		26.0				
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6				
Max Green Setting (Gmax), s	* 16	* 45		18.4	* 16	* 45		18.4				
Max Q Clear Time (g_c+I1), s	11.7	13.8		13.3	9.8	34.5		20.4				
Green Ext Time (p_c), s	0.2	2.4		0.4	0.0	5.7		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		31.5
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1605	310	232	564	1	322	17	209	121	179	478
Future Volume (veh/h)	19	1605	310	232	564	1	322	17	209	121	179	478
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1745	337	252	613	1	350	18	227	132	195	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	506	1934	600	282	1365	609	413	513	229	195	263	
Arrive On Green	0.15	0.38	0.38	0.16	0.38	0.38	0.12	0.14	0.14	0.06	0.07	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	21	1745	337	252	613	1	350	18	227	132	195	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	32.3	9.8	13.9	12.8	0.0	9.9	0.4	14.3	3.7	5.4	0.0
Cycle Q Clear(g_c), s	0.5	32.3	9.8	13.9	12.8	0.0	9.9	0.4	14.3	3.7	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	506	1934	600	282	1365	609	413	513	229	195	263	
V/C Ratio(X)	0.04	0.90	0.56	0.89	0.45	0.00	0.85	0.04	0.99	0.68	0.74	
Avail Cap(c_a), veh/h	506	1934	600	287	1365	609	477	513	229	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	29.3	8.3	41.2	22.9	9.2	43.1	36.8	42.7	46.3	45.4	0.0
Incr Delay (d2), s/veh	0.0	7.4	3.8	26.5	1.1	0.0	10.6	0.0	57.3	1.5	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.2	3.7	7.8	5.1	0.0	4.8	0.2	9.2	1.6	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	36.7	12.1	67.8	24.0	9.2	53.7	36.8	100.0	47.8	53.4	0.0
LnGrp LOS	D	D	B	E	C	A	D	D	F	D	D	
Approach Vol, veh/h		2103			866			595			327	
Approach Delay, s/veh		32.7			36.7			70.9			51.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	45.0	12.0	20.6	21.8	45.6	18.2	14.5
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 38	13.6	* 8.9	16.1	* 37	13.8	* 7.9
Max Q Clear Time (g_c+I1), s	2.5	14.8	5.7	16.3	15.9	34.3	11.9	7.4
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1195	200	171	729	305	185
Future Volume (veh/h)	1195	200	171	729	305	185
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1299	217	186	792	332	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2028	905	253	2551	501	230
Arrive On Green	0.57	0.57	0.07	0.72	0.15	0.15
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	1299	217	186	792	332	201
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	24.7	6.8	5.3	8.1	9.1	12.4
Cycle Q Clear(g_c), s	24.7	6.8	5.3	8.1	9.1	12.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2028	905	253	2551	501	230
V/C Ratio(X)	0.64	0.24	0.73	0.31	0.66	0.87
Avail Cap(c_a), veh/h	2028	905	435	2551	529	243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	10.7	45.4	5.1	40.4	41.9
Incr Delay (d2), s/veh	1.6	0.6	1.6	0.3	2.2	25.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	2.2	2.2	2.2	4.0	12.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	11.3	46.9	5.4	42.6	67.5
LnGrp LOS	B	B	D	A	D	E
Approach Vol, veh/h	1516			978	533	
Approach Delay, s/veh	15.4			13.3	52.0	
Approach LOS	B			B	D	

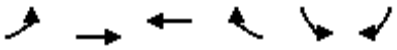
Timer - Assigned Phs	2		4	5	6
Phs Duration (G+Y+Rc), s	78.8		21.2	14.7	64.1
Change Period (Y+Rc), s	7.0		* 6.7	* 7.4	7.0
Max Green Setting (Gmax), s	71.0		* 15	* 13	51.0
Max Q Clear Time (g_c+I1), s	10.1		14.4	7.3	26.7
Green Ext Time (p_c), s	3.1		0.1	0.1	6.1

Intersection Summary	
HCM 6th Ctrl Delay	21.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	0	962	72	86	96
Future Volume (veh/h)	24	0	962	72	86	96
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	0	1046	78	93	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	412	0	2521	1124	151	135
Arrive On Green	0.03	0.00	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	26	3647	1585	1781	1585
Grp Volume(v), veh/h	26	4.4	1046	78	93	104
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	0.4		12.1	1.5	5.0	6.4
Cycle Q Clear(g_c), s	0.4		12.1	1.5	5.0	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	412		2521	1124	151	135
V/C Ratio(X)	0.06		0.41	0.07	0.61	0.77
Avail Cap(c_a), veh/h	563		2521	1124	267	238
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.3		6.0	4.4	44.2	44.8
Incr Delay (d2), s/veh	0.0		0.5	0.1	1.5	3.5
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1		3.3	0.4	2.3	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.4		6.5	4.6	45.7	48.3
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h			1124		197	
Approach Delay, s/veh			6.4		47.1	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	8.6	76.9				14.5
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	11.0	56.0				15.0
Max Q Clear Time (g_c+I1), s	2.4	14.1				8.4
Green Ext Time (p_c), s	0.0	3.5				0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	15	15	105	26	0	6	57	33	3	62	6
Future Vol, veh/h	6	15	15	105	26	0	6	57	33	3	62	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	16	16	114	28	0	7	62	36	3	67	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	136	189	37	142	174	49	74	0	0	98	0	0
Stage 1	77	77	-	94	94	-	-	-	-	-	-	-
Stage 2	59	112	-	48	80	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	822	705	1027	814	718	1009	1524	-	-	1493	-	-
Stage 1	923	830	-	902	816	-	-	-	-	-	-	-
Stage 2	946	802	-	959	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	700	1027	783	713	1009	1524	-	-	1493	-	-
Mov Cap-2 Maneuver	793	700	-	783	713	-	-	-	-	-	-	-
Stage 1	918	828	-	897	812	-	-	-	-	-	-	-
Stage 2	909	798	-	923	826	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10.4	0.5	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	793	833	783	713	1493	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.039	0.146	0.04	0.002	-	-
HCM Control Delay (s)	7.4	-	-	9.6	9.5	10.4	10.3	7.4	-	-
HCM Lane LOS	A	-	-	A	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	8	10	0	1	61
Future Vol, veh/h	55	8	10	0	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	9	11	0	1	66

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	11	0	-	0	136	6
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1607	-	-	-	844	1075
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	887	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1607	-	-	-	813	1075
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1607	-	-	-	1069
HCM Lane V/C Ratio	0.037	-	-	-	0.063
HCM Control Delay (s)	7.3	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	1	9	36	2	1	6	23	26	0	17	1
Future Vol, veh/h	8	1	9	36	2	1	6	23	26	0	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	10	39	2	1	7	25	28	0	18	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	74	86	19	77	72	39	19	0	0	53	0	0
Stage 1	19	19	-	53	53	-	-	-	-	-	-	-
Stage 2	55	67	-	24	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	916	804	1059	912	818	1033	1597	-	-	1553	-	-
Stage 1	1000	880	-	960	851	-	-	-	-	-	-	-
Stage 2	957	839	-	994	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	800	1059	899	814	1033	1597	-	-	1553	-	-
Mov Cap-2 Maneuver	910	800	-	899	814	-	-	-	-	-	-	-
Stage 1	995	880	-	955	847	-	-	-	-	-	-	-
Stage 2	949	835	-	984	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9.2	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	971	897	1553	-	-
HCM Lane V/C Ratio	0.004	-	-	0.02	0.047	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

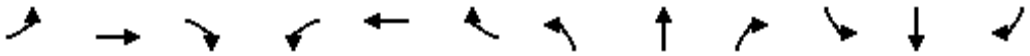
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	7	162	21	2	331
Future Vol, veh/h	35	7	162	21	2	331
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	8	176	23	2	360

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	552	188	0	0	199	0
Stage 1	188	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	495	854	-	-	1373	-
Stage 1	844	-	-	-	-	-
Stage 2	703	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	495	854	-	-	1373	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	702	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1373	-
HCM Lane V/C Ratio	-	-	0.086	0.002	-
HCM Control Delay (s)	-	-	12.4	7.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.3	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	141	0	82	0	106	12	136	221	3
Future Volume (veh/h)	0	0	0	141	0	82	0	106	12	136	221	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	153	0	89	0	115	13	148	240	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	275	296	0	557	0	251	275	631	71	700	705	9
Arrive On Green	0.00	0.00	0.00	0.16	0.00	0.16	0.00	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	1308	1870	0	1781	0	1585	1137	1650	187	1262	1843	23
Grp Volume(v), veh/h	0	0	0	153	0	89	0	0	128	148	0	243
Grp Sat Flow(s),veh/h/ln	1308	1870	0	1781	0	1585	1137	0	1837	1262	0	1866
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	1.3	0.0	0.0	1.2	2.3	0.0	2.4
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.1	0.0	1.3	0.0	0.0	1.2	3.5	0.0	2.4
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.10	1.00		0.01
Lane Grp Cap(c), veh/h	275	296	0	557	0	251	275	0	703	700	0	714
V/C Ratio(X)	0.00	0.00	0.00	0.27	0.00	0.35	0.00	0.00	0.18	0.21	0.00	0.34
Avail Cap(c_a), veh/h	1219	1646	0	1843	0	1395	928	0	1757	1425	0	1785
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	10.1	0.0	9.8	0.0	0.0	5.4	6.5	0.0	5.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.6	0.0	0.3	0.0	0.0	0.2	0.3	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	10.2	0.0	10.1	0.0	0.0	5.4	6.6	0.0	5.8
LnGrp LOS	A	A	A	B	A	B	A	A	A	A	A	A
Approach Vol, veh/h		0			242			128			391	
Approach Delay, s/veh		0.0			10.2			5.4			6.1	
Approach LOS					B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.0		10.1		16.0		10.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0		23.0		25.0		23.0				
Max Q Clear Time (g_c+I1), s		3.2		0.0		5.5		4.1				
Green Ext Time (p_c), s		0.3		0.0		0.8		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	845	4	169	520	53	21	59	68	77	81	130
Future Volume (veh/h)	171	845	4	169	520	53	21	59	68	77	81	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	186	918	4	184	565	58	23	64	74	84	88	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	256	1976	613	711	2109	940	170	222	188	181	222	
Arrive On Green	0.07	0.39	0.39	0.27	0.59	0.59	0.12	0.12	0.12	0.12	0.12	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1309	1870	1585	1251	1870	1585
Grp Volume(v), veh/h	186	918	4	184	565	58	23	64	74	84	88	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1309	1870	1585	1251	1870	1585
Q Serve(g_s), s	5.3	13.4	0.2	0.0	7.7	1.5	1.7	3.1	4.3	6.6	4.4	0.0
Cycle Q Clear(g_c), s	5.3	13.4	0.2	0.0	7.7	1.5	6.0	3.1	4.3	9.7	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	256	1976	613	711	2109	940	170	222	188	181	222	
V/C Ratio(X)	0.73	0.46	0.01	0.26	0.27	0.06	0.14	0.29	0.39	0.46	0.40	
Avail Cap(c_a), veh/h	674	1976	613	711	2109	940	282	382	323	288	382	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	22.9	18.8	16.2	9.8	8.6	43.6	40.2	40.8	44.7	40.8	0.0
Incr Delay (d2), s/veh	1.5	0.8	0.0	0.1	0.3	0.1	0.1	0.3	0.5	0.7	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.1	0.1	2.5	2.6	0.5	0.5	1.4	1.7	2.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	23.7	18.9	16.3	10.1	8.7	43.7	40.5	41.3	45.3	41.2	0.0
LnGrp LOS	D	C	B	B	B	A	D	D	D	D	D	
Approach Vol, veh/h		1108			807			161			172	
Approach Delay, s/veh		27.5			11.4			41.3			43.2	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	66.6		19.4	34.6	46.0		19.4
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 20	* 39		20.4	* 20	* 39		20.4
Max Q Clear Time (g_c+I1), s	7.3	9.7		8.0	2.0	15.4		11.7
Green Ext Time (p_c), s	0.2	2.0		0.1	0.0	3.4		0.2

Intersection Summary	
HCM 6th Ctrl Delay	23.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	254	136	508	319	149
Future Volume (veh/h)	765	254	136	508	319	149
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	832	276	148	552	347	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2139	954	214	2622	429	197
Arrive On Green	0.60	0.60	0.06	0.74	0.12	0.12
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	832	276	148	552	347	162
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	12.2	8.4	4.2	4.8	9.8	10.0
Cycle Q Clear(g_c), s	12.2	8.4	4.2	4.8	9.8	10.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2139	954	214	2622	429	197
V/C Ratio(X)	0.39	0.29	0.69	0.21	0.81	0.82
Avail Cap(c_a), veh/h	2139	954	505	2622	736	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	9.6	46.0	4.1	42.6	42.7
Incr Delay (d2), s/veh	0.5	0.8	1.5	0.2	1.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.6	1.8	1.2	4.3	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.9	10.4	47.5	4.2	44.0	46.0
LnGrp LOS	B	B	D	A	D	D
Approach Vol, veh/h	1108			700	509	
Approach Delay, s/veh	10.7			13.4	44.7	
Approach LOS	B			B	D	

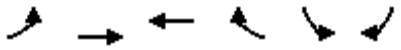
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		80.9		19.1	13.6	67.3
Change Period (Y+Rc), s		* 7.1		* 6.7	* 7.4	7.1
Max Green Setting (Gmax), s		* 65		* 21	* 15	42.9
Max Q Clear Time (g_c+I1), s		6.8		12.0	6.2	14.2
Green Ext Time (p_c), s		2.0		0.4	0.1	3.7

Intersection Summary		
HCM 6th Ctrl Delay		19.0
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	0	776	250	216	168
Future Volume (veh/h)	130	0	776	250	216	168
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	141	0	843	272	235	183
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	413	0	2204	983	269	239
Arrive On Green	0.05	0.00	0.62	0.62	0.15	0.15
Sat Flow, veh/h	1781	141	3647	1585	1781	1585
Grp Volume(v), veh/h	141	7.1	843	272	235	183
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	2.8		11.8	7.9	12.9	11.1
Cycle Q Clear(g_c), s	2.8		11.8	7.9	12.9	11.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	413		2204	983	269	239
V/C Ratio(X)	0.34		0.38	0.28	0.87	0.77
Avail Cap(c_a), veh/h	557		2204	983	321	285
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.9		9.5	8.7	41.5	40.8
Incr Delay (d2), s/veh	0.2		0.5	0.7	18.0	7.8
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8		3.9	2.4	7.0	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	7.1		10.0	9.4	59.6	48.5
LnGrp LOS	A		A	A	E	D
Approach Vol, veh/h			1115		418	
Approach Delay, s/veh			9.8		54.7	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	10.9	68.0				21.1
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	51.0				18.0
Max Q Clear Time (g_c+I1), s	4.8	13.8				14.9
Green Ext Time (p_c), s	0.1	2.8				0.2

Intersection Summary	
HCM 6th Ctrl Delay	20.8
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	7	34	21	8	1	11	320	49	0	329	91
Future Vol, veh/h	67	7	34	21	8	1	11	320	49	0	329	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	8	37	23	9	1	12	348	53	0	358	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	611	833	229	582	856	201	457	0	0	401	0	0
Stage 1	408	408	-	399	399	-	-	-	-	-	-	-
Stage 2	203	425	-	183	457	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	378	303	774	396	294	806	1100	-	-	1154	-	-
Stage 1	591	595	-	598	601	-	-	-	-	-	-	-
Stage 2	780	585	-	801	566	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	366	300	774	367	291	806	1100	-	-	1154	-	-
Mov Cap-2 Maneuver	366	300	-	367	291	-	-	-	-	-	-	-
Stage 1	584	595	-	591	594	-	-	-	-	-	-	-
Stage 2	759	579	-	753	566	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	15.9	0.2	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1100	-	-	366	610	367	313	1154	-	-
HCM Lane V/C Ratio	0.011	-	-	0.199	0.073	0.062	0.031	-	-	-
HCM Control Delay (s)	8.3	-	-	17.3	11.4	15.5	16.9	0	-	-
HCM Lane LOS	A	-	-	C	B	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.2	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	8.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	339	50	39	0	0	381
Future Vol, veh/h	339	50	39	0	0	381
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	368	54	42	0	0	414

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	42	0	-	0	805	21
Stage 1	-	-	-	-	42	-
Stage 2	-	-	-	-	763	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1565	-	-	-	320	1051
Stage 1	-	-	-	-	975	-
Stage 2	-	-	-	-	421	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1565	-	-	-	245	1051
Mov Cap-2 Maneuver	-	-	-	-	245	-
Stage 1	-	-	-	-	746	-
Stage 2	-	-	-	-	421	-

Approach	EB	WB	SB
HCM Control Delay, s	7	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1565	-	-	-	1051
HCM Lane V/C Ratio	0.235	-	-	-	0.394
HCM Control Delay (s)	8	-	-	-	10.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.9	-	-	-	1.9

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	88	187	1	0	56	141	141	0	106	2
Future Vol, veh/h	0	0	88	187	1	0	56	141	141	0	106	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	61	153	153	0	115	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	468	544	116	516	469	230	117	0	0	306	0	0
Stage 1	116	116	-	352	352	-	-	-	-	-	-	-
Stage 2	352	428	-	164	117	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	505	446	936	470	492	809	1471	-	-	1255	-	-
Stage 1	889	800	-	665	632	-	-	-	-	-	-	-
Stage 2	665	585	-	838	799	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	484	423	936	406	467	809	1471	-	-	1255	-	-
Mov Cap-2 Maneuver	484	423	-	406	467	-	-	-	-	-	-	-
Stage 1	844	800	-	631	600	-	-	-	-	-	-	-
Stage 2	630	555	-	752	799	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	22.5	1.3	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	936	406	1255	-	-
HCM Lane V/C Ratio	0.041	-	-	0.102	0.503	-	-	-
HCM Control Delay (s)	7.6	0	-	9.3	22.5	0	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	2.7	0	-	-

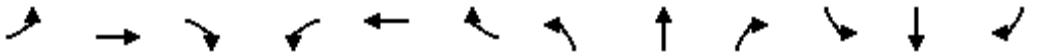
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	11	303	51	7	328
Future Vol, veh/h	33	11	303	51	7	328
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	0	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	12	329	55	8	357

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	730	357	0	0	384	0
Stage 1	357	-	-	-	-	-
Stage 2	373	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	389	687	-	-	1174	-
Stage 1	708	-	-	-	-	-
Stage 2	696	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	386	687	-	-	1174	-
Mov Cap-2 Maneuver	386	-	-	-	-	-
Stage 1	708	-	-	-	-	-
Stage 2	691	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	433	1174	-
HCM Lane V/C Ratio	-	-	0.11	0.006	-
HCM Control Delay (s)	-	-	14.3	8.1	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.4	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	145	0	92	0	272	167	119	246	0
Future Volume (veh/h)	0	0	0	145	0	92	0	272	167	119	246	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	158	0	100	0	296	182	129	267	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	281	0	514	0	238	246	476	293	456	822	0
Arrive On Green	0.00	0.00	0.00	0.15	0.00	0.15	0.00	0.44	0.44	0.44	0.44	0.00
Sat Flow, veh/h	1295	1870	0	1781	0	1585	1112	1084	666	916	1870	0
Grp Volume(v), veh/h	0	0	0	158	0	100	0	0	478	129	267	0
Grp Sat Flow(s),veh/h/ln	1295	1870	0	1781	0	1585	1112	0	1750	916	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	2.4	0.0	1.7	0.0	0.0	6.2	3.7	2.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	2.4	0.0	1.7	0.0	0.0	6.2	9.8	2.7	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.38	1.00		0.00
Lane Grp Cap(c), veh/h	246	281	0	514	0	238	246	0	769	456	822	0
V/C Ratio(X)	0.00	0.00	0.00	0.31	0.00	0.42	0.00	0.00	0.62	0.28	0.32	0.00
Avail Cap(c_a), veh/h	983	1344	0	1527	0	1139	786	0	1617	900	1728	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	11.6	0.0	11.3	0.0	0.0	6.3	10.1	5.4	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.4	0.0	0.0	0.3	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.7	0.0	0.5	0.0	0.0	1.2	0.5	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	11.7	0.0	11.7	0.0	0.0	6.6	10.2	5.4	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	B	A	A
Approach Vol, veh/h		0			258			478			396	
Approach Delay, s/veh		0.0			11.7			6.6			7.0	
Approach LOS					B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.8		10.4		18.8		10.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		27.0		21.0		27.0		21.0				
Max Q Clear Time (g_c+I1), s		8.2		0.0		11.8		4.4				
Green Ext Time (p_c), s		1.5		0.0		1.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			7.9									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	1739	14	237	605	96	60	168	178	123	112	132
Future Volume (veh/h)	316	1739	14	237	605	96	60	168	178	123	112	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	343	1890	15	258	658	104	65	183	193	134	122	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	412	2282	709	363	1716	765	233	344	292	168	344	
Arrive On Green	0.12	0.45	0.45	0.15	0.48	0.48	0.18	0.18	0.18	0.18	0.18	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1269	1870	1585	1007	1870	1585
Grp Volume(v), veh/h	343	1890	15	258	658	104	65	183	193	134	122	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1269	1870	1585	1007	1870	1585
Q Serve(g_s), s	9.7	32.5	0.5	7.8	11.8	3.6	4.7	8.8	11.3	9.6	5.7	0.0
Cycle Q Clear(g_c), s	9.7	32.5	0.5	7.8	11.8	3.6	10.4	8.8	11.3	18.4	5.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	412	2282	709	363	1716	765	233	344	292	168	344	
V/C Ratio(X)	0.83	0.83	0.02	0.71	0.38	0.14	0.28	0.53	0.66	0.80	0.35	
Avail Cap(c_a), veh/h	536	2282	709	384	1716	765	233	344	292	168	344	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.1	24.3	15.4	37.5	16.4	14.3	40.2	36.9	37.9	46.6	35.6	0.0
Incr Delay (d2), s/veh	6.7	3.6	0.1	4.7	0.7	0.4	0.2	0.8	4.4	21.3	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	12.3	0.2	5.7	4.4	1.3	1.5	4.1	4.7	4.3	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	27.9	15.5	42.2	17.1	14.7	40.4	37.7	42.3	67.9	35.8	0.0
LnGrp LOS	D	C	B	D	B	B	D	D	D	E	D	
Approach Vol, veh/h		2248			1020			441			256	
Approach Delay, s/veh		31.2			23.2			40.1			52.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	18.4	55.6		26.0	22.0	52.0		26.0
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 16	* 45		18.4	* 16	* 45		18.4
Max Q Clear Time (g_c+I1), s	11.7	13.8		13.3	9.8	34.5		20.4
Green Ext Time (p_c), s	0.2	2.4		0.4	0.0	5.7		0.0

Intersection Summary	
HCM 6th Ctrl Delay	31.5
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	1605	310	232	564	1	322	17	209	121	179	478
Future Volume (veh/h)	19	1605	310	232	564	1	322	17	209	121	179	478
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	1745	337	252	613	1	350	18	227	132	195	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	506	1934	600	282	1365	609	413	513	229	195	263	
Arrive On Green	0.15	0.38	0.38	0.16	0.38	0.38	0.12	0.14	0.14	0.06	0.07	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	21	1745	337	252	613	1	350	18	227	132	195	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	32.3	9.8	13.9	12.8	0.0	9.9	0.4	14.3	3.7	5.4	0.0
Cycle Q Clear(g_c), s	0.5	32.3	9.8	13.9	12.8	0.0	9.9	0.4	14.3	3.7	5.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	506	1934	600	282	1365	609	413	513	229	195	263	
V/C Ratio(X)	0.04	0.90	0.56	0.89	0.45	0.00	0.85	0.04	0.99	0.68	0.74	
Avail Cap(c_a), veh/h	506	1934	600	287	1365	609	477	513	229	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.7	29.3	8.3	41.2	22.9	9.2	43.1	36.8	42.7	46.3	45.4	0.0
Incr Delay (d2), s/veh	0.0	7.4	3.8	26.5	1.1	0.0	10.6	0.0	57.3	1.5	8.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	13.2	3.7	7.8	5.1	0.0	4.8	0.2	9.2	1.6	2.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	36.7	12.1	67.8	24.0	9.2	53.7	36.8	100.0	47.8	53.4	0.0
LnGrp LOS	D	D	B	E	C	A	D	D	F	D	D	
Approach Vol, veh/h		2103			866			595			327	
Approach Delay, s/veh		32.7			36.7			70.9			51.2	
Approach LOS		C			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.3	45.0	12.0	20.6	21.8	45.6	18.2	14.5
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 38	13.6	* 8.9	16.1	* 37	13.8	* 7.9
Max Q Clear Time (g_c+I1), s	2.5	14.8	5.7	16.3	15.9	34.3	11.9	7.4
Green Ext Time (p_c), s	0.0	2.1	0.0	0.0	0.0	1.7	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	41.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1195	200	171	729	305	185
Future Volume (veh/h)	1195	200	171	729	305	185
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1299	217	186	792	332	201
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2028	905	253	2551	501	230
Arrive On Green	0.57	0.57	0.07	0.72	0.15	0.15
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	1299	217	186	792	332	201
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	24.7	6.8	5.3	8.1	9.1	12.4
Cycle Q Clear(g_c), s	24.7	6.8	5.3	8.1	9.1	12.4
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2028	905	253	2551	501	230
V/C Ratio(X)	0.64	0.24	0.73	0.31	0.66	0.87
Avail Cap(c_a), veh/h	2028	905	435	2551	529	243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.5	10.7	45.4	5.1	40.4	41.9
Incr Delay (d2), s/veh	1.6	0.6	1.6	0.3	2.2	25.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.8	2.2	2.2	2.2	4.0	12.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	16.1	11.3	46.9	5.4	42.6	67.5
LnGrp LOS	B	B	D	A	D	E
Approach Vol, veh/h	1516			978	533	
Approach Delay, s/veh	15.4			13.3	52.0	
Approach LOS	B			B	D	

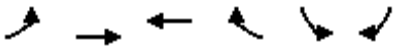
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		78.8		21.2	14.7	64.1
Change Period (Y+Rc), s		7.0		* 6.7	* 7.4	7.0
Max Green Setting (Gmax), s		71.0		* 15	* 13	51.0
Max Q Clear Time (g_c+I1), s		10.1		14.4	7.3	26.7
Green Ext Time (p_c), s		3.1		0.1	0.1	6.1

Intersection Summary		
HCM 6th Ctrl Delay		21.2
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	24	0	962	65	86	96
Future Volume (veh/h)	24	0	962	65	86	96
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	26	0	1046	71	93	104
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	414	0	2521	1124	151	135
Arrive On Green	0.03	0.00	0.71	0.71	0.08	0.08
Sat Flow, veh/h	1781	26	3647	1585	1781	1585
Grp Volume(v), veh/h	26	4.4	1046	71	93	104
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	0.4		12.1	1.4	5.0	6.4
Cycle Q Clear(g_c), s	0.4		12.1	1.4	5.0	6.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	414		2521	1124	151	135
V/C Ratio(X)	0.06		0.41	0.06	0.61	0.77
Avail Cap(c_a), veh/h	565		2521	1124	267	238
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	4.3		6.0	4.4	44.2	44.8
Incr Delay (d2), s/veh	0.0		0.5	0.1	1.5	3.5
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1		3.3	0.4	2.3	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.4		6.5	4.5	45.7	48.3
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h			1117		197	
Approach Delay, s/veh			6.4		47.1	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	8.6	76.9				14.5
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	11.6	56.0				15.0
Max Q Clear Time (g_c+I1), s	2.4	14.1				8.4
Green Ext Time (p_c), s	0.0	3.5				0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	15	15	105	26	0	6	57	33	3	62	6
Future Vol, veh/h	6	15	15	105	26	0	6	57	33	3	62	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	16	16	114	28	0	7	62	36	3	67	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	136	189	37	142	174	49	74	0	0	98	0	0
Stage 1	77	77	-	94	94	-	-	-	-	-	-	-
Stage 2	59	112	-	48	80	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	822	705	1027	814	718	1009	1524	-	-	1493	-	-
Stage 1	923	830	-	902	816	-	-	-	-	-	-	-
Stage 2	946	802	-	959	828	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	700	1027	783	713	1009	1524	-	-	1493	-	-
Mov Cap-2 Maneuver	793	700	-	783	713	-	-	-	-	-	-	-
Stage 1	918	828	-	897	812	-	-	-	-	-	-	-
Stage 2	909	798	-	923	826	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	10.4	0.5	0.3
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1524	-	-	793	833	783	713	1493	-	-
HCM Lane V/C Ratio	0.004	-	-	0.008	0.039	0.146	0.04	0.002	-	-
HCM Control Delay (s)	7.4	-	-	9.6	9.5	10.4	10.3	7.4	-	-
HCM Lane LOS	A	-	-	A	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.5	0.1	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	55	8	10	0	1	61
Future Vol, veh/h	55	8	10	0	1	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	60	9	11	0	1	66

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	11	0	-	0	136	6
Stage 1	-	-	-	-	11	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1607	-	-	-	844	1075
Stage 1	-	-	-	-	1010	-
Stage 2	-	-	-	-	887	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1607	-	-	-	813	1075
Mov Cap-2 Maneuver	-	-	-	-	813	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	SB
HCM Control Delay, s	6.4	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1607	-	-	-	1069
HCM Lane V/C Ratio	0.037	-	-	-	0.063
HCM Control Delay (s)	7.3	-	-	-	8.6
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	1	9	36	2	1	6	23	26	0	17	1
Future Vol, veh/h	8	1	9	36	2	1	6	23	26	0	17	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	10	39	2	1	7	25	28	0	18	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	74	86	19	77	72	39	19	0	0	53	0	0
Stage 1	19	19	-	53	53	-	-	-	-	-	-	-
Stage 2	55	67	-	24	19	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	916	804	1059	912	818	1033	1597	-	-	1553	-	-
Stage 1	1000	880	-	960	851	-	-	-	-	-	-	-
Stage 2	957	839	-	994	880	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	910	800	1059	899	814	1033	1597	-	-	1553	-	-
Mov Cap-2 Maneuver	910	800	-	899	814	-	-	-	-	-	-	-
Stage 1	995	880	-	955	847	-	-	-	-	-	-	-
Stage 2	949	835	-	984	880	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.8	9.2	0.8	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	971	897	1553	-	-
HCM Lane V/C Ratio	0.004	-	-	0.02	0.047	-	-	-
HCM Control Delay (s)	7.3	0	-	8.8	9.2	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

2026 BACKGROUND PLUS PROJECT

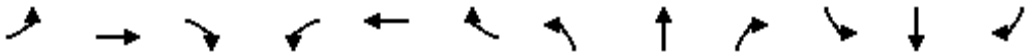
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Future Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	134	38	0	8	34	245	23	2	410	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	744	751	411	807	741	257	412	0	0	268	0	0
Stage 1	415	415	-	325	325	-	-	-	-	-	-	-
Stage 2	329	336	-	482	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	331	340	641	300	344	782	1147	-	-	1296	-	-
Stage 1	615	592	-	687	649	-	-	-	-	-	-	-
Stage 2	684	642	-	565	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	327	641	231	331	782	1147	-	-	1296	-	-
Mov Cap-2 Maneuver	319	327	-	231	331	-	-	-	-	-	-	-
Stage 1	593	591	-	663	626	-	-	-	-	-	-	-
Stage 2	654	620	-	446	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	21.6	0.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	608	262	1296	-	-
HCM Lane V/C Ratio	0.029	-	-	0.232	0.174	0.002	-	-
HCM Control Delay (s)	8.2	0	-	12.7	21.6	7.8	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.6	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	3
Future Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	5	163	153	2	89	48	213	13	148	423	3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	13	422	466	10	425	366	577	35	512	614	4
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1306	47	1545	1217	35	1555	961	1745	106	1155	1855	13
Grp Volume(v), veh/h	3	0	168	153	0	91	48	0	226	148	0	426
Grp Sat Flow(s),veh/h/ln	1306	0	1592	1217	0	1590	961	0	1851	1155	0	1868
Q Serve(g_s), s	0.1	0.0	2.6	3.5	0.0	1.3	1.4	0.0	2.8	3.4	0.0	6.0
Cycle Q Clear(g_c), s	1.4	0.0	2.6	6.1	0.0	1.3	7.4	0.0	2.8	6.2	0.0	6.0
Prop In Lane	1.00		0.97	1.00		0.98	1.00		0.06	1.00		0.01
Lane Grp Cap(c), veh/h	537	0	435	466	0	434	366	0	612	512	0	618
V/C Ratio(X)	0.01	0.00	0.39	0.33	0.00	0.21	0.13	0.00	0.37	0.29	0.00	0.69
Avail Cap(c_a), veh/h	1171	0	1209	1058	0	1208	841	0	1528	1083	0	1542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.0	0.0	8.9	11.4	0.0	8.5	12.0	0.0	7.7	10.1	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.7	0.0	0.3	0.2	0.0	0.7	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	9.2	11.6	0.0	8.6	12.0	0.0	7.9	10.2	0.0	9.3
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		171			244			274			574	
Approach Delay, s/veh		9.2			10.5			8.6			9.5	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.0		14.3		16.0		14.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0		23.0		25.0		23.0				
Max Q Clear Time (g_c+I1), s		9.4		4.6		8.2		8.1				
Green Ext Time (p_c), s		0.7		0.5		1.4		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Future Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
Arrive On Green	0.10	0.32	0.32	0.21	0.43	0.43	0.08	0.08	0.08	0.12	0.25	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1290	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1290	1870	1585	1781	1870	1585
Q Serve(g_s), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Cycle Q Clear(g_c), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
V/C Ratio(X)	0.81	0.81	0.14	0.39	0.57	0.14	0.42	0.49	0.62	0.84	0.22	
Avail Cap(c_a), veh/h	467	1619	502	476	1529	682	219	213	181	285	625	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.9	31.3	24.4	30.9	21.5	17.3	45.2	44.4	16.9	43.2	29.6	0.0
Incr Delay (d2), s/veh	5.9	4.4	0.6	0.2	1.5	0.4	0.6	1.0	1.9	14.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.5	1.2	3.4	7.2	1.4	1.8	1.7	1.8	5.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	35.7	25.0	31.1	23.0	17.7	45.9	45.4	18.8	58.0	29.7	0.0
LnGrp LOS	D	D	C	C	C	B	D	D	B	E	C	
Approach Vol, veh/h		1663			1147			216			279	
Approach Delay, s/veh		37.7			23.9			36.4			47.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	50.3	17.7	15.2	28.1	39.0		32.9
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 14	* 32	16.0	11.4	* 14	* 32		33.4
Max Q Clear Time (g_c+I1), s	10.2	20.4	11.6	7.5	4.6	25.4		6.4
Green Ext Time (p_c), s	0.2	2.7	0.2	0.1	0.0	2.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Future Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
Arrive On Green	0.14	0.26	0.26	0.26	0.37	0.37	0.15	0.18	0.18	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
V/C Ratio(X)	0.14	0.99	0.90	0.94	0.58	0.02	0.93	0.10	0.62	0.31	0.68	
Avail Cap(c_a), veh/h	487	1335	415	465	1329	593	511	635	283	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	36.8	35.6	36.2	25.1	11.0	42.1	34.3	37.9	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.0	23.0	24.7	27.4	1.9	0.1	23.9	0.0	3.1	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.8	11.4	13.2	7.1	0.2	7.4	0.6	4.2	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	59.8	60.4	63.6	27.0	11.1	66.0	34.3	41.0	48.3	48.1	0.0
LnGrp LOS	D	E	E	E	C	B	E	C	D	D	D	
Approach Vol, veh/h		1766			1225			715			177	
Approach Delay, s/veh		59.1			39.9			57.1			48.1	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	44.0	9.2	25.0	31.9	33.9	21.0	13.2
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 37	13.6	* 9.9	26.1	* 26	* 15	7.9
Max Q Clear Time (g_c+I1), s	13.7	19.5	2.9	12.3	26.0	27.9	15.6	6.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Future Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1350	602	263	1428	637	446	248	211	460	486	217
Arrive On Green	0.05	0.38	0.38	0.08	0.40	0.40	0.13	0.13	0.13	0.13	0.14	0.14
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	3.5	25.0	15.9	5.6	14.9	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Cycle Q Clear(g_c), s	3.5	25.0	15.9	5.6	14.9	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1350	602	263	1428	637	446	248	211	460	486	217
V/C Ratio(X)	0.67	0.76	0.54	0.74	0.50	0.56	0.85	0.47	0.85	1.01	0.30	0.80
Avail Cap(c_a), veh/h	435	1350	602	435	1428	637	529	286	243	460	486	217
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	27.0	24.2	45.2	22.3	23.1	42.6	40.1	42.4	43.3	38.8	41.9
Incr Delay (d2), s/veh	1.5	4.0	3.4	1.6	1.2	3.6	9.8	0.5	20.2	44.9	0.1	17.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.4	6.4	2.3	5.9	7.0	5.2	2.7	5.5	8.5	1.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	30.9	27.6	46.8	23.6	26.7	52.4	40.6	62.6	88.3	39.0	59.7
LnGrp LOS	D	C	C	D	C	C	D	D	E	F	D	E
Approach Vol, veh/h		1469			1262			677			784	
Approach Delay, s/veh		31.6			28.1			53.1			72.8	
Approach LOS		C			C			D			E	

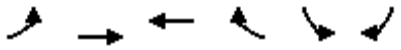
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	47.2	20.0	20.0	15.0	45.0	19.6	20.4
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	31.0	* 13	* 15	* 13	31.0	* 15	* 13
Max Q Clear Time (g_c+I1), s	5.5	19.5	15.3	13.1	7.6	27.0	12.8	12.6
Green Ext Time (p_c), s	0.1	2.6	0.0	0.2	0.1	1.9	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	41.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	0	951	408	427	258
Future Volume (veh/h)	224	0	951	408	427	258
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	0	1034	443	464	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	379	0	1564	697	445	396
Arrive On Green	0.13	0.00	0.44	0.44	0.25	0.25
Sat Flow, veh/h	1781	243	3647	1585	1781	1585
Grp Volume(v), veh/h	243	38.0	1034	443	464	280
Grp Sat Flow(s),veh/h/ln	1781	D	1777	1585	1781	1585
Q Serve(g_s), s	4.2		23.0	21.7	25.0	16.1
Cycle Q Clear(g_c), s	4.2		23.0	21.7	25.0	16.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	379		1564	697	445	396
V/C Ratio(X)	0.64		0.66	0.64	1.04	0.71
Avail Cap(c_a), veh/h	379		1564	697	445	396
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1		22.1	21.8	37.5	34.2
Incr Delay (d2), s/veh	2.8		2.2	4.4	54.0	4.9
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3		9.1	8.1	17.3	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.0		24.3	26.1	91.5	39.0
LnGrp LOS	D		C	C	F	D
Approach Vol, veh/h			1477		744	
Approach Delay, s/veh			24.9		71.7	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	19.0	50.0				31.0
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	44.0				25.0
Max Q Clear Time (g_c+I1), s	6.2	25.0				27.0
Green Ext Time (p_c), s	0.1	3.6				0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Future Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	8	37	80	9	1	12	550	112	0	603	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	957	1339	351	936	1332	331	702	0	0	662	0	0
Stage 1	653	653	-	630	630	-	-	-	-	-	-	-
Stage 2	304	686	-	306	702	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	212	152	645	220	153	665	891	-	-	922	-	-
Stage 1	423	462	-	436	473	-	-	-	-	-	-	-
Stage 2	681	446	-	679	439	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	200	150	645	197	151	665	891	-	-	922	-	-
Mov Cap-2 Maneuver	200	150	-	197	151	-	-	-	-	-	-	-
Stage 1	418	462	-	430	467	-	-	-	-	-	-	-
Stage 2	658	440	-	630	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.1	34.5	0.2	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	891	-	-	200	413	197	165	922	-	-
HCM Lane V/C Ratio	0.013	-	-	0.364	0.108	0.408	0.059	-	-	-
HCM Control Delay (s)	9.1	-	-	33	14.8	35.3	28.2	0	-	-
HCM Lane LOS	A	-	-	D	B	E	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	0.4	1.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	424	151	147	0	0	500
Future Vol, veh/h	424	151	147	0	0	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	164	160	0	0	543

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	1164	80
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	1004	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1417	-	-	-	188	964
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1417	-	-	-	127	964
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	315	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1417	-	-	-	964
HCM Lane V/C Ratio	0.325	-	-	-	0.564
HCM Control Delay (s)	8.8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.4	-	-	-	3.6

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	88	187	1	0	5	141	141	0	106	2
Future Vol, veh/h	0	0	88	187	1	0	5	141	141	0	106	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	5	153	153	0	115	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	356	432	116	404	357	230	117	0	0	306	0	0
Stage 1	116	116	-	240	240	-	-	-	-	-	-	-
Stage 2	240	316	-	164	117	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	599	516	936	557	569	809	1471	-	-	1255	-	-
Stage 1	889	800	-	763	707	-	-	-	-	-	-	-
Stage 2	763	655	-	838	799	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	596	514	936	499	567	809	1471	-	-	1255	-	-
Mov Cap-2 Maneuver	596	514	-	499	567	-	-	-	-	-	-	-
Stage 1	885	800	-	760	704	-	-	-	-	-	-	-
Stage 2	759	652	-	752	799	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	17.1	0.1	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	936	499	1255	-	-
HCM Lane V/C Ratio	0.004	-	-	0.102	0.41	-	-	-
HCM Control Delay (s)	7.5	0	-	9.3	17.1	0	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	2	0	-	-

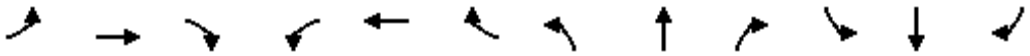
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	4	0	80	33	0	11	87	352	51	7	390	7
Future Vol, veh/h	4	0	80	33	0	11	87	352	51	7	390	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	87	36	0	12	95	383	55	8	424	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1051	1072	428	1089	1049	411	432	0	0	438	0	0
Stage 1	444	444	-	601	601	-	-	-	-	-	-	-
Stage 2	607	628	-	488	448	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	220	627	193	227	641	1128	-	-	1122	-	-
Stage 1	593	575	-	487	489	-	-	-	-	-	-	-
Stage 2	483	476	-	561	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	194	627	151	200	641	1128	-	-	1122	-	-
Mov Cap-2 Maneuver	183	194	-	151	200	-	-	-	-	-	-	-
Stage 1	527	571	-	432	434	-	-	-	-	-	-	-
Stage 2	421	423	-	480	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	30.7	1.5	0.1
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1128	-	-	562	187	1122	-	-
HCM Lane V/C Ratio	0.084	-	-	0.162	0.256	0.007	-	-
HCM Control Delay (s)	8.5	0	-	12.6	30.7	8.2	-	-
HCM Lane LOS	A	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	4	114	145	5	92	115	406	167	119	384	9
Future Volume (veh/h)	2	4	114	145	5	92	115	406	167	119	384	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	4	124	158	5	100	125	441	182	129	417	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	341	11	349	320	17	344	549	722	298	395	1044	25
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1289	50	1543	1262	76	1521	961	1258	519	801	1819	44
Grp Volume(v), veh/h	2	0	128	158	0	105	125	0	623	129	0	427
Grp Sat Flow(s),veh/h/ln	1289	0	1593	1262	0	1597	961	0	1777	801	0	1863
Q Serve(g_s), s	0.1	0.0	4.1	7.2	0.0	3.3	5.0	0.0	13.8	7.6	0.0	7.6
Cycle Q Clear(g_c), s	3.3	0.0	4.1	11.3	0.0	3.3	12.6	0.0	13.8	21.4	0.0	7.6
Prop In Lane	1.00		0.97	1.00		0.95	1.00		0.29	1.00		0.02
Lane Grp Cap(c), veh/h	341	0	360	320	0	361	549	0	1020	395	0	1069
V/C Ratio(X)	0.01	0.00	0.36	0.49	0.00	0.29	0.23	0.00	0.61	0.33	0.00	0.40
Avail Cap(c_a), veh/h	501	0	557	476	0	559	549	0	1020	395	0	1069
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	20.6	0.0	19.5	24.3	0.0	19.2	10.5	0.0	8.4	15.4	0.0	7.1
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.4	0.0	0.2	1.0	0.0	2.7	2.2	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.4	2.0	0.0	1.1	1.1	0.0	4.8	1.5	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.6	0.0	19.8	24.7	0.0	19.4	11.5	0.0	11.1	17.6	0.0	8.2
LnGrp LOS	C	A	B	C	A	B	B	A	B	B	A	A
Approach Vol, veh/h		130			263			748			556	
Approach Delay, s/veh		19.8			22.6			11.2			10.4	
Approach LOS		B			C			B			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		40.4		19.6		40.4		19.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		27.0		21.0		27.0		21.0				
Max Q Clear Time (g_c+I1), s		15.8		6.1		23.4		13.3				
Green Ext Time (p_c), s		2.1		0.3		0.7		0.3				

Intersection Summary												
HCM 6th Ctrl Delay			13.3									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	456	2029	61	237	953	189	118	184	178	185	122	251
Future Volume (veh/h)	456	2029	61	237	953	189	118	184	178	185	122	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	496	2205	66	258	1036	205	128	200	193	201	133	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	550	2242	696	563	2019	900	200	209	177	208	521	
Arrive On Green	0.16	0.44	0.44	0.28	0.57	0.57	0.11	0.11	0.11	0.12	0.28	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1257	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	496	2205	66	258	1036	205	128	200	193	201	133	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1257	1870	1585	1781	1870	1585
Q Serve(g_s), s	16.9	51.2	2.9	9.7	21.3	7.7	12.1	12.8	10.1	13.5	6.6	0.0
Cycle Q Clear(g_c), s	16.9	51.2	2.9	9.7	21.3	7.7	12.1	12.8	10.1	13.5	6.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	550	2242	696	563	2019	900	200	209	177	208	521	
V/C Ratio(X)	0.90	0.98	0.09	0.46	0.51	0.23	0.64	0.96	1.09	0.97	0.26	
Avail Cap(c_a), veh/h	590	2242	696	563	2019	900	200	209	177	208	521	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	49.5	33.2	19.7	33.3	15.8	12.9	52.7	53.0	30.0	52.8	33.6	0.0
Incr Delay (d2), s/veh	15.7	15.5	0.3	0.2	0.9	0.6	5.2	49.7	93.9	52.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.2	22.5	1.1	5.8	8.0	2.9	4.1	8.9	8.5	9.1	3.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.2	48.7	20.0	33.5	16.7	13.4	57.9	102.8	123.9	105.6	33.7	0.0
LnGrp LOS	E	D	B	C	B	B	E	F	F	F	C	
Approach Vol, veh/h		2767			1499			521			334	
Approach Delay, s/veh		51.0			19.2			99.6			77.0	
Approach LOS		D			B			F			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	25.6	75.5	20.0	21.0	41.1	60.0		41.0
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 21	* 45	14.0	13.4	* 13	* 53		33.4
Max Q Clear Time (g_c+I1), s	18.9	23.3	15.5	14.8	11.7	53.2		8.6
Green Ext Time (p_c), s	0.2	4.1	0.0	0.0	0.0	0.0		0.3

Intersection Summary	
HCM 6th Ctrl Delay	48.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	2051	407	252	1069	1	419	17	240	121	179	478
Future Volume (veh/h)	19	2051	407	252	1069	1	419	17	240	121	179	478
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	2229	442	274	1162	1	455	18	261	132	195	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1529	3919	1217	269	1670	745	455	504	225	186	234	
Arrive On Green	0.44	0.77	0.77	0.15	0.47	0.47	0.13	0.14	0.14	0.05	0.07	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	21	2229	442	274	1162	1	455	18	261	132	195	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.4	21.6	10.8	18.1	30.9	0.1	15.8	0.5	17.0	4.5	6.5	0.0
Cycle Q Clear(g_c), s	0.4	21.6	10.8	18.1	30.9	0.1	15.8	0.5	17.0	4.5	6.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1529	3919	1217	269	1670	745	455	504	225	186	234	
V/C Ratio(X)	0.01	0.57	0.36	1.02	0.70	0.00	1.00	0.04	1.16	0.71	0.83	
Avail Cap(c_a), veh/h	1529	3919	1217	269	1670	745	455	504	225	392	234	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.8	5.8	4.5	51.0	25.0	30.1	52.1	44.4	51.5	55.8	55.4	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.8	60.1	2.4	0.0	42.2	0.0	110.0	1.9	20.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	5.5	3.3	12.2	12.5	0.0	9.5	0.2	13.6	2.0	3.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	6.4	5.3	111.0	27.5	30.1	94.3	44.4	161.5	57.7	76.3	0.0
LnGrp LOS	B	A	A	F	C	C	F	D	F	E	E	
Approach Vol, veh/h		2692			1437			734			327	
Approach Delay, s/veh		6.3			43.4			117.0			68.8	
Approach LOS		A			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	63.0	12.9	24.1	24.0	101.0	22.0	15.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 56	13.6	* 11	18.1	* 53	* 16	7.9
Max Q Clear Time (g_c+I1), s	12.4	32.9	6.5	19.0	20.1	23.6	17.8	8.5
Green Ext Time (p_c), s	0.0	4.6	0.0	0.0	0.0	13.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	36.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	1434	232	202	890	410	346	135	231	258	112	136
Future Volume (veh/h)	168	1434	232	202	890	410	346	135	231	258	112	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	1559	252	220	967	446	376	147	251	280	122	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	239	1667	743	276	1704	760	383	228	193	338	386	172
Arrive On Green	0.07	0.47	0.47	0.08	0.48	0.48	0.11	0.12	0.12	0.10	0.11	0.11
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	183	1559	252	220	967	446	376	147	251	280	122	148
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	6.2	49.8	12.0	7.5	23.3	24.5	13.0	9.0	14.6	9.5	3.8	11.0
Cycle Q Clear(g_c), s	6.2	49.8	12.0	7.5	23.3	24.5	13.0	9.0	14.6	9.5	3.8	11.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	239	1667	743	276	1704	760	383	228	193	338	386	172
V/C Ratio(X)	0.77	0.94	0.34	0.80	0.57	0.59	0.98	0.65	1.30	0.83	0.32	0.86
Avail Cap(c_a), veh/h	363	1667	743	363	1704	760	383	228	193	383	394	176
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.9	30.1	20.1	54.3	22.3	22.6	53.2	50.2	52.7	53.2	49.4	52.6
Incr Delay (d2), s/veh	2.1	11.3	1.2	6.6	1.4	3.3	40.9	4.8	167.7	12.8	0.2	30.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	21.9	4.7	3.4	9.3	9.7	7.9	4.5	14.8	4.7	1.7	5.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.0	41.4	21.4	60.9	23.7	25.9	94.1	55.1	220.3	66.0	49.5	83.1
LnGrp LOS	E	D	C	E	C	C	F	E	F	E	D	F
Approach Vol, veh/h		1994			1633			774			550	
Approach Delay, s/veh		40.3			29.3			127.6			67.0	
Approach LOS		D			C			F			E	

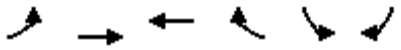
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	64.6	18.4	21.3	17.0	63.3	20.0	19.7
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	53.0	* 13	* 13	* 13	53.0	* 13	* 13
Max Q Clear Time (g_c+I1), s	8.2	26.5	11.5	16.6	9.5	51.8	15.0	13.0
Green Ext Time (p_c), s	0.1	4.7	0.2	0.0	0.1	0.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	53.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	0	1108	264	337	241
Future Volume (veh/h)	133	0	1108	264	337	241
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	0	1204	287	366	262
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	277	0	2055	916	395	352
Arrive On Green	0.05	0.00	0.58	0.58	0.22	0.22
Sat Flow, veh/h	1781	145	3647	1585	1781	1585
Grp Volume(v), veh/h	145	14.4	1204	287	366	262
Grp Sat Flow(s),veh/h/ln	1781	B	1777	1585	1781	1585
Q Serve(g_s), s	4.0		25.9	11.2	24.1	18.5
Cycle Q Clear(g_c), s	4.0		25.9	11.2	24.1	18.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	277		2055	916	395	352
V/C Ratio(X)	0.52		0.59	0.31	0.93	0.74
Avail Cap(c_a), veh/h	485		2055	916	490	436
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	13.8		16.1	13.0	45.7	43.5
Incr Delay (d2), s/veh	0.6		1.2	0.9	19.3	3.8
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4		9.7	3.8	12.7	7.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.4		17.4	13.9	65.0	47.4
LnGrp LOS	B		B	B	E	D
Approach Vol, veh/h			1491		628	
Approach Delay, s/veh			16.7		57.6	
Approach LOS			B		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	12.0	75.4				32.6
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	20.0	49.0				33.0
Max Q Clear Time (g_c+I1), s	6.0	27.9				26.1
Green Ext Time (p_c), s	0.1	4.2				0.5

Intersection Summary	
HCM 6th Ctrl Delay	27.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	15	15	179	26	0	6	223	111	3	202	6
Future Vol, veh/h	6	15	15	179	26	0	6	223	111	3	202	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	16	16	195	28	0	7	242	121	3	220	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	379	607	114	441	550	182	227	0	0	363	0	0
Stage 1	230	230	-	317	317	-	-	-	-	-	-	-
Stage 2	149	377	-	124	233	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	553	409	917	500	441	829	1339	-	-	1192	-	-
Stage 1	752	713	-	669	653	-	-	-	-	-	-	-
Stage 2	838	614	-	867	711	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	523	406	917	474	437	829	1339	-	-	1192	-	-
Mov Cap-2 Maneuver	523	406	-	474	437	-	-	-	-	-	-	-
Stage 1	748	711	-	666	650	-	-	-	-	-	-	-
Stage 2	797	611	-	830	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	17.3	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1339	-	-	523	563	474	437	1192	-	-
HCM Lane V/C Ratio	0.005	-	-	0.012	0.058	0.41	0.065	0.003	-	-
HCM Control Delay (s)	7.7	-	-	12	11.8	17.8	13.8	8	-	-
HCM Lane LOS	A	-	-	B	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	2	0.2	0	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	157	79	76	0	1	135
Future Vol, veh/h	157	79	76	0	1	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	86	83	0	1	147

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	83	0	-	0	468	42
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1512	-	-	-	524	1019
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1512	-	-	-	465	1019
Mov Cap-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	1010
HCM Lane V/C Ratio	0.113	-	-	-	0.146
HCM Control Delay (s)	7.7	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.5

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	1	9	73	2	1	6	71	74	0	54	1
Future Vol, veh/h	8	1	9	73	2	1	6	71	74	0	54	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	10	79	2	1	7	77	80	0	59	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	193	231	60	196	191	117	60	0	0	157	0	0
Stage 1	60	60	-	131	131	-	-	-	-	-	-	-
Stage 2	133	171	-	65	60	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	767	669	1005	763	704	935	1544	-	-	1423	-	-
Stage 1	951	845	-	873	788	-	-	-	-	-	-	-
Stage 2	870	757	-	946	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	762	666	1005	752	700	935	1544	-	-	1423	-	-
Mov Cap-2 Maneuver	762	666	-	752	700	-	-	-	-	-	-	-
Stage 1	946	845	-	869	784	-	-	-	-	-	-	-
Stage 2	862	753	-	936	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.4	0.3	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	859	752	1423	-	-
HCM Lane V/C Ratio	0.004	-	-	0.023	0.11	-	-	-
HCM Control Delay (s)	7.3	0	-	9.3	10.4	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-	-

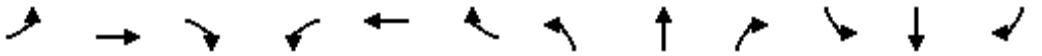
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Future Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	134	38	0	8	34	245	23	2	410	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	744	751	411	807	741	257	412	0	0	268	0	0
Stage 1	415	415	-	325	325	-	-	-	-	-	-	-
Stage 2	329	336	-	482	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	331	340	641	300	344	782	1147	-	-	1296	-	-
Stage 1	615	592	-	687	649	-	-	-	-	-	-	-
Stage 2	684	642	-	565	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	327	641	231	331	782	1147	-	-	1296	-	-
Mov Cap-2 Maneuver	319	327	-	231	331	-	-	-	-	-	-	-
Stage 1	593	591	-	663	626	-	-	-	-	-	-	-
Stage 2	654	620	-	446	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	21.6	0.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	608	262	1296	-	-
HCM Lane V/C Ratio	0.029	-	-	0.232	0.174	0.002	-	-
HCM Control Delay (s)	8.2	0	-	12.7	21.6	7.8	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.6	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Future Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	5	163	153	2	89	48	213	13	148	423	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	13	424	466	10	426	367	579	35	512	619	1
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1306	47	1545	1217	35	1555	963	1745	106	1155	1865	4
Grp Volume(v), veh/h	3	0	168	153	0	91	48	0	226	148	0	424
Grp Sat Flow(s),veh/h/ln	1306	0	1592	1217	0	1590	963	0	1851	1155	0	1870
Q Serve(g_s), s	0.1	0.0	2.6	3.6	0.0	1.3	1.4	0.0	2.8	3.4	0.0	6.0
Cycle Q Clear(g_c), s	1.4	0.0	2.6	6.2	0.0	1.3	7.4	0.0	2.8	6.2	0.0	6.0
Prop In Lane	1.00		0.97	1.00		0.98	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	537	0	437	466	0	436	367	0	615	512	0	621
V/C Ratio(X)	0.01	0.00	0.38	0.33	0.00	0.21	0.13	0.00	0.37	0.29	0.00	0.68
Avail Cap(c_a), veh/h	1593	0	1724	1450	0	1722	1470	0	2734	1834	0	2761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	9.0	11.5	0.0	8.5	12.0	0.0	7.7	10.1	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.7	0.0	0.3	0.2	0.0	0.7	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	9.2	11.6	0.0	8.6	12.0	0.0	7.9	10.2	0.0	9.3
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		171			244			274			572	
Approach Delay, s/veh		9.2			10.5			8.6			9.5	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.1		14.4		16.1		14.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0				
Max Q Clear Time (g_c+I1), s		9.4		4.6		8.2		8.2				
Green Ext Time (p_c), s		0.8		0.5		1.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Future Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
Arrive On Green	0.10	0.32	0.32	0.21	0.43	0.43	0.08	0.08	0.08	0.12	0.25	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1290	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1290	1870	1585	1781	1870	1585
Q Serve(g_s), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Cycle Q Clear(g_c), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
V/C Ratio(X)	0.81	0.81	0.14	0.39	0.57	0.14	0.42	0.49	0.62	0.84	0.22	
Avail Cap(c_a), veh/h	467	1619	502	476	1529	682	219	213	181	285	625	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.9	31.3	24.4	30.9	21.5	17.3	45.2	44.4	16.9	43.2	29.6	0.0
Incr Delay (d2), s/veh	5.9	4.4	0.6	0.2	1.5	0.4	0.6	1.0	1.9	14.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.5	1.2	3.4	7.2	1.4	1.8	1.7	1.8	5.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	35.7	25.0	31.1	23.0	17.7	45.9	45.4	18.8	58.0	29.7	0.0
LnGrp LOS	D	D	C	C	C	B	D	D	B	E	C	
Approach Vol, veh/h		1663			1147			216			279	
Approach Delay, s/veh		37.7			23.9			36.4			47.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	50.3	17.7	15.2	28.1	39.0		32.9
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 14	* 32	16.0	11.4	* 14	* 32		33.4
Max Q Clear Time (g_c+I1), s	10.2	20.4	11.6	7.5	4.6	25.4		6.4
Green Ext Time (p_c), s	0.2	2.7	0.2	0.1	0.0	2.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Future Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
Arrive On Green	0.14	0.26	0.26	0.26	0.37	0.37	0.15	0.18	0.18	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
V/C Ratio(X)	0.14	0.99	0.90	0.94	0.58	0.02	0.93	0.10	0.62	0.31	0.68	
Avail Cap(c_a), veh/h	487	1335	415	465	1329	593	511	635	283	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	36.8	35.6	36.2	25.1	11.0	42.1	34.3	37.9	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.0	23.0	24.7	27.4	1.9	0.1	23.9	0.0	3.1	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.8	11.4	13.2	7.1	0.2	7.4	0.6	4.2	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	59.8	60.4	63.6	27.0	11.1	66.0	34.3	41.0	48.3	48.1	0.0
LnGrp LOS	D	E	E	E	C	B	E	C	D	D	D	
Approach Vol, veh/h		1766			1225			715			177	
Approach Delay, s/veh		59.1			39.9			57.1			48.1	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	44.0	9.2	25.0	31.9	33.9	21.0	13.2
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 37	13.6	* 9.9	26.1	* 26	* 15	7.9
Max Q Clear Time (g_c+I1), s	13.7	19.5	2.9	12.3	26.0	27.9	15.6	6.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Future Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
Arrive On Green	0.05	0.38	0.38	0.08	0.40	0.40	0.13	0.13	0.13	0.13	0.14	0.14
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Cycle Q Clear(g_c), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
V/C Ratio(X)	0.67	0.75	0.54	0.74	0.49	0.56	0.86	0.48	0.86	1.01	0.30	0.81
Avail Cap(c_a), veh/h	435	1355	605	435	1433	639	460	249	211	460	485	216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	26.8	24.1	45.2	22.2	23.0	42.7	40.2	42.6	43.3	38.9	41.9
Incr Delay (d2), s/veh	1.5	3.9	3.4	1.6	1.2	3.5	13.8	0.5	27.7	44.9	0.1	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	6.4	2.3	5.9	7.0	5.4	2.7	5.9	8.5	1.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	30.7	27.4	46.8	23.4	26.6	56.5	40.8	70.2	88.3	39.0	60.2
LnGrp LOS	D	C	C	D	C	C	E	D	E	F	D	E
Approach Vol, veh/h		1469			1262			677			784	
Approach Delay, s/veh		31.5			28.0			57.4			72.9	
Approach LOS		C			C			E			E	

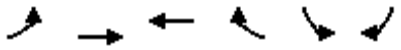
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	47.3	20.0	19.8	15.0	45.1	19.5	20.3
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	33.0	* 13	* 13	* 13	33.0	* 13	* 13
Max Q Clear Time (g_c+I1), s	5.5	19.5	15.3	13.1	7.6	26.9	12.8	12.6
Green Ext Time (p_c), s	0.1	2.8	0.0	0.0	0.1	2.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	0	951	408	427	258
Future Volume (veh/h)	224	0	951	408	427	258
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	0	1034	443	464	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	379	0	1564	697	445	396
Arrive On Green	0.13	0.00	0.44	0.44	0.25	0.25
Sat Flow, veh/h	1781	243	3647	1585	1781	1585
Grp Volume(v), veh/h	243	38.0	1034	443	464	280
Grp Sat Flow(s),veh/h/ln	1781	D	1777	1585	1781	1585
Q Serve(g_s), s	4.2		23.0	21.7	25.0	16.1
Cycle Q Clear(g_c), s	4.2		23.0	21.7	25.0	16.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	379		1564	697	445	396
V/C Ratio(X)	0.64		0.66	0.64	1.04	0.71
Avail Cap(c_a), veh/h	379		1564	697	445	396
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1		22.1	21.8	37.5	34.2
Incr Delay (d2), s/veh	2.8		2.2	4.4	54.0	4.9
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3		9.1	8.1	17.3	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.0		24.3	26.1	91.5	39.0
LnGrp LOS	D		C	C	F	D
Approach Vol, veh/h			1477		744	
Approach Delay, s/veh			24.9		71.7	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	19.0	50.0				31.0
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	44.0				25.0
Max Q Clear Time (g_c+I1), s	6.2	25.0				27.0
Green Ext Time (p_c), s	0.1	3.6				0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Future Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	8	37	80	9	1	12	550	112	0	603	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	957	1227	351	880	1276	275	702	0	-	550	0	0
Stage 1	653	653	-	574	574	-	-	-	-	-	-	-
Stage 2	304	574	-	306	702	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	212	177	645	241	165	722	891	-	0	1016	-	-
Stage 1	423	462	-	471	501	-	-	-	0	-	-	-
Stage 2	681	501	-	679	439	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	201	175	645	217	163	722	891	-	-	1016	-	-
Mov Cap-2 Maneuver	201	175	-	217	163	-	-	-	-	-	-	-
Stage 1	418	462	-	465	494	-	-	-	-	-	-	-
Stage 2	659	494	-	630	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.6	30.5	0.2	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	891	-	201	442	217	178	1016	-	-
HCM Lane V/C Ratio	0.013	-	0.362	0.101	0.371	0.055	-	-	-
HCM Control Delay (s)	9.1	-	32.7	14.1	31	26.4	0	-	-
HCM Lane LOS	A	-	D	B	D	D	A	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.3	1.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	424	151	147	0	0	500
Future Vol, veh/h	424	151	147	0	0	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	164	160	0	0	543

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	1164	80
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	1004	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1417	-	-	-	188	964
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1417	-	-	-	127	964
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	315	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1417	-	-	-	964
HCM Lane V/C Ratio	0.325	-	-	-	0.564
HCM Control Delay (s)	8.8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.4	-	-	-	3.6

Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Future Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	61	153	153	0	179	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	532	608	180	580	533	230	181	0	0	306	0	0
Stage 1	180	180	-	352	352	-	-	-	-	-	-	-
Stage 2	352	428	-	228	181	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	458	410	863	426	453	809	1394	-	-	1255	-	-
Stage 1	822	750	-	665	632	-	-	-	-	-	-	-
Stage 2	665	585	-	775	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	388	863	363	429	809	1394	-	-	1255	-	-
Mov Cap-2 Maneuver	438	388	-	363	429	-	-	-	-	-	-	-
Stage 1	778	750	-	629	598	-	-	-	-	-	-	-
Stage 2	628	553	-	689	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	27	1.3	0
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	863	363	1255	-	-
HCM Lane V/C Ratio	0.044	-	-	0.111	0.563	-	-	-
HCM Control Delay (s)	7.7	0	-	9.7	27	0	-	-
HCM Lane LOS	A	A	-	A	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	3.3	0	-	-

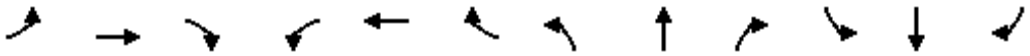
Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	4	0	80	33	0	11	87	352	51	7	390	7
Future Vol, veh/h	4	0	80	33	0	11	87	352	51	7	390	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	200	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	87	36	0	12	95	383	55	8	424	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1051	1072	428	1089	1049	411	432	0	0	438	0	0
Stage 1	444	444	-	601	601	-	-	-	-	-	-	-
Stage 2	607	628	-	488	448	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	205	220	627	193	227	641	1128	-	-	1122	-	-
Stage 1	593	575	-	487	489	-	-	-	-	-	-	-
Stage 2	483	476	-	561	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	183	194	627	151	200	641	1128	-	-	1122	-	-
Mov Cap-2 Maneuver	183	194	-	151	200	-	-	-	-	-	-	-
Stage 1	527	571	-	432	434	-	-	-	-	-	-	-
Stage 2	421	423	-	480	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	30.7	1.5	0.1
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1128	-	-	562	187	1122	-	-
HCM Lane V/C Ratio	0.084	-	-	0.162	0.256	0.007	-	-
HCM Control Delay (s)	8.5	0	-	12.6	30.7	8.2	-	-
HCM Lane LOS	A	A	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.6	1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	4	114	145	5	92	115	406	167	119	384	4
Future Volume (veh/h)	2	4	114	145	5	92	115	406	167	119	384	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	4	124	158	5	100	125	441	182	129	417	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	398	12	366	377	18	360	495	620	256	338	911	9
Arrive On Green	0.24	0.24	0.24	0.24	0.24	0.24	0.49	0.49	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1289	50	1543	1262	76	1521	966	1258	519	801	1849	18
Grp Volume(v), veh/h	2	0	128	158	0	105	125	0	623	129	0	421
Grp Sat Flow(s),veh/h/ln	1289	0	1593	1262	0	1597	966	0	1777	801	0	1867
Q Serve(g_s), s	0.1	0.0	3.0	5.3	0.0	2.4	4.3	0.0	12.2	6.7	0.0	6.6
Cycle Q Clear(g_c), s	2.4	0.0	3.0	8.2	0.0	2.4	10.9	0.0	12.2	18.8	0.0	6.6
Prop In Lane	1.00		0.97	1.00		0.95	1.00		0.29	1.00		0.01
Lane Grp Cap(c), veh/h	398	0	377	377	0	378	495	0	875	338	0	920
V/C Ratio(X)	0.01	0.00	0.34	0.42	0.00	0.28	0.25	0.00	0.71	0.38	0.00	0.46
Avail Cap(c_a), veh/h	703	0	754	676	0	756	607	0	1081	430	0	1136
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.8	0.0	14.0	17.5	0.0	13.8	10.9	0.0	8.8	16.1	0.0	7.4
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.3	0.0	0.1	0.1	0.0	1.1	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.9	1.4	0.0	0.7	0.8	0.0	3.5	1.1	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	0.0	14.2	17.7	0.0	14.0	11.0	0.0	9.9	16.4	0.0	7.5
LnGrp LOS	B	A	B	B	A	B	B	A	A	B	A	A
Approach Vol, veh/h		130			263			748			550	
Approach Delay, s/veh		14.2			16.2			10.1			9.6	
Approach LOS		B			B			B			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		27.9		16.5		27.9		16.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		27.0		21.0		27.0		21.0				
Max Q Clear Time (g_c+I1), s		14.2		5.0		20.8		10.2				
Green Ext Time (p_c), s		2.2		0.3		1.0		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			11.2									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	456	2029	61	237	953	189	118	184	178	185	122	251
Future Volume (veh/h)	456	2029	61	237	953	189	118	184	178	185	122	251
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	496	2205	66	258	1036	205	128	200	193	201	133	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	552	2345	728	541	2039	909	195	207	176	206	509	
Arrive On Green	0.16	0.46	0.46	0.27	0.57	0.57	0.11	0.11	0.11	0.12	0.27	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1257	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	496	2205	66	258	1036	205	128	200	193	201	133	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1257	1870	1585	1781	1870	1585
Q Serve(g_s), s	18.3	53.4	3.1	10.7	22.8	8.2	13.1	13.8	11.0	14.6	7.2	0.0
Cycle Q Clear(g_c), s	18.3	53.4	3.1	10.7	22.8	8.2	13.1	13.8	11.0	14.6	7.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	552	2345	728	541	2039	909	195	207	176	206	509	
V/C Ratio(X)	0.90	0.94	0.09	0.48	0.51	0.23	0.66	0.97	1.10	0.98	0.26	
Avail Cap(c_a), veh/h	678	2345	728	541	2039	909	195	207	176	206	509	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.6	33.5	19.8	37.3	16.7	13.6	57.2	57.6	33.5	57.3	37.1	0.0
Incr Delay (d2), s/veh	11.7	9.1	0.2	0.2	0.9	0.6	6.3	52.2	97.0	56.2	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	22.3	1.1	6.5	8.8	3.1	4.5	9.5	9.0	9.8	3.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.3	42.5	20.1	37.6	17.6	14.1	63.6	109.7	130.5	113.6	37.2	0.0
LnGrp LOS	E	D	C	D	B	B	E	F	F	F	D	
Approach Vol, veh/h		2767			1499			521			334	
Approach Delay, s/veh		46.1			20.6			106.1			83.1	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	27.3	81.9	21.0	22.0	42.2	67.0		43.0
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 26	* 48	15.0	14.4	* 14	* 60		35.4
Max Q Clear Time (g_c+I1), s	20.3	24.8	16.6	15.8	12.7	55.4		9.2
Green Ext Time (p_c), s	0.4	4.2	0.0	0.0	0.0	3.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	47.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	2051	407	252	1069	1	419	17	240	121	179	478
Future Volume (veh/h)	19	2051	407	252	1069	1	419	17	240	121	179	478
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	21	2229	442	274	1162	1	455	18	261	132	195	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1412	3892	1208	275	1788	797	447	482	215	183	216	
Arrive On Green	0.41	0.76	0.76	0.15	0.50	0.50	0.13	0.14	0.14	0.05	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	21	2229	442	274	1162	1	455	18	261	132	195	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	23.9	11.9	20.0	31.4	0.1	16.8	0.6	17.6	4.9	7.1	0.0
Cycle Q Clear(g_c), s	0.5	23.9	11.9	20.0	31.4	0.1	16.8	0.6	17.6	4.9	7.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1412	3892	1208	275	1788	797	447	482	215	183	216	
V/C Ratio(X)	0.01	0.57	0.37	0.99	0.65	0.00	1.02	0.04	1.21	0.72	0.90	
Avail Cap(c_a), veh/h	1412	3892	1208	275	1788	797	447	482	215	362	216	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.9	6.5	5.1	54.9	23.8	28.2	56.6	48.8	56.2	60.6	60.7	0.0
Incr Delay (d2), s/veh	0.0	0.6	0.9	52.7	1.8	0.0	47.4	0.0	131.2	2.0	35.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	6.6	3.8	12.7	12.7	0.0	10.3	0.3	14.9	2.2	4.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	7.1	5.9	107.6	25.7	28.2	104.0	48.8	187.4	62.7	95.9	0.0
LnGrp LOS	C	A	A	F	C	C	F	D	F	E	F	
Approach Vol, veh/h		2692			1437			734			327	
Approach Delay, s/veh		7.1			41.3			132.3			82.5	
Approach LOS		A			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	72.0	13.3	24.7	26.0	108.0	23.0	15.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 65	13.6	* 12	20.1	* 60	* 17	7.9
Max Q Clear Time (g_c+I1), s	2.5	33.4	6.9	19.6	22.0	25.9	18.8	9.1
Green Ext Time (p_c), s	0.0	4.8	0.0	0.0	0.0	14.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	168	1434	232	202	890	410	346	135	231	258	112	136
Future Volume (veh/h)	168	1434	232	202	890	410	346	135	231	258	112	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	1559	252	220	967	446	376	147	251	280	122	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	237	1715	765	271	1750	781	424	229	205	331	364	162
Arrive On Green	0.07	0.48	0.48	0.08	0.49	0.49	0.12	0.13	0.13	0.10	0.10	0.10
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1777	1585	3456	3554	1585
Grp Volume(v), veh/h	183	1559	252	220	967	446	376	147	251	280	122	148
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	6.8	52.6	12.7	8.1	24.7	25.8	13.9	10.2	16.8	10.4	4.1	12.0
Cycle Q Clear(g_c), s	6.8	52.6	12.7	8.1	24.7	25.8	13.9	10.2	16.8	10.4	4.1	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	237	1715	765	271	1750	781	424	229	205	331	364	162
V/C Ratio(X)	0.77	0.91	0.33	0.81	0.55	0.57	0.89	0.64	1.23	0.85	0.34	0.91
Avail Cap(c_a), veh/h	601	1715	765	335	1750	781	433	229	205	354	364	162
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.5	31.0	20.7	58.9	23.0	23.3	56.1	53.7	56.6	57.8	54.2	57.8
Incr Delay (d2), s/veh	2.0	8.7	1.2	9.4	1.3	3.0	18.5	4.6	137.2	16.2	0.2	45.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.0	22.7	5.0	3.8	9.9	10.2	7.2	4.9	14.6	5.3	1.9	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.6	39.6	21.8	68.4	24.3	26.3	74.6	58.4	193.8	74.0	54.4	103.0
LnGrp LOS	E	D	C	E	C	C	E	E	F	E	D	F
Approach Vol, veh/h		1994			1633			774			550	
Approach Delay, s/veh		39.4			30.8			110.2			77.5	
Approach LOS		D			C			F			E	

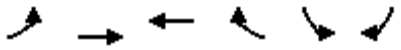
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	71.0	19.2	23.5	17.6	69.7	22.6	20.0
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 23	50.0	* 13	* 16	* 13	60.0	* 16	* 13
Max Q Clear Time (g_c+I1), s	18.8	27.8	12.4	18.8	10.1	54.6	15.9	14.0
Green Ext Time (p_c), s	0.2	4.6	0.1	0.0	0.1	3.4	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	51.8
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	133	0	1108	264	241	200
Future Volume (veh/h)	133	0	1108	264	241	200
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	145	0	1204	287	262	217
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	301	0	2331	1040	290	258
Arrive On Green	0.04	0.00	0.66	0.66	0.16	0.16
Sat Flow, veh/h	1781	145	3647	1585	1781	1585
Grp Volume(v), veh/h	145	10.3	1204	287	262	217
Grp Sat Flow(s),veh/h/ln	1781	B	1777	1585	1781	1585
Q Serve(g_s), s	3.5		22.9	9.9	18.8	17.3
Cycle Q Clear(g_c), s	3.5		22.9	9.9	18.8	17.3
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	301		2331	1040	290	258
V/C Ratio(X)	0.48		0.52	0.28	0.90	0.84
Avail Cap(c_a), veh/h	540		2331	1040	438	390
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	9.9		11.6	9.4	53.4	52.8
Incr Delay (d2), s/veh	0.4		0.8	0.7	11.8	6.2
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2		8.1	3.2	9.3	7.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.3		12.5	10.0	65.2	59.0
LnGrp LOS	B		B	B	E	E
Approach Vol, veh/h			1491		479	
Approach Delay, s/veh			12.0		62.4	
Approach LOS			B		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	11.5	91.3				27.2
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	23.0	57.0				32.0
Max Q Clear Time (g_c+I1), s	5.5	24.9				20.8
Green Ext Time (p_c), s	0.1	4.4				0.4

Intersection Summary	
HCM 6th Ctrl Delay	23.3
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	15	15	179	26	0	6	223	111	3	202	6
Future Vol, veh/h	6	15	15	179	26	0	6	223	111	3	202	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	16	16	195	28	0	7	242	121	3	220	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	379	607	114	441	550	182	227	0	0	363	0	0
Stage 1	230	230	-	317	317	-	-	-	-	-	-	-
Stage 2	149	377	-	124	233	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	553	409	917	500	441	829	1339	-	-	1192	-	-
Stage 1	752	713	-	669	653	-	-	-	-	-	-	-
Stage 2	838	614	-	867	711	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	523	406	917	474	437	829	1339	-	-	1192	-	-
Mov Cap-2 Maneuver	523	406	-	474	437	-	-	-	-	-	-	-
Stage 1	748	711	-	666	650	-	-	-	-	-	-	-
Stage 2	797	611	-	830	709	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.8	17.3	0.1	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1339	-	-	523	563	474	437	1192	-	-
HCM Lane V/C Ratio	0.005	-	-	0.012	0.058	0.41	0.065	0.003	-	-
HCM Control Delay (s)	7.7	-	-	12	11.8	17.8	13.8	8	-	-
HCM Lane LOS	A	-	-	B	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	2	0.2	0	-	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	157	79	76	0	1	135
Future Vol, veh/h	157	79	76	0	1	135
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	171	86	83	0	1	147

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	83	0	-	0	468	42
Stage 1	-	-	-	-	83	-
Stage 2	-	-	-	-	385	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1512	-	-	-	524	1019
Stage 1	-	-	-	-	931	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1512	-	-	-	465	1019
Mov Cap-2 Maneuver	-	-	-	-	465	-
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	657	-

Approach	EB	WB	SB
HCM Control Delay, s	5.1	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1512	-	-	-	1010
HCM Lane V/C Ratio	0.113	-	-	-	0.146
HCM Control Delay (s)	7.7	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.4	-	-	-	0.5

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	1	9	73	2	1	6	71	74	0	54	1
Future Vol, veh/h	8	1	9	73	2	1	6	71	74	0	54	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	10	79	2	1	7	77	80	0	59	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	193	231	60	196	191	117	60	0	0	157	0	0
Stage 1	60	60	-	131	131	-	-	-	-	-	-	-
Stage 2	133	171	-	65	60	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	767	669	1005	763	704	935	1544	-	-	1423	-	-
Stage 1	951	845	-	873	788	-	-	-	-	-	-	-
Stage 2	870	757	-	946	845	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	762	666	1005	752	700	935	1544	-	-	1423	-	-
Mov Cap-2 Maneuver	762	666	-	752	700	-	-	-	-	-	-	-
Stage 1	946	845	-	869	784	-	-	-	-	-	-	-
Stage 2	862	753	-	936	845	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.3	10.4	0.3	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	859	752	1423	-	-
HCM Lane V/C Ratio	0.004	-	-	0.023	0.11	-	-	-
HCM Control Delay (s)	7.3	0	-	9.3	10.4	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.4	0	-	-

2050 BACKGROUND

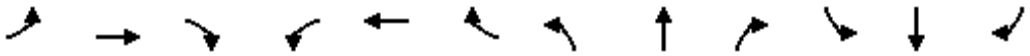
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	0	0	0	32	0	6	3	337	49	2	295	0
Future Vol, veh/h	0	0	0	32	0	6	3	337	49	2	295	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	35	0	7	3	366	53	2	321	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	727	750	321	724	724	393	321	0	0	419	0	0
Stage 1	325	325	-	399	399	-	-	-	-	-	-	-
Stage 2	402	425	-	325	325	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	339	340	720	341	352	656	1239	-	-	1140	-	-
Stage 1	687	649	-	627	602	-	-	-	-	-	-	-
Stage 2	625	586	-	687	649	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	334	338	720	340	350	656	1239	-	-	1140	-	-
Mov Cap-2 Maneuver	334	338	-	340	350	-	-	-	-	-	-	-
Stage 1	685	648	-	625	600	-	-	-	-	-	-	-
Stage 2	617	584	-	686	648	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	16	0.1	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1239	-	-	-	368	1140	-	-
HCM Lane V/C Ratio	0.003	-	-	-	0.112	0.002	-	-
HCM Control Delay (s)	7.9	0	-	0	16	8.2	-	-
HCM Lane LOS	A	A	-	A	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	0.4	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	260	0	150	0	194	22	141	228	0
Future Volume (veh/h)	0	0	0	260	0	150	0	194	22	141	228	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	283	0	163	0	211	24	153	248	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	432	0	663	0	366	252	576	66	543	654	0
Arrive On Green	0.00	0.00	0.00	0.23	0.00	0.23	0.00	0.35	0.35	0.35	0.35	0.00
Sat Flow, veh/h	1223	1870	0	1781	0	1585	1132	1649	188	1145	1870	0
Grp Volume(v), veh/h	0	0	0	283	0	163	0	0	235	153	248	0
Grp Sat Flow(s),veh/h/ln	1223	1870	0	1781	0	1585	1132	0	1837	1145	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	4.2	0.0	2.5	0.0	0.0	2.7	3.3	2.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.2	0.0	2.5	0.0	0.0	2.7	6.0	2.8	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	252	432	0	663	0	366	252	0	642	543	654	0
V/C Ratio(X)	0.00	0.00	0.00	0.43	0.00	0.45	0.00	0.00	0.37	0.28	0.38	0.00
Avail Cap(c_a), veh/h	952	1504	0	1684	0	1274	845	0	1605	1143	1634	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	10.1	0.0	9.4	0.0	0.0	6.9	9.2	7.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.1	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.1	0.0	0.6	0.0	0.0	0.6	0.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	10.2	0.0	9.7	0.0	0.0	7.1	9.3	7.1	0.0
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		0			446			235			401	
Approach Delay, s/veh		0.0			10.0			7.1			7.9	
Approach LOS					B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.0		12.6		16.0		12.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		25.0		23.0		25.0		23.0				
Max Q Clear Time (g_c+I1), s		4.7		0.0		8.0		6.2				
Green Ext Time (p_c), s		0.6		0.0		0.9		0.7				

Intersection Summary												
HCM 6th Ctrl Delay			8.6									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	854	4	192	591	60	32	89	102	87	92	148
Future Volume (veh/h)	173	854	4	192	591	60	32	89	102	87	92	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	928	4	209	642	65	35	97	0	95	100	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1721	534	984	1973	880	137	177		160	292	
Arrive On Green	0.07	0.34	0.34	0.28	0.56	0.56	0.05	0.05	0.00	0.05	0.16	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	1295	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	188	928	4	209	642	65	35	97	0	95	100	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1295	1777	1585	1728	1870	1585
Q Serve(g_s), s	5.3	14.7	0.2	4.6	9.8	1.9	2.6	2.7	0.0	2.7	4.8	0.0
Cycle Q Clear(g_c), s	5.3	14.7	0.2	4.6	9.8	1.9	2.6	2.7	0.0	2.7	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	1721	534	984	1973	880	137	177		160	292	
V/C Ratio(X)	0.73	0.54	0.01	0.21	0.33	0.07	0.26	0.55		0.59	0.34	
Avail Cap(c_a), veh/h	536	1721	534	984	1973	880	194	334		484	550	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	26.9	22.0	27.2	12.1	10.3	46.4	46.4	0.0	46.8	37.6	0.0
Incr Delay (d2), s/veh	1.5	1.2	0.0	0.0	0.4	0.2	0.4	1.0	0.0	3.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	0.1	1.8	3.5	0.7	0.9	1.2	0.0	1.2	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	28.1	22.1	27.3	12.5	10.5	46.7	47.4	0.0	50.2	37.9	0.0
LnGrp LOS	D	C	C	C	B	B	D	D		D	D	
Approach Vol, veh/h		1120			916			132			195	
Approach Delay, s/veh		31.2			15.7			47.2			43.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	62.8	10.6	12.6	35.8	41.0		23.2
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 16	* 34	14.0	9.4	* 16	* 34		29.4
Max Q Clear Time (g_c+I1), s	7.3	11.8	4.7	4.7	6.6	16.7		6.8
Green Ext Time (p_c), s	0.2	2.2	0.2	0.1	0.0	3.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	722	222	373	288	10	350	57	150	28	135	108
Future Volume (veh/h)	63	722	222	373	288	10	350	57	150	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	785	241	405	313	11	380	62	163	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	2125	660	469	1747	779	445	568	253	98	218	
Arrive On Green	0.04	0.42	0.42	0.14	0.49	0.49	0.13	0.16	0.16	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	785	241	405	313	11	380	62	163	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	10.6	10.5	11.5	4.9	0.4	10.8	1.5	9.6	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.9	10.6	10.5	11.5	4.9	0.4	10.8	1.5	9.6	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	2125	660	469	1747	779	445	568	253	98	218	
V/C Ratio(X)	0.46	0.37	0.37	0.86	0.18	0.01	0.85	0.11	0.64	0.31	0.67	
Avail Cap(c_a), veh/h	425	2125	660	695	1747	779	650	568	253	470	316	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	20.1	20.1	42.3	14.2	13.0	42.6	35.9	39.3	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.8	0.5	1.6	5.2	0.2	0.0	5.2	0.0	4.3	0.7	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.9	4.1	5.0	1.8	0.1	4.9	0.6	4.0	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	20.6	21.7	47.5	14.4	13.1	47.8	36.0	43.7	48.3	47.3	0.0
LnGrp LOS	D	C	C	D	B	B	D	D	D	D	D	
Approach Vol, veh/h		1094			729			605			177	
Approach Delay, s/veh		22.5			32.8			45.5			47.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	55.8	9.2	23.1	19.5	48.2	19.1	13.2
Change Period (Y+Rc), s	* 7.7	6.6	6.4	* 7.1	5.9	* 6.6	* 6.2	7.1
Max Green Setting (Gmax), s	* 12	32.4	13.6	* 15	20.1	* 27	* 19	8.9
Max Q Clear Time (g_c+I1), s	13.5	6.9	2.9	11.6	13.5	12.6	12.8	6.1
Green Ext Time (p_c), s	0.0	1.0	0.0	0.1	0.1	2.8	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	254	136	508	319	149
Future Volume (veh/h)	765	254	136	508	319	149
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	832	276	148	552	347	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2143	956	214	2626	429	197
Arrive On Green	0.60	0.60	0.06	0.74	0.12	0.12
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	832	276	148	552	347	162
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	12.1	8.4	4.2	4.8	9.8	10.0
Cycle Q Clear(g_c), s	12.1	8.4	4.2	4.8	9.8	10.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2143	956	214	2626	429	197
V/C Ratio(X)	0.39	0.29	0.69	0.21	0.81	0.82
Avail Cap(c_a), veh/h	2143	956	505	2626	736	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	9.5	46.0	4.0	42.6	42.7
Incr Delay (d2), s/veh	0.5	0.8	1.5	0.2	1.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.6	1.8	1.2	4.3	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.8	10.3	47.5	4.2	44.0	46.0
LnGrp LOS	B	B	D	A	D	D
Approach Vol, veh/h	1108			700	509	
Approach Delay, s/veh	10.7			13.4	44.7	
Approach LOS	B			B	D	

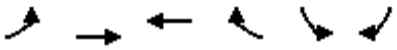
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		80.9		19.1	13.6	67.3
Change Period (Y+Rc), s		7.0		* 6.7	* 7.4	7.0
Max Green Setting (Gmax), s		65.0		* 21	* 15	43.0
Max Q Clear Time (g_c+I1), s		6.8		12.0	6.2	14.1
Green Ext Time (p_c), s		2.0		0.4	0.1	3.7

Intersection Summary		
HCM 6th Ctrl Delay		19.0
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	0	776	51	89	70
Future Volume (veh/h)	72	0	776	51	89	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	0	843	55	97	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	529	0	2494	1112	132	117
Arrive On Green	0.04	0.00	0.70	0.70	0.07	0.07
Sat Flow, veh/h	1781	78	3647	1585	1781	1585
Grp Volume(v), veh/h	78	3.9	843	55	97	76
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	1.2		9.3	1.1	5.3	4.7
Cycle Q Clear(g_c), s	1.2		9.3	1.1	5.3	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	529		2494	1112	132	117
V/C Ratio(X)	0.15		0.34	0.05	0.74	0.65
Avail Cap(c_a), veh/h	681		2494	1112	321	285
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9		5.8	4.6	45.4	45.0
Incr Delay (d2), s/veh	0.0		0.4	0.1	3.0	2.2
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3		2.6	0.3	2.5	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9		6.2	4.7	48.3	47.3
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h			898		173	
Approach Delay, s/veh			6.1		47.9	
Approach LOS			A		D	

Timer - Assigned Phs	1	2	8
Phs Duration (G+Y+Rc), s	10.4	76.2	13.4
Change Period (Y+Rc), s	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	51.0	18.0
Max Q Clear Time (g_c+I1), s	7.3	11.3	7.3
Green Ext Time (p_c), s	0.0	2.6	0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	3	35	4	0	0	4	106	12	0	119	39
Future Vol, veh/h	59	3	35	4	0	0	4	106	12	0	119	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	3	38	4	0	0	4	115	13	0	129	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	216	286	86	196	301	64	171	0	0	128	0	0
Stage 1	150	150	-	130	130	-	-	-	-	-	-	-
Stage 2	66	136	-	66	171	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	722	622	956	745	610	987	1404	-	-	1456	-	-
Stage 1	837	772	-	860	788	-	-	-	-	-	-	-
Stage 2	937	783	-	937	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	721	620	956	711	608	987	1404	-	-	1456	-	-
Mov Cap-2 Maneuver	721	620	-	711	608	-	-	-	-	-	-	-
Stage 1	834	772	-	857	786	-	-	-	-	-	-	-
Stage 2	934	781	-	896	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.1	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	721	917	711	-	1456	-	-
HCM Lane V/C Ratio	0.003	-	-	0.089	0.045	0.006	-	-	-	-
HCM Control Delay (s)	7.6	-	-	10.5	9.1	10.1	0	0	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	0	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	144	21	14	0	0	144
Future Vol, veh/h	144	21	14	0	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	23	15	0	0	157

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	15	0	-	0	341	8
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1601	-	-	-	629	1072
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1601	-	-	-	567	1072
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1601	-	-	-	1072
HCM Lane V/C Ratio	0.098	-	-	-	0.146
HCM Control Delay (s)	7.5	-	-	-	8.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	11	23	1	0	32	61	61	0	13	2
Future Vol, veh/h	0	0	11	23	1	0	32	61	61	0	13	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	25	1	0	35	66	66	0	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	185	217	15	190	185	99	16	0	0	132	0	0
Stage 1	15	15	-	169	169	-	-	-	-	-	-	-
Stage 2	170	202	-	21	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	776	681	1065	770	709	957	1602	-	-	1453	-	-
Stage 1	1005	883	-	833	759	-	-	-	-	-	-	-
Stage 2	832	734	-	998	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	761	665	1065	748	692	957	1602	-	-	1453	-	-
Mov Cap-2 Maneuver	761	665	-	748	692	-	-	-	-	-	-	-
Stage 1	981	883	-	813	741	-	-	-	-	-	-	-
Stage 2	811	716	-	987	882	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	10	1.5	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	1065	745	1453	-	-
HCM Lane V/C Ratio	0.022	-	-	0.011	0.035	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.1	0	-	-

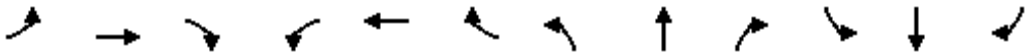
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	0	0	0	30	0	11	0	473	79	16	787	0
Future Vol, veh/h	0	0	0	30	0	11	0	473	79	16	787	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	33	0	12	0	514	86	17	855	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1452	1489	855	1446	1446	557	855	0	0	600	0	0
Stage 1	889	889	-	557	557	-	-	-	-	-	-	-
Stage 2	563	600	-	889	889	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	108	124	358	109	132	530	785	-	-	977	-	-
Stage 1	338	361	-	515	512	-	-	-	-	-	-	-
Stage 2	511	490	-	338	361	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	104	122	358	108	130	530	785	-	-	977	-	-
Mov Cap-2 Maneuver	104	122	-	108	130	-	-	-	-	-	-	-
Stage 1	338	355	-	515	512	-	-	-	-	-	-	-
Stage 2	499	490	-	332	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	43.5	0	0.2
HCM LOS	A	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	785	-	-	-	137	977	-	-
HCM Lane V/C Ratio	-	-	-	-	0.325	0.018	-	-
HCM Control Delay (s)	0	-	-	0	43.5	8.8	-	-
HCM Lane LOS	A	-	-	A	E	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	1.3	0.1	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	207	0	131	0	421	258	276	541	0
Future Volume (veh/h)	0	0	0	207	0	131	0	421	258	276	541	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	225	0	142	0	458	280	300	588	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	321	0	459	0	272	153	623	381	342	1073	0
Arrive On Green	0.00	0.00	0.00	0.17	0.00	0.17	0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1246	1870	0	1781	0	1585	828	1087	664	720	1870	0
Grp Volume(v), veh/h	0	0	0	225	0	142	0	0	738	300	588	0
Grp Sat Flow(s),veh/h/ln	1246	1870	0	1781	0	1585	828	0	1751	720	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	5.6	0.0	3.8	0.0	0.0	14.6	12.4	9.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.6	0.0	3.8	0.0	0.0	14.6	27.0	9.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.38	1.00		0.00
Lane Grp Cap(c), veh/h	153	321	0	459	0	272	153	0	1004	342	1073	0
V/C Ratio(X)	0.00	0.00	0.00	0.49	0.00	0.52	0.00	0.00	0.74	0.88	0.55	0.00
Avail Cap(c_a), veh/h	495	834	0	947	0	707	153	0	1004	342	1073	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	18.5	0.0	17.7	0.0	0.0	7.4	19.6	6.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.6	0.0	0.0	2.5	21.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	2.1	0.0	1.3	0.0	0.0	4.1	5.0	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	18.8	0.0	18.3	0.0	0.0	9.9	40.7	6.6	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	D	A	A
Approach Vol, veh/h		0			367			738			888	
Approach Delay, s/veh		0.0			18.6			9.9			18.1	
Approach LOS					B			A			B	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		33.0		14.1		33.0		14.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		27.0		21.0		27.0		21.0				
Max Q Clear Time (g_c+I1), s		16.6		0.0		29.0		7.6				
Green Ext Time (p_c), s		2.2		0.0		0.0		0.5				

Intersection Summary												
HCM 6th Ctrl Delay			15.2									
HCM 6th LOS			B									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1963	16	237	673	96	86	243	258	232	211	250
Future Volume (veh/h)	340	1963	16	237	673	96	86	243	258	232	211	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	370	2134	17	258	732	104	93	264	280	252	229	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	2200	683	552	2086	931	276	536	454	206	536	
Arrive On Green	0.12	0.43	0.43	0.27	0.59	0.59	0.29	0.29	0.29	0.29	0.29	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1152	1870	1585	862	1870	1585
Grp Volume(v), veh/h	370	2134	17	258	732	104	93	264	280	252	229	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1152	1870	1585	862	1870	1585
Q Serve(g_s), s	12.6	49.0	0.7	9.7	12.9	3.5	8.6	14.1	18.4	20.3	11.9	0.0
Cycle Q Clear(g_c), s	12.6	49.0	0.7	9.7	12.9	3.5	20.5	14.1	18.4	34.4	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	429	2200	683	552	2086	931	276	536	454	206	536	
V/C Ratio(X)	0.86	0.97	0.02	0.47	0.35	0.11	0.34	0.49	0.62	1.22	0.43	
Avail Cap(c_a), veh/h	562	2200	683	552	2086	931	276	536	454	206	536	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	33.4	19.6	33.9	12.9	10.9	43.1	35.5	37.1	52.8	34.8	0.0
Incr Delay (d2), s/veh	8.6	13.3	0.1	0.2	0.5	0.2	0.3	0.3	1.8	135.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	21.3	0.3	5.8	4.7	1.2	2.5	6.5	7.3	14.0	5.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	46.7	19.7	34.2	13.3	11.2	43.4	35.8	38.9	188.4	35.0	0.0
LnGrp LOS	E	D	B	C	B	B	D	D	D	F	C	
Approach Vol, veh/h		2521			1094			637			481	
Approach Delay, s/veh		48.5			18.1			38.3			115.4	
Approach LOS		D			B			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.4	77.8		42.0	40.2	59.0		42.0
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 20	* 45		34.4	* 13	* 52		34.4
Max Q Clear Time (g_c+I1), s	14.6	14.9		22.5	11.7	51.0		36.4
Green Ext Time (p_c), s	0.3	2.7		0.8	0.0	0.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1949	374	274	733	2	298	15	195	175	255	682
Future Volume (veh/h)	23	1949	374	274	733	2	298	15	195	175	255	682
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	2118	407	298	797	2	324	16	212	190	277	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	840	2774	861	313	1670	745	377	449	200	245	293	
Arrive On Green	0.24	0.54	0.54	0.18	0.47	0.47	0.11	0.13	0.13	0.07	0.08	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	25	2118	407	298	797	2	324	16	212	190	277	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.7	38.9	15.2	19.9	18.4	0.1	11.1	0.5	15.2	6.5	9.3	0.0
Cycle Q Clear(g_c), s	0.7	38.9	15.2	19.9	18.4	0.1	11.1	0.5	15.2	6.5	9.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	840	2774	861	313	1670	745	377	449	200	245	293	
V/C Ratio(X)	0.03	0.76	0.47	0.95	0.48	0.00	0.86	0.04	1.06	0.77	0.94	
Avail Cap(c_a), veh/h	840	2774	861	313	1670	745	397	449	200	392	293	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.6	21.4	10.9	48.9	21.7	14.2	52.6	46.0	52.4	54.8	54.8	0.0
Incr Delay (d2), s/veh	0.0	2.1	1.9	37.7	1.0	0.0	15.6	0.0	80.0	2.0	37.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	14.4	5.6	11.8	7.3	0.0	5.6	0.2	10.5	2.9	5.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	23.5	12.7	86.6	22.7	14.2	68.1	46.0	132.4	56.8	92.4	0.0
LnGrp LOS	C	C	B	F	C	B	E	D	F	E	F	
Approach Vol, veh/h		2550			1097			552			467	
Approach Delay, s/veh		21.8			40.0			92.2			77.9	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.4	63.0	14.9	21.4	27.0	73.4	19.3	17.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 56	13.6	* 11	21.1	* 50	13.8	* 9.9
Max Q Clear Time (g_c+I1), s	12.7	20.4	8.5	17.2	21.9	40.9	13.1	11.3
Green Ext Time (p_c), s	0.0	2.9	0.1	0.0	0.0	6.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1210	179	161	756	467	284
Future Volume (veh/h)	1210	179	161	756	467	284
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1315	195	175	822	508	309
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1744	778	421	2387	729	334
Arrive On Green	0.49	0.49	0.12	0.67	0.21	0.21
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	1315	195	175	822	508	309
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	35.9	8.6	5.6	11.9	16.3	22.9
Cycle Q Clear(g_c), s	35.9	8.6	5.6	11.9	16.3	22.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1744	778	421	2387	729	334
V/C Ratio(X)	0.75	0.25	0.42	0.34	0.70	0.92
Avail Cap(c_a), veh/h	1744	778	421	2387	786	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	17.7	48.8	8.4	43.8	46.4
Incr Delay (d2), s/veh	3.1	0.8	0.2	0.4	2.0	27.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	3.1	2.4	3.9	7.2	20.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.8	18.5	49.0	8.8	45.8	73.5
LnGrp LOS	C	B	D	A	D	E
Approach Vol, veh/h	1510			997	817	
Approach Delay, s/veh	26.6			15.9	56.3	
Approach LOS	C			B	E	

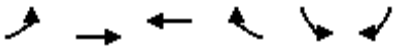
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		32.0	22.0	66.0
Change Period (Y+Rc), s		* 7.4		* 6.7	7.4	* 7.1
Max Green Setting (Gmax), s		* 79		* 27	12.6	* 59
Max Q Clear Time (g_c+I1), s		13.9		24.9	7.6	37.9
Green Ext Time (p_c), s		3.3		0.4	0.1	5.9

Intersection Summary		
HCM 6th Ctrl Delay		30.7
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	1089	134	204	227
Future Volume (veh/h)	36	0	1089	134	204	227
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	0	1184	146	222	247
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	309	0	2308	1029	303	270
Arrive On Green	0.03	0.00	0.65	0.65	0.17	0.17
Sat Flow, veh/h	1781	39	3647	1585	1781	1585
Grp Volume(v), veh/h	39	8.4	1184	146	222	247
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	0.9		21.0	4.3	14.2	18.4
Cycle Q Clear(g_c), s	0.9		21.0	4.3	14.2	18.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	309		2308	1029	303	270
V/C Ratio(X)	0.13		0.51	0.14	0.73	0.92
Avail Cap(c_a), veh/h	419		2308	1029	312	277
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3		11.1	8.1	47.2	48.9
Incr Delay (d2), s/veh	0.1		0.8	0.3	7.2	31.5
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3		7.3	1.3	6.9	9.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.4		11.9	8.4	54.4	80.4
LnGrp LOS	A		B	A	D	F
Approach Vol, veh/h			1330		469	
Approach Delay, s/veh			11.5		68.1	
Approach LOS			B		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	9.6	83.9				26.4
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	11.6	70.0				21.0
Max Q Clear Time (g_c+I1), s	12.9	23.0				20.4
Green Ext Time (p_c), s	0.0	4.2				0.1

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	10	148	95	24	0	26	98	46	3	188	27
Future Vol, veh/h	25	10	148	95	24	0	26	98	46	3	188	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	11	161	103	26	0	28	107	50	3	204	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	348	438	117	302	427	79	233	0	0	157	0	0
Stage 1	225	225	-	188	188	-	-	-	-	-	-	-
Stage 2	123	213	-	114	239	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	582	511	913	627	518	965	1332	-	-	1420	-	-
Stage 1	757	716	-	796	743	-	-	-	-	-	-	-
Stage 2	868	725	-	879	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	549	499	913	499	506	965	1332	-	-	1420	-	-
Mov Cap-2 Maneuver	549	499	-	499	506	-	-	-	-	-	-	-
Stage 1	741	715	-	779	727	-	-	-	-	-	-	-
Stage 2	819	710	-	712	705	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	13.8	1.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1332	-	-	549	867	499	506	1420	-	-
HCM Lane V/C Ratio	0.021	-	-	0.049	0.198	0.207	0.052	0.002	-	-
HCM Control Delay (s)	7.8	-	-	11.9	10.2	14.1	12.5	7.5	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.7	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	108	16	9	0	1	209
Future Vol, veh/h	108	16	9	0	1	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	17	10	0	1	227

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	10	0	-	0	253	5
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1608	-	-	-	714	1076
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1608	-	-	-	662	1076
Mov Cap-2 Maneuver	-	-	-	-	662	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1608	-	-	-	1073
HCM Lane V/C Ratio	0.073	-	-	-	0.213
HCM Control Delay (s)	7.4	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	1	30	124	2	1	11	46	51	0	56	1
Future Vol, veh/h	7	1	30	124	2	1	11	46	51	0	56	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	33	135	2	1	12	50	55	0	61	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	165	191	62	181	164	78	62	0	0	105	0	0
Stage 1	62	62	-	102	102	-	-	-	-	-	-	-
Stage 2	103	129	-	79	62	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	800	704	1003	781	729	983	1541	-	-	1486	-	-
Stage 1	949	843	-	904	811	-	-	-	-	-	-	-
Stage 2	903	789	-	930	843	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	698	1003	750	723	983	1541	-	-	1486	-	-
Mov Cap-2 Maneuver	793	698	-	750	723	-	-	-	-	-	-	-
Stage 1	941	843	-	897	805	-	-	-	-	-	-	-
Stage 2	892	783	-	899	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	10.9	0.7	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	946	751	1486	-	-
HCM Lane V/C Ratio	0.008	-	-	0.044	0.184	-	-	-
HCM Control Delay (s)	7.4	0	-	9	10.9	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	32	0	6	3	337	49	2	295	0
Future Volume (veh/h)	0	0	0	32	0	6	3	337	49	2	295	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	35	0	7	3	366	53	2	321	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	97	0	387	0	12	180	569	82	845	668	0
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.05	0.36	0.36	0.36	0.36	0.36	0.00
Sat Flow, veh/h	0	1870	0	1202	0	240	4	1592	229	968	1870	0
Grp Volume(v), veh/h	0	0	0	42	0	0	422	0	0	2	321	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	1443	0	0	1826	0	0	968	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.6	0.0	0.0	3.9	0.0	0.0	0.0	2.7	0.0
Prop In Lane	0.00		0.00	0.83		0.17	0.01		0.13	1.00		0.00
Lane Grp Cap(c), veh/h	0	97	0	400	0	0	831	0	0	845	668	0
V/C Ratio(X)	0.00	0.00	0.00	0.11	0.00	0.00	0.51	0.00	0.00	0.00	0.48	0.00
Avail Cap(c_a), veh/h	0	2025	0	1887	0	0	3405	0	0	2214	3314	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	9.4	0.0	0.0	5.5	0.0	0.0	4.2	5.1	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.1	0.0	0.0	0.5	0.0	0.0	0.0	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	9.4	0.0	0.0	5.6	0.0	0.0	4.2	5.3	0.0
LnGrp LOS	A	A	A	A	A	A	A	A	A	A	A	A
Approach Vol, veh/h		0			42			422			323	
Approach Delay, s/veh		0.0			9.4			5.6			5.3	
Approach LOS					A			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		13.3		7.1		13.3		7.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		36.0		22.0		36.0		22.0				
Max Q Clear Time (g_c+I1), s		5.9		0.0		4.7		2.6				
Green Ext Time (p_c), s		1.3		0.0		1.0		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			5.7									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	260	0	150	0	194	22	141	228	0
Future Volume (veh/h)	0	0	0	260	0	150	0	194	22	141	228	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	283	0	163	0	211	24	153	248	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	432	0	663	0	366	252	576	66	543	654	0
Arrive On Green	0.00	0.00	0.00	0.23	0.00	0.23	0.00	0.35	0.35	0.35	0.35	0.00
Sat Flow, veh/h	1223	1870	0	1781	0	1585	1132	1649	188	1145	1870	0
Grp Volume(v), veh/h	0	0	0	283	0	163	0	0	235	153	248	0
Grp Sat Flow(s),veh/h/ln	1223	1870	0	1781	0	1585	1132	0	1837	1145	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	4.2	0.0	2.5	0.0	0.0	2.7	3.3	2.8	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	4.2	0.0	2.5	0.0	0.0	2.7	6.0	2.8	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	252	432	0	663	0	366	252	0	642	543	654	0
V/C Ratio(X)	0.00	0.00	0.00	0.43	0.00	0.45	0.00	0.00	0.37	0.28	0.38	0.00
Avail Cap(c_a), veh/h	952	1504	0	1684	0	1274	845	0	1605	1143	1634	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	10.1	0.0	9.4	0.0	0.0	6.9	9.2	7.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.2	0.0	0.3	0.0	0.0	0.1	0.1	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.1	0.0	0.6	0.0	0.0	0.6	0.6	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	10.2	0.0	9.7	0.0	0.0	7.1	9.3	7.1	0.0
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		0			446			235			401	
Approach Delay, s/veh		0.0			10.0			7.1			7.9	
Approach LOS					B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	16.0	12.6	16.0	12.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	25.0	23.0	25.0	23.0
Max Q Clear Time (g_c+I1), s	4.7	0.0	8.0	6.2
Green Ext Time (p_c), s	0.6	0.0	0.9	0.7

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	173	854	4	192	591	60	32	89	102	87	92	148
Future Volume (veh/h)	173	854	4	192	591	60	32	89	102	87	92	148
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	188	928	4	209	642	65	35	97	0	95	100	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	257	1721	534	984	1973	880	137	177		160	292	
Arrive On Green	0.07	0.34	0.34	0.28	0.56	0.56	0.05	0.05	0.00	0.05	0.16	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	1295	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	188	928	4	209	642	65	35	97	0	95	100	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1295	1777	1585	1728	1870	1585
Q Serve(g_s), s	5.3	14.7	0.2	4.6	9.8	1.9	2.6	2.7	0.0	2.7	4.8	0.0
Cycle Q Clear(g_c), s	5.3	14.7	0.2	4.6	9.8	1.9	2.6	2.7	0.0	2.7	4.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	257	1721	534	984	1973	880	137	177		160	292	
V/C Ratio(X)	0.73	0.54	0.01	0.21	0.33	0.07	0.26	0.55		0.59	0.34	
Avail Cap(c_a), veh/h	536	1721	534	984	1973	880	194	334		484	550	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.3	26.9	22.0	27.2	12.1	10.3	46.4	46.4	0.0	46.8	37.6	0.0
Incr Delay (d2), s/veh	1.5	1.2	0.0	0.0	0.4	0.2	0.4	1.0	0.0	3.5	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	5.7	0.1	1.8	3.5	0.7	0.9	1.2	0.0	1.2	2.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.8	28.1	22.1	27.3	12.5	10.5	46.7	47.4	0.0	50.2	37.9	0.0
LnGrp LOS	D	C	C	C	B	B	D	D		D	D	
Approach Vol, veh/h		1120			916			132			195	
Approach Delay, s/veh		31.2			15.7			47.2			43.9	
Approach LOS		C			B			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	13.9	62.8	10.6	12.6	35.8	41.0		23.2
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 16	* 34	14.0	9.4	* 16	* 34		29.4
Max Q Clear Time (g_c+I1), s	7.3	11.8	4.7	4.7	6.6	16.7		6.8
Green Ext Time (p_c), s	0.2	2.2	0.2	0.1	0.0	3.2		0.2

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	722	222	373	288	10	350	57	150	28	135	108
Future Volume (veh/h)	63	722	222	373	288	10	350	57	150	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	785	241	405	313	11	380	62	163	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	2125	660	469	1747	779	445	568	253	98	218	
Arrive On Green	0.04	0.42	0.42	0.14	0.49	0.49	0.13	0.16	0.16	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	785	241	405	313	11	380	62	163	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.9	10.6	10.5	11.5	4.9	0.4	10.8	1.5	9.6	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.9	10.6	10.5	11.5	4.9	0.4	10.8	1.5	9.6	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	147	2125	660	469	1747	779	445	568	253	98	218	
V/C Ratio(X)	0.46	0.37	0.37	0.86	0.18	0.01	0.85	0.11	0.64	0.31	0.67	
Avail Cap(c_a), veh/h	425	2125	660	695	1747	779	650	568	253	470	316	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	20.1	20.1	42.3	14.2	13.0	42.6	35.9	39.3	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.8	0.5	1.6	5.2	0.2	0.0	5.2	0.0	4.3	0.7	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	3.9	4.1	5.0	1.8	0.1	4.9	0.6	4.0	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	20.6	21.7	47.5	14.4	13.1	47.8	36.0	43.7	48.3	47.3	0.0
LnGrp LOS	D	C	C	D	B	B	D	D	D	D	D	
Approach Vol, veh/h		1094			729			605			177	
Approach Delay, s/veh		22.5			32.8			45.5			47.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.9	55.8	9.2	23.1	19.5	48.2	19.1	13.2
Change Period (Y+Rc), s	* 7.7	6.6	6.4	* 7.1	5.9	* 6.6	* 6.2	7.1
Max Green Setting (Gmax), s	* 12	32.4	13.6	* 15	20.1	* 27	* 19	8.9
Max Q Clear Time (g_c+I1), s	13.5	6.9	2.9	11.6	13.5	12.6	12.8	6.1
Green Ext Time (p_c), s	0.0	1.0	0.0	0.1	0.1	2.8	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	765	254	136	508	319	149
Future Volume (veh/h)	765	254	136	508	319	149
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	832	276	148	552	347	162
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	2143	956	214	2626	429	197
Arrive On Green	0.60	0.60	0.06	0.74	0.12	0.12
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	832	276	148	552	347	162
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	12.1	8.4	4.2	4.8	9.8	10.0
Cycle Q Clear(g_c), s	12.1	8.4	4.2	4.8	9.8	10.0
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	2143	956	214	2626	429	197
V/C Ratio(X)	0.39	0.29	0.69	0.21	0.81	0.82
Avail Cap(c_a), veh/h	2143	956	505	2626	736	338
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.3	9.5	46.0	4.0	42.6	42.7
Incr Delay (d2), s/veh	0.5	0.8	1.5	0.2	1.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	2.6	1.8	1.2	4.3	8.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	10.8	10.3	47.5	4.2	44.0	46.0
LnGrp LOS	B	B	D	A	D	D
Approach Vol, veh/h	1108			700	509	
Approach Delay, s/veh	10.7			13.4	44.7	
Approach LOS	B			B	D	

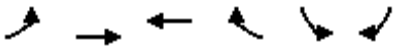
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		80.9		19.1	13.6	67.3
Change Period (Y+Rc), s		7.0		* 6.7	* 7.4	7.0
Max Green Setting (Gmax), s		65.0		* 21	* 15	43.0
Max Q Clear Time (g_c+I1), s		6.8		12.0	6.2	14.1
Green Ext Time (p_c), s		2.0		0.4	0.1	3.7

Intersection Summary						
HCM 6th Ctrl Delay			19.0			
HCM 6th LOS			B			

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	72	0	776	51	89	70
Future Volume (veh/h)	72	0	776	51	89	70
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	78	0	843	55	97	76
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	529	0	2494	1112	132	117
Arrive On Green	0.04	0.00	0.70	0.70	0.07	0.07
Sat Flow, veh/h	1781	78	3647	1585	1781	1585
Grp Volume(v), veh/h	78	3.9	843	55	97	76
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	1.2		9.3	1.1	5.3	4.7
Cycle Q Clear(g_c), s	1.2		9.3	1.1	5.3	4.7
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	529		2494	1112	132	117
V/C Ratio(X)	0.15		0.34	0.05	0.74	0.65
Avail Cap(c_a), veh/h	681		2494	1112	321	285
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	3.9		5.8	4.6	45.4	45.0
Incr Delay (d2), s/veh	0.0		0.4	0.1	3.0	2.2
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3		2.6	0.3	2.5	1.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	3.9		6.2	4.7	48.3	47.3
LnGrp LOS	A		A	A	D	D
Approach Vol, veh/h			898		173	
Approach Delay, s/veh			6.1		47.9	
Approach LOS			A		D	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	10.4	76.2				13.4
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	51.0				18.0
Max Q Clear Time (g_c+I1), s	7.3	11.3				7.3
Green Ext Time (p_c), s	0.0	2.6				0.1

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	3	35	4	0	0	4	106	12	0	119	39
Future Vol, veh/h	59	3	35	4	0	0	4	106	12	0	119	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	3	38	4	0	0	4	115	13	0	129	42

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	216	286	86	196	301	64	171	0	0	128	0	0
Stage 1	150	150	-	130	130	-	-	-	-	-	-	-
Stage 2	66	136	-	66	171	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	722	622	956	745	610	987	1404	-	-	1456	-	-
Stage 1	837	772	-	860	788	-	-	-	-	-	-	-
Stage 2	937	783	-	937	756	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	721	620	956	711	608	987	1404	-	-	1456	-	-
Mov Cap-2 Maneuver	721	620	-	711	608	-	-	-	-	-	-	-
Stage 1	834	772	-	857	786	-	-	-	-	-	-	-
Stage 2	934	781	-	896	756	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	10.1	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1404	-	-	721	917	711	-	1456	-	-
HCM Lane V/C Ratio	0.003	-	-	0.089	0.045	0.006	-	-	-	-
HCM Control Delay (s)	7.6	-	-	10.5	9.1	10.1	0	0	-	-
HCM Lane LOS	A	-	-	B	A	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.1	0	-	0	-	-

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	144	21	14	0	0	144
Future Vol, veh/h	144	21	14	0	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	157	23	15	0	0	157

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	15	0	-	0	341	8
Stage 1	-	-	-	-	15	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1601	-	-	-	629	1072
Stage 1	-	-	-	-	1005	-
Stage 2	-	-	-	-	704	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1601	-	-	-	567	1072
Mov Cap-2 Maneuver	-	-	-	-	567	-
Stage 1	-	-	-	-	907	-
Stage 2	-	-	-	-	704	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1601	-	-	-	1072
HCM Lane V/C Ratio	0.098	-	-	-	0.146
HCM Control Delay (s)	7.5	-	-	-	8.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5

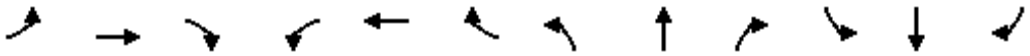
Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	11	23	1	0	32	61	61	0	13	2
Future Vol, veh/h	0	0	11	23	1	0	32	61	61	0	13	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	12	25	1	0	35	66	66	0	14	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	185	217	15	190	185	99	16	0	0	132	0	0
Stage 1	15	15	-	169	169	-	-	-	-	-	-	-
Stage 2	170	202	-	21	16	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	776	681	1065	770	709	957	1602	-	-	1453	-	-
Stage 1	1005	883	-	833	759	-	-	-	-	-	-	-
Stage 2	832	734	-	998	882	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	761	665	1065	748	692	957	1602	-	-	1453	-	-
Mov Cap-2 Maneuver	761	665	-	748	692	-	-	-	-	-	-	-
Stage 1	981	883	-	813	741	-	-	-	-	-	-	-
Stage 2	811	716	-	987	882	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.4	10	1.5	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	1065	745	1453	-	-
HCM Lane V/C Ratio	0.022	-	-	0.011	0.035	-	-	-
HCM Control Delay (s)	7.3	0	-	8.4	10	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0.1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	30	0	11	0	473	79	16	787	0
Future Volume (veh/h)	0	0	0	30	0	11	0	473	79	16	787	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	33	0	12	0	514	86	17	855	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	0	97	0	261	0	20	0	864	145	510	1035	0
Arrive On Green	0.00	0.00	0.00	0.05	0.00	0.05	0.00	0.55	0.55	0.55	0.55	0.00
Sat Flow, veh/h	0	1870	0	1070	0	389	0	1562	261	819	1870	0
Grp Volume(v), veh/h	0	0	0	45	0	0	0	0	600	17	855	0
Grp Sat Flow(s),veh/h/ln	0	1870	0	1459	0	0	0	0	1823	819	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	6.7	0.4	11.4	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	6.7	7.1	11.4	0.0
Prop In Lane	0.00		0.00	0.73		0.27	0.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	0	97	0	281	0	0	0	0	1009	510	1035	0
V/C Ratio(X)	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.59	0.03	0.83	0.00
Avail Cap(c_a), veh/h	0	1292	0	1213	0	0	0	0	2220	1054	2277	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	14.1	0.0	0.0	0.0	0.0	4.5	6.9	5.6	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.8	0.0	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	14.2	0.0	0.0	0.0	0.0	4.7	6.9	6.2	0.0
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		0			45			600			872	
Approach Delay, s/veh		0.0			14.2			4.7			6.3	
Approach LOS					B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		22.8		7.6		22.8		7.6				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		37.0		21.0		37.0		21.0				
Max Q Clear Time (g_c+I1), s		8.7		0.0		13.4		2.9				
Green Ext Time (p_c), s		2.1		0.0		3.4		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			5.9									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	207	0	131	0	421	258	276	541	0
Future Volume (veh/h)	0	0	0	207	0	131	0	421	258	276	541	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	0	0	0	225	0	142	0	458	280	300	588	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	153	321	0	459	0	272	153	623	381	342	1073	0
Arrive On Green	0.00	0.00	0.00	0.17	0.00	0.17	0.00	0.57	0.57	0.57	0.57	0.00
Sat Flow, veh/h	1246	1870	0	1781	0	1585	828	1087	664	720	1870	0
Grp Volume(v), veh/h	0	0	0	225	0	142	0	0	738	300	588	0
Grp Sat Flow(s),veh/h/ln	1246	1870	0	1781	0	1585	828	0	1751	720	1870	0
Q Serve(g_s), s	0.0	0.0	0.0	5.6	0.0	3.8	0.0	0.0	14.6	12.4	9.2	0.0
Cycle Q Clear(g_c), s	0.0	0.0	0.0	5.6	0.0	3.8	0.0	0.0	14.6	27.0	9.2	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		0.38	1.00		0.00
Lane Grp Cap(c), veh/h	153	321	0	459	0	272	153	0	1004	342	1073	0
V/C Ratio(X)	0.00	0.00	0.00	0.49	0.00	0.52	0.00	0.00	0.74	0.88	0.55	0.00
Avail Cap(c_a), veh/h	495	834	0	947	0	707	153	0	1004	342	1073	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	0.00	0.00	1.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	0.0	0.0	18.5	0.0	17.7	0.0	0.0	7.4	19.6	6.2	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.3	0.0	0.6	0.0	0.0	2.5	21.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	2.1	0.0	1.3	0.0	0.0	4.1	5.0	2.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.0	0.0	18.8	0.0	18.3	0.0	0.0	9.9	40.7	6.6	0.0
LnGrp LOS	A	A	A	B	A	B	A	A	A	D	A	A
Approach Vol, veh/h		0			367			738			888	
Approach Delay, s/veh		0.0			18.6			9.9			18.1	
Approach LOS					B			A			B	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	33.0	14.1	33.0	14.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	27.0	21.0	27.0	21.0
Max Q Clear Time (g_c+I1), s	16.6	0.0	29.0	7.6
Green Ext Time (p_c), s	2.2	0.0	0.0	0.5

Intersection Summary	
HCM 6th Ctrl Delay	15.2
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	340	1963	16	237	673	96	86	243	258	232	211	250
Future Volume (veh/h)	340	1963	16	237	673	96	86	243	258	232	211	250
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	370	2134	17	258	732	104	93	264	280	252	229	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	429	2200	683	552	2086	931	276	536	454	206	536	
Arrive On Green	0.12	0.43	0.43	0.27	0.59	0.59	0.29	0.29	0.29	0.29	0.29	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1152	1870	1585	862	1870	1585
Grp Volume(v), veh/h	370	2134	17	258	732	104	93	264	280	252	229	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1152	1870	1585	862	1870	1585
Q Serve(g_s), s	12.6	49.0	0.7	9.7	12.9	3.5	8.6	14.1	18.4	20.3	11.9	0.0
Cycle Q Clear(g_c), s	12.6	49.0	0.7	9.7	12.9	3.5	20.5	14.1	18.4	34.4	11.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	429	2200	683	552	2086	931	276	536	454	206	536	
V/C Ratio(X)	0.86	0.97	0.02	0.47	0.35	0.11	0.34	0.49	0.62	1.22	0.43	
Avail Cap(c_a), veh/h	562	2200	683	552	2086	931	276	536	454	206	536	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	51.5	33.4	19.6	33.9	12.9	10.9	43.1	35.5	37.1	52.8	34.8	0.0
Incr Delay (d2), s/veh	8.6	13.3	0.1	0.2	0.5	0.2	0.3	0.3	1.8	135.6	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.8	21.3	0.3	5.8	4.7	1.2	2.5	6.5	7.3	14.0	5.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	46.7	19.7	34.2	13.3	11.2	43.4	35.8	38.9	188.4	35.0	0.0
LnGrp LOS	E	D	B	C	B	B	D	D	D	F	C	
Approach Vol, veh/h		2521			1094			637			481	
Approach Delay, s/veh		48.5			18.1			38.3			115.4	
Approach LOS		D			B			D			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.4	77.8		42.0	40.2	59.0		42.0
Change Period (Y+Rc), s	* 6.5	* 7.3		7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 20	* 45		34.4	* 13	* 52		34.4
Max Q Clear Time (g_c+I1), s	14.6	14.9		22.5	11.7	51.0		36.4
Green Ext Time (p_c), s	0.3	2.7		0.8	0.0	0.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	46.9
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1949	374	274	733	2	298	15	195	175	255	682
Future Volume (veh/h)	23	1949	374	274	733	2	298	15	195	175	255	682
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	25	2118	407	298	797	2	324	16	212	190	277	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	840	2774	861	313	1670	745	377	449	200	245	293	
Arrive On Green	0.24	0.54	0.54	0.18	0.47	0.47	0.11	0.13	0.13	0.07	0.08	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	25	2118	407	298	797	2	324	16	212	190	277	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.7	38.9	15.2	19.9	18.4	0.1	11.1	0.5	15.2	6.5	9.3	0.0
Cycle Q Clear(g_c), s	0.7	38.9	15.2	19.9	18.4	0.1	11.1	0.5	15.2	6.5	9.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	840	2774	861	313	1670	745	377	449	200	245	293	
V/C Ratio(X)	0.03	0.76	0.47	0.95	0.48	0.00	0.86	0.04	1.06	0.77	0.94	
Avail Cap(c_a), veh/h	840	2774	861	313	1670	745	397	449	200	392	293	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.6	21.4	10.9	48.9	21.7	14.2	52.6	46.0	52.4	54.8	54.8	0.0
Incr Delay (d2), s/veh	0.0	2.1	1.9	37.7	1.0	0.0	15.6	0.0	80.0	2.0	37.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	14.4	5.6	11.8	7.3	0.0	5.6	0.2	10.5	2.9	5.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.6	23.5	12.7	86.6	22.7	14.2	68.1	46.0	132.4	56.8	92.4	0.0
LnGrp LOS	C	C	B	F	C	B	E	D	F	E	F	
Approach Vol, veh/h		2550			1097			552			467	
Approach Delay, s/veh		21.8			40.0			92.2			77.9	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	37.4	63.0	14.9	21.4	27.0	73.4	19.3	17.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 56	13.6	* 11	21.1	* 50	13.8	* 9.9
Max Q Clear Time (g_c+I1), s	12.7	20.4	8.5	17.2	21.9	40.9	13.1	11.3
Green Ext Time (p_c), s	0.0	2.9	0.1	0.0	0.0	6.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1210	179	161	756	467	284
Future Volume (veh/h)	1210	179	161	756	467	284
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1315	195	175	822	508	309
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1744	778	421	2387	729	334
Arrive On Green	0.49	0.49	0.12	0.67	0.21	0.21
Sat Flow, veh/h	3647	1585	3456	3647	3456	1585
Grp Volume(v), veh/h	1315	195	175	822	508	309
Grp Sat Flow(s),veh/h/ln	1777	1585	1728	1777	1728	1585
Q Serve(g_s), s	35.9	8.6	5.6	11.9	16.3	22.9
Cycle Q Clear(g_c), s	35.9	8.6	5.6	11.9	16.3	22.9
Prop In Lane		1.00	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	1744	778	421	2387	729	334
V/C Ratio(X)	0.75	0.25	0.42	0.34	0.70	0.92
Avail Cap(c_a), veh/h	1744	778	421	2387	786	361
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.7	17.7	48.8	8.4	43.8	46.4
Incr Delay (d2), s/veh	3.1	0.8	0.2	0.4	2.0	27.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.5	3.1	2.4	3.9	7.2	20.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.8	18.5	49.0	8.8	45.8	73.5
LnGrp LOS	C	B	D	A	D	E
Approach Vol, veh/h	1510			997	817	
Approach Delay, s/veh	26.6			15.9	56.3	
Approach LOS	C			B	E	

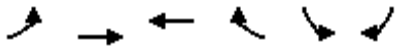
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		88.0		32.0	22.0	66.0
Change Period (Y+Rc), s		* 7.4		* 6.7	7.4	* 7.1
Max Green Setting (Gmax), s		* 79		* 27	12.6	* 59
Max Q Clear Time (g_c+I1), s		13.9		24.9	7.6	37.9
Green Ext Time (p_c), s		3.3		0.4	0.1	5.9

Intersection Summary		
HCM 6th Ctrl Delay		30.7
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	0	1089	134	204	227
Future Volume (veh/h)	36	0	1089	134	204	227
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	0	1184	146	222	247
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	309	0	2308	1029	303	270
Arrive On Green	0.03	0.00	0.65	0.65	0.17	0.17
Sat Flow, veh/h	1781	39	3647	1585	1781	1585
Grp Volume(v), veh/h	39	8.4	1184	146	222	247
Grp Sat Flow(s),veh/h/ln	1781	A	1777	1585	1781	1585
Q Serve(g_s), s	0.9		21.0	4.3	14.2	18.4
Cycle Q Clear(g_c), s	0.9		21.0	4.3	14.2	18.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	309		2308	1029	303	270
V/C Ratio(X)	0.13		0.51	0.14	0.73	0.92
Avail Cap(c_a), veh/h	419		2308	1029	312	277
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3		11.1	8.1	47.2	48.9
Incr Delay (d2), s/veh	0.1		0.8	0.3	7.2	31.5
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3		7.3	1.3	6.9	9.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.4		11.9	8.4	54.4	80.4
LnGrp LOS	A		B	A	D	F
Approach Vol, veh/h			1330		469	
Approach Delay, s/veh			11.5		68.1	
Approach LOS			B		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	9.6	83.9				26.4
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	11.6	70.0				21.0
Max Q Clear Time (g_c+I1), s	12.9	23.0				20.4
Green Ext Time (p_c), s	0.0	4.2				0.1

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	10	148	95	24	0	26	98	46	3	188	27
Future Vol, veh/h	25	10	148	95	24	0	26	98	46	3	188	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	11	161	103	26	0	28	107	50	3	204	29

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	348	438	117	302	427	79	233	0	0	157	0	0
Stage 1	225	225	-	188	188	-	-	-	-	-	-	-
Stage 2	123	213	-	114	239	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	582	511	913	627	518	965	1332	-	-	1420	-	-
Stage 1	757	716	-	796	743	-	-	-	-	-	-	-
Stage 2	868	725	-	879	706	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	549	499	913	499	506	965	1332	-	-	1420	-	-
Mov Cap-2 Maneuver	549	499	-	499	506	-	-	-	-	-	-	-
Stage 1	741	715	-	779	727	-	-	-	-	-	-	-
Stage 2	819	710	-	712	705	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	13.8	1.2	0.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1332	-	-	549	867	499	506	1420	-	-
HCM Lane V/C Ratio	0.021	-	-	0.049	0.198	0.207	0.052	0.002	-	-
HCM Control Delay (s)	7.8	-	-	11.9	10.2	14.1	12.5	7.5	-	-
HCM Lane LOS	A	-	-	B	B	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.7	0.8	0.2	0	-	-

Intersection	
Int Delay, s/veh	8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	108	16	9	0	1	209
Future Vol, veh/h	108	16	9	0	1	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	17	10	0	1	227

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	10	0	-	0	253	5
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1608	-	-	-	714	1076
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	775	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1608	-	-	-	662	1076
Mov Cap-2 Maneuver	-	-	-	-	662	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	775	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1608	-	-	-	1073
HCM Lane V/C Ratio	0.073	-	-	-	0.213
HCM Control Delay (s)	7.4	-	-	-	9.3
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	7	1	30	124	2	1	11	46	51	0	56	1
Future Vol, veh/h	7	1	30	124	2	1	11	46	51	0	56	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	1	33	135	2	1	12	50	55	0	61	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	165	191	62	181	164	78	62	0	0	105	0	0
Stage 1	62	62	-	102	102	-	-	-	-	-	-	-
Stage 2	103	129	-	79	62	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	800	704	1003	781	729	983	1541	-	-	1486	-	-
Stage 1	949	843	-	904	811	-	-	-	-	-	-	-
Stage 2	903	789	-	930	843	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	793	698	1003	750	723	983	1541	-	-	1486	-	-
Mov Cap-2 Maneuver	793	698	-	750	723	-	-	-	-	-	-	-
Stage 1	941	843	-	897	805	-	-	-	-	-	-	-
Stage 2	892	783	-	899	843	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	10.9	0.7	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	946	751	1486	-	-
HCM Lane V/C Ratio	0.008	-	-	0.044	0.184	-	-	-
HCM Control Delay (s)	7.4	0	-	9	10.9	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0	-	-

2050 BACKGROUND PLUS PROJECT

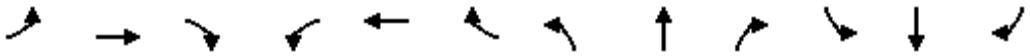
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕		↰	↕	
Traffic Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Future Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	134	38	0	8	34	245	23	2	410	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	744	751	411	807	741	257	412	0	0	268	0	0
Stage 1	415	415	-	325	325	-	-	-	-	-	-	-
Stage 2	329	336	-	482	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	331	340	641	300	344	782	1147	-	-	1296	-	-
Stage 1	615	592	-	687	649	-	-	-	-	-	-	-
Stage 2	684	642	-	565	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	327	641	231	331	782	1147	-	-	1296	-	-
Mov Cap-2 Maneuver	319	327	-	231	331	-	-	-	-	-	-	-
Stage 1	593	591	-	663	626	-	-	-	-	-	-	-
Stage 2	654	620	-	446	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	21.6	0.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	608	262	1296	-	-
HCM Lane V/C Ratio	0.029	-	-	0.232	0.174	0.002	-	-
HCM Control Delay (s)	8.2	0	-	12.7	21.6	7.8	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.6	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Future Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	5	163	153	2	89	48	213	13	148	423	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	13	424	466	10	426	367	579	35	512	619	1
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1306	47	1545	1217	35	1555	963	1745	106	1155	1865	4
Grp Volume(v), veh/h	3	0	168	153	0	91	48	0	226	148	0	424
Grp Sat Flow(s),veh/h/ln	1306	0	1592	1217	0	1590	963	0	1851	1155	0	1870
Q Serve(g_s), s	0.1	0.0	2.6	3.6	0.0	1.3	1.4	0.0	2.8	3.4	0.0	6.0
Cycle Q Clear(g_c), s	1.4	0.0	2.6	6.2	0.0	1.3	7.4	0.0	2.8	6.2	0.0	6.0
Prop In Lane	1.00		0.97	1.00		0.98	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	537	0	437	466	0	436	367	0	615	512	0	621
V/C Ratio(X)	0.01	0.00	0.38	0.33	0.00	0.21	0.13	0.00	0.37	0.29	0.00	0.68
Avail Cap(c_a), veh/h	1593	0	1724	1450	0	1722	1470	0	2734	1834	0	2761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	9.0	11.5	0.0	8.5	12.0	0.0	7.7	10.1	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.7	0.0	0.3	0.2	0.0	0.7	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	9.2	11.6	0.0	8.6	12.0	0.0	7.9	10.2	0.0	9.3
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		171			244			274			572	
Approach Delay, s/veh		9.2			10.5			8.6			9.5	
Approach LOS		A			B			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.1		14.4		16.1		14.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0				
Max Q Clear Time (g_c+I1), s		9.4		4.6		8.2		8.2				
Green Ext Time (p_c), s		0.8		0.5		1.5		0.4				

Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Future Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
Arrive On Green	0.10	0.32	0.32	0.21	0.43	0.43	0.08	0.08	0.08	0.12	0.25	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1290	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1290	1870	1585	1781	1870	1585
Q Serve(g_s), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Cycle Q Clear(g_c), s	8.2	23.4	3.2	2.6	18.4	3.7	5.5	3.6	2.8	9.6	4.4	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1619	502	476	1529	682	170	141	120	208	473	
V/C Ratio(X)	0.81	0.81	0.14	0.39	0.57	0.14	0.42	0.49	0.62	0.84	0.22	
Avail Cap(c_a), veh/h	467	1619	502	476	1529	682	219	213	181	285	625	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.9	31.3	24.4	30.9	21.5	17.3	45.2	44.4	16.9	43.2	29.6	0.0
Incr Delay (d2), s/veh	5.9	4.4	0.6	0.2	1.5	0.4	0.6	1.0	1.9	14.8	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.5	1.2	3.4	7.2	1.4	1.8	1.7	1.8	5.1	2.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	35.7	25.0	31.1	23.0	17.7	45.9	45.4	18.8	58.0	29.7	0.0
LnGrp LOS	D	D	C	C	C	B	D	D	B	E	C	
Approach Vol, veh/h		1663			1147			216			279	
Approach Delay, s/veh		37.7			23.9			36.4			47.4	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	50.3	17.7	15.2	28.1	39.0		32.9
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 14	* 32	16.0	11.4	* 14	* 32		33.4
Max Q Clear Time (g_c+I1), s	10.2	20.4	11.6	7.5	4.6	25.4		6.4
Green Ext Time (p_c), s	0.2	2.7	0.2	0.1	0.0	2.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Future Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
Arrive On Green	0.14	0.26	0.26	0.26	0.37	0.37	0.15	0.18	0.18	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
V/C Ratio(X)	0.14	0.99	0.90	0.94	0.58	0.02	0.93	0.10	0.62	0.31	0.68	
Avail Cap(c_a), veh/h	487	1335	415	465	1329	593	511	635	283	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	36.8	35.6	36.2	25.1	11.0	42.1	34.3	37.9	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.0	23.0	24.7	27.4	1.9	0.1	23.9	0.0	3.1	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.8	11.4	13.2	7.1	0.2	7.4	0.6	4.2	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	59.8	60.4	63.6	27.0	11.1	66.0	34.3	41.0	48.3	48.1	0.0
LnGrp LOS	D	E	E	E	C	B	E	C	D	D	D	
Approach Vol, veh/h		1766			1225			715			177	
Approach Delay, s/veh		59.1			39.9			57.1			48.1	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	44.0	9.2	25.0	31.9	33.9	21.0	13.2
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 37	13.6	* 9.9	26.1	* 26	* 15	7.9
Max Q Clear Time (g_c+I1), s	13.7	19.5	2.9	12.3	26.0	27.9	15.6	6.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Future Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
Arrive On Green	0.05	0.38	0.38	0.08	0.40	0.40	0.13	0.13	0.13	0.13	0.14	0.14
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Cycle Q Clear(g_c), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
V/C Ratio(X)	0.67	0.75	0.54	0.74	0.49	0.56	0.86	0.48	0.86	1.01	0.30	0.81
Avail Cap(c_a), veh/h	435	1355	605	435	1433	639	460	249	211	460	485	216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	26.8	24.1	45.2	22.2	23.0	42.7	40.2	42.6	43.3	38.9	41.9
Incr Delay (d2), s/veh	1.5	3.9	3.4	1.6	1.2	3.5	13.8	0.5	27.7	44.9	0.1	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	6.4	2.3	5.9	7.0	5.4	2.7	5.9	8.5	1.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	30.7	27.4	46.8	23.4	26.6	56.5	40.8	70.2	88.3	39.0	60.2
LnGrp LOS	D	C	C	D	C	C	E	D	E	F	D	E
Approach Vol, veh/h		1469			1262			677			784	
Approach Delay, s/veh		31.5			28.0			57.4			72.9	
Approach LOS		C			C			E			E	

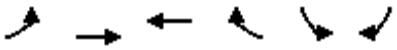
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	47.3	20.0	19.8	15.0	45.1	19.5	20.3
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	33.0	* 13	* 13	* 13	33.0	* 13	* 13
Max Q Clear Time (g_c+I1), s	5.5	19.5	15.3	13.1	7.6	26.9	12.8	12.6
Green Ext Time (p_c), s	0.1	2.8	0.0	0.0	0.1	2.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	0	951	408	427	258
Future Volume (veh/h)	224	0	951	408	427	258
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	0	1034	443	464	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	379	0	1564	697	445	396
Arrive On Green	0.13	0.00	0.44	0.44	0.25	0.25
Sat Flow, veh/h	1781	243	3647	1585	1781	1585
Grp Volume(v), veh/h	243	38.0	1034	443	464	280
Grp Sat Flow(s),veh/h/ln	1781	D	1777	1585	1781	1585
Q Serve(g_s), s	4.2		23.0	21.7	25.0	16.1
Cycle Q Clear(g_c), s	4.2		23.0	21.7	25.0	16.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	379		1564	697	445	396
V/C Ratio(X)	0.64		0.66	0.64	1.04	0.71
Avail Cap(c_a), veh/h	379		1564	697	445	396
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1		22.1	21.8	37.5	34.2
Incr Delay (d2), s/veh	2.8		2.2	4.4	54.0	4.9
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3		9.1	8.1	17.3	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.0		24.3	26.1	91.5	39.0
LnGrp LOS	D		C	C	F	D
Approach Vol, veh/h			1477		744	
Approach Delay, s/veh			24.9		71.7	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	19.0	50.0				31.0
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	44.0				25.0
Max Q Clear Time (g_c+I1), s	6.2	25.0				27.0
Green Ext Time (p_c), s	0.1	3.6				0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Future Vol, veh/h	67	7	34	74	8	1	11	506	103	0	555	91
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	Free	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	73	8	37	80	9	1	12	550	112	0	603	99

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	957	1227	351	880	1276	275	702	0	-	550	0	0
Stage 1	653	653	-	574	574	-	-	-	-	-	-	-
Stage 2	304	574	-	306	702	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	212	177	645	241	165	722	891	-	0	1016	-	-
Stage 1	423	462	-	471	501	-	-	-	0	-	-	-
Stage 2	681	501	-	679	439	-	-	-	0	-	-	-
Platoon blocked, %								-			-	-
Mov Cap-1 Maneuver	201	175	645	217	163	722	891	-	-	1016	-	-
Mov Cap-2 Maneuver	201	175	-	217	163	-	-	-	-	-	-	-
Stage 1	418	462	-	465	494	-	-	-	-	-	-	-
Stage 2	659	494	-	630	439	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	25.6	30.5	0.2	0
HCM LOS	D	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	891	-	201	442	217	178	1016	-	-
HCM Lane V/C Ratio	0.013	-	0.362	0.101	0.371	0.055	-	-	-
HCM Control Delay (s)	9.1	-	32.7	14.1	31	26.4	0	-	-
HCM Lane LOS	A	-	D	B	D	D	A	-	-
HCM 95th %tile Q(veh)	0	-	1.6	0.3	1.6	0.2	0	-	-

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	424	151	147	0	0	500
Future Vol, veh/h	424	151	147	0	0	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	164	160	0	0	543

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	1164	80
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	1004	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1417	-	-	-	188	964
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1417	-	-	-	127	964
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	315	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1417	-	-	-	964
HCM Lane V/C Ratio	0.325	-	-	-	0.564
HCM Control Delay (s)	8.8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.4	-	-	-	3.6

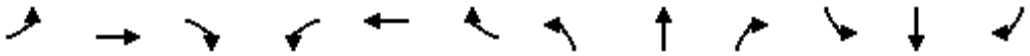
Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Future Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	61	153	153	0	179	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	532	608	180	580	533	230	181	0	0	306	0	0
Stage 1	180	180	-	352	352	-	-	-	-	-	-	-
Stage 2	352	428	-	228	181	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	458	410	863	426	453	809	1394	-	-	1255	-	-
Stage 1	822	750	-	665	632	-	-	-	-	-	-	-
Stage 2	665	585	-	775	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	388	863	363	429	809	1394	-	-	1255	-	-
Mov Cap-2 Maneuver	438	388	-	363	429	-	-	-	-	-	-	-
Stage 1	778	750	-	629	598	-	-	-	-	-	-	-
Stage 2	628	553	-	689	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	27	1.3	0
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	863	363	1255	-	-
HCM Lane V/C Ratio	0.044	-	-	0.111	0.563	-	-	-
HCM Control Delay (s)	7.7	0	-	9.7	27	0	-	-
HCM Lane LOS	A	A	-	A	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	3.3	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	80	30	0	10	87	522	79	16	849	7
Future Volume (veh/h)	4	0	80	30	0	10	87	522	79	16	849	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	0	87	33	0	11	95	567	86	17	923	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	44	3	118	151	10	30	152	883	129	561	1461	13
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.08	1.00	1.00	1.00	0.79	0.79	0.79
Sat Flow, veh/h	33	37	1517	1046	127	391	135	1119	163	779	1851	16
Grp Volume(v), veh/h	91	0	0	44	0	0	748	0	0	17	0	931
Grp Sat Flow(s),veh/h/ln	1587	0	0	1564	0	0	1418	0	0	779	0	1867
Q Serve(g_s), s	1.3	0.0	0.0	0.0	0.0	0.0	9.8	0.0	0.0	0.0	0.0	18.9
Cycle Q Clear(g_c), s	5.0	0.0	0.0	2.3	0.0	0.0	28.7	0.0	0.0	0.9	0.0	18.9
Prop In Lane	0.04		0.96	0.75		0.25	0.13		0.11	1.00		0.01
Lane Grp Cap(c), veh/h	165	0	0	191	0	0	1164	0	0	561	0	1474
V/C Ratio(X)	0.55	0.00	0.00	0.23	0.00	0.00	0.64	0.00	0.00	0.03	0.00	0.63
Avail Cap(c_a), veh/h	410	0	0	405	0	0	1164	0	0	561	0	1474
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	0.87	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	0.0	39.3	0.0	0.0	0.6	0.0	0.0	2.1	0.0	4.0
Incr Delay (d2), s/veh	1.1	0.0	0.0	0.2	0.0	0.0	2.4	0.0	0.0	0.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	0.9	0.0	0.0	0.8	0.0	0.0	0.1	0.0	5.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.7	0.0	0.0	39.5	0.0	0.0	2.9	0.0	0.0	2.2	0.0	6.1
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		91			44			748			948	
Approach Delay, s/veh		41.7			39.5			2.9			6.0	
Approach LOS		D			D			A			A	

Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.0		13.0		77.0		13.0				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		57.0		21.0		57.0		21.0				
Max Q Clear Time (g_c+I1), s		30.7		7.0		20.9		4.3				
Green Ext Time (p_c), s		3.6		0.2		4.1		0.1				

Intersection Summary												
HCM 6th Ctrl Delay			7.3									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	4	114	207	5	131	115	555	258	276	679	4
Future Volume (veh/h)	2	4	114	207	5	131	115	555	258	276	679	4
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	4	124	225	5	142	125	603	280	300	738	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	273	12	360	290	13	359	534	1185	1004	369	1177	6
Arrive On Green	0.23	0.23	0.23	0.23	0.23	0.23	0.63	0.63	0.63	1.00	1.00	1.00
Sat Flow, veh/h	1241	50	1543	1262	54	1539	718	1870	1585	629	1858	10
Grp Volume(v), veh/h	2	0	128	225	0	147	125	603	280	300	0	742
Grp Sat Flow(s),veh/h/ln	1241	0	1593	1262	0	1593	718	1870	1585	629	0	1869
Q Serve(g_s), s	0.1	0.0	6.0	15.0	0.0	7.0	7.0	15.7	7.1	41.3	0.0	0.0
Cycle Q Clear(g_c), s	7.1	0.0	6.0	21.0	0.0	7.0	7.0	15.7	7.1	57.0	0.0	0.0
Prop In Lane	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	273	0	372	290	0	372	534	1185	1004	369	0	1183
V/C Ratio(X)	0.01	0.00	0.34	0.78	0.00	0.40	0.23	0.51	0.28	0.81	0.00	0.63
Avail Cap(c_a), veh/h	273	0	372	290	0	372	534	1185	1004	369	0	1183
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.77	0.00	0.77
Uniform Delay (d), s/veh	32.2	0.0	28.8	38.0	0.0	29.1	7.3	8.9	7.3	8.6	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.2	11.4	0.0	0.3	1.0	1.6	0.7	14.1	0.0	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	2.3	5.8	0.0	2.7	1.1	6.1	2.3	4.3	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.2	0.0	29.0	49.4	0.0	29.4	8.4	10.5	8.0	22.7	0.0	1.9
LnGrp LOS	C	A	C	D	A	C	A	B	A	C	A	A
Approach Vol, veh/h		130			372			1008			1042	
Approach Delay, s/veh		29.0			41.5			9.5			7.9	
Approach LOS		C			D			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	63.0	27.0	63.0	27.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	57.0	21.0	57.0	21.0
Max Q Clear Time (g_c+I1), s	17.7	9.1	59.0	23.0
Green Ext Time (p_c), s	3.0	0.3	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	14.5
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	2163	62	237	968	189	144	259	258	294	221	369
Future Volume (veh/h)	480	2163	62	237	968	189	144	259	258	294	221	369
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	522	2351	67	258	1052	205	157	282	280	320	240	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	568	2104	653	707	2311	1031	193	232	197	267	593	
Arrive On Green	0.16	0.41	0.41	0.40	0.65	0.65	0.12	0.12	0.12	0.15	0.32	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	1140	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	522	2351	67	258	1052	205	157	282	280	320	240	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1140	1870	1585	1781	1870	1585
Q Serve(g_s), s	20.8	57.7	3.6	14.3	20.6	7.3	17.4	17.4	13.1	21.0	14.1	0.0
Cycle Q Clear(g_c), s	20.8	57.7	3.6	14.3	20.6	7.3	17.4	17.4	13.1	21.0	14.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	568	2104	653	707	2311	1031	193	232	197	267	593	
V/C Ratio(X)	0.92	1.12	0.10	0.36	0.46	0.20	0.81	1.21	1.42	1.20	0.40	
Avail Cap(c_a), veh/h	605	2104	653	707	2311	1031	193	232	197	267	593	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	57.6	41.2	25.3	29.8	12.2	9.8	62.1	61.3	34.5	59.5	37.4	0.0
Incr Delay (d2), s/veh	18.0	59.9	0.3	0.1	0.6	0.4	21.2	128.7	216.6	119.4	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.2	34.4	1.4	6.0	7.5	2.6	6.8	16.6	16.9	18.3	6.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	75.5	101.1	25.6	29.9	12.8	10.3	83.4	190.0	251.1	178.9	37.6	0.0
LnGrp LOS	E	F	C	C	B	B	F	F	F	F	D	
Approach Vol, veh/h		2940			1515			719			560	
Approach Delay, s/veh		94.8			15.4			190.5			118.3	
Approach LOS		F			B			F			F	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	29.5	98.9	27.0	25.0	63.5	65.0		52.0
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 25	* 50	21.0	17.4	* 17	* 58		44.4
Max Q Clear Time (g_c+I1), s	22.8	22.6	23.0	19.4	16.3	59.7		16.1
Green Ext Time (p_c), s	0.2	4.4	0.0	0.0	0.0	0.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	88.1
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	2304	453	294	1185	2	395	15	226	175	255	682
Future Volume (veh/h)	22	2304	453	294	1185	2	395	15	226	175	255	682
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	2504	492	320	1288	2	429	16	0	190	277	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1311	3797	1179	294	1863	831	390	451		238	277	
Arrive On Green	0.38	0.74	0.74	0.17	0.52	0.52	0.11	0.13	0.00	0.07	0.08	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	24	2504	492	320	1288	2	429	16	0	190	277	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.6	34.5	21.2	23.1	37.9	0.1	15.8	0.6	0.0	7.6	10.9	0.0
Cycle Q Clear(g_c), s	0.6	34.5	21.2	23.1	37.9	0.1	15.8	0.6	0.0	7.6	10.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1311	3797	1179	294	1863	831	390	451		238	277	
V/C Ratio(X)	0.02	0.66	0.42	1.09	0.69	0.00	1.10	0.04		0.80	1.00	
Avail Cap(c_a), veh/h	1311	3797	1179	294	1863	831	390	451		336	277	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.2	9.0	11.4	58.5	24.8	25.7	62.1	53.6	0.0	64.2	64.6	0.0
Incr Delay (d2), s/veh	0.0	0.9	1.1	78.3	2.1	0.0	75.3	0.0	0.0	5.7	54.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	10.5	7.6	16.5	15.4	0.0	11.0	0.3	0.0	3.5	7.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.2	9.9	12.5	136.7	27.0	25.7	137.4	53.6	0.0	70.0	118.9	0.0
LnGrp LOS	C	A	B	F	C	C	F	D		E	F	
Approach Vol, veh/h		3020			1610			445			467	
Approach Delay, s/veh		10.5			48.8			134.4			99.0	
Approach LOS		B			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	80.0	16.0	24.0	29.0	113.0	22.0	18.0
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 6.2	5.9	* 7.7	6.2	* 7.1
Max Green Setting (Gmax), s	12.3	* 73	13.6	* 14	23.1	* 65	15.8	* 11
Max Q Clear Time (g_c+I1), s	12.6	39.9	9.6	2.6	25.1	36.5	17.8	12.9
Green Ext Time (p_c), s	0.0	5.6	0.0	0.0	0.0	16.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	39.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



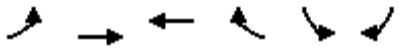
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	1250	250	185	824	410	490	135	300	235	112	136
Future Volume (veh/h)	142	1250	250	185	824	410	490	135	300	235	112	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	1359	272	201	896	446	533	147	326	255	122	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	1640	731	249	1688	753	579	338	286	302	357	159
Arrive On Green	0.06	0.46	0.46	0.07	0.47	0.47	0.17	0.18	0.18	0.09	0.10	0.10
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	154	1359	272	201	896	446	533	147	326	255	122	148
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	6.1	46.7	15.6	8.0	24.8	28.8	21.3	9.8	25.3	10.2	4.5	13.0
Cycle Q Clear(g_c), s	6.1	46.7	15.6	8.0	24.8	28.8	21.3	9.8	25.3	10.2	4.5	13.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	202	1640	731	249	1688	753	579	338	286	302	357	159
V/C Ratio(X)	0.76	0.83	0.37	0.81	0.53	0.59	0.92	0.43	1.14	0.85	0.34	0.93
Avail Cap(c_a), veh/h	311	1640	731	311	1688	753	624	338	286	328	357	159
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.9	32.9	24.5	64.0	25.8	26.9	57.4	51.0	57.3	63.0	58.6	62.5
Incr Delay (d2), s/veh	2.2	5.0	1.4	9.6	1.2	3.4	17.7	0.3	95.8	15.7	0.2	50.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	20.0	6.2	3.8	10.2	11.6	10.8	4.7	17.7	5.1	2.0	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.2	37.9	26.0	73.6	27.0	30.3	75.0	51.3	153.1	78.6	58.9	112.5
LnGrp LOS	E	D	C	E	C	C	E	D	F	E	E	F
Approach Vol, veh/h		1785			1543			1006			525	
Approach Delay, s/veh		38.6			34.0			96.9			83.6	
Approach LOS		D			C			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	73.5	18.9	32.0	17.5	71.6	30.2	20.8
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	61.0	* 13	* 25	* 13	61.0	* 25	* 13
Max Q Clear Time (g_c+I1), s	8.1	30.8	12.2	27.3	10.0	48.7	23.3	15.0
Green Ext Time (p_c), s	0.1	4.4	0.0	0.0	0.1	5.1	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	54.1
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	149	0	1348	340	380	355
Future Volume (veh/h)	149	0	1348	340	380	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	0	1465	370	413	386
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	210	0	1989	887	460	410
Arrive On Green	0.05	0.00	0.56	0.56	0.26	0.26
Sat Flow, veh/h	1781	162	3647	1585	1781	1585
Grp Volume(v), veh/h	162	34.0	1465	370	413	386
Grp Sat Flow(s),veh/h/ln	1781	C	1777	1585	1781	1585
Q Serve(g_s), s	5.4		43.2	18.8	31.3	33.4
Cycle Q Clear(g_c), s	5.4		43.2	18.8	31.3	33.4
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	210		1989	887	460	410
V/C Ratio(X)	0.77		0.74	0.42	0.90	0.94
Avail Cap(c_a), veh/h	268		1989	887	598	532
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.6		23.1	17.7	50.1	50.9
Incr Delay (d2), s/veh	7.4		2.5	1.4	11.7	20.0
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3		17.3	6.8	15.5	15.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.0		25.6	19.1	61.8	70.9
LnGrp LOS	C		C	B	E	E
Approach Vol, veh/h			1835		799	
Approach Delay, s/veh			24.3		66.2	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	13.5	84.4				42.2
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	12.6	63.0				47.0
Max Q Clear Time (g_c+I1), s	7.4	45.2				35.4
Green Ext Time (p_c), s	0.0	5.3				0.8

Intersection Summary	
HCM 6th Ctrl Delay	36.8
HCM 6th LOS	D

Intersection	
Int Delay, s/veh	7.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	11	163	145	26	0	29	274	123	3	368	30
Future Vol, veh/h	28	11	163	145	26	0	29	274	123	3	368	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	65	-	-	0	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	12	177	158	28	0	32	298	134	3	400	33

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	650	919	217	641	868	216	433	0	0	432	0	0
Stage 1	423	423	-	429	429	-	-	-	-	-	-	-
Stage 2	227	496	-	212	439	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.54	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.52	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	354	270	787	360	289	789	1123	-	-	1124	-	-
Stage 1	579	586	-	574	582	-	-	-	-	-	-	-
Stage 2	755	544	-	770	576	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	262	787	263	280	789	1123	-	-	1124	-	-
Mov Cap-2 Maneuver	319	262	-	263	280	-	-	-	-	-	-	-
Stage 1	563	584	-	558	566	-	-	-	-	-	-	-
Stage 2	697	529	-	583	574	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.8	34.5	0.6	0.1
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1123	-	-	319	699	263	280	1124	-	-
HCM Lane V/C Ratio	0.028	-	-	0.095	0.271	0.599	0.101	0.003	-	-
HCM Control Delay (s)	8.3	-	-	17.5	12.1	37.2	19.3	8.2	-	-
HCM Lane LOS	A	-	-	C	B	E	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	1.1	3.5	0.3	0	-	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	89	102	0	1	305
Future Vol, veh/h	215	89	102	0	1	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	234	97	111	0	1	332

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	628	56
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1477	-	-	-	415	999
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	349	999
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	993
HCM Lane V/C Ratio	0.158	-	-	-	0.335
HCM Control Delay (s)	7.9	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	1.5

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	8	1	33	174	2	1	12	99	104	0	99	1
Future Vol, veh/h	8	1	33	174	2	1	12	99	104	0	99	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	36	189	2	1	13	108	113	0	108	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	301	356	109	318	300	165	109	0	0	221	0	0
Stage 1	109	109	-	191	191	-	-	-	-	-	-	-
Stage 2	192	247	-	127	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	651	570	945	635	612	879	1481	-	-	1348	-	-
Stage 1	896	805	-	811	742	-	-	-	-	-	-	-
Stage 2	810	702	-	877	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	643	564	945	605	606	879	1481	-	-	1348	-	-
Mov Cap-2 Maneuver	643	564	-	605	606	-	-	-	-	-	-	-
Stage 1	887	805	-	803	735	-	-	-	-	-	-	-
Stage 2	799	695	-	843	805	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	13.7	0.4	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1481	-	-	855	606	1348	-	-
HCM Lane V/C Ratio	0.009	-	-	0.053	0.317	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	13.7	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	1.4	0	-	-

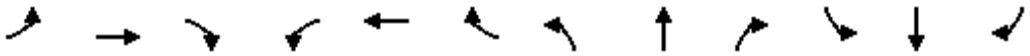
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔		↰	↕	
Traffic Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Future Vol, veh/h	7	0	123	35	0	7	31	225	21	2	377	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	0	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	134	38	0	8	34	245	23	2	410	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	744	751	411	807	741	257	412	0	0	268	0	0
Stage 1	415	415	-	325	325	-	-	-	-	-	-	-
Stage 2	329	336	-	482	416	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	331	340	641	300	344	782	1147	-	-	1296	-	-
Stage 1	615	592	-	687	649	-	-	-	-	-	-	-
Stage 2	684	642	-	565	592	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	327	641	231	331	782	1147	-	-	1296	-	-
Mov Cap-2 Maneuver	319	327	-	231	331	-	-	-	-	-	-	-
Stage 1	593	591	-	663	626	-	-	-	-	-	-	-
Stage 2	654	620	-	446	591	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.7	21.6	0.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1147	-	-	608	262	1296	-	-
HCM Lane V/C Ratio	0.029	-	-	0.232	0.174	0.002	-	-
HCM Control Delay (s)	8.2	0	-	12.7	21.6	7.8	-	-
HCM Lane LOS	A	A	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.6	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Future Volume (veh/h)	3	5	150	141	2	82	44	196	12	136	389	1
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	3	5	163	153	2	89	48	213	13	148	423	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	537	13	424	466	10	426	367	579	35	512	619	1
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1306	47	1545	1217	35	1555	963	1745	106	1155	1865	4
Grp Volume(v), veh/h	3	0	168	153	0	91	48	0	226	148	0	424
Grp Sat Flow(s),veh/h/ln	1306	0	1592	1217	0	1590	963	0	1851	1155	0	1870
Q Serve(g_s), s	0.1	0.0	2.6	3.6	0.0	1.3	1.4	0.0	2.8	3.4	0.0	6.0
Cycle Q Clear(g_c), s	1.4	0.0	2.6	6.2	0.0	1.3	7.4	0.0	2.8	6.2	0.0	6.0
Prop In Lane	1.00		0.97	1.00		0.98	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	537	0	437	466	0	436	367	0	615	512	0	621
V/C Ratio(X)	0.01	0.00	0.38	0.33	0.00	0.21	0.13	0.00	0.37	0.29	0.00	0.68
Avail Cap(c_a), veh/h	1593	0	1724	1450	0	1722	1470	0	2734	1834	0	2761
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.1	0.0	9.0	11.5	0.0	8.5	12.0	0.0	7.7	10.1	0.0	8.8
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.6	0.7	0.0	0.3	0.2	0.0	0.7	0.6	0.0	1.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.1	0.0	9.2	11.6	0.0	8.6	12.0	0.0	7.9	10.2	0.0	9.3
LnGrp LOS	A	A	A	B	A	A	B	A	A	B	A	A
Approach Vol, veh/h		171			244			274			572	
Approach Delay, s/veh		9.2			10.5			8.6			9.5	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.1		14.4		16.1		14.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		45.0		33.0		45.0		33.0				
Max Q Clear Time (g_c+I1), s		9.4		4.6		8.2		8.2				
Green Ext Time (p_c), s		0.8		0.5		1.5		0.4				
Intersection Summary												
HCM 6th Ctrl Delay			9.5									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Future Volume (veh/h)	265	1201	64	169	798	88	66	64	68	161	96	263
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	356	1619	502	1081	1687	753	170	269	120	250	389	
Arrive On Green	0.10	0.32	0.32	0.25	0.47	0.47	0.08	0.08	0.08	0.07	0.21	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	1290	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	288	1305	70	184	867	96	72	70	74	175	104	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1290	1777	1585	1728	1870	1585
Q Serve(g_s), s	8.2	23.4	3.2	0.0	16.9	3.4	5.5	1.9	2.6	4.9	4.7	0.0
Cycle Q Clear(g_c), s	8.2	23.4	3.2	0.0	16.9	3.4	5.5	1.9	2.6	4.9	4.7	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	356	1619	502	1081	1687	753	170	269	120	250	389	
V/C Ratio(X)	0.81	0.81	0.14	0.17	0.51	0.13	0.42	0.26	0.62	0.70	0.27	
Avail Cap(c_a), veh/h	467	1619	502	1081	1687	753	219	405	181	553	625	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	43.9	31.3	24.4	26.5	18.2	14.7	45.2	43.6	14.3	45.3	33.2	0.0
Incr Delay (d2), s/veh	5.9	4.4	0.6	0.0	1.1	0.3	0.6	0.2	1.9	3.5	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	9.5	1.2	1.6	6.5	1.3	1.8	0.8	1.8	2.2	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.8	35.7	25.0	26.5	19.4	15.0	45.9	43.8	16.2	48.8	33.3	0.0
LnGrp LOS	D	D	C	C	B	B	D	D	B	D	C	
Approach Vol, veh/h		1663			1147			216			279	
Approach Delay, s/veh		37.7			20.1			35.0			43.1	
Approach LOS		D			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	16.8	54.8	13.2	15.2	32.6	39.0		28.4
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	* 7.3	* 7.3		7.6
Max Green Setting (Gmax), s	* 14	* 32	16.0	11.4	* 14	* 32		33.4
Max Q Clear Time (g_c+I1), s	10.2	18.9	6.9	7.5	2.0	25.4		6.7
Green Ext Time (p_c), s	0.2	2.8	0.3	0.1	0.0	2.9		0.2

Intersection Summary	
HCM 6th Ctrl Delay	31.9
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Future Volume (veh/h)	63	1220	342	402	715	10	439	57	162	28	135	108
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
Arrive On Green	0.14	0.26	0.26	0.26	0.37	0.37	0.15	0.18	0.18	0.03	0.06	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	68	1326	372	437	777	11	477	62	176	30	147	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Cycle Q Clear(g_c), s	1.7	25.9	22.6	24.0	17.5	0.3	13.6	1.5	10.3	0.9	4.1	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	487	1335	415	464	1329	593	511	635	283	98	217	
V/C Ratio(X)	0.14	0.99	0.90	0.94	0.58	0.02	0.93	0.10	0.62	0.31	0.68	
Avail Cap(c_a), veh/h	487	1335	415	465	1329	593	511	635	283	470	281	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	37.6	36.8	35.6	36.2	25.1	11.0	42.1	34.3	37.9	47.6	46.0	0.0
Incr Delay (d2), s/veh	0.0	23.0	24.7	27.4	1.9	0.1	23.9	0.0	3.1	0.7	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.7	12.8	11.4	13.2	7.1	0.2	7.4	0.6	4.2	0.4	1.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	37.7	59.8	60.4	63.6	27.0	11.1	66.0	34.3	41.0	48.3	48.1	0.0
LnGrp LOS	D	E	E	E	C	B	E	C	D	D	D	
Approach Vol, veh/h		1766			1225			715			177	
Approach Delay, s/veh		59.1			39.9			57.1			48.1	
Approach LOS		E			D			E			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	44.0	9.2	25.0	31.9	33.9	21.0	13.2
Change Period (Y+Rc), s	7.7	* 6.6	6.4	* 7.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	12.3	* 37	13.6	* 9.9	26.1	* 26	* 15	7.9
Max Q Clear Time (g_c+I1), s	13.3	19.5	2.9	12.3	26.0	27.9	15.6	6.1
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	52.2
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Future Volume (veh/h)	115	938	298	180	650	330	350	108	166	428	133	160
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
Arrive On Green	0.05	0.38	0.38	0.08	0.40	0.40	0.13	0.13	0.13	0.13	0.14	0.14
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	3554	1585
Grp Volume(v), veh/h	125	1020	324	196	707	359	380	117	180	465	145	174
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1777	1585
Q Serve(g_s), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Cycle Q Clear(g_c), s	3.5	24.9	15.9	5.6	14.8	17.5	10.8	5.8	11.1	13.3	3.7	10.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	188	1355	605	263	1433	639	443	246	208	460	485	216
V/C Ratio(X)	0.67	0.75	0.54	0.74	0.49	0.56	0.86	0.48	0.86	1.01	0.30	0.81
Avail Cap(c_a), veh/h	435	1355	605	435	1433	639	460	249	211	460	485	216
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	26.8	24.1	45.2	22.2	23.0	42.7	40.2	42.6	43.3	38.9	41.9
Incr Delay (d2), s/veh	1.5	3.9	3.4	1.6	1.2	3.5	13.8	0.5	27.7	44.9	0.1	18.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	10.3	6.4	2.3	5.9	7.0	5.4	2.7	5.9	8.5	1.6	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.9	30.7	27.4	46.8	23.4	26.6	56.5	40.8	70.2	88.3	39.0	60.2
LnGrp LOS	D	C	C	D	C	C	E	D	E	F	D	E
Approach Vol, veh/h		1469			1262			677			784	
Approach Delay, s/veh		31.5			28.0			57.4			72.9	
Approach LOS		C			C			E			E	

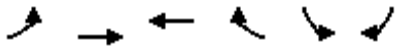
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.8	47.3	20.0	19.8	15.0	45.1	19.5	20.3
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	33.0	* 13	* 13	* 13	33.0	* 13	* 13
Max Q Clear Time (g_c+I1), s	5.5	19.5	15.3	13.1	7.6	26.9	12.8	12.6
Green Ext Time (p_c), s	0.1	2.8	0.0	0.0	0.1	2.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	42.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	0	951	408	427	258
Future Volume (veh/h)	224	0	951	408	427	258
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	243	0	1034	443	464	280
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	379	0	1564	697	445	396
Arrive On Green	0.13	0.00	0.44	0.44	0.25	0.25
Sat Flow, veh/h	1781	243	3647	1585	1781	1585
Grp Volume(v), veh/h	243	38.0	1034	443	464	280
Grp Sat Flow(s),veh/h/ln	1781	D	1777	1585	1781	1585
Q Serve(g_s), s	4.2		23.0	21.7	25.0	16.1
Cycle Q Clear(g_c), s	4.2		23.0	21.7	25.0	16.1
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	379		1564	697	445	396
V/C Ratio(X)	0.64		0.66	0.64	1.04	0.71
Avail Cap(c_a), veh/h	379		1564	697	445	396
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1		22.1	21.8	37.5	34.2
Incr Delay (d2), s/veh	2.8		2.2	4.4	54.0	4.9
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3		9.1	8.1	17.3	6.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	38.0		24.3	26.1	91.5	39.0
LnGrp LOS	D		C	C	F	D
Approach Vol, veh/h			1477		744	
Approach Delay, s/veh			24.9		71.7	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	19.0	50.0				31.0
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	13.0	44.0				25.0
Max Q Clear Time (g_c+I1), s	6.2	25.0				27.0
Green Ext Time (p_c), s	0.1	3.6				0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.3
HCM 6th LOS	D



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	7	34	74	8	1	11	506	103	0	555	91
Future Volume (veh/h)	67	7	34	74	8	1	11	506	103	0	555	91
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	73	8	37	80	9	1	12	550	0	0	603	99
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	482	43	201	449	248	28	453	1373		278	1181	193
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.39	0.39	0.00	0.00	0.39	0.39
Sat Flow, veh/h	1405	290	1340	1361	1654	184	745	3647	0	858	3056	501
Grp Volume(v), veh/h	73	0	45	80	0	10	12	550	0	0	350	352
Grp Sat Flow(s),veh/h/ln	1405	0	1629	1361	0	1837	745	1777	0	858	1777	1780
Q Serve(g_s), s	1.2	0.0	0.6	1.4	0.0	0.1	0.3	2.9	0.0	0.0	3.9	3.9
Cycle Q Clear(g_c), s	1.3	0.0	0.6	2.0	0.0	0.1	4.2	2.9	0.0	0.0	3.9	3.9
Prop In Lane	1.00		0.82	1.00		0.10	1.00		0.00	1.00		0.28
Lane Grp Cap(c), veh/h	482	0	244	449	0	275	453	1373		278	687	688
V/C Ratio(X)	0.15	0.00	0.18	0.18	0.00	0.04	0.03	0.40		0.00	0.51	0.51
Avail Cap(c_a), veh/h	2063	0	2078	1981	0	2343	1461	6179		1438	3090	3096
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	10.0	0.0	9.6	10.5	0.0	9.4	7.7	5.8	0.0	0.0	6.1	6.1
Incr Delay (d2), s/veh	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.2	0.3	0.0	0.0	0.0	0.5	0.0	0.0	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	10.0	0.0	9.8	10.6	0.0	9.4	7.7	5.8	0.0	0.0	6.3	6.3
LnGrp LOS	B	A	A	B	A	A	A	A		A	A	A
Approach Vol, veh/h		118			90			562			702	
Approach Delay, s/veh		9.9			10.4			5.9			6.3	
Approach LOS		A			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	16.0	9.9	16.0	9.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	45.0	33.0	45.0	33.0
Max Q Clear Time (g_c+I1), s	6.2	3.3	5.9	4.0
Green Ext Time (p_c), s	2.1	0.2	2.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.7
HCM 6th LOS	A

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	424	151	147	0	0	500
Future Vol, veh/h	424	151	147	0	0	500
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	461	164	160	0	0	543

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	160	0	-	0	1164	80
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	1004	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1417	-	-	-	188	964
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	315	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1417	-	-	-	127	964
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	315	-

Approach	EB	WB	SB
HCM Control Delay, s	6.5	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1417	-	-	-	964
HCM Lane V/C Ratio	0.325	-	-	-	0.564
HCM Control Delay (s)	8.8	-	-	-	13.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.4	-	-	-	3.6

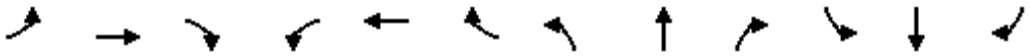
Intersection	
Int Delay, s/veh	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Future Vol, veh/h	0	0	88	187	1	0	56	141	141	0	165	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	96	203	1	0	61	153	153	0	179	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	532	608	180	580	533	230	181	0	0	306	0	0
Stage 1	180	180	-	352	352	-	-	-	-	-	-	-
Stage 2	352	428	-	228	181	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	458	410	863	426	453	809	1394	-	-	1255	-	-
Stage 1	822	750	-	665	632	-	-	-	-	-	-	-
Stage 2	665	585	-	775	750	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	438	388	863	363	429	809	1394	-	-	1255	-	-
Mov Cap-2 Maneuver	438	388	-	363	429	-	-	-	-	-	-	-
Stage 1	778	750	-	629	598	-	-	-	-	-	-	-
Stage 2	628	553	-	689	750	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	27	1.3	0
HCM LOS	A	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1394	-	-	863	363	1255	-	-
HCM Lane V/C Ratio	0.044	-	-	0.111	0.563	-	-	-
HCM Control Delay (s)	7.7	0	-	9.7	27	0	-	-
HCM Lane LOS	A	A	-	A	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	3.3	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	80	30	0	10	87	522	79	16	849	7
Future Volume (veh/h)	4	0	80	30	0	10	87	522	79	16	849	7
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	4	0	87	33	0	11	95	567	86	17	923	8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	41	3	116	142	9	29	153	889	130	595	1479	13
Arrive On Green	0.08	0.00	0.08	0.08	0.00	0.08	0.80	0.80	0.80	0.80	0.80	0.80
Sat Flow, veh/h	32	38	1517	1008	121	376	138	1113	163	779	1851	16
Grp Volume(v), veh/h	91	0	0	44	0	0	748	0	0	17	0	931
Grp Sat Flow(s),veh/h/ln	1587	0	0	1504	0	0	1414	0	0	779	0	1867
Q Serve(g_s), s	1.4	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	19.3
Cycle Q Clear(g_c), s	5.4	0.0	0.0	2.5	0.0	0.0	25.2	0.0	0.0	0.9	0.0	19.3
Prop In Lane	0.04		0.96	0.75		0.25	0.13		0.11	1.00		0.01
Lane Grp Cap(c), veh/h	160	0	0	180	0	0	1171	0	0	595	0	1492
V/C Ratio(X)	0.57	0.00	0.00	0.24	0.00	0.00	0.64	0.00	0.00	0.03	0.00	0.62
Avail Cap(c_a), veh/h	383	0	0	374	0	0	1171	0	0	595	0	1492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	43.6	0.0	0.0	42.2	0.0	0.0	3.6	0.0	0.0	2.0	0.0	3.9
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.3	0.0	0.0	2.7	0.0	0.0	0.1	0.0	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	1.0	0.0	0.0	4.0	0.0	0.0	0.1	0.0	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.8	0.0	0.0	42.5	0.0	0.0	6.3	0.0	0.0	2.1	0.0	5.9
LnGrp LOS	D	A	A	D	A	A	A	A	A	A	A	A
Approach Vol, veh/h		91			44			748			948	
Approach Delay, s/veh		44.8			42.5			6.3			5.8	
Approach LOS		D			D			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		83.0		13.4		83.0		13.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		77.0		21.0		77.0		21.0				
Max Q Clear Time (g_c+I1), s		27.2		7.4		21.3		4.5				
Green Ext Time (p_c), s		3.8		0.2		4.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			8.8									
HCM 6th LOS			A									



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	4	114	207	5	131	115	555	258	276	679	8
Future Volume (veh/h)	2	4	114	207	5	131	115	555	258	276	679	8
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	2	4	124	225	5	142	125	603	280	300	738	9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	336	13	411	353	14	410	301	1067	905	328	1052	13
Arrive On Green	0.27	0.27	0.27	0.27	0.27	0.27	0.57	0.57	0.57	0.57	0.57	0.57
Sat Flow, veh/h	1241	50	1543	1262	54	1539	714	1870	1585	629	1844	22
Grp Volume(v), veh/h	2	0	128	225	0	147	125	603	280	300	0	747
Grp Sat Flow(s),veh/h/ln	1241	0	1593	1262	0	1593	714	1870	1585	629	0	1866
Q Serve(g_s), s	0.1	0.0	4.7	12.7	0.0	5.5	11.2	15.0	6.8	27.0	0.0	21.1
Cycle Q Clear(g_c), s	5.6	0.0	4.7	17.5	0.0	5.5	32.3	15.0	6.8	42.0	0.0	21.1
Prop In Lane	1.00		0.97	1.00		0.97	1.00		1.00	1.00		0.01
Lane Grp Cap(c), veh/h	336	0	424	353	0	424	301	1067	905	328	0	1065
V/C Ratio(X)	0.01	0.00	0.30	0.64	0.00	0.35	0.42	0.56	0.31	0.91	0.00	0.70
Avail Cap(c_a), veh/h	359	0	454	377	0	455	301	1067	905	328	0	1065
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	21.5	28.5	0.0	21.8	22.9	10.0	8.2	26.4	0.0	11.3
Incr Delay (d2), s/veh	0.0	0.0	0.1	2.3	0.0	0.2	0.3	0.4	0.1	28.3	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	1.7	3.9	0.0	2.0	1.8	5.4	2.0	7.8	0.0	7.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.1	0.0	21.7	30.8	0.0	22.0	23.2	10.4	8.3	54.8	0.0	13.1
LnGrp LOS	C	A	C	C	A	C	C	B	A	D	A	B
Approach Vol, veh/h		130			372			1008			1047	
Approach Delay, s/veh		21.7			27.3			11.4			25.0	
Approach LOS		C			C			B			C	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	48.0	25.6	48.0	25.6
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	42.0	21.0	42.0	21.0
Max Q Clear Time (g_c+I1), s	34.3	7.6	44.0	19.5
Green Ext Time (p_c), s	2.0	0.3	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	480	2163	62	237	968	189	144	259	258	294	221	369
Future Volume (veh/h)	480	2163	62	237	968	189	144	259	258	294	221	369
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	522	2351	67	258	1052	205	157	282	0	320	240	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	579	2402	746	308	1382	616	199	448		369	522	
Arrive On Green	0.17	0.47	0.47	0.09	0.39	0.39	0.13	0.13	0.00	0.11	0.28	0.00
Sat Flow, veh/h	3456	5106	1585	3456	3554	1585	1140	3554	1585	3456	1870	1585
Grp Volume(v), veh/h	522	2351	67	258	1052	205	157	282	0	320	240	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1728	1777	1585	1140	1777	1585	1728	1870	1585
Q Serve(g_s), s	19.3	58.8	3.0	9.6	33.4	11.8	16.4	9.8	0.0	11.9	13.8	0.0
Cycle Q Clear(g_c), s	19.3	58.8	3.0	9.6	33.4	11.8	16.4	9.8	0.0	11.9	13.8	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	579	2402	746	308	1382	616	199	448		369	522	
V/C Ratio(X)	0.90	0.98	0.09	0.84	0.76	0.33	0.79	0.63		0.87	0.46	
Avail Cap(c_a), veh/h	731	2402	746	369	1382	616	199	448		372	524	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.1	33.8	19.0	58.3	34.5	27.9	57.5	53.9	0.0	57.2	38.8	0.0
Incr Delay (d2), s/veh	10.8	14.0	0.2	11.6	4.0	1.4	17.3	2.1	0.0	19.0	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	25.4	1.1	4.6	14.4	4.8	6.2	4.5	0.0	6.1	6.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	47.8	19.3	69.9	38.5	29.3	74.8	56.0	0.0	76.1	39.0	0.0
LnGrp LOS	E	D	B	E	D	C	E	E		E	D	
Approach Vol, veh/h		2940			1515			439			560	
Approach Delay, s/veh		50.0			42.6			62.8			60.2	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	28.3	57.8	19.9	24.0	17.7	68.4		43.9
Change Period (Y+Rc), s	* 6.5	* 7.3	6.0	7.6	6.1	* 7.3		7.6
Max Green Setting (Gmax), s	* 28	* 45	14.0	16.4	13.9	* 59		36.4
Max Q Clear Time (g_c+I1), s	21.3	35.4	13.9	18.4	11.6	60.8		15.8
Green Ext Time (p_c), s	0.5	3.1	0.0	0.0	0.0	0.0		0.5

Intersection Summary	
HCM 6th Ctrl Delay	50.0
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	2304	453	294	1185	2	395	15	226	175	255	682
Future Volume (veh/h)	22	2304	453	294	1185	2	395	15	226	175	255	682
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	24	2504	492	320	1288	2	429	16	0	190	277	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1412	3932	1220	289	1842	822	367	137		473	243	
Arrive On Green	0.41	0.77	0.77	0.16	0.52	0.52	0.11	0.04	0.00	0.14	0.07	0.00
Sat Flow, veh/h	3456	5106	1585	1781	3554	1585	3456	3554	1585	3456	3554	1585
Grp Volume(v), veh/h	24	2504	492	320	1288	2	429	16	0	190	277	0
Grp Sat Flow(s),veh/h/ln	1728	1702	1585	1781	1777	1585	1728	1777	1585	1728	1777	1585
Q Serve(g_s), s	0.5	28.8	13.5	21.1	35.6	0.1	13.8	0.6	0.0	6.5	8.9	0.0
Cycle Q Clear(g_c), s	0.5	28.8	13.5	21.1	35.6	0.1	13.8	0.6	0.0	6.5	8.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	1412	3932	1220	289	1842	822	367	137		473	243	
V/C Ratio(X)	0.02	0.64	0.40	1.11	0.70	0.00	1.17	0.12		0.40	1.14	
Avail Cap(c_a), veh/h	1412	3932	1220	289	1842	822	367	271		473	243	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.9	6.7	5.0	54.5	23.6	15.1	58.1	60.4	0.0	51.2	60.6	0.0
Incr Delay (d2), s/veh	0.0	0.8	1.0	84.7	2.2	0.0	101.7	0.1	0.0	0.2	100.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	7.7	4.2	15.9	14.3	0.0	11.2	0.3	0.0	2.9	7.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	7.5	6.0	139.1	25.9	15.1	159.8	60.5	0.0	51.4	160.7	0.0
LnGrp LOS	C	A	A	F	C	B	F	E		D	F	
Approach Vol, veh/h		3020			1610			445			467	
Approach Delay, s/veh		7.4			48.4			156.2			116.3	
Approach LOS		A			D			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	62.0	74.0	24.9	11.1	27.0	109.0	20.0	16.0
Change Period (Y+Rc), s	7.7	* 6.6	7.1	* 6.1	5.9	* 7.7	* 6.2	7.1
Max Green Setting (Gmax), s	42.3	* 67	13.6	* 9.9	21.1	* 61	* 14	8.9
Max Q Clear Time (g_c+I1), s	12.5	37.6	8.5	2.6	23.1	30.8	15.8	10.9
Green Ext Time (p_c), s	0.0	5.5	0.1	0.0	0.0	16.5	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	40.4
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	142	1250	250	185	824	410	490	135	330	258	112	136
Future Volume (veh/h)	142	1250	250	185	824	410	490	135	330	258	112	136
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	154	1359	272	201	896	446	533	147	0	280	122	148
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	206	1588	708	253	1636	730	566	319		330	191	162
Arrive On Green	0.06	0.45	0.45	0.07	0.46	0.46	0.16	0.17	0.00	0.10	0.10	0.10
Sat Flow, veh/h	3456	3554	1585	3456	3554	1585	3456	1870	1585	3456	1870	1585
Grp Volume(v), veh/h	154	1359	272	201	896	446	533	147	0	280	122	148
Grp Sat Flow(s),veh/h/ln	1728	1777	1585	1728	1777	1585	1728	1870	1585	1728	1870	1585
Q Serve(g_s), s	5.7	44.5	14.9	7.4	23.6	27.5	19.8	9.2	0.0	10.4	8.1	12.0
Cycle Q Clear(g_c), s	5.7	44.5	14.9	7.4	23.6	27.5	19.8	9.2	0.0	10.4	8.1	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	206	1588	708	253	1636	730	566	319		330	191	162
V/C Ratio(X)	0.75	0.86	0.38	0.80	0.55	0.61	0.94	0.46		0.85	0.64	0.91
Avail Cap(c_a), veh/h	335	1588	708	335	1636	730	566	319		354	191	162
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.2	32.2	24.0	59.3	25.3	26.3	53.7	48.5	0.0	57.9	56.0	57.8
Incr Delay (d2), s/veh	2.0	6.1	1.6	6.8	1.3	3.8	23.9	0.4	0.0	15.4	5.3	45.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	19.2	5.9	3.4	9.7	11.1	10.5	4.4	0.0	5.2	4.1	6.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	62.2	38.3	25.6	66.1	26.6	30.1	77.6	48.9	0.0	73.3	61.4	103.0
LnGrp LOS	E	D	C	E	C	C	E	D		E	E	F
Approach Vol, veh/h		1785			1543			680			550	
Approach Delay, s/veh		38.5			32.8			71.4			78.6	
Approach LOS		D			C			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.1	66.9	19.1	28.9	16.9	65.1	28.0	20.0
Change Period (Y+Rc), s	* 7.4	7.0	* 6.7	* 6.7	* 7.4	7.0	* 6.7	* 6.7
Max Green Setting (Gmax), s	* 13	55.0	* 13	* 21	* 13	55.0	* 21	* 13
Max Q Clear Time (g_c+I1), s	7.7	29.5	12.4	11.2	9.4	46.5	21.8	14.0
Green Ext Time (p_c), s	0.1	4.3	0.0	0.3	0.1	4.1	0.0	0.0

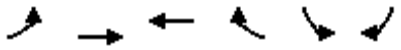
Intersection Summary	
HCM 6th Ctrl Delay	46.3
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	149	0	1110	340	380	355
Future Volume (veh/h)	149	0	1110	340	380	355
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	0	1870	1870	1870	1870
Adj Flow Rate, veh/h	162	0	1207	370	413	386
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	0	2	2	2	2
Cap, veh/h	256	0	1941	866	462	411
Arrive On Green	0.06	0.00	0.55	0.55	0.26	0.26
Sat Flow, veh/h	1781	162	3647	1585	1781	1585
Grp Volume(v), veh/h	162	19.3	1207	370	413	386
Grp Sat Flow(s),veh/h/ln	1781	B	1777	1585	1781	1585
Q Serve(g_s), s	5.2		30.3	18.0	29.1	31.0
Cycle Q Clear(g_c), s	5.2		30.3	18.0	29.1	31.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	256		1941	866	462	411
V/C Ratio(X)	0.63		0.62	0.43	0.89	0.94
Avail Cap(c_a), veh/h	431		1941	866	589	524
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00		1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.4		20.3	17.5	46.4	47.1
Incr Delay (d2), s/veh	1.0		1.5	1.5	11.8	20.0
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9		11.9	6.4	14.3	14.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	19.3		21.8	19.0	58.2	67.1
LnGrp LOS	B		C	B	E	E
Approach Vol, veh/h			1577		799	
Approach Delay, s/veh			21.1		62.5	
Approach LOS			C		E	

Timer - Assigned Phs	1	2				8
Phs Duration (G+Y+Rc), s	13.2	77.0				39.7
Change Period (Y+Rc), s	6.0	6.0				6.0
Max Green Setting (Gmax), s	20.0	49.0				43.0
Max Q Clear Time (g_c+I1), s	7.2	32.3				33.0
Green Ext Time (p_c), s	0.1	4.1				0.7

Intersection Summary	
HCM 6th Ctrl Delay	34.0
HCM 6th LOS	C



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	11	163	145	26	0	29	274	123	3	368	30
Future Volume (veh/h)	28	11	163	145	26	0	29	274	123	3	368	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	30	12	177	158	28	0	32	298	134	3	400	33
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	610	29	424	458	529	0	458	783	344	453	1084	89
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.00	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1382	102	1499	1194	1870	0	955	2402	1055	956	3325	273
Grp Volume(v), veh/h	30	0	189	158	28	0	32	219	213	3	213	220
Grp Sat Flow(s),veh/h/ln	1382	0	1601	1194	1870	0	955	1777	1680	956	1777	1821
Q Serve(g_s), s	0.5	0.0	2.9	3.8	0.3	0.0	0.8	2.9	3.0	0.1	2.8	2.8
Cycle Q Clear(g_c), s	0.8	0.0	2.9	6.7	0.3	0.0	3.7	2.9	3.0	3.1	2.8	2.8
Prop In Lane	1.00		0.94	1.00		0.00	1.00		0.63	1.00		0.15
Lane Grp Cap(c), veh/h	610	0	453	458	529	0	458	579	548	453	579	594
V/C Ratio(X)	0.05	0.00	0.42	0.35	0.05	0.00	0.07	0.38	0.39	0.01	0.37	0.37
Avail Cap(c_a), veh/h	1166	0	1096	938	1281	0	831	1274	1205	827	1274	1306
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	0.0	8.9	11.7	8.0	0.0	9.3	7.9	8.0	9.2	7.9	7.9
Incr Delay (d2), s/veh	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.2	0.2	0.0	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.7	0.8	0.1	0.0	0.1	0.7	0.7	0.0	0.7	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	8.3	0.0	9.2	11.9	8.0	0.0	9.3	8.1	8.1	9.2	8.1	8.1
LnGrp LOS	A	A	A	B	A	A	A	A	A	A	A	A
Approach Vol, veh/h		219			186			464			436	
Approach Delay, s/veh		9.1			11.3			8.2			8.1	
Approach LOS		A			B			A			A	

Timer - Assigned Phs	2	4	6	8
Phs Duration (G+Y+Rc), s	16.0	14.7	16.0	14.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	22.0	21.0	22.0	21.0
Max Q Clear Time (g_c+I1), s	5.7	4.9	5.1	8.7
Green Ext Time (p_c), s	1.3	0.5	1.2	0.2

Intersection Summary	
HCM 6th Ctrl Delay	8.7
HCM 6th LOS	A

Intersection	
Int Delay, s/veh	6.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	89	102	0	1	305
Future Vol, veh/h	215	89	102	0	1	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	234	97	111	0	1	332

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	628	56
Stage 1	-	-	-	-	111	-
Stage 2	-	-	-	-	517	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1477	-	-	-	415	999
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1477	-	-	-	349	999
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	SB
HCM Control Delay, s	5.6	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1477	-	-	-	993
HCM Lane V/C Ratio	0.158	-	-	-	0.335
HCM Control Delay (s)	7.9	-	-	-	10.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	1.5

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	1	33	174	2	1	12	99	104	0	99	1
Future Vol, veh/h	8	1	33	174	2	1	12	99	104	0	99	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	36	189	2	1	13	108	113	0	108	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	301	356	109	318	300	165	109	0	0	221	0	0
Stage 1	109	109	-	191	191	-	-	-	-	-	-	-
Stage 2	192	247	-	127	109	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	651	570	945	635	612	879	1481	-	-	1348	-	-
Stage 1	896	805	-	811	742	-	-	-	-	-	-	-
Stage 2	810	702	-	877	805	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	643	564	945	605	606	879	1481	-	-	1348	-	-
Mov Cap-2 Maneuver	643	564	-	605	606	-	-	-	-	-	-	-
Stage 1	887	805	-	803	735	-	-	-	-	-	-	-
Stage 2	799	695	-	843	805	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	13.7	0.4	0
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1481	-	-	855	606	1348	-	-
HCM Lane V/C Ratio	0.009	-	-	0.053	0.317	-	-	-
HCM Control Delay (s)	7.5	0	-	9.4	13.7	0	-	-
HCM Lane LOS	A	A	-	A	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	1.4	0	-	-

SIGNAL WARRANTS

2026 SIGNAL WARRANTS

Signal Warrants Report For Intersection 8: Highland Blvd & 11800 North

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	463	618	237	96
2	449	599	230	93
3	440	587	225	91
4	412	550	211	85
5	366	488	187	76
6	361	482	185	75
7	357	476	182	74
8	324	433	166	67
9	319	426	164	66
10	315	420	161	65
11	273	365	140	57
12	255	340	130	53
13	250	334	128	52
14	185	247	95	38
15	185	247	95	38
16	130	173	66	27
17	74	99	38	15
18	74	99	38	15
19	42	56	21	9
20	23	31	12	5
21	14	19	7	3
22	5	6	2	1
23	5	6	2	1
24	5	6	2	1

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1081	1	237	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
2	2	1048	1	230	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
3	2	1027	1	225	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
4	2	962	1	211	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
5	2	854	1	187	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
6	2	843	1	185	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
7	2	833	1	182	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
8	2	757	1	166	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
9	2	745	1	164	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
10	2	735	1	161	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
11	2	638	1	140	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No
12	2	595	1	130	No	Yes	Yes	Yes	No	No	No	Yes	No	No
13	2	584	1	128	No	Yes	Yes	Yes	No	No	No	Yes	No	No
14	2	432	1	95	No	No	No	Yes	No	No	No	No	No	No
15	2	432	1	95	No	No	No	Yes	No	No	No	No	No	No
16	2	303	1	66	No	No	No	No	No	No	No	No	No	No
17	2	173	1	38	No	No	No	No	No	No	No	No	No	No
18	2	173	1	38	No	No	No	No	No	No	No	No	No	No
19	2	98	1	21	No	No	No	No	No	No	No	No	No	No
20	2	54	1	12	No	No	No	No	No	No	No	No	No	No
21	2	33	1	7	No	No	No	No	No	No	No	No	No	No
22	2	11	1	2	No	No	No	No	No	No	No	No	No	No
23	2	11	1	2	No	No	No	No	No	No	No	No	No	No
24	2	11	1	2	No	No	No	No	No	No	No	No	No	No
Hours Met					10	13	13	15	4	10	11	13	4	0

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	295.1	13
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	19:25	0:20
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	237	96
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	1414	1414
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	**Yes**	

2050 SIGNAL WARRANT

Signal Warrants Report For Intersection 8: Highland Blvd & 11800 North

Warrants Summary

Warrant	Name	Met?
#1	Eight Hour Vehicular Volume	Yes
#2	Four Hour Vehicular Volume	Yes
#3	Peak Hour	Yes

Intersection Warrants Parameters

Major Approaches	N, S
Minor Approaches	E, W
Speed > 40mph	No
Population < 10,000	No
Warrant Factor	100%

Warrant Analysis Traffic Volumes

Hour	Major Streets		Minor Streets	
	N	S	E	W
1	817	679	338	0
2	792	659	328	0
3	776	645	321	0
4	727	604	301	0
5	645	536	267	0
6	637	530	264	0
7	629	523	260	0
8	572	475	237	0
9	564	469	233	0
10	556	462	230	0
11	482	401	199	0
12	449	373	186	0
13	441	367	183	0
14	327	272	135	0
15	327	272	135	0
16	229	190	95	0
17	131	109	54	0
18	131	109	54	0
19	74	61	30	0
20	41	34	17	0
21	25	20	10	0
22	8	7	3	0
23	8	7	3	0
24	8	7	3	0

Warrant Analysis by Hour

Hour	Major Streets		Minor Street		Warrant 1 Condition A				Warrant 1 Condition B				Warrant 2	Warrant 3
	Number	Volume	Number	Volume	100%	80%	70%	56%	100%	80%	70%	56%		Condition B
1	2	1496	1	338	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2	2	1451	1	328	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3	2	1421	1	321	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4	2	1331	1	301	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5	2	1181	1	267	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
6	2	1167	1	264	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
7	2	1152	1	260	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
8	2	1047	1	237	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
9	2	1033	1	233	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
10	2	1018	1	230	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
11	2	883	1	199	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No
12	2	822	1	186	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
13	2	808	1	183	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	No
14	2	599	1	135	No	Yes	Yes	Yes	No	No	No	Yes	No	No
15	2	599	1	135	No	Yes	Yes	Yes	No	No	No	Yes	No	No
16	2	419	1	95	No	No	No	Yes	No	No	No	No	No	No
17	2	240	1	54	No	No	No	No	No	No	No	No	No	No
18	2	240	1	54	No	No	No	No	No	No	No	No	No	No
19	2	135	1	30	No	No	No	No	No	No	No	No	No	No
20	2	75	1	17	No	No	No	No	No	No	No	No	No	No
21	2	45	1	10	No	No	No	No	No	No	No	No	No	No
22	2	15	1	3	No	No	No	No	No	No	No	No	No	No
23	2	15	1	3	No	No	No	No	No	No	No	No	No	No
24	2	15	1	3	No	No	No	No	No	No	No	No	No	No
Hours Met					13	15	15	16	10	13	13	15	11	7

Warrant 3 Condition A

Orientation	E	W
Total Stopped Delay Per Vehicle on Minor Approach (s)	1280	56.8
Number of Lanes on Minor Street Approach	1	1
VehicleHours of Stopped Delay on Minor Approach ([h]h:mm)	120:10	0:00
Delay Condition Met	Yes	No
Volume on Minor Street Approach During Same Hour	338	0
High Minor Volume Condition Met	Yes	No
Total Entering Volume on All Approaches During Same Hour	1834	1834
Number of Approaches on Intersection	4	4
Total Volume Condition Met	Yes	Yes
Warrant Met for Approach	Yes	No
Warrant Met for Intersection	**Yes**	

Skye Area Plan

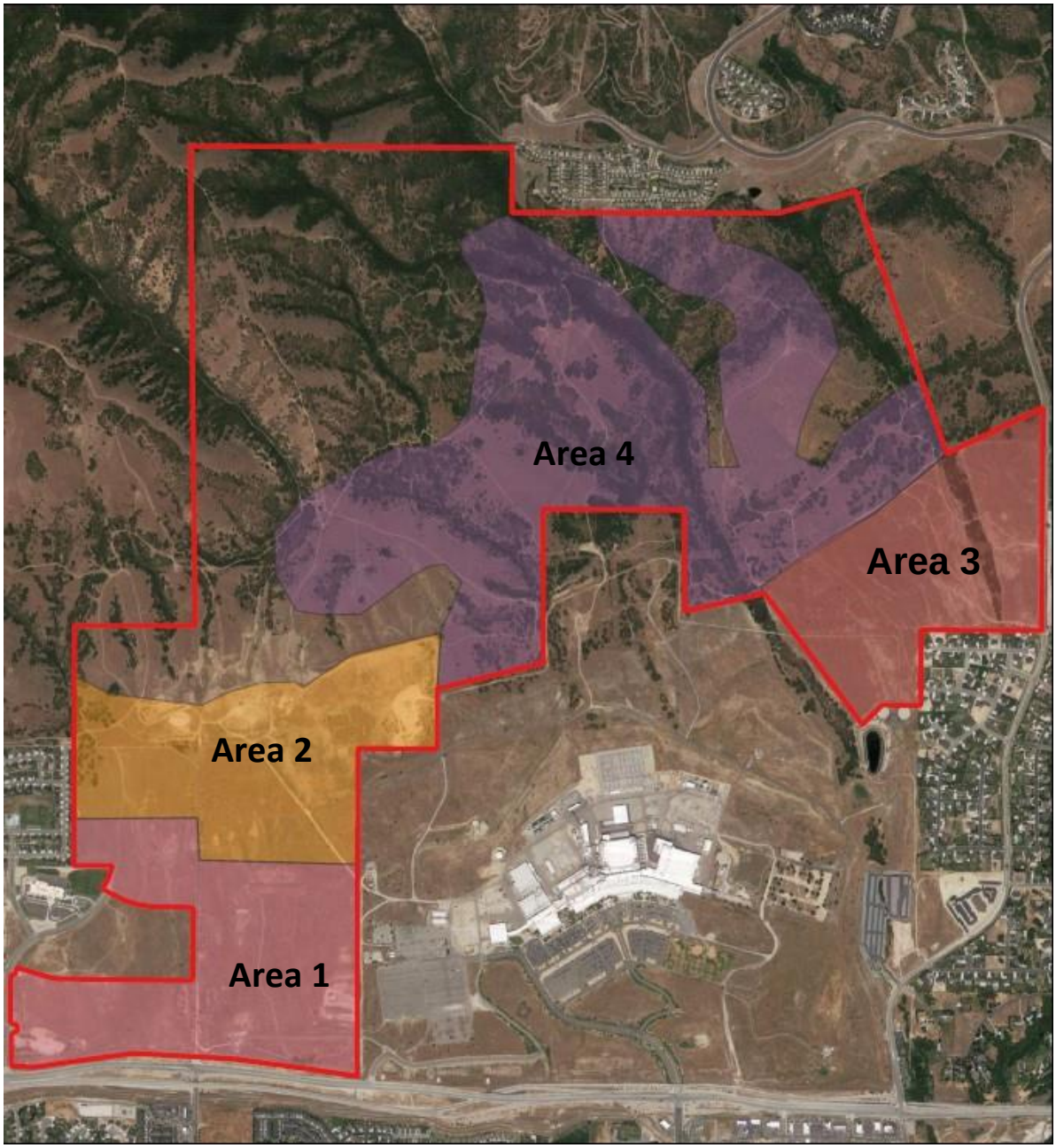
2nd Amendment

Section 5 – Geotechnical

- Geotech Table of Contents
- Geotech Area 1
- Geotech Area 2
- Geotech Area 3
- Geotech Area 4
- Geotech Debris Flow Study
- Geotech Gault Rupture Study

Section 5 – Geotechnical Study Area Map

- Geotechnical Report (Area 1) High Density Single Family, Commercial and Apartment Section
- Geotechnical Report (Area 2) Lehi Emerald and Single Family
- Geotechnical Report (Area 3) Highland Emerald and Single Family
- Geotechnical Report (Area 4) Inverness Area



GeoStrata



Geotechnical Investigation

Micron Property – High Density Single Family, Commercial and Apartment Section

Approximately 500 West and State Road 92
Lehi, Utah

January 21, 2021

Prepared For:

D.R. Horton
Attention: Scott Bishop and Dan Mitchell
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Draper, Utah 84020

GeoStrata Job No. 589-100

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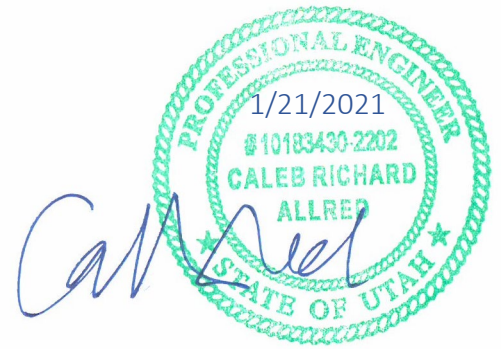
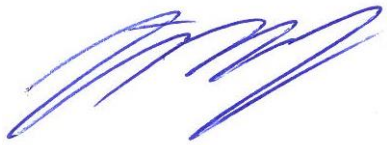
Preliminary Geotechnical Investigation
Micron Property – High Density and Commercial Property 157-Acre Portion
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100





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January 21, 2021

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2

2.1 PURPOSE AND SCOPE OF WORK 2
2.2 PROJECT DESCRIPTION 2

3.0 METHOD OF STUDY 4

3.1 FIELD INVESTIGATION 4
3.2 LABORATORY INVESTIGATION 4
3.3 ENGINEERING ANALYSIS 5

4.0 GENERALIZED SITE CONDITIONS 6

4.1 SURFACE CONDITIONS 6
4.2 SUBSURFACE CONDITIONS 6
4.2.1 Soils 6
4.2.2 Groundwater 7
4.2.3 Collapsible Soils 8

5.0 GEOLOGIC CONDITIONS 10

5.1 GEOLOGIC SETTING 10
5.2 FAULTING AND SEISMICITY 10
5.3 LIQUEFACTION 12
5.4 OTHER GEOLOGIC HAZARDS 12

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS 13

6.1 GENERAL CONCLUSIONS 13
6.2 EARTHWORK 13
6.2.1 General Site Preparation and Grading 14
6.2.2 Excavation Stability 14
6.2.3 Soft Soil Stabilization 15
6.2.4 Structural Fill and Compaction 15
6.3 FOUNDATIONS 18
6.3.1 Installation and Bearing Material 18
6.3.2 Bearing Pressure 19
6.3.3 Settlement 19
6.3.4 Frost Depth 19

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6.3.5 Construction Observation *20*
6.3.6 Foundation Drainage *20*
6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION 21
6.5 EARTH PRESSURE AND LATERAL RESISTANCE 21
6.6 PAVEMENT SECTION 23
7.0 CLOSURE 26
7.1 LIMITATIONS 26
7.2 ADDITIONAL SERVICES 26
7.3 ACKNOWLEDGEMENTs 27
REFERENCES CITED 28

APPENDICES

Appendix A
Plate A-1 ..... Site Vicinity Map
Plate A-2 ..... Site Section Map
Plate A-3 ..... High Density Single Family, Commercial and Apartment Section Exploration Map
Plate A-4 ..... Site Geologic Map
Plate A-5 ..... Fault and Fault Special Study Area Map
Plate A-6 ..... Debris Flow Special Study Area Map
Plate A-7 ..... Slope Stability Special Study Area Map

Appendix B
Plate B-1 to B-34 ..... Test Pit Logs
Plate B-35 ..... Key to Soil Symbols and Terms

Appendix C
Plate C-1 ..... Lab Summary Report
Plates C-2 to C-3 ..... Atterberg Limits' Results
Plates C-4 to C-7 ..... Grain Size Distribution
Plates C-8 to C-21 ..... 1-D Consolidation/Swell/Collapse Test
Plates C-22 to C-23 ..... Compaction and CBR Test

Appendix D
Plate D-1 to D-2 ..... Important Information About This Report

1.0 EXECUTIVE SUMMARY

This report presents the preliminary findings of a geotechnical investigation conducted for 157-acres of the Micron Property at approximately 500 West and State Road 92, in Lehi and Draper, of Utah County. We understand that this section of the proposed development consists of high density residential and commercial development. The development will include different structures, consisting of townhouses, duplexes, apartments and office buildings. The development for this section will be constructed across 157 acres. We anticipate footing loads on the order of 3 to 5 kips per lineal foot and column loads of up to 70 kips. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork. All recommendations and conclusions presented in this report are preliminary, due to the preliminary site development plan.

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed development provided that the recommendations contained in this report are incorporated into the design and construction of the project.

As a part of this investigation, subsurface soil conditions were explored by advancing 34 exploratory test pits depths ranging from 6 to 12 feet below the existing site grade. Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is overlain partially by approximately ½ to 2 feet of topsoil covered a majority of the site. Underlying the topsoil or fill, we encountered deposits mapped by Biek (2005) as consisting of Historical to Pleistocene-aged material deposits. Groundwater was not encountered in any of the completed test pits for this section.

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill depth below footings will be 0 to 24 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively. Exterior shallow footings and spread footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior strip shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. Conventional strip and spread footings founded on a native granular soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,900 pounds per square foot (psf)**.

Additional recommendations concerning other aspects of the proposed construction may be found in the body of this report.

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGIEERING REPORT:

Do not rely on the executive summary. The executive summary omits a number of details, any one of which could be crucial. Read and refer to the report in full. Do not rely on this report if this report was prepared for a different client, different project, different purpose, different site, and/or before important events occurred at the site or adjacent to it. All recommendations in this report are confirmation dependent. A two-page document prepared by GBA explains these items with greater detail and can be found in Appendix D (Plates D-1 and D-2).

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a preliminary geotechnical investigation conducted for 157-acres of the Micron Property located at approximately 500 West and State Road 92 in Lehi and Draper, in Utah County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork.

The scope of work completed for this study included a site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal and signed authorization, dated November 18, 2020.

The recommendations contained in this report are subject to the limitations presented in the LIMITATIONS section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

Due to the size of the Micron Property project, we have divided the property into smaller sections for the purposes of our investigation. This preliminary geotechnical investigation is completed for High Density Single Family, Commercial and Apartments Section, which represents the southwestern-most 157-acres of the proposed building portions of the development. The property is located at approximately 500 West and State Road 92, in Lehi and Draper, Utah County, Utah (see Plate A-1, *Site Vicinity Map*). Plate A-2, Site Section Map, shows how we have divided up the buildable portions of the Micron property. This 157-acres portion of the Micron Property will be developed with high density residences and commercial office buildings. The resulting construction will include one- to three-story, wood-framed residences founded on conventional spread and strip footings and one- to two-story office buildings or apartment structures founded on conventional spread and strip footings. If larger structures are planned, then GeoStrata should be consulted and our recommendations should be updated if necessary. Each of these types of structures are anticipated to have basements or crawlspaces if feasible. We anticipate footing loads on the order of 3 to 5 kips per lineal foot and column loads of up to 70 kips. As stated before, if the anticipated footing loads exceed assumptions or the proposed construction is different than what we have assumed, please contact

GeoStrata with the updated information. The additional information may warrant additional soil subsurface investigations and engineering analysis. Our investigation for the development will be used to provide geotechnical design parameters for construction of buildings, parking areas, driveways, and associated landscaping and utilities.

3.0 METHOD OF STUDY

3.1 FIELD INVESTIGATION

As a part of this investigation, subsurface soil conditions were explored by advancing 34 exploratory test pits depths ranging from 6 to 12 feet below the existing site grade. The approximate locations of the explorations are shown on Plate A-3*, High Density Single Family, Commercial and Apartments Section Exploration Map,* in Appendix A. Exploration points were placed to provide optimum coverage of the site in the areas of the proposed residential or commercial development. Logs of the subsurface conditions, as encountered in the test pit explorations, were recorded at the time of excavation and advancement by a staff engineer currently employed at GeoStrata and are presented on Plates B-1 to B-34 in Appendix B. A *Soil Symbols and Description Key* used in the test pit logs is included as Plate B-35.

The test pits were excavated with a mini track mounted excavator. Both bulk and relatively undisturbed soil samples were obtained from the test pits. Relatively undisturbed soil samples were obtained from the test pit in the form of tube samples and block samples. All samples were transported to our laboratory for testing to evaluate engineering properties of the various earth materials observed. The soils were classified according to the *Unified Soil Classification System* (USCS) by the Geotechnical Engineer. Classifications for the individual soil units are shown on the attached Test Pit Logs, Plates B-1 to B-34 in Appendix B.

3.2 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Grain Size Distribution Analysis (ASTM D422)
- Atterberg Limits (ASTM D4318)
- 1-D Collapse Consolidation Test (ASTM D2435)
- California Bearing Ratio Test (ASTM D1883)

The results of laboratory tests are presented on the Test Pit Logs in Appendix B (Plates B-1 to B-34), the test result plates presented in Appendix C (Plates C-2 to C-23) and in the *Summary of Laboratory Test Results* Table (Plate C-1).

3.3 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics and classification. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

At the time of our subsurface investigation in this 157-acre portion of the Micron Property, one structure existed on the site. This portion of the subject property was also occupied by storage ponds for the uphill drainages, and a well house. These ponds consisted of depressions excavated into the native grade and then earthen embankments surrounding the depressions. The only other site improvements consisted of utilities, gravel improved roadways, and fences constructed across the site. The site slopes towards the south (towards Utah Lake), having a maximum topographic relief of approximately 180 feet. The residential development known as Canyon View borders this property to the northwest and two schools border this property on the west, the southern border of this property is State Road 92. The remainder of property surrounding the 157-acre portion of the Micron Property is undeveloped land.

4.2 SUBSURFACE CONDITIONS

As previously mentioned, the subsurface soil conditions were explored at the subject property by advancing 34 exploratory test pits to depths ranging from 6 to 12 feet below the existing site grade (Test Pits MW-TP-17 to MW-TP-19, MW-TP-24 to MW-TP-54). Subsurface soil conditions were logged using the United Soils Classification System (USCS) at the time of the investigation and are included on the Test Pit Logs in Appendix B (Plates B-1 through B-34). The soil and moisture conditions encountered during our investigation are discussed below.

4.2.1 Soils

Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is overlain partially by approximately ½ to 2 feet of topsoil. Underlying the topsoil or fill, we encountered deposits mapped by Biek (2005) as consisting of Historical to Pleistocene-aged material deposits. Descriptions of the soil units shown in the area are described below;

Qlsb - Lacustrine sand and silt (Upper Pleistocene) − Fine- to coarse-grained lacustrine sand and silt with minor gravel. These deposits are typically thick bedded and well sorted. This geologic soil unit was encountered in MW-TP-17, 18, 19, 24, 25, 26, 27, 28, 31, 32, 35, 36, 39, 40, 41, 42, 43, 47, 48, 49, 50, and 51. The soils were generally visually classified as a fine-grained Lean CLAY (CL) or Sandy SILT (ML), or a coarse-grained Silty SAND (SM) to Silty GRAVEL (GM) with varying amounts of silt, sand, and gravel. Some of the block samples obtained from the test pits contain pinhole texture and could be moisture sensitive. We are in the process of

completing laboratory test to assess this collapse hazard in order to provide recommendations for remediation.

Qafy - Younger undifferentiated alluvial-fan deposits (Holocene to Upper Pleistocene) − Poorly to moderately sorted, non-stratified, clay- to boulder-size sediment deposited principally by debris flows at the mouths of active drainages, are locally deeply incised; thickness unknown, but likely up to several tens of feet. This geologic soil unit was encountered in MW-TP-29, 30, 33, 34, 37, 38, 44, 45, 46, 52, 53, and 54. The soils were generally visually classified as a fine-grained Lean CLAY (CL) or Sandy SILT (ML), or a coarse-grained Silty SAND (SM) to Silty GRAVEL (GM) with varying amounts of silt, sand, and gravel.

Qf - Artificial fill (Historical) − Engineered fill larger areas of fill used to create new level building areas. Not encountered in our test pits advanced in this section but mapped as existing in this in this section.

Qaf_l - Modern alluvial-fan deposits (Holocene) − Poorly to moderately sorted, non-stratified, clay- to boulder-size sediment deposited principally by debris flows at the mouths of active drainages. The closest test pit to this unit is MW-TP-17, and the near surface soil may contain some of the silty soil associated with this unit.

The stratification lines shown on the enclosed test pit represent the approximate boundary between soil types USCS classifications of the soils (Plates B-1 to B-34). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils, care should be taken in interpolating subsurface conditions between and beyond the exploration locations.

4.2.2 Groundwater

Groundwater was not encountered in any of the 34 test pits completed for this portion of the Micron Property. Seasonal fluctuations in precipitation, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions. The observed groundwater conditions can change seasonally depending on the time of year and will impact the proposed construction. It is recommended that lowest floor slab elevation for each structure should be maintained a minimum of 3 feet above any observed groundwater conditions.

4.2.3 Collapsible Soils

Collapse (often referred to as "hydro-collapse") is a phenomena whereby undisturbed soils exhibit volumetric strain and consolidation upon wetting under increased loading conditions. Collapsible soils can cause differential settling of structures and roadways. Collapsible soils do not necessarily preclude development and can be mitigated by over-excavating porous, potentially collapsible soils and replacing with engineered fill and by controlling surface drainage and runoff. For some structures that are particularly sensitive to differential settlement, or in areas where collapsible soils are identified at great depth, a deep foundation system should be considered.

Soils that have a potential to collapse under increased loading and moisture conditions are typically characterized by a pinhole structure and relatively low unit weights. In general, potentially collapsible soils are observed in fine-grained soils that include clay and silt, although collapsible soils may include sandy soils. Test results of the collapse test show negligible to low collapse potential. A table of the collapse test results, depth, and test pit number are provided below. This information is also contained in Plate C-8 to C-21.

Test Pit Number	Sample Depth	Collapse Potential
MW-TP-18	3.0	0.07
MW-TP-19	6.0	1.40
MW-TP-28	3.5	0.47
MW-TP-30	4.0	0.40
MW-TP-32	3.5	0.01
MW-TP-33	6.0	0.10
MW-TP-35	5.0	0.12
MW-TP-39	3.5	0.21
MW-TP-41	5.0	0.01
MW-TP-43	8.0	3.55
MW-TP-47	6.0	0.65
MW-TP-49	6.0	-0.29
MW-TP-52	4.0	-0.01
MW-TP-54	8.0	0.53

Based on these lab test results, it is anticipated that between 0 to 24 inches of structural fill may be required under some of the structures that extend into fine-grained soils with a pinhole

texture. With the 0 to 24 inches of structural fill under the footings the collapsible soils are not anticipated to present a significant risk to the foundation elements within the proposed development if the recommendations presented in this report are incorporated into the design and construction of the structures.

5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

The site is located at an elevation between 4,830 and 5,050 feet above mean sea level within the northern portion of Utah Valley. The Utah Valley is a deep, sediment-filled structural basin of Cenozoic age flanked by the Wasatch Range to the east and the Lake Mountains, East Tintic Mountains, and the West Hills to the West (Hintze, 1980). The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah.

The near-surface geology of Utah Valley is dominated by sediments deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983). As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valleys are predominately deep-water deposits of clay, silt and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Surface soil units as mapped by Biek (2005) as consisted of Historical to Pleistocene-aged material deposits. Based on the soil and groundwater conditions encountered during our investigation, it is considered likely that each of our test pits were terminated in the mapped deposit.

5.2 FAULTING AND SEISMICITY

The site lies within the north-south trending belt of seismicity known as the Intermountain Seismic Belt (ISB) (Hecker, 1993). The ISB extends from northwestern Montana through southwestern Utah. An active fault is defined as a fault that has had activity within the Holocene (<11ka). Based on information provided by Geologic Hazards on the Utah Geologic Hazard Portal, faults associated with the Wasatch Fault Zone (WFZ) are present to the north and east of the subject property (see Plate A-5, *Fault and Fault Special Study Area Map*). No active faults or special study area are mapped through or immediately adjacent to the site (Black and others, 2003, and Constenius, et al., 2011). The closes fault according to Utah Geologic Hazard Portal is 1200 feet northeast of the site. The 157-acre portion of Micron Property is located approximately 5 miles east of the northern strand of the Provo section of the Wasatch Fault Zone. The Provo section is one of the longest sections of the Wasatch Fault Zone (Hecker, 1993) and is estimated to be approximately 43 miles long with a reported rupture length of 37 miles and a maximum potential to produce earthquakes up to magnitude (M_s) 7.5 to 7.7 (Black and others, 2003). The 157-acre portion of Micron Property is also located approximately 6 miles north of the mapped

Utah Lake Faults and Folds (ULFF). The ULFF consists of several northeast to northwest trending faults and folds located beneath Utah Lake and are reported to have been active in the past 15 ka (Black et al, 2003). However, since the ULFF is at the bottom of a large lake these faults are poorly understood – as such, the USGS does not include ULFF in their fault database for seismic hazard analysis. Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region. Each of the faults listed above show evidence of Holocene-aged movement and is therefore considered active.

Spectral responses for the Risk-Targeted Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a one percent probability of structure collapse in 50 years for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field exploration to 12 feet and our geologic review of the site, it is our opinion that this location is best described as a Site Class C. The spectral accelerations are calculated based on the site's approximate latitude and longitude of 40.434° and -111.851˚ respectively and the Seismic Design Maps web-based application at https://seismicmaps.org/.

Description	Value
Site Class	C
S_s - MCE_R ground motion (period – 0.2s)	1.327
S_1 - MCE_R ground motion (period – 1.0s)	0.485
F_a - Site amplification factor at 1.0s	1.200
F_v - Site amplification factor at 1.0s	1.500
PGA - MCE_G peak ground acceleration	0.596
PGA_M – Site modified peak ground acceleration	0.715

It should be noted that our investigation did not include a site-specific ground motion hazard analysis and a Site Class C has been used to determine the seismic parameters presented above based on maximum depths explored of 12 feet and our geologic review. The seismic parameters presented herein may be used for design of the proposed structures provided that structural design allows for the ground motion hazard analysis exception in ASCE 7-16 Section 11.4.8. Alternatively, GeoStrata may be contacted to complete a ground motion hazard analysis in accordance with ASCE 7-16 Chapter 21.

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5.3 LIQUEFACTION

Certain areas within the intermountain region possess a potential for liquefaction during seismic events. Liquefaction is a phenomenon whereby loose, saturated, granular soil deposits lose a significant portion of their shear strength due to excess pore water pressure buildup resulting from dynamic loading, such as that caused by an earthquake. Among other effects, liquefaction can result in densification of such deposits causing settlements of overlying layers after an earthquake as excess pore water pressures are dissipated. The primary factors affecting liquefaction potential of a soil deposit are: (1) level and duration of seismic ground motions; (2) soil type and consistency; and (3) depth to groundwater.

Based on our review of the *Liquefaction-Special Study Areas, Wastach Front and nearby Area, Utah*, this portion of the Micron Property is located in an area currently designated as having a "Very Low to Low" liquefaction potential. "Low" liquefaction potential indicates that there is between a 5% to 10% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. "Very Low" liquefaction potential indicates that there is less than 5% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction.

The near-surface soils observed within our test pits consisted of unsaturated soils. Groundwater was not observed in the test pits. A liquefaction analysis was beyond the scope of the project; however, if the owner or client wishes to have greater understanding of the liquefaction potential of the soils at greater depths, a liquefaction analysis should be completed at the site.

5.4 OTHER GEOLOGIC HAZARDS

According to the latest update to the Geologic Hazards on the web-based Utah Geologic Hazard Portal at https://geology.utah.gov/apps/hazards/, the 157-acre portion of Micron property is located just outside of special study areas for debris flows and slope stability. Maps of these hazards are included on Plates A-6 to A-7. Recommendations for development in these mapped hazards special study areas, should be addressed in geologic hazard report or reports. The results of these reports and findings may limit the development or require mitigation prior to the development of the site.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed construction provided that the recommendations contained in this report are complied with. This conclusion should be understood as preliminary, and the results of geologic hazard analysis could designate some portions of this development as hazardous or unbuildable.

The recommendations presented in this report are based on our understanding of the proposed project, the subsurface conditions observed during field exploration, the results of laboratory testing, and our engineering analyses. If subsurface conditions other than those described herein are encountered in conjunction with construction, and/or if design and layout changes are initiated, we must be informed so that the recommendations herein can be reviewed and revised as changes or conditions may require.

Based on our observations, the subject site is overlain by ½ to 2 feet of topsoil. Increased depth of topsoil may be encountered in the drainages or within the alluvial fan deposits. These soils would need to be over-excavated in all areas underlying footing elements, pavements and any other areas which would underlie structural elements of the new development.

As additional layers of undocumented fill soils may exist existing, particularly in the footprint of the existing roadways or batching plant. The owner and contractor should be aware that the possibility exists that thicker sections of undocumented fill than those reported in our test pits may exist.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, concrete slabs-on-grade, and pavement sections. Site grading is also recommended to provide proper drainage and moisture control on the subject property and to aid in preventing differential movement in foundation soils as a result of variations in moisture conditions.

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6.2.1 General Site Preparation and Grading

In areas beneath footings and concrete flat work, the highly organic topsoil (top 3 to 6 inches) should be stripped and stockpiled for use in landscape areas or disposal. Debris, vegetation, undocumented fill, roots, loose, soft or other deleterious materials should also be removed. If over-excavation is required, the excavation should extend a minimum of one foot laterally for every foot of depth of over-excavation. The exposed subgrade should be proof-rolled with heavy equipment to identify loose, soft or otherwise disturbed soils. If soft soils are observed, they should be stabilized in accordance with our recommendations in the Soft Soil Stabilization Section (Section 6.2.4); if loose soils are observed, they should be compacted as recommended in Section 6.2.5.

A GeoStrata representative should observe the site preparation and grading operations to assess that the recommendations presented in this report are complied with.

6.2.2 Excavation Stability

Based on Occupational Safety and Health Administration (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied, however, the presence of fill soils, loose soils, or wet soils may require that the walls be flattened to maintain safe working conditions. When the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Based on our soil observations, laboratory testing, and OSHA guidelines, native soils at the site classify as Type C soils. Deeper excavations, if required, should be constructed with side slopes no steeper than one and one- and one-half horizontal to one vertical (1.5H:1V). Wet conditions should be anticipated side slopes will likely need to be further flattened to maintain slope stability. Alternatively, shoring or trench boxes may be used to improve safe work conditions in trenches. The contractor is ultimately responsible for trench and site safety. Pertinent OSHA requirements should be met to provide a safe work environment. If site specific conditions arise that require engineering analysis in accordance with OSHA regulations, GeoStrata can respond and provide recommendations as needed.

We recommend that a GeoStrata representative be on-site during all excavations to assess the exposed soils in trench walls.

6.2.3 Soft Soil Stabilization

Based on observations during our field investigation, if near-surface soils become saturated soft or pumping soils may be exposed in excavations at the site. Once exposed, all subgrade surfaces beneath proposed structure, pavements, and flat work concrete should be proof rolled with heavy wheeled-construction equipment. If soft or pumping soils are encountered, these soils should be stabilized prior to construction of footings. Stabilization of the subgrade soils can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 2-inch diameter, but less than 6 inches. A locally available pit-run gravel may be suitable but should contain a high percentage of particles larger than 2 inches and have less than 7 percent fines (material passing the No. 200 sieve). A pit-run gravel may not be as effective as a coarse, angular material in stabilizing the soft soils and may require more material and greater effort. The stabilization material should be worked (pushed) into the soft subgrade soils until a firm relatively unyielding surface is established. Once a firm, relatively unyielding surface is achieved, the area may be brought to final design grade using structural fill.

In large areas of soft subgrade soils, stabilization of the subgrade may not be practical using the method outlined above. In these areas it may be more economical to place a woven geotextile fabric against the soft soils covered by 18 inches of coarse, sub-rounded to rounded material over the woven geotextile. An inexpensive non-woven geotextile “filter” fabric should also be placed over the top of the coarse, sub-rounded to rounded fill prior to placing structural fill or pavement section soils to reduce infiltration of fines from above. The woven geotextile should be Mirafi RS280i or prior approved equivalent. The filter fabric should consist of a Mirafi 140N, or equivalent as approved by the Geotechnical Engineer.

We recommend that a GeoStrata representative be on-site to assess the exposed excavation soils and be allowed to review the excavation plans when they are prepared in order to evaluate their compatibility with these recommendations.

6.2.4 Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements, should consist of structural fill. Onsite soils may be utilized for structural fill, although the contractor should be aware that due to the over-sized aggregates or the clayey composition of the native soils, it may be difficult if not impossible to maintain active and accurate proctor values for moisture conditioning and compaction. As such, the native soil onsite may need to be screened and well mixed prior to the

use of the native soils as structural fill for development. Onsite undocumented fill soils may likewise be used as structural fill. The contractor should have confidence that the anticipated method of compaction will be suitable for the type of structural fill used. All structural fill should be free of vegetation, debris or frozen material, and should contain no inert materials larger than **4 inches** in nominal diameter.

If an imported material will be used as structural fill, it should consist a relatively well-graded granular soil with a maximum of 50 percent passing the No. 4 sieve and a maximum fines content (minus No.200 mesh sieve) of 25 percent. Fill material potion finer than the No. 40 sieve should have a liquid limit (LL) less than 35 and a plasticity index (PI) less than 25. The table below provides our recommended gradation and Atterberg limits requirements for structural fill.

Grain Size	Percent Passing
4-inch	100
2-inch	85 to 100
No. 4	15 to 50
No. 200	< 25
Liquid Limit (LL)	<35
Plasticity Index (PI)	<25

All structural fill soils should be approved by the Geotechnical Engineer prior to placement. Earth materials not meeting the aforementioned criteria may be suitable for use as structural fill; however, such material should be evaluated on a case-by-case basis and should be approved by the Geotechnical Engineer prior to use. These requirements for structural fill meet the needs of the site; however, regulating entities including special service districts, cities etc. may require the use of a predefined structural fill for use in their utility corridors/trenches. The contractor should be aware of the special requirements of structural fill by these regulating entities.

GeoStrata observed that some of the native soils meet the requirements for A-1-a according to AASTHO soil classification system. A table of the laboratory tests and soil classification are provided below;

Sample Location	USCS Classification	AASTHO Classification	Can be used as onsite structural fill?
MW-TP-17	SM	A-2-4	Yes
MW-TP-24	GC	A-2-6	Yes
MW-TP-25	SP-SM	A-1-b	Yes
MW-TP-26	SM	A-2-4	Yes
MW-TP-29	SC	A-2-6	Yes
MW-TP-31	CL	A-6	No
MW-TP-32	CL	A-6	No
MW-TP-33	GP-GM	A-1-a	Yes
MW-TP-36	ML	A-2-4	No
MW-TP-36	ML	A-2-4	Yes
MW-TP-37	GP	A-1-a	Yes
MW-TP-39	CL	A-6	No
MW-TP-41	GC	A-6	Yes
MW-TP-42	SM	A-4	Yes
MW-TP-45	CL	A-6	No
MW-TP-46	GM	A-4	Yes
MW-TP-49	SC	A-6	Yes
MW-TP-51	CL	A-6	No
MW-TP-53	CL	A-6	No

All structural fill should be placed in maximum 10-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 12-inch loose lifts if compacted by riding rollers or heavy-duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by the geotechnical engineer. Structural fill should be compacted to at least 95% of the maximum dry density, as determined by ASTM D-1557, for fill 5 feet or less in thickness. The required compaction should be increased to 98% for fills greater than 5 feet in thickness. The moisture content should be at or slightly above the optimum moisture content at the time of placement and compaction. Also, prior to placing any fill, the excavations should be observed by the geotechnical engineer to observe that any unsuitable materials or loose soils have been removed. In addition, proper grading should precede placement of fill, as described in the **General Site Preparation and Grading** subsection of this report (Section 6.2.1).

We understand that grading fills and structural fill will be placed up to 12 feet in total height. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills less than 6 feet in depth. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills more than 6 feet and less than 12 feet in depth. Contact Geostrata for recommendations for fill placement exceed 12 feet in depth. All utility trenches backfilled below the proposed structure, pavements, and flatwork concrete, should be backfilled with onsite soils or structural fill that is within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557. All other trenches, in landscape areas, should be backfilled and compacted to at least 90% of the maximum dry density (ASTM D-1557).

The gradation, placement, moisture, and compaction recommendations contained in this section meet our minimum requirements but may not meet the requirements of other governing agencies such as city, county, or state entities. If their requirements exceed our recommendations, their specifications should override those presented in this report.

6.3 FOUNDATIONS

The foundations for the proposed structures may consist of conventional strip and/or spread footings. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively, and exterior shallow footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement.

6.3.1 Installation and Bearing Material

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-

specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill depth below footings will be 0 to 24 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.4 of this report.

Foundation elements should not be founded on undocumented fill, and if these soils are encountered, they should be over-excavated until suitable, native soils are exposed. Foundation elements should not be founded on combination soils, and if these soils condition are encountered, they should be over-excavated a minimum of 1-foot. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.5 of this report.

All organic material, soft areas, frozen material or other inappropriate material shall be removed from the footing zone to a depth determined by the Geotechnical Engineer and be replaced with structural fill where over excavation is required.

6.3.2 Bearing Pressure

Conventional strip and spread footings founded on a native soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,900 pounds per square foot (psf).** The recommended net allowable bearing pressure refers to the total dead load and can be increased by ⅓ to include the sum of all loads including wind and seismic.

6.3.3 Settlement

Settlements of properly designed and constructed conventional footings, founded as described above, are anticipated to be less than 1 inch. Differential settlements should be on the order of half the total settlement over 30 feet.

6.3.4 Frost Depth

All exterior footings and spread footings are to be constructed at least 30 inches below the ground surface for frost protection and confinement. This includes walk-out areas and may require fill to be placed around buildings. Interior strip footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. If foundations are constructed through the winter months, all soils on which footings will bear shall be protected from freezing.

6.3.5 Construction Observation

A geotechnical engineer shall periodically monitor excavations prior to installation of footings. Inspection of soil before placement of structural fill or concrete is required to detect any field conditions not encountered in the investigation which would alter the recommendations of this report. All structural fill material shall be tested under the direction of a geotechnical engineer for material and compaction requirements.

6.3.6 Foundation Drainage

As stated in Section 4.2.2 of this report, groundwater was not encountered in the test pits. IRC Section R405 *Foundation Drainage* recommends the construction of a foundation drain around any walls or portions thereof that retain earth and enclose spaces and floors below grade. Where a site is located in well-drained gravel or sand/gravel mixture soils, a dedicated drainage system is not required.

We recommend that the IRC Section R405 Foundation Drainage recommends be complied with. The foundation drain should consist of a 4-inch perforated pipe placed at or below the footing elevation. The pipe should be covered with at least 12 inches of free draining gravel (containing less than 5 percent passing the No. 4 sieve) and be graded to a free gravity outfall or to a pumped sump. A separator fabric, such as Mirafi 140N, should separate the free draining gravel and native soil (i.e. the separator fabric should be placed between the gravel and the native soils at the bottom of the gravel, the side of the gravel where the gravel does not lie against the concrete footing or foundation and at the top of the gravel). We recommend that the gravel extend up the foundation wall to within 2 feet of the final ground surface. As an alternative, the gravel extending up the foundation wall may be replaced with a prefabricated drain panel, such as Ecodrain-E. We recommend that the foundation drain construction be observed and documented in a subsequent observation letter.

As an added precaution the following moisture protection mitigation recommendation should be implemented to help reduce the risk from potential settlement from occurring. These items are summarized as follows:

- Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented.

- The ground surface within 10 feet of the entire perimeter of the building should slope a minimum of five percent away from the structure. Alternatively, a slope of 5% is acceptable if the water is conveyed to a concrete ditch that will convey the water to a point of discharge that is at least 10 feet from the structures.
- Roof runoff devices (rain gutters) should be installed to direct all runoff a minimum of 10 feet away from the structure and preferably day-lighted to the curb where it can be transferred to the storm drain system. Rain gutters discharging roof runoff adjacent to or within the near vicinity of the structure may result in excessive differential settlement.
- We recommend irrigation around foundations be minimized by selective landscaping and that irrigation valves be constructed at least 5 feet away from foundations.
- Jetting (injecting water beneath the surface) to compact backfill against foundation soils may result in excessive settlement beneath the building and is not allowed.
- Backfill against foundations walls should be placed and compacted in accordance with the Section 6.2.4.
- Any additional precautions which may become evident during construction.

6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION

Concrete slabs-on-grade should be constructed over at least 4 inches of compacted gravel. Disturbed native soils should be compacted to at least 95% of the maximum dry density as determined by ASTM D-1557 (modified proctor) prior to placement of gravel. The gravel should consist of road base or clean drain rock with a ¾-inch maximum particle size and no more than 12 percent fines passing the No. 200 mesh sieve. The gravel layer should be compacted to at least 95 percent of the maximum dry density of modified proctor or until tight and relatively unyielding if the material is non-proctorable. The maximum load on the floor slab should not exceed 100 psf; greater loads would require additional subgrade preparation and additional structural fill. All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with welded wire, re-bar, or fiber mesh.

6.5 EARTH PRESSURE AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footing and the supporting subgrade. In determining the frictional resistance, a coefficient of friction of 0.41 should be used for native soils against concrete or 0.43 for structural fill against concrete.

Ultimate lateral earth pressures from native soil backfill acting against retaining walls and buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in the following table:

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active[1]	0.29	34
At-rest[2]	0.48	58
Passive[1]	11.62	1394
Seismic Active[3]	0.32	38
Seismic Passive[4]	-8.92	-1071

[1]Based on Coulomb's equation
[2]Based on Jaky
[3]Based on Lew et al. (2010)
[4]Based on Mononobe-Okabe Equation

These coefficients and densities assume level, granular backfill with no buildup of hydrostatic pressures. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. If sloping backfill is present, we recommend the geotechnical engineer be consulted to provide more accurate lateral pressure parameters once the design geometry is established.

Walls and structures allowed to rotate slightly should use the active condition. If the element is constrained against rotation, the at-rest condition should be used. These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

For seismic analyses, the *active* and *passive* earth pressure coefficient provided in the table is based on Lew et al (2010) and Mononobe-Okabe respectively and only accounts for the dynamic horizontal thrust produced by ground motion. Hence, the resulting dynamic thrust pressure should be added to the static pressure to determine the total pressure on the wall. The pressure distribution of the dynamic horizontal thrust may be closely approximated as an inverted triangle with stress decreasing with depth and the resultant acting at a distance approximately 0.6 times the loaded height of the structure, measured upward from the bottom of the structure.

The coefficients shown assume a vertical wall face. Hydrostatic and surcharge loadings, if any, should be added. Over-compaction behind walls should be avoided. Resisting passive earth pressure from soils subject to frost or heave, or otherwise above prescribed minimum depths of embedment, should usually be neglected in design.

6.6 PAVEMENT SECTION

For pavement design, the following CBR laboratory test result was obtained:

Test Pit	Depth (ft)	Soil Type	CBR (%)
MW- TP-41	1.5	GC	10.9
MW- TP-41	2.0	CL	5.3

The test results indicate a low CBR value of 5.3. No traffic information was available at the time this report was prepared; therefore, GeoStrata has assumed traffic counts for the local and private roads and parking areas. We assumed that vehicle traffic along the local and private roadways will consist of approximately 1,500 passenger car trips per day, 2 small trucks per day, and 2 large trucks per day with a 20-year design life. Based on these assumptions, our analysis uses 51,000 ESAL's for for a 20-year design life of the pavement. We assumed that vehicle traffic along the collector and arterial roads will consist of approximately 1,275,000 ESAL's for a 20-year design life (approximately 25 times greater than private roads).

Based on these assumptions, our analysis uses 51,000 and 1,275,000 ESAL's for the traffic over the life of the pavement. Asphalt has been assumed to be a high stability plant mix or Superpave mix with a minimum CBR of 70. The untreated base course material (road base or UTBC) composed of crushed stone with a minimum CBR of 30. The table below presents equivalent recommended pavement sections based on the above assumptions. The City of Lehi minimum pavement sections may govern the pavement design.

Local and Private Roadways Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	3	3	3
Untreated Base Course	6	10	6
Granular Borrow/ Engineered Fill	8	0	12

Collector and Arterial Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	5	6	6.5
Untreated Base Course	8	8	6
Granular Borrow/ Engineered Fill	15	10	12

The pavement section thicknesses above assume that there is no mixing over time between the road base and the softer native layers below. In order to prevent mixing or fines migration, and thereby prolong the life of the pavement section, we recommend that the owner give consideration to placing a non-woven filter fabric between the native soils and the road base. We recommend that a Propex Geotex® NW-401, NW-601, or a GeoStrata-approved equivalent be used.

If traffic conditions vary significantly from our stated assumptions, GeoStrata should be contacted so we can modify our pavement design parameters accordingly. Specifically, if the traffic counts are significantly higher or lower, we should be contacted to review the pavement sections as necessary. The pavement sections thicknesses above assumes that the majority of construction traffic including cement trucks, cranes, loaded haulers, etc. has ceased. If a significant volume of construction traffic occurs after the pavement section has been constructed, the owner should anticipate maintenance or a decrease in the design life of the pavement area.

In our experience, in areas with heavy truck loads where trucks frequently turn around, backup, or load and unload, such as areas around dumpsters, pavements experience more distress. To prolong the life of the pavement in these areas, consideration should be given to using a Portland cement concrete (rigid) pavement in these areas. The table below presents our recommended rigid pavement section.

Rigid Pavement Section

Pavement Materials	Recommended Minimum Thickness (in)
	Rigid Pavement 1
Concrete	5
Untreated Base Course	6

Concrete should consist of a low slump, low water cement ratio mix with a minimum 28-day compressive strength of 4,000 psi. Base course should be compacted to at least 95% of the maximum dry density as determined by the ASTM D-1557.

The pavement sections discussed above meet our minimum recommendations for pavement design. It should be noted that more stringent pavement section requirements may be enforced by Lehi City, Utah County or other governing agency.

7.0 CLOSURE

7.1 LIMITATIONS

The recommendations contained in this report are based on our limited field exploration, laboratory testing, and understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist between and beyond the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, GeoStrata should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, GeoStrata should be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No other warranty, expressed or implied, is made.

It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

7.2 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and observations will be made during construction. GeoStrata staff should be on site to verify compliance with these recommendations. These tests and observations should include, but not necessarily be limited to, the following:

- Observations and testing during site preparation, earthwork and structural fill placement.
- Observation of foundation soils to assess their suitability for footing placement.
- Observation of soft/loose soils over-excavation.
- Observation of temporary excavations and shoring.
- Consultation as may be required during construction.
- Quality control and observation of concrete placement.

We also recommend that project plans and specifications be reviewed by GeoStrata to verify compatibility with our conclusions and recommendations. Additional information concerning the scope and cost of these services can be obtained from our office.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact us at your convenience at (801) 501-0583.

7.3 ACKNOWLEDGEMENTS

This project was made possible through the help of Dan Mitchell and Scott Bishop with D.R. Horton, they scheduled meetings with the landowners and worked on permits for land disturbance and scheduled a second trackhoe to dig the east side of the property test pits at the site. Dale Judd with JSI Ventures, LLC, the operator with the excavation company that completed the test pits on the west side of the property. Bryce Jackson, E.I.T., Nate Flores, Ashley Peay, and James Moore with GeoStrata all logged test pits and collected samples at the site. Jerry Olson and Jack Berry with Micron Technology, Inc met multiple times to discuss utility location. There are others with GeoStrata, D.R. Horton, and Micron Technology Inc. that made this project happen. Thank you.

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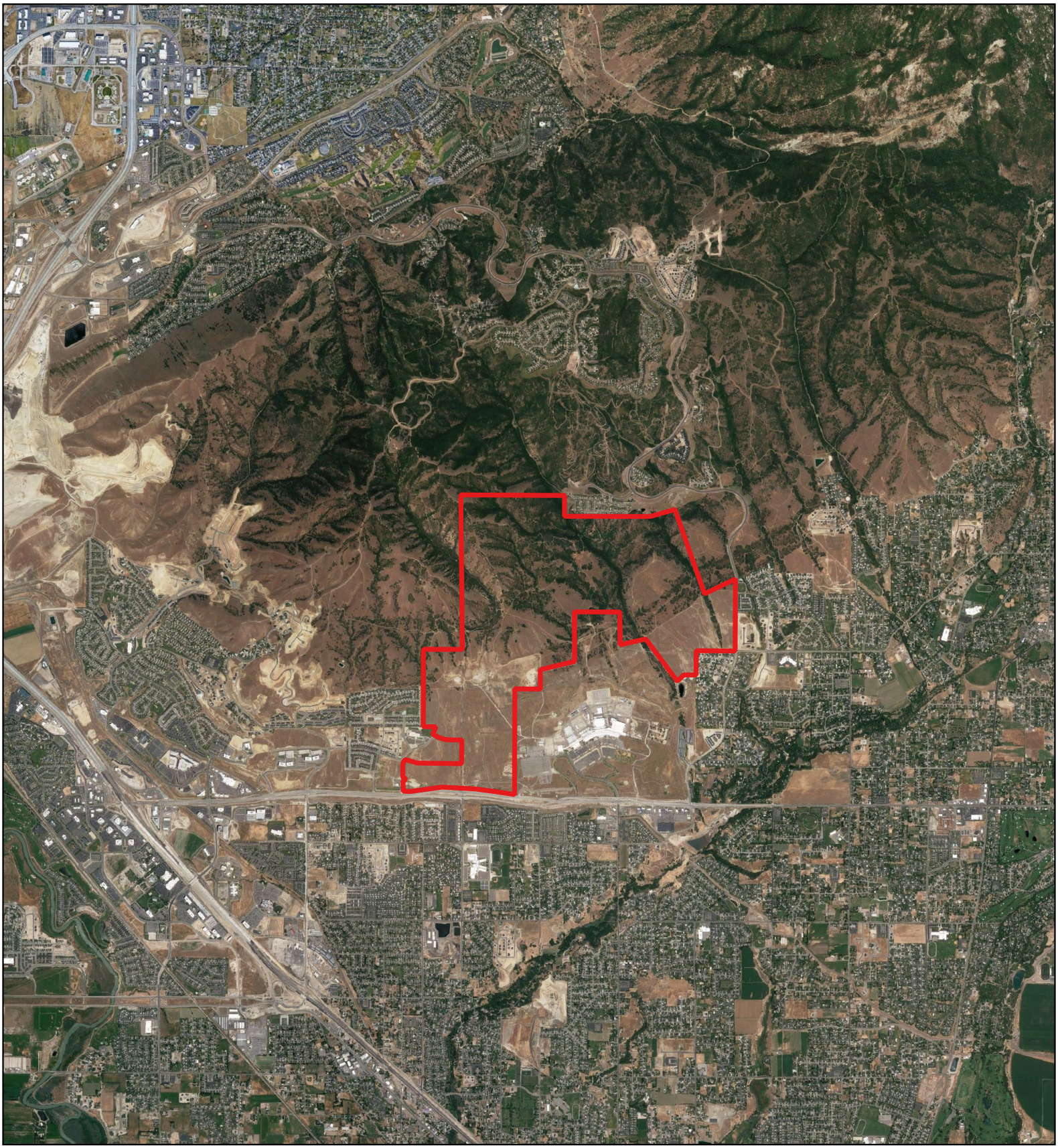
APPENDIX A



Legend

Bondaries

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D.R. Horton
Mircon Property
Lehi/Draper, Utah
Project Number

Site Vicinity Map

Plate A-1

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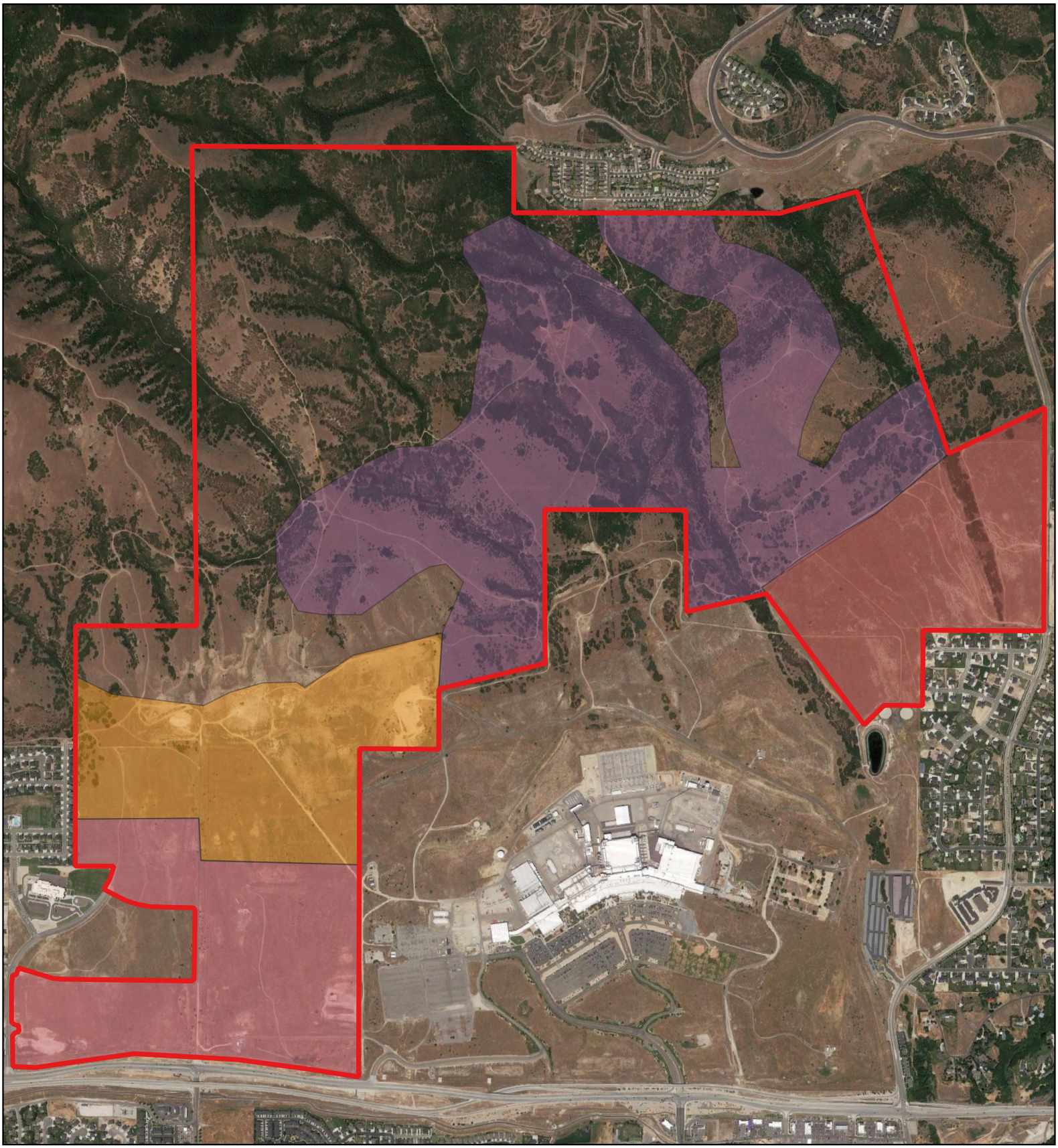

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Legend

- Mircon Property Boundaries
- High Density Single Family, Commerial, and Apartments
- Lehi Emerald Single Family and Single Family
- Highland Emerald Single Family
- Mountain Single Family

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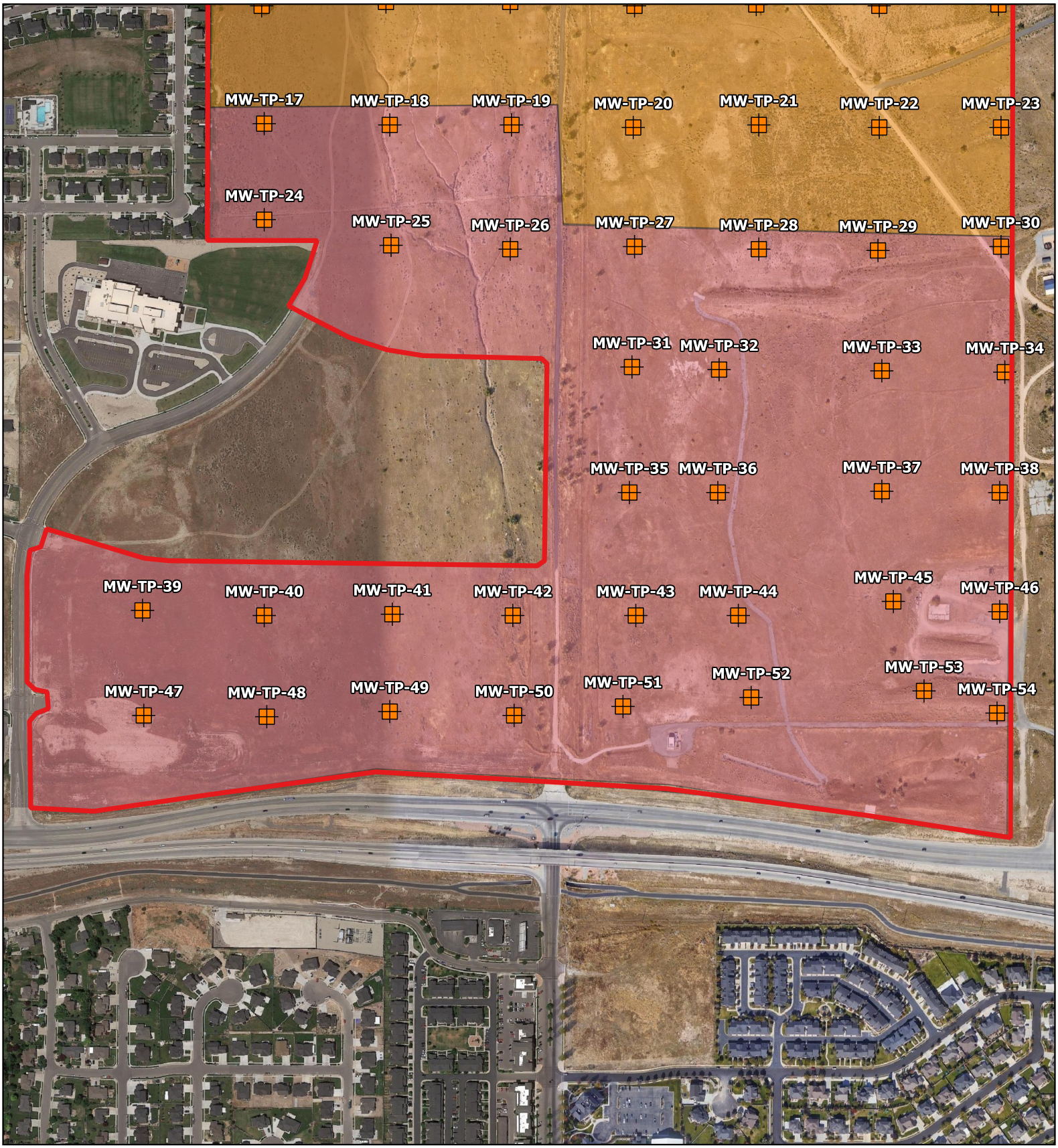
Mircon Property
Lehi/Draper, Utah
Project Number

Site Section Map

Plate A-2



Legend

- Mircon Property Boundaries
- Approximate Test Pit Location
- High Density Single Family, Commercial, and Apartments
- Lehi Emerald Single Family and Single Family

400 0 400 800 1200 1600 ft

1:6000

N

GeoStrata

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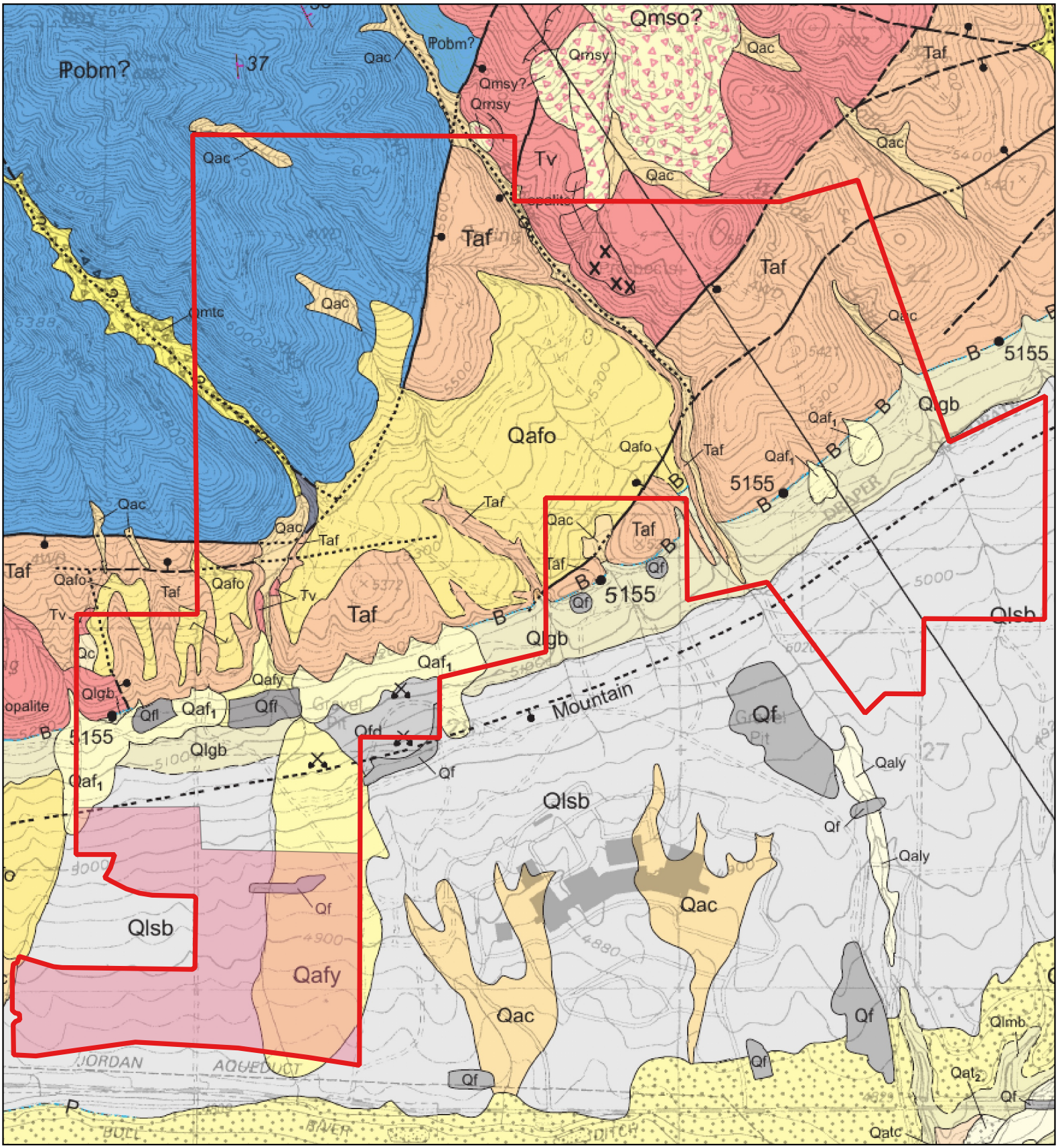
D.R. Horton
Mircon Property
Lehi/Draper, Utah

High Density Single Family, Commercial, and Apartment Section Exploration Map

Plate A-3



Legend

- Mircon Property Boundaries
- High Density Single Family, Commercial, and Apartments

400 0 400 800 1200 1600 ft

1:17000

N

GeoStrata

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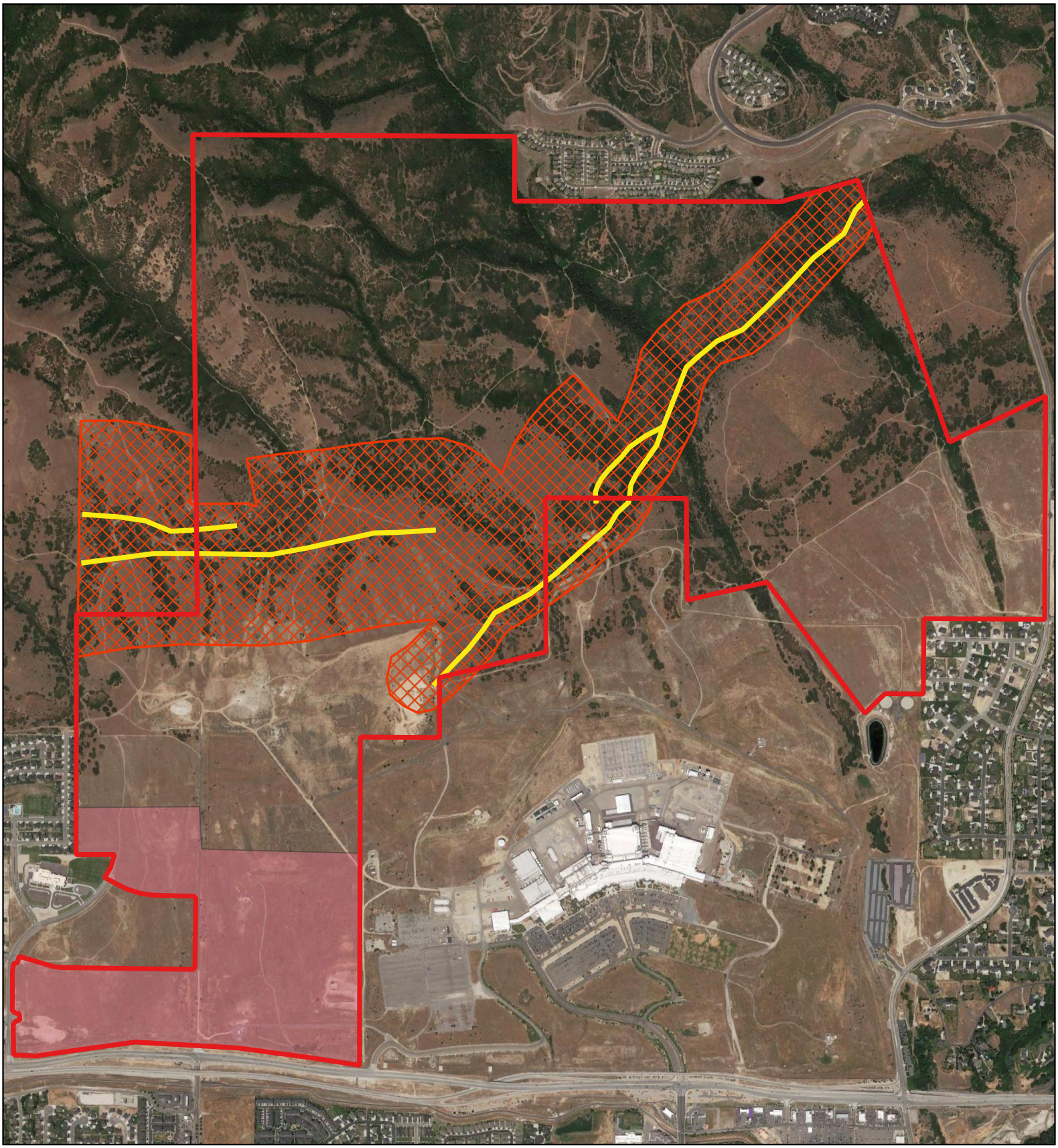
D.R. Horton
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Site Geology Map

Plate A-4



Legend

- Mircon Property Boundaries
- High Density Single Family, Commercial, and Apartments
- Approximate Faults
- Fault Special Study Area

400 0 400 800 1200 1600 ft

1:17000

N

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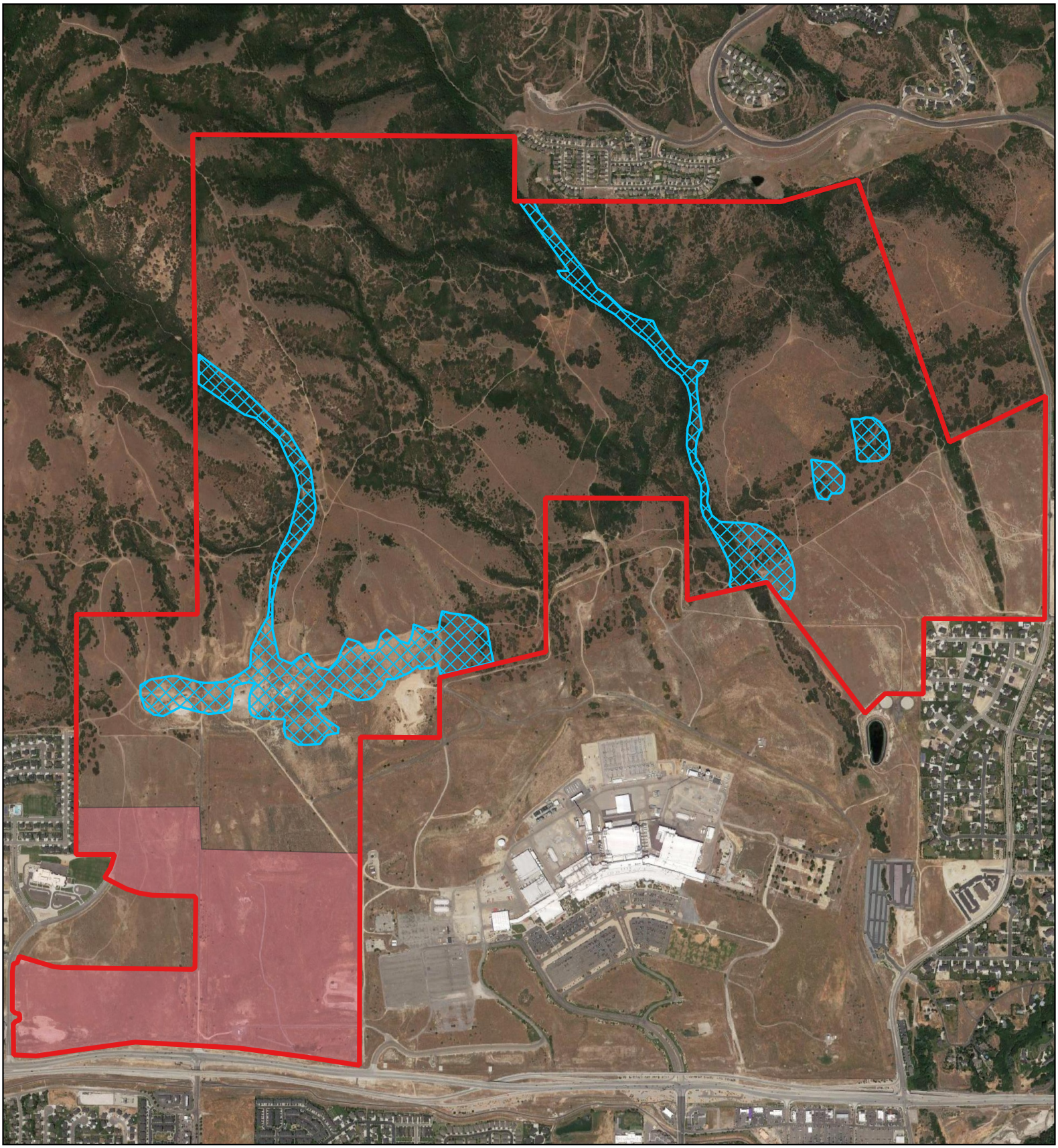
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Faults and Fault Special Study Area Map

Plate A-5



Legend

- Mircon Property Boundaries
- High Density Single Family, Commercial, and Apartments
- Debris Flow Study Areas

400 0 400 800 1200 1600 ft

1:17000

N

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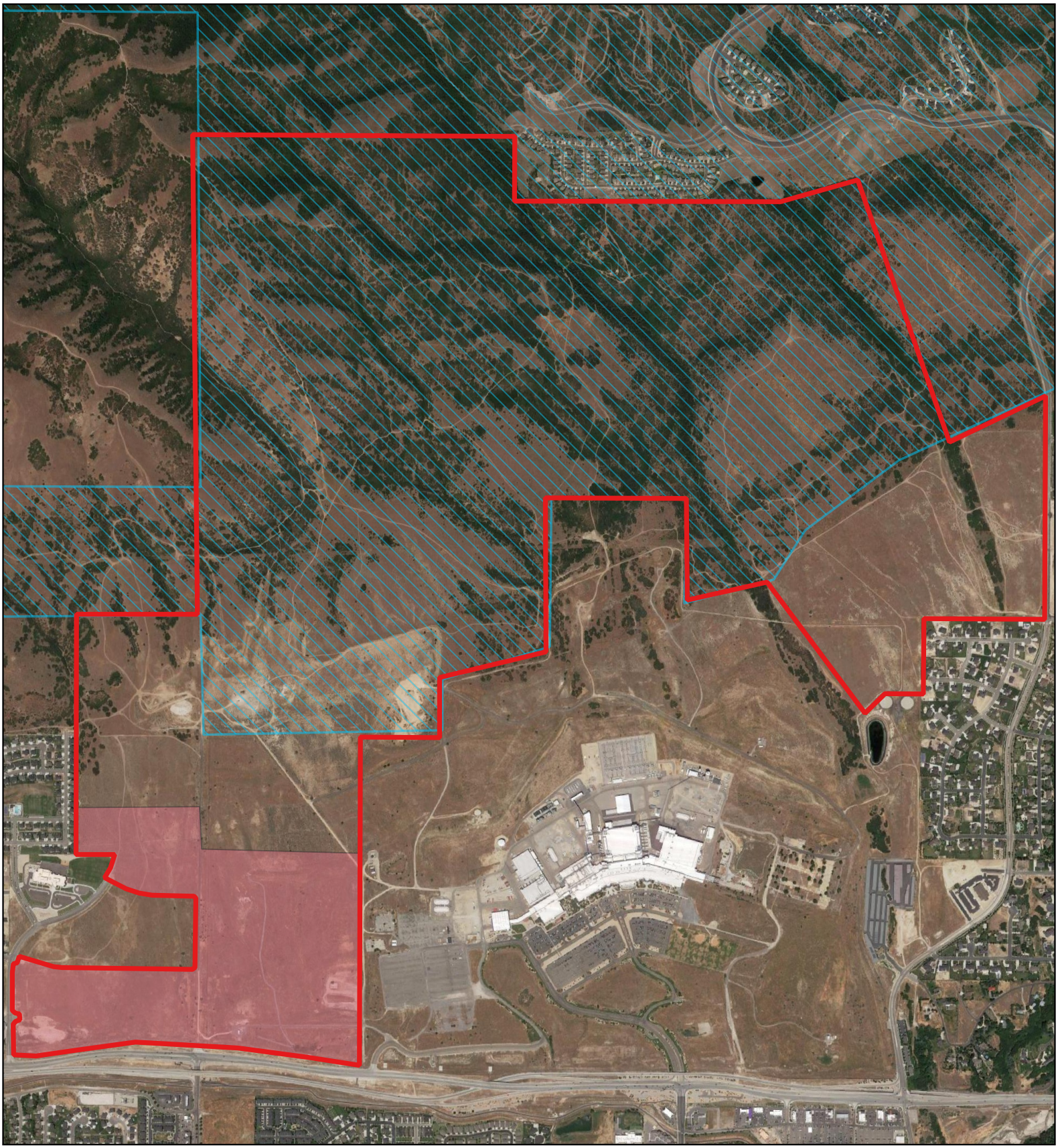
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Debris Flow Special Study Area Map

Plate A-6

520



Legend

- Mircon Property Boundaries
- Slope Stability Special Study Area
- High Density Single Family, Commercial, and Apartments

400 0 400 800 1200 1600 ft

1:17000

N

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Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Slope Special Study Area Map

Plate A-7

APPENDIX B

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-17
Sheet 1 of 1

LOCATION
NORTHING 4,476,957.00 EASTING 4,476,957.00 ELEVATION 5,040-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1								4.1	25.6	NP	NP	
	5											
2												
					SM	Sandy SILT with gravel - stiff, moist, light brown						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 1

DATE	
STARTED:	12/2/20
COMPLETED:	12/2/20
BACKFILLED:	12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: **MW-TP-18**
Sheet 1 of 1

LOCATION
NORTHING 4,476,959.00 EASTING 4,476,959.00 ELEVATION 5,024-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY with sand - stiff, moist, dark brown						
1						-light brown, with iron staining	86.7	20.1	85.1			●
	5											
2					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown, subrounded gravel up to 3 inches in diameter						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 2

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-19
Sheet 1 of 1

LOCATION
NORTHING 4,476,956.00 EASTING 4,476,956.00 ELEVATION 5,018-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter					
1											
	5										
2					ML	Sandy SILT - stiff, moist, tan	88.6	8.1	65.1		
3	10				SM	Silty SAND with gravel - dense, moist, tan, gravels and cobbles up to 6 inches in diameter					
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 3

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-24
Sheet 1 of 1

LOCATION
NORTHING 4,476,845.80 EASTING 4,476,845.80 ELEVATION 5,001-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	SILT with sand and gravel - medium dense, moist, tan					
1					GC	Clayey GRAVEL with sand - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter	3.8		13.5	27	12
2	5										
					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown					
3	10										
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 4

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-25
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.00 EASTING 4,476,814.00 ELEVATION 4,986-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SP-SM	Poorly Graded SAND with silt - medium dense, moist, light brown						
1	5											
2												
3	10											
						Bottom of Test Pit @ 11 Feet		5.0	8.9	NP	NP	●
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate B - 5

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-26
Sheet 1 of 1

LOCATION
NORTHING 4,476,810.20 EASTING 4,476,810.20 ELEVATION 4,975-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL with sand - medium dense, moist, tan, occasional cobbles throughout		3.3	27.9			●
1												
					ML	Sandy SILT - stiff, moist, tan						
	5											
2												
						Bottom of Test Pit @ 8 Feet						
3	10											
4												

GeoStrata
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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 6

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-27
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.00 EASTING 4,476,814.00 ELEVATION 4,965-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout
					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter
1					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown
	5					
2					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter
					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown
3	10					
						Bottom of Test Pit @ 12 Feet
4						

Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 7

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-28
Sheet 1 of 1

LOCATION
NORTHING 4,476,812.40 EASTING 4,476,812.40 ELEVATION 4,958-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL-ML	Sandy Silty CLAY - stiff, moist, tan						
1							107.0	6.8	79.2	25	18	●
					SM	Silty SAND with gravel - dense, moist, light brown						
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 8

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-29
Sheet 1 of 1

LOCATION
NORTHING 4,476,807.40 EASTING 4,476,807.40 ELEVATION 4,961-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT with gravel - stiff, moist, brown						
					SC	Clayey SAND with gravel - medium dense, moist, tan		4.7	31.3	30	15	
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 9

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-30
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.60 EASTING 4,476,814.60 ELEVATION 4,963-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	Sandy SILT with gravel - stiff, moist, dark brown					
					CL	Lean CLAY - stiff, moist. dark brown					
1							126.6	14.2	92.5	35	15
	5					- some white mottling					
2						- some iron staining					
3	10					Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 10

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-31
Sheet 1 of 1

LOCATION
NORTHING 4,476,669.00 EASTING 4,476,669.00 ELEVATION 4,931-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, dark brown		10.9	95.0	32	12	
1					CL	Sandy Lean CLAY with gravel - stiff, moist. dark brown						
	5											
2												
3	10				SP	Poorly Graded SAND with gravel - medium dense, moist, brown						
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 11

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-32
Sheet 1 of 1

LOCATION
NORTHING 4,476,666.00 EASTING 4,476,666.00 ELEVATION 4,929-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, dark brown						
1					CL	Lean CLAY with gravel - stiff, moist. brown	98.9	11.1	95.9	35	14	
5					CL	Sandy Lean CLAY with gravel - stiff, moist. brown, some iron staining						
2												
3	10				SP	Poorly Graded SAND with gravel - medium dense, moist, brown						
						Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 12

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-33
Sheet 1 of 1

LOCATION
NORTHING 4,476,667.00 EASTING 4,476,667.00 ELEVATION 4,923-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY with sand - stiff, moist, light brown					
							90.0	10.6	86.7		
1											
	5										
2											
3	10				GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, tan		1.0	2.0		
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 13

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-34
Sheet 1 of 1

LOCATION
NORTHING 4,476,662.00 EASTING 4,476,662.00 ELEVATION 4,928-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Lean CLAY with sand and gravel - dark brown, moist, organics throughout					
					SM	Silty SAND - dense, moist, brown					
1	5							7.4			
					CL	Lean CLAY with sand - stiff, moist, tan, sand was observed to be fine-grained, some iron staining					
2											
3	10					Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 14

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-35
Sheet 1 of 1

LOCATION
NORTHING 4,476,519.00 EASTING 4,476,519.00 ELEVATION 4,898-ft

DEPTH METERS | FEET | SAMPLES | WATER LEVEL | GRAPHICAL LOG | UNIFIED SOIL CLASSIFICATION

MATERIAL DESCRIPTION

Material Description	Unified Soil Classification	Dry Density (pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
Sandy SILT - stiff, moist, tan	ML	96.1	10.9	77.5		
Poorly Graded SAND with gravel - medium dense, moist, dark brown, subrounded gravel up to 3 inches in diameter	SP					
Bottom of Test Pit @ 12 Feet						

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 15

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-36
Sheet 1 of 1

LOCATION
NORTHING 4,476,519.00 EASTING 4,476,519.00 ELEVATION 4,892-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					ML	Gravelly SILT with sand -stiff, moist, dark brown		13.9			
								6.7	40.8		
1					SM	Silty SAND - dense, moist, light brown, pinholes throughout					
	5										
2					CL	Sandy Lean CLAY - stiff, moist, light brown, iron staining					
					ML	Sandy SILT - stiff, moist, light brown, iron staining					
3	10							7.0	53.7		
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 16

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-37
Sheet 1 of 1

LOCATION
NORTHING 4,476,523.00 EASTING 4,476,523.00 ELEVATION 4,892-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND with gravel - medium dense, moist, dark brown					
1						-tan					
	5										
2					GP	Poorly Graded GRAVEL with sand - medium dense, moist, tan		1.0	1.4		
3	10					-becomes more sandy, smaller gravel up to 1/2 inches					
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 17

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-38
Sheet 1 of 1

LOCATION
NORTHING 4,476,523.00 EASTING 4,476,523.00 ELEVATION 4,893-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1					SP	Poorly Graded SAND with gravel - medium dense, moist, tan						
	5											
2												
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 18

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-39
Sheet 1 of 1

LOCATION
NORTHING 4,476,375.00 EASTING 4,476,375.00 ELEVATION 4,877-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY - stiff, moist. light brown		7.4	97.6		
1						-tan, iron staining	95.5	8.0	93.2		
	5										
2											
3	10										
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 19

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: **MW-TP-40**
Sheet 1 of 1

LOCATION
NORTHING 4,476,377.00 EASTING 4,476,377.00 ELEVATION 4,875-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL-ML	Silty CLAY - medium stiff, moist, light brown, pinholes throughout						
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 20

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-41
Sheet 1 of 1

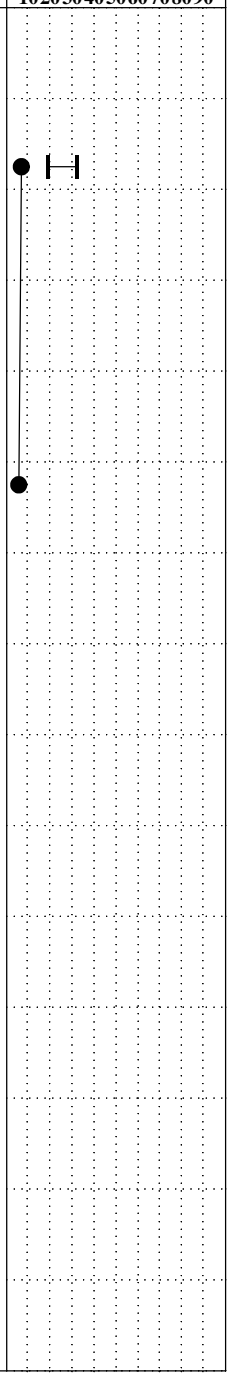
LOCATION
NORTHING 4,476,373.00 EASTING 4,476,373.00 ELEVATION 4,873-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					GC	Clayey GRAVEL with sand - dense, moist, dark brown		6.7	40.8	32	13
1					CL	Sandy Lean CLAY - medium dense, moist, light brown					
	5					-lighter tan brown	88.6	5.5	53.1		
2											
3	10				SP	Poorly Graded SAND with gravel - medium dense, moist, tan					
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit — Moisture Content — Liquid Limit

10 20 30 40 50 60 70 80 90



2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 21

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-42
Sheet 1 of 1

LOCATION
NORTHING 4,476,373.00 EASTING 4,476,373.00 ELEVATION 4,869-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1	5					-smaller gravel 1/2 inches in diameter		5.9	42.9	22	4	● H
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 22

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-43
Sheet 1 of 1

LOCATION
NORTHING 4,476,370.00 EASTING 4,476,370.00 ELEVATION 4,865-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT with gravel - stiff, moist, brown						
1												
					SP	Silty SAND with gravel - medium dense, moist, light brown						
	5											
2												
					ML	Sandy SILT - hard, moist, light brown	86.8	7.1	68.9			●
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 23

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-44
Sheet 1 of 1

LOCATION
NORTHING 4,476,377.00 EASTING 4,476,377.00 ELEVATION 4,866-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, dark brown, pinholes throughout						
1												
	5				SM	Silty SAND - medium dense, moist, light tan, pinholes throughout						
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 24

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-45
Sheet 1 of 1

LOCATION
NORTHING 4,476,386.00 EASTING 4,476,386.00 ELEVATION 4,865-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Sandy Lean CLAY - stiff, moist, brown		6.0	68.6	27	10	● H
1					SM	Silty SAND with gravel - medium dense, moist, dark brown						
	5											
2					SP	Poorly Graded SAND with gravel - medium dense, moist, tan, subrounded gravel						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 25

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-46
Sheet 1 of 1

LOCATION
NORTHING 4,476,379.00 EASTING 4,476,379.00 ELEVATION 4,860-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL with sand - very dense, moist, dark brown		6.0	40.9			●
1												
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 26

DATE	
STARTED:	12/4/20
COMPLETED:	12/4/20
BACKFILLED:	12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: **MW-TP-47**
Sheet 1 of 1

LOCATION
NORTHING 4,476,246.00 EASTING 4,476,246.00 ELEVATION 4,859-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY - Stiff, moist, dark brown, pinholes					
1											
	5										
2							95.0	9.3	93.1		
	10					Bottom of Test Pit @ 12 Feet					
3											
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 27

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-48
Sheet 1 of 1

LOCATION
NORTHING 4,476,254.00 EASTING 4,476,254.00 ELEVATION 4,846-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SP	Silty SAND with gravel - medium dense, moist, dark brown						
1	5					-color change to light brown						
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 28

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-49
Sheet 1 of 1

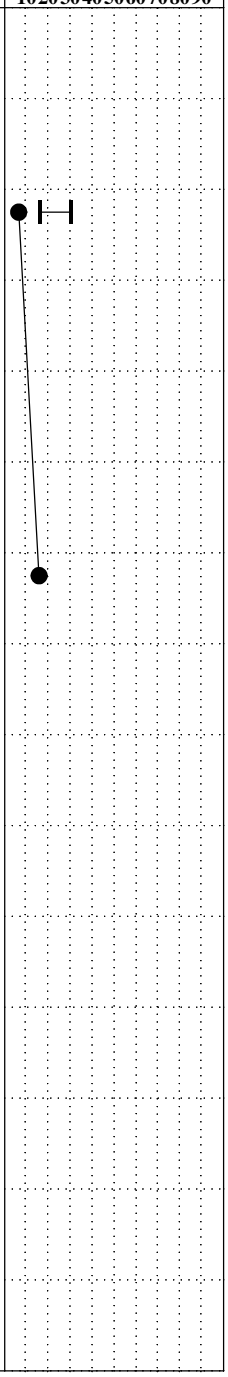
LOCATION
NORTHING 4,476,257.00 EASTING 4,476,257.00 ELEVATION 4,852-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					SC	Clayey SAND - dense, moist, light brown, small organics, iron staining		6.4	46.0	30	14
1											
	5										
2					CL	Lean CLAY - hard, moist, dark brown	105.0	15.7	95.6		
	10										
3											
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90



SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 29

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-50
Sheet 1 of 1

LOCATION
NORTHING 4,476,254.00 EASTING 4,476,254.00 ELEVATION 4,848-ft

DEPTH METERS / FEET | SAMPLES | WATER LEVEL | GRAPHICAL LOG | UNIFIED SOIL CLASSIFICATION | MATERIAL DESCRIPTION | Dry Density(pcf) | Moisture Content % | Percent minus 200 | Liquid Limit | Plasticity Index | Moisture Content and Atterberg Limits (Plastic Limit, Moisture Content, Liquid Limit; 10 20 30 40 50 60 70 80 90)

Depth (m)	Depth (ft)	USCS	Material Description
0	0		TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout
		SM	Silty SAND with gravel - medium dense, moist, light brown
1	5	SM	Silty SAND - dense, moist, light brown
2			
3	10		Bottom of Test Pit @ 12 Feet
4			

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 30

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-51
Sheet 1 of 1

LOCATION
NORTHING 4,476,265.00 EASTING 4,476,265.00 ELEVATION 4,849-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, dark brown		9.9	87.0	32	14	
1												
	5				SM	Silty SAND - medium dense, moist, light brown						
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 31

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE	
STARTED:	12/4/20
COMPLETED:	12/4/20
BACKFILLED:	12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-52
Sheet 1 of 1

LOCATION
NORTHING 4,476,274.00 EASTING 4,476,274.00 ELEVATION 4,849-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, dark brown						
1						- iron staining	104.4	14.7	93.1			●
	5											
2												
					SM	Silty SAND - medium dense, moist, gray						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 32

DATE	
STARTED:	12/4/20
COMPLETED:	12/4/20
BACKFILLED:	12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-53
Sheet 1 of 1

LOCATION
NORTHING 4,476,263.00 EASTING 4,476,263.00 ELEVATION 4,844-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1					CL	Gravelly Lean CLAY with sand - stiff. moist, dark brown		7.0	56.9	27	11	● ⊢
2	5				SP	Poorly Graded SAND with gravel - medium dense, moist, tan, subrounded gravel						
3	10					Bottom of Test Pit @ 8 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 33

DATE	
STARTED:	12/3/20
COMPLETED:	12/4/20
BACKFILLED:	12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-54
Sheet 1 of 1

LOCATION
NORTHING 4,476,268.00 EASTING 4,476,268.00 ELEVATION 4,852-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, light brown						
1	5											
2							86.7	13.6	88.6			●
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 34

Unified Soil Classification Per ASTM D 2488

Primary Divisions			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on the No. 200 Sieve	GRAVEL More than half of the coarse fraction is larger than the #4 sieve	Clean Gravel	GW	Well Graded GRAVEL
			GP	Poorly Graded GRAVEL
		Gravel with Duel Classifications	GW-GM	Well Graded GRAVEL with silt
			GP-GM	Poorly Graded GRAVEL with silt
			GW-GC	Well Graded GRAVEL with clay
			GP-GC	Poorly Graded GRAVEL with clay
		Gravel with Fines	GM	Silty GRAVEL
			GC	Clayey GRAVEL
			GC-GM	Silty, Clayey GRAVEL
	SAND More than half of the coarse fraction is smaller than the #4 sieve	Clean Sand	SW	Well Graded SAND
			SP	Poorly Graded SAND
		Sand with Dual Classifications	SW-SM	Well Graded SAND with silt
			SP-SM	Poorly Graded SAND with silt
			SW-SC	Well Graded SAND with clay
			SP-SC	Well Graded SAND with clay
		Sand with Fines	SM	Silty SAND
			SC	Clayey SAND
			SC-SM	Silty, Clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 Sieve	SILTY & CLAY less than 50%	Inorganic	CL	Lean CLAY
			ML	SILT
			CL-ML	Silty CLAY
		Organic	OL	Organic CLAY or Organic SILT
	SILTY & CLAY LL 50% or more	Inorganic	CH	Fat CLAY
			MH	Elastic SILT
		Organic	OH	Organic CLAY or Organic SILT
	Highly Organic Soils		PT	Peat

Exploration Log Key

Sample Symbols	Ground Water Symbol
Auger Cuttings	Measured Groundwater Elevation
California Sampler	Estimated Groundwater Elevation
Rock Core	
Bag or Block Sample	
Modified California Sampler	
No Recovery	
Split Spoon	
Shelby Tube	
Dames and More Sampler	

Relative Density	SPT N (blows/ft)
Very Loose	0 to 4
Loose	5 to 10
Med. Dense	11 to 30
Dense	31 to 50
Very Dense	>51

Consistency	SPT N (blows/ft)
Very Soft	0 to 1
Soft	2 to 4
Med. Stiff	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	31 to 60
Very Hard	>61

Modifiers	
Description	Percentage
Trace	less than 5
Some	5 to 12
With	more than 12

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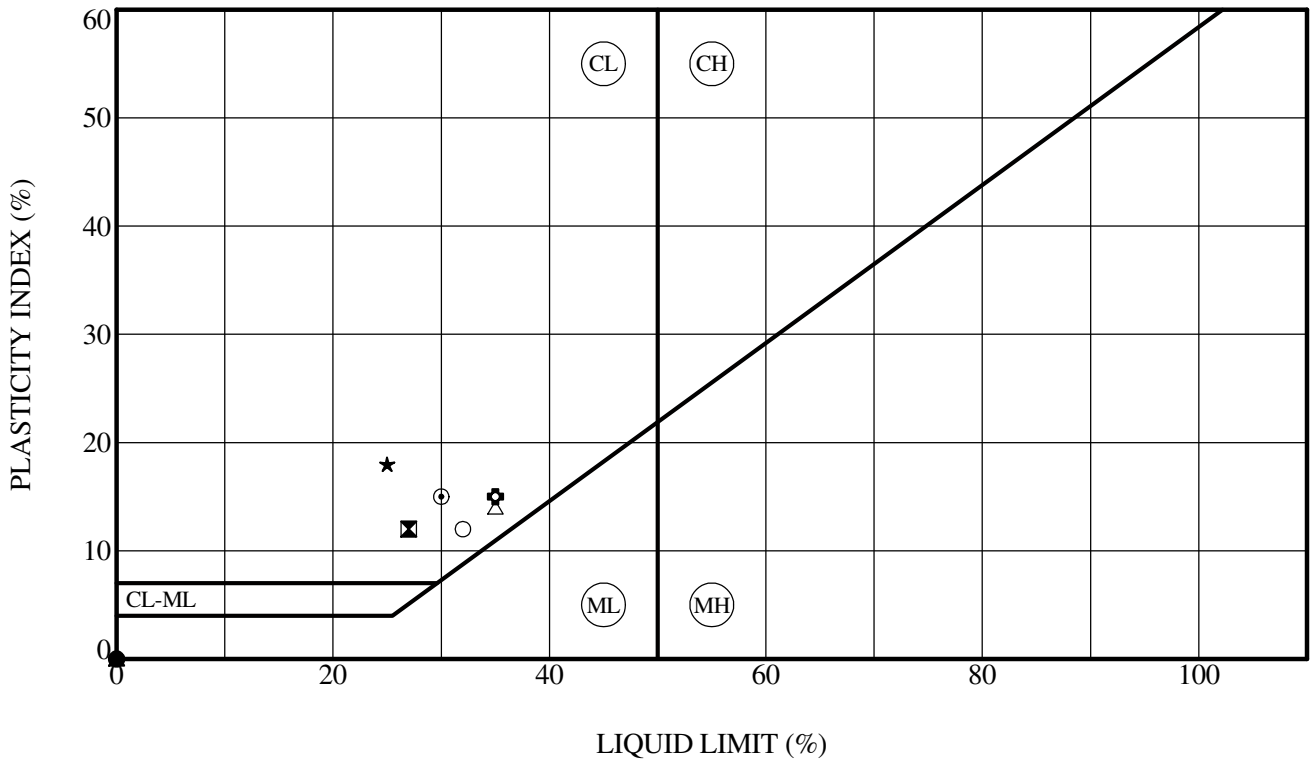
Soil Symbols and Description Key

D.R. Horton
Micron Property
Lehi/Draper, Utah
Project Number: 589-100

Plate B-35

APPENDIX C

Test Pit No.	Sample Depth (feet)	USCS Soil Classification	Natural Moisture Content (%)	Natural Dry Density (pcf)	Optimum Moisture Content (%)	Maximum Dry Density (pcf)	Gradation			Atterberg		Collapse (%)	CBR (%)
							Gravel (%)	Sand (%)	Fines (%)	LL	PI		
MW-TP-17	4	SM	4.1				35.6	38.8	25.6	NP	NP		
MW-TP-18	3	CL	20.1	86.7					85.1			0.07	
MW-TP-19	6	ML	8.1	88.6					65.1			1.4	
MW-TP-24	3.5	GC	3.8	3.8			51.9	34.6	13.5	27	12		
MW-TP-25	11	SP-SM	5				6.7	84.4	8.9	NP	NP		
MW-TP-26	3	GM	3.3				2.3	69.8	27.9				
MW-TP-28	3.5	CL-ML	6.8	107					79.2	25	18	0.47	
MW-TP-29	2	SC	4.7				23.4	45.3	31.3	30	15		
MW-TP-30	4	CL	14.2	126.6					92.5	35	15	0.4	
MW-TP-31	2	CL	10.9				0.1	4.9	95.0	32	12		
MW-TP-32	3.5	CL	11.1	98.9			1.3	2.8	95.9	35	14	0.01	
MW-TP-33	6	CL	10.6	90					86.7			0.1	
MW-TP-33	10.5	GP-GM	1				74.5	23.5	2.0				
MW-TP-34	4.5	SM	7.4										
MW-TP-35	5	ML	10.9	96.1					77.5			0.12	
MW-TP-36	1	ML	13.9										
MW-TP-36	1.5	ML	6.7				36.0	23.2	40.8				
MW-TP-36	10	ML	7				6.0	40.3	53.7				
MW-TP-37	6	GP	1				81.6	17.0	1.4				
MW-TP-39	2	CL	7.4				0.0	2.4	97.6				
MW-TP-39	3.5	CL	8	95.5					93.2			0.21	
MW-TP-41	1.5	GC	6.7		10.9	121.1	28.7	20.8	40.8	32	13		11.6
MW-TP-41	5	CL	5.5	88.6					53.1			0.01	
MW-TP-42	6	SM	5.9				12.6	44.5	42.9	22	4		
MW-TP-43	8	ML	7.1	86.8					68.9			3.55	
MW-TP-45	2	CL	6		11.7	112	13.3	18.1	68.6	27	10		5.3
MW-TP-46	3.5	GM	6				31.6	27.5	40.9				
MW-TP-47	6	CL	9.3	95					93.1			0.65	
MW-TP-49	2	SC	6.4				3.3	50.7	46.0	30	14		
MW-TP-49	6	CL	15.7	105					95.6				
MW-TP-51	2	CL	9.9				1.0	12.0	87.0	32	14		
MW-TP-52	4	CL	14.7	104.4					93.1				
MW-TP-53	2	CL	7				26.3	16.8	56.9	27	11		
MW-TP-54	8	CL	13.6	86.7					88.6			0.53	



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**MW-TP-17**	**4.0**	**NP**	**NP**	**NP**	**25.6**	**Silty SAND with gravel**
⊠	**MW-TP-24**	**3.5**	**27**	**15**	**12**	**13.5**	**Clayey GRAVEL with sand**
▲	**MW-TP-25**	**11.0**	**NP**	**NP**	**NP**	**8.9**	**Poorly Graded SAND with silt**
★	**MW-TP-28**	**3.5**	**25**	**7**	**18**	**79.2**	**Sandy Silty CLAY**
⊙	**MW-TP-29**	**2.0**	**30**	**15**	**15**	**31.3**	**Clayey SAND with gravel**
✿	**MW-TP-30**	**4.0**	**35**	**20**	**15**	**92.5**	**Lean CLAY**
○	**MW-TP-31**	**2.0**	**32**	**20**	**12**	**95.0**	**Lean CLAY**
△	**MW-TP-32**	**3.5**	**35**	**21**	**14**	**95.9**	**Lean CLAY**

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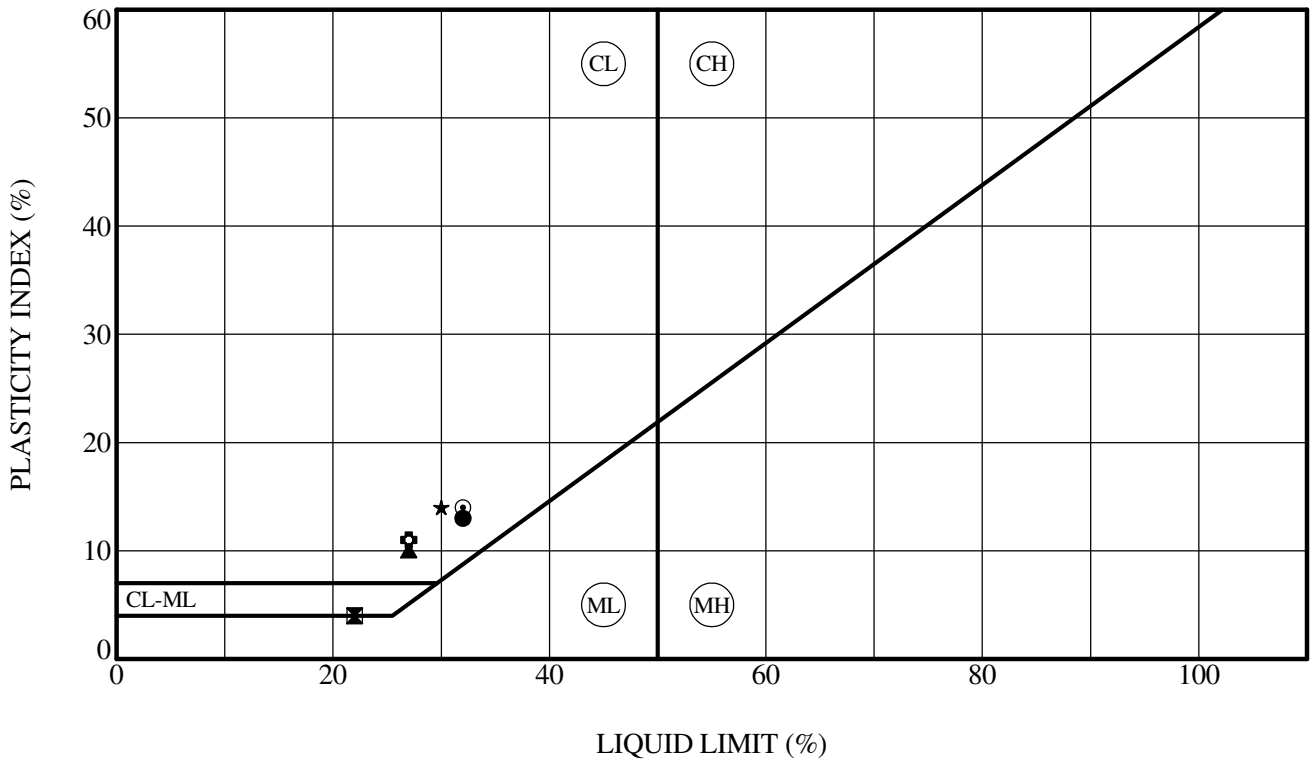
ATTERBERG LIMITS' RESULTS - ASTM D 4318

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 2

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**MW-TP-41**	**1.5**	**32**	**19**	**13**	**40.8**	**Clayey GRAVEL with sand**
⊠	**MW-TP-42**	**6.0**	**22**	**18**	**4**	**42.9**	**Silty SAND**
▲	**MW-TP-45**	**2.0**	**27**	**17**	**10**	**68.6**	**Sandy Lean CLAY**
★	**MW-TP-49**	**2.0**	**30**	**16**	**14**	**46.0**	**Clayey SAND**
⊙	**MW-TP-51**	**2.0**	**32**	**18**	**14**	**87.0**	**Lean CLAY**
✿	**MW-TP-53**	**2.0**	**27**	**16**	**11**	**56.9**	**Gravelly Lean CLAY with sand**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

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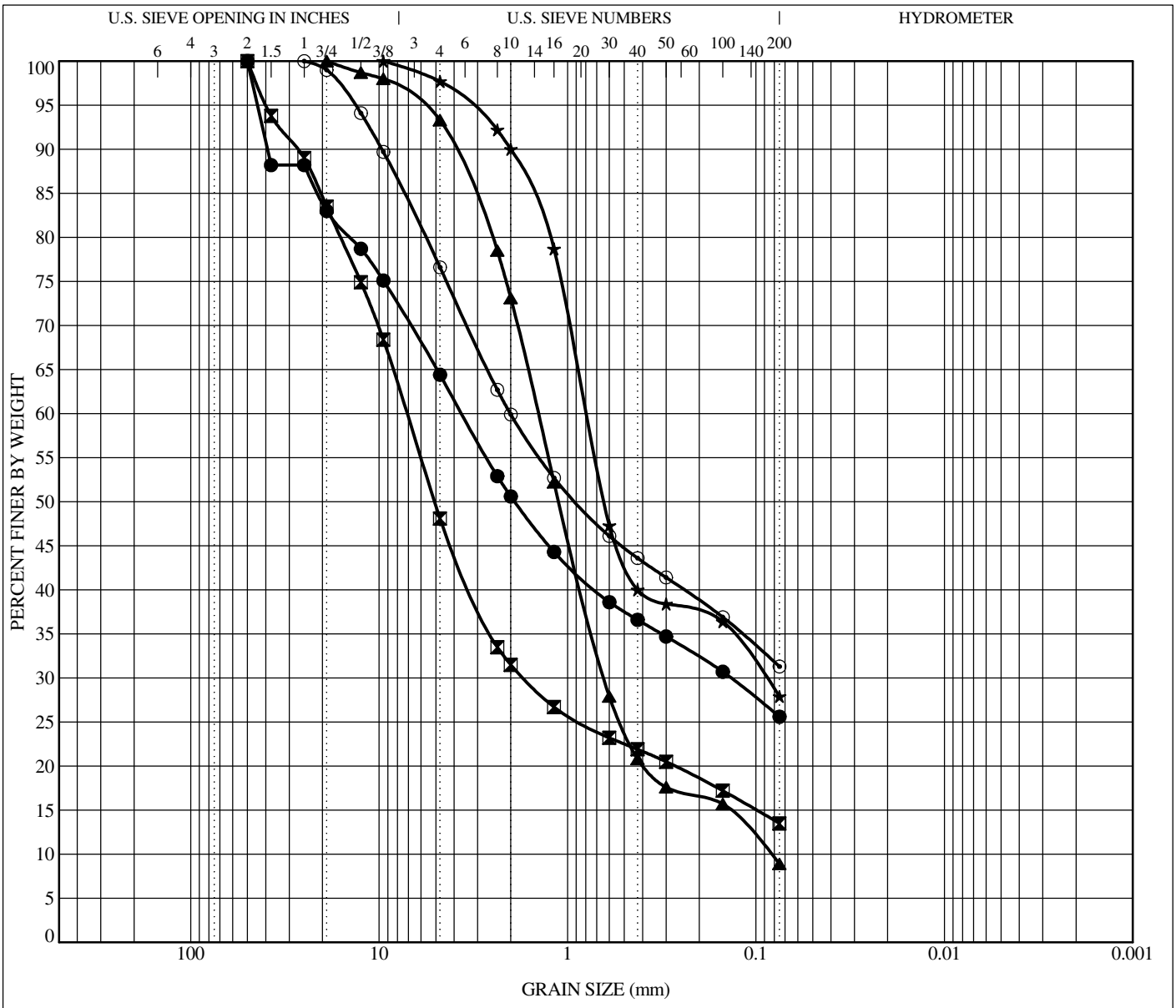
D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 3

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-17**	**4.0**	**Silty SAND with gravel**	**NP**	**NP**	**NP**		
⊠	**MW-TP-24**	**3.5**	**Clayey GRAVEL with sand**	**27**	**15**	**12**		
▲	**MW-TP-25**	**11.0**	**Poorly Graded SAND with silt**	**NP**	**NP**	**NP**	**3.36**	**17.13**
★	**MW-TP-26**	**3.0**						
⊙	**MW-TP-29**	**2.0**	**Clayey SAND with gravel**	**30**	**15**	**15**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-17**	**4.0**	**50**	**3.635**	**0.136**		**35.6**	**38.8**	**25.6**	
⊠	**MW-TP-24**	**3.5**	**50**	**7.131**	**1.696**		**51.9**	**34.6**	**13.5**	
▲	**MW-TP-25**	**11.0**	**19**	**1.437**	**0.636**	**0.084**	**6.7**	**84.4**	**8.9**	
★	**MW-TP-26**	**3.0**	**9.5**	**0.789**	**0.089**		**2.3**	**69.8**	**27.9**	
⊙	**MW-TP-29**	**2.0**	**25**	**2.012**			**23.4**	**45.3**	**31.3**	

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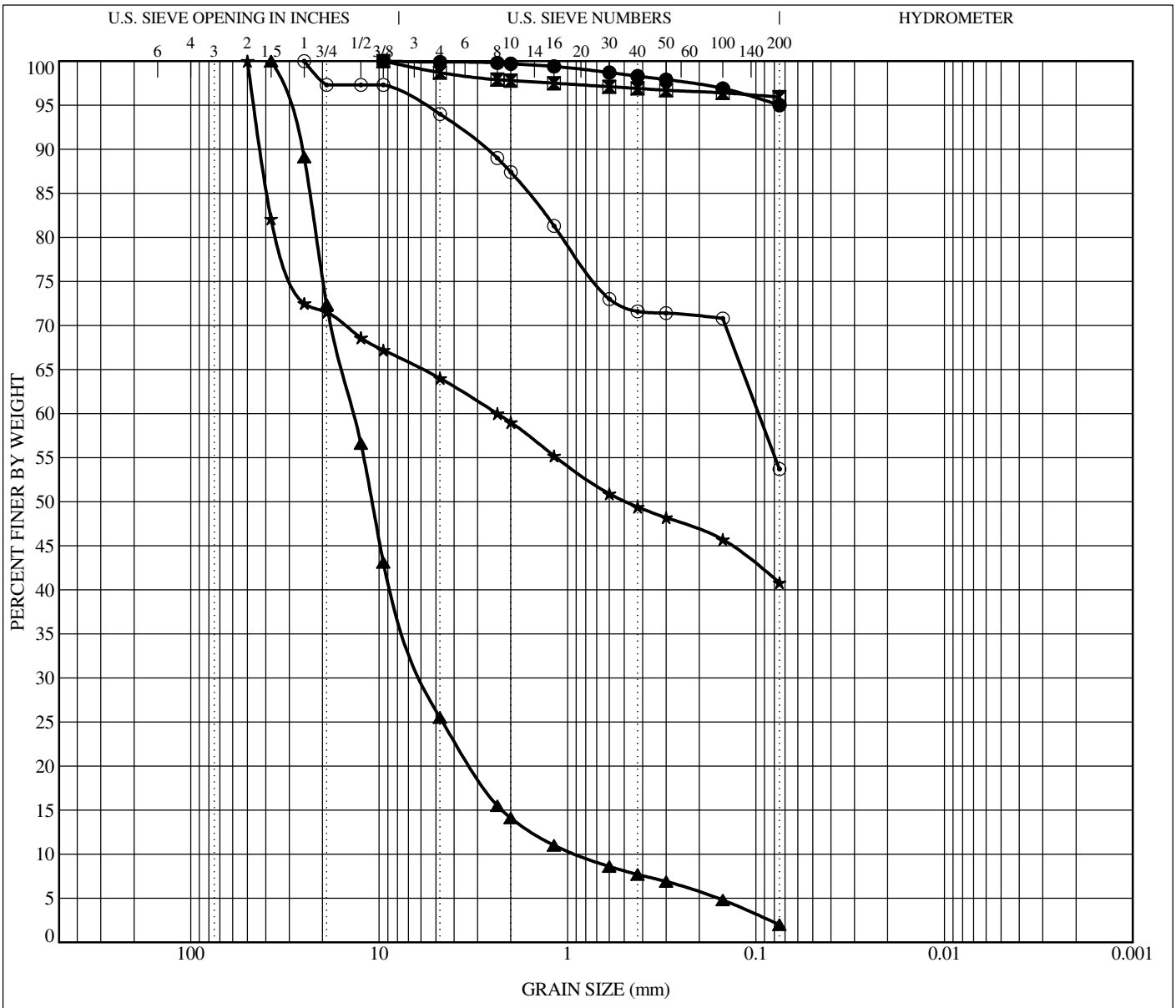
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 4

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-31**	**2.0**	**Lean CLAY**	**32**	**20**	**12**		
⊠	**MW-TP-32**	**3.5**	**Lean CLAY**	**35**	**21**	**14**		
▲	**MW-TP-33**	**10.5**	**Poorly Graded GRAVEL with silt and sand**				**2.64**	**15.37**
★	**MW-TP-36**	**1.5**	**Gravelly SILT with sand**					
⊙	**MW-TP-36**	**10.0**	**Sandy SILT**					

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-31**	**2.0**	**9.5**				**0.1**	**4.9**	**95.0**	
⊠	**MW-TP-32**	**3.5**	**9.5**				**1.3**	**2.8**	**95.9**	
▲	**MW-TP-33**	**10.5**	**37.5**	**13.679**	**5.671**	**0.89**	**74.5**	**23.5**	**2.0**	
★	**MW-TP-36**	**1.5**	**50**	**2.36**			**36.0**	**23.2**	**40.8**	
⊙	**MW-TP-36**	**10.0**	**25**	**0.097**			**6.0**	**40.3**	**53.7**	

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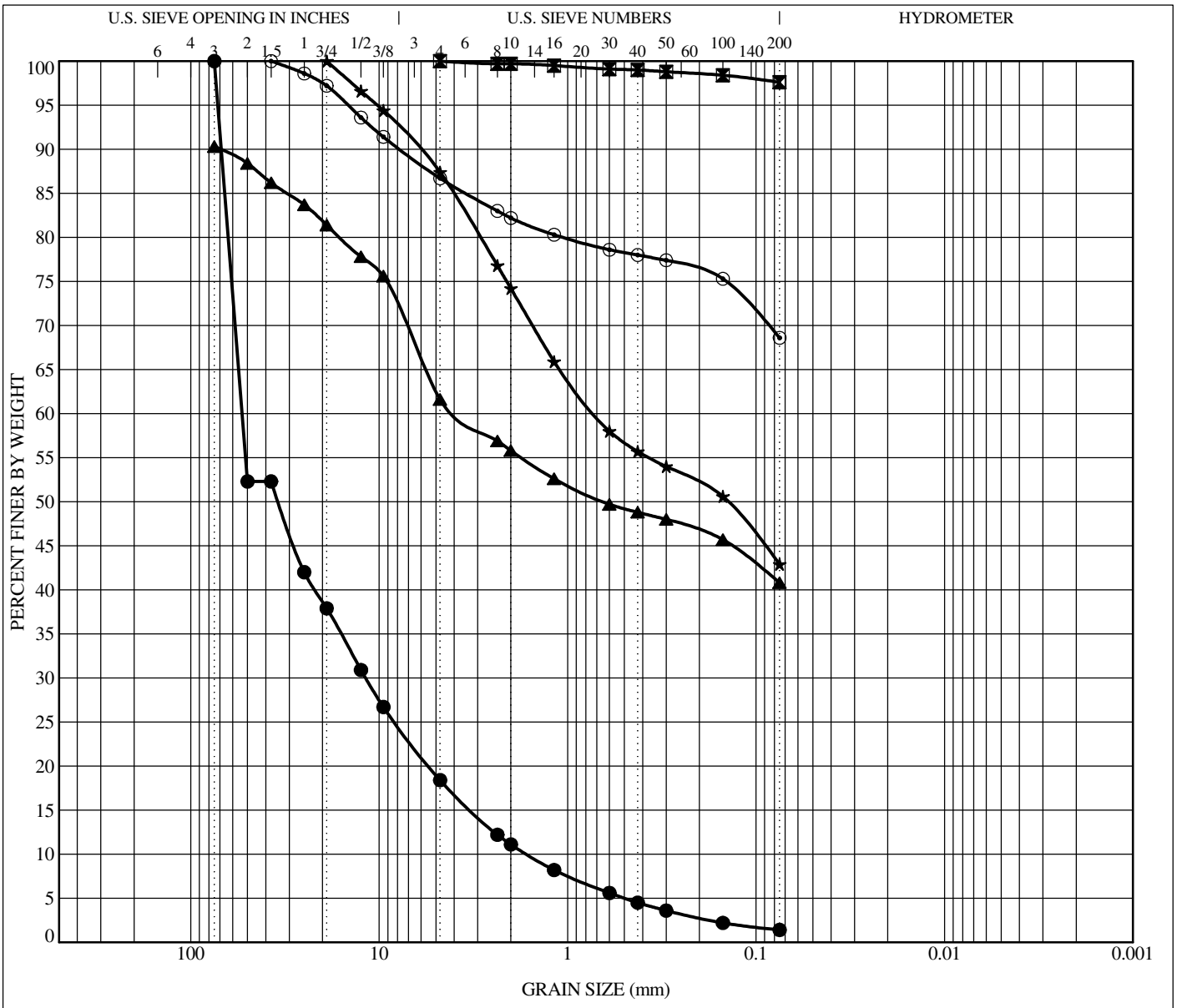
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 5

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-37**	**6.0**	**Poorly Graded GRAVEL with sand**				**1.59**	**32.60**
⊠	**MW-TP-39**	**2.0**	**Lean CLAY**					
▲	**MW-TP-41**	**1.5**	**Clayey GRAVEL with sand**	**32**	**19**	**13**		
★	**MW-TP-42**	**6.0**	**Silty SAND**	**22**	**18**	**4**		
⊙	**MW-TP-45**	**2.0**	**Sandy Lean CLAY**	**27**	**17**	**10**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-37**	**6.0**	**75**	**53.382**	**11.786**	**1.637**	**81.6**	**17.0**	**1.4**	
⊠	**MW-TP-39**	**2.0**	**4.75**				**0.0**	**2.4**	**97.6**	
▲	**MW-TP-41**	**1.5**	**75**	**3.744**			**28.7**	**20.8**	**40.8**	
★	**MW-TP-42**	**6.0**	**19**	**0.712**			**12.6**	**44.5**	**42.9**	
⊙	**MW-TP-45**	**2.0**	**37.5**				**13.3**	**18.1**	**68.6**	

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GRAIN SIZE DISTRIBUTION - ASTM D422

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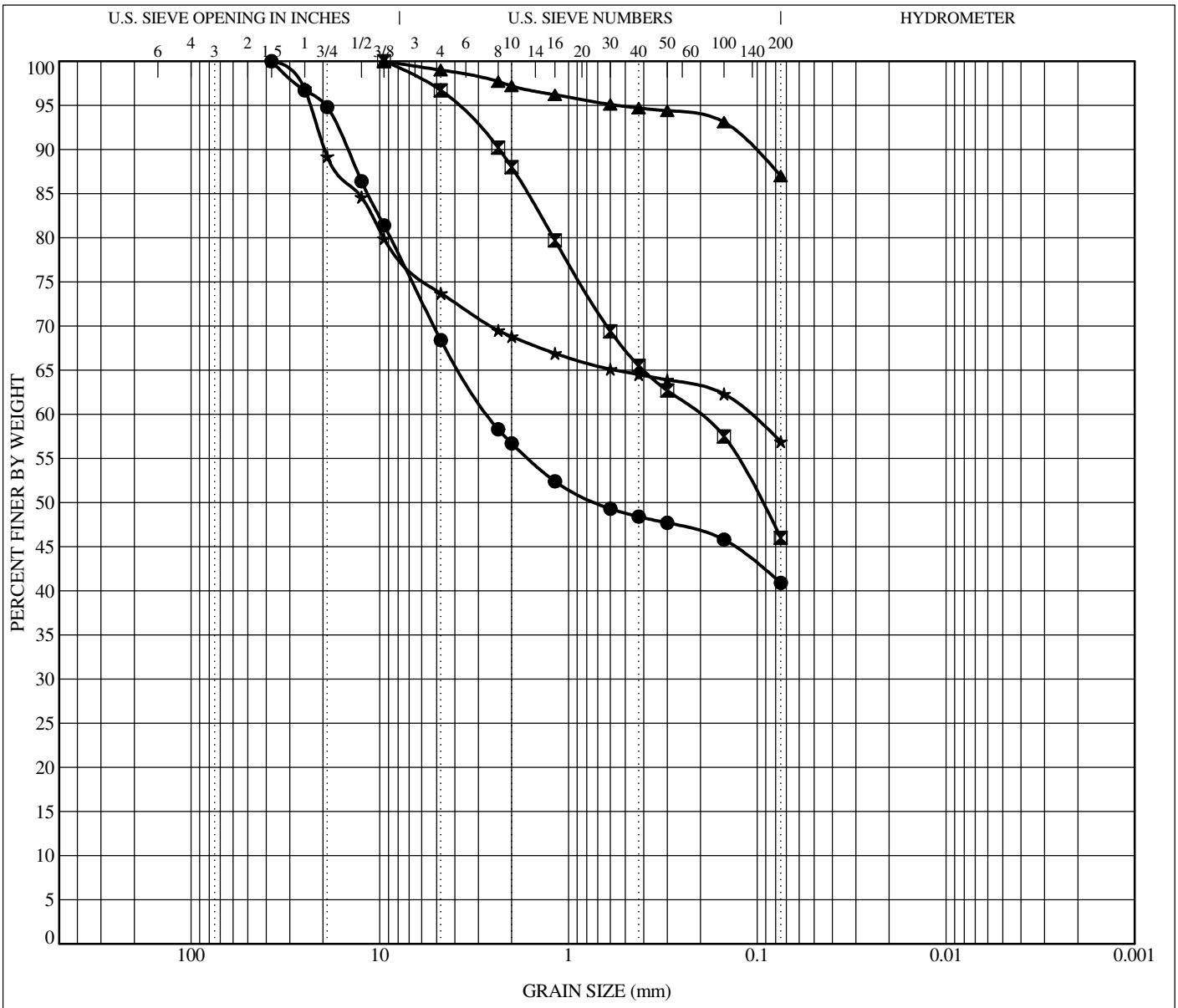
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 6

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-46**	**3.5**	**Silty GRAVEL with sand**					
⊠	**MW-TP-49**	**2.0**	**Clayey SAND**	**30**	**16**	**14**		
▲	**MW-TP-51**	**2.0**	**Lean CLAY**	**32**	**18**	**14**		
★	**MW-TP-53**	**2.0**	**Gravelly Lean CLAY with sand**	**27**	**16**	**11**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-46**	**3.5**	**37.5**	**2.655**			**31.6**	**27.5**	**40.9**	
⊠	**MW-TP-49**	**2.0**	**9.5**	**0.209**			**3.3**	**50.7**	**46.0**	
▲	**MW-TP-51**	**2.0**	**9.5**				**1.0**	**12.0**	**87.0**	
★	**MW-TP-53**	**2.0**	**37.5**	**0.112**			**26.3**	**16.8**	**56.9**	

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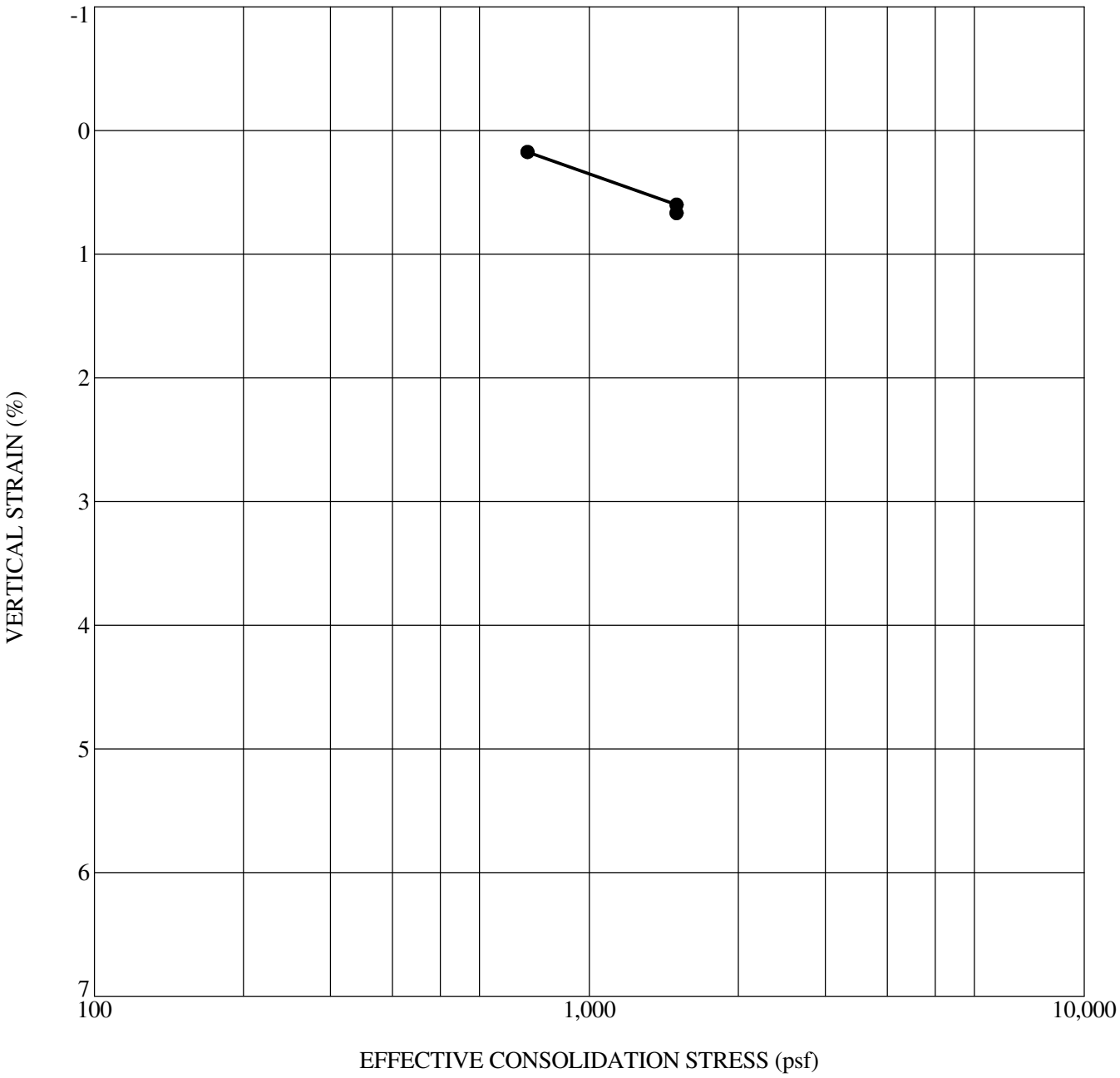
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 7

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-18**	**3.0**	**Lean CLAY with sand**	**87**	**20**				**1500**		**0.07**

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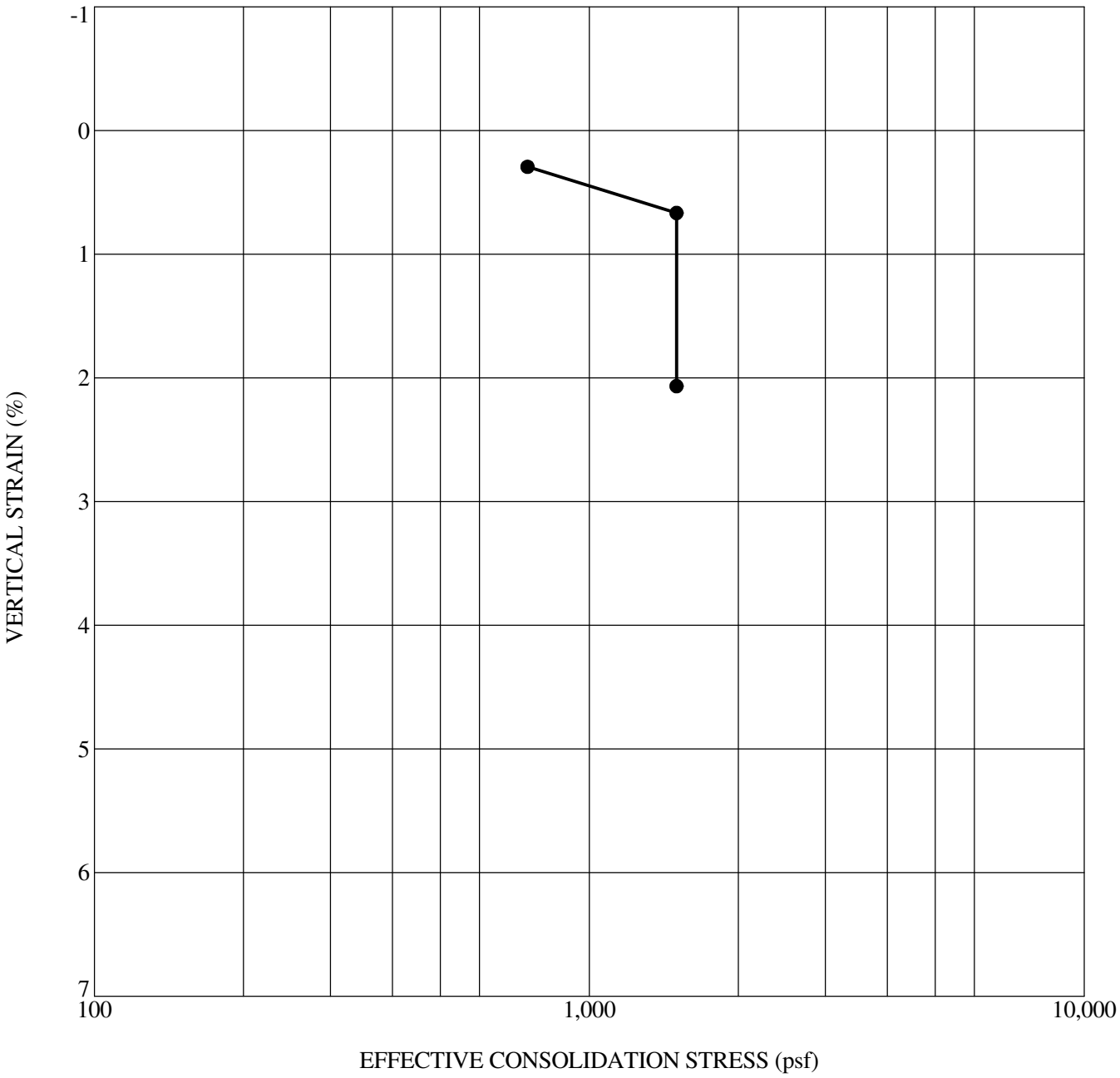
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 8

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-19**	**6.0**	**Sandy SILT**	**89**	**8**				**1500**		**1.40**

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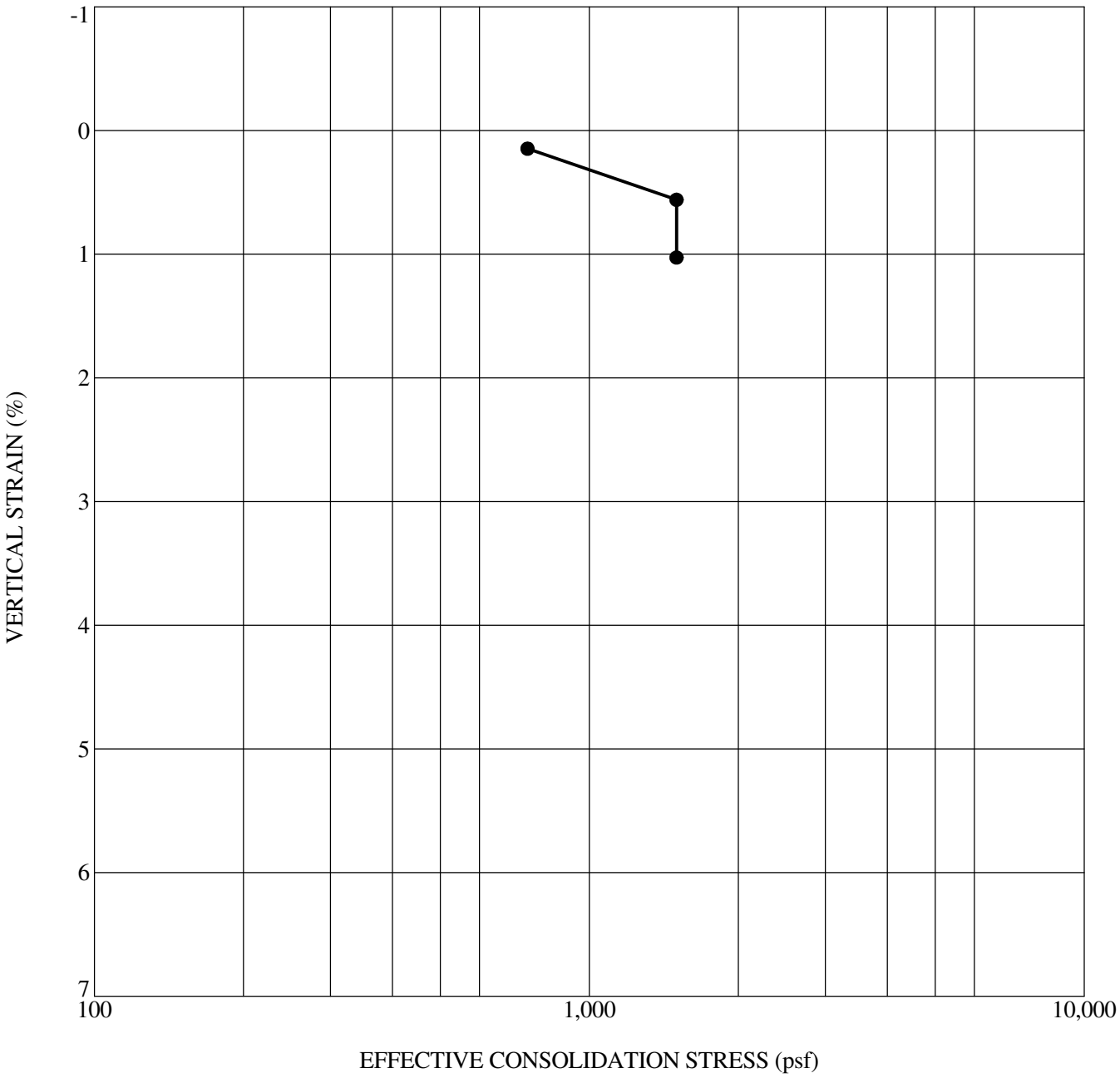
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 9

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-28**	**3.5**	**Sandy Silty CLAY**	**107**	**7**				**1500**		**0.47**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
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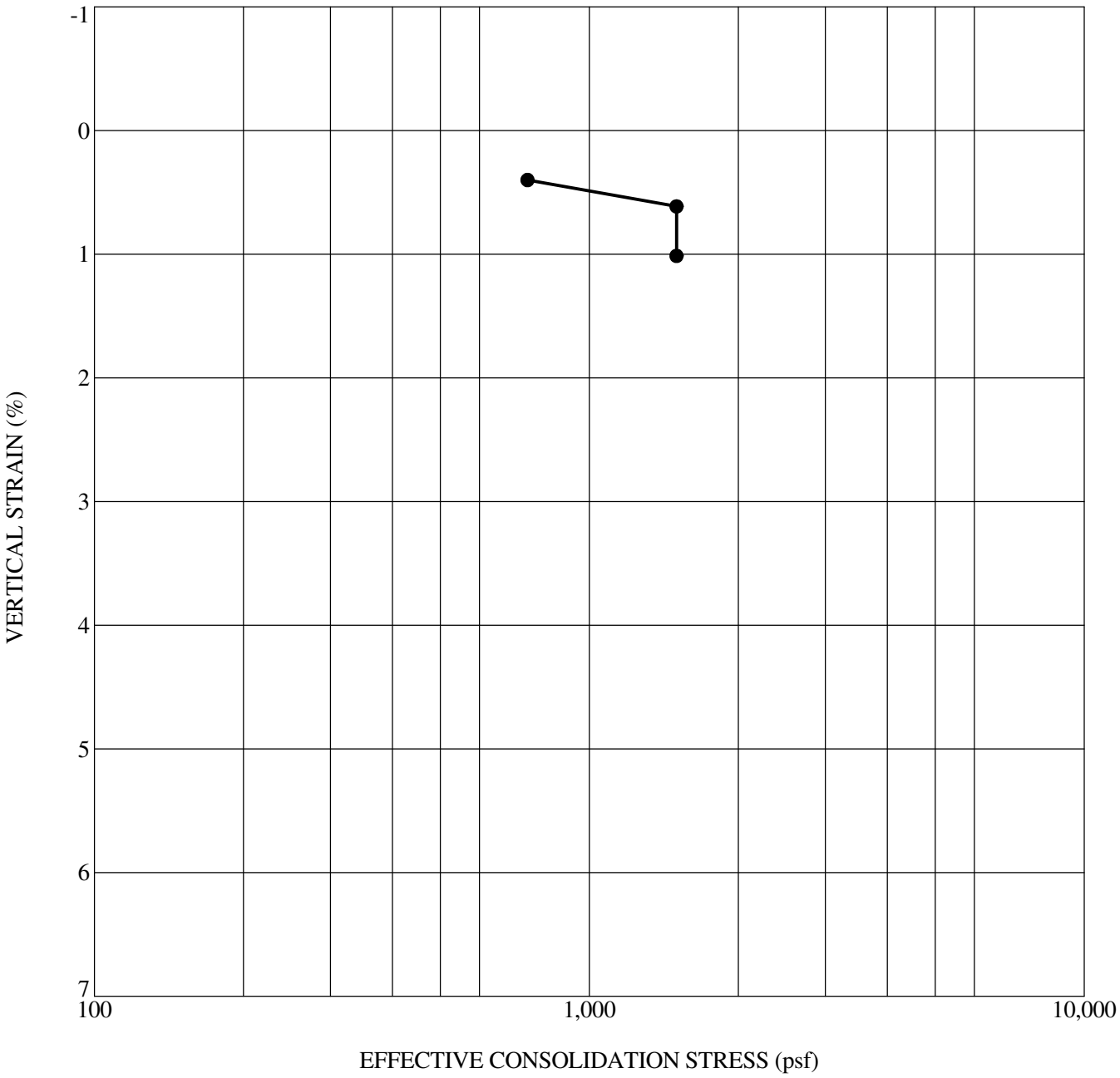
Lehi, Utah
Project Number: 589-100

Plate

C - 10

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-30**	**4.0**	**Lean CLAY**	**103**	**24**				**1500**		**0.40**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
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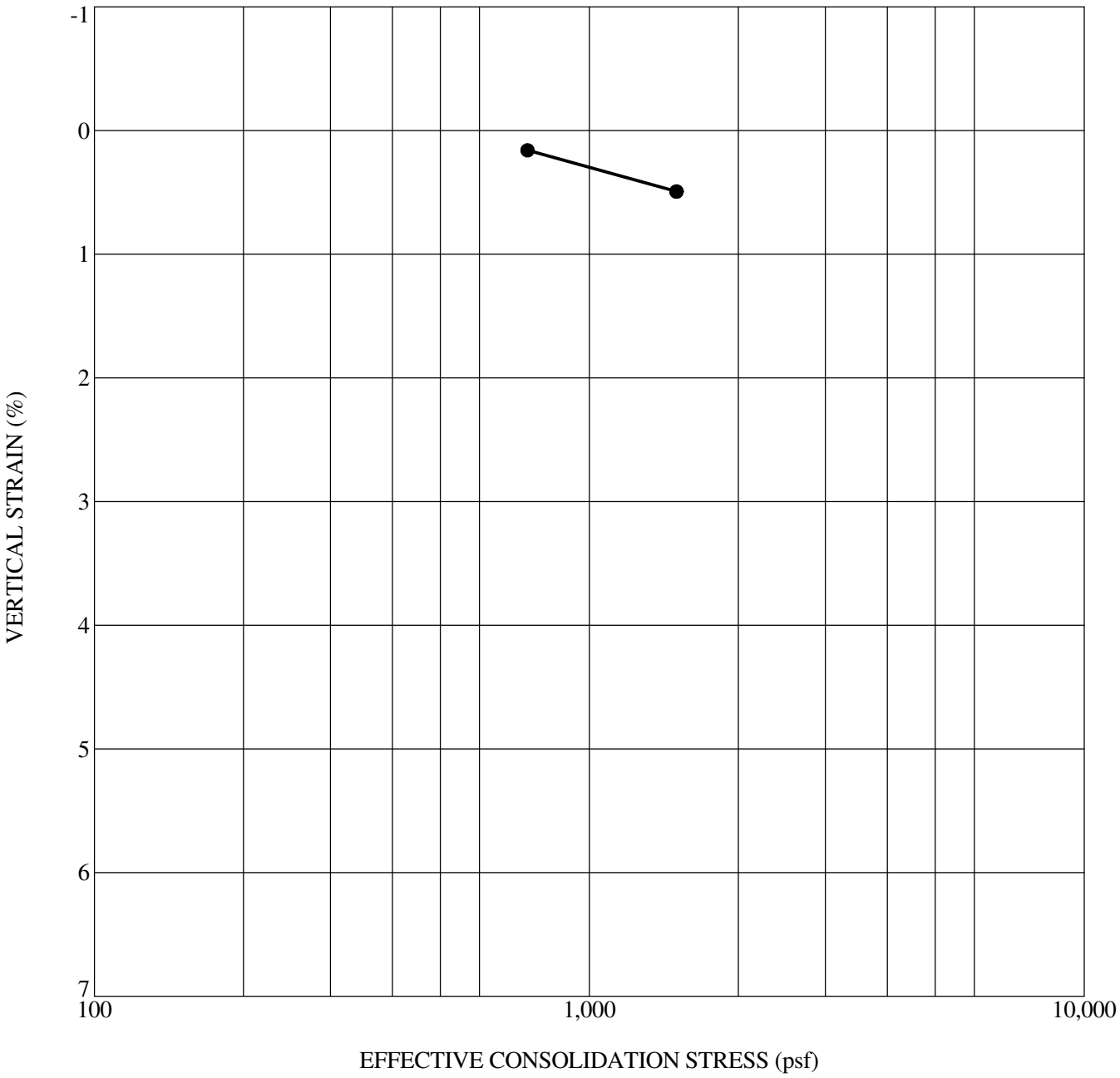
Plate

C - 11

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-32**	**3.5**	**Lean CLAY**	**99**	**10**				**1500**		**0.01**

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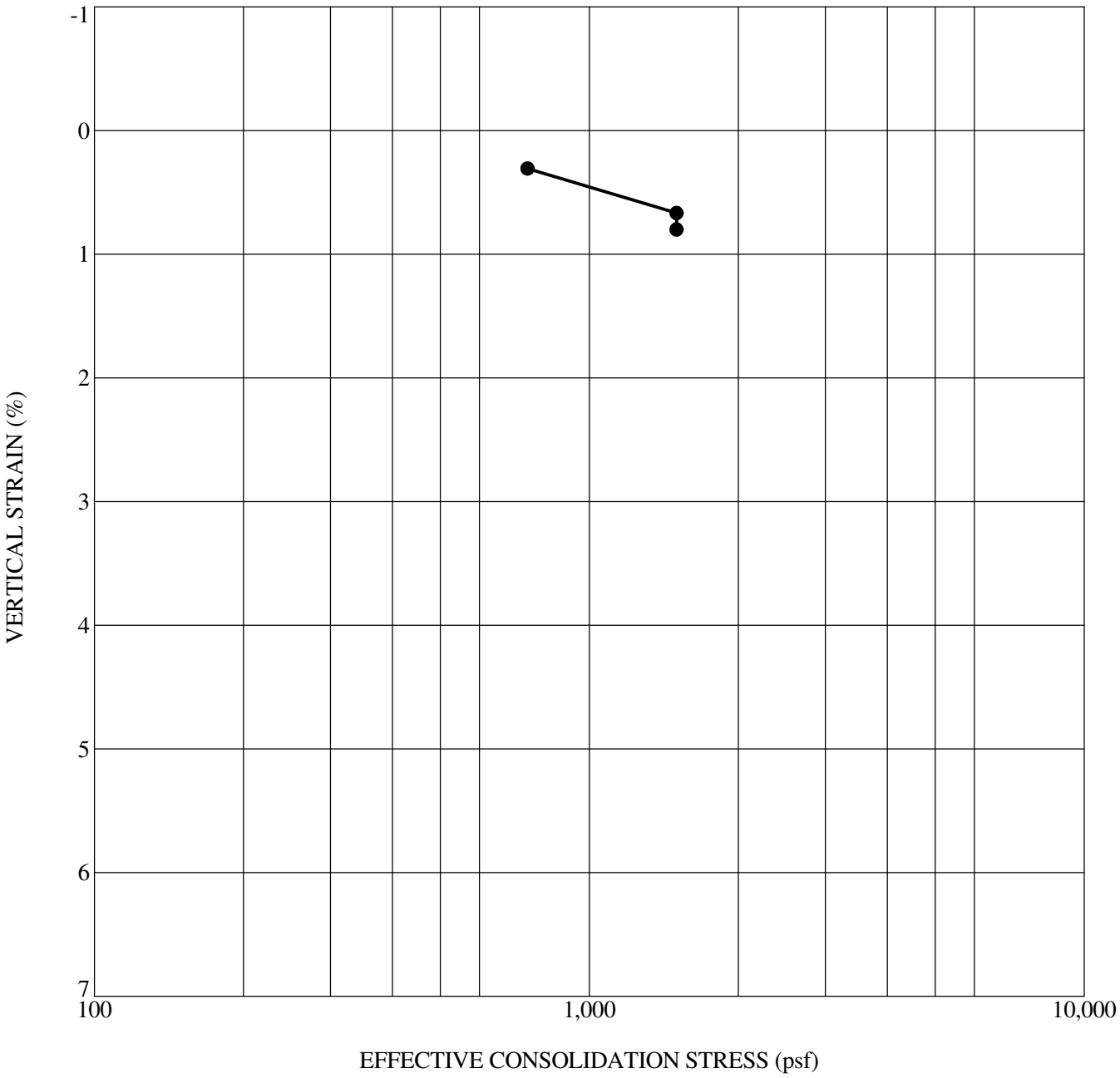
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 12

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-33**	**6.0**	**Lean CLAY with sand**	**90**	**11**				**1500**		**0.10**

GeoStrata

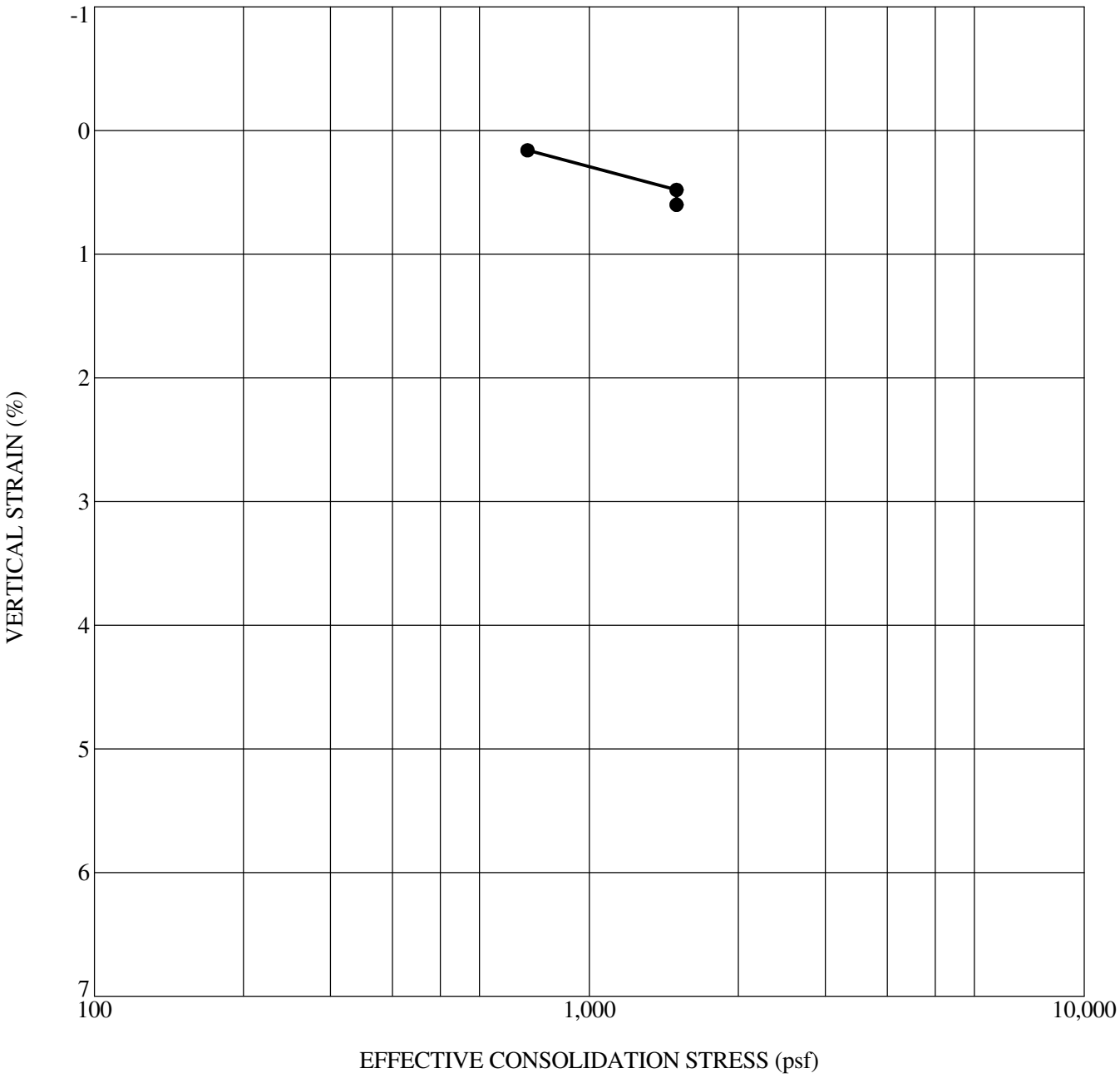
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 13

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-35**	**5.0**	**Sandy SILT**	**96**	**11**				**1500**		**0.12**

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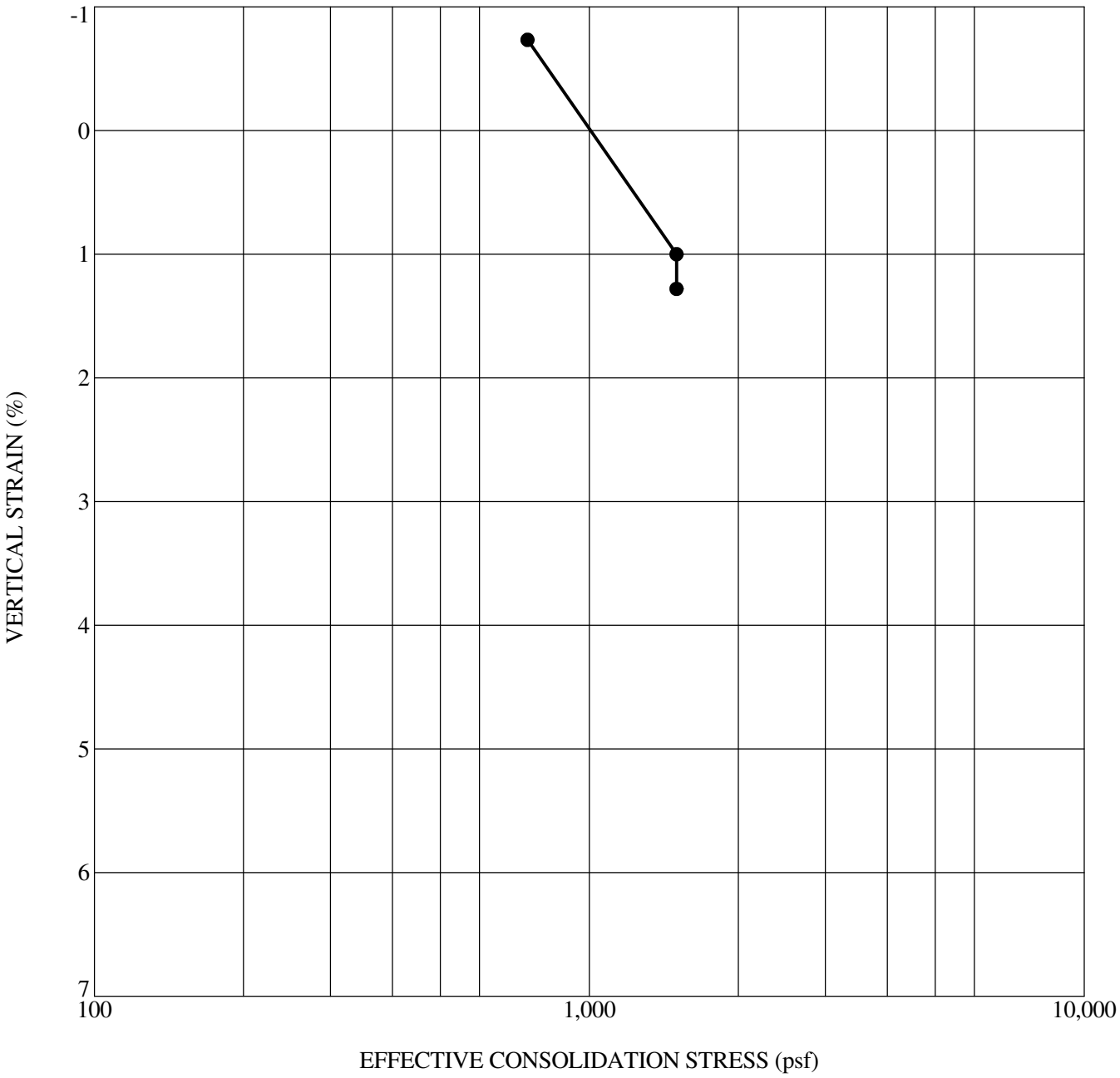
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 14

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-39**	**3.5**	**Lean CLAY**	**96**	**8**				**1500**		**0.21**

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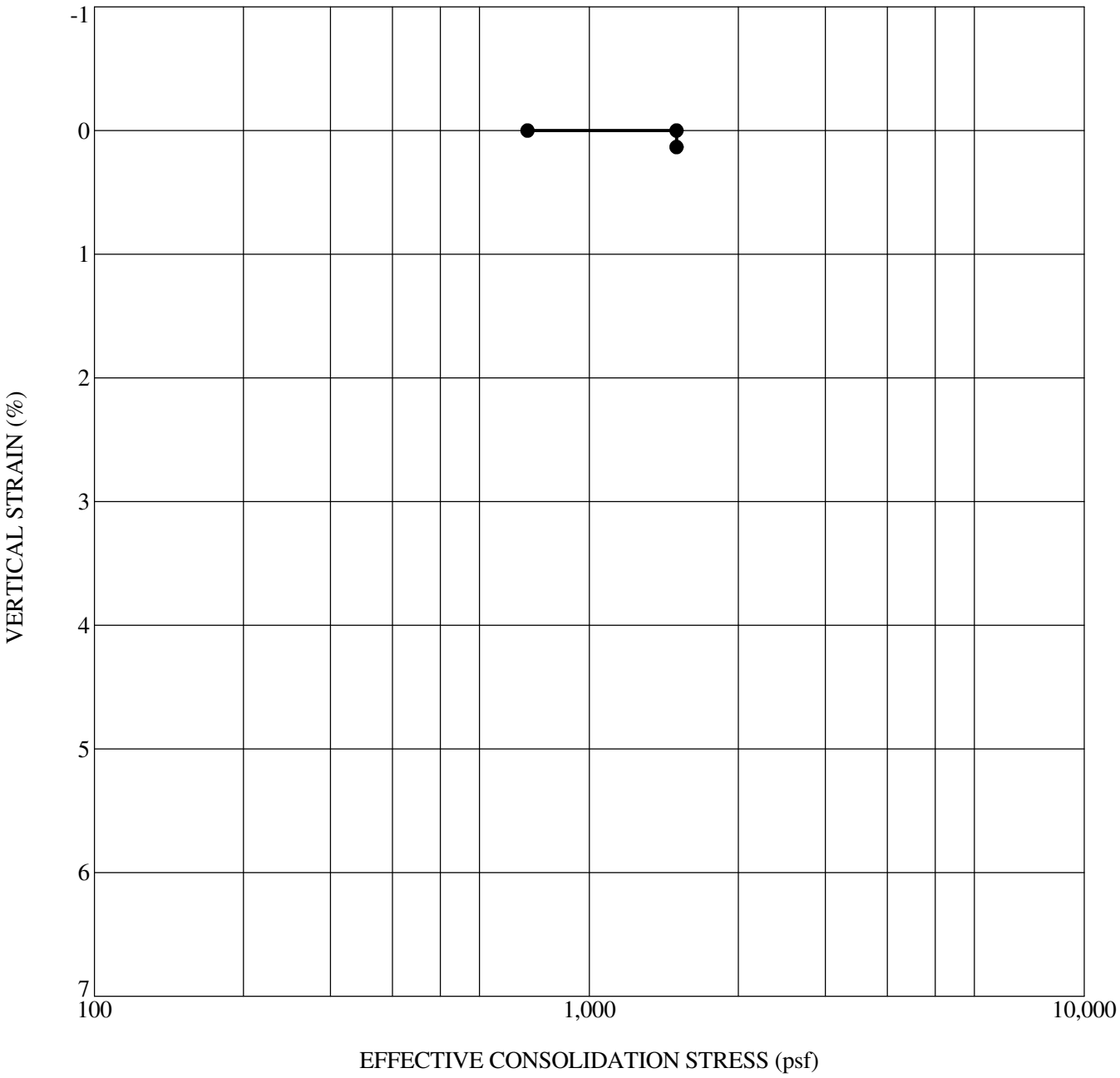
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 15

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-41**	**5.0**	**Sandy Lean CLAY**	**89**	**5**				**1500**		**0.01**

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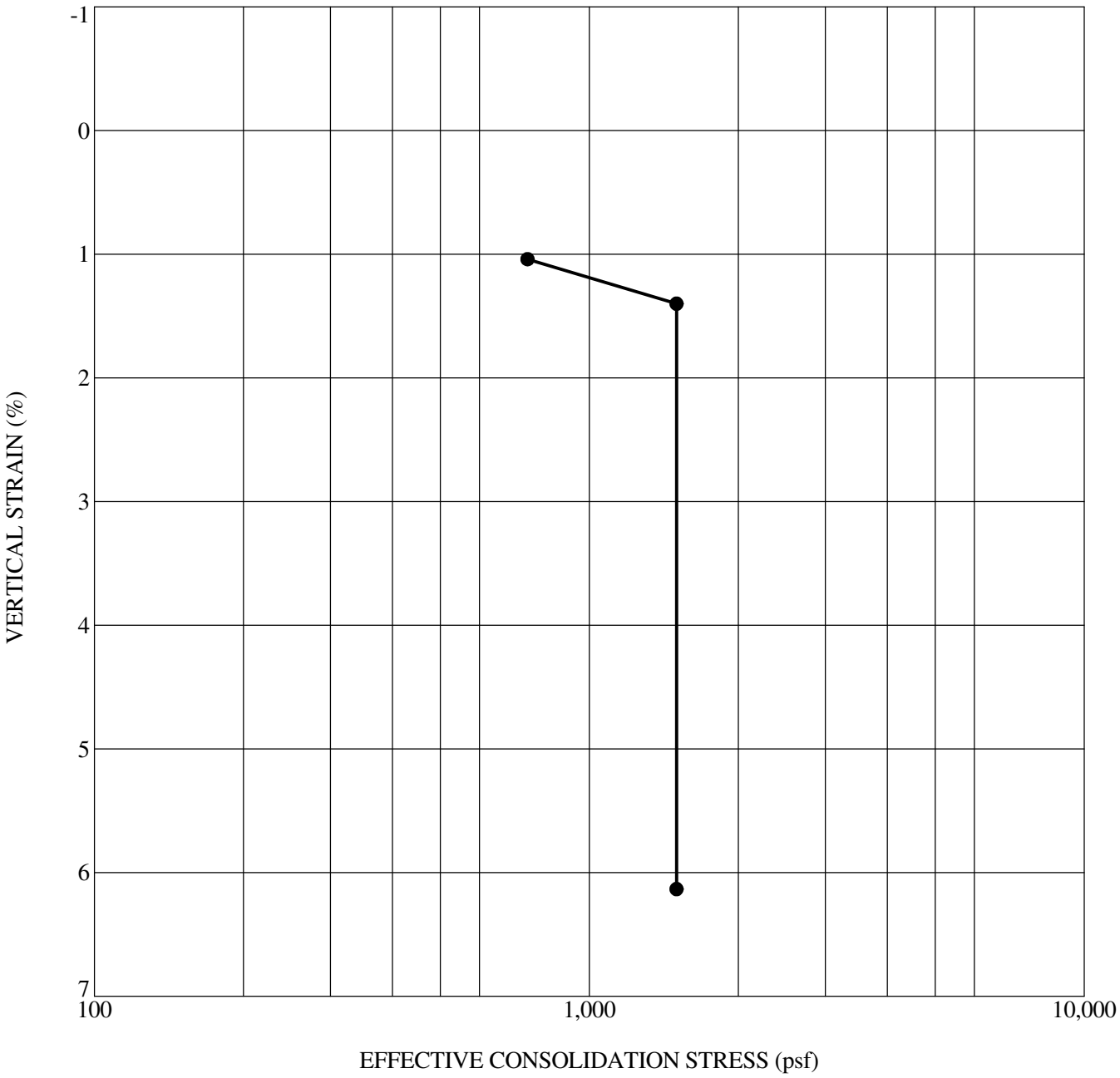
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 16

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-43**	**8.0**	**Sandy SILT**	**87**	**7**				**1500**		**3.55**

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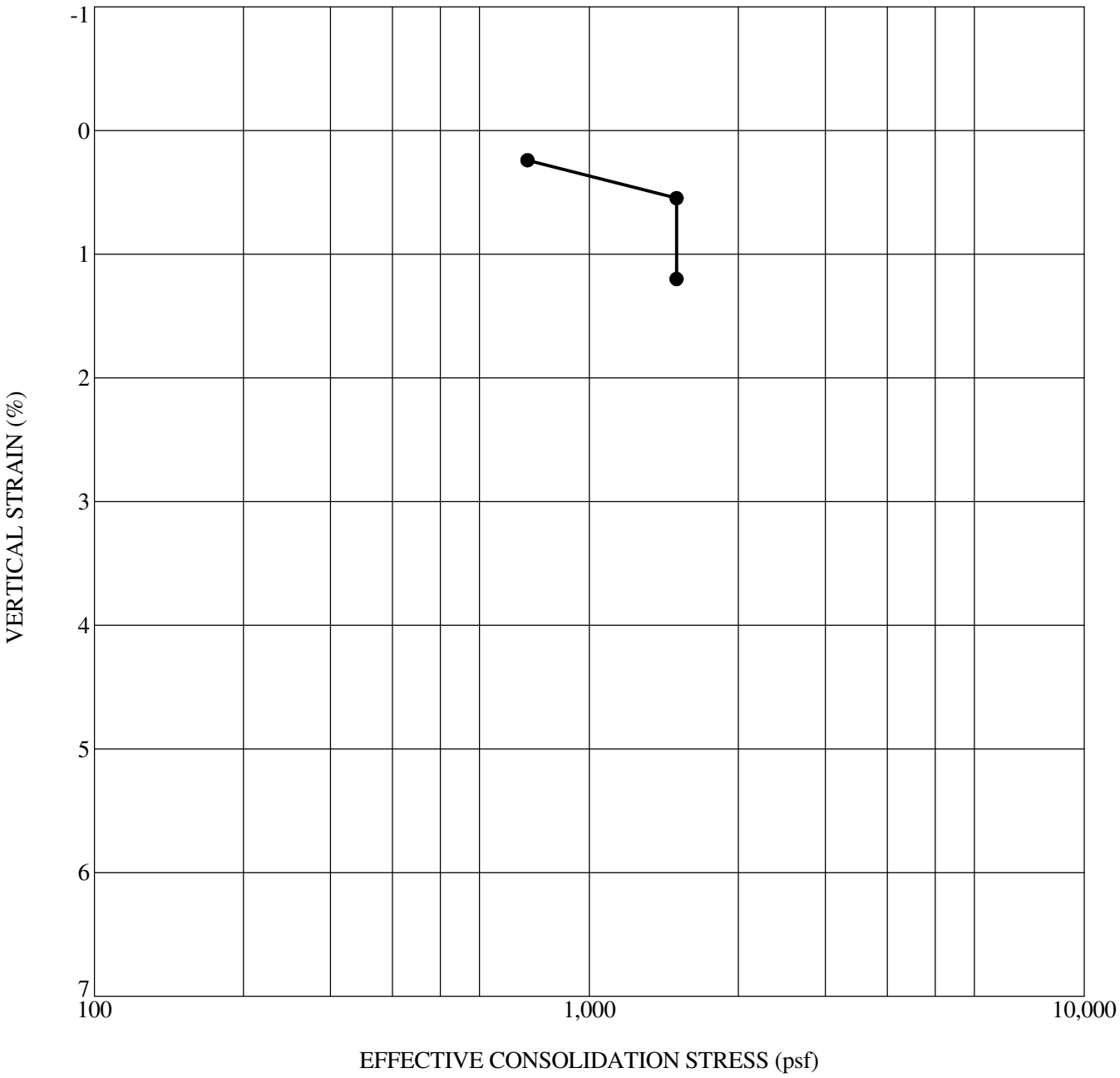
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 17

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-47**	**6.0**	**Lean CLAY**	**95**	**9**				**1500**		**0.65**

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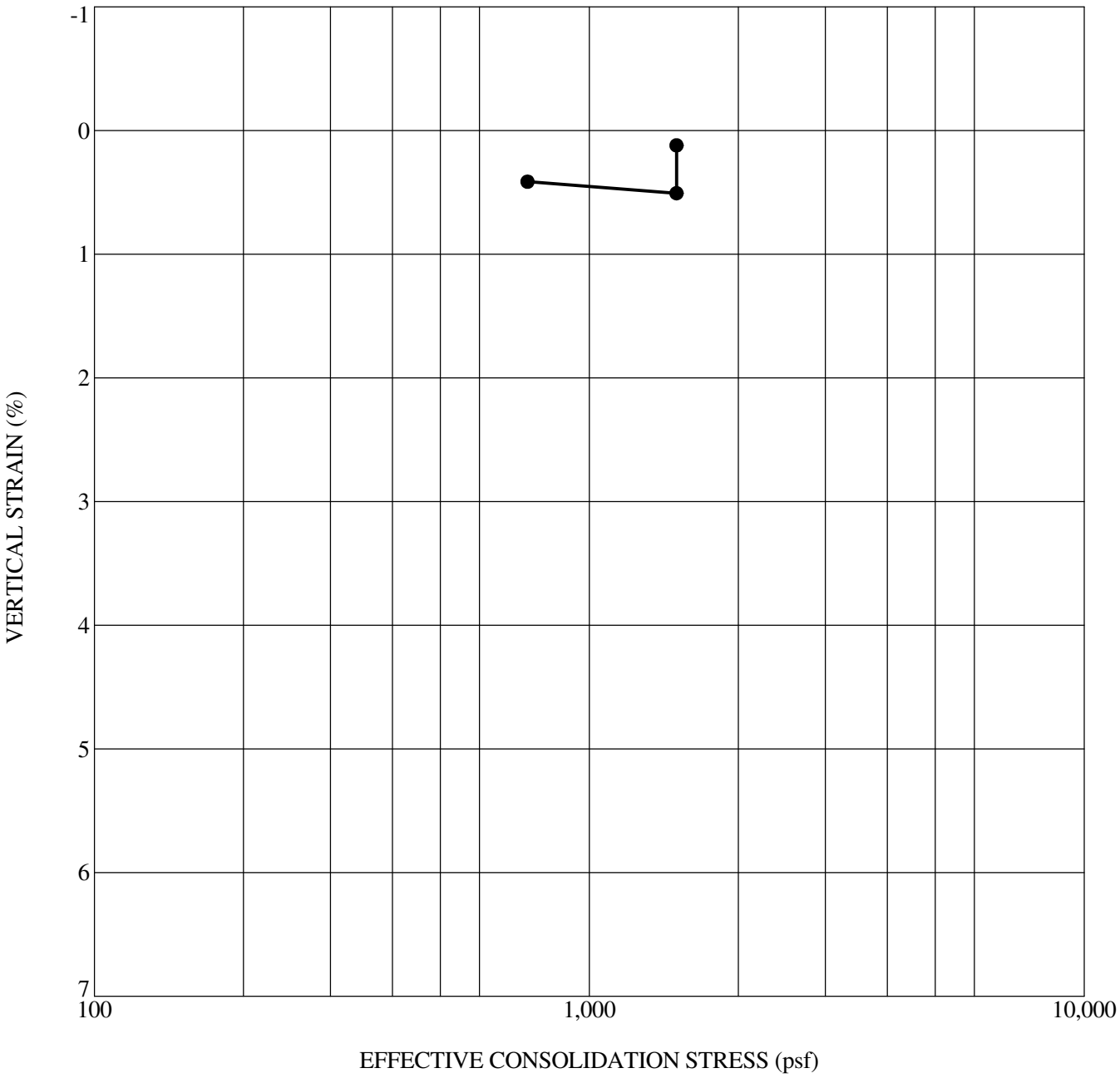
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 18

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-49**	**6.0**	**Lean CLAY**	**105**	**16**				**1500**	**0.29**	

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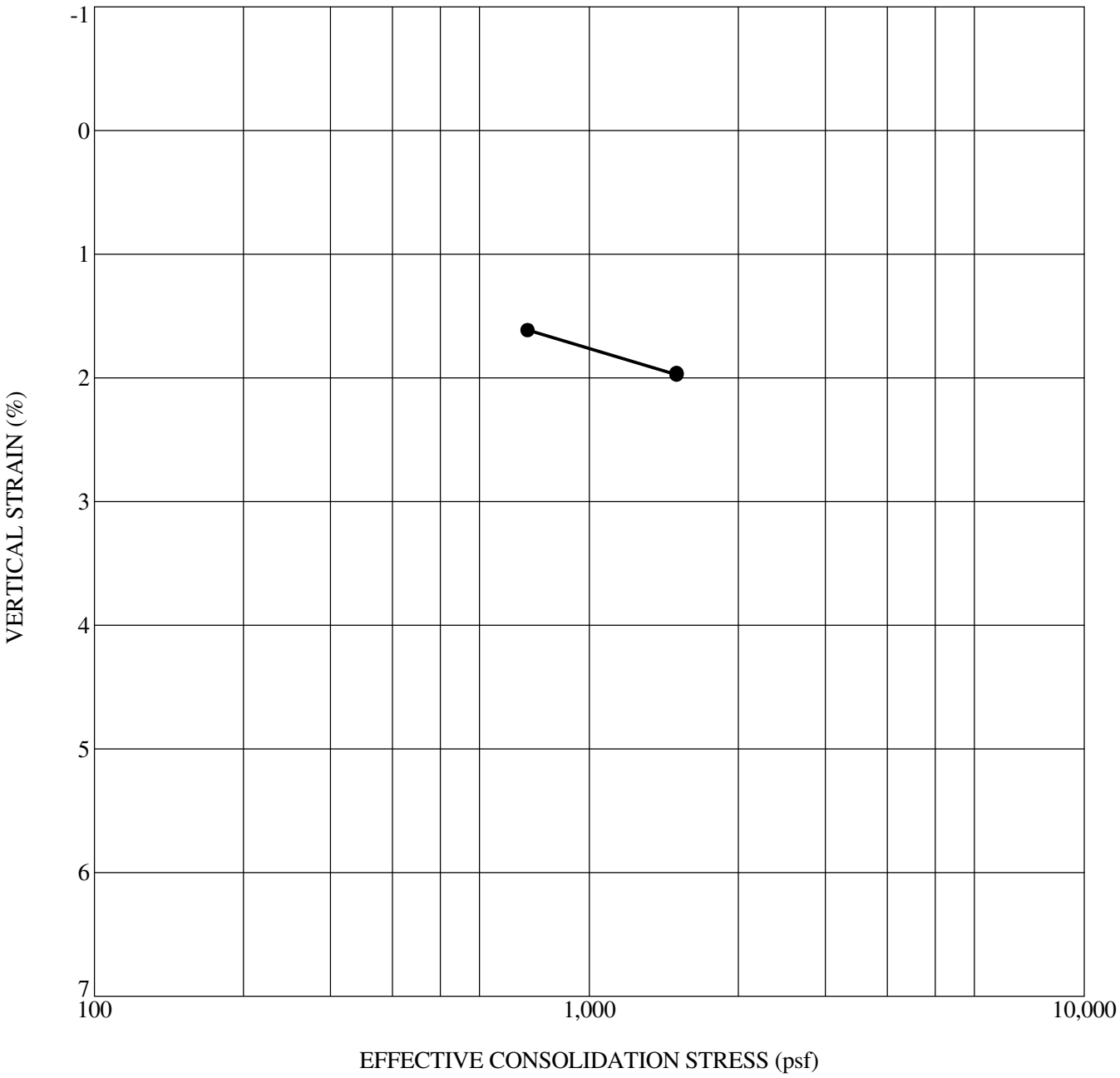
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 19

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-52**	**4.0**	**Lean CLAY**	**104**	**15**				**1500**	**0.01**	

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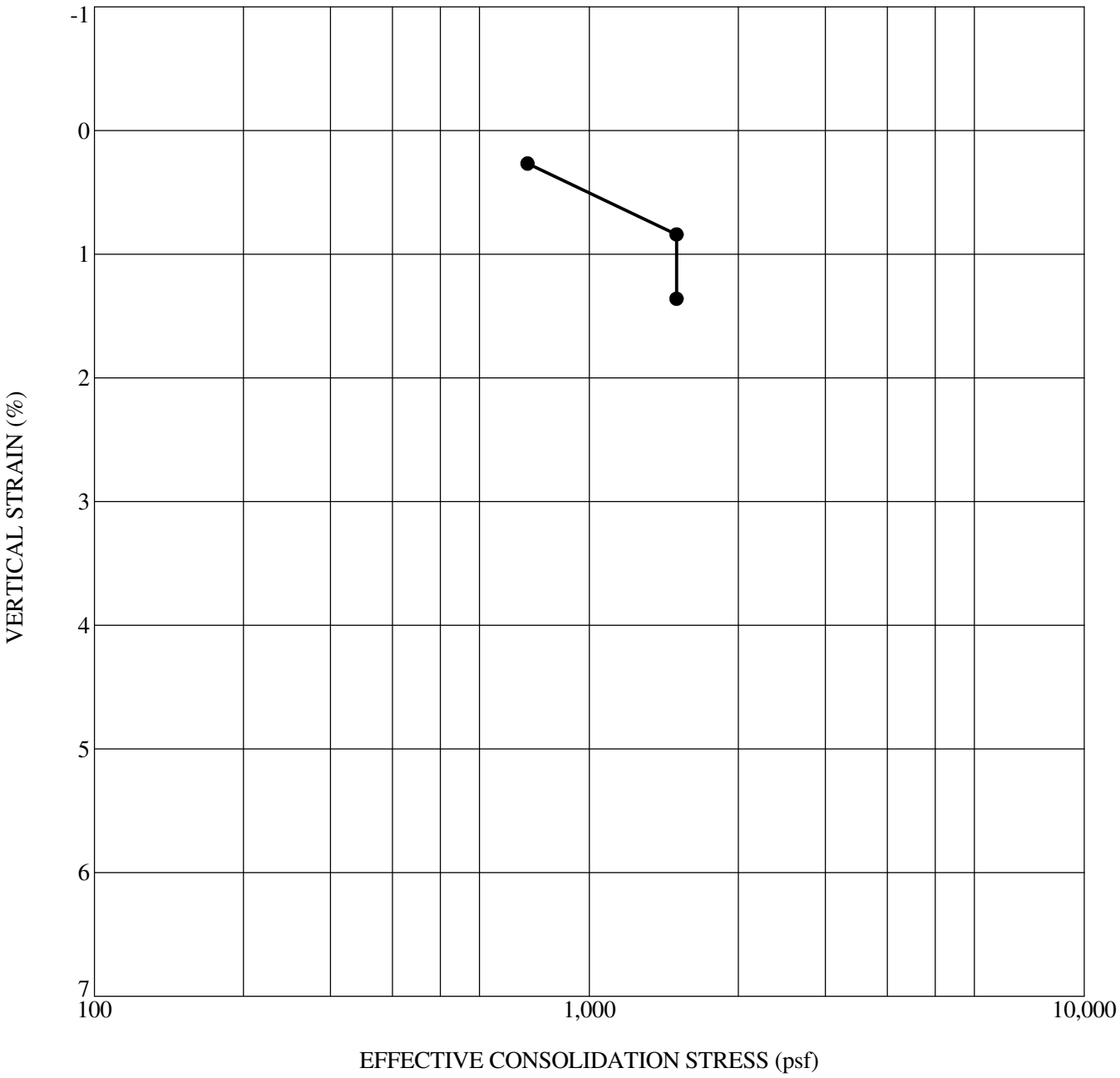
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 20

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-54**	**8.0**	**Lean CLAY**	**87**	**14**				**1500**		**0.53**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 21

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

Source of Material: **MW-TP-41 1.5 ft.**

Material Description: **Clayey GRAVEL with sand**

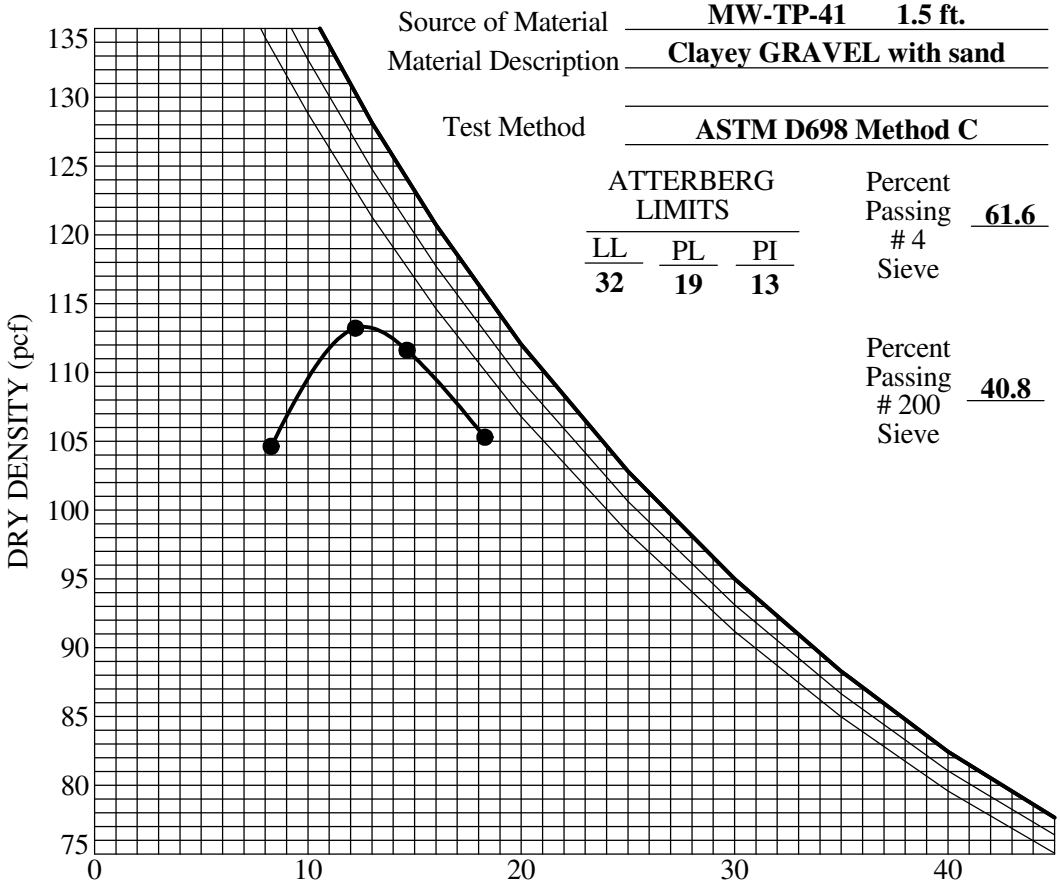
Test Method: **ASTM D698 Method C**

ATTERBERG LIMITS

LL	PL	PI
32	19	13

Percent Passing # 4 Sieve: **61.6**

Percent Passing # 200 Sieve: **40.8**

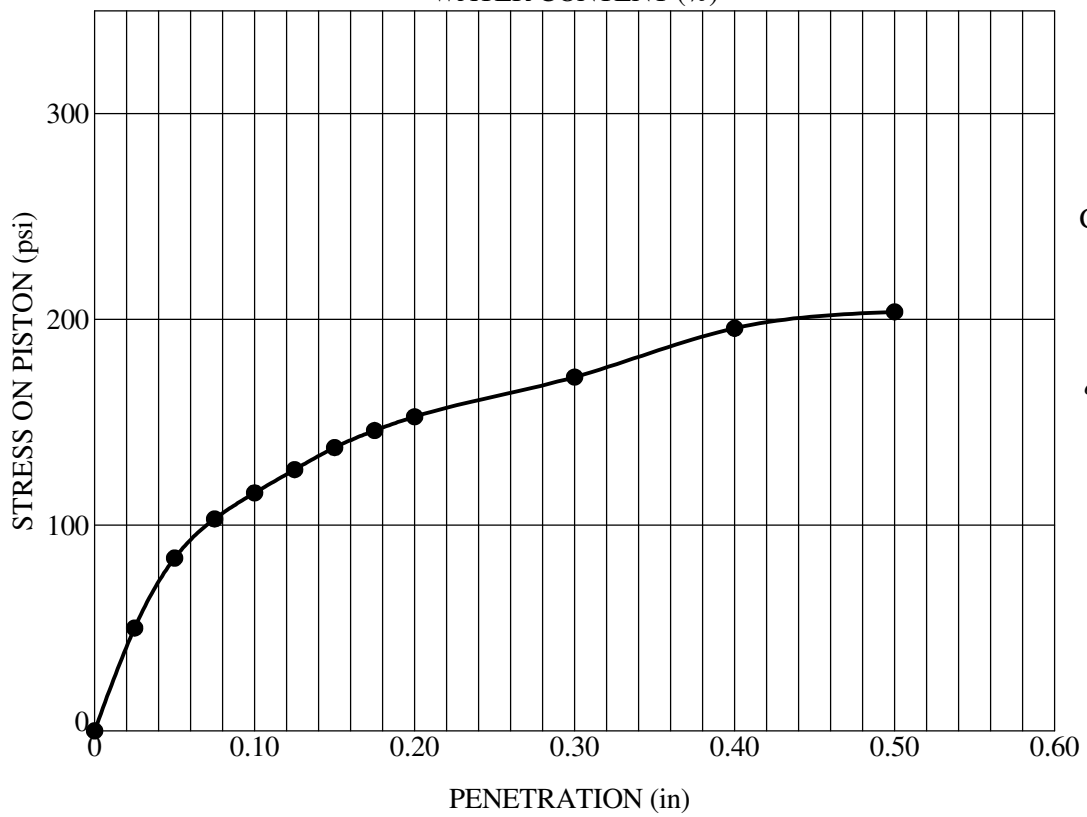


TEST RESULTS

Maximum Dry Density	**114.8** (pcf)
Optimum Water Content	**12.9** (%)
Percent Rock	**19.0** (%)
Corrected Maximum Dry Density	**121.1** (pcf)
Corrected Optimum Water Content	**10.9** (%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80



Dry Density	**114.8** (pcf)
Relative Compaction	**100** (%)
Surcharge	**51** (psf)
% Standard CBR	**11.60**
Swell	**0.81** (%)

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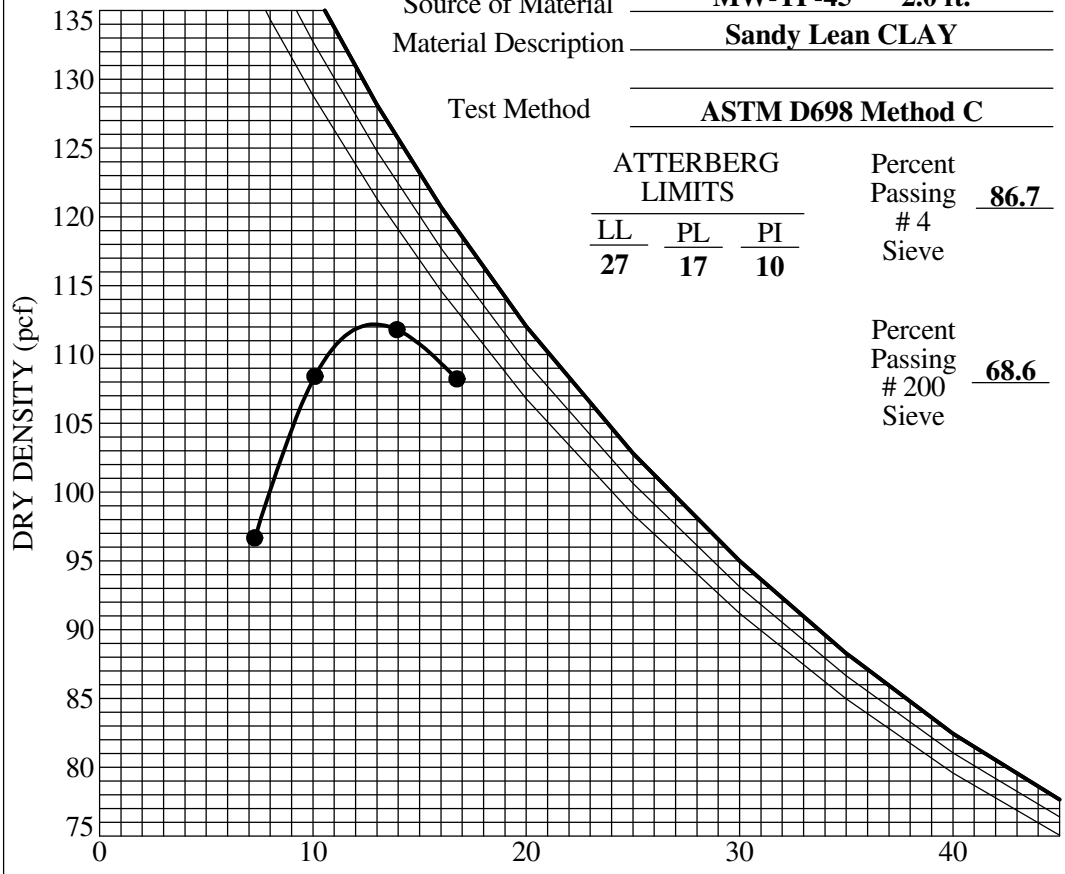
COMPACTION AND CBR TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 22

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Source of Material: **MW-TP-45 2.0 ft.**

Material Description: **Sandy Lean CLAY**

Test Method: **ASTM D698 Method C**

ATTERBERG LIMITS		
LL	PL	PI
27	**17**	**10**

Percent Passing # 4 Sieve: **86.7**

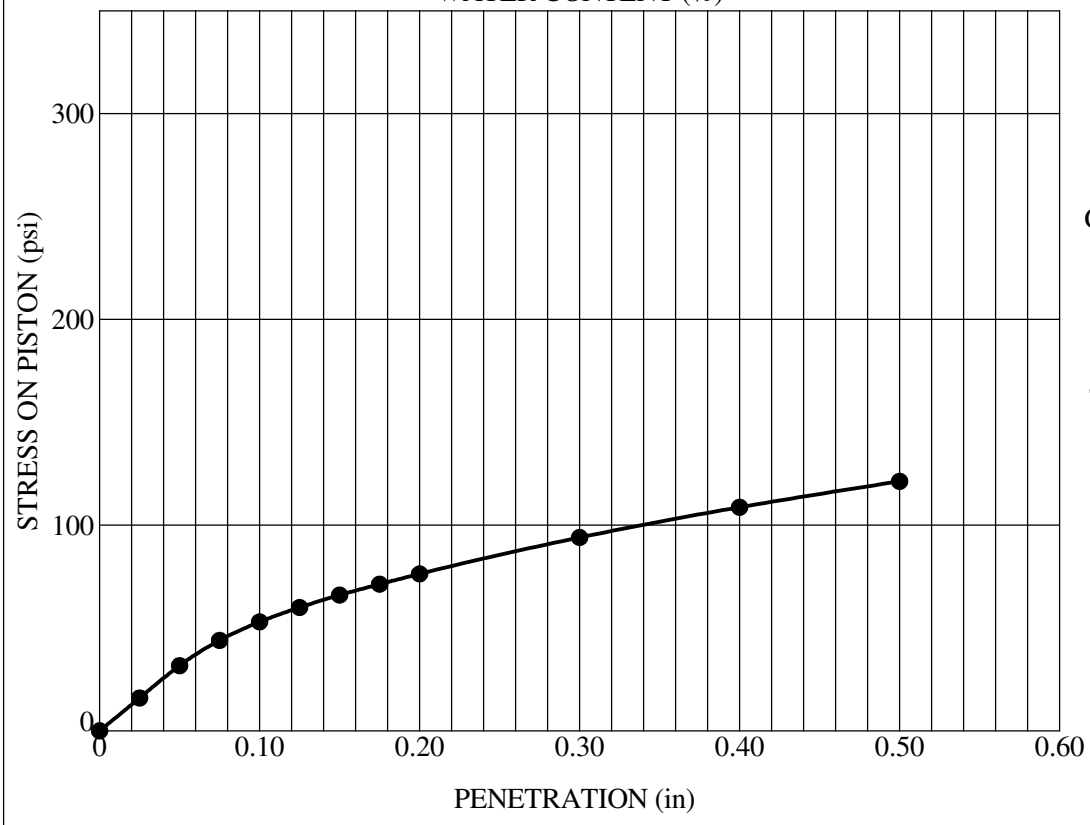
Percent Passing # 200 Sieve: **68.6**

TEST RESULTS

Maximum Dry Density	**112.0** (pcf)
Optimum Water Content	**11.7** (%)
Percent Rock	_____ (%)
Corrected Maximum Dry Density	_____ (pcf)
Corrected Optimum Water Content	_____ (%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80



Dry Density	**113.0** (pcf)
Relative Compaction	**101** (%)
Surcharge	**51** (psf)
% Standard CBR	**5.30**
Swell	**0.52** (%)

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COMPACTION AND CBR TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 23

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

APPENDIX D

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

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Important Information about this Geotechnical Engineering Report

D.R. Horton
Micron Property
Lehi/Drpaer, Utah
Project Number: 589-100

Plate D-1

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration* by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*

GEOPROFESSIONAL BUSINESS ASSOCIATION

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GeoStrata



Geotechnical Investigation

Micron Property – Lehi Emerald and Single Family

Approximately 500 West and State Road 92
Lehi, Utah

January 18, 2021

Prepared For:

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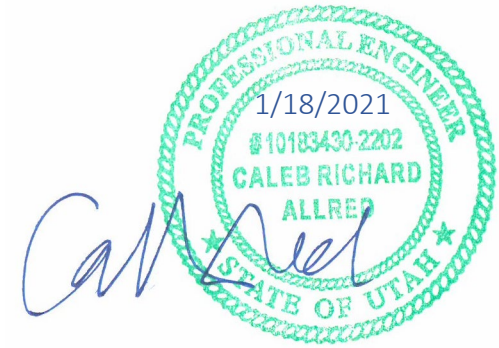
Preliminary Geotechnical Investigation
Micron Property Lehi Single Family 145-Acre Portion
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

Reviewed by:



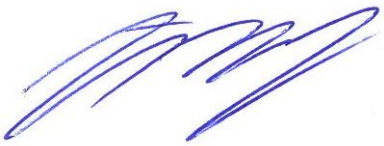


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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2

2.1 PURPOSE AND SCOPE OF WORK 2
2.2 PROJECT DESCRIPTION 2

3.0 METHOD OF STUDY 4

3.1 FIELD INVESTIGATION 4
3.2 LABORATORY INVESTIGATION 4
3.3 ENGINEERING ANALYSIS 5

4.0 GENERALIZED SITE CONDITIONS 6

4.1 SURFACE CONDITIONS 6
4.2 SUBSURFACE CONDITIONS 6
4.2.1 Soils 6
4.2.2 Groundwater 8
4.2.3 Collapsible Soils 8

5.0 GEOLOGIC CONDITIONS 10

5.1 GEOLOGIC SETTING 10
5.2 FAULTING AND SEISMICITY 10
5.3 LIQUEFACTION 12
5.4 OTHER GEOLOGIC HAZARDS 12

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS 14

6.1 GENERAL CONCLUSIONS 14
6.2 EARTHWORK 14
6.2.1 General Site Preparation and Grading 15
6.2.3 Excavation Stability 15
6.2.4 Soft Soil Stabilization 16
6.2.5 Structural Fill and Compaction 17
6.3 FOUNDATIONS 19
6.3.1 Installation and Bearing Material 19
6.3.2 Bearing Pressure 20
6.3.3 Settlement 20
6.3.4 Frost Depth 20

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6.3.5 Construction Observation *21*
6.3.6 Foundation Drainage *21*
6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION 22
6.5 EARTH PRESSURE AND LATERAL RESISTANCE 22
6.6 PAVEMENT SECTION 24
7.0 CLOSURE 27
7.1 LIMITATIONS 27
7.2 ADDITIONAL SERVICES 27
7.3 ACKNOWLEDGEMENTs 28
REFERENCES CITED 29

APPENDICES

Appendix A
Plate A-1 .....Site Vicinity Map
Plate A-2 .....Site Section Map
Plate A-3 .....Lehi Emerald Single-Family and Single-Family Section Exploration Map
Plate A-4 .....Site Geologic Map
Plate A-5 .....Fault and Fault Special Study Area Map
Plate A-6 .....Debris Flow Special Study Area Map
Plate A-7 .....Slope Stability Special Study Area Map

Appendix B
Plate B-1 to B-23 .....Test Pit Logs
Plate B-24.....Key to Soil Symbols and Terms

Appendix C
Plate C-1 .....Lab Summary Report
Plate C-2.....Atterberg Limits' Results
Plate C-4 to C-6 .....Grain Size Distribution
Plate C-7 to C-16 .....1-D Consolidation/Swell/Collapse Test
Plate C-17.....Compaction and CBR Test
Plate C-18 to C-19 .....Direct Shear Test

Appendix D
Plate D-1 to D-2 .....Important Information About This Report

1.0 EXECUTIVE SUMMARY

This report presents the preliminary findings of a geotechnical investigation conducted for 145-acres of the Micron Property at approximately 500 West and State Road 92, in Lehi and Draper, of Utah County. We understand that this section of the proposed development consists of medium to low density residential development. The development will include different structures, with "low" including single family residences 1 to 2 stories in height with basements (if feasible), and "medium" consisting of townhouse and duplex structures. The development for this section will be constructed across 145 acres. We anticipate footing loads on the order of 2 to 4 kips per lineal foot and column loads of up to 20 kips. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork. The area of this section of the Micron Property contains some geologic hazards that have not been addressed in this report. All recommendations and conclusion in this report are consisted preliminary.

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed development provided that the recommendations contained in this report are incorporated into the design and construction of the project.

As a part of this investigation, subsurface soil conditions were explored by advancing 23 exploratory test pits depths ranging from 8 to 12 feet below the existing site grade. Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is overlain partially by approximately ½-foot of topsoil or ½-foot of roadway fill covered a majority of the site. Underlying the topsoil or fill, we encountered deposits mapped by Biek (2005) as consisting of Historical to Oligocene-Eocene-aged materials deposits. Groundwater was not encountered in any of the completed test pits for the section.

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill depth below footings will be 0 to 12 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively. Exterior shallow footings and spread footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior strip shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. Conventional strip and spread footings founded on a native granular soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,800 pounds per square foot (psf)**.

Additional recommendations concerning other aspects of the proposed construction may be found in the body of this report.

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGIEERING REPORT:

Do not rely on the executive summary. The executive summary omits a number of details, any one of which could be crucial. Read and refer to the report in full. Do not rely on this report if this report was prepared for a different client, different project, different purpose, different site, and/or before important events occurred at the site or adjacent to it. All recommendations in this report are confirmation dependent. A two-page document prepared by GBA explains these items with greater detail and can be found in Appendix D (Plates D-1 and D-2).

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2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a preliminary geotechnical investigation conducted for 145-acres of the property termed the Micron Property located at approximately 500 West and State Road 92 in Lehi and Draper, in Utah County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork.

The scope of work completed for this study included a site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal and signed authorization, dated November 18, 2020.

The recommendations contained in this report are subject to the limitations presented in the LIMITATIONS section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

Due to the size of the Micron Property project, we have divided the property into four smaller sections containing similar proposed development types for the purposes of our investigation. This preliminary geotechnical investigation is completed for Lehi Emerald and Lehi Single Family Lots, which represents the northwestern-most 145-acres of the proposed building portions of the development. The property is located at approximately 500 West and State Road 92, in Lehi and Draper, Utah County, Utah (see Plate A-1, *Site Vicinity Map*). Plate A-2, Site Section Map, shows how we have divided up the buildable portions of the Micron property. Based on information received from the Client, we understand that steep and hard to access portions of the Micron Property will not be developed. This 145-acres portion of the Micron Property will be developed with low density (single family residential lots) and medium density (small acre single family lots to townhomes). The resulting construction will include one- to two-story, wood-framed single-family residences founded on conventional spread and strip footings and one- to three-story townhouse structures founded on conventional spread and strip footings. If larger structures are planned, then GeoStrata should be consulted and our recommendations should be updated if necessary. Each of these types of structures are anticipated to have basements or crawlspaces if feasible. We anticipate footing loads on the order of 2 to 4 kips per

lineal foot and column loads of up to 20 kips. As stated before, if the anticipated footing loads exceed assumptions or the proposed construction is different than what we have assumed, please contact GeoStrata with the updated information and allow for further analysis. Our investigation for the development will be used to provide geotechnical design parameters for construction of buildings, parking areas, driveways, and associated landscaping and utilities.

3.0 METHOD OF STUDY

3.1 FIELD INVESTIGATION

As a part of this investigation, subsurface soil conditions were explored by advancing 23 exploratory test pits (MW-TP-01 to MW-TP-05, MW-TP-10 to MW-TP-23, MW-TP-27 to MW-TP-30) to depths ranging from 8 to 12 feet below the existing site grade. It should be noted that the northeastern portion of the subject 145 acres extended into property that is currently part of Draper City, and appropriate permits were not able to be obtained in the timeframe allotted for this investigation. As such, no test pits were excavated in the northeastern portions of the subject property. The approximate locations of the explorations are shown on Plate A-3, *Lehi Emerald Single Family and Single-Family Section Exploration Map,* in Appendix A. Exploration points were placed to provide optimum coverage of the site in the areas of proposed residential development. Logs of the subsurface conditions, as encountered in the test pit explorations, were recorded at the time of excavation and advancement by a staff engineer currently employed at GeoStrata and are presented on Plates B-1 to B-23 in Appendix B. A *Soil Symbols Description Key* used in the borehole and test pit logs is included as Plate B-24.

The test pits were excavated with a mini track mounted excavator. Both bulk and relatively undisturbed soil samples were obtained from the test pits. Relatively undisturbed soil samples were obtained from the test pit in the form of tube samples and block samples. All samples were transported to our laboratory for testing to evaluate engineering properties of the various earth materials observed. The soils were classified according to the *Unified Soil Classification System* (USCS) by the Geotechnical Engineer. Classifications for the individual soil units are shown on the attached Test Pit Logs, Plates B-1 to B-23 in Appendix B.

3.2 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Grain Size Distribution Analysis (ASTM D422)
- Atterberg Limits (ASTM D4318)
- 1-D Collapse Consolidation Test (ASTM D2435)
- California Bearing Ratio Test (ASTM D1883)
- Direct Shear Test (ASTM D3080)

The results of laboratory tests are presented on the Test Pit Logs in Appendix B (Plates B-1 to B-23), the test result plates presented in Appendix C (Plates C-2 to C-19) and in the *Summary of Laboratory Test Results* Table (Plate C-1).

3.3 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics and classification. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

At the time of our subsurface investigation in this 145-acre portion of the Micron Property, no structures existed on the site, although the remains of an abandoned batch plant used during the construction of the Micron facility was observed on the northern boundary of the property. The only other site improvements consisted of dirt roadways and fences constructed across the site. The site slopes towards the south (towards Utah Lake), having a maximum topographic relief of approximately 180 feet. The residential development known as Canyon View borders this property on the west. The remainder of surrounding properties consisted of undeveloped hillside properties.

4.2 SUBSURFACE CONDITIONS

As previously mentioned, the subsurface soil conditions were explored at the subject property by advancing 23 exploratory test pits to depths ranging from 8 to 12 feet below the existing site grade. Subsurface soil conditions were logged using the United Soils Classification System (USCS) at the time of the investigation and are included on the Test Pit Logs in Appendix B (Plates B-1 through B-23). The soil and moisture conditions encountered during our investigation are discussed below.

4.2.1 Soils

Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is largely overlain by approximately ½ foot of topsoil or ½ foot of roadbase fill. Underlying the topsoil or fill, we encountered deposits mapped by Biek (2005) as consisting of a variety of soil deposits ranging from Historical to Oligocene-Eocene in age. Descriptions of the soil units shown in the area are described below;

Qlsb - Lacustrine sand and silt (Upper Pleistocene) − Fine- to coarse-grained lacustrine sand and silt with minor gravel; typically thick bedded and well sorted. This geologic soil unit was encountered in MW-TP-11, 13, 14, 20, and 21. The soils were visual classified as consisting of Silty SAND (SM) with varying amounts of clay and gravel.

Qlgb - Lacustrine gravel and sand (Upper Pleistocene) − Moderately to well-sorted, moderately to well-rounded, clast-supported, pebble to cobble gravel and pebbly sand; thin to thick bedded.

This geologic soil unit was encountered in MW-TP-12. The soils encountered were visually classified as Sandy SILT (ML) with gravel.

Qaf_l - Modern alluvial-fan deposits (Holocene) − Poorly to moderately sorted, non-stratified, clay- to boulder-size sediment deposited principally by debris flows at the mouths of active drainages. This geologic soil unit was encountered in MW-TP-01 and 10. The soil encountered were visually classified as Silty SAND (SM) with varying amounts of gravel.

Qafy - Younger undifferentiated alluvial-fan deposits (Holocene to Upper Pleistocene) − Poorly to moderately sorted, non-stratified, clay- to boulder-size sediment deposited principally by debris flows at the mouths of active drainages, are locally deeply incised; thickness unknown, but likely up to several tens of feet. This geologic soil unit was encountered in MW-TP-15, 16, 22, and 23. The soil encountered general consisted of a Silty SAND (SM) with varying amounts of gravel.

Qfl - Landfill deposits (Historical) − Miscellaneous fill, principally building and road construction debris, placed in sand and gravel or aggregate pits. This geologic soil unit is mapped at MW-TP-02, although the soils at this test pit location appeared to be native. The area around the location had been disturbed due to past excavation and site use.

Qfd - Disturbed land (Historical) – Land disturbed by sand and gravel operations. These deposits were not encountered in our test pit for this section

Tv - Volcanic rocks of the east Traverse Mountains, undivided (Oligocene-Eocene) − Complexly interbedded block and ash-flow tuffs, volcanic mudflow breccia, minor lava flows, and minor fluvial volcaniclastic deposits. No test pits were completed in the geologic unit.

Taf - Alluvial-fan deposits (Miocene[?] to Oligocene[?]) – Unconsolidated, pebble- to boulder-size, subangular to subrounded orthoquartzite and calcareous sandstone clasts. This geologic soil unit was encountered in MW-TP-04 and 05. The soils were visual classified as Silty SAND with gravel (SM).

The stratification lines shown on the enclosed test pit represent the approximate boundary between soil types USCS classifications of the soils (Plates B-1 to B-23). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils,

care should be taken in interpolating subsurface conditions between and beyond the exploration locations.

4.2.2 Groundwater

Groundwater was not encountered in any of the 23 test pits completed for this portion of the Micron Property. Seasonal fluctuations in precipitation, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions. The observed groundwater conditions can change seasonally depending on the time of year and will impact the proposed construction. It is recommended that lowest floor slab elevation for each structure should be maintained a minimum of 3 feet above any observed groundwater conditions.

4.2.3 Collapsible Soils

Collapse (often referred to as "hydro-collapse") is a phenomena whereby undisturbed soils exhibit volumetric strain and consolidation upon wetting under increased loading conditions. Collapsible soils can cause differential settling of structures and roadways. Collapsible soils do not necessarily preclude development and can be mitigated by over-excavating porous, potentially collapsible soils and replacing with engineered fill and by controlling surface drainage and runoff. For some structures that are particularly sensitive to differential settlement, or in areas where collapsible soils are identified at great depth, a deep foundation system should be considered.

Soils that have a potential to collapse under increased loading and moisture conditions are typically characterized by a pinhole structure and relatively low unit weights. In general, potentially collapsible soils are observed in fine-grained soils that include clay and silt, although collapsible soils may include sandy soils. Test results of the collapse test show negligible to low collapse potential. A table of the collapse test results, depth, and test pit number are provided below. This information is also contained on Plate C-1 and Plates C-7 to C-16.

Test Pit Number	Sample Depth	Collapse Potential
MW-TP-03	3.0	0.32
MW-TP-12	6.0	1.17
MW-TP-13	8.5	0.27
MW-TP-14	6.0	0.09
MW-TP-18	3.0	0.07
MW-TP-19	6	1.40

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MW-TP-20	3.5	0.44
MW-TP-21	3.5	0.23
MW-TP-28	3.5	0.47

Based on these lab test results, it is anticipated that between 0 to 12 inches of structural fill may be required under some of the structures that extend into fine-grained soils with a pinhole texture. The 0 to 12 inches of structural fill under the footings is recommended to reduce the potential for collapsible soils to present a significant risk to the foundation elements within the proposed development. In addition to the structural fill soils, all other recommendations presented in this report should be incorporated into the design and construction of the structures.

5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

The site is located at an elevation between 4,995 and 5,165 feet above mean sea level within the northern portion of Utah Valley. The Utah Valley is a deep, sediment-filled structural basin of Cenozoic age flanked by the Wasatch Range to the east and the Lake Mountains, East Tintic Mountains, and the West Hills to the West (Hintze, 1980). The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah.

The near-surface geology of Utah Valley is dominated by sediments deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983). As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valleys are predominately deep-water deposits of clay, silt and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Surface soil units as mapped by Biek (2005) consisted of Historical to Oligocene-Eocene-aged materials deposits. Based on the soil and groundwater conditions encountered during our investigation, it is considered likely that each of our test pits were terminated in one of the mapped deposits.

5.2 FAULTING AND SEISMICITY

The site lies within the north-south trending belt of seismicity known as the Intermountain Seismic Belt (ISB) (Hecker, 1993). The ISB extends from northwestern Montana through southwestern Utah. An active fault is defined as a fault that has had activity within the Holocene (<11ka). Based on information provided by Geologic Hazards on the Utah Geologic Hazard Portal, faults associated with the Wasatch Fault Zone (WFZ) are present to the north and east of the subject property (see Plate A-5, *Fault and Fault Special Study Area Map*). As a result, the northeastern portion of the subject 145-acre development are identified as being located within a surficial faulting special study area. As discussed previously, this portion of the property are located within Draper City limits, and as such no explorations were completed within this area. It is possible that a series of fault investigations including trenches across the proposed building pads may be required prior to development within the area identified on Plate A-5. However, when considering the most recently published geologic maps containing the subject site, no active faults are mapped through or immediately adjacent to the site (Black and others, 2003, and Constenius, et al., 2011). The 145-acre portion of Micron Property is located approximately 5

miles east of the northern strand of the Provo section of the Wasatch Fault Zone. The Provo section is one of the longest sections of the Wasatch Fault Zone (Hecker, 1993) and is estimated to be approximately 43 miles long with a reported rupture length of 37 miles and a maximum potential to produce earthquakes up to magnitude (M_s) 7.5 to 7.7 (Black and others, 2003). The 145-acre portion of Micron Property is also located approximately 6 miles north of the mapped Utah Lake Faults and Folds (ULFF). The ULFF consists of several northeast to northwest trending faults and folds located beneath Utah Lake and are reported to have been active in the past 15 ka (Black et al, 2003). However, since the ULFF is at the bottom of a large lake these faults are poorly understood – as such, the USGS does not include ULFF in their fault database for seismic hazard analysis. Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region. Each of the faults listed above show evidence of Holocene-aged movement and is therefore considered active.

Spectral responses for the Risk-Targeted Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a one percent probability of structure collapse in 50 years for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field exploration to 12 feet and our geologic review of the site, it is our opinion that this location is best described as a Site Class C. The spectral accelerations are calculated based on the site's approximate latitude and longitude of 40.442° and -111.850° respectively and the Seismic Design Maps web-based application at https://seismicmaps.org/.

Description	Value
Site Class	C
S_s - MCE_R ground motion (period – 0.2s)	1.349
S_1 - MCE_R ground motion (period – 1.0s)	0.494
F_a - Site amplification factor at 1.0s	1.200
F_v - Site amplification factor at 1.0s	1.500
PGA - MCE_G peak ground acceleration	0.602
PGA_M – Site modified peak ground acceleration	0.729

It should be noted that our investigation did not include a site-specific ground motion hazard analysis and a Site Class C has been used to determine the seismic parameters presented above based on maximum depths explored of 12 feet and our geologic review. The seismic parameters

presented herein may be used for design of the proposed structures provided that structural design allows for the ground motion hazard analysis exception in ASCE 7-16 Section 11.4.8. Alternatively, GeoStrata may be contacted to complete a ground motion hazard analysis in accordance with ASCE 7-16 Chapter 21.

5.3 LIQUEFACTION

Certain areas within the intermountain region possess a potential for liquefaction during seismic events. Liquefaction is a phenomenon whereby loose, saturated, granular soil deposits lose a significant portion of their shear strength due to excess pore water pressure buildup resulting from dynamic loading, such as that caused by an earthquake. Among other effects, liquefaction can result in densification of such deposits causing settlements of overlying layers after an earthquake as excess pore water pressures are dissipated. The primary factors affecting liquefaction potential of a soil deposit are: (1) level and duration of seismic ground motions; (2) soil type and consistency; and (3) depth to groundwater.

Based on our review of the *Liquefaction-Special Study Areas, Wastach Front and nearby Area, Utah*, this portion of the Micron Property is located in an area currently designated as having a "Very Low to Low" liquefaction potential. "Low" liquefaction potential indicates that there is between a 5% to 10% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. "Very Low" liquefaction potential indicates that there is less than 5% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction.

The near-surface soils observed within our test pits consisted of unsaturated soils. Groundwater was not observed in the test pits. A liquefaction analysis was beyond the scope of the project; however, if the owner or client wishes to have greater understanding of the liquefaction potential of the soils at greater depths, a liquefaction analysis should be completed at the site.

5.4 OTHER GEOLOGIC HAZARDS

According to the latest update to the Geologic Hazards on Utah Geologic Hazard Portal, a portion of the 145-acre portion of Micron property is located in special study areas for debris flows and slope stability. Maps of these hazard are included on Plates A-6 to A-7. Recommendations for development in these mapped hazards special study areas, should be address in geologic hazard report or reports. The results of these reports and findings may limit the development, or require mitigation prior to the development of the site.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed construction provided that the recommendations contained in this report are complied with. This conclusion should be understood as preliminary, and the results of geologic hazard analysis could designate some portions of this development as hazardous or unbuildable.

The recommendations presented in this report are based on our understanding of the proposed project, the subsurface conditions observed during field exploration, the results of laboratory testing, and our engineering analyses. If subsurface conditions other than those described herein are encountered in conjunction with construction, and/or if design and layout changes are initiated, we must be informed so that the recommendations herein can be reviewed and revised as changes or conditions may require.

Based on our observations, the subject site is overlain by ½-foot of topsoil or ½-foot of roadway fill soils. Increased depth of topsoil may be encountered in the drainages or within the alluvial fan deposits. These soils would need to be over-excavated in all areas underlying footing elements, pavements and any other areas which would underlie structural elements of the new development.

As additional layers of undocumented fill soils may exist existing, particularly in the footprint of the existing roadways or batching plant. The owner and contractor should be aware that the possibility exists that thicker sections of undocumented fill than those reported in our test pits may exist.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, concrete slabs-on-grade, and pavement sections. Site grading is also recommended to provide proper drainage and moisture control on the subject property and to aid in preventing differential movement in foundation soils as a result of variations in moisture conditions.

6.2.1 General Site Preparation and Grading

In areas beneath footings and concrete flat work, the highly organic topsoil (top 3 to 6 inches) should be stripped and stockpiled for use in landscape areas or disposal. Debris, vegetation, undocumented fill, roots, loose, soft or other deleterious materials should also be removed. If over-excavation is required, the excavation should extend a minimum of one foot laterally for every foot of depth of over-excavation. The exposed subgrade should be proof-rolled with heavy equipment to identify loose, soft or otherwise disturbed soils. If soft soils are observed, they should be stabilized in accordance with our recommendations in the Soft Soil Stabilization Section (Section 6.2.4); if loose soils are observed, they should be compacted as recommended in Section 6.2.5.

A GeoStrata representative should observe the site preparation and grading operations to assess that the recommendations presented in this report are complied with.

6.2.2 Demolition

Although no structures were observed during our field investigation, the possibility exists that isolated structures may be present at the subject property, particularly in the area of previously existing batch plant. If encountered, demolition of any on-site structures is required prior to subsequent construction. We recommend complete removal of all foundations of any existing structures until native soils are exposed. All debris produced from demolition should be removed from the site to an approved construction and demolition landfill. Loose soils and additional undocumented fill can be created from demolition of existing structures. These loose and deleterious materials should be over-excavated. The upper 12 inches of native soils should be scarified and compacted to 95% of maximum dry density according to ASTM D1557 prior to proceeding with construction.

6.2.3 Excavation Stability

Based on Occupational Safety and Health Administration (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied, however, the presence of fill soils, loose soils, or wet soils may require that the walls be flattened to maintain safe working conditions. When the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Based on our soil observations, laboratory testing, and OSHA guidelines, native soils at the site classify as Type C soils. Deeper excavations, if required, should be constructed with side slopes no steeper than one and one- and one-half horizontal to one vertical (1.5H:1V). Wet conditions should be anticipated side slopes

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will likely need to be further flattened to maintain slope stability. Alternatively, shoring or trench boxes may be used to improve safe work conditions in trenches. The contractor is ultimately responsible for trench and site safety. Pertinent OSHA requirements should be met to provide a safe work environment. If site specific conditions arise that require engineering analysis in accordance with OSHA regulations, GeoStrata can respond and provide recommendations as needed.

We recommend that a GeoStrata representative be on-site during all excavations to assess the exposed soils in trench walls.

6.2.4 Soft Soil Stabilization

Based on observations during our field investigation, if near-surface soils become saturated soft or pumping soils may be exposed in excavations at the site. Once exposed, all subgrade surfaces beneath proposed structure, pavements, and flat work concrete should be proof rolled with heavy wheeled-construction equipment. If soft or pumping soils are encountered, these soils should be stabilized prior to construction of footings. Stabilization of the subgrade soils can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 2-inch diameter, but less than 6 inches. A locally available pit-run gravel may be suitable but should contain a high percentage of particles larger than 2 inches and have less than 7 percent fines (material passing the No. 200 sieve). A pit-run gravel may not be as effective as a coarse, angular material in stabilizing the soft soils and may require more material and greater effort. The stabilization material should be worked (pushed) into the soft subgrade soils until a firm relatively unyielding surface is established. Once a firm, relatively unyielding surface is achieved, the area may be brought to final design grade using structural fill.

In large areas of soft subgrade soils, stabilization of the subgrade may not be practical using the method outlined above. In these areas it may be more economical to place a woven geotextile fabric against the soft soils covered by 18 inches of coarse, sub-rounded to rounded material over the woven geotextile. An inexpensive non-woven geotextile “filter” fabric should also be placed over the top of the coarse, sub-rounded to rounded fill prior to placing structural fill or pavement section soils to reduce infiltration of fines from above. The woven geotextile should be Mirafi RS280i or prior approved equivalent. The filter fabric should consist of a Mirafi 140N, or equivalent as approved by the Geotechnical Engineer.

We recommend that a GeoStrata representative be on-site to assess the exposed excavation soils and be allowed to review the excavation plans when they are prepared in order to evaluate their compatibility with these recommendations.

6.2.5 Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements, should consist of structural fill. Onsite soils may be utilized for structural fill, although the contractor should be aware that due to the over-sized aggregates or the clayey composition of the native soils, it may be difficult if not impossible to maintain active and accurate proctor values for moisture conditioning and compaction. As such, the native soil onsite may need to be screened and well mixed prior to the use of the native soils as structural fill for development. Onsite undocumented fill soils may likewise be used as structural fill. The contractor should have confidence that the anticipated method of compaction will be suitable for the type of structural fill used. All structural fill should be free of vegetation, debris or frozen material, and should contain no inert materials larger than **4 inches** in nominal diameter.

If an imported material will be used as structural fill, it should consist a relatively well-graded granular soil with a maximum of 50 percent passing the No. 4 sieve and a maximum fines content (minus No.200 mesh sieve) of 25 percent. Fill material potion finer than the No. 40 sieve should have a liquid limit (LL) less than 35 and a plasticity index (PI) less than 25. The table below provides our recommended gradation and Atterberg limits requirements for structural fill.

Grain Size	Percent Passing
4-inch	100
2-inch	85 to 100
No. 4	15 to 50
No. 200	< 25
Liquid Limit (LL)	<35
Plasticity Index (PI)	<25

All structural fill soils should be approved by the Geotechnical Engineer prior to placement. Earth materials not meeting the aforementioned criteria may be suitable for use as structural fill; however, such material should be evaluated on a case-by-case basis and should be approved by the Geotechnical Engineer prior to use. These requirements for structural fill meet the needs of the site; however, regulating entities including special service districts, cities etc. may require the

use of a predefined structural fill for use in their utility corridors/trenches. The contractor should be aware of the special requirements of structural fill by these regulating entities.

GeoStrata observed that some of the native soils meet the requirements for A-1-a according to AASTHO soil classification system. A table of the laboratory tests and soil classification are provided below;

Sample Location and Depth	USCS Classification	AASTHO Classification	Can be used as onsite structural fill
MW-TP-01	GP-GM	A-1-a	Yes
MW-TP-02	GP	A-1-a	Yes
MW-TP-04	GC	A-2-4	Yes
MW-TP-10	GP-GC	A-2-4	Yes
MW-TP-11	SM	A-1-b	Yes
MW-TP-16	GP-GM	A-1-a	Yes
MW-TP-17	SM	A-2-4	No
MW-TP-21	CL	A-6	No
MW-TP-22	CL	A-6	No
MW-TP-23	GC	A-2-4	Yes
MW-TP-29	SC	A-2-6	No

All structural fill should be placed in maximum 10-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 12-inch loose lifts if compacted by riding rollers or heavy-duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by the geotechnical engineer. Structural fill should be compacted to at least 95% of the maximum dry density, as determined by ASTM D-1557, for fill 5 feet or less in thickness. The required compaction should be increased to 98% for fills greater than 5 feet in thickness. The moisture content should be at or slightly above the optimum moisture content at the time of placement and compaction. Also, prior to placing any fill, the excavations should be observed by the geotechnical engineer to observe that any unsuitable materials or loose soils have been removed. In addition, proper grading should precede placement of fill, as described in the **General Site Preparation and Grading** subsection of this report (Section 6.2.1).

We understand that grading fills and structural fill will be placed up to 12 feet in total height. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills less than 6 feet in depth. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills more than 6 feet and less than 12 feet in depth. Contact Geostrata for recommendations for fill placement exceed 12 feet in depth. All utility trenches backfilled below the proposed structure, pavements, and flatwork concrete, should be backfilled with onsite soils or structural fill that is within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557. All other trenches, in landscape areas, should be backfilled and compacted to at least 90% of the maximum dry density (ASTM D-1557).

The gradation, placement, moisture, and compaction recommendations contained in this section meet our minimum requirements but may not meet the requirements of other governing agencies such as city, county, or state entities. If their requirements exceed our recommendations, their specifications should override those presented in this report.

6.3 FOUNDATIONS

The foundations for the proposed structures may consist of conventional strip and/or spread footings. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively, and exterior shallow footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement.

6.3.1 Installation and Bearing Material

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural

fill depth below footings will be 0 to 12 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.5 of this report.

Foundation elements should not be founded on undocumented fill, and if these soils are encountered, they should be over-excavated until suitable, native soils are exposed. Foundation elements should not be founded on combination soils, and if these soils condition are encountered, they should be over-excavated a minimum of 1-foot. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.5 of this report.

All organic material, soft areas, frozen material or other inappropriate material shall be removed from the footing zone to a depth determined by the Geotechnical Engineer and be replaced with structural fill where over excavation is required.

6.3.2 Bearing Pressure

Conventional strip and spread footings founded on a native soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,800 pounds per square foot (psf).** The recommended net allowable bearing pressure refers to the total dead load and can be increased by ⅓ to include the sum of all loads including wind and seismic.

6.3.3 Settlement

Settlements of properly designed and constructed conventional footings, founded as described above, are anticipated to be less than 1 inch. Differential settlements should be on the order of half the total settlement over 30 feet.

6.3.4 Frost Depth

All exterior footings and spread footings are to be constructed at least 30 inches below the ground surface for frost protection and confinement. This includes walk-out areas and may require fill to be placed around buildings. Interior strip footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. If foundations are constructed through the winter months, all soils on which footings will bear shall be protected from freezing.

6.3.5 Construction Observation

A geotechnical engineer shall periodically monitor excavations prior to installation of footings. Inspection of soil before placement of structural fill or concrete is required to detect any field conditions not encountered in the investigation which would alter the recommendations of this report. All structural fill material shall be tested under the direction of a geotechnical engineer for material and compaction requirements.

6.3.6 Foundation Drainage

As stated in Section 4.2.2 of this report, groundwater was not encountered in the test pits. IRC Section R405 *Foundation Drainage* recommends the construction of a foundation drain around any walls or portions thereof that retain earth and enclose spaces and floors below grade. Where a site is located in well-drained gravel or sand/gravel mixture soils, a dedicated drainage system is not required.

We recommend that the IRC Section R405 Foundation Drainage recommends be complied with. The foundation drain should consist of a 4-inch perforated pipe placed at or below the footing elevation. The pipe should be covered with at least 12 inches of free draining gravel (containing less than 5 percent passing the No. 4 sieve) and be graded to a free gravity outfall or to a pumped sump. A separator fabric, such as Mirafi 140N, should separate the free draining gravel and native soil (i.e. the separator fabric should be placed between the gravel and the native soils at the bottom of the gravel, the side of the gravel where the gravel does not lie against the concrete footing or foundation and at the top of the gravel). We recommend that the gravel extend up the foundation wall to within 2 feet of the final ground surface. As an alternative, the gravel extending up the foundation wall may be replaced with a prefabricated drain panel, such as Ecodrain-E. We recommend that the foundation drain construction be observed and documented in a subsequent observation letter.

As an added precaution, the following moisture protection mitigation recommendations should be implemented to help reduce the risk from potential settlement from occurring. These items are summarized as follows:

- Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented.

- The ground surface within 10 feet of the entire perimeter of the building should slope a minimum of five percent away from the structure. Alternatively, a slope of 5% is acceptable if the water is conveyed to a concrete ditch that will convey the water to a point of discharge that is at least 10 feet from the structures.
- Roof runoff devices (rain gutters) should be installed to direct all runoff a minimum of 10 feet away from the structure and preferably day-lighted to the curb where it can be transferred to the storm drain system. Rain gutters discharging roof runoff adjacent to or within the near vicinity of the structure may result in excessive differential settlement.
- We recommend irrigation around foundations be minimized by selective landscaping and that irrigation valves be constructed at least 5 feet away from foundations.
- Jetting (injecting water beneath the surface) to compact backfill against foundation soils may result in excessive settlement beneath the building and is not allowed.
- Backfill against foundations walls should be placed and compacted in accordance with the Section 6.2.4.
- Any additional precautions which may become evident during construction.

6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION

Concrete slabs-on-grade should be constructed over at least 4 inches of compacted gravel. Disturbed native soils should be compacted to at least 95% of the maximum dry density as determined by ASTM D-1557 (modified proctor) prior to placement of gravel. The gravel should consist of road base or clean drain rock with a ¾-inch maximum particle size and no more than 12 percent fines passing the No. 200 mesh sieve. The gravel layer should be compacted to at least 95 percent of the maximum dry density of modified proctor or until tight and relatively unyielding if the material is non-proctorable. The maximum load on the floor slab should not exceed 100 psf; greater loads would require additional subgrade preparation and additional structural fill. All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with welded wire, re-bar, or fiber mesh.

6.5 EARTH PRESSURE AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the footing and the supporting subgrade. In determining the frictional resistance, a coefficient of friction of 0.41 should be used for native soils against concrete or 0.43 for structural fill against concrete.

Ultimate lateral earth pressures from native soil backfill acting against retaining walls and buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in the following table:

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active[1]	0.29	34
At-rest[2]	0.48	58
Passive[1]	11.62	1394
Seismic Active[3]	0.32	39
Seismic Passive[4]	-8.92	-1071

[1]Based on Coulomb's equation

[2]Based on Jaky

[3]Based on Lew et al. (2010)

[4]Based on Mononobe-Okabe Equation

These coefficients and densities assume level, granular backfill with no buildup of hydrostatic pressures. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. If sloping backfill is present, we recommend the geotechnical engineer be consulted to provide more accurate lateral pressure parameters once the design geometry is established.

Walls and structures allowed to rotate slightly should use the active condition. If the element is constrained against rotation, the at-rest condition should be used. These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

For seismic analyses, the *active* and *passive* earth pressure coefficient provided in the table is based on Lew et al (2010) and Mononobe-Okabe respectively and only accounts for the dynamic horizontal thrust produced by ground motion. Hence, the resulting dynamic thrust pressure should be added to the static pressure to determine the total pressure on the wall. The pressure distribution of the dynamic horizontal thrust may be closely approximated as an inverted triangle with stress decreasing with depth and the resultant acting at a distance approximately 0.6 times the loaded height of the structure, measured upward from the bottom of the structure.

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The coefficients shown assume a vertical wall face. Hydrostatic and surcharge loadings, if any, should be added. Over-compaction behind walls should be avoided. Resisting passive earth pressure from soils subject to frost or heave, or otherwise above prescribed minimum depths of embedment, should usually be neglected in design.

6.6 PAVEMENT SECTION

For pavement design, the following CBR laboratory test result was obtained:

Test Pit	Depth (ft)	Soil Type	CBR (%)
MW- TP-01	7.0	GP-GM	76.7

The test results indicate that CBR value of 76.7 we have elected to use a CBR value of 10.0 in design. This design value well below the test result and is use because of the various soil types encountered at the surface of the site. No traffic information was available at the time this report was prepared; therefore, GeoStrata has assumed traffic counts for the local and private roads and parking areas. We assumed that vehicle traffic along the local and private roadways will consist of approximately 1,500 passenger car trips per day, 2 small trucks per day, and 2 large trucks per day with a 20-year design life. Based on these assumptions, our analysis uses 51,000 ESAL's for for a 20-year design life of the pavement. We assumed that vehicle traffic along the collector and arterial roads will consist of approximately 1,275,000 ESAL's for a 20-year design life (approximately 25 times greater than private roads).

Based on these assumptions, our analysis uses 51,000 and 1,275,000 ESAL's for the traffic over the life of the pavement. Asphalt has been assumed to be a high stability plant mix or Superpave mix with a minimum CBR of 70. The untreated base course material (road base or UTBC) composed of crushed stone with a minimum CBR of 30. The table below presents equivalent recommended pavement sections based on the above assumptions. The City of Lehi or Draper City required minimum pavement sections may govern the pavement design.

Local and Private Roadways Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	3	3	3
Untreated Base Course	6	8	6
Granular Borrow/ Engineered Fill	6	0	8

Collector and Arterial Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	5	5	6.5
Untreated Base Course	6	8	6
Granular Borrow/ Engineered Fill	9	8	8

The pavement section thicknesses above assume that there is no mixing over time between the road base and the softer native layers below. In order to prevent mixing or fines migration, and thereby prolong the life of the pavement section, we recommend that the owner give consideration to placing a non-woven filter fabric between the native soils and the road base. We recommend that a Propex Geotex® NW-401, NW-601, or a GeoStrata-approved equivalent be used.

If traffic conditions vary significantly from our stated assumptions, GeoStrata should be contacted so we can modify our pavement design parameters accordingly. Specifically, if the traffic counts are significantly higher or lower, we should be contacted to review the pavement sections as necessary. The pavement sections thicknesses above assumes that the majority of construction traffic including cement trucks, cranes, loaded haulers, etc. has ceased. If a significant volume of construction traffic occurs after the pavement section has been constructed, the owner should anticipate maintenance or a decrease in the design life of the pavement area.

In our experience, in areas with heavy truck loads where trucks frequently turn around, backup, or load and unload, such as areas around dumpsters, pavements experience more distress. To prolong the life of the pavement in these areas, consideration should be given to using a Portland

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cement concrete (rigid) pavement in these areas. The table below presents our recommended rigid pavement section.

Rigid Pavement Section

Pavement Materials	Recommended Minimum Thickness (in)
	Rigid Pavement 1
Concrete	5
Untreated Base Course	6

Concrete should consist of a low slump, low water cement ratio mix with a minimum 28-day compressive strength of 4,000 psi. Base course should be compacted to at least 95% of the maximum dry density as determined by the ASTM D-1557.

The pavement sections discussed above meet our minimum recommendations for pavement design. It should be noted that more stringent pavement section requirements may be enforced by Lehi City, Draper City, Utah County or other governing agency.

7.0 CLOSURE

7.1 LIMITATIONS

The recommendations contained in this report are based on our limited field exploration, laboratory testing, and understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist between and beyond the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, GeoStrata should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, GeoStrata should be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No other warranty, expressed or implied, is made.

It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

7.2 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and observations will be made during construction. GeoStrata staff should be on site to verify compliance with these recommendations. These tests and observations should include, but not necessarily be limited to, the following:

- Observations and testing during site preparation, earthwork and structural fill placement.
- Observation of foundation soils to assess their suitability for footing placement.
- Observation of soft/loose soils over-excavation.
- Observation of temporary excavations and shoring.
- Consultation as may be required during construction.
- Quality control and observation of concrete placement.

We also recommend that project plans and specifications be reviewed by GeoStrata to verify compatibility with our conclusions and recommendations. Additional information concerning the scope and cost of these services can be obtained from our office.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact us at your convenience at (801) 501-0583.

7.3 ACKNOWLEDGEMENTS

This project was made possible through the help of Dan Mitchell and Scott Bishop with D.R. Horton, they scheduled meetings with the landowners and worked on permits for land disturbance and scheduled a second trackhoe to dig the east side of the property test pits at the site. Dale Judd with JSI Ventures, LLC, the operator with the excavation company that completed the test pits on the west side of the property. Bryce Jackson, E.I.T., Nate Flores, Ashley Peay, and James Moore with GeoStrata all logged test pits and collected samples at the site. Jerry Olson and Jack Berry with Micron Technology, Inc met multiple times to discuss utility location. There are others with GeoStrata, D.R. Horton, and Micron Technology Inc. that made this project happen. Thank you.

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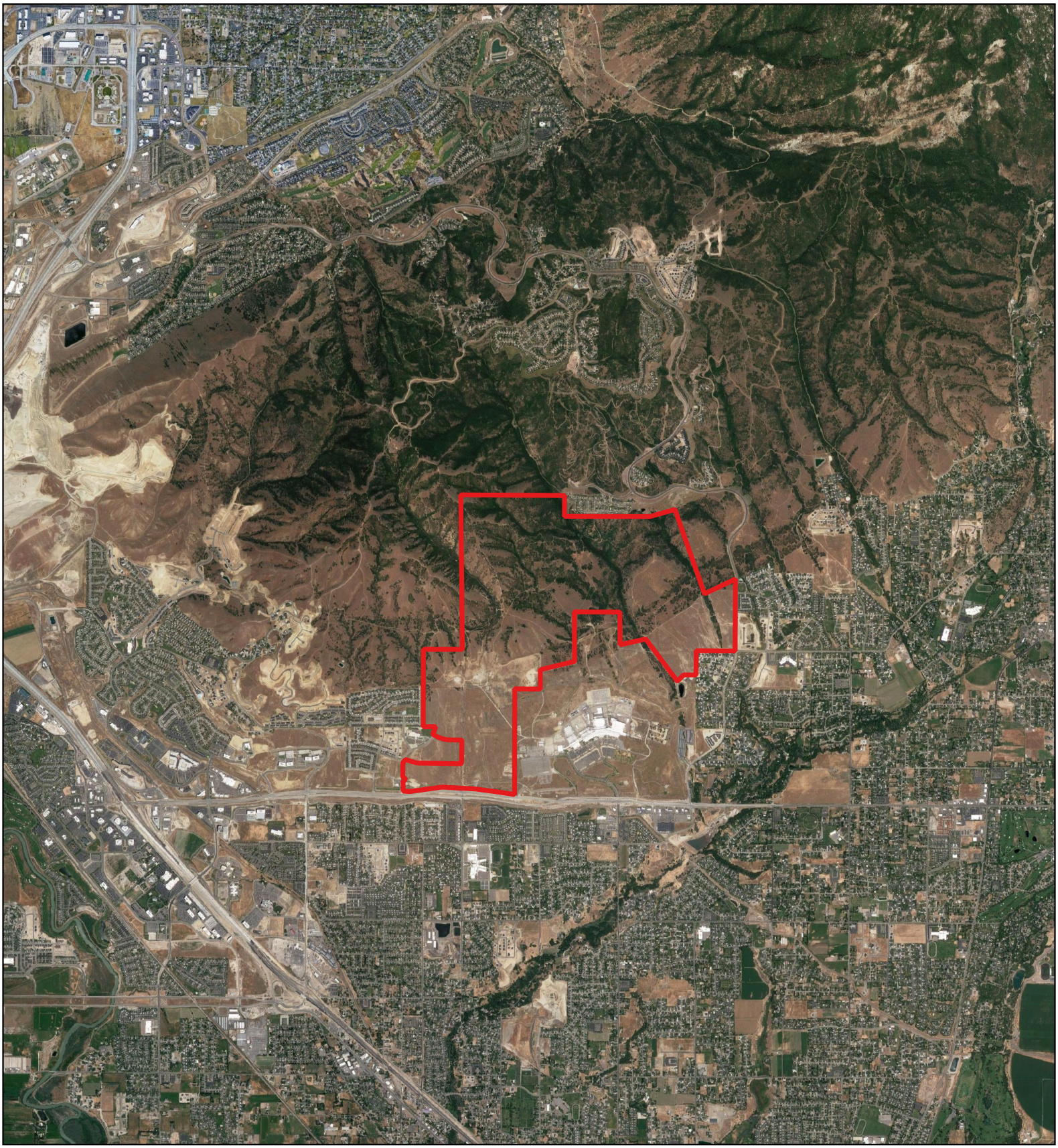
APPENDIX A



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Mircon Property
Lehi/Draper, Utah
Project Number

Site Vicinity Map

Plate A-1

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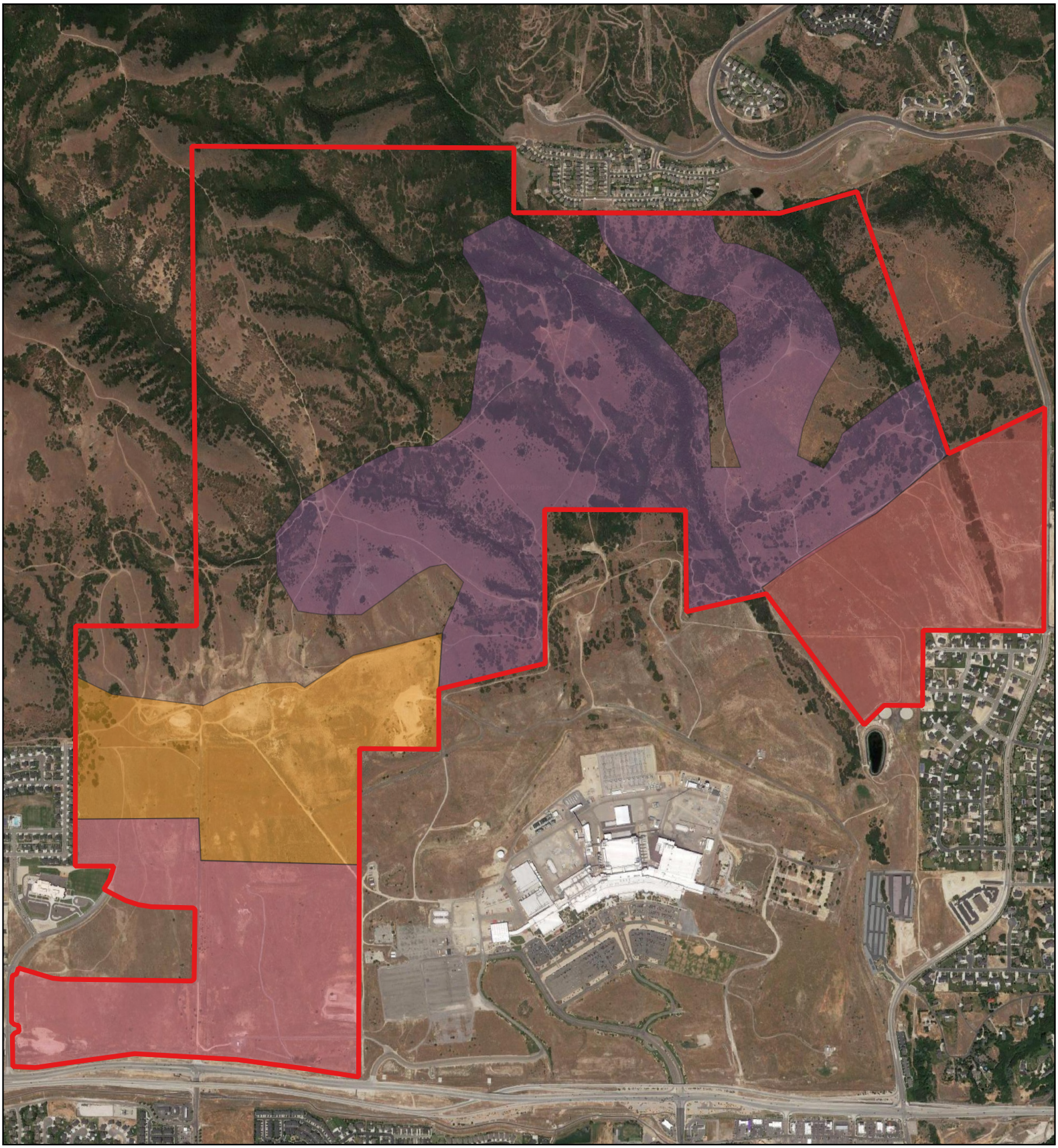

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Legend

- Mircon Property Boundaries
- High Density Single Family, Commerial, and Apartments
- Lehi Emerald Single Family and Single Family
- Highland Emerald Single Family
- Mountain Single Family

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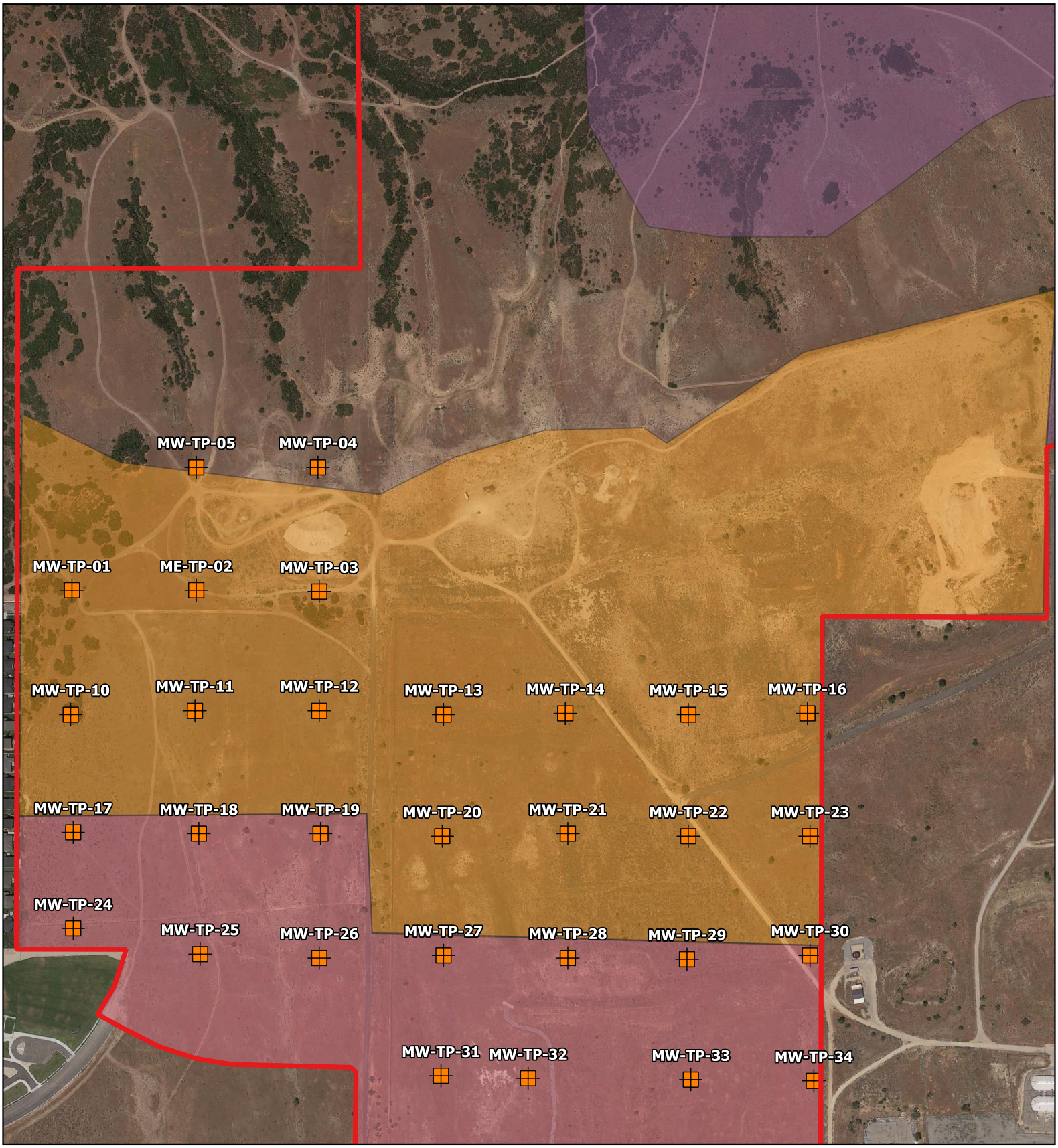
Mircon Property
Lehi/Draper, Utah
Project Number

Site Section Map

Plate A-2

620



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- Mircon Property Boundaries
- Approximate Test Pit Location
- High Density Single Family, Commercial, and Apartments
- Lehi Emerald Single Family and Single Family
- Highland Emerald Single Family
- Mountain Single Family

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Lehi/Draper, Utah

Lehi Emerald Single Family and Single Family Section Exploration Map

Plate A-3

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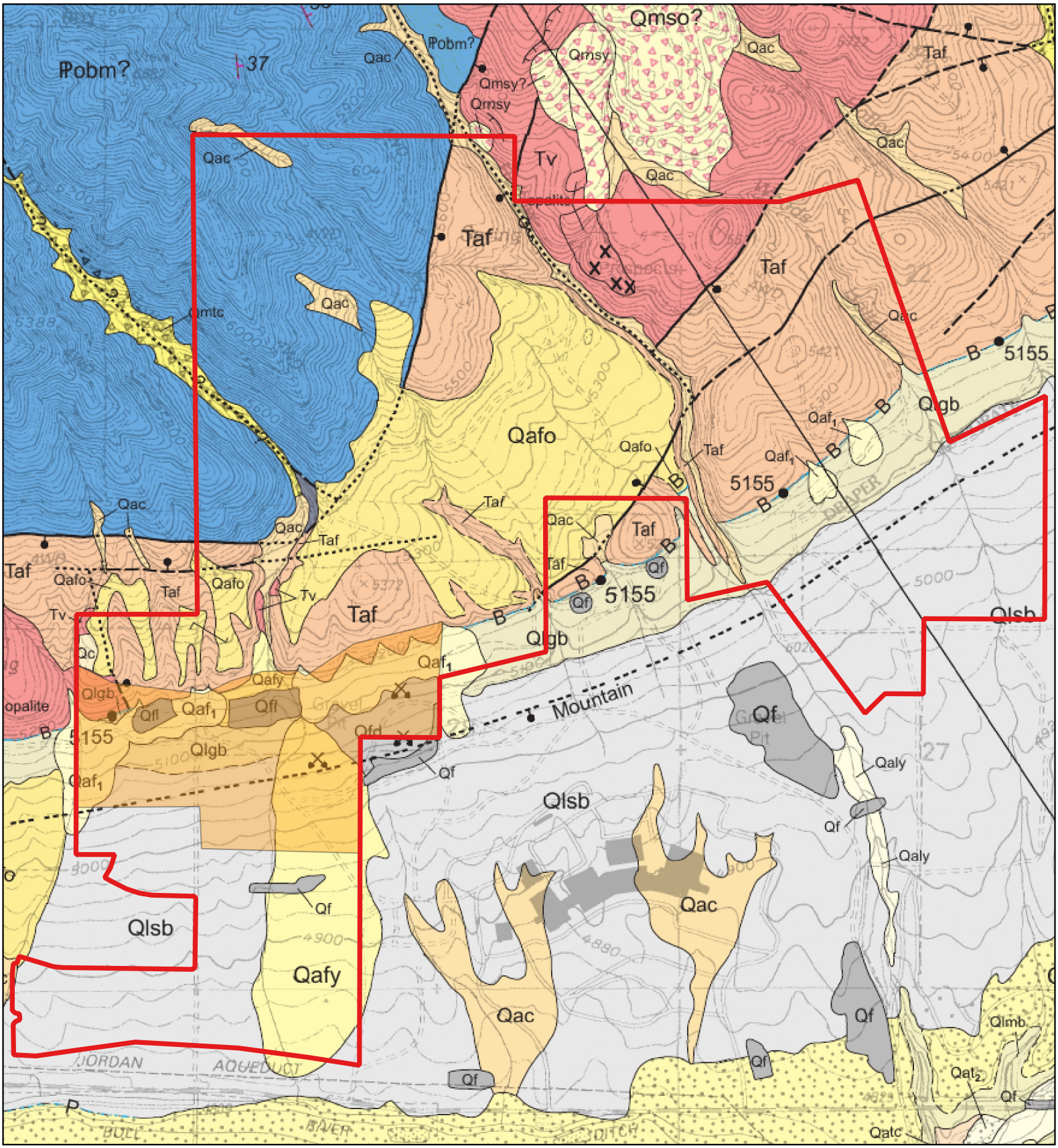

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- Mircon Property Boundaries
- Lehi Emerald Single Family and Single Family

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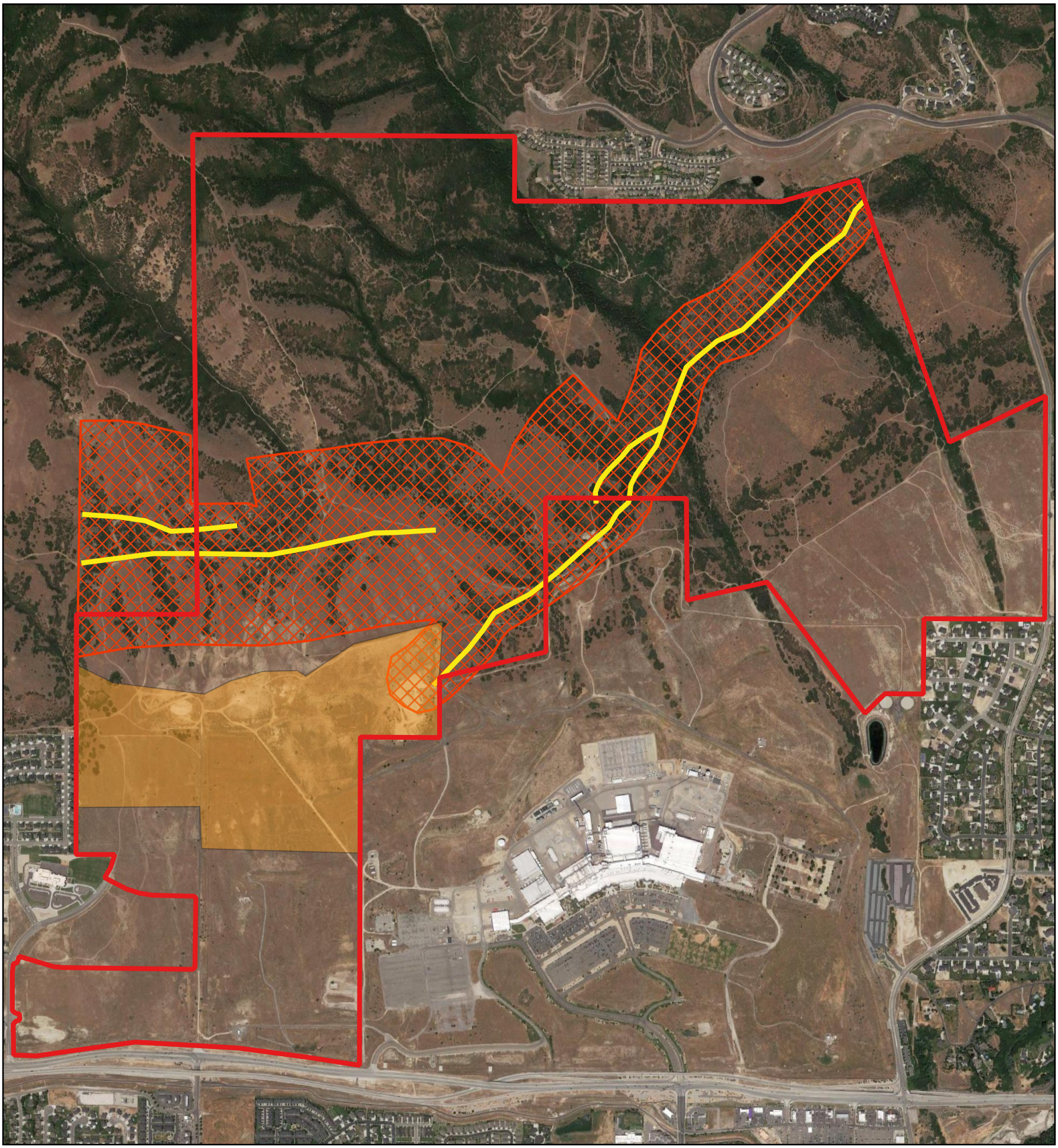
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Site Geology Map

Plate A-4



Legend

- Mircon Property Boundaries
- Lehi Emerald Single Family and Single Family
- Approximate Faults
- Fault Special Study Area

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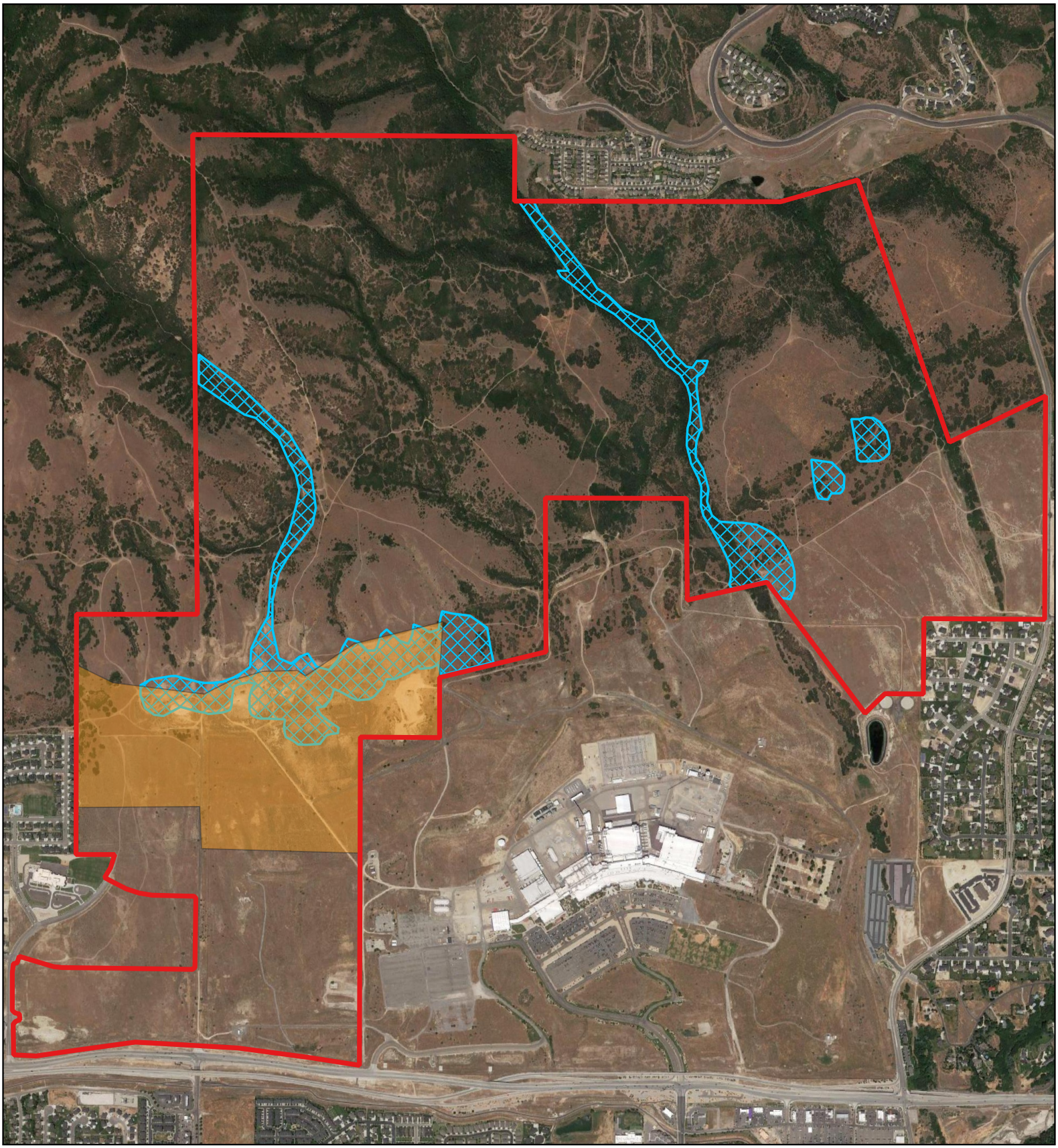
Lehi/Draper, Utah
Project Number 589-100

Fault and Fault Special Study Area Map

Plate A-5



Legend

- Mircon Property Boundaries
- Lehi Emerald Single Family and Single Family
- Debris Flow Study Areas

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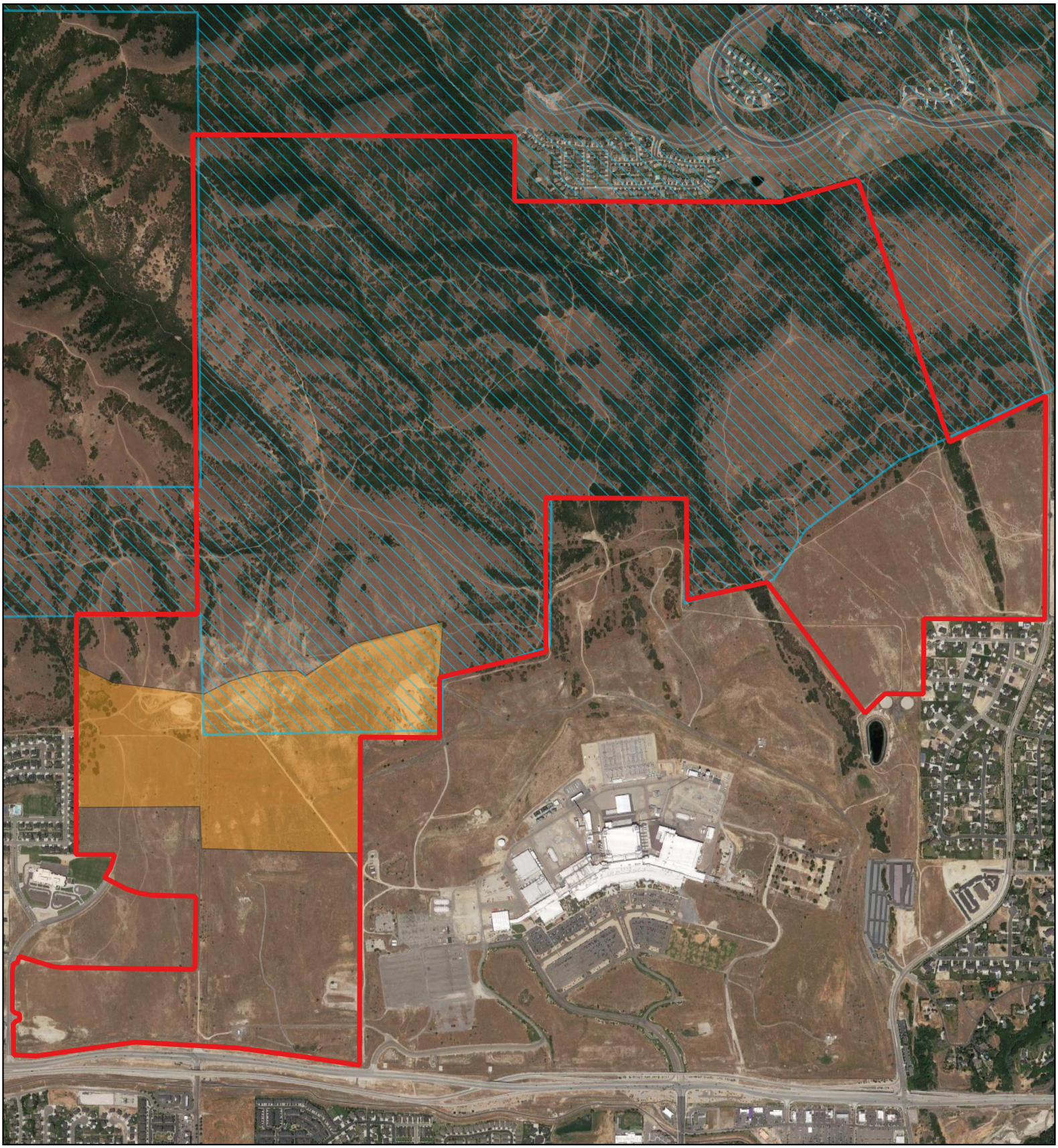
Lehi/Draper, Utah
Project Number 589-100

Debris Flow Special Study Area Map

Plate A-6

624



Legend

- Mircon Property Boundaries
- Slope Stability Special Study Area

400 0 400 800 1200 1600 ft

1:17000

N

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D.R. Horton
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Slope Stability Special Study Area Map

Plate A-7

APPENDIX B

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-01
Sheet 1 of 1

LOCATION
NORTHING 4,477,248.00 EASTING 4,477,248.00 ELEVATION 5,142-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter						
1												
	5											
2								3.3	10.9	22	4	● H
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 1

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-02
Sheet 1 of 1

LOCATION
NORTHING 4,477,249.00 EASTING 4,477,249.00 ELEVATION 5,123-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - dense, moist, dark brown, gravels and cobbles up to 6 inches in diameter						
					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter						
1												
	5											
2												
					GP	Poorly Graded GRAVEL with sand - medium dense, moist, brown, subrounded gravel up to 5 inches in diameter		5.1	3.4	NP	NP	●
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 2

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-03
Sheet 1 of 1

LOCATION
NORTHING 4,477,241.00 EASTING 4,477,241.00 ELEVATION 5,114-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					Roadbase - Silty SAND with gravel - light brown, moist						
					CL-ML	Silty CLAY - stiff, moist, dark brown						
1					ML	SILT - stiff, moist, light brown	92.5	8.0	69.3			●
	5											
2					SM	Silty SAND - medium dense, moist, brown, subrounded gravel up to 3 inches in diameter						
3	10				SP	Poorly Graded SAND with gravel - medium dense, moist, dark brown, subrounded gravel up to 3 inches in diameter						
						Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 3

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-04
Sheet 1 of 1

LOCATION
NORTHING 4,477,396.00 EASTING 4,477,396.00 ELEVATION 5,170-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					GC	Clayey GRAVEL with sand - dense, moist, dark brown, gravels and cobbles up to 6 inches in diameter						
1								4.0	25.2	24	8	
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 4

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-05
Sheet 1 of 1

LOCATION
NORTHING 4,477,391.00 EASTING 4,477,391.00 ELEVATION 5,182-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - dense, moist, dark brown, gravels and cobbles up to 6 inches in diameter						
1												
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 5

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-10
Sheet 1 of 1

LOCATION
NORTHING 4,477,099.00 EASTING 4,477,099.00 ELEVATION 5,092-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					GP-GC	Poorly Graded GRAVEL with clay and sand - dense, moist, dark brown		2.2	13.1	25	9	
1												
	5											
2					SP	Poorly Graded SAND with gravel - medium dense, moist, brown, subrounded gravel up to 3 inches in diameter						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits: 10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 6

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-11
Sheet 1 of 1

LOCATION
NORTHING 4,477,103.00 EASTING 4,477,103.00 ELEVATION 5,071-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - stiff, moist, dark brown		5.7	21.6	NP	NP	●
1												
	5											
2												
						Bottom of Test Pit @ 8 Feet						
3	10											
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 7

DATE
STARTED: 12/1/20
COMPLETED: 12/1/20
BACKFILLED: 12/1/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-12
Sheet 1 of 1

LOCATION
NORTHING 4,477,106.00 EASTING 4,477,106.00 ELEVATION 5,065-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout					
					ML	Sandy SILT with gravel - stiff, moist, brown					
1											
	5										
2					SM	Silty SAND - medium dense , moist, tan	95.0	5.3	39.5		
	10										
3											
4						Bottom of Test Pit @ 12 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 8

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-13
Sheet 1 of 1

LOCATION
NORTHING 4,477,092.00 EASTING 4,477,092.00 ELEVATION 5,058-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1						-light brown						
	5											
2												
					SM	Silty SAND - dense, moist, light brown, Fe staining throughout	81.0	16.7	41.7	NP	NP	●
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 9

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-14
Sheet 1 of 1

LOCATION
NORTHING 4,477,101.00 EASTING 4,477,101.00 ELEVATION 5,051-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, light brown						
1												
	5											
2							110.7	13.5	41.3			●
					SM	Silty SAND - dense, moist, light brown, few carbonite stringers						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 10

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-15
Sheet 1 of 1

LOCATION
NORTHING 4,477,102.00 EASTING 4,477,102.00 ELEVATION 5,046-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, light brown						
1												
	5											
2					SM	Silty SAND - dense, moist, light brown						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 11

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-16
Sheet 1 of 1

LOCATION
NORTHING 4,477,097.00 EASTING 4,477,097.00 ELEVATION 5,040-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, subrounded gravel up to 3 inches in diameter		3.6	7.0	NP	NP	●
1												
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 12

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-17
Sheet 1 of 1

LOCATION
NORTHING 4,476,957.00 EASTING 4,476,957.00 ELEVATION 5,040-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1								4.1	25.6	NP	NP	
	5											
2												
					SM	Sandy SILT with gravel - stiff, moist, light brown						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 13

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-18
Sheet 1 of 1

LOCATION
NORTHING 4,476,959.00 EASTING 4,476,959.00 ELEVATION 5,024-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY with sand - stiff, moist, dark brown						
1						-light brown, with iron staining	86.7	20.1	85.1			●
	5											
2					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown, subrounded gravel up to 3 inches in diameter						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 14

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-19
Sheet 1 of 1

LOCATION
NORTHING 4,476,956.00 EASTING 4,476,956.00 ELEVATION 5,018-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter					
1											
	5										
2					ML	Sandy SILT - stiff, moist, tan	88.6	8.1	65.1		
3	10				SM	Silty SAND with gravel - dense, moist, tan, gravels and cobbles up to 6 inches in diameter					
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 15

DATE		
STARTED:	12/2/20	
COMPLETED:	12/2/20	
BACKFILLED:	12/2/20	

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-20
Sheet 1 of 1

LOCATION
NORTHING 4,476,954.00 EASTING 4,476,954.00 ELEVATION 5,009-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit – Moisture Content – Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, tan						
1							92.9	21.8	83.7			●
	5											
2					SM	Silty SAND - dense, moist, light brown, Fe staining throughout						
3	10				SM	Silty SAND with gravel - dense, moist, tan, gravels and cobbles up to 6 inches in diameter						
						Bottom of Test Pit @ 12 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 16

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-21
Sheet 1 of 1

LOCATION
NORTHING 4,476,955.00 EASTING 4,476,955.00 ELEVATION 5,001-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Sandy Lean CLAY - dark brown, moist, organics throughout						
					CL	Lean CLAY with sand - stiff, moist, dark brown, minor organics						
1							86.6	15.7	82.6	38	14	
	5											
2												
					SM	Silty SAND - dense, moist, light brown, Fe staining throughout						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 17

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-22
Sheet 1 of 1

LOCATION
NORTHING 4,476,953.00 EASTING 4,476,953.00 ELEVATION 5,009-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL	Sandy Lean CLAY - stiff, moist, tan		7.5	65.5	29	13	
1					CL	Lean CLAY with sand and gravel - stiff to hard, moist, dark brown						
	5				SP	Poorly Graded SAND with gravel - dense, moist, tan, gravels, cobbles and boulders up to 12 inches in diameter						
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 18

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-23
Sheet 1 of 1

LOCATION
NORTHING 4,476,953.00 EASTING 4,476,953.00 ELEVATION 4,998-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GC	Clayey GRAVEL with sand - dense, moist, light brown		4.6	32.9	24	7
1											
	5										
2											
					SP	Poorly Graded SAND with gravel - medium dense, moist, tan					
3	10										
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 19

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-27
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.00 EASTING 4,476,814.00 ELEVATION 4,965-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout
					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter
1					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown
	5					
2					SM	Silty SAND with gravel - dense, moist, light brown, gravels and cobbles up to 6 inches in diameter
					SP	Poorly Graded SAND with gravel - medium dense, moist, light brown
3	10					
						Bottom of Test Pit @ 12 Feet
4						

Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 20

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-28
Sheet 1 of 1

LOCATION
NORTHING 4,476,812.40 EASTING 4,476,812.40 ELEVATION 4,958-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL-ML	Sandy Silty CLAY - stiff, moist, tan						
1							107.0	6.8	79.2	25	18	●
					SM	Silty SAND with gravel - dense, moist, light brown						
	5											
2												
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

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Plate
B - 21

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE	
STARTED:	12/3/20
COMPLETED:	12/3/20
BACKFILLED:	12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO: MW-TP-29
Sheet 1 of 1

LOCATION
NORTHING 4,476,807.40 EASTING 4,476,807.40 ELEVATION 4,961-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT with gravel - stiff, moist, brown						
					SC	Clayey SAND with gravel - medium dense, moist, tan		4.7	31.3	30	15	
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 22

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-30
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.60 EASTING 4,476,814.60 ELEVATION 4,963-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	Sandy SILT with gravel - stiff, moist, dark brown					
					CL	Lean CLAY - stiff, moist. dark brown					
1							126.6	14.2	92.5	35	15
	5					- some white mottling					
2						- some iron staining					
3	10					Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 23

Unified Soil Classification Per ASTM D 2488

Primary Divisions			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on the No. 200 Sieve	GRAVEL More than half of the coarse fraction is larger than the #4 sieve	Clean Gravel	GW	Well Graded GRAVEL
			GP	Poorly Graded GRAVEL
		Gravel with Duel Classifications	GW-GM	Well Graded GRAVEL with silt
			GP-GM	Poorly Graded GRAVEL with silt
			GW-GC	Well Graded GRAVEL with clay
			GP-GC	Poorly Graded GRAVEL with clay
		Gravel with Fines	GM	Silty GRAVEL
			GC	Clayey GRAVEL
			GC-GM	Silty, Clayey GRAVEL
	SAND More than half of the coarse fraction is smaller than the #4 sieve	Clean Sand	SW	Well Graded SAND
			SP	Poorly Graded SAND
		Sand with Dual Classifications	SW-SM	Well Graded SAND with silt
			SP-SM	Poorly Graded SAND with silt
			SW-SC	Well Graded SAND with clay
			SP-SC	Well Graded SAND with clay
		Sand with Fines	SM	Silty SAND
			SC	Clayey SAND
			SC-SM	Silty, Clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 Sieve	SILTY & CLAY less than 50%	Inorganic	CL	Lean CLAY
			ML	SILT
			CL-ML	Silty CLAY
		Organic	OL	Organic CLAY or Organic SILT
	SILTY & CLAY LL 50% or more	Inorganic	CH	Fat CLAY
			MH	Elastic SILT
		Organic	OH	Organic CLAY or Organic SILT
	Highly Organic Soils		PT	Peat

Exploration Log Key

Sample Symbols	Ground Water Symbol
Auger Cuttings	Measured Groundwater Elevation
California Sampler	Estimated Groundwater Elevation
Rock Core	
Bag or Block Sample	
Modified California Sampler	
No Recovery	
Split Spoon	
Shelby Tube	
Dames and More Sampler	

Relative Density	SPT N (blows/ft)
Very Loose	0 to 4
Loose	5 to 10
Med. Dense	11 to 30
Dense	31 to 50
Very Dense	>51

Consistency	SPT N (blows/ft)
Very Soft	0 to 1
Soft	2 to 4
Med. Stiff	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	31 to 60
Very Hard	>61

Modifiers	
Description	Percentage
Trace	less than 5
Some	5 to 12
With	more than 12

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Soil Symbols and Description Key

D.R. Horton
Micron Property
Lehi/Draper, Utah
Project Number: 589-100

Plate B-24

APPENDIX C

Test Pit No.	Sample Depth (feet)	USCS Soil Classification	Natural Moisture Content (%)	Natural Dry Density (pcf)	Optimum Moisture Content (%)	Maximum Dry Density (pcf)	Gradation			Atterberg		Consolidation			Collapse (%)	CBR (%)
							Gravel (%)	Sand (%)	Fines (%)	LL	PI	Cc	Cr	OCR		
MW-TP-01	7	GP-GM	3.3		6.1	136.3	46.1	38.1	10.9	22	4					76.7
MW-TP-02	8	GP	5.1				50.1	46.5	3.4	NP	NP					
MW-TP-03	3	ML	8	92.5					69.3						0.32	
MW-TP-04	3	GC	4				44.5	30.3	25.2	24	8					
MW-TP-10	2	GC	2.2				59.9	27.0	13.1	25	9					
MW-TP-11	6	SM	5.7				29.8	48.6	21.6	NP	NP					
MW-TP-12	6	SM	5.3	95					39.5						1.17	
MW-TP-13	8.5	SM	16.7	81					41.7	NP	NP				0.27	
MW-TP-14	6	SM	13.5	110.7					41.3						0.09	
MW-TP-16	1.5	GP-GM	3.6				70.7	22.3	7.0	NP	NP					
MW-TP-17	4	SM	4.1				35.6	38.8	25.6	NP	NP					
MW-TP-18	3	CL	20.1	86.7					85.1						0.07	
MW-TP-19	6	ML	8.1	88.6					65.1						1.4	
MW-TP-20	3.5	ML	21.8	92.9					83.7						0.44	
MW-TP-21	3.5	CL	15.7	86.6			0.0	17.4	82.6	38	14				0.23	
MW-TP-22	2	CL	7.5				13.8	20.7	65.5	29	13					
MW-TP-23	1.5	GC	4.6				33.6	33.5	32.9	24	7					
MW-TP-28	3.5	CL-ML	6.8	107					79.2	25	18				0.47	
MW-TP-29	2	SC	4.7				23.4	45.3	31.3	30	15					
MW-TP-30	4	CL	14.2	126.6					92.5	35	15				0.4	

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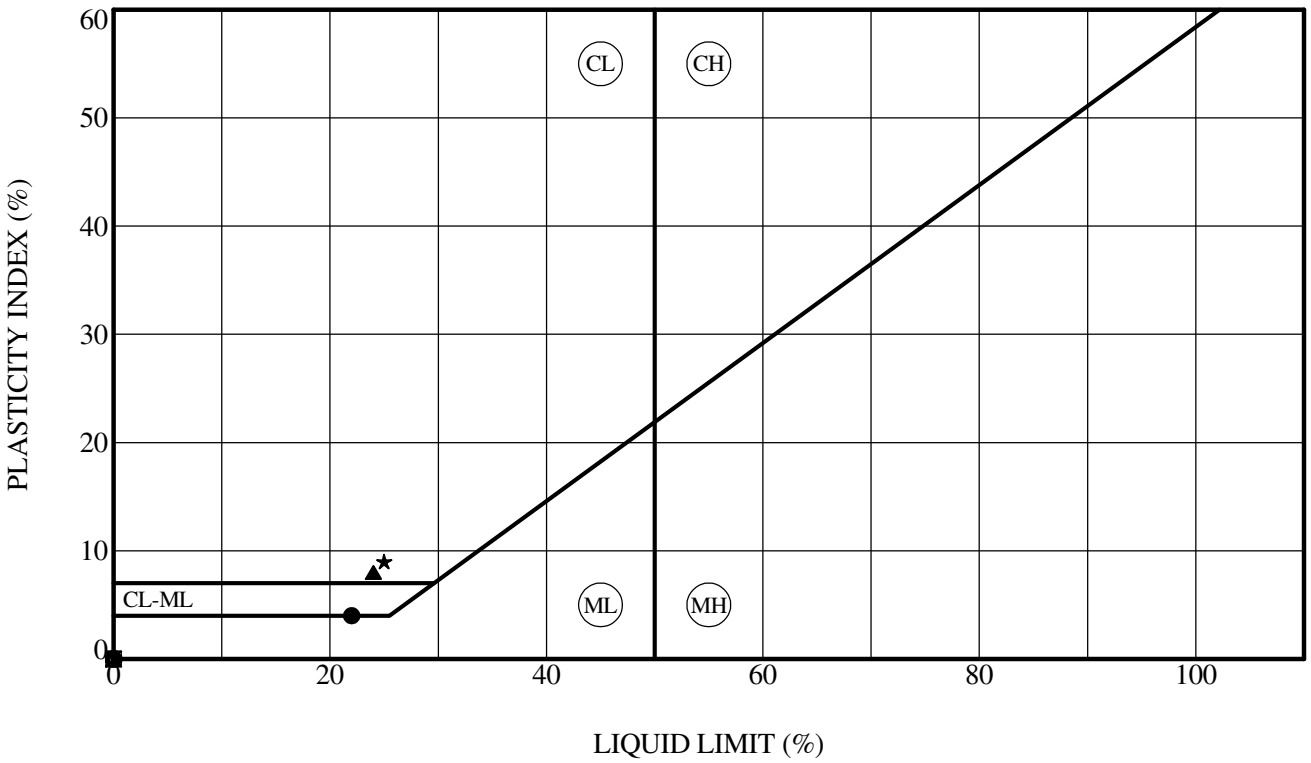
Lab Summary Report

D.R. Horton
Micron Property – Lehi Single Family
Lehi/Draper, Utah
Project Number: 589-100

Plate C



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**MW-TP-01**	**7.0**	**22**	**18**	**4**	**10.9**	**Poorly Graded GRAVEL with silt and sand**
⊠	**MW-TP-02**	**8.0**	**NP**	**NP**	**NP**	**3.4**	**Poorly Graded GRAVEL with sand**
▲	**MW-TP-04**	**3.0**	**24**	**16**	**8**	**25.2**	**Clayey GRAVEL with sand**
★	**MW-TP-10**	**2.0**	**25**	**16**	**9**	**13.1**	**Clayey GRAVEL with sand**
⊙	**MW-TP-11**	**6.0**	**NP**	**NP**	**NP**	**21.6**	**Silty SAND with gravel**
✿	**MW-TP-13**	**8.5**	**NP**	**NP**	**NP**	**41.7**	**Silty SAND**
○	**MW-TP-16**	**1.5**	**NP**	**NP**	**NP**	**7.0**	**Poorly Graded GRAVEL with silt and sand**
△	**MW-TP-17**	**4.0**	**NP**	**NP**	**NP**	**25.6**	**Silty SAND with gravel**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

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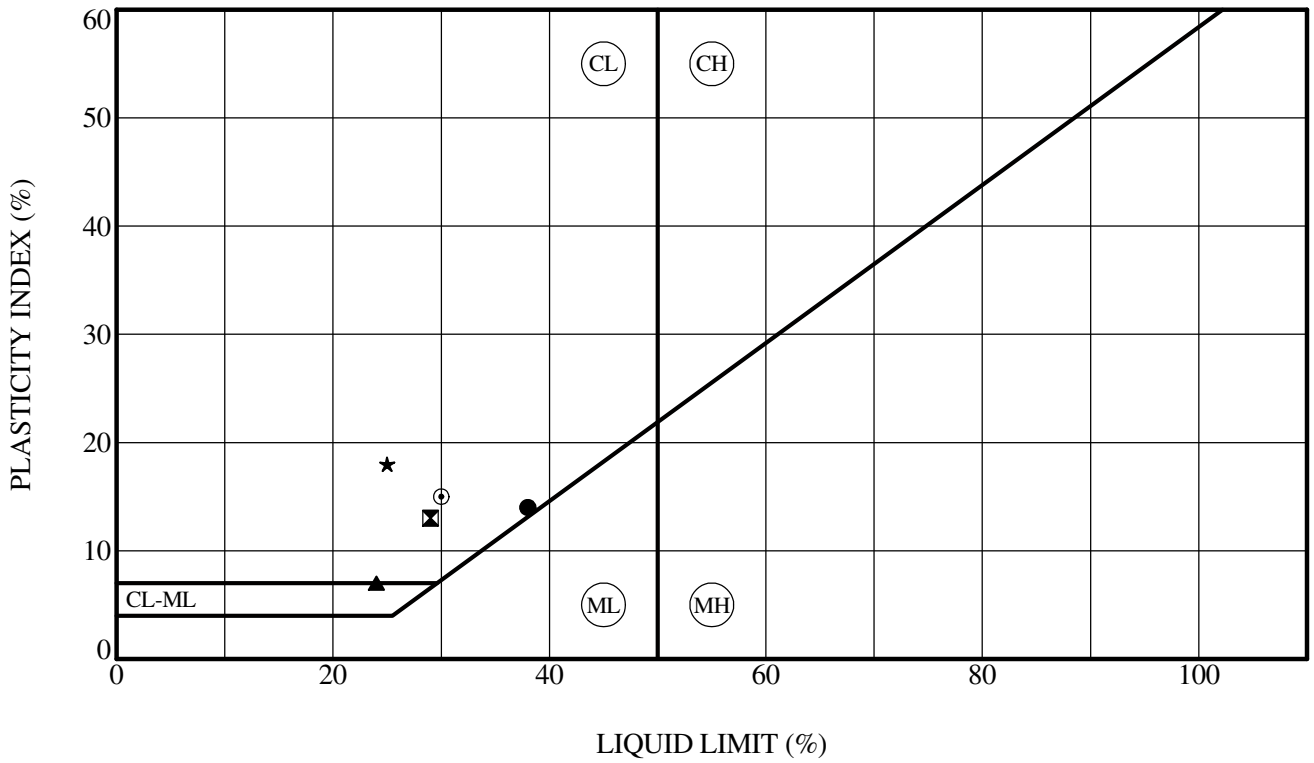
D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 2

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**MW-TP-21**	**3.5**	**38**	**24**	**14**	**82.6**	**Lean CLAY with sand**
⊠	**MW-TP-22**	**2.0**	**29**	**16**	**13**	**65.5**	**Sandy Lean CLAY**
▲	**MW-TP-23**	**1.5**	**24**	**17**	**7**	**32.9**	**Clayey GRAVEL with sand**
★	**MW-TP-28**	**3.5**	**25**	**7**	**18**	**79.2**	**Sandy Silty CLAY**
⊙	**MW-TP-29**	**2.0**	**30**	**15**	**15**	**31.3**	**Clayey SAND with gravel**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

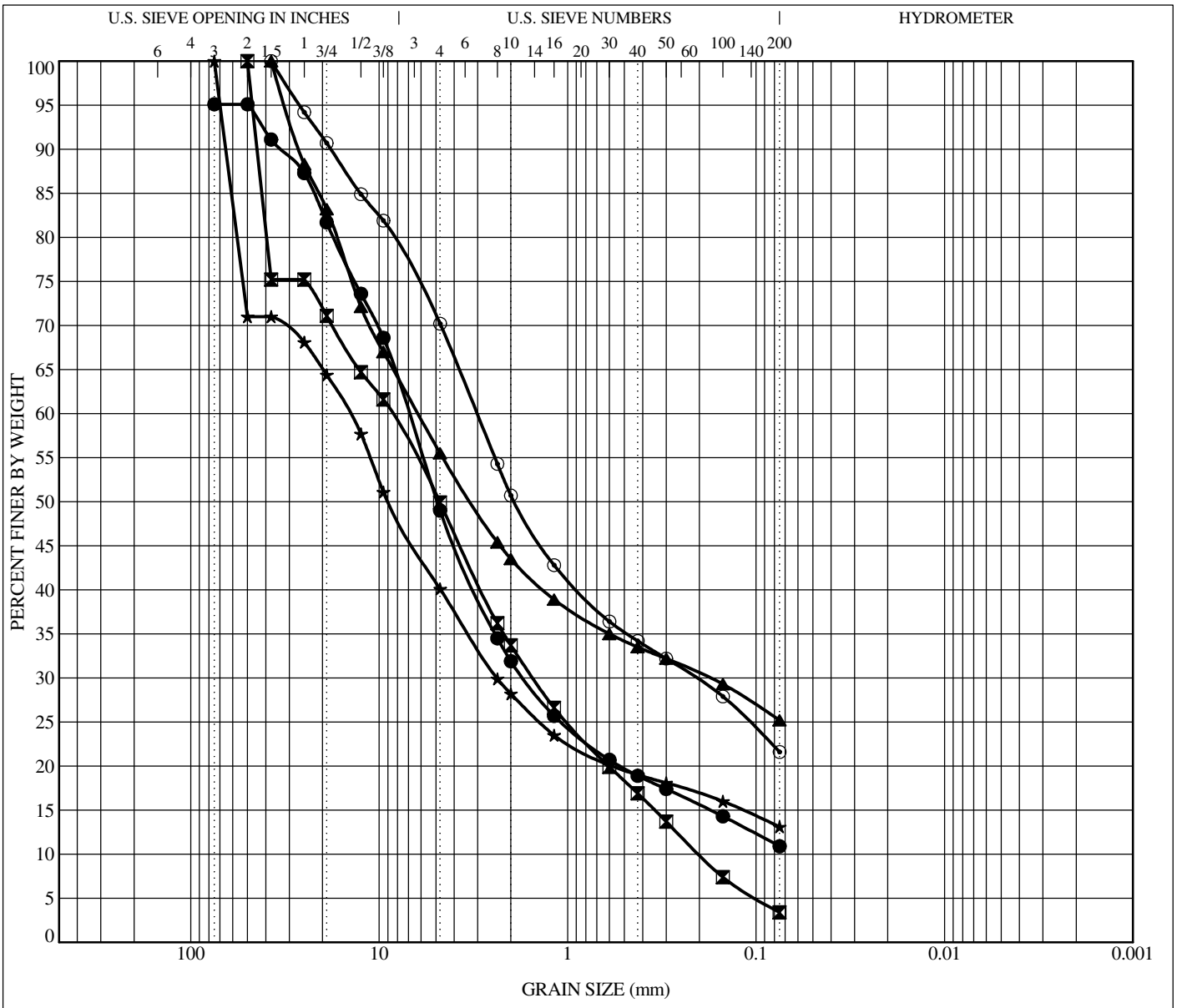
GeoStrata

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 3

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location		Depth	Classification	LL	PL	PI	Cc	Cu
●	MW-TP-01	7.0	Poorly Graded GRAVEL with silt and sand	22	18	4	6.62	112.27
⊠	MW-TP-02	8.0	Poorly Graded GRAVEL with sand	NP	NP	NP	1.34	43.27
▲	MW-TP-04	3.0	Clayey GRAVEL with sand	24	16	8		
★	MW-TP-10	2.0	Poorly Graded GRAVEL with clay and sand	25	16	9		
⊙	MW-TP-11	6.0	Silty SAND with gravel	NP	NP	NP		

Sample Loctaion		Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	MW-TP-01	7.0	75	7.009	1.701		46.1	38.1	10.9	
⊠	MW-TP-02	8.0	50	8.641	1.519	0.2	50.1	46.5	3.4	
▲	MW-TP-04	3.0	37.5	6.23	0.177		44.5	30.3	25.2	
★	MW-TP-10	2.0	75	14.432	2.376		59.9	27.0	13.1	
⊙	MW-TP-11	6.0	37.5	3.033	0.21		29.8	48.6	21.6	

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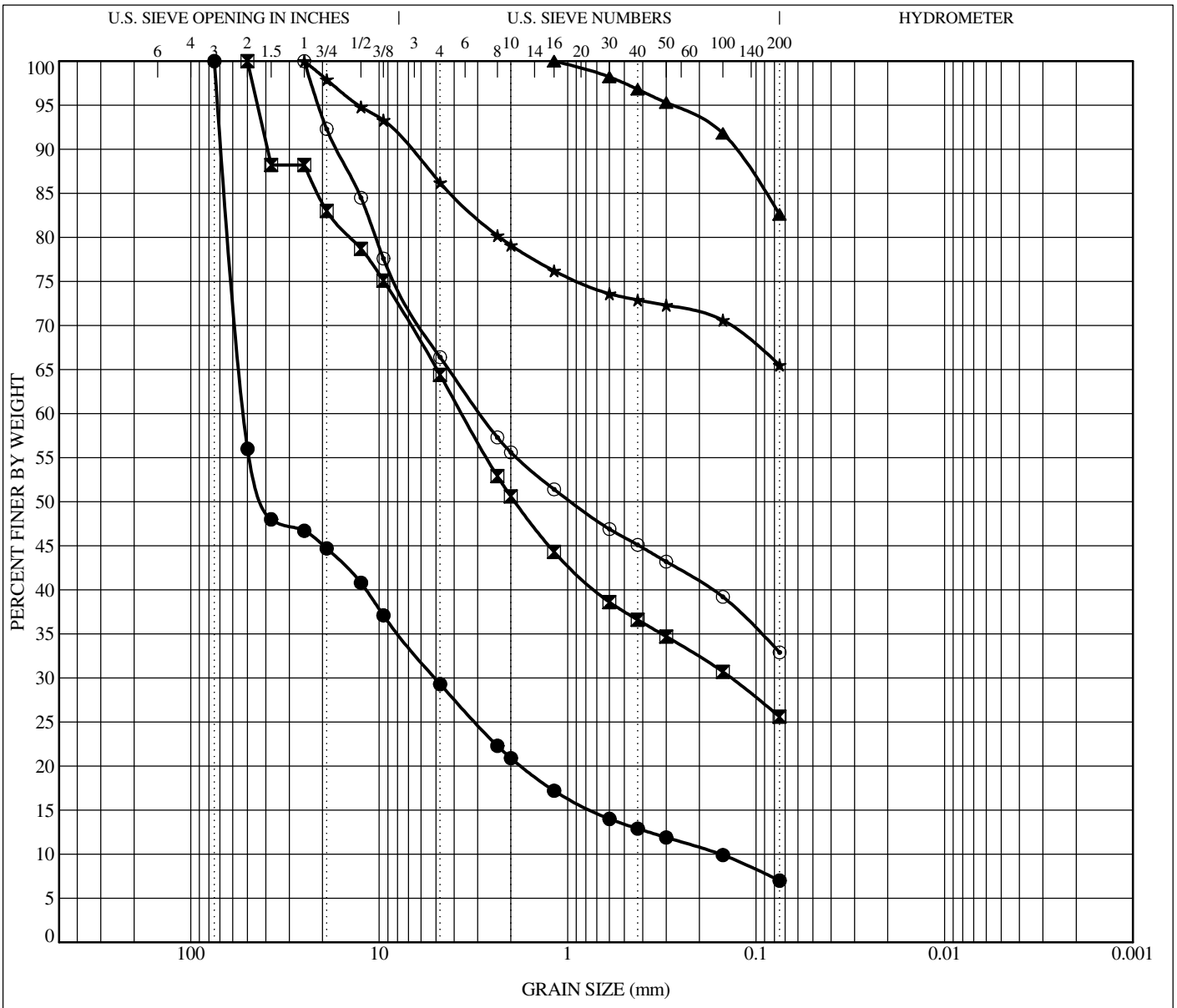
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 4

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-16**	**1.5**	**Poorly Graded GRAVEL with silt and sand**	**NP**	**NP**	**NP**	**3.17**	**334.07**
⊠	**MW-TP-17**	**4.0**	**Silty SAND with gravel**	**NP**	**NP**	**NP**		
▲	**MW-TP-21**	**3.5**	**Lean CLAY with sand**	**38**	**24**	**14**		
★	**MW-TP-22**	**2.0**	**Sandy Lean CLAY**	**29**	**16**	**13**		
⊙	**MW-TP-23**	**1.5**	**Clayey GRAVEL with sand**	**24**	**17**	**7**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-16**	**1.5**	**75**	**51.877**	**5.055**	**0.155**	**70.7**	**22.3**	**7.0**	
⊠	**MW-TP-17**	**4.0**	**50**	**3.635**	**0.136**		**35.6**	**38.8**	**25.6**	
▲	**MW-TP-21**	**3.5**	**1.18**				**0.0**	**17.4**	**82.6**	
★	**MW-TP-22**	**2.0**	**25**				**13.8**	**20.7**	**65.5**	
⊙	**MW-TP-23**	**1.5**	**25**	**2.904**			**33.6**	**33.5**	**32.9**	

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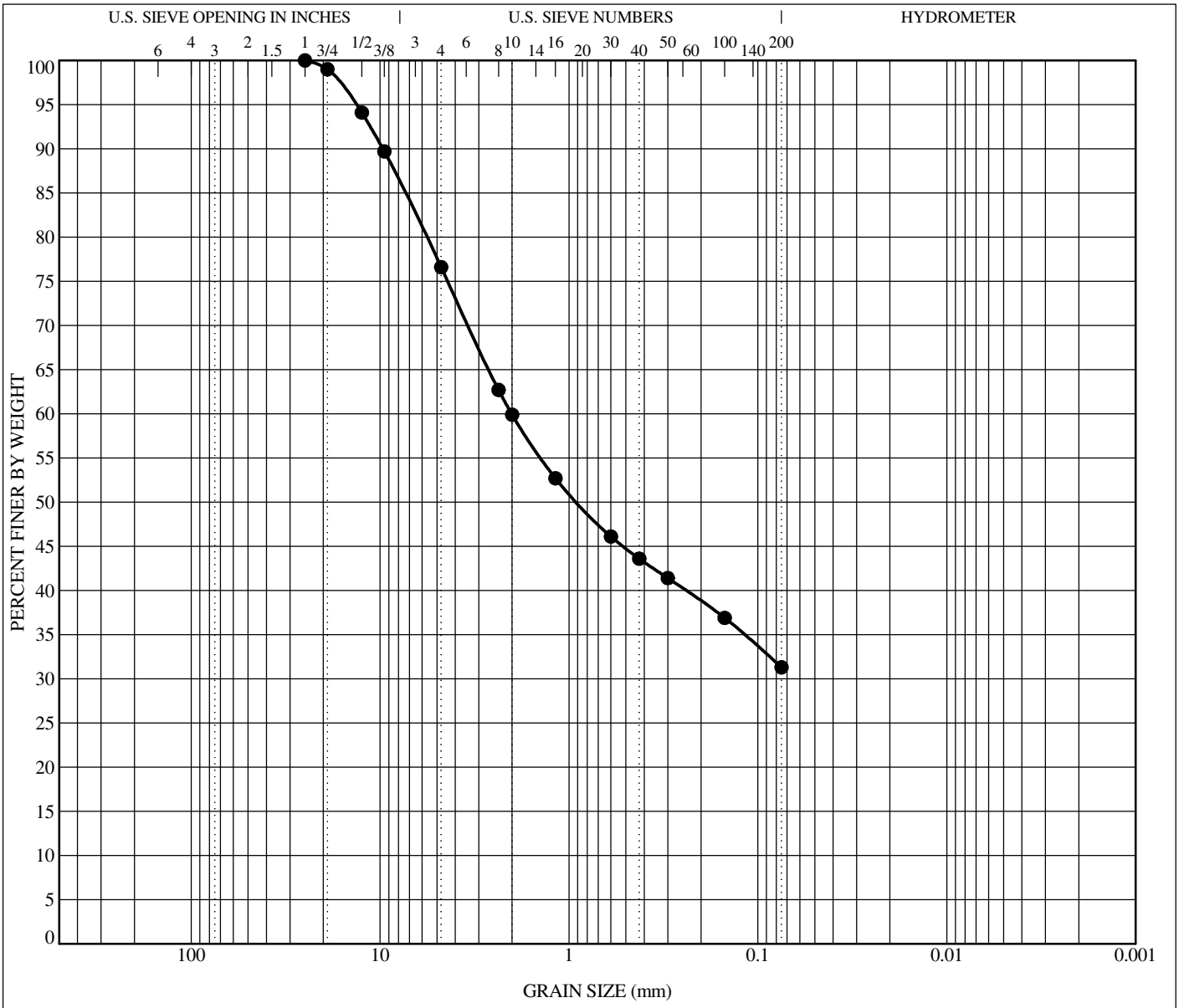
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 5

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**MW-TP-29**	**2.0**	**Clayey SAND with gravel**	**30**	**15**	**15**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**MW-TP-29**	**2.0**	**25**	**2.012**			**23.4**	**45.3**	**31.3**	

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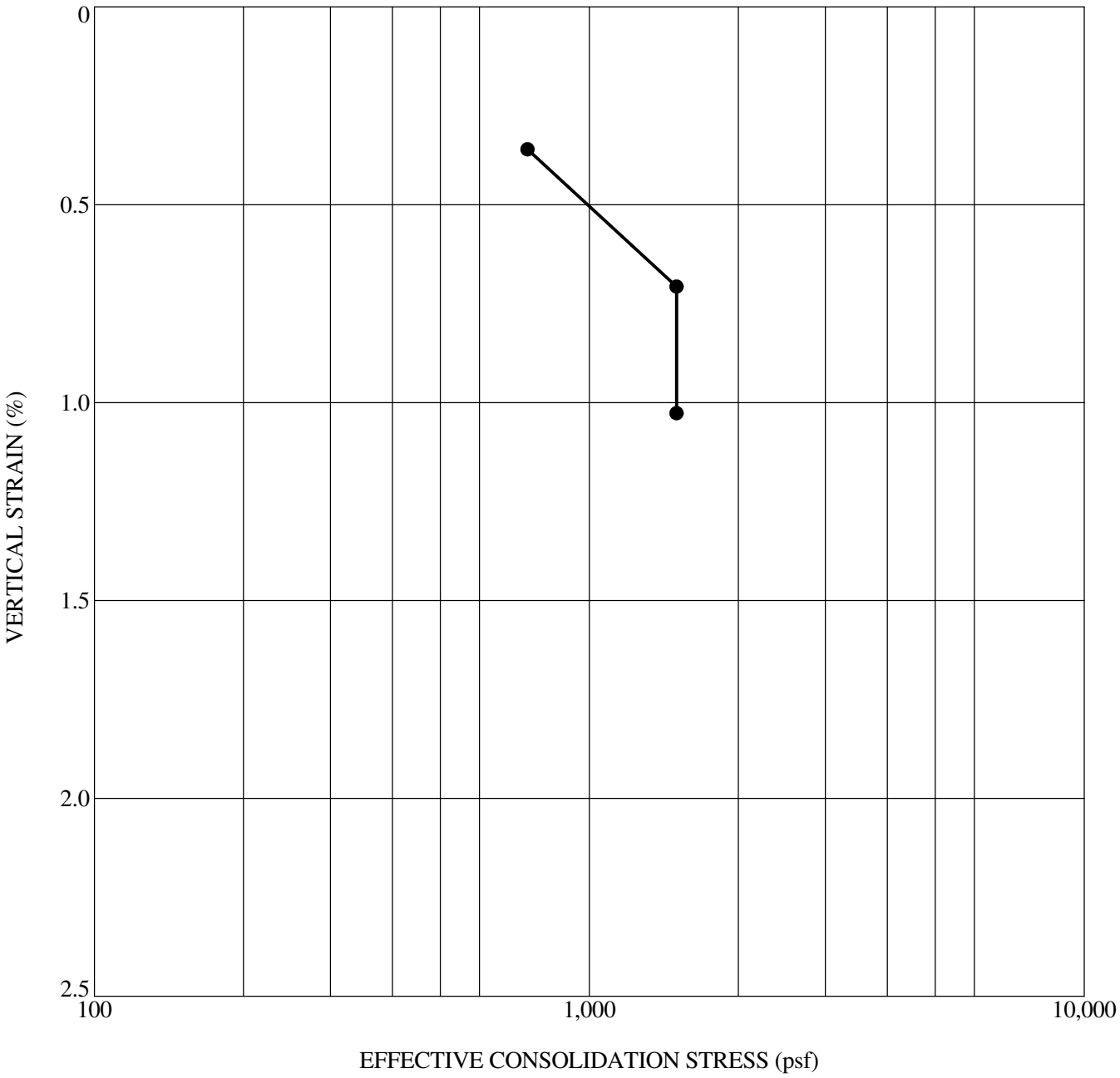
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 6

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
● **MW-TP-03**	**3.0**		**93**	**9**				**1500**		**0.32**

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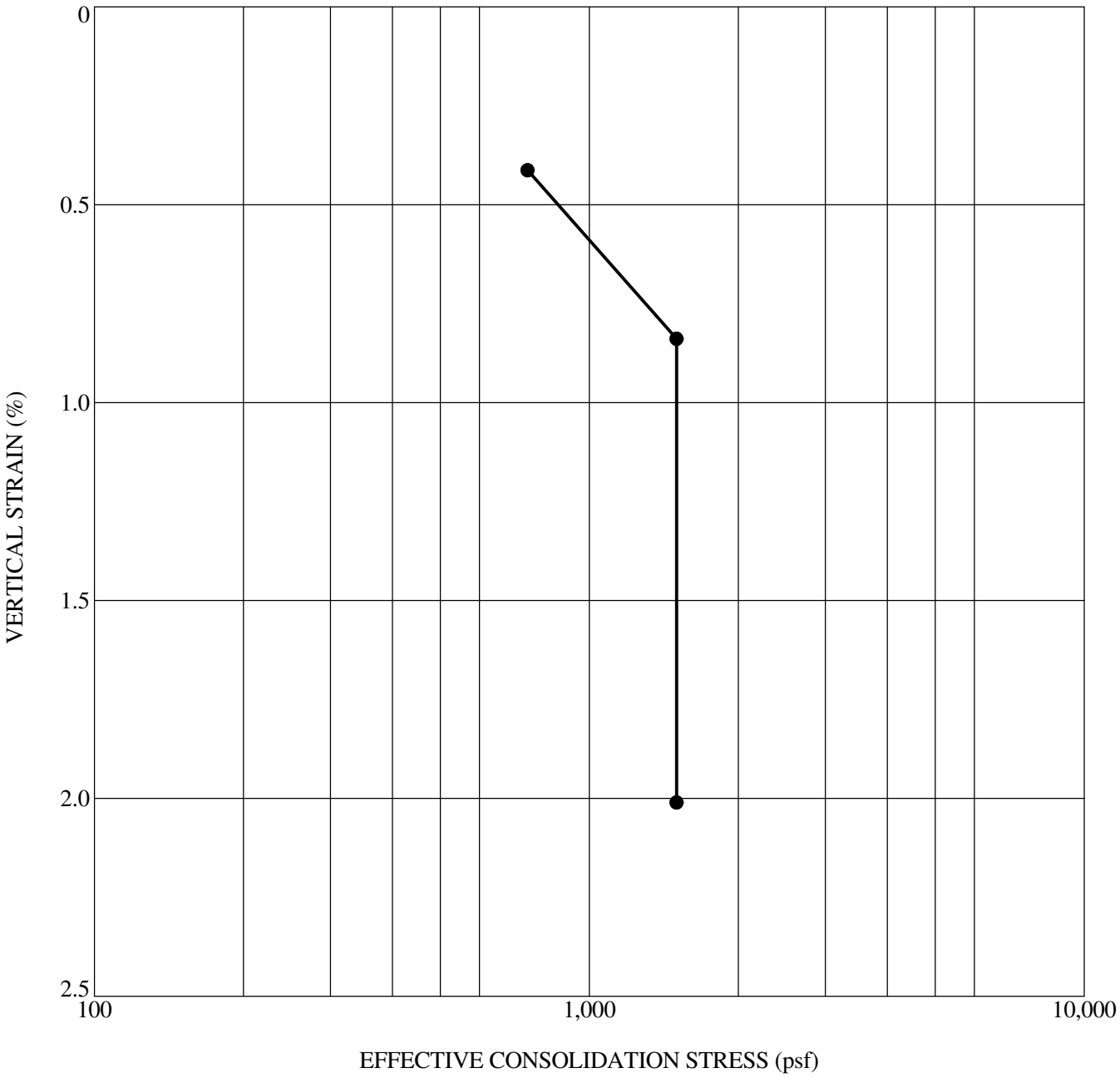
1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 7

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
● **MW-TP-12**	**6.0**	**Silty SAND**	**95**	**7**				**1500**		**1.17**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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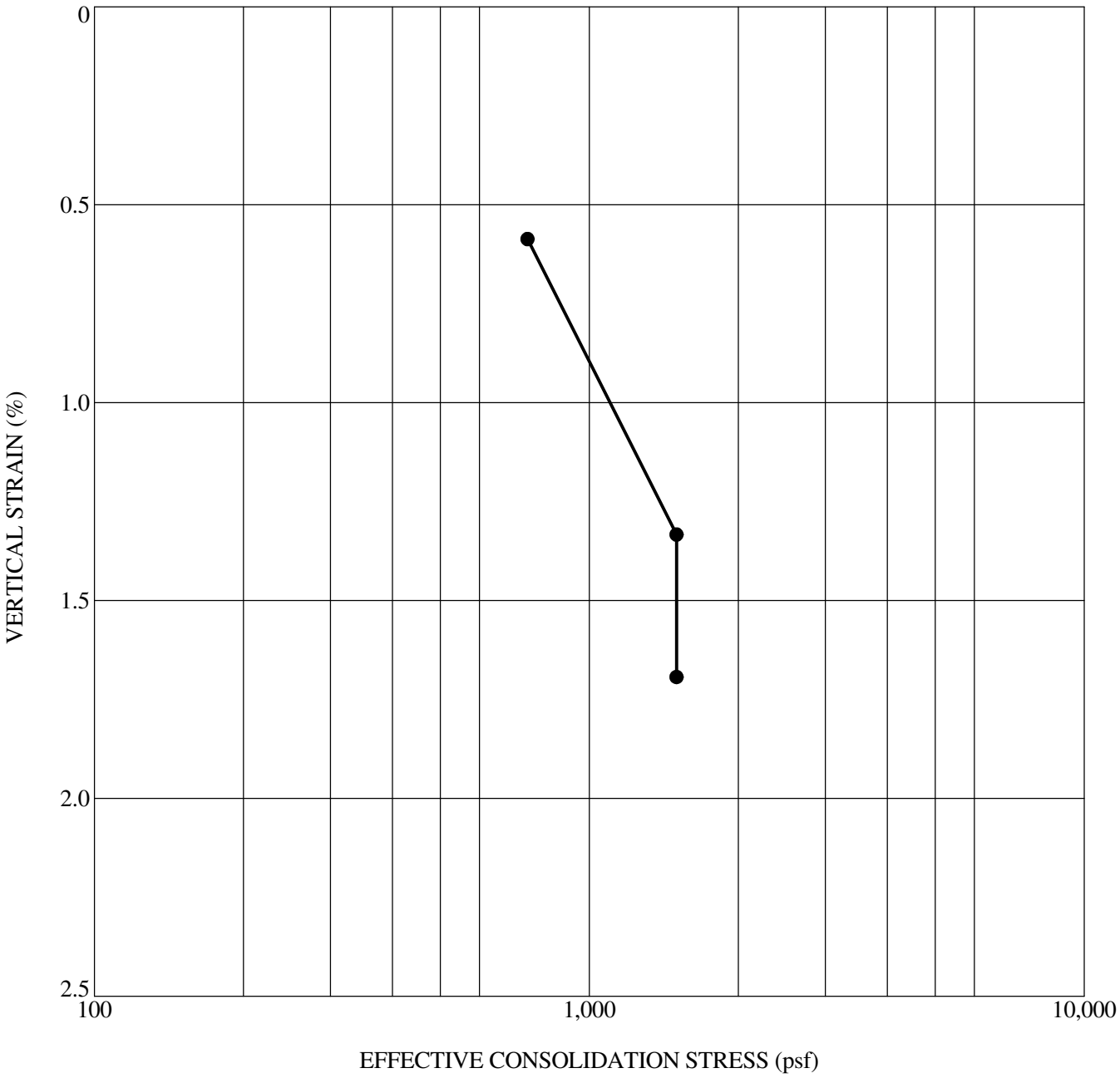
Plate

C - 8

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-13**	**8.5**	**Silty SAND**	**81**	**17**				**1500**		**0.27**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Project Number: 589-100

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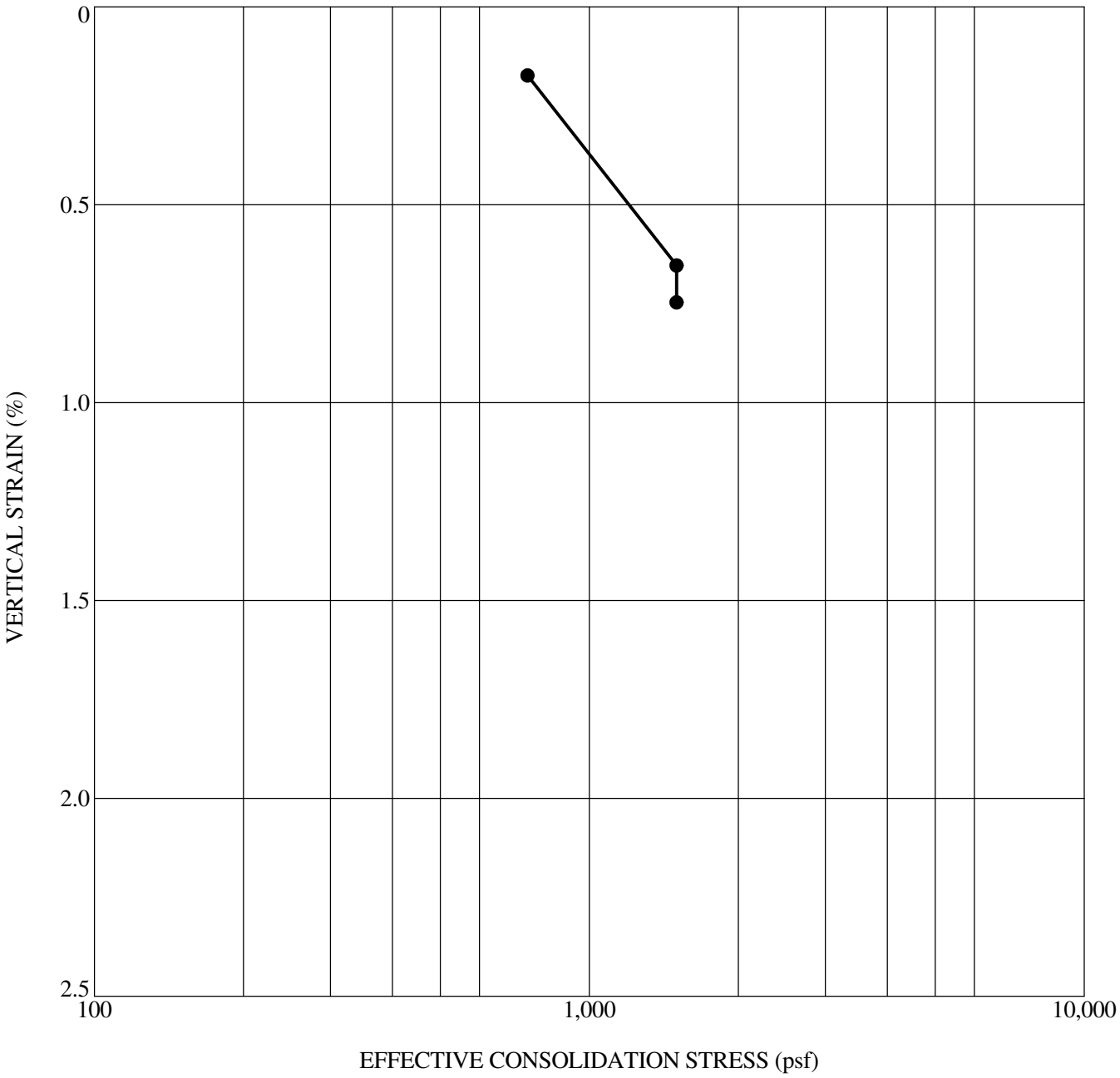
C - 9

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-14**	**6.0**	**Silty SAND with gravel**	**98**	**14**				**1500**		**0.09**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

D.R. Horton
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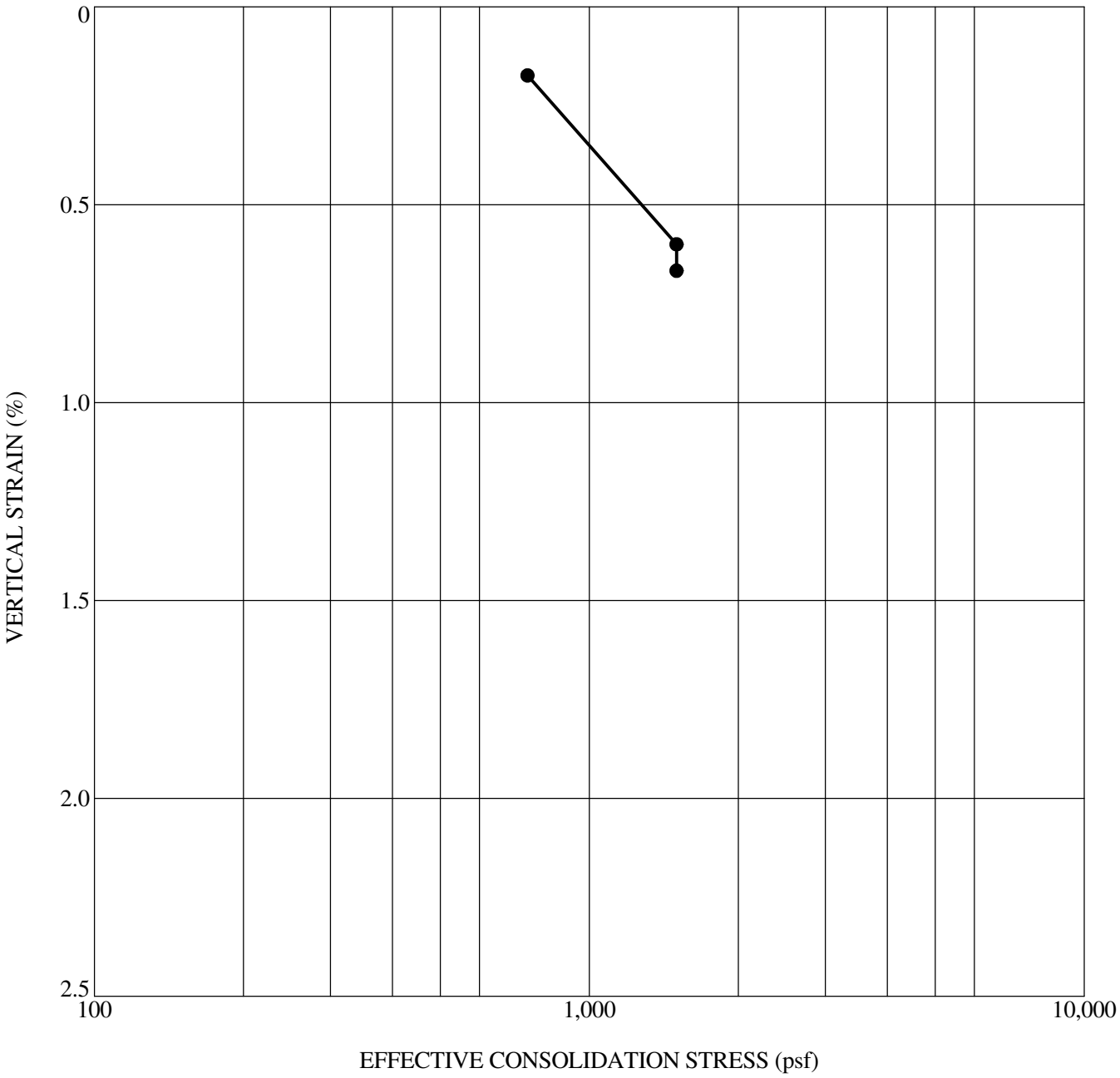
Project Number: 589-100

Plate

C - 10

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-18**	**3.0**	**Lean CLAY with sand**	**87**	**20**				**1500**		**0.07**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Lehi, Utah
Project Number: 589-100

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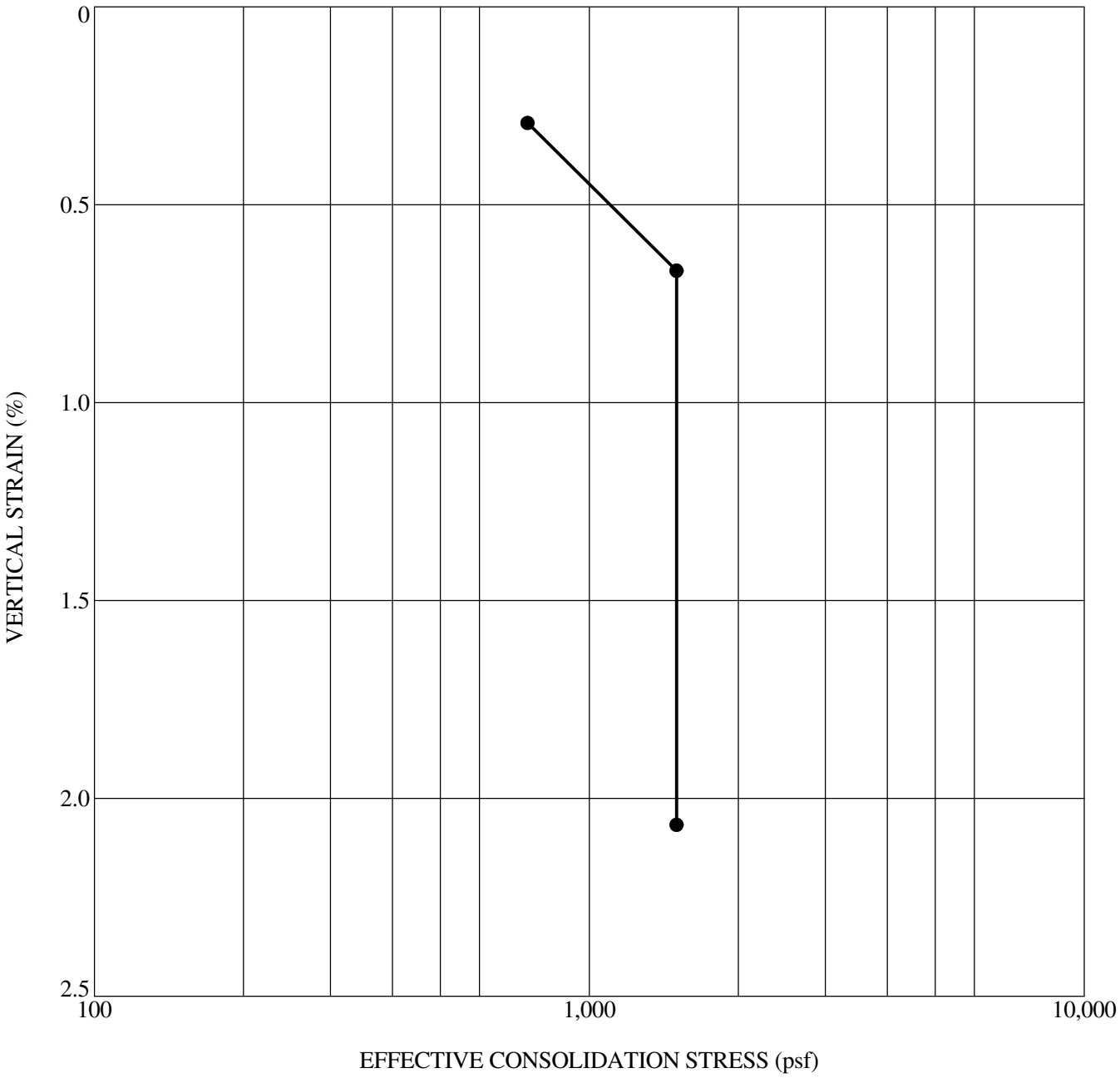
C - 11

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
● **MW-TP-19**	**6.0**	**Sandy SILT**	**89**	**8**				**1500**		**1.40**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Project Number: 589-100

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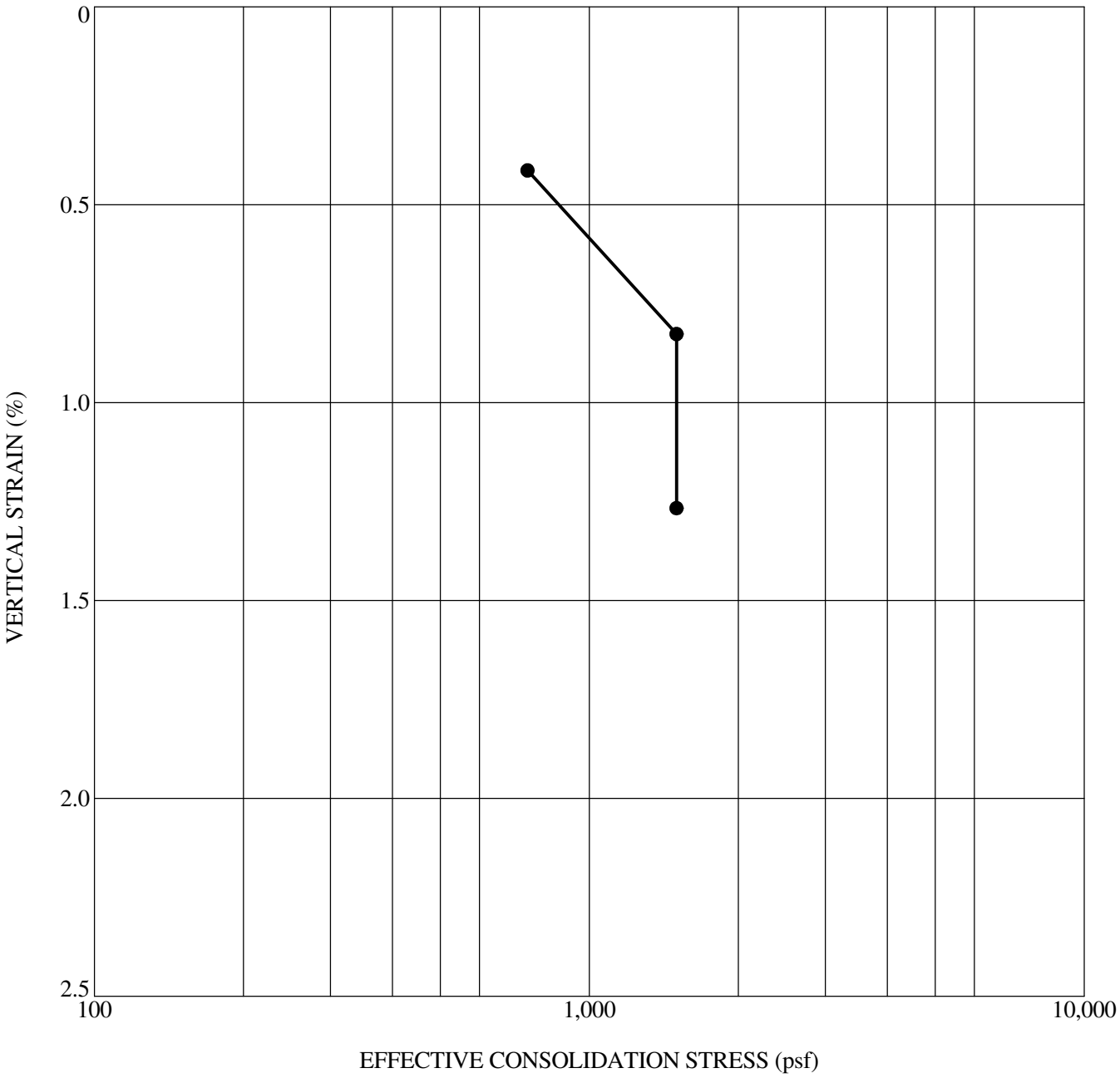
C - 12

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
● **MW-TP-20**	**3.5**		**93**	**22**				**1500**		**0.44**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Project Number: 589-100

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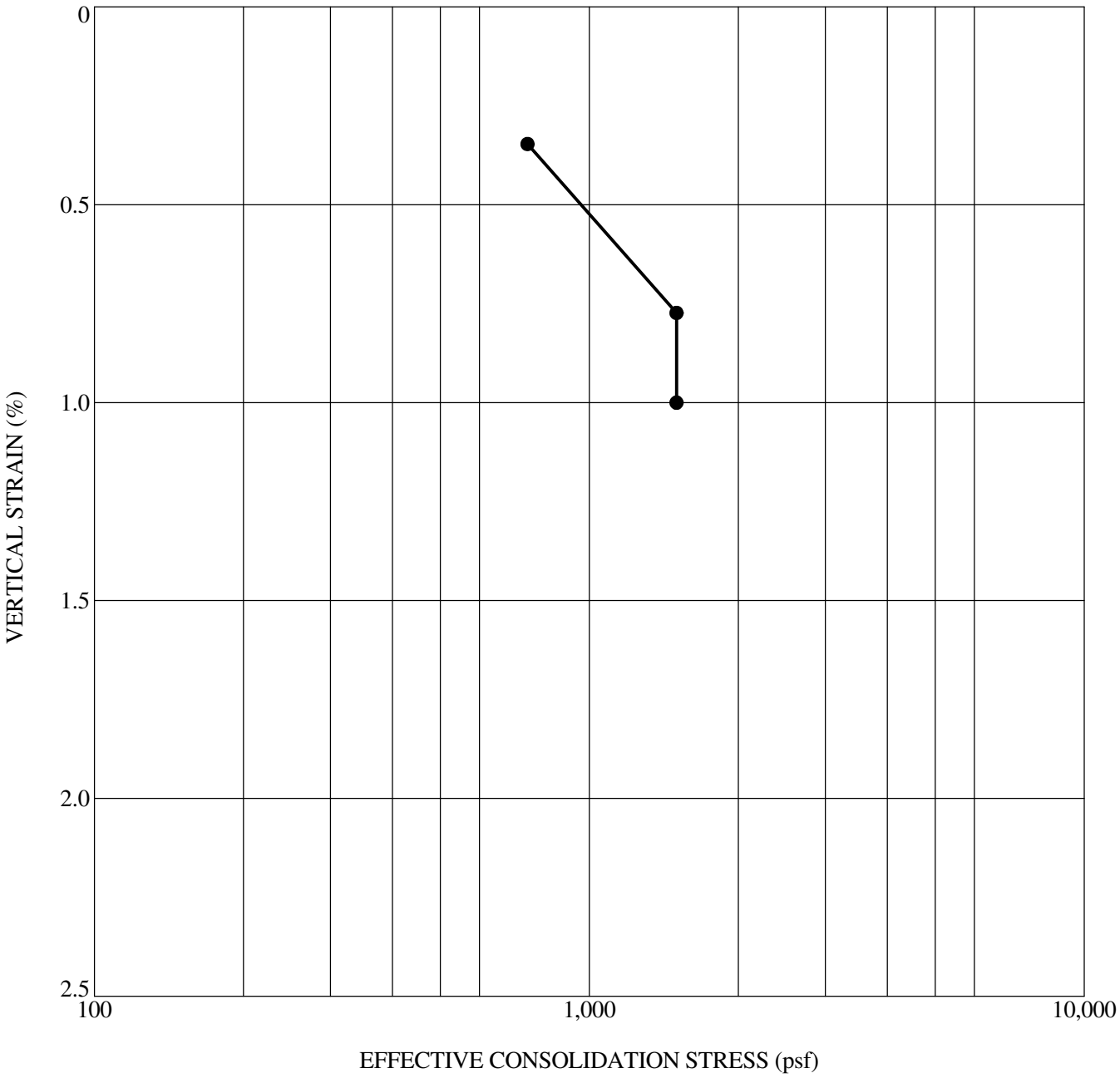
C - 13

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-21**	**3.5**	**Lean CLAY with sand**	**87**	**16**				**1500**		**0.23**

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1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Project Number: 589-100

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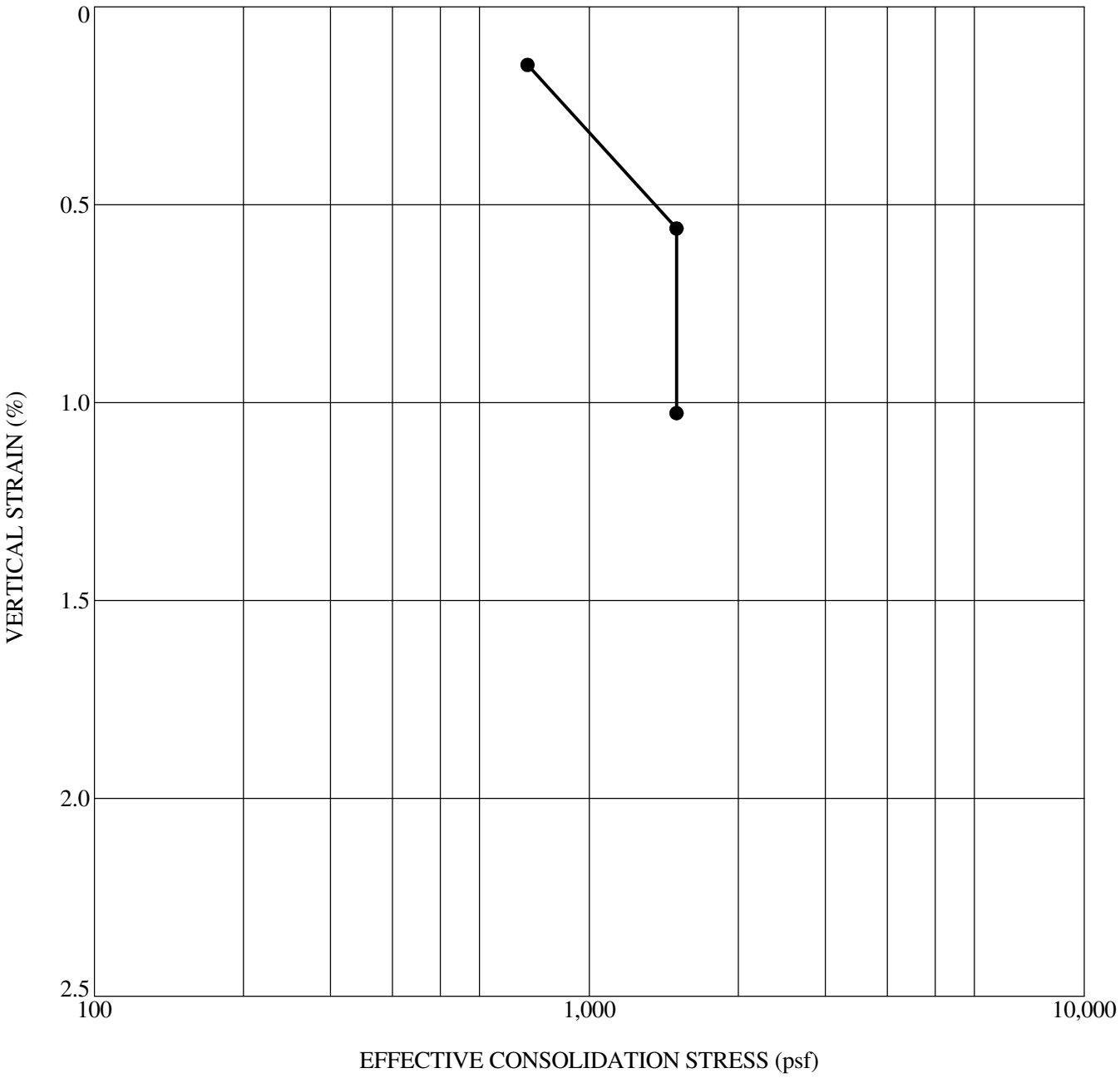
C - 14

C_CONSOL SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-28**	**3.5**	**Sandy Silty CLAY**	**107**	**7**				**1500**		**0.47**

1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Lehi, Utah
Project Number: 589-100

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C - 15

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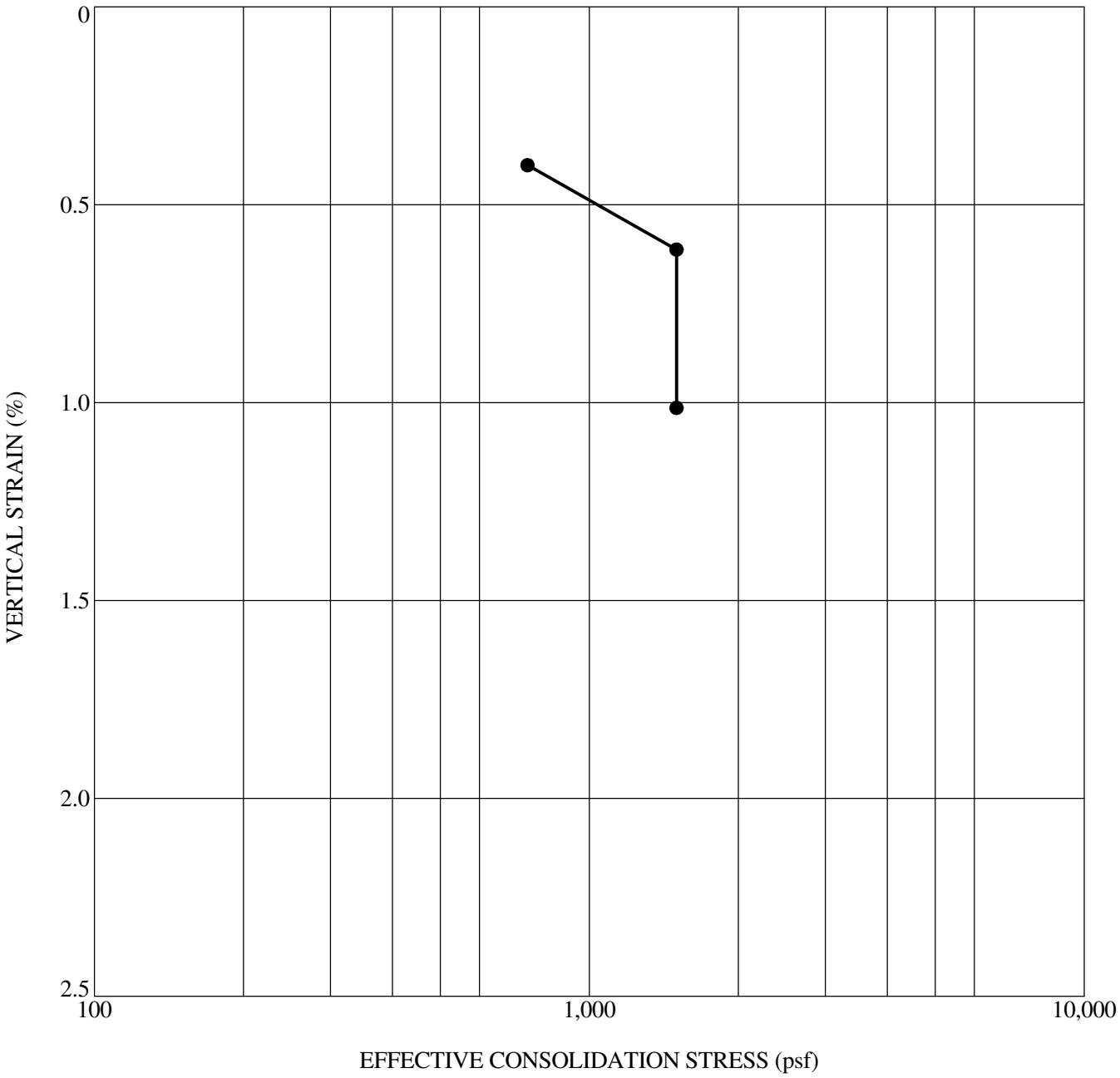

	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'_c	C'_r	OCR	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**MW-TP-30**	**4.0**	**Lean CLAY**	**103**	**24**				**1500**		**0.40**

1-D CONSOLIDATION/SWELL/COLLAPSE TEST

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Lehi, Utah
Project Number: 589-100

Plate

C - 16

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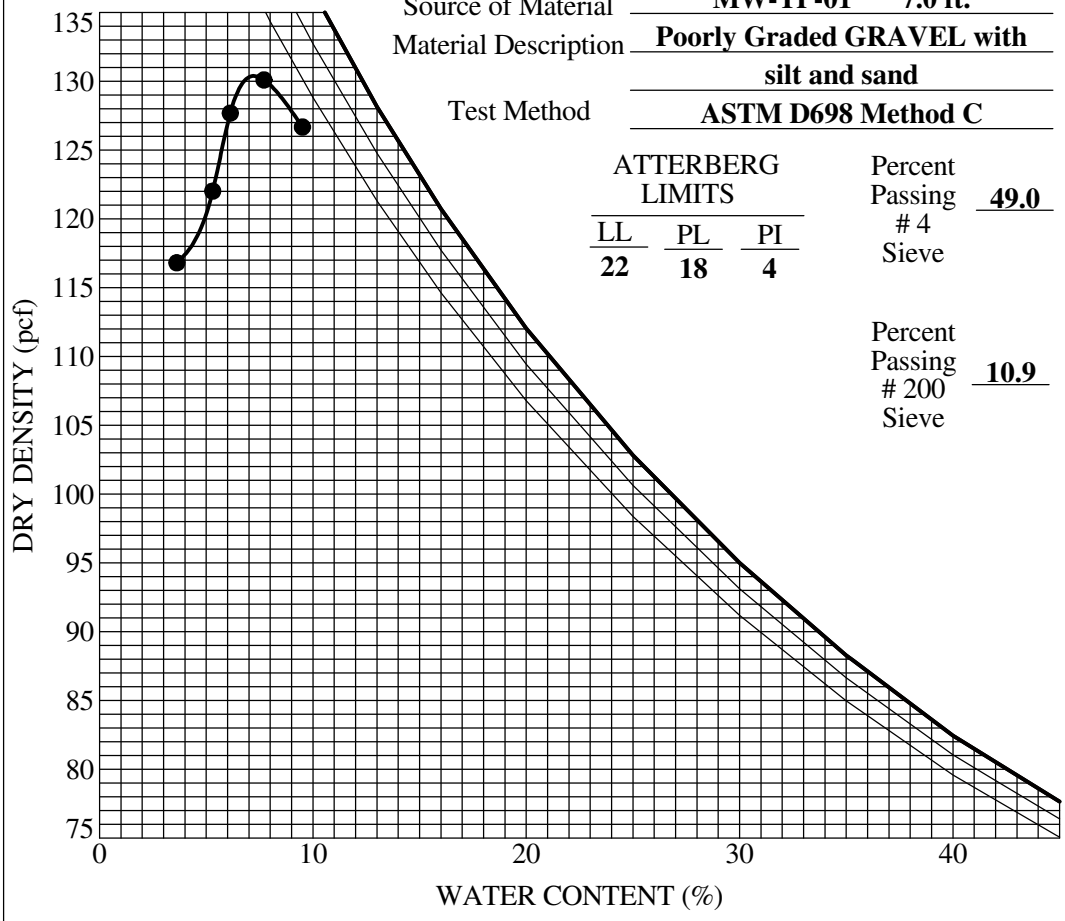


Source of Material: **MW-TP-01 7.0 ft.**

Material Description: **Poorly Graded GRAVEL with silt and sand**

Test Method: **ASTM D698 Method C**

ATTERBERG LIMITS

LL	PL	PI
22	18	4

Percent Passing # 4 Sieve: **49.0**

Percent Passing # 200 Sieve: **10.9**

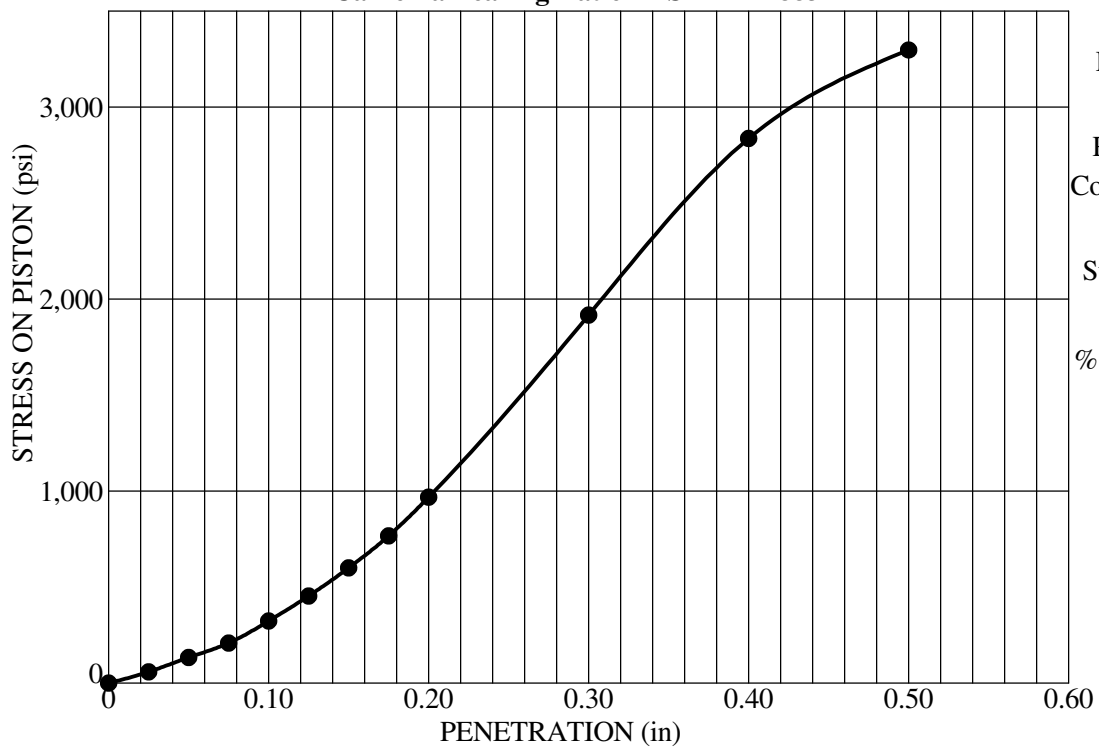
TEST RESULTS

Maximum Dry Density	**132.0 (pcf)**
Optimum Water Content	**7.0 (%)**
Percent Rock	**18.0 (%)**
Corrected Maximum Dry Density	**136.3 (pcf)**
Corrected Optimum Water Content	**6.1 (%)**

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80

Califonia Bearing Ratio - ASTM D 1883



Dry Density	**132.0 (pcf)**
Relative Compaction	**100 (%)**
Surcharge	**51 (psf)**
% Standard CBR	**76.70**
Swell	**-0.20 (%)**

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COMPACTION AND CBR TEST

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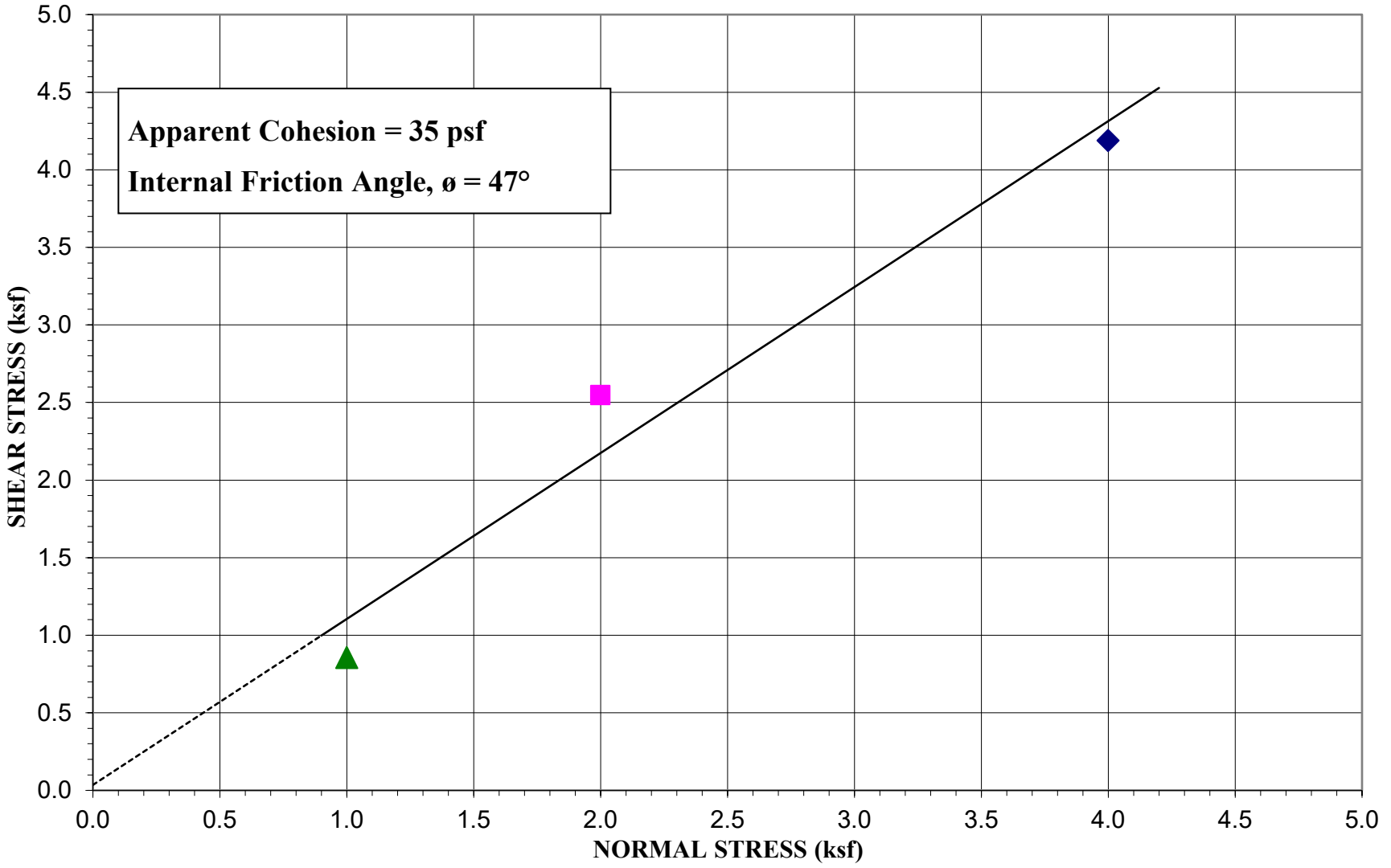
Lehi, Utah
Project Number: 589-100

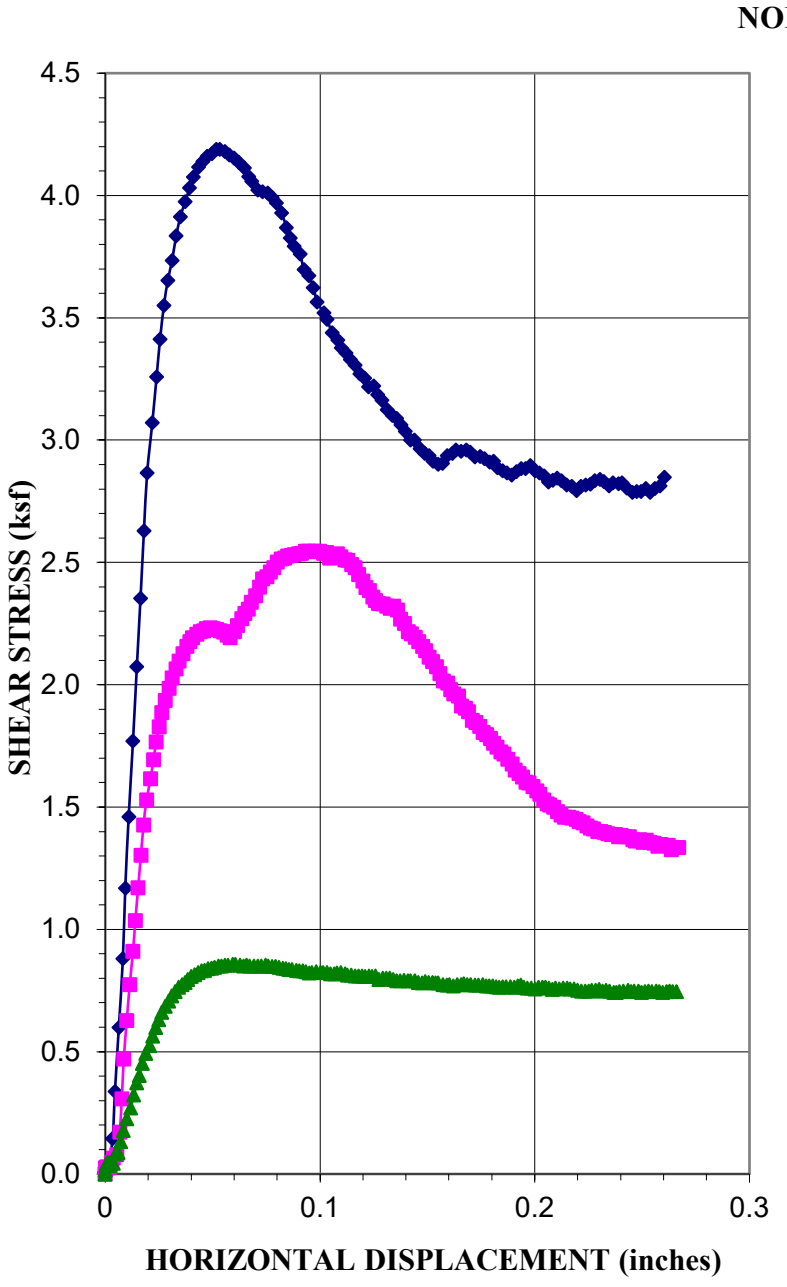
Plate

C - 17

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DIRECT SHEAR TEST





Source:	MW-TP-02 at 8 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.006	1.018	1.093
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	101.5	100.2	93.6
Dry Density After, pcf	103.3	102.0	95.2
Moisture % Before	8.4	11.2	8.6
Moisture % After	21.0	21.1	23.0
Saturation, % Before	35.1	45.7	29.8
Saturation, % After	92.6	90.0	82.7
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	4.19	2.55	0.86
Strain Rate	0.00333 IN/MIN		

Sample Properties	
Cohesion, psf	35
Friction Angle, ϕ	47
Liquid Limit, %	NP
Plasticity Index, %	NP
Percent Gravel	50
Percent Sand	46
Percent Passing No. 200 sieve	3.4
Classification	GP

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PROJECT NO.: 589-100

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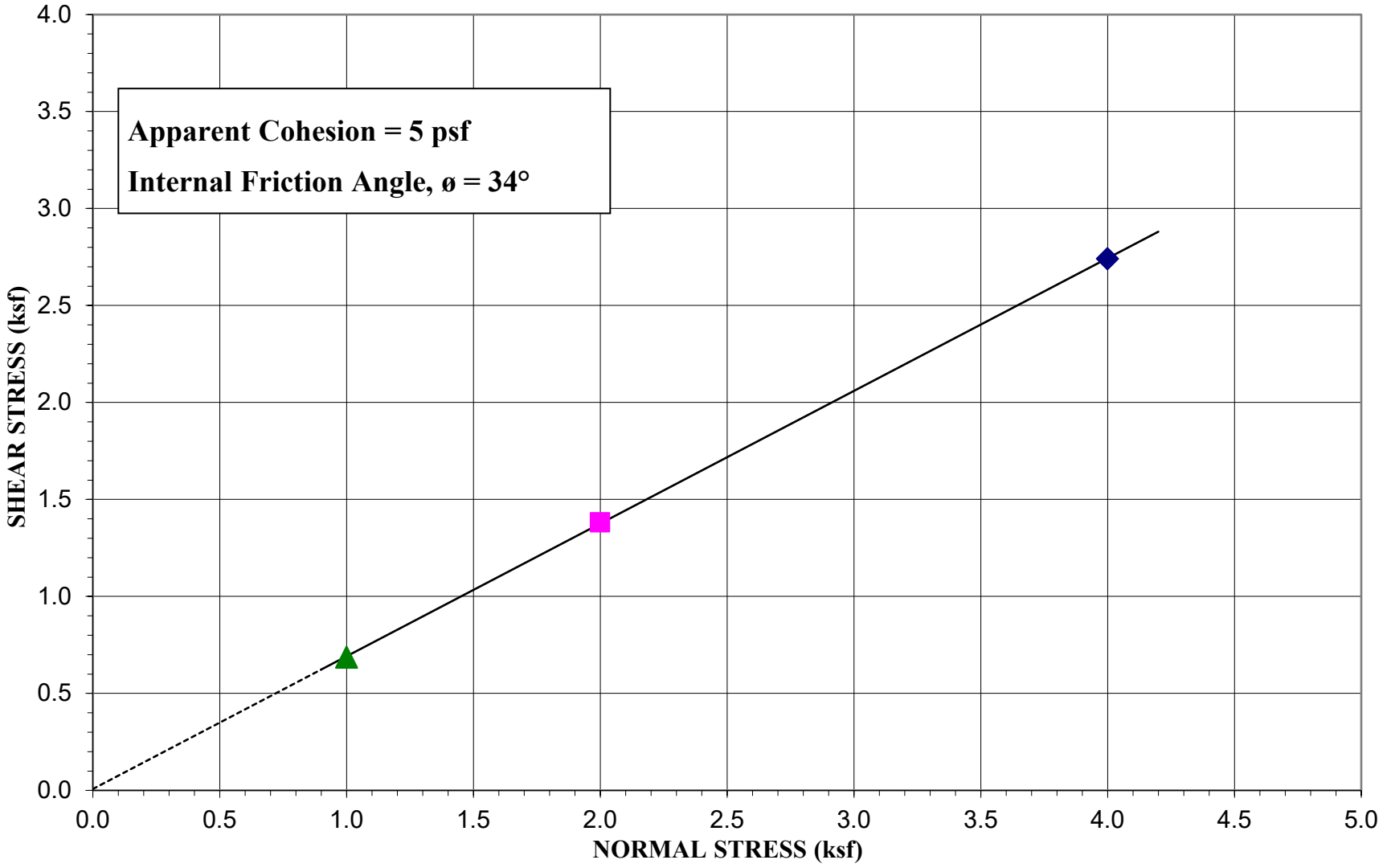
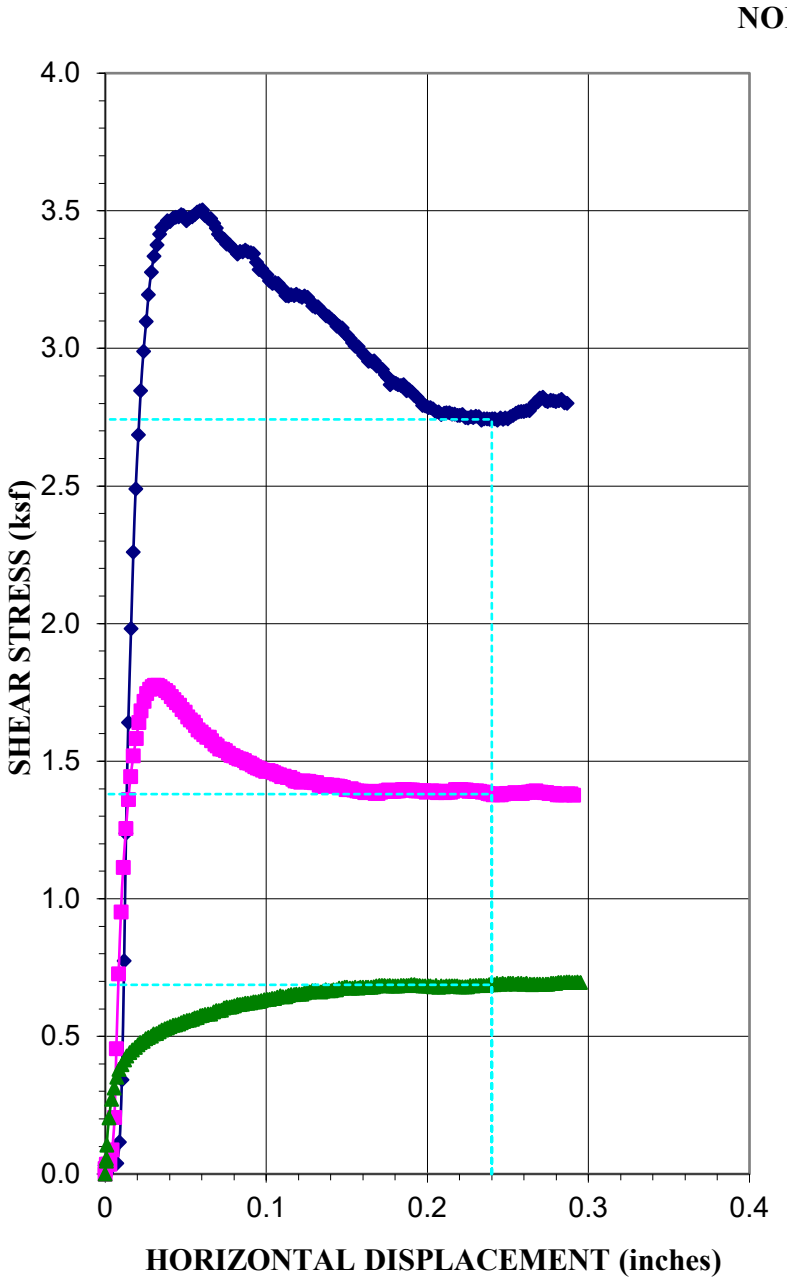
Plate C-18

DIRECT SHEAR TEST





Sample Location:	MW-TP-11 at 6 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	0.829	0.835	0.949
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	118.8	118.0	103.1
Dry Density After, pcf	121.2	120.3	105.1
Moisture % Before	9.9	13.1	10.8
Moisture % After	15.7	16.5	19.2
Saturation, % Before	67.2	86.2	47.3
Saturation, % After	114.2	116.7	89.0
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.74	1.38	0.69
Strain Rate	0.003333 IN/MIN		

Sample Properties	
Cohesion, psf	5
Friction Angle, ϕ	34
Liquid Limit, %	NP
Plasticity Index, %	NP
Percent Gravel	29.8
Percent Sand	48.7
Percent Passing No. 200 sieve	21.6
Classification	SM

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PROJECT NO.: 589-100

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Plate C-19

APPENDIX D

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

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Important Information about this Geotechnical Engineering Report

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Lehi/Drpaer, Utah
Project Number: 589-100

Plate D-1

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration* by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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Geotechnical Investigation

Micron Property – Highland Emerald and Single Family

Approximately 500 West and State Road 92
Lehi, Utah

January 27, 2021

Prepared For:

D.R. Horton
Attention: Scott Bishop and Dan Mitchell
12351 South Gateway Park Place
Draper, Utah 84020

GeoStrata Job No. 589-100

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Preliminary Geotechnical Investigation
Micron Property Highland Single Family 128-Acre Portion
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

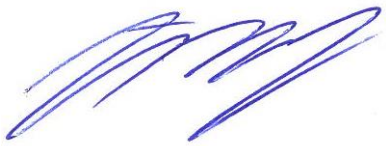

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2

2.1 PURPOSE AND SCOPE OF WORK 2
2.2 PROJECT DESCRIPTION 2

3.0 METHOD OF STUDY 4

3.1 FIELD INVESTIGATION 4
3.2 LABORATORY INVESTIGATION 4
3.3 ENGINEERING ANALYSIS 5

4.0 GENERALIZED SITE CONDITIONS 6

4.1 SURFACE CONDITIONS 6
4.2 SUBSURFACE CONDITIONS 6
4.2.1 Soils 6
4.2.2 Groundwater 7
4.2.3 Collapsible Soils 7

5.0 GEOLOGIC CONDITIONS 9

5.1 GEOLOGIC SETTING 9
5.2 FAULTING AND SEISMICITY 9
5.3 LIQUEFACTION 11
5.4 OTHER GEOLOGIC HAZARDS 11

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS 12

6.1 GENERAL CONCLUSIONS 12
6.2 EARTHWORK 12
6.2.1 General Site Preparation and Grading 13
6.2.2 Excavation Stability 13
6.2.3 Soft Soil Stabilization 14
6.2.4 Structural Fill and Compaction 14
6.3 FOUNDATIONS 17
6.3.1 Installation and Bearing Material 17
6.3.2 Bearing Pressure 18
6.3.3 Settlement 18
6.3.4 Frost Depth 18

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6.3.5 Construction Observation *19*
6.3.6 Foundation Drainage *19*
6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION 20
6.5 EARTH PRESSURE AND LATERAL RESISTANCE 20
6.6 PAVEMENT SECTION 22
7.0 CLOSURE 25
7.1 LIMITATIONS 25
7.2 ADDITIONAL SERVICES 25
7.3 ACKNOWLEDGEMENTs 26
REFERENCES CITED 27

APPENDICES

Appendix A Plate A-1 .....Site Vicinity Map
Plate A-2 .....Site Section Map
Plate A-3 .....Lehi Emerald Single-Family and Single-Family Section Exploration Map
Plate A-4 .....Site Geologic Map
Plate A-5 .....Fault and Fault Special Study Area Map
Plate A-6 .....Debris Flow Special Study Area Map
Plate A-7 .....Slope Stability Special Study Area Map

Appendix B Plate B-1 to B-43 .....Test Pit Logs
Plate B-44.....Key to Soil Symbols and Terms

Appendix C Plate C-1.....Lab Summary Report
..... Plate C-2 to C-4 .....Atterberg Limits' Results
..... Plate C-5 to C-8 .....Grain Size Distribution
..... Plate C-9 to C-21 .....1-D Swell/Collaspe Test
..... Plate C-22 to C-23 .....Compaction and CBR Test
..... Plate C-24 to C-28 .....Direct Shear Test

Appendix D Plate D-1 to D-2 .....Important Information About This Report

1.0 EXECUTIVE SUMMARY

This report presents the preliminary findings of a geotechnical investigation conducted for 128-acres of the Micron Property at approximately 500 West and State Road 92, in Lehi and Draper, of Utah County. We understand that this section of the proposed development consists of medium to low density residential development. The development will include different structures, with "low" including single family residences 1 to 2 stories in height with basements (if feasible), and "medium" consisting of townhouse and duplex structures. The development for this section will be constructed across 128 acres. We anticipate footing loads on the order of 2 to 4 kips per lineal foot and column loads of up to 20 kips. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork. The area of this section of the Micron Property contains some geologic hazards that have not been addressed in this report. All recommendations and conclusion in this report are consisted preliminary.

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed development provided that the recommendations contained in this report are incorporated into the design and construction of the project.

As a part of this investigation, subsurface soil conditions were explored by advancing 43 exploratory test pits depths ranging from 6 to 14 feet below the existing site grade. Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is overlain partially by approximately 1 to 1½ feet of topsoil covered a majority of the site. Underlying the topsoil, we encountered deposits mapped by Biek (2005) as consisting of Upper Pleistocene-aged materials deposits. Groundwater was not encountered in any of the completed test pits for the section.

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill below footings will not be required. The site may then be brought back up to design grade using properly placed and compacted structural fill. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively. Exterior shallow footings and spread footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior strip shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. Conventional strip and spread footings founded on a native granular soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **2,000 pounds per square foot (psf)**.

Additional recommendations concerning other aspects of the proposed construction may be found in the body of this report.

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGIEERING REPORT:

Do not rely on the executive summary. The executive summary omits a number of details, any one of which could be crucial. Read and refer to the report in full. Do not rely on this report if this report was prepared for a different client, different project, different purpose, different site, and/or before important events occurred at the site or adjacent to it. All recommendations in this report are confirmation dependent. A two-page document prepared by GBA explains these items with greater detail and can be found in Appendix D (Plates D-1 and D-2).

2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a preliminary geotechnical investigation conducted for 128-acres of the property termed the Micron Property located in Lehi on the border of Highland and slightly in the city of Draper at approximately 500 West and State Road 92 in Lehi and Draper, in Utah County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork.

The scope of work completed for this study included a site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal and signed authorization, dated November 18, 2020.

The recommendations contained in this report are subject to the limitations presented in the LIMITATIONS section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

Due to the size of the Micron Property project, we have divided the property into smaller sections containing similar proposed development types for the purposes of our investigation. This preliminary geotechnical investigation has been completed for Highland Emerald Single-Family Lots, which represents the eastern-most 128-acres of the proposed building portions of the development. The property is located at approximately 500 West and State Road 92, in Lehi and Draper, Utah County, Utah (see Plate A-1, *Site Vicinity Map*). Plate A-2, *Site Section Map*, shows how we have divided up the buildable portions of the Micron property. Based on information received from the Client, we understand that steep and hard to access portions of the Micron Property will not be developed, and the Draper portion of the site has not been fully investigated due to changing plans of development and ability to obtain proper permits. The subject 128-acres portion of the Micron Property will be developed with low density (single family residential lots) and medium density (small acre single family lots to townhomes) development. The resulting construction will include one- to two-story, wood-framed single-family residences founded on conventional spread and strip footings and one- to three-story townhouse structures founded on conventional spread and strip footings. If larger structures are

planned, then GeoStrata should be consulted and our recommendations should be updated if necessary. Each of these types of structures are anticipated to have basements or crawlspaces if feasible. We anticipate footing loads on the order of 2 to 4 kips per lineal foot and column loads of up to 20 kips. As stated before, if the anticipated footing loads exceed assumptions or the proposed construction is different than what we have assumed, please contact GeoStrata with the updated information and allow for further analysis. Our investigation for the development will be used to provide geotechnical design parameters for construction of buildings, parking areas, driveways, and associated landscaping and utilities.

3.0 METHOD OF STUDY

3.1 FIELD INVESTIGATION

As a part of this investigation, subsurface soil conditions were explored by advancing 23 exploratory test pits on the subject property (ME-TP-01 to ME-TP-18, ME-TP-21 to ME-TP-22, and ME-TP-24 to ME-TP-25). Twenty (20) additional test pits (ME-TP-26 to ME-TP-40 and ME-TP-49 to 51) that have been advanced on the adjacent phase of the Micron Property project have likewise been included in this report to provide supplemental data where appropriate. The test pits were excavated to depths ranging from 6 to 14 feet below the existing site grade. The approximate locations of the explorations are shown on Plate A-3, *Highland Emerald Single Family,* in Appendix A. Exploration points were placed to provide optimum coverage of the site in the areas of proposed residential development. Logs of the subsurface conditions, as encountered in the test pit explorations, were recorded at the time of excavation and advancement by a staff engineer current employed at GeoStrata and are presented on Plates B-1 to B-43 in Appendix B. A *Soil Symbols Description Key* used in the borehole and test pit logs is included as Plate B-44.

The test pits were excavated with a track mounted excavator. Both bulk and relatively undisturbed soil samples were obtained from the test pits. Relatively undisturbed soil samples were obtained from the test pit in the form of tube samples and block samples. All samples were transported to our laboratory for testing to evaluate engineering properties of the various earth materials observed. The soils were classified according to the *Unified Soil Classification System* (USCS) by the Geotechnical Engineer. Classifications for the individual soil units are shown on the attached Test Pit Logs, Plates B-1 to B-43 in Appendix B.

3.2 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Grain Size Distribution Analysis (ASTM D422)
- Atterberg Limits (ASTM D4318)
- 1-D Collapse Consolidation Test (ASTM D2435)
- California Bearing Ratio Test (ASTM D1883)
- Direct Shear Test (ASTM D3080)

The results of laboratory tests are presented on the Test Pit Logs in Appendix B (Plates B-1 to B-43), the test result plates presented in Appendix C (Plates C-2 to C-28) and in the *Summary of Laboratory Test Results* Table (Plate C-1).

3.3 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics and classification. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

At the time of our subsurface investigation in this 128-acre portion of the Micron Property, no structures existed on the site. The only site improvements consisted of dirt roadways and fences constructed across the site. A natural drainage is located on the eastern portion of the property and was dry at the time of our investigation. This drainage terminates into a residential development to the south of the subject property. The remainder of the property slopes gently to the south (towards Utah Lake) and has a maximum topographic relief of approximately 110 feet. The subject property is bound on the east by Highland Boulevard, on the south by an established residential development as well as pair of water storage tanks, and on the west and north by undeveloped hillside property.

4.2 SUBSURFACE CONDITIONS

As previously mentioned, the subsurface soil conditions were explored at the subject property by advancing 23 exploratory test pits to depths ranging from 6 to 14 feet below the existing site grade. In addition 20 additional test pits advanced on the adjacent parcel to the north and west were likewise included in this report. Subsurface soil conditions were logged using the United Soils Classification System (USCS) at the time of the investigation and are included on the Test Pit Logs in Appendix B (Plates B-1 through B-43). The soil and moisture conditions encountered during our investigation are discussed below.

4.2.1 Soils

Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is largely overlain by approximately 1 to 1½ feet of topsoil. Underlying the topsoil, we encountered deposits mapped by Biek (2005) as consisting largely of Pleistocene-aged materials deposits associated with the Bonneville Lake cycle. Descriptions of the soil units shown in the area are described below;

Qlsb - Lacustrine sand and silt (Upper Pleistocene) − Fine- to coarse-grained lacustrine sand and silt with minor gravel; typically, thick bedded and well sorted. This geologic soil unit is mapped at the locations of all the test pits completed in the section with test pits ME-TP-10 and 24 on the border of the adjacent soil unit (Qlgb). The soils were generally visually classified as a fine-grained Lean CLAY (CL) or Sandy SILT (ML), or a coarse-grained Silty SAND (SM) to Silty GRAVEL (GM) with varying amounts of silt, sand, and gravel. Some of the block samples

obtained from the test pits contain pinhole texture and could be moisture sensitive. A summary of our laboratory testing results completed to assess this hazard is presented in Section 4.2.3 of this report.

Qlgb, Lacustrine gravel and sand (Upper Pleistocene) − Moderately to well-sorted, moderately to well-rounded, clast-supported, pebble to cobble gravel and pebbly sand; thin to thick bedded. This geologic soil unit is mapped at the locations of ME-TP-10 and 24. These test pits are one the border of this unit and the adjacent soil unit (Qlsb). The soils consisted of coarse-grained soils.

The stratification lines shown on the enclosed test pit represent the approximate boundary between soil types USCS classifications of the soils (Plates B-1 to B-43). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils, care should be taken in interpolating subsurface conditions between and beyond the exploration locations.

4.2.2 Groundwater

Groundwater was not encountered in any of the 43 test pits assessed for this portion of the Micron Property. Seasonal fluctuations in precipitation, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions. The observed groundwater conditions can change seasonally depending on the time of year and will impact the proposed construction. It is recommended that lowest floor slab elevation for each structure should be maintained a minimum of 3 feet above any observed groundwater conditions.

4.2.3 Collapsible Soils

Collapse (often referred to as “hydro-collapse”) is a phenomena whereby undisturbed soils exhibit volumetric strain and consolidation upon wetting under increased loading conditions. Collapsible soils can cause differential settling of structures and roadways. Collapsible soils do not necessarily preclude development and can be mitigated by over-excavating porous, potentially collapsible soils and replacing with engineered fill and by controlling surface drainage and runoff. For some structures that are particularly sensitive to differential settlement, or in areas where collapsible soils are identified at great depth, a deep foundation system should be considered.

Soils that have a potential to collapse under increased loading and moisture conditions are typically characterized by a pinhole structure and relatively low unit weights. In general,

potentially collapsible soils are observed in fine-grained soils that include clay and silt, although collapsible soils may include sandy soils. Test results of the collapse test show negligible to low collapse potential. A table of the collapse test results, depth, and test pit number are provided below. This information is also contained in Plates C-9 to C-21.

Test Pit Number	Sample Depth	Collapse Potential
ME-TP-02	3.0	0.37
ME-TP-03	5.0	-0.01
ME-TP-04	4.0	0.07
ME-TP-07	4.0	0.09
ME-TP-08	3.0	0.01
ME-TP-08	12.	0.01
ME-TP-10	5.0	0.43
ME-TP-12	4.0	0.22
ME-TP-13	11.0	0.12
ME-TP-15	3.0	0.03
ME-TP-18	3.0	0.07
ME-TP-22	3.5	0.01

Based on these lab test results, it is anticipated that no structural fill may be required under the structures that extend into fine-grained soils with a pinhole texture. The collapsible soils encountered will not present a significant risk to the foundation elements within the proposed development if the recommendations presented in this report are incorporated into the design and construction of the structures.

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5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

The site is located at an elevation between 4,985 and 5,095 feet above mean sea level within the northern portion of Utah Valley. The Utah Valley is a deep, sediment-filled structural basin of Cenozoic age flanked by the Wasatch Range to the east and the Lake Mountains, East Tintic Mountains, and the West Hills to the West (Hintze, 1980). The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah.

The near-surface geology of Utah Valley is dominated by sediments deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983). As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valleys are predominately deep-water deposits of clay, silt and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Surface soil units as mapped by Biek (2005) consisted of Upper Pleistocene-aged materials deposits. Based on the soil and groundwater conditions encountered during our investigation, it is considered likely that each of our test pits were terminated in the mapped deposit.

5.2 FAULTING AND SEISMICITY

The site lies within the north-south trending belt of seismicity known as the Intermountain Seismic Belt (ISB) (Hecker, 1993). The ISB extends from northwestern Montana through southwestern Utah. An active fault is defined as a fault that has had activity within the Holocene (<11ka). Based on information provided by Geologic Hazards on the Utah Geologic Hazard Portal, faults associated with the Wasatch Fault Zone (WFZ) are present to the north and west of the subject property (see Plate A-5, *Fault and Fault Special Study Area Map*). As a result, the northeastern portion of the subject 128-acre development are identified as being located within a surficial faulting special study area. As discussed previously, this portion of the property are located within Draper City limits, and as such no geotechnical recommendations were completed within this area. It is possible that a series of fault investigations including trenches across the proposed building pads may be required prior to development within the area identified on Plate A-5. However, when considering the most recently published geologic maps containing the subject site, no active faults are mapped through or immediately adjacent to the site (Black and others, 2003, and Constenius, et al., 2011). The 128-acre portion of Micron Property is located

approximately 3 miles east of the northern strand of the Provo section of the Wasatch Fault Zone. The Provo section is one of the longest sections of the Wasatch Fault Zone (Hecker, 1993) and is estimated to be approximately 43 miles long with a reported rupture length of 37 miles and a maximum potential to produce earthquakes up to magnitude (M_s) 7.5 to 7.7 (Black and others, 2003). The 128-acre portion of Micron Property is also located approximately 6.5 miles north to northeast of the mapped Utah Lake Faults and Folds (ULFF). The ULFF consists of several northeast to northwest trending faults and folds located beneath Utah Lake and are reported to have been active in the past 15 ka (Black et al, 2003). However, since the ULFF is at the bottom of a large lake these faults are poorly understood – as such, the USGS does not include ULFF in their fault database for seismic hazard analysis. Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region. Each of the faults listed above show evidence of Holocene-aged movement and is therefore considered active.

Spectral responses for the Risk-Targeted Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a one percent probability of structure collapse in 50 years for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field exploration to 14 feet and our geologic review of the site, it is our opinion that this location is best described as a Site Class C. The spectral accelerations are calculated based on the site's approximate latitude and longitude of 40.448° and -111.821˚ respectively and the Seismic Design Maps web-based application at https://seismicmaps.org/.

Description	Value
Site Class	C
S_s - MCE_R ground motion (period – 0.2s)	1.38
S_1 - MCE_R ground motion (period – 1.0s)	0.511
F_a - Site amplification factor at 1.0s	1.200
F_v - Site amplification factor at 1.0s	1.500
PGA - MCE_G peak ground acceleration	0.625
PGA_M – Site modified peak ground acceleration	0.750

It should be noted that our investigation did not include a site-specific ground motion hazard analysis and a Site Class C has been used to determine the seismic parameters presented above based on maximum depths explored of 12 feet and our geologic review. The seismic parameters

presented herein may be used for design of the proposed structures provided that structural design allows for the ground motion hazard analysis exception in ASCE 7-16 Section 11.4.8. Alternatively, GeoStrata may be contacted to complete a ground motion hazard analysis in accordance with ASCE 7-16 Chapter 21.

5.3 LIQUEFACTION

Certain areas within the intermountain region possess a potential for liquefaction during seismic events. Liquefaction is a phenomenon whereby loose, saturated, granular soil deposits lose a significant portion of their shear strength due to excess pore water pressure buildup resulting from dynamic loading, such as that caused by an earthquake. Among other effects, liquefaction can result in densification of such deposits causing settlements of overlying layers after an earthquake as excess pore water pressures are dissipated. The primary factors affecting liquefaction potential of a soil deposit are: (1) level and duration of seismic ground motions; (2) soil type and consistency; and (3) depth to groundwater.

Based on our review of the *Liquefaction-Special Study Areas, Wastach Front and nearby Area, Utah*, this portion of the Micron Property is located in an area currently designated as having a "Very Low to Low" liquefaction potential. "Low" liquefaction potential indicates that there is between a 5% to 10% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. "Very Low" liquefaction potential indicates that there is less than 5% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction.

The near-surface soils observed within our test pits consisted of unsaturated soils. Groundwater was not observed in the test pits. A liquefaction analysis was beyond the scope of the project; however, if the owner or client wishes to have greater understanding of the liquefaction potential of the soils at greater depths, a liquefaction analysis should be completed at the site.

5.4 OTHER GEOLOGIC HAZARDS

According to the latest update to the Geologic Hazards on Utah Geologic Hazard Portal, a portion of the 128-acre portion of Micron Property is located in special study areas for debris flows and slope stability. Maps of these hazard are included on Plates A-6 to A-7. Recommendations for development in these mapped hazards special study areas should be addressed in a geologic hazard report or reports. The results of these reports and findings may limit the development or require mitigation prior to the development of the site.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed construction provided that the recommendations contained in this report are complied with. This conclusion should be understood as preliminary, and the results of geologic hazard analysis could designate some portions of this development as hazardous or unbuildable.

The recommendations presented in this report are based on our understanding of the proposed project, the subsurface conditions observed during field exploration, the results of laboratory testing, and our engineering analyses. If subsurface conditions other than those described herein are encountered in conjunction with construction, and/or if design and layout changes are initiated, we must be informed so that the recommendations herein can be reviewed and revised as changes or conditions may require.

Based on our observations, the subject site is overlain by ½-foot of topsoil soils. Increased depth of topsoil may be encountered in the drainages or within the alluvial fan deposits. These soils would need to be over-excavated in all areas underlying footing elements, pavements and any other areas which would underlie structural elements of the new development.

Although not encountered in our test pits completed during our investigation, the possibility exists that undocumented fill soils may be present on the subject property as a result of previous grading activities or nearby roadway construction. The owner and contractor should be aware that the possibility exists that sections of undocumented fill may be present at the subject property.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, concrete slabs-on-grade, and pavement sections. Site grading is also recommended to provide proper drainage and moisture control on the subject property and to aid in preventing differential movement in foundation soils as a result of variations in moisture conditions.

6.2.1 General Site Preparation and Grading

In areas beneath footings and concrete flat work, the highly organic topsoil (top 3 to 6 inches) should be stripped and stockpiled for use in landscape areas or disposal. Debris, vegetation, undocumented fill, roots, loose, soft or other deleterious materials should also be removed. If over-excavation is required, the excavation should extend a minimum of one foot laterally for every foot of depth of over-excavation. The exposed subgrade should be proof-rolled with heavy equipment to identify loose, soft or otherwise disturbed soils. If soft soils are observed, they should be stabilized in accordance with our recommendations in the Soft Soil Stabilization Section (Section 6.2.3); if loose soils are observed, they should be compacted as recommended in Section 6.2.4.

A GeoStrata representative should observe the site preparation and grading operations to assess that the recommendations presented in this report are complied with.

6.2.2 Excavation Stability

Based on Occupational Safety and Health Administration (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied, however, the presence of fill soils, loose soils, or wet soils may require that the walls be flattened to maintain safe working conditions. When the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Based on our soil observations, laboratory testing, and OSHA guidelines, native soils at the site classify as Type C soils. Deeper excavations, if required, should be constructed with side slopes no steeper than one and one- and one-half horizontal to one vertical (1.5H:1V). Wet conditions should be anticipated side slopes will likely need to be further flattened to maintain slope stability. Alternatively, shoring or trench boxes may be used to improve safe work conditions in trenches. The contractor is ultimately responsible for trench and site safety. Pertinent OSHA requirements should be met to provide a safe work environment. If site specific conditions arise that require engineering analysis in accordance with OSHA regulations, GeoStrata can respond and provide recommendations as needed.

We recommend that a GeoStrata representative be on-site during all excavations to assess the exposed soils in trench walls.

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6.2.3 Soft Soil Stabilization

Based on observations during our field investigation, if near-surface soils become saturated soft or pumping soils may be exposed in excavations at the site. Once exposed, all subgrade surfaces beneath proposed structure, pavements, and flat work concrete should be proof rolled with heavy wheeled-construction equipment. If soft or pumping soils are encountered, these soils should be stabilized prior to construction of footings. Stabilization of the subgrade soils can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 2-inch diameter, but less than 6 inches. A locally available pit-run gravel may be suitable but should contain a high percentage of particles larger than 2 inches and have less than 7 percent fines (material passing the No. 200 sieve). A pit-run gravel may not be as effective as a coarse, angular material in stabilizing the soft soils and may require more material and greater effort. The stabilization material should be worked (pushed) into the soft subgrade soils until a firm relatively unyielding surface is established. Once a firm, relatively unyielding surface is achieved, the area may be brought to final design grade using structural fill.

In large areas of soft subgrade soils, stabilization of the subgrade may not be practical using the method outlined above. In these areas it may be more economical to place a woven geotextile fabric against the soft soils covered by 18 inches of coarse, sub-rounded to rounded material over the woven geotextile. An inexpensive non-woven geotextile “filter” fabric should also be placed over the top of the coarse, sub-rounded to rounded fill prior to placing structural fill or pavement section soils to reduce infiltration of fines from above. The woven geotextile should be Mirafi RS280i or prior approved equivalent. The filter fabric should consist of a Mirafi 140N, or equivalent as approved by the Geotechnical Engineer.

We recommend that a GeoStrata representative be on-site to assess the exposed excavation soils and be allowed to review the excavation plans when they are prepared in order to evaluate their compatibility with these recommendations.

6.2.4 Structural Fill and Compaction

All fill placed for the support of structures, flatwork or pavements, should consist of structural fill. Onsite soils may be utilized for structural fill, although the contractor should be aware that due to the over-sized aggregates or the clayey composition of the native soils, it may be difficult if not impossible to maintain active and accurate proctor values for moisture conditioning and compaction. As such, the native soil onsite may need to be screened and well mixed prior to the

use of the native soils as structural fill for development. Onsite undocumented fill soils may likewise be used as structural fill. The contractor should have confidence that the anticipated method of compaction will be suitable for the type of structural fill used. All structural fills should be free of vegetation, debris or frozen material, and should contain no inert materials larger than **4 inches** in nominal diameter.

If an imported material will be used as structural fill, it should consist a relatively well-graded granular soil with a maximum of 50 percent passing the No. 4 sieve and a maximum fines content (minus No.200 mesh sieve) of 25 percent. Fill material potion finer than the No. 40 sieve should have a liquid limit (LL) less than 35 and a plasticity index (PI) less than 25. The table below provides our recommended gradation and Atterberg limits requirements for structural fill.

Grain Size	Percent Passing
4-inch	100
2-inch	85 to 100
No. 4	15 to 50
No. 200	< 25
Liquid Limit (LL)	<35
Plasticity Index (PI)	<25

All structural fill soils should be approved by the Geotechnical Engineer prior to placement. Earth materials not meeting the aforementioned criteria may be suitable for use as structural fill; however, such material should be evaluated on a case-by-case basis and should be approved by the Geotechnical Engineer prior to use. These requirements for structural fill meet the needs of the site; however, regulating entities including special service districts, cities etc. may require the use of a predefined structural fill for use in their utility corridors/trenches. The contractor should be aware of the special requirements of structural fill by these regulating entities.

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GeoStrata observed that some of the native soils meet the requirements for A-1-a according to AASTHO soil classification system. A table of the laboratory tests and soil classification are provided below;

Sample Location and Depth	USCS Classification	AASTHO Classification	Can be used as onsite structural fill
ME-TP-01	SM	A-1-b	Yes
ME-TP-03	GM	A-1-b	Yes
ME-TP-03	CL	A-6	No
ME-TP-04	CL	A-6	No
ME-TP-05	SM	A-2-4	Yes
ME-TP-06	SM	A-2-4	Yes
ME-TP-09	ML	A-4	No
ME-TP-10	CL	A-6	No
ME-TP-11	SP-SM	A-1-b	Yes
ME-TP-13	CL	A-6	No
ME-TP-17	CL	A-6	No
ME-TP-24	SM	A-1-a	Yes
ME-TP-25	SC	A-4	Yes
ME-TP-26	SC-SM	A-2-4	Yes
ME-TP-27	SM	A-1-b	Yes
ME-TP-29	SP-SM	A-1-b	Yes
ME-TP-33	GM	A-1-a	Yes
ME-TP-34	SM	A-4	No
ME-TP-36	GM	A-4	No
ME-TP-55	GM	A-1-b	Yes

All structural fill should be placed in maximum 10-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 12-inch loose lifts if compacted by riding rollers or heavy duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by the geotechnical engineer. Structural fill should be compacted to at least 95% of the maximum dry density, as determined by ASTM D-1557, for fill 5 feet or less in thickness. The required compaction should be increased to 98% for fills greater than 5 feet in thickness. The moisture content should be at or slightly above the optimum moisture content at

the time of placement and compaction. Also, prior to placing any fill, the excavations should be observed by the geotechnical engineer to observe that any unsuitable materials or loose soils have been removed. In addition, proper grading should precede placement of fill, as described in the **General Site Preparation and Grading** subsection of this report (Section 6.2.1).

We understand that grading fills and structural fill will be placed up to 12 feet in total height. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills less than 6 feet in depth. Fill soils placed for subgrade below exterior flat work and pavements, should be within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills more than 6 feet and less than 12 feet in depth. If fills greater than 12 feet in thickness are anticipated, GeoStrata should be contacted for recommendations concerning the placement of such sections. All utility trenches backfilled below the proposed structure, pavements, and flatwork concrete, should be backfilled with onsite soils or structural fill that is within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557. All other trenches, in landscape areas, should be backfilled and compacted to at least 90% of the maximum dry density (ASTM D-1557).

The gradation, placement, moisture, and compaction recommendations contained in this section meet our minimum requirements but may not meet the requirements of other governing agencies such as city, county, or state entities. If their requirements exceed our recommendations, their specifications should override those presented in this report.

6.3 FOUNDATIONS

The foundations for the proposed structures may consist of conventional strip and/or spread footings. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively, and exterior shallow footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement.

6.3.1 Installation and Bearing Material

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-

collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill depth below footings will not be required. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.4 of this report.

Foundation elements should not be founded on undocumented fill, and if these soils are encountered, they should be over-excavated until suitable, native soils are exposed. Foundation elements should not be founded on combination soils (i.e. partially on clay and partially on gravels), and if these soils condition are encountered, they should be over-excavated a minimum of 1-foot. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.4 of this report.

All organic material, soft areas, frozen material or other inappropriate material shall be removed from the footing zone to a depth determined by the Geotechnical Engineer and be replaced with structural fill where over excavation is required.

6.3.2 Bearing Pressure

Conventional strip and spread footings founded on a native soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **2,000 pounds per square foot (psf).** The recommended net allowable bearing pressure refers to the total dead load and can be increased by ⅓ to include the sum of all loads including wind and seismic.

6.3.3 Settlement

Settlements of properly designed and constructed conventional footings, founded as described above, are anticipated to be less than 1 inch. Differential settlements should be on the order of half the total settlement over 30 feet.

6.3.4 Frost Depth

All exterior footings and spread footings are to be constructed at least 30 inches below the ground surface for frost protection and confinement. This includes walk-out areas and may

require fill to be placed around buildings. Interior strip footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. If foundations are constructed through the winter months, all soils on which footings will bear shall be protected from freezing.

6.3.5 Construction Observation

A geotechnical engineer shall periodically monitor excavations prior to installation of footings. Inspection of soil before placement of structural fill or concrete is required to detect any field conditions not encountered in the investigation which would alter the recommendations of this report. All structural fill material shall be tested under the direction of a geotechnical engineer for material and compaction requirements.

6.3.6 Foundation Drainage

As stated in Section 4.2.2 of this report, groundwater was not encountered in the test pits. IRC Section R405 *Foundation Drainage* recommends the construction of a foundation drain around any walls or portions thereof that retain earth and enclose spaces and floors below grade. Where a site is located in well-drained gravel or sand/gravel mixture soils, a dedicated drainage system is not required.

We recommend that the IRC Section R405 Foundation Drainage recommends be complied with. The foundation drain should consist of a 4-inch perforated pipe placed at or below the footing elevation. The pipe should be covered with at least 12 inches of free draining gravel (containing less than 5 percent passing the No. 4 sieve) and be graded to a free gravity outfall or to a pumped sump. A separator fabric, such as Mirafi 140N, should separate the free draining gravel and native soil (i.e. the separator fabric should be placed between the gravel and the native soils at the bottom of the gravel, the side of the gravel where the gravel does not lie against the concrete footing or foundation and at the top of the gravel). We recommend that the gravel extend up the foundation wall to within 2 feet of the final ground surface. As an alternative, the gravel extending up the foundation wall may be replaced with a prefabricated drain panel, such as Ecodrain-E. We recommend that the foundation drain construction be observed and documented in a subsequent observation letter.

As an added precaution, the following moisture protection mitigation recommendation should be implemented to help reduce the risk from potential settlement from occurring. These items are summarized as follows:

- Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented.
- The ground surface within 10 feet of the entire perimeter of the building should slope a minimum of five percent away from the structure. Alternatively, a slope of 5% is acceptable if the water is conveyed to a concrete ditch that will convey the water to a point of discharge that is at least 10 feet from the structures.
- Roof runoff devices (rain gutters) should be installed to direct all runoff a minimum of 10 feet away from the structure and preferably day-lighted to the curb where it can be transferred to the storm drain system. Rain gutters discharging roof runoff adjacent to or within the near vicinity of the structure may result in excessive differential settlement.
- We recommend irrigation around foundations be minimized by selective landscaping and that irrigation valves be constructed at least 5 feet away from foundations.
- Jetting (injecting water beneath the surface) to compact backfill against foundation soils may result in excessive settlement beneath the building and is not allowed.
- Backfill against foundations walls should be placed and compacted in accordance with the Section 6.2.4.
- Any additional precautions which may become evident during construction.

6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION

Concrete slabs-on-grade should be constructed over at least 4 inches of compacted gravel. Disturbed native soils should be compacted to at least 95% of the maximum dry density as determined by ASTM D-1557 (modified proctor) prior to placement of gravel. The gravel should consist of road base or clean drain rock with a ¾-inch maximum particle size and no more than 12 percent fines passing the No. 200 mesh sieve. The gravel layer should be compacted to at least 95 percent of the maximum dry density of modified proctor or until tight and relatively unyielding if the material is non-proctorable. The maximum load on the floor slab should not exceed 100 psf; greater loads would require additional subgrade preparation and additional structural fill. All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with welded wire, re-bar, or fiber mesh.

6.5 EARTH PRESSURE AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the

footing and the supporting subgrade. In determining the frictional resistance, a coefficient of friction of 0.41 should be used for native soils against concrete or 0.43 for structural fill against concrete.

Ultimate lateral earth pressures from native soil backfill acting against retaining walls and buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in the following table:

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active[1]	0.29	34
At-rest[2]	0.48	58
Passive[1]	11.62	1394
Seismic Active[3]	0.33	40
Seismic Passive[4]	-8.93	-1072

[1]Based on Coulomb's equation

[2]Based on Jaky

[3]Based on Lew et al. (2010)

[4]Based on Mononobe-Okabe Equation

These coefficients and densities assume level, granular backfill with no buildup of hydrostatic pressures. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. If sloping backfill is present, we recommend the geotechnical engineer be consulted to provide more accurate lateral pressure parameters once the design geometry is established.

Walls and structures allowed to rotate slightly should use the active condition. If the element is constrained against rotation, the at-rest condition should be used. These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

For seismic analyses, the *active* and *passive* earth pressure coefficient provided in the table is based on Lew et al (2010) and Mononobe-Okabe respectively and only accounts for the dynamic horizontal thrust produced by ground motion. Hence, the resulting dynamic thrust pressure should be added to the static pressure to determine the total pressure on the wall. The pressure distribution of the dynamic horizontal thrust may be closely approximated as an inverted triangle

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with stress decreasing with depth and the resultant acting at a distance approximately 0.6 times the loaded height of the structure, measured upward from the bottom of the structure.

The coefficients shown assume a vertical wall face. Hydrostatic and surcharge loadings, if any, should be added. Over-compaction behind walls should be avoided. Resisting passive earth pressure from soils subject to frost or heave, or otherwise above prescribed minimum depths of embedment, should usually be neglected in design.

6.6 PAVEMENT SECTION

For pavement design, the following CBR laboratory test result was obtained:

Test Pit	Depth (ft)	Soil Type	CBR (%)
ME- TP-04	1.0	CL	4.3
ME-TP-10	1.0	CL	3.9

The test results indicate that CBR value of 4.0 would an acceptable approximation of the site CBR value. No traffic information was available at the time this report was prepared; therefore, GeoStrata has assumed traffic counts for the local and private roads and parking areas. We assumed that vehicle traffic along the local and private roadways will consist of approximately 1,500 passenger car trips per day, 2 small trucks per day, and 2 large trucks per day with a 20-year design life. Based on these assumptions, our analysis uses 51,000 ESAL's for for a 20-year design life of the pavement. We assumed that vehicle traffic along the collector and arterial roads will consist of approximately 1,275,000 ESAL's for a 20-year design life (approximately 25 times greater than private roads).

Based on these assumptions, our analysis uses 51,000 and 1,275,000 ESAL's for the traffic over the life of the pavement. Asphalt has been assumed to be a high stability plant mix or Superpave mix with a minimum CBR of 70. The untreated base course material (road base or UTBC) composed of crushed stone with a minimum CBR of 30. The table below presents equivalent recommended pavement sections based on the above assumptions. The City of Lehi minimum pavement section may govern the pavement design.

Local and Private Roadways Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	3	3	3
Untreated Base Course	6	8	6
Granular Borrow/ Engineered Fill	9	6	15

Collector and Arterial Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)		
	Pavement 1	Pavement 2	City Minimum
Asphaltic Concrete	5	6.5	6.5
Untreated Base Course	8	9	6
Granular Borrow/ Engineered Fill	17	9	15

The pavement section thicknesses above assume that there is no mixing over time between the road base and the softer native layers below. In order to prevent mixing or fines migration, and thereby prolong the life of the pavement section, we recommend that the owner give consideration to placing a non-woven filter fabric between the native soils and the road base. We recommend that a Propex Geotex® NW-401, NW-601, or a GeoStrata-approved equivalent be used.

If traffic conditions vary significantly from our stated assumptions, GeoStrata should be contacted so we can modify our pavement design parameters accordingly. Specifically, if the traffic counts are significantly higher or lower, we should be contacted to review the pavement sections as necessary. The pavement sections thicknesses above assumes that the majority of construction traffic including cement trucks, cranes, loaded haulers, etc. has ceased. If a significant volume of construction traffic occurs after the pavement section has been constructed, the owner should anticipate maintenance or a decrease in the design life of the pavement area.

In our experience, in areas with heavy truck loads where trucks frequently turn around, backup, or load and unload, such as areas around dumpsters, pavements experience more distress. To prolong the life of the pavement in these areas, consideration should be given to using a Portland

cement concrete (rigid) pavement in these areas. The table below presents our recommended rigid pavement section.

Rigid Pavement Section

Pavement Materials	Recommended Minimum Thickness (in)
	Rigid Pavement 1
Concrete	5
Untreated Base Course	6

Concrete should consist of a low slump, low water cement ratio mix with a minimum 28-day compressive strength of 4,000 psi. Base course should be compacted to at least 95% of the maximum dry density as determined by the ASTM D-1557.

The pavement sections discussed above meet our minimum recommendations for pavement design. It should be noted that more stringent pavement section requirements may be enforced by Lehi City, Draper City, Utah County or other governing agency.

7.0 CLOSURE

7.1 LIMITATIONS

The recommendations contained in this report are based on our limited field exploration, laboratory testing, and understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist between and beyond the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, GeoStrata should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, GeoStrata should be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No other warranty, expressed or implied, is made.

It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

7.2 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and observations will be made during construction. GeoStrata staff should be on site to verify compliance with these recommendations. These tests and observations should include, but not necessarily be limited to, the following:

- Observations and testing during site preparation, earthwork and structural fill placement.
- Observation of foundation soils to assess their suitability for footing placement.
- Observation of soft/loose soils over-excavation.
- Observation of temporary excavations and shoring.
- Consultation as may be required during construction.
- Quality control and observation of concrete placement.

We also recommend that project plans and specifications be reviewed by GeoStrata to verify compatibility with our conclusions and recommendations. Additional information concerning the scope and cost of these services can be obtained from our office.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact us at your convenience at (801) 501-0583.

7.3 ACKNOWLEDGEMENTS

This project was made possible through the help of Dan Mitchell and Scott Bishop with D.R. Horton, they scheduled meetings with the landowners and worked on permits for land disturbance and scheduled a second trackhoe to dig the east side of the property test pits at the site. Dale Judd with JSI Ventures, LLC, the operator with the excavation company that completed the test pits on the west side of the property. Bryce Jackson, E.I.T., Nate Flores, Ashley Peay, and James Moore with GeoStrata all logged test pits and collected samples at the site. Jerry Olson and Jack Berry with Micron Technology, Inc met multiple times to discuss utility location. There are others with GeoStrata, D.R. Horton, and Micron Technology Inc. that made this project happen. Thank you.

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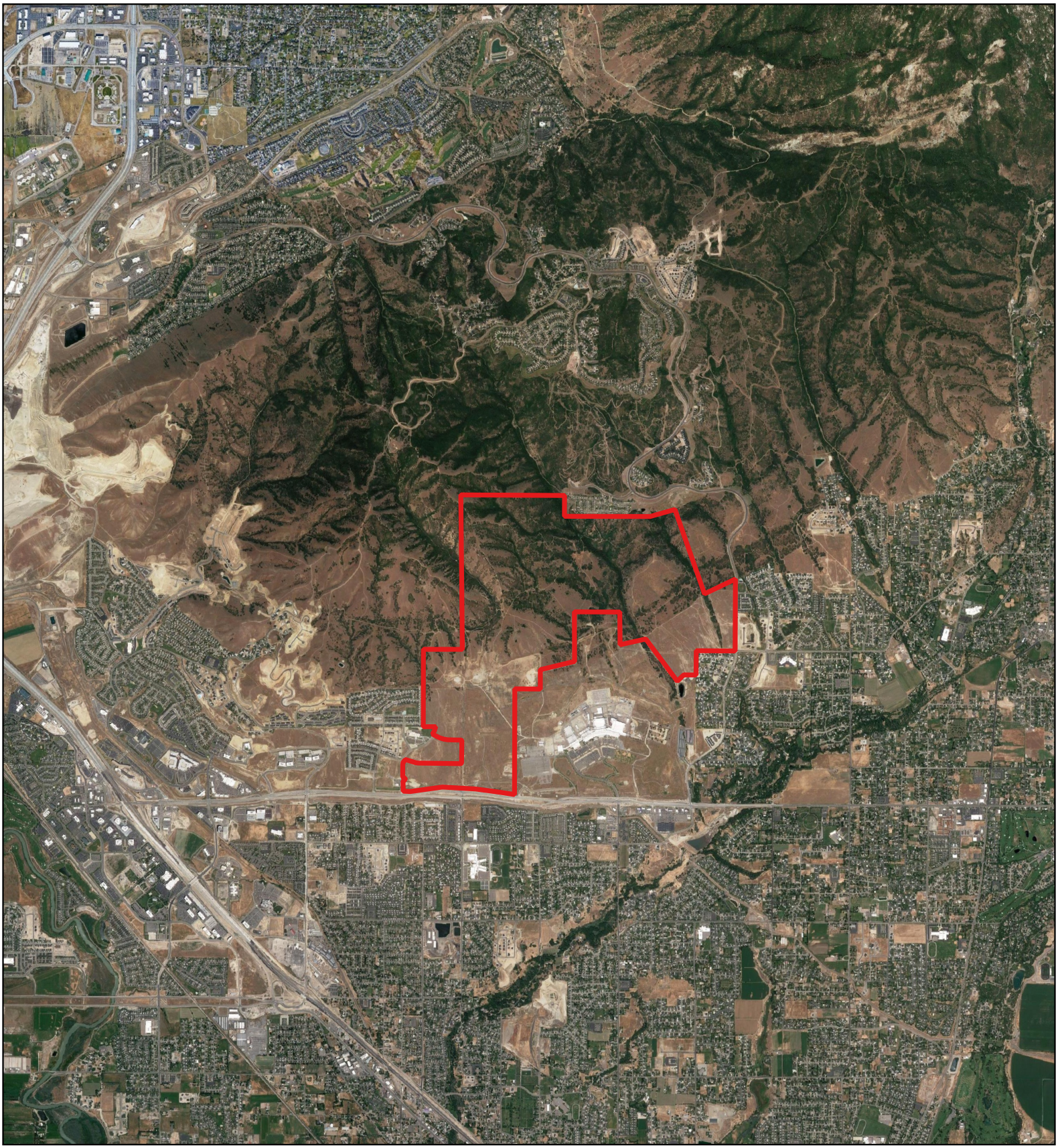
APPENDIX A



Legend

Bondaries

400 0 400 800 1200 1600 ft

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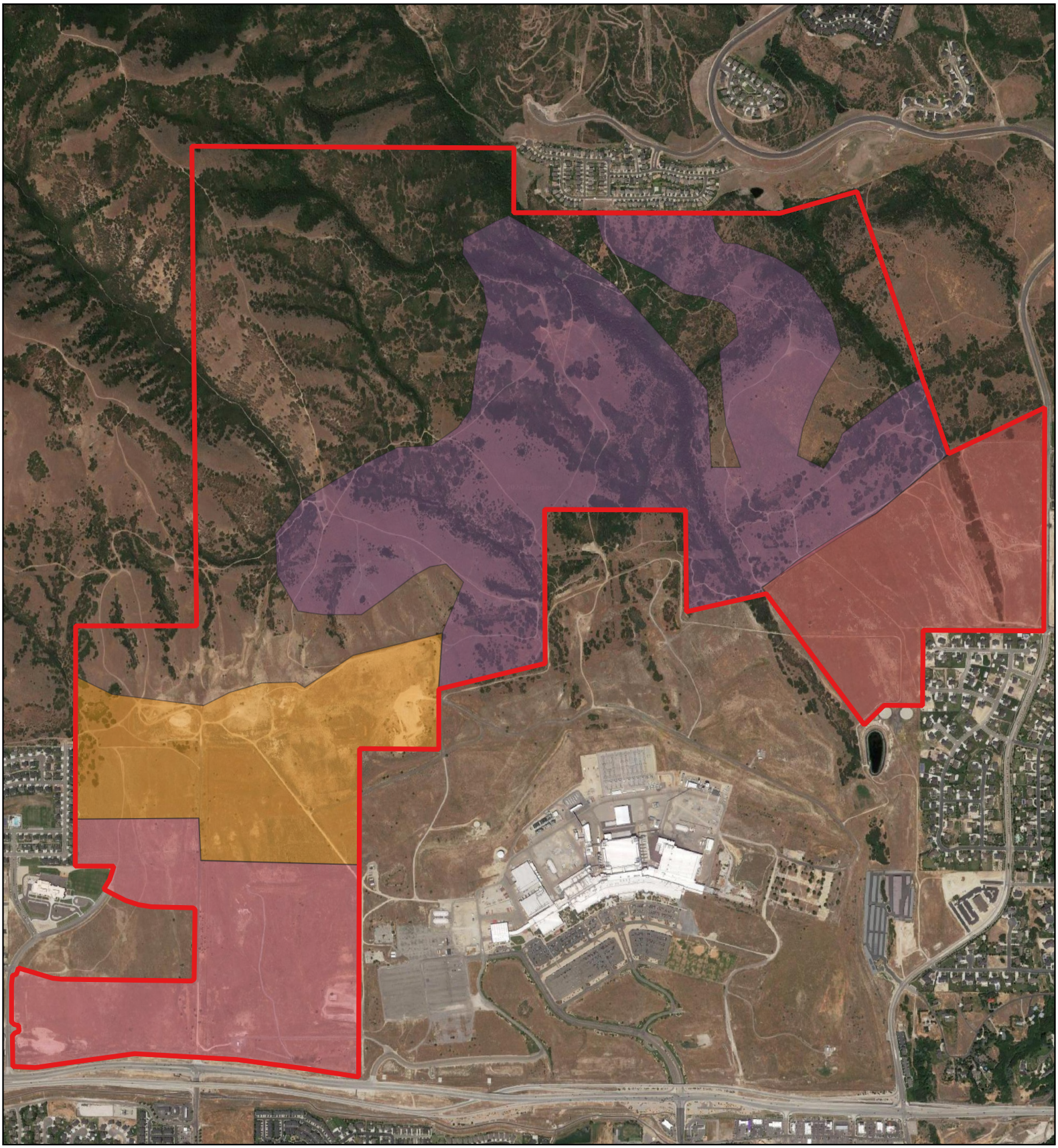
Mircon Property
Lehi/Draper, Utah
Project Number

Site Vicinity Map

Plate A-1

706



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Legend

- Mircon Property Boundaries
- High Density Single Family, Commerial, and Apartments
- Lehi Emerald Single Family and Single Family
- Highland Emerald Single Family
- Mountain Single Family

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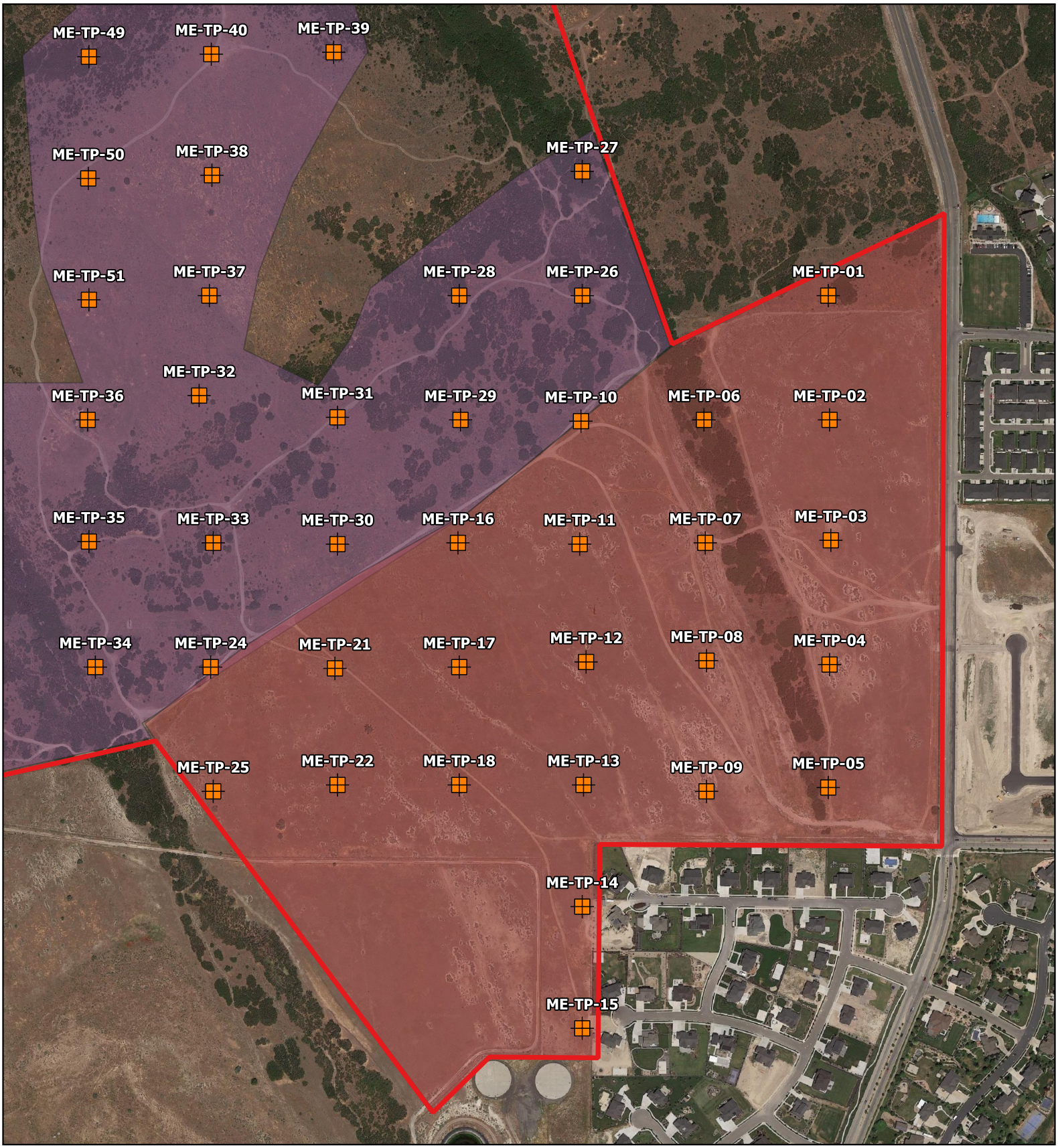
Lehi/Draper, Utah
Project Number

Site Section Map

Plate A-2

707



Legend

- Mircon Property Boundaries
- Approximate Test Pit Location
- High Density Single Family, Commercial, and Apartments
- Lehi Emerald Single Family and Single Family
- Highland Emerald Single Family
- Mountain Single Family

400 0 400 800 1200 1600 ft

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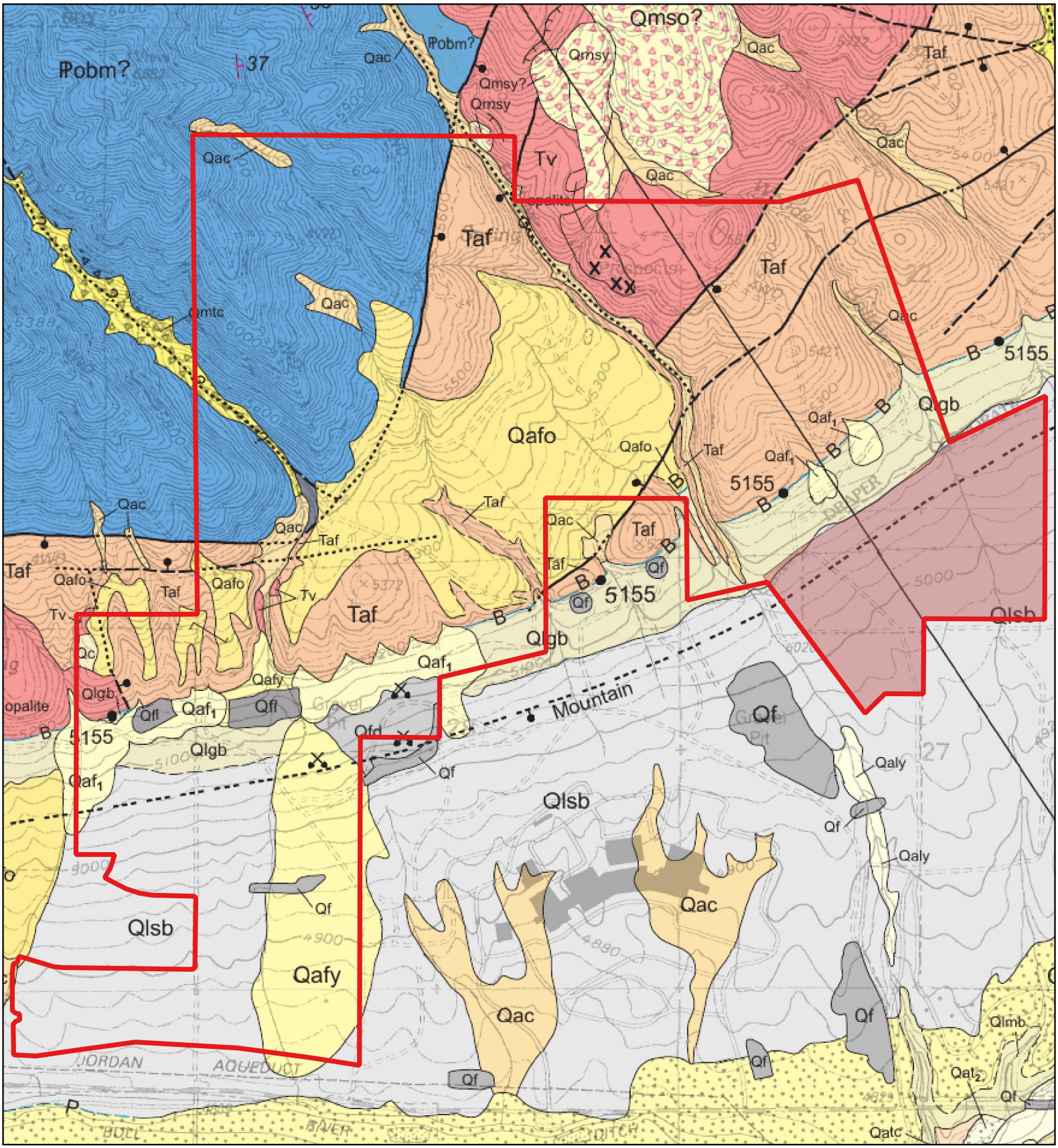
Lehi/Draper, Utah

Highland Emerald Single Family Section Exploration Map

Plate A-5

708



Legend

- Mircon Property Boundaries
- Highland Emerald Single Family

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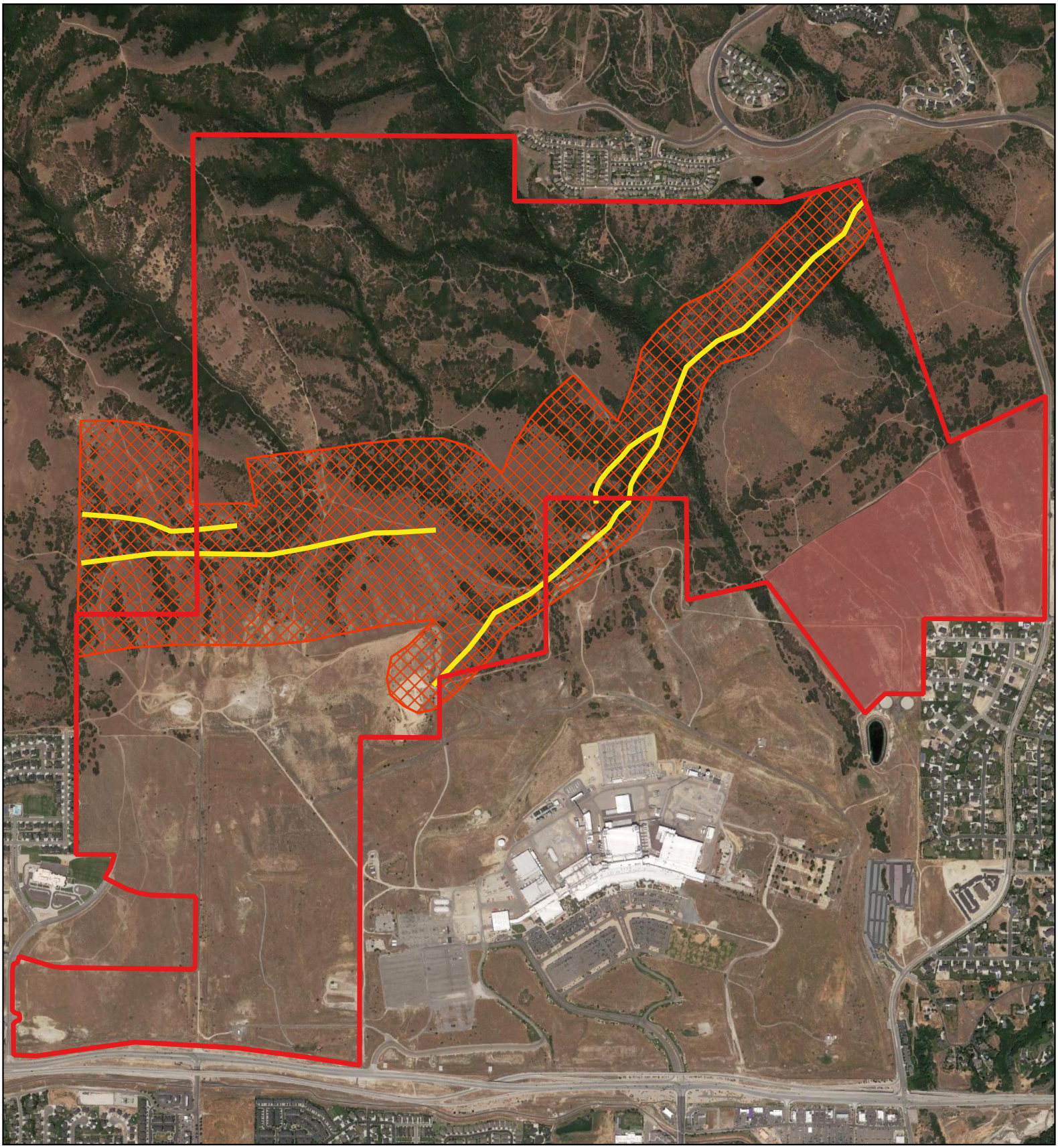
Lehi/Draper, Utah
Project Number 589-100

Site Geology Map

Plate A-4

709



Legend

- Mircon Property Boundaries
- Highland Emerald Single Family
- Approximate Faults
- Fault Special Study Area

400 0 400 800 1200 1600 ft

1:17000

N

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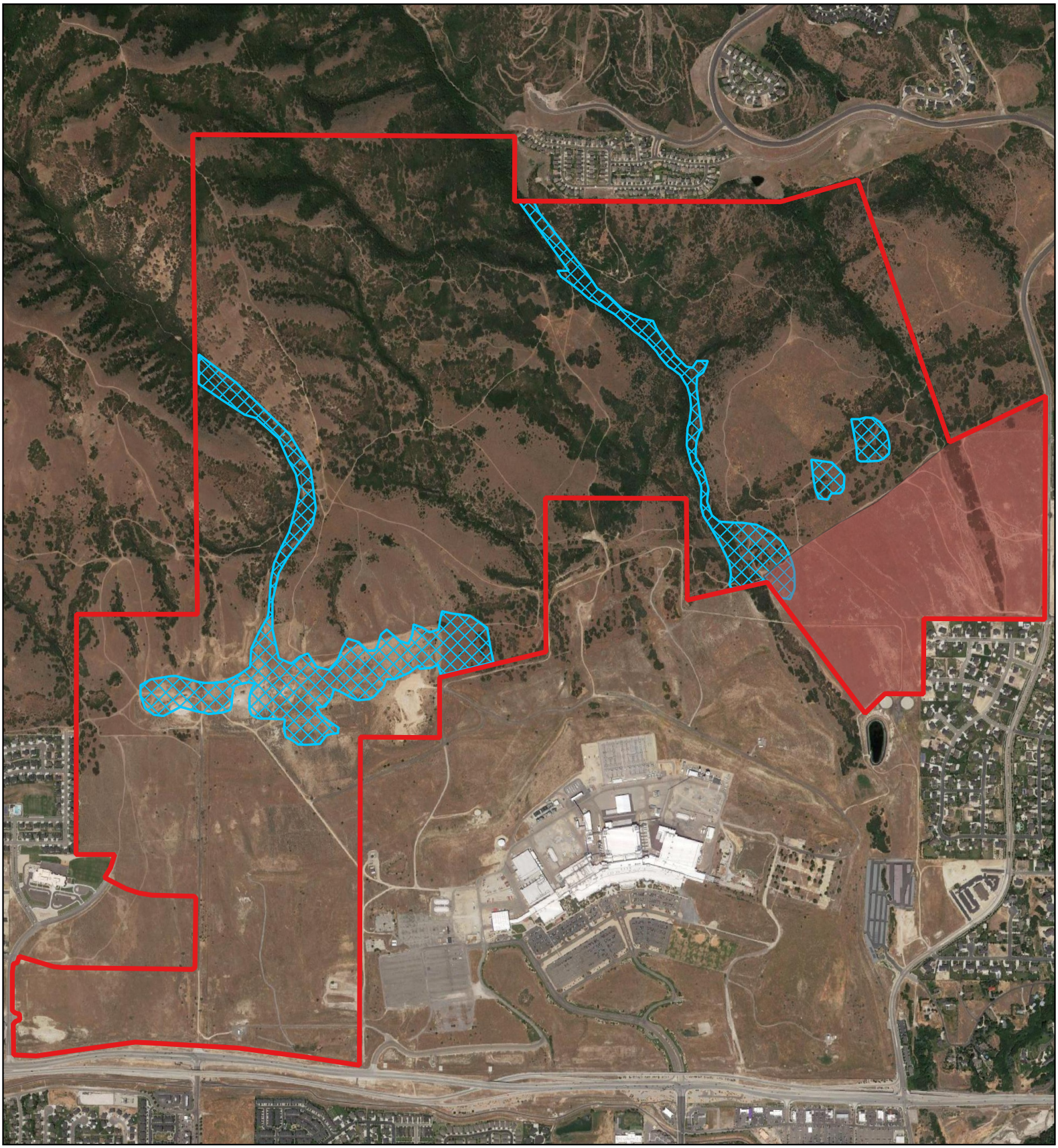
Lehi/Draper, Utah
Project Number 589-100

Faults and Fault Special Study Area Map

Plate A-5



Legend

- Mircon Property Boundaries
- Highland Emerald Single Family
- Debris Flow Study Areas

400 0 400 800 1200 1600 ft

1:17000

N

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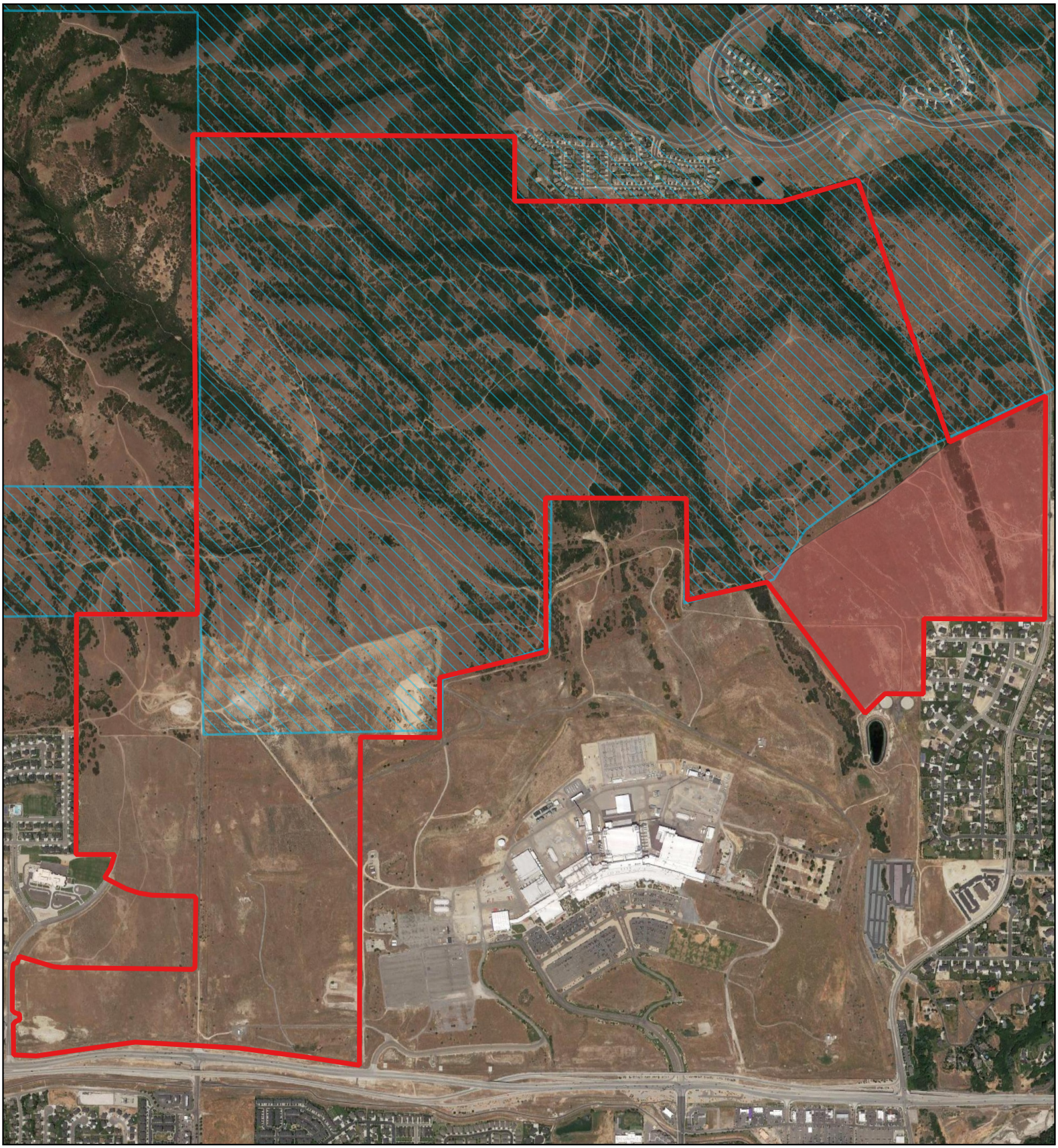
Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Debris Flow Special Study Area Map

Plate A-6



Legend

- Mircon Property Boundaries
- Slope Stability Special Study Area
- Highland Emerald Single Family

400 0 400 800 1200 1600 ft

1:17000

N

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Mircon Property
Lehi/Draper, Utah
Project Number 589-100

Slope Special Study Area Map

Plate A-7

712

APPENDIX B

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-01
Sheet 1 of 1

LOCATION
NORTHING 4,478,261.00 EASTING 4,478,261.00 ELEVATION 5,075-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SP	Poorly Graded SAND with gravel - medium dense, moist, dark brown, subrounded gravel up to 3 inches in diameter					
1					SM	Silty SAND with gravel - dense, moist, brown, occasional organics		6.4	22.6		
	5										
2											
3					SM	Silty SAND - dense, moist, light brown					
	10										
4						Bottom of Test Pit @ 12 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 1

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-02
Sheet 1 of 1

LOCATION
NORTHING 4,478,112.00 EASTING 4,478,112.00 ELEVATION 5,043-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					CL	Sandy Lean CLAY - stiff, moist, dense					
1							85.5	20.8	63.7	34	13
	5										
					SC-SM	Silty Clayey SAND - dense, moist, tan					
2											
3	10										
4						Bottom of Test Pit @ 13 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 2

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-03
Sheet 1 of 1

LOCATION
NORTHING 4,477,976.00 EASTING 4,477,976.00 ELEVATION 5,025-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GM	Silty GRAVEL with sand - dense, moist, brown					
1								7.3	17.4		
					SM	Silty SAND - dense, moist, light brown					
5					CL	Lean CLAY - stiff, moist, brown, sand was observed to be fine-grained	96.4	19.7	92.4	30	9
2											
3	10							20.2	93.7		
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 3

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-04
Sheet 1 of 1

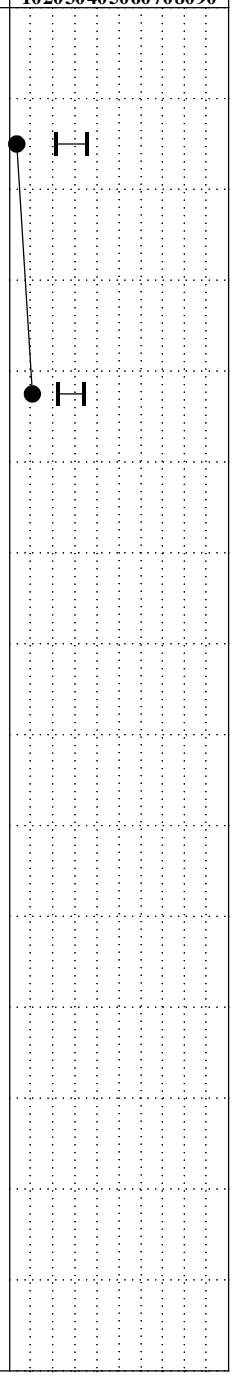
LOCATION
NORTHING 4,477,827.00 EASTING 4,477,827.00 ELEVATION 5,002-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY - stiff, moist, tan, minor cementation		3.2	97.1	35	14
1							98.4	10.4	92.9	34	12
	5										
2					SM	Silty SAND - dense, moist, light brown					
	10										
3						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90



SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 4

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-05
Sheet 1 of 1

LOCATION
NORTHING 4,477,674.00 EASTING 4,477,674.00 ELEVATION 4,978-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - dense, moist, light brown						
1								6.5	33.5			●
	5					- subrounded cobbles up to 7 inches in diameter						
2												
					SM	Silty SAND with gravel - dense, moist, light brown						
3	10											
						Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 5

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-06
Sheet 1 of 1

LOCATION
NORTHING 4,478,114.00 EASTING 4,478,114.00 ELEVATION 5,055-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SP	Poorly Graded SAND with silt and gravel - medium dense, moist, dark brown					
					SM	Silty SAND with gravel - dense, moist, light brown		6.6	26.4		
1											
					SP	Poorly Graded SAND - medium dense, moist, brown					
	5										
2											
					GP	Poorly Graded GRAVEL with sand - dense, moist, light brown, subrounded gravel and cobbles up to 10 inches in diameter					
3	10										
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit — Moisture Content — Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 6

DATE	
STARTED:	12/2/20
COMPLETED:	12/2/20
BACKFILLED:	12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO: **ME-TP-07**
Sheet 1 of 1

LOCATION
NORTHING 4,477,972.00 EASTING 4,477,972.00 ELEVATION 5,031-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL	Sandy Lean CLAY - stiff, moist, brown						
1							92.3	14.2	67.8	32	9	●
	5											
2												
3	10				SP	Poorly Graded SAND - medium dense, moist, light brown, sand is coarse grained						
					SM	Silty SAND - dense, moist, light brown						
4						Bottom of Test Pit @ 13 Feet						

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate B - 7

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-08
Sheet 1 of 1

LOCATION
NORTHING 4,477,831.00 EASTING 4,477,831.00 ELEVATION 5,013-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND - dense, moist, tan					
					CL	Lean CLAY - stiff, moist, brown, iron staining throughout					
1							95.1	17.6	90.3	31	9
	5										
2											
3	10						92.9	23.3	98.8	32	11
4						Bottom of Test Pit @ 14 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 8

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-09
Sheet 1 of 1

LOCATION
NORTHING 4,477,678.00 EASTING 4,477,678.00 ELEVATION 4,986-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	SILT - stiff, moist, tan					
1					ML	SILT - stiff, moist, brown, iron staining throughout		18.1	96.4		
	5										
2											
3	10				GP	Poorly Graded GRAVEL with sand - medium dense, moist, tan, occasional cobbles throughout					
4						Bottom of Test Pit @ 13 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 9

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-10
Sheet 1 of 1

LOCATION
NORTHING 4,478,112.00 EASTING 4,478,112.00 ELEVATION 5,074-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY with sand - stiff, moist, light brown		4.4	84.0	38	16
1											
	5						73.9	13.7	78.7	NP	NP
2					GP	Poorly Graded GRAVEL with sand - medium dense, moist, tan, occasional cobbles throughout					
3	10					Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 10

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-11
Sheet 1 of 1

LOCATION
NORTHING 4,477,967.00 EASTING 4,477,967.00 ELEVATION 5,046-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND - dense, moist, light brown					
1					SC-SM	Silty Clayey SAND - medium dense, moist, light brown					
	5										
2					SP	Poorly Graded SAND with silt - medium dense, moist, tan		5.2	5.9		
3	10										
4						Bottom of Test Pit @ 13 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 11

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-12
Sheet 1 of 1

LOCATION
NORTHING 4,477,829.00 EASTING 4,477,829.00 ELEVATION 5,024-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND - dense, moist, light brown					
1					CL-ML	Silty CLAY - medium stiff, moist, brown, iron staining throughout	97.0	23.6	93.5	32	11
	5										
2											
3	10										
4						Bottom of Test Pit @ 13 Feet					

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 12

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-13
Sheet 1 of 1

LOCATION
NORTHING 4,477,669.00 EASTING 4,477,669.00 ELEVATION 5,001-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SM	Silty SAND - dense, moist, light brown					
1											
	5				CL	Lean CLAY - medium stiff, moist, brown, iron staining throughout		12.3	88.2		
2											
3	10						100.1	16.7	85.9	34	15
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 13

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J. M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-14
Sheet 1 of 1

LOCATION
NORTHING 4,477,536.00 EASTING 4,477,536.00 ELEVATION 4,987-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	SILT - stiff, moist, tan, iron staining throughout		14.8	97.2		
1											
					CL	Lean CLAY - stiff, moist, brown, iron staining throughout					
	5										
2						- orange mottling					
3	10					Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 14

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J. M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-15
Sheet 1 of 1

LOCATION
NORTHING 4,477,389.00 EASTING 4,477,389.00 ELEVATION 4,975-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy Lean CLAY - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff to hard, moist, light brown with white mottling						
1							96.8	15.5	97.2	32	11	
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 15

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-16
Sheet 1 of 1

LOCATION
NORTHING 4,477,972.00 EASTING 4,477,972.00 ELEVATION 5,073-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, tan with orange mottling						
1					SM	Silty SAND - medium dense, moist, light brown						
	5											
2												
					SM	Silty SAND with cobbles and boulders - medium dense, moist, light brown, occasional boulders up to 2 feet in diameter						
3	10											
						Bottom of Test Pit @ 11 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 16

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-17
Sheet 1 of 1

LOCATION
NORTHING 4,477,823.00 EASTING 4,477,823.00 ELEVATION 5,040-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit – Moisture Content – Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy Lean CLAY - dark brown, moist						
					CL	Sandy Lean CLAY - hard, moist, dark brown, occasional pea sized gravels throughout		12.8	69.9	41	19	
1					CL-ML	Silty CLAY - hard, moist, tan						
	5				CL-ML	Silty CLAY - hard, moist, grey with orange mottling, sand is fine-grained						
2												
3	10					Bottom of Test Pit @ 11 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 17

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-18
Sheet 1 of 1

LOCATION
NORTHING 4,477,682.00 EASTING 4,477,682.00 ELEVATION 5,016-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Sandy Lean CLAY - dark brown, moist, organics throughout					
					CL	Lean CLAY - stiff, moist, light brown					
1							88.6	20.5	91.7	42	15
	5										
					CL	Lean CLAY with sand - stiff, moist, brown with orange mottling, sand was observed to be fine-grained, clay was finley laminated					
2											
3	10					Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 18

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-21
Sheet 1 of 1

LOCATION
NORTHING 4,477,818.00 EASTING 4,477,818.00 ELEVATION 5,060-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, tan, minor cementation						
1												
	5											
2												
					SP	Poorly Graded SAND with gravel - medium dense, moist, dark brown, subrounded gravel up to 3 inches in diameter						
3	10					- subangular to subrounded cobbles and boulders up to 13 inches in diameter						
4						Bottom of Test Pit @ 13 Feet						

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 19

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-22
Sheet 1 of 1

LOCATION
NORTHING 4,477,680.00 EASTING 4,477,680.00 ELEVATION 5,033-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout					
					CL	Lean CLAY - medium stiff, moist, light brown, pinhole structures from 2 to 4 feet					
1							92.8	22.1	90.7	40	16
	5					- orange mottling					
2											
3	10					Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 20

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-24
Sheet 1 of 1

LOCATION
NORTHING 4,477,820.00 EASTING 4,477,820.00 ELEVATION 5,085-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout					
					SM	Silty SAND - dense, moist, light brown			13.3		
1					SP	Poorly Graded SAND - medium dense, moist, reddish brown					
	5										
2						- rounded cobbles and boulders up to 12 inches in diameter					
3	10										
4						Bottom of Test Pit @ 13 Feet					

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-25
Sheet 1 of 1

LOCATION
NORTHING 4,477,672.00 EASTING 4,477,672.00 ELEVATION 5,047-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					SC	Clayey SAND - dense, moist, light brown						
1								5.1	37.3	27	9	● H
	5											
					SP	Poorly Graded SAND - medium dense, moist, reddish brown						
2						- rounded cobbles and boulders up to 24 inches in diameter						
						- trackhoe refusal						
3	10					Bottom of Test Pit @ 9 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 22

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-26
Sheet 1 of 1

LOCATION
NORTHING 4,478,261.00 EASTING 4,478,261.00 ELEVATION 5,115-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SC-SM	Silty Clayey SAND - dense, moist, tan, large root casts throughout		3.3	27.9	25	7	● H
1					SP	Poorly Graded SAND - medium dense, moist, dark brown						
	5				ML	SILT - hard, moist, tan, medium cementation with pinhole structures throughout						
2					SP	Poorly Graded SAND - medium dense, moist, brown, coarse grained sand						
3	10				SM	Silty SAND - medium dense, moist, tan						
						Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 23

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-27
Sheet 1 of 1

LOCATION
NORTHING 4,478,414.00 EASTING 4,478,414.00 ELEVATION 5,127-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GM	Silty GRAVEL with sand - medium dense, moist, tan, occasional cobbles throughout					
1											
	5								22.7	NP	NP
					ML	SILT with gravel - hard, moist, brown with yellow and reddish brown mottling,					
2											
						Bottom of Test Pit @ 8 Feet					
3	10										
4											

Moisture Content and Atterberg Limits

Plastic Limit — Moisture Content — Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 24

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-28
Sheet 1 of 1

LOCATION
NORTHING 4,478,254.00 EASTING 4,478,254.00 ELEVATION 5,138-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					SM	Silty SAND with gravel - dense, moist, light brown, subrounded cobbles up to 7 inches in diameter						
1												
	5											
2												
3	10					Bottom of Test Pit @ 10 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 25

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-29
Sheet 1 of 1

LOCATION
NORTHING 4,478,116.00 EASTING 4,478,116.00 ELEVATION 5,111-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					SP	Poorly Graded SAND with silt - medium dense, moist, reddish brown, pinhole structures throughout					
					SP-SM	Poorly Graded SAND with silt - medium dense, moist, brown			11.9		
1											
	5										
					GP	Poorly Graded GRAVEL with silt and clay - very dense, brown with yellow and orange mottling, moist					
2											
3	10					Bottom of Test Pit @ 10.5 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit — Moisture Content — Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 26

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-30
Sheet 1 of 1

LOCATION
NORTHING 4,477,967.00 EASTING 4,477,967.00 ELEVATION 5,098-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND - dense, moist, light brown						
1												
	5						82.9	23.0	44.7	NP	NP	●
2					ML	SILT - stiff, moist, tan						
					SP	Poorly Graded SAND with gravel - medium dense, moist, reddish brown, subrounded gravel and cobbles up to 8 inches in diameter						
3	10					Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 27

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-31
Sheet 1 of 1

LOCATION
NORTHING 4,478,121.00 EASTING 4,478,121.00 ELEVATION 5,135-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, tan, minor cementation						
					GM	Silty GRAVEL - dense, moist, reddish brown, subangular cobbles and boulders up to 30 inches in diameter						
1												
	5											
2												
3	10					Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 28

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-32
Sheet 1 of 1

LOCATION
NORTHING 4,478,145.00 EASTING 4,478,145.00 ELEVATION 5,222-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SP	Poorly Graded SAND with gravel - medium dense, moist, dark brown, subrounded gravel up to 6 inches in diameter						
1												
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 29

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-33
Sheet 1 of 1

LOCATION
NORTHING 4,477,969.00 EASTING 4,477,969.00 ELEVATION 5,128-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GM	Silty GRAVEL - dense, moist, brown with gray mottling, occasional cobbles throughout					
						- grey					
1											
	5								17.4		
2						- light brown					
3	10					Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 30

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-34
Sheet 1 of 1

LOCATION
NORTHING 4,477,820.00 EASTING 4,477,820.00 ELEVATION 5,102-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					SM	Silty SAND - dense, moist, light brown						
1												
	5							7.5	43.1			●
2												
					SP	Poorly Graded SAND - medium dense, moist, light brown						
3	10					Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 31

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-35
Sheet 1 of 1

LOCATION
NORTHING 4,477,969.00 EASTING 4,477,969.00 ELEVATION 5,147-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					SC	Clayey SAND - dense, moist, brown						
1					GM	Silty GRAVEL- very dense, moist, grayish brown, cobbles and boulders up to 24 inches in diameter						
	5											
2												
						- trackhoe refusal						
						Bottom of Test Pit @ 8 Feet						
3	10											
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 32

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-36
Sheet 1 of 1

LOCATION
NORTHING 4,478,117.00 EASTING 4,478,117.00 ELEVATION 5,235-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GM	Silty GRAVEL - dense, moist, brown, gravels average 2 to 4 inches in diameter		13.9	47.8		
1					SP	Poorly Graded SAND with gravel - medium dense, moist, brown, subrounded gravels and cobbles up to 6 inches in diameter					
	5										
2											
3	10				GP	Poorly Graded GRAVEL with sand - medium dense, moist, tan, occasional cobbles throughout					
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 33

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-37
Sheet 1 of 1

LOCATION
NORTHING 4,478,262.00 EASTING 4,478,262.00 ELEVATION 5,208-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty CLAY with gravel - dark brown, moist, organics throughout						
					GM-GC	Silty GRAVEL with clay - dense to very dense, moist, light brown						
1						- orange and brown mottling						
	5					- cobbles and boulders up to 12 inches in diameter						
2												
3	10					Bottom of Test Pit @ 8 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 34

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-38
Sheet 1 of 1

LOCATION
NORTHING 4,478,405.00 EASTING 4,478,405.00 ELEVATION 5,342-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty CLAY with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL - dense to very dense, moist, light brown, cobbles and boulders up to 12 inches in diameter						
1												
	5											
2												
						-Refusal @ 8 feet						
						Bottom of Test Pit @ 8 Feet						
3	10											
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 35

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-39
Sheet 1 of 1

LOCATION
NORTHING 4,478,551.00 EASTING 4,478,551.00 ELEVATION 5,348-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty CLAY with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL - dense to very dense, moist, light brown, cobbles and boulders up to 12 inches in diameter						
1												
	5											
2						-Refusal @ 6 feet Bottom of Test Pit @ 6 Feet						
3	10											
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 36

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-40
Sheet 1 of 1

LOCATION
NORTHING 4,478,551.00 EASTING 4,478,551.00 ELEVATION 5,416-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty CLAY with gravel - dark brown, moist, organics throughout						
					GP	Poorly Graded GRAVEL with silt and sand - dense to very dense, moist, light brown with orange mottling, cobbles up to 8 inches in diameter						
1												
	5					- boulders up to 18 inches in diameter						
2						- increased moisture						
	10											
3												
4						Bottom of Test Pit @ 12 Feet						

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 37

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-41
Sheet 1 of 1

LOCATION
NORTHING 4,478,697.00 EASTING 4,478,697.00 ELEVATION 5,382-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy Lean Clay with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - Lean CLAY - stiff, reddish brown with white mottling, moist						
1												
	5											
2												
					CL	Sandy Lean CLAY with gravel - stiff to hard, moist, light brown, gravels and cobbles up to 10 inches in diameter						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 38

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-42
Sheet 1 of 1

LOCATION
NORTHING 4,478,843.00 EASTING 4,478,843.00 ELEVATION 5,461-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy Lean Clay with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - Lean CLAY - stiff, reddish brown with white mottling, moist						
1												
	5											
2					CL	Sandy Lean CLAY with gravel - stiff to hard, moist, light brown, gravels and cobbles up to 10 inches in diameter						
						Bottom of Test Pit @ 6 Feet						
3	10											
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 39

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-48
Sheet 1 of 1

LOCATION
NORTHING 4,478,697.00 EASTING 4,478,697.00 ELEVATION 5,423-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					GC	Clayey GRAVEL - dense, moist, light brown						
1												
	5											
2												
					SP	Poorly Graded SAND - medium dense, moist, reddish brown						
3	10											
						Bottom of Test Pit @ 11 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 40

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-50
Sheet 1 of 1

LOCATION
NORTHING 4,478,401.00 EASTING 4,478,401.00 ELEVATION 5,355-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty CLAY with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL - dense to very dense, moist, light brown with orange mottling, cobbles and boulders up to 12 inches in diameter						
1												
	5					-Refusal @ 6 feet						
2												
3	10					Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 41

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-51
Sheet 1 of 1

LOCATION
NORTHING 4,478,257.00 EASTING 4,478,257.00 ELEVATION 5,318-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					GM	Silty GRAVEL - dense, moist, reddish brown, cobbles and boulders up to 12 inches in diameter						
1												
	5											
2												
					SP	Poorly Graded SAND - medium dense, moist, reddish brown						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 42

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-55
Sheet 1 of 1

LOCATION
NORTHING 4,478,121.00 EASTING 4,478,121.00 ELEVATION 5,191-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					GM	Silty GRAVEL with sand - dense to very dense, moist, brown, subrounded gravels and cobbles up to 6 inches in diameter		17.5	20.4		
1											
	5										
2											
3	10					Bottom of Test Pit @ 11 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 43

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

Unified Soil Classification Per ASTM D 2488

Primary Divisions			Group Symbol	Group Name
COARSE-GRAINED SOILS more than 50% retained on the No. 200 Sieve	GRAVEL More than half of the coarse fraction is larger than the #4 sieve	Clean Gravel	GW	Well Graded GRAVEL
			GP	Poorly Graded GRAVEL
		Gravel with Duel Classifications	GW-GM	Well Graded GRAVEL with silt
			GP-GM	Poorly Graded GRAVEL with silt
			GW-GC	Well Graded GRAVEL with clay
			GP-GC	Poorly Graded GRAVEL with clay
		Gravel with Fines	GM	Silty GRAVEL
			GC	Clayey GRAVEL
			GC-GM	Silty, Clayey GRAVEL
	SAND More than half of the coarse fraction is smaller than the #4 sieve	Clean Sand	SW	Well Graded SAND
			SP	Poorly Graded SAND
		Sand with Dual Classifications	SW-SM	Well Graded SAND with silt
			SP-SM	Poorly Graded SAND with silt
			SW-SC	Well Graded SAND with clay
			SP-SC	Well Graded SAND with clay
		Sand with Fines	SM	Silty SAND
			SC	Clayey SAND
			SC-SM	Silty, Clayey SAND
FINE-GRAINED SOILS 50% or more passes No. 200 Sieve	SILTY & CLAY less than 50%	Inorganic	CL	Lean CLAY
			ML	SILT
			CL-ML	Silty CLAY
		Organic	OL	Organic CLAY or Organic SILT
	SILTY & CLAY LL 50% or more	Inorganic	CH	Fat CLAY
			MH	Elastic SILT
		Organic	OH	Organic CLAY or Organic SILT
	Highly Organic Soils		PT	Peat

Exploration Log Key

Sample Symbols	Ground Water Symbol
Auger Cuttings	Measured Groundwater Elevation
California Sampler	Estimated Groundwater Elevation
Rock Core	
Bag or Block Sample	
Modified California Sampler	
No Recovery	
Split Spoon	
Shelby Tube	
Dames and More Sampler	

Relative Density	SPT N (blows/ft)
Very Loose	0 to 4
Loose	5 to 10
Med. Dense	11 to 30
Dense	31 to 50
Very Dense	>51

Consistency	SPT N (blows/ft)
Very Soft	0 to 1
Soft	2 to 4
Med. Stiff	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	31 to 60
Very Hard	>61

Modifiers	
Description	Percentage
Trace	less than 5
Some	5 to 12
With	more than 12

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Soil Symbols and Description Key

D.R. Horton
Micron Property
Lehi/Draper, Utah
Project Number: 589-100

Plate B-44

APPENDIX C

Test Pit No.	Sample Depth (feet)	USCS Soil Classification	Natural Moisture Content (%)	Natural Dry Density (pcf)	Optimum Moisture Content (%)	Maximum Dry Density (pcf)	Gradation			Atterberg		Collapse (%)	CBR (%)
							Gravel (%)	Sand (%)	Fines (%)	LL	PI		
ME-TP-01	3	SM	6.4				37.3	40.1	22.6				
ME-TP-02	3	CL	20.8	85.5					63.7	34	13	0.37	
ME-TP-03	3.5	GM	7.3				52.2	30.4	17.4				
ME-TP-03	5	CL	19.7	96.4					92.4	30	9		
ME-TP-03	11	CL	20.2				0.0	6.3	93.7				
ME-TP-04	1	CL	3.2		18.5	107	0.1	2.8	97.1	35	14		4.3
ME-TP-04	4	CL	10.4	98.4					92.9	34	12	0.07	
ME-TP-05	3	SM	6.5				25.2	41.3	33.5				
ME-TP-06	2	SM	6.6				30.3	43.3	26.4				
ME-TP-07	4	CL	14.2	92.3					67.8	32	9	0.09	
ME-TP-08	3	CL	17.6	95.1					90.3	31	9	0.01	
ME-TP-08	12	CL	23.3	92.9					98.8	32	11	0.01	
ME-TP-09	4	ML	18.1				0.0	3.6	96.4				
ME-TP-10	1	CL	4.4		21.8	100	0.1	15.9	84.0	38	16		3.9
ME-TP-10	5	ML	13.7	73.9					78.7	NP	NP	0.43	
ME-TP-11	7	SP-SM	5.2				3.4	90.7	5.9				
ME-TP-12	4	CL	23.6	97					93.5	32	11	0.22	
ME-TP-13	5	CL	12.3				1.2	10.6	88.2				
ME-TP-13	11	CL	16.7	100.1					85.9	34	15	0.12	
ME-TP-14	3		14.8						97.2				
ME-TP-15	3	CL	15.5	96.8					97.2	32	11	0.03	
ME-TP-17	2	CL	12.8				5.6	24.5	69.9	41	19		
ME-TP-18	3	CL	20.5	88.6					91.7	42	15	0.07	
ME-TP-22	3.5	CL	22.1	92.8					90.7	40	16	0.01	
ME-TP-24	3	SM					12.7	74.0	13.3				
ME-TP-25	3	SC	5.1				2.7	60.0	37.3	27	9		
ME-TP-26	3	SC-SM	3.3				2.3	69.8	27.9	25	7		
ME-TP-27	5	GM					42.0	35.3	22.7	NP	NP		
ME-TP-29	3	SP-SM					6.2	81.9	11.9				
ME-TP-30	5	SM	23	82.9					44.7	NP	NP	0.04	
ME-TP-33	5	GM					52.2	30.4	17.4				
ME-TP-34	5	SM	7.5				1.7	55.2	43.1				
ME-TP-36	1	GM	13.9				42.8	9.4	47.8				
ME-TP-55	3	GM	17.5				39.8	39.8	20.4				

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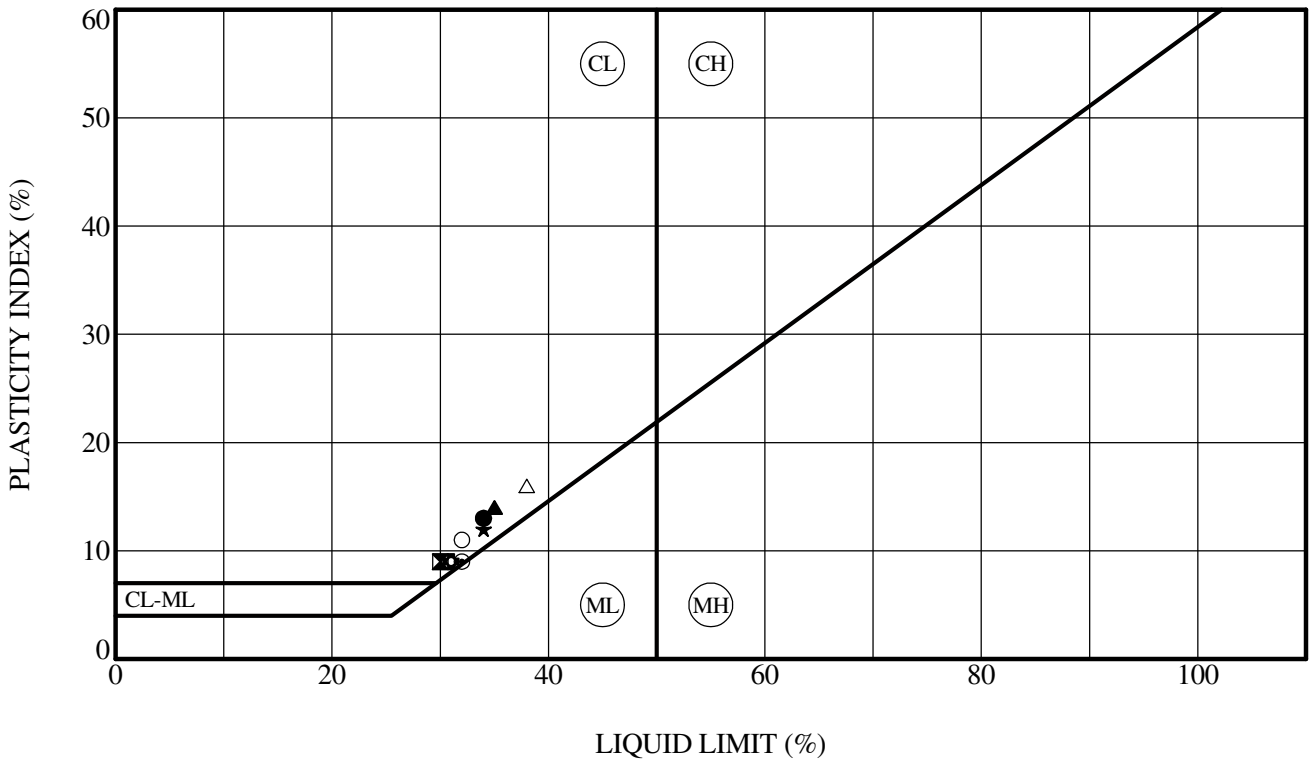
Lab Summary Report

D.R. Horton
Micron Property – Highland Emerald Single Family
Lehi/Draper, Utah
Project Number: 589-100

Plate C



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**ME-TP-02**	**3.0**	**34**	**21**	**13**	**63.7**	**Sandy Lean CLAY**
⊠	**ME-TP-03**	**5.0**	**30**	**21**	**9**	**92.4**	**Lean CLAY**
▲	**ME-TP-04**	**1.0**	**35**	**21**	**14**	**97.1**	**Lean CLAY**
★	**ME-TP-04**	**4.0**	**34**	**22**	**12**	**92.9**	**Lean CLAY**
⊙	**ME-TP-07**	**4.0**	**32**	**23**	**9**	**67.8**	**Sandy Lean CLAY**
✿	**ME-TP-08**	**3.0**	**31**	**22**	**9**	**90.3**	**Lean CLAY**
○	**ME-TP-08**	**12.0**	**32**	**21**	**11**	**98.8**	**Lean CLAY**
△	**ME-TP-10**	**1.0**	**38**	**22**	**16**	**84.0**	**Lean CLAY with sand**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

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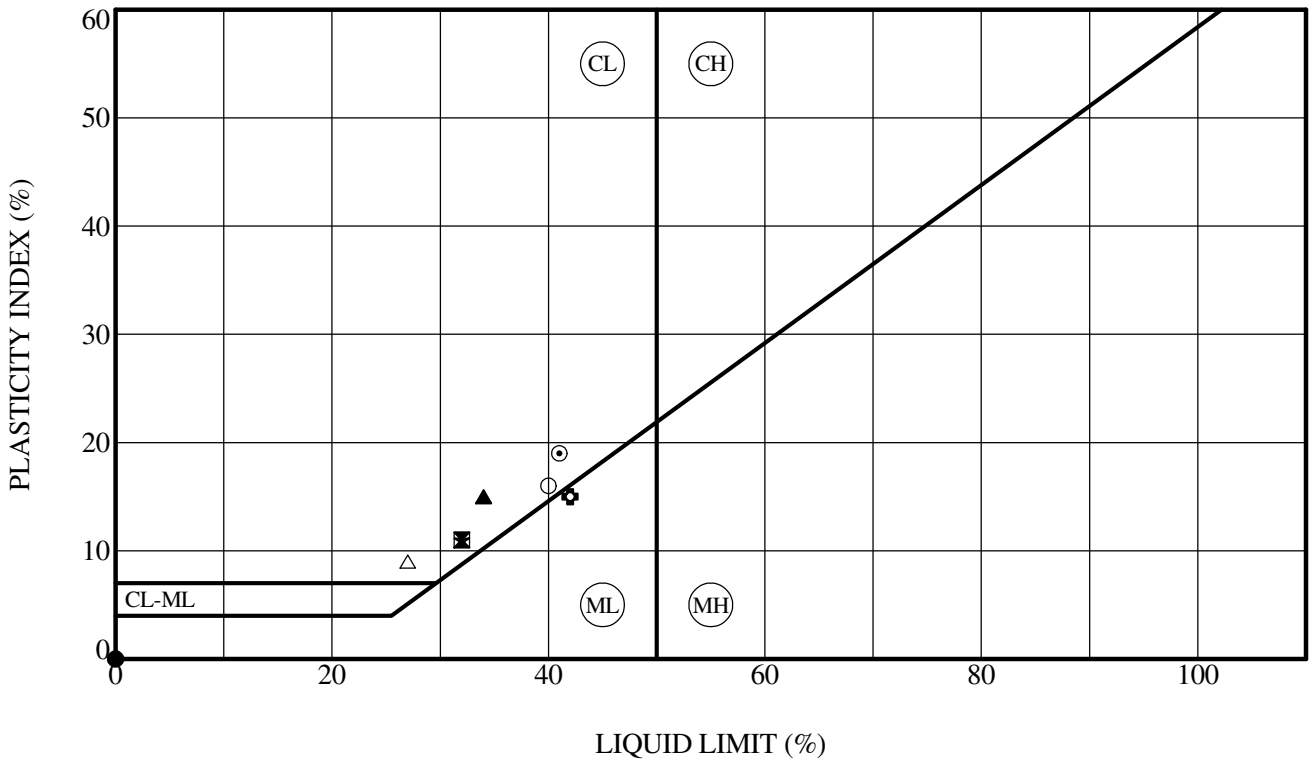
D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 2

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**ME-TP-10**	**5.0**	**NP**	**NP**	**NP**	**78.7**	**Sandy SILT**
⊠	**ME-TP-12**	**4.0**	**32**	**21**	**11**	**93.5**	**Lean CLAY**
▲	**ME-TP-13**	**11.0**	**34**	**19**	**15**	**85.9**	**Lean CLAY**
★	**ME-TP-15**	**3.0**	**32**	**21**	**11**	**97.2**	**Lean CLAY**
⊙	**ME-TP-17**	**2.0**	**41**	**22**	**19**	**69.9**	**Sandy Lean CLAY**
✿	**ME-TP-18**	**3.0**	**42**	**27**	**15**	**91.7**	**Lean CLAY**
○	**ME-TP-22**	**3.5**	**40**	**24**	**16**	**90.7**	**Lean CLAY**
△	**ME-TP-25**	**3.0**	**27**	**18**	**9**	**37.3**	**Clayey SAND**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

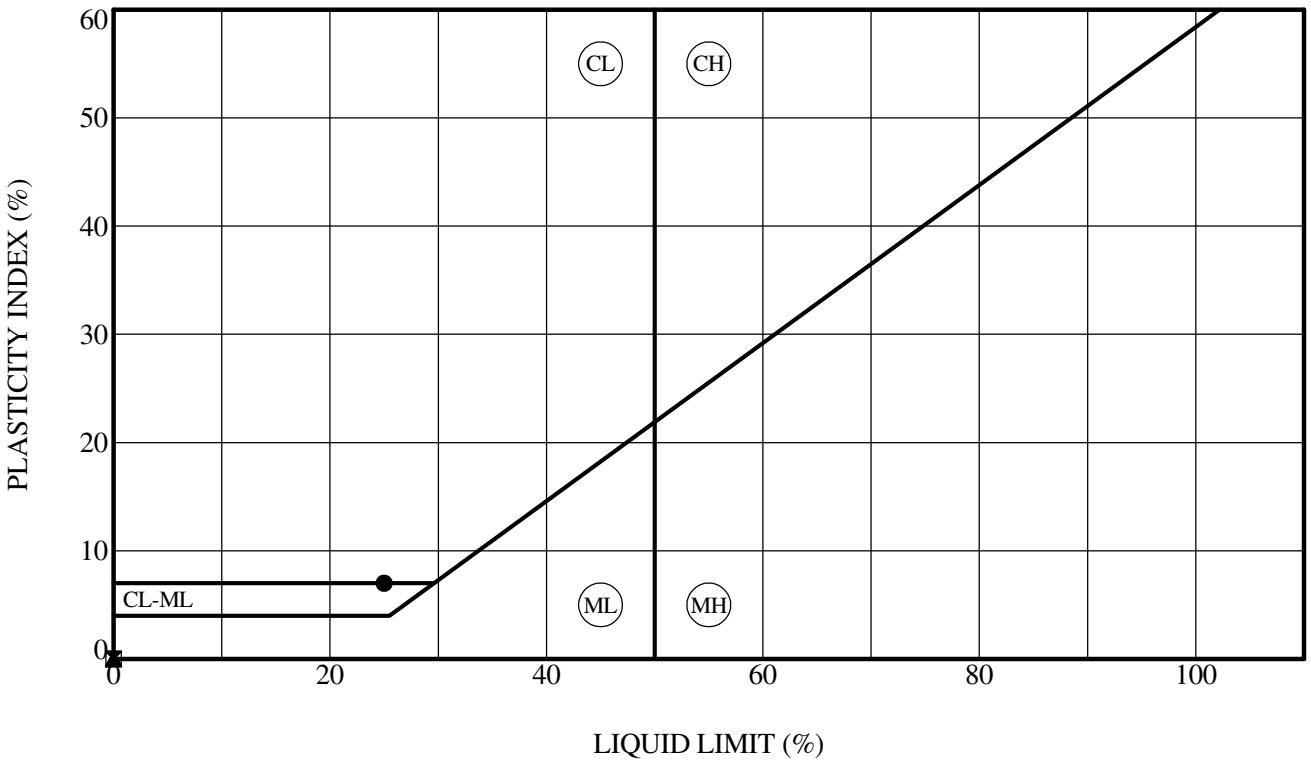
GeoStrata

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 3

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
● **ME-TP-26**	**3.0**	**25**	**18**	**7**	**27.9**	**Silty Clayey SAND**
⊠ **ME-TP-27**	**5.0**	**NP**	**NP**	**NP**	**22.7**	**Silty GRAVEL with sand**
▲ **ME-TP-30**	**5.0**	**NP**	**NP**	**NP**	**44.7**	**Silty SAND**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

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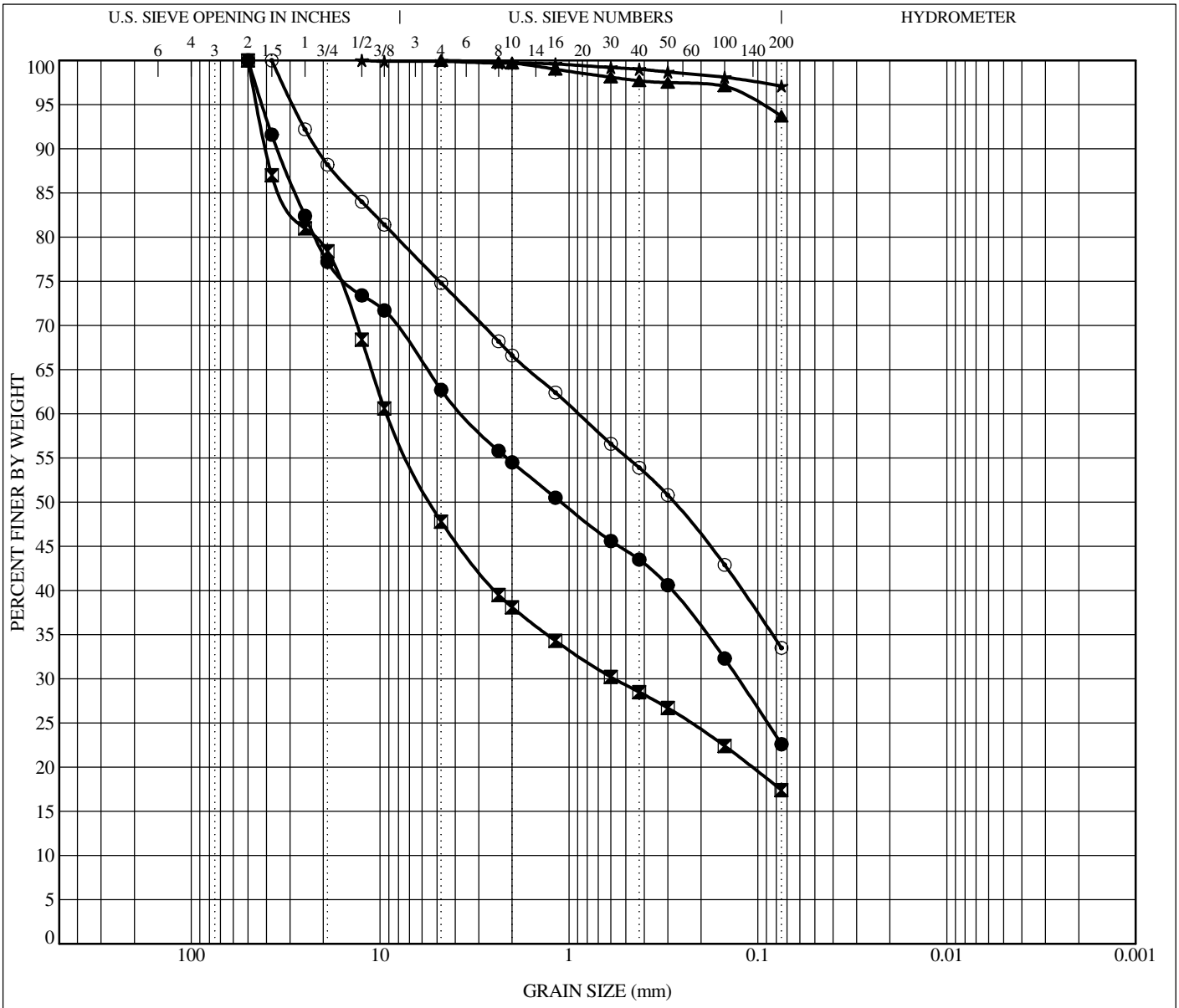
D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 4

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	ME-TP-01	3.0	Silty SAND with gravel					
⊠	ME-TP-03	3.5	Silty GRAVEL with sand					
▲	ME-TP-03	11.0	Lean CLAY					
★	ME-TP-04	1.0	Lean CLAY	35	21	14		
⊙	ME-TP-05	3.0	Silty SAND with gravel					

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	ME-TP-01	3.0	50	3.613	0.127		37.3	40.1	22.6	
⊠	ME-TP-03	3.5	50	9.196	0.576		52.2	30.4	17.4	
▲	ME-TP-03	11.0	4.75				0.0	6.3	93.7	
★	ME-TP-04	1.0	12.5				0.1	2.8	97.1	
⊙	ME-TP-05	3.0	37.5	0.892			25.2	41.3	33.5	

GeoStrata

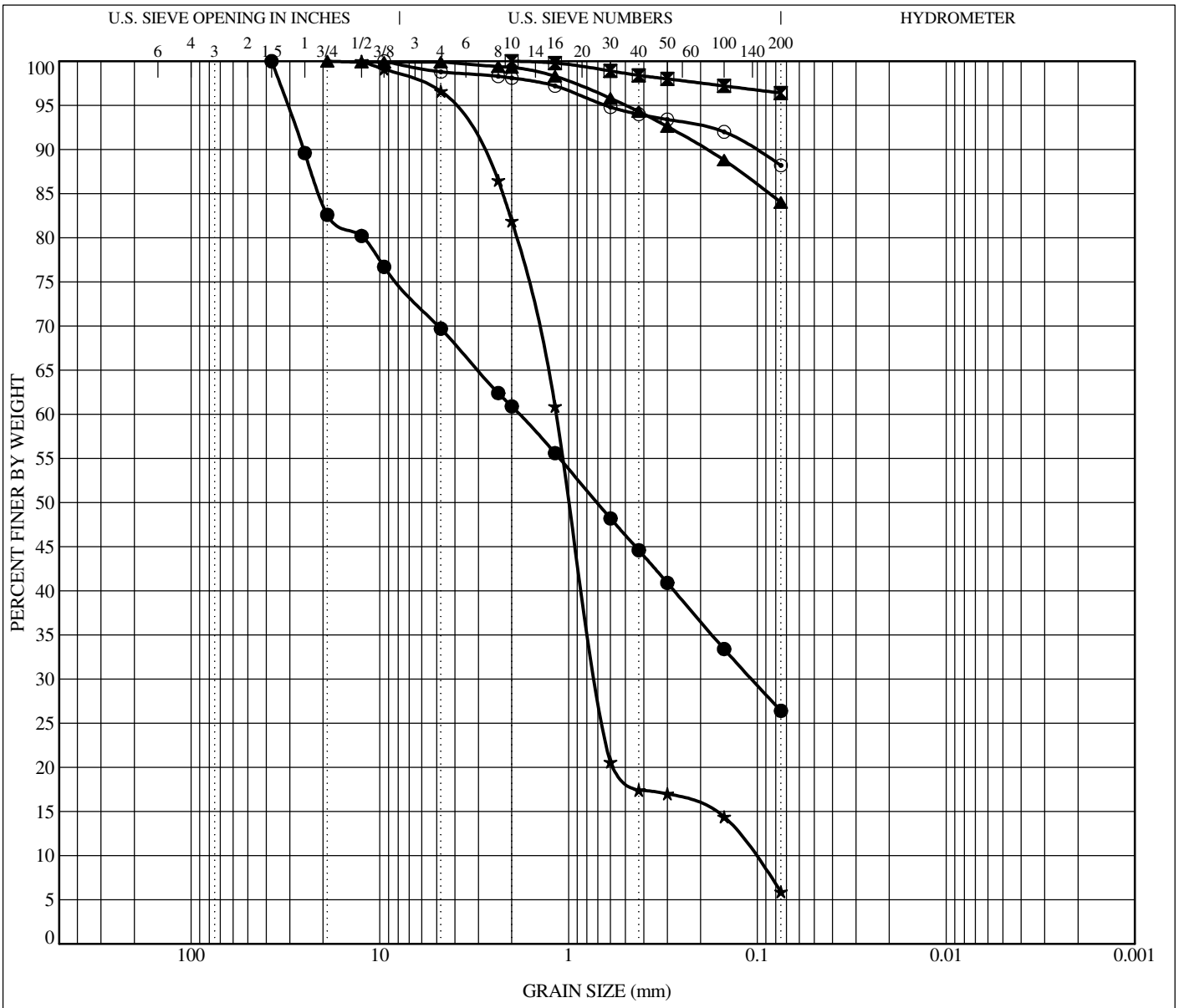
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 5

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**ME-TP-06**	**2.0**	**Silty SAND with gravel**					
⊠	**ME-TP-09**	**4.0**	**SILT**					
▲	**ME-TP-10**	**1.0**	**Lean CLAY with sand**	**38**	**22**	**16**		
★	**ME-TP-11**	**7.0**	**Poorly Graded SAND with silt**				**4.05**	**11.09**
⊙	**ME-TP-13**	**5.0**	**Lean CLAY**					

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**ME-TP-06**	**2.0**	**37.5**	**1.829**	**0.107**		**30.3**	**43.3**	**26.4**	
⊠	**ME-TP-09**	**4.0**	**2**				**0.0**	**3.6**	**96.4**	
▲	**ME-TP-10**	**1.0**	**19**				**0.1**	**15.9**	**84.0**	
★	**ME-TP-11**	**7.0**	**12.5**	**1.162**	**0.703**	**0.105**	**3.4**	**90.7**	**5.9**	
⊙	**ME-TP-13**	**5.0**	**9.5**				**1.2**	**10.6**	**88.2**	

GeoStrata

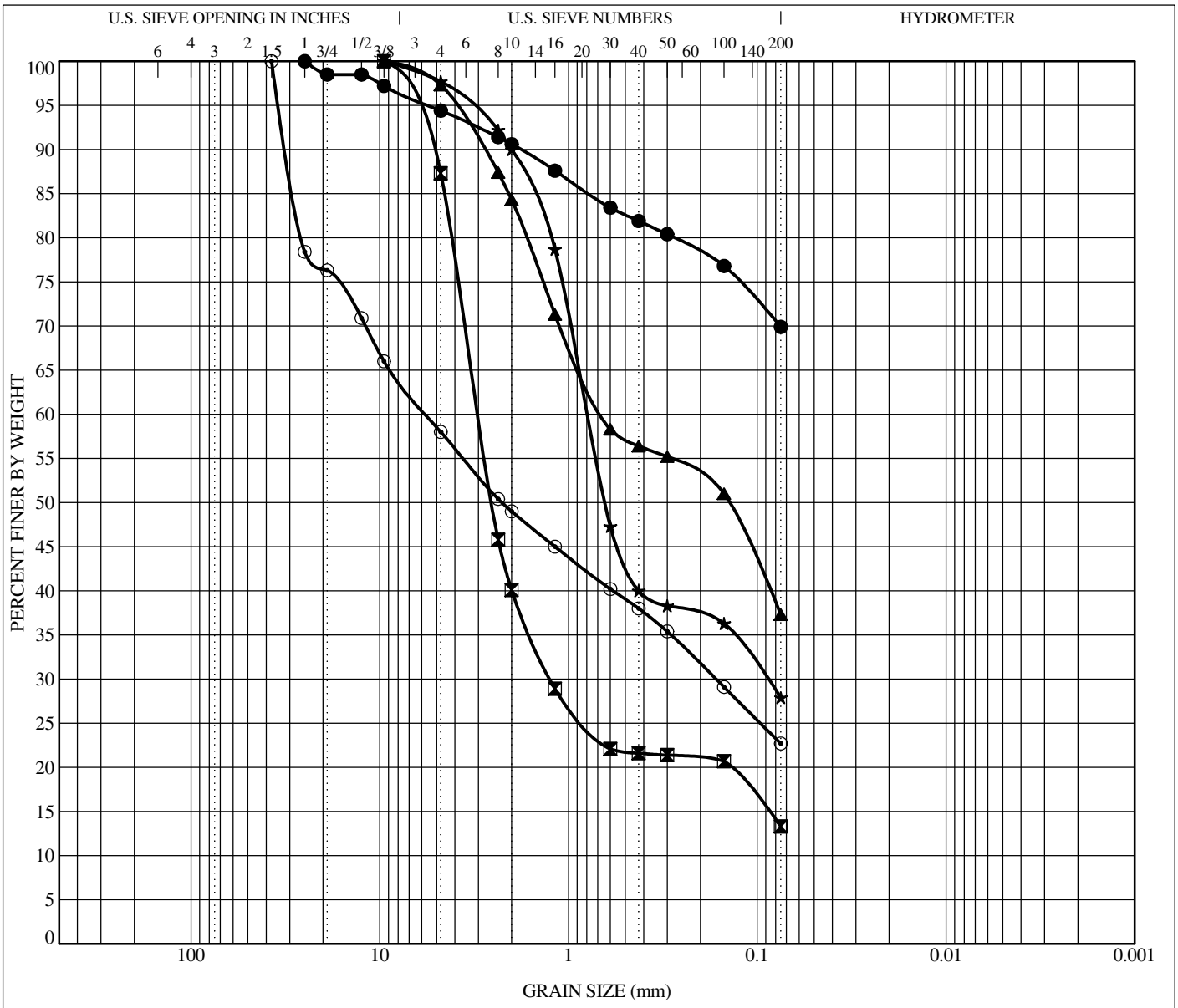
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 6

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
● ME-TP-17	2.0	Sandy Lean CLAY	41	22	19		
⊠ ME-TP-24	3.0	Silty SAND					
▲ ME-TP-25	3.0	Clayey SAND	27	18	9		
★ ME-TP-26	3.0	Silty Clayey SAND	25	18	7		
⊙ ME-TP-27	5.0	Silty GRAVEL with sand	NP	NP	NP		

Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● ME-TP-17	2.0	25				5.6	24.5	69.9	
⊠ ME-TP-24	3.0	9.5	2.998	1.243		12.7	74.0	13.3	
▲ ME-TP-25	3.0	9.5	0.655			2.7	60.0	37.3	
★ ME-TP-26	3.0	9.5	0.789	0.089		2.3	69.8	27.9	
⊙ ME-TP-27	5.0	37.5	5.649	0.166		42.0	35.3	22.7	

GeoStrata

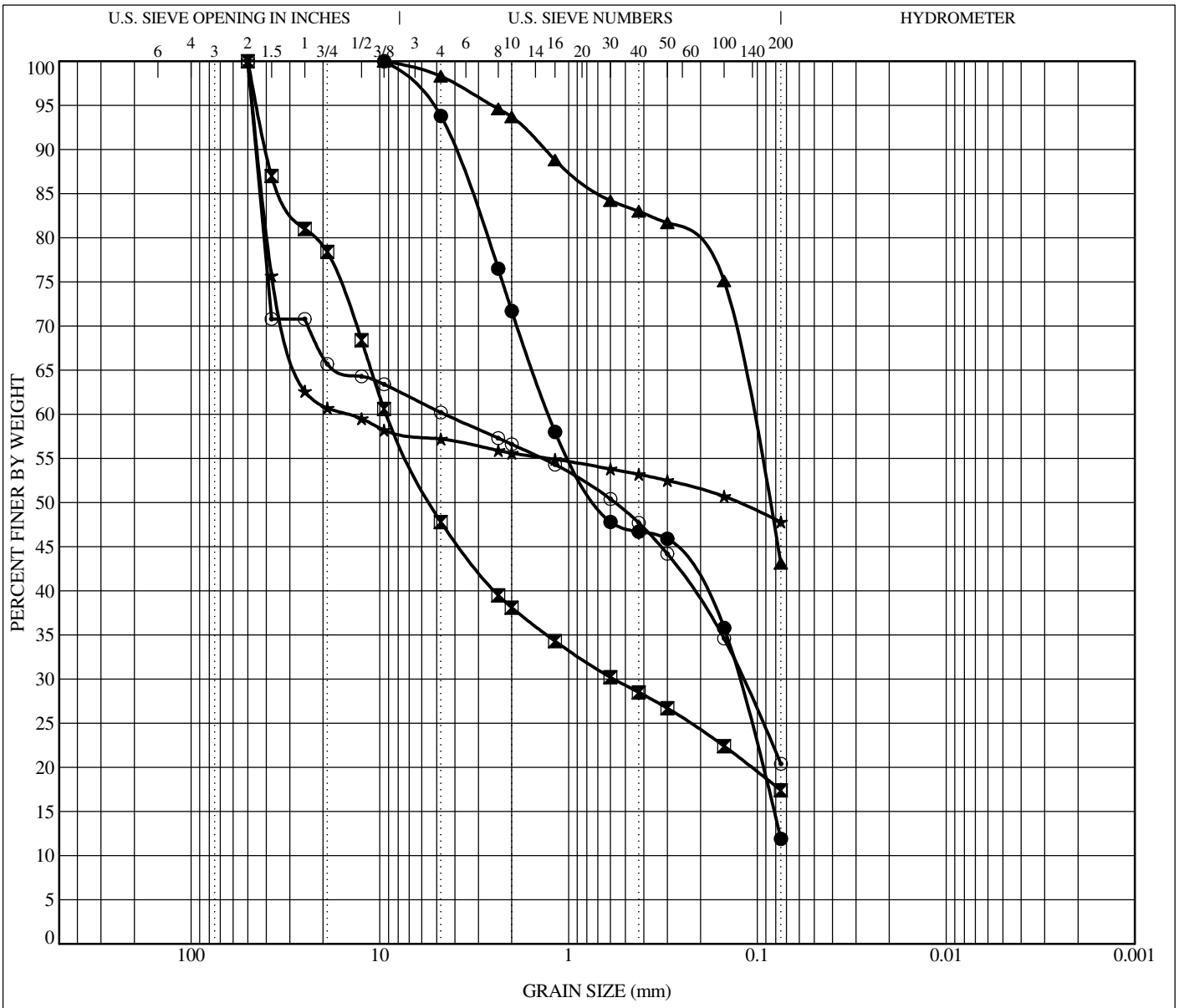
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 7

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**ME-TP-29**	**3.0**	**Poorly Graded SAND with silt**				**0.18**	**17.96**
⊠	**ME-TP-33**	**5.0**	**Silty GRAVEL with sand**					
▲	**ME-TP-34**	**5.0**	**Silty SAND**					
★	**ME-TP-36**	**1.0**	**Silty GRAVEL**					
⊙	**ME-TP-55**	**3.0**	**Silty GRAVEL with sand**					

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**ME-TP-29**	**3.0**	**9.5**	**1.274**	**0.127**		**6.2**	**81.9**	**11.9**	
⊠	**ME-TP-33**	**5.0**	**50**	**9.196**	**0.576**		**52.2**	**30.4**	**17.4**	
▲	**ME-TP-34**	**5.0**	**9.5**	**0.108**			**1.7**	**55.2**	**43.1**	
★	**ME-TP-36**	**1.0**	**50**	**14.883**			**42.8**	**9.4**	**47.8**	
⊙	**ME-TP-55**	**3.0**	**50**	**4.526**	**0.12**		**39.8**	**39.8**	**20.4**	

GeoStrata

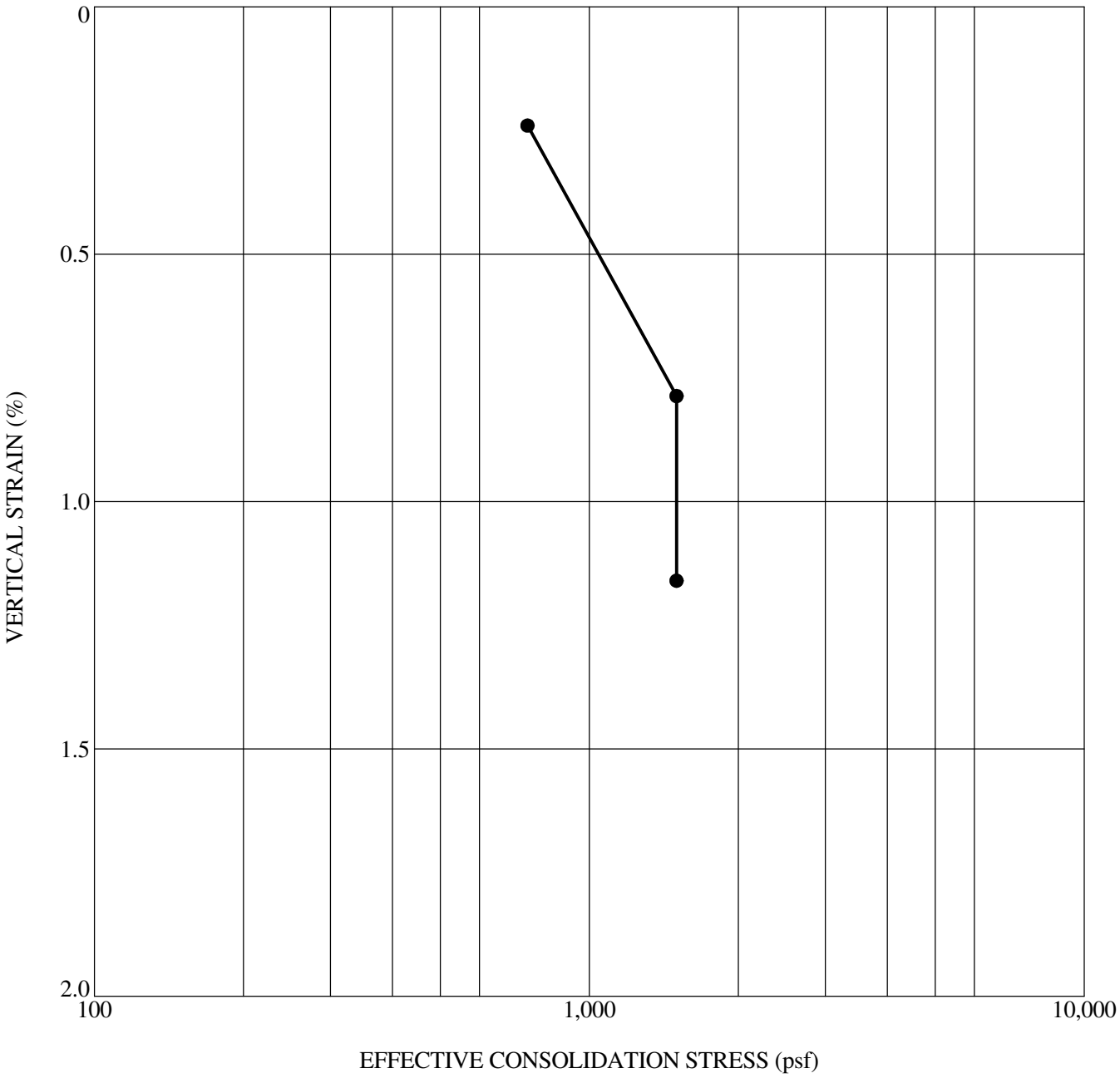
GRAIN SIZE DISTRIBUTION - ASTM D422

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 8

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-02**	**3.0**	**Sandy Lean CLAY**	**86**	**21**	**1500**		**0.37**

GeoStrata

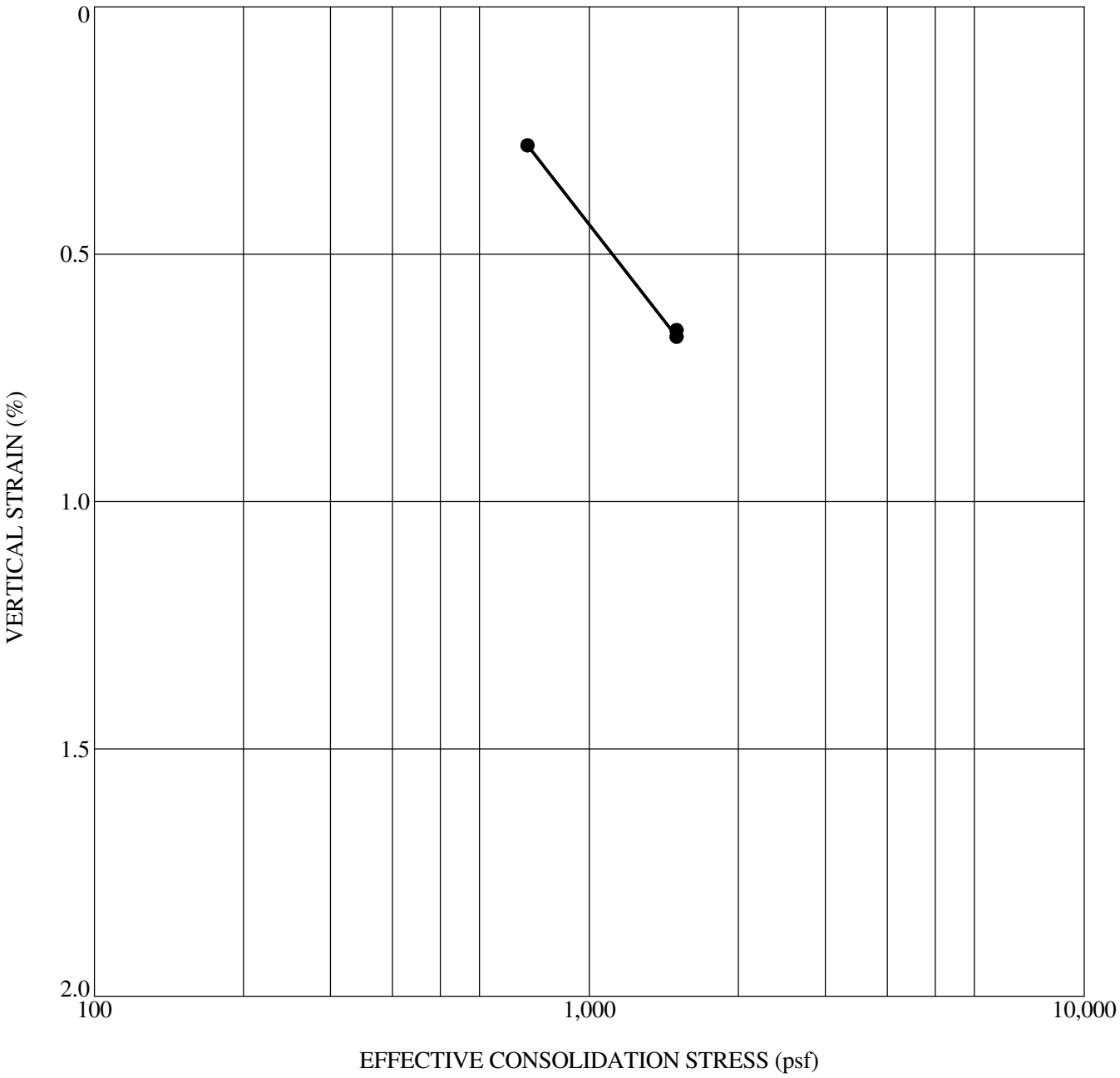
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 9

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-03**	**5.0**	**Lean CLAY**	**96**	**22**	**1500**	**0.01**	

GeoStrata

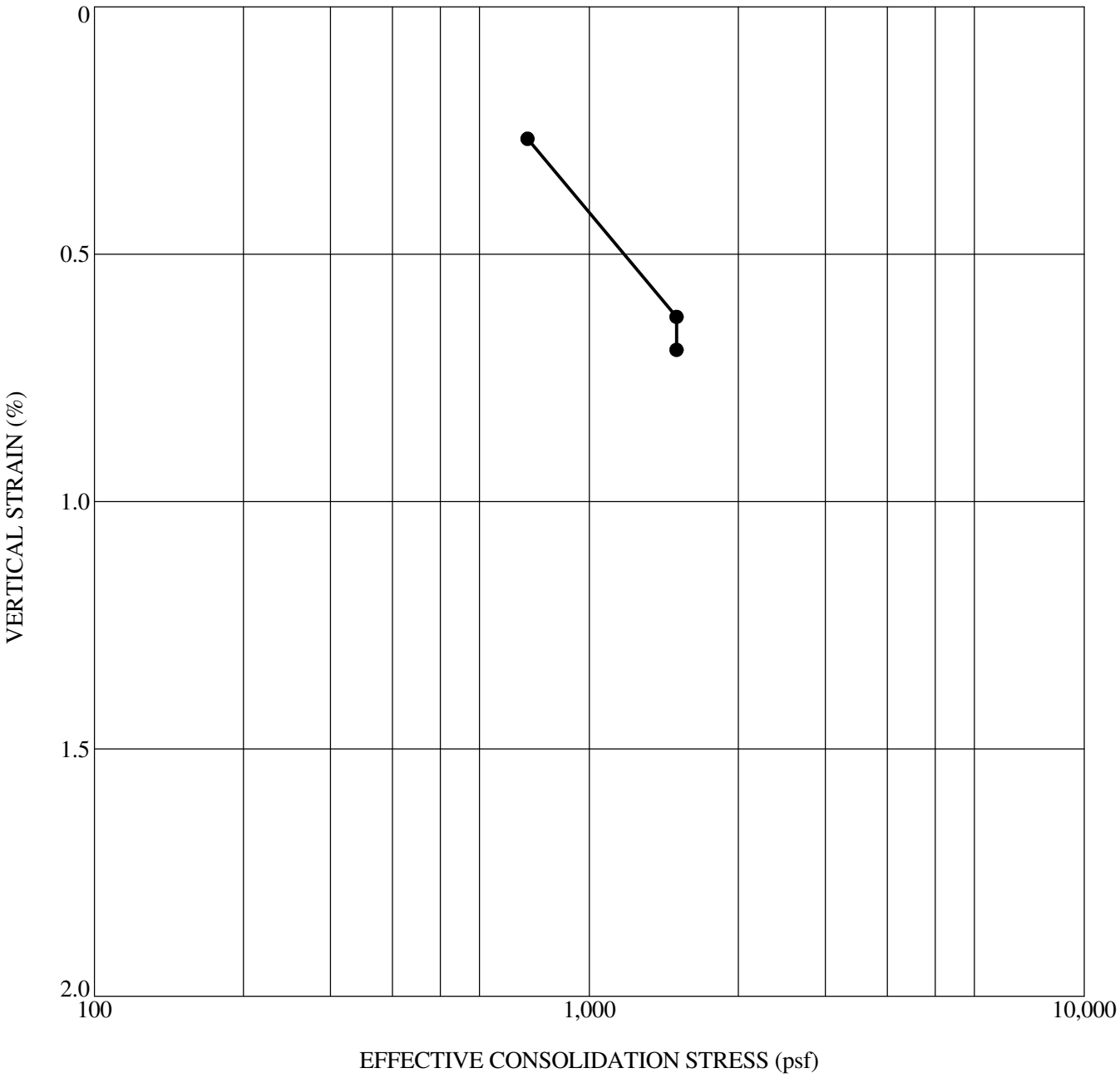
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 10

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-04**	**4.0**	**Lean CLAY**	**98**	**10**	**1500**		**0.07**

GeoStrata

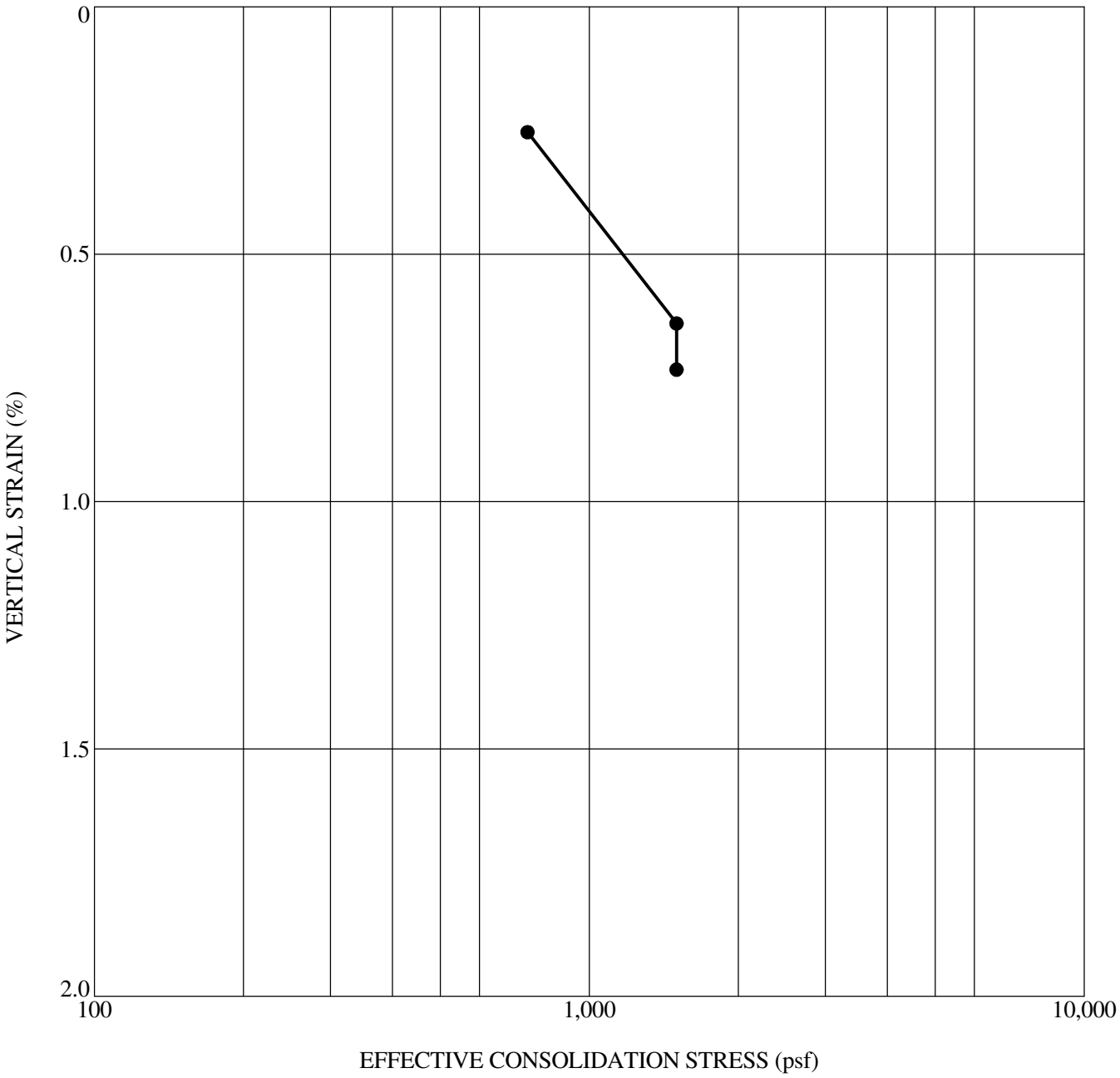
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 11

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-07**	**4.0**	**Sandy Lean CLAY**	**92**	**16**	**1500**		**0.09**

GeoStrata

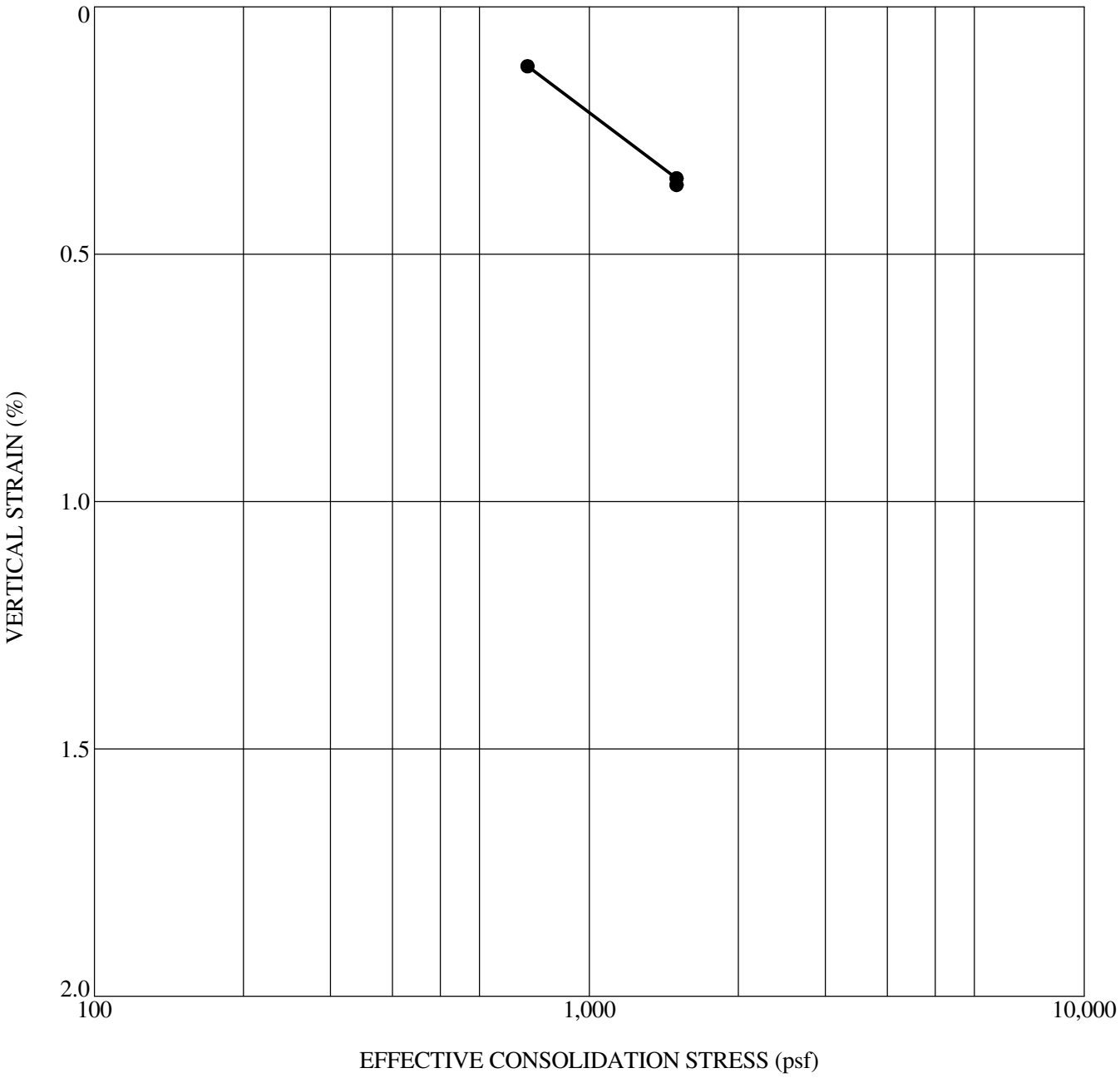
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 12

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-08**	**3.0**	**Lean CLAY**	**95**	**15**	**1500**		**0.01**

GeoStrata

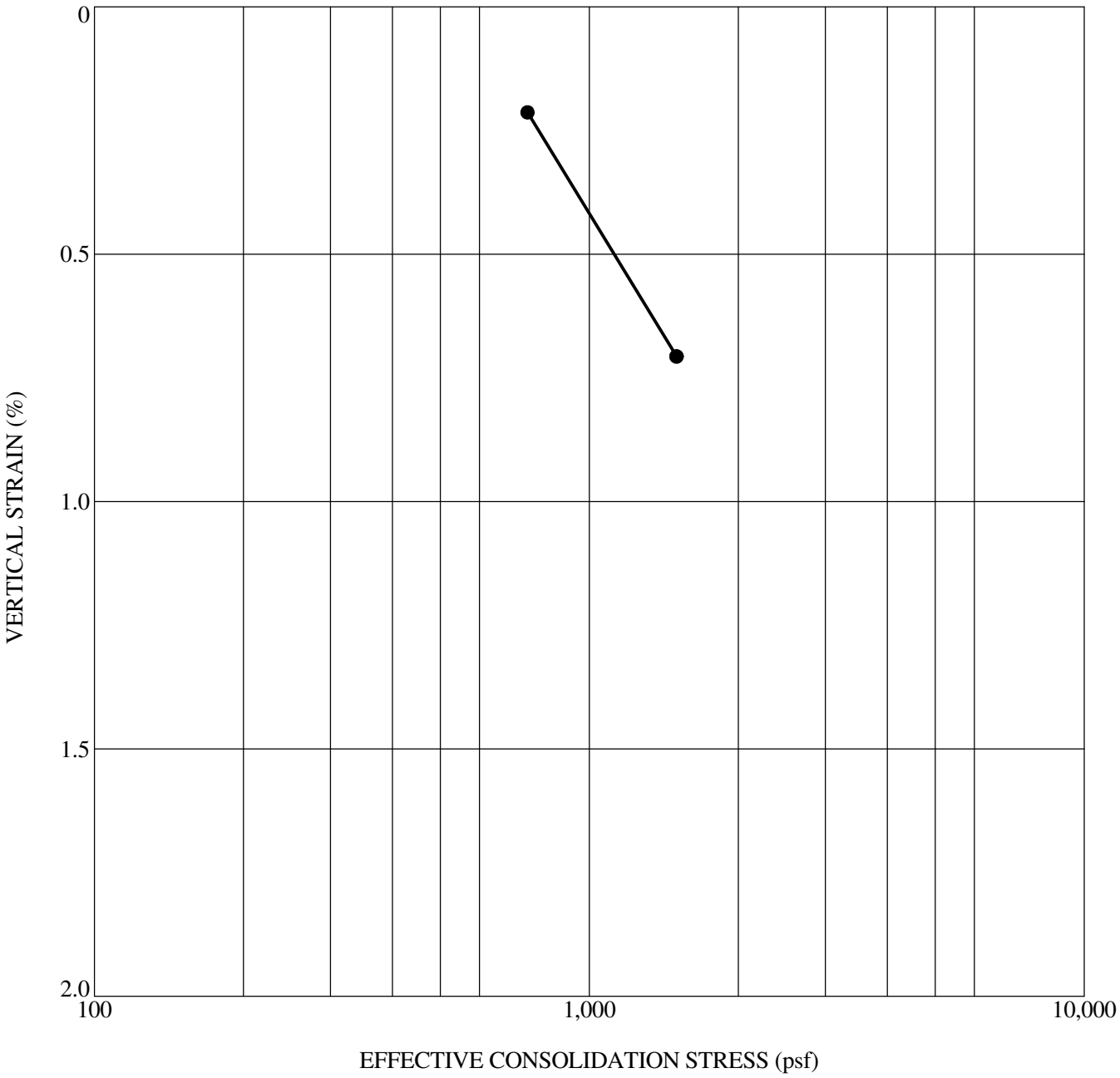
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 13

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-08**	**12.0**	**Lean CLAY**	**93**	**23**	**1500**		**0.01**

GeoStrata

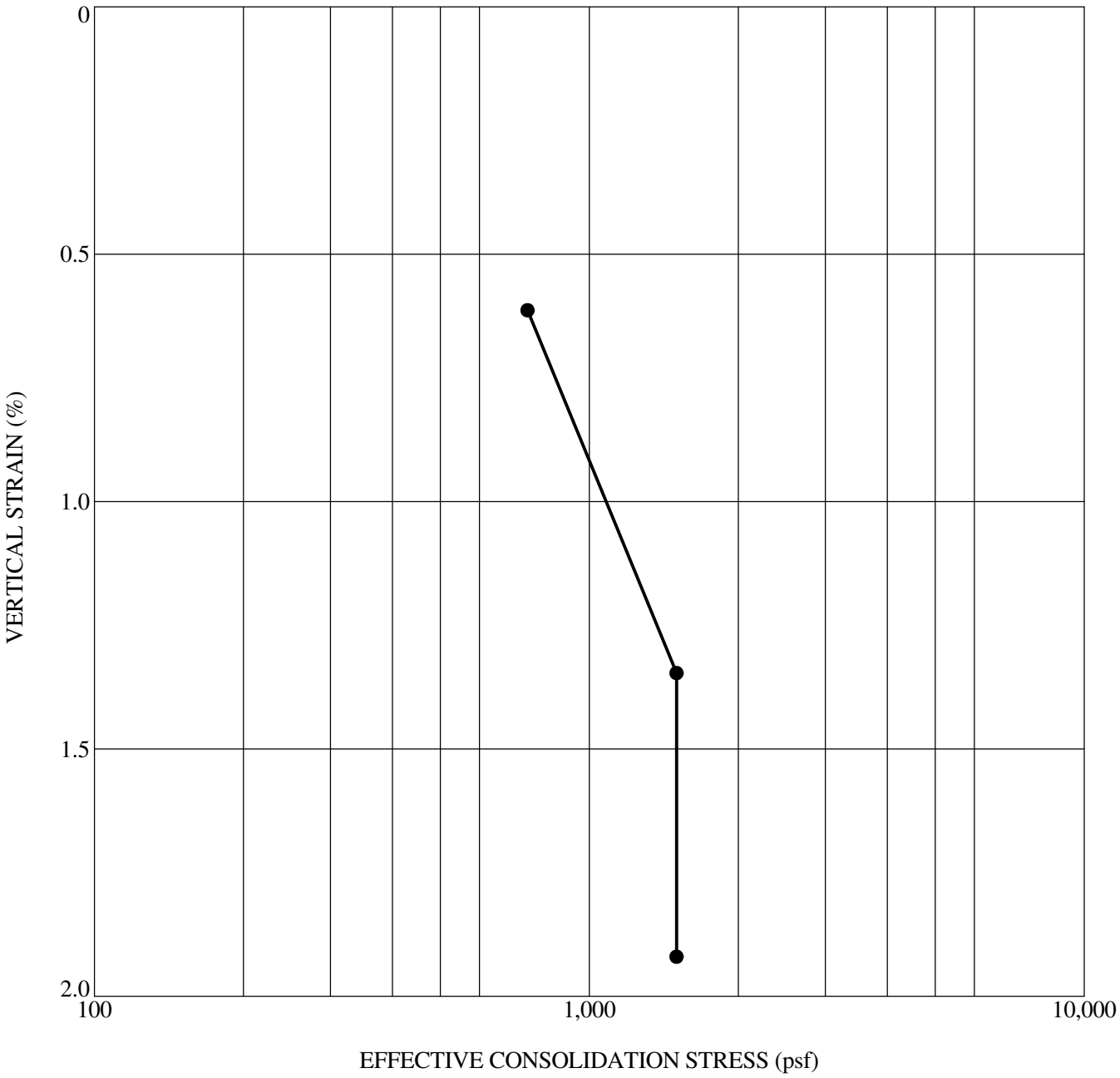
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 14

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-10**	**5.0**	**Sandy SILT**	**82**	**17**	**1500**		**0.43**

GeoStrata

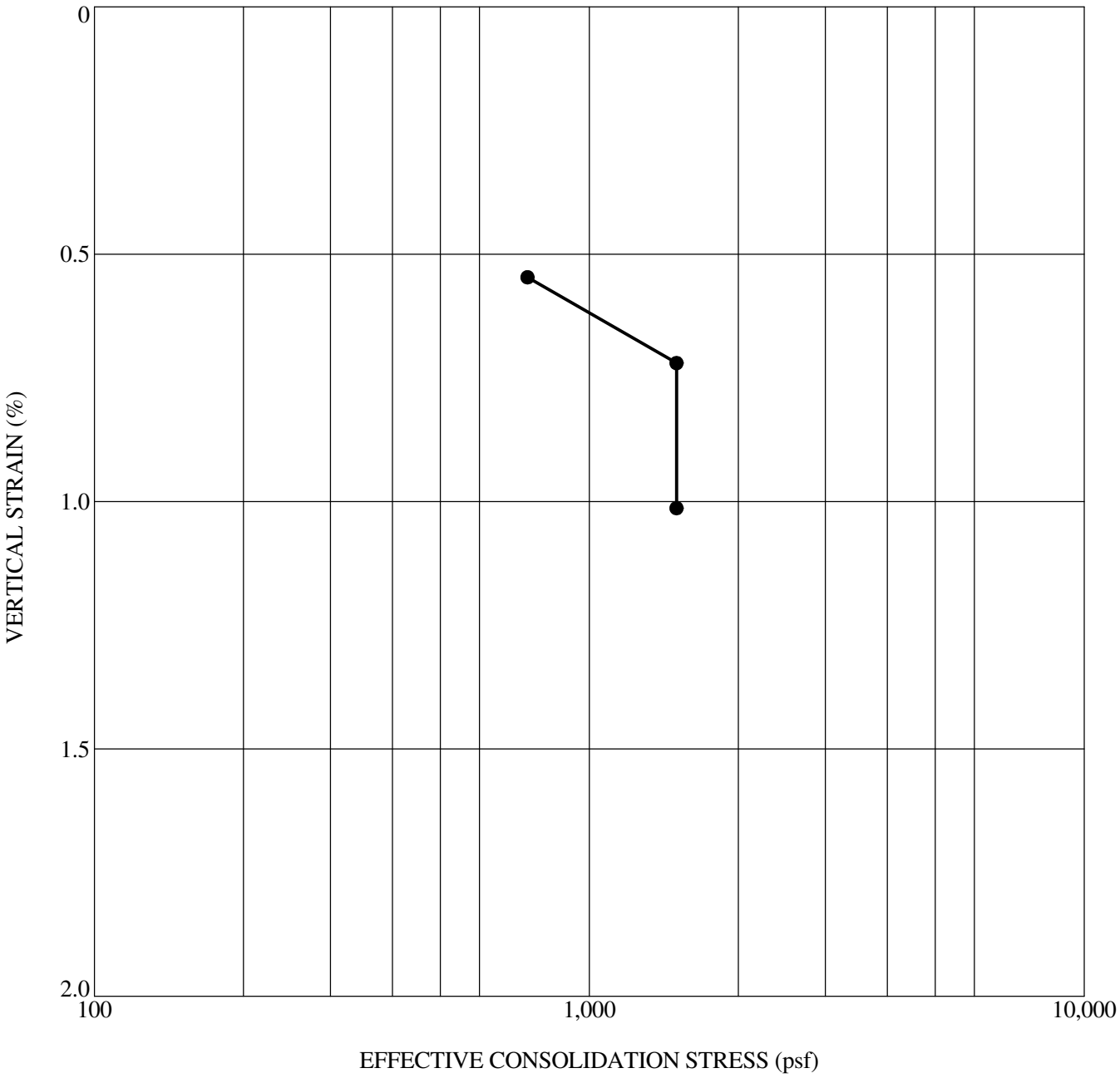
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 15

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-12**	**4.0**	**Lean CLAY**	**97**	**25**	**1500**		**0.22**

GeoStrata

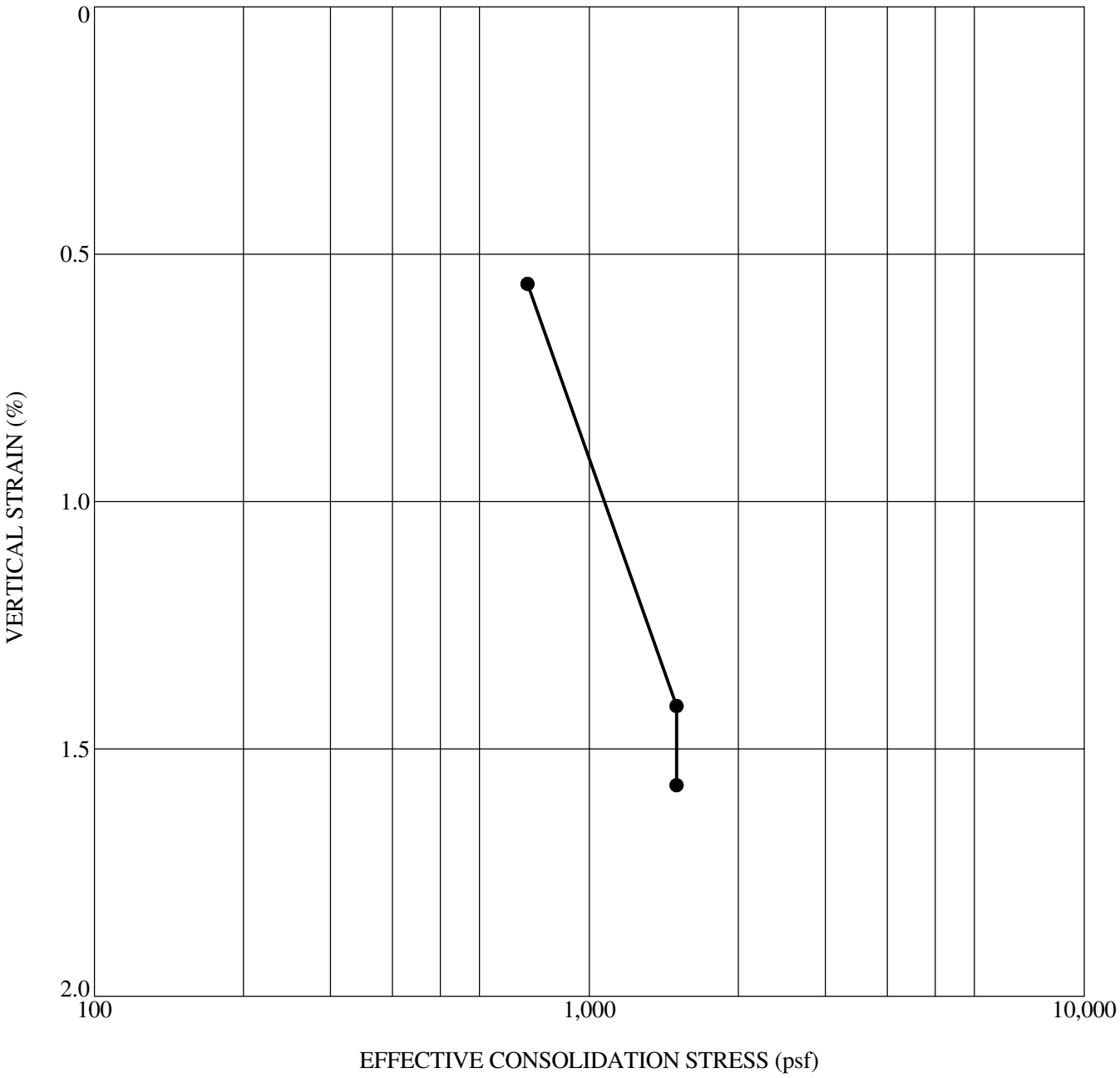
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 16

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **ME-TP-13**	**11.0**	**Lean CLAY**	**100**	**19**	**1500**		**0.12**

GeoStrata

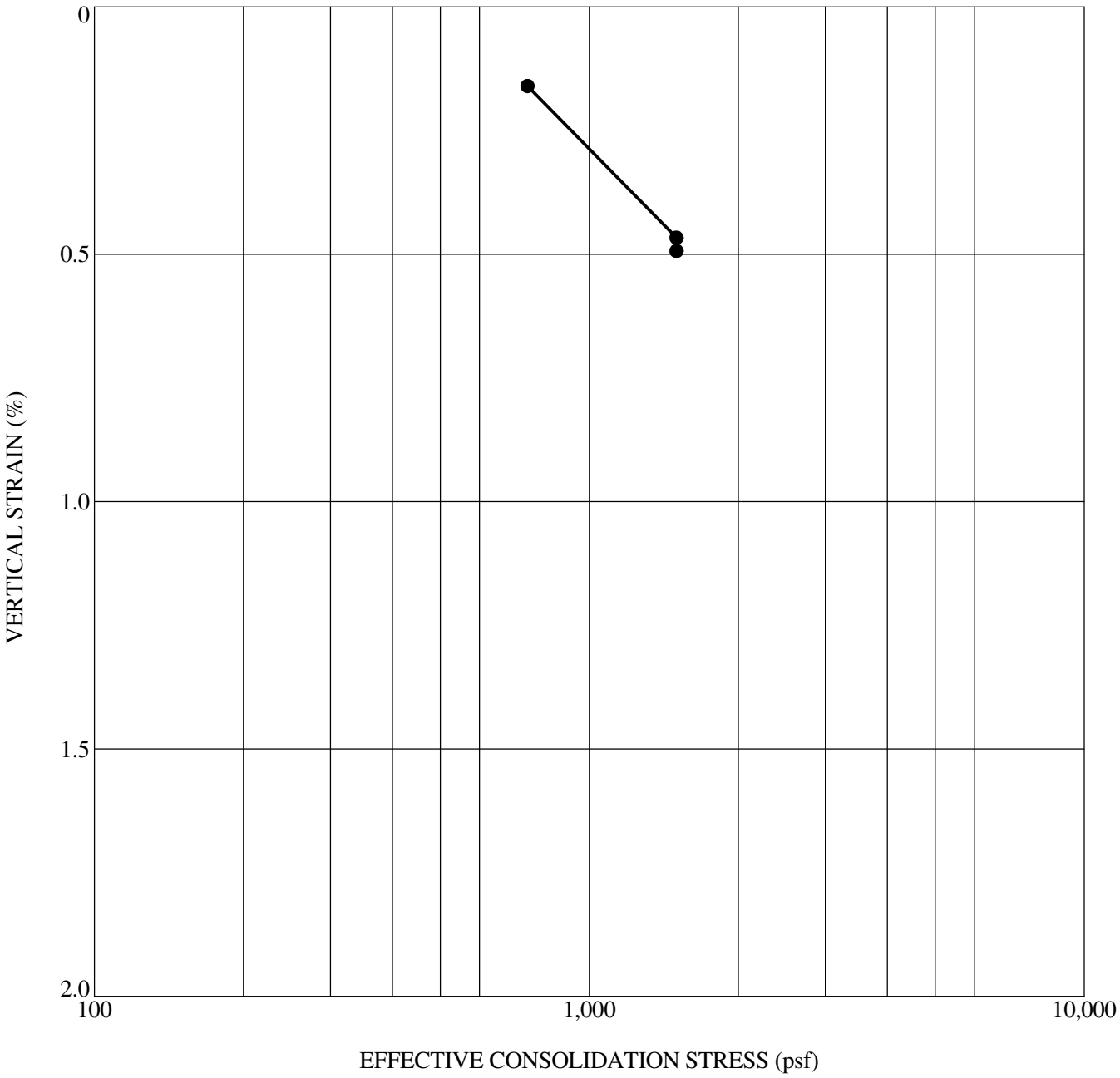
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 17

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-15**	**3.0**	**Lean CLAY**	**97**	**16**	**1500**		**0.03**

GeoStrata

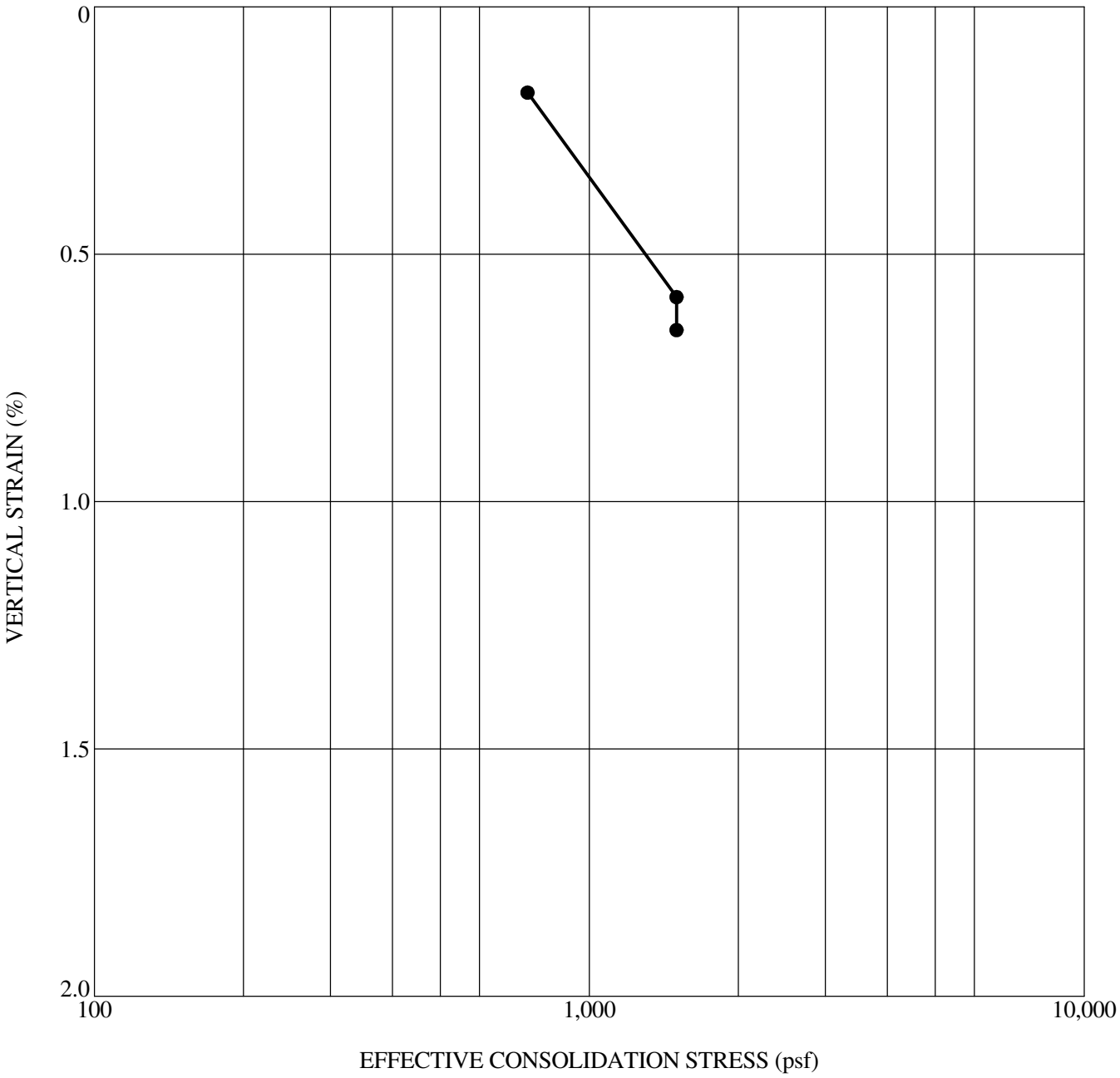
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 18

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-18**	**3.0**	**Lean CLAY**	**89**	**20**	**1500**		**0.07**

GeoStrata

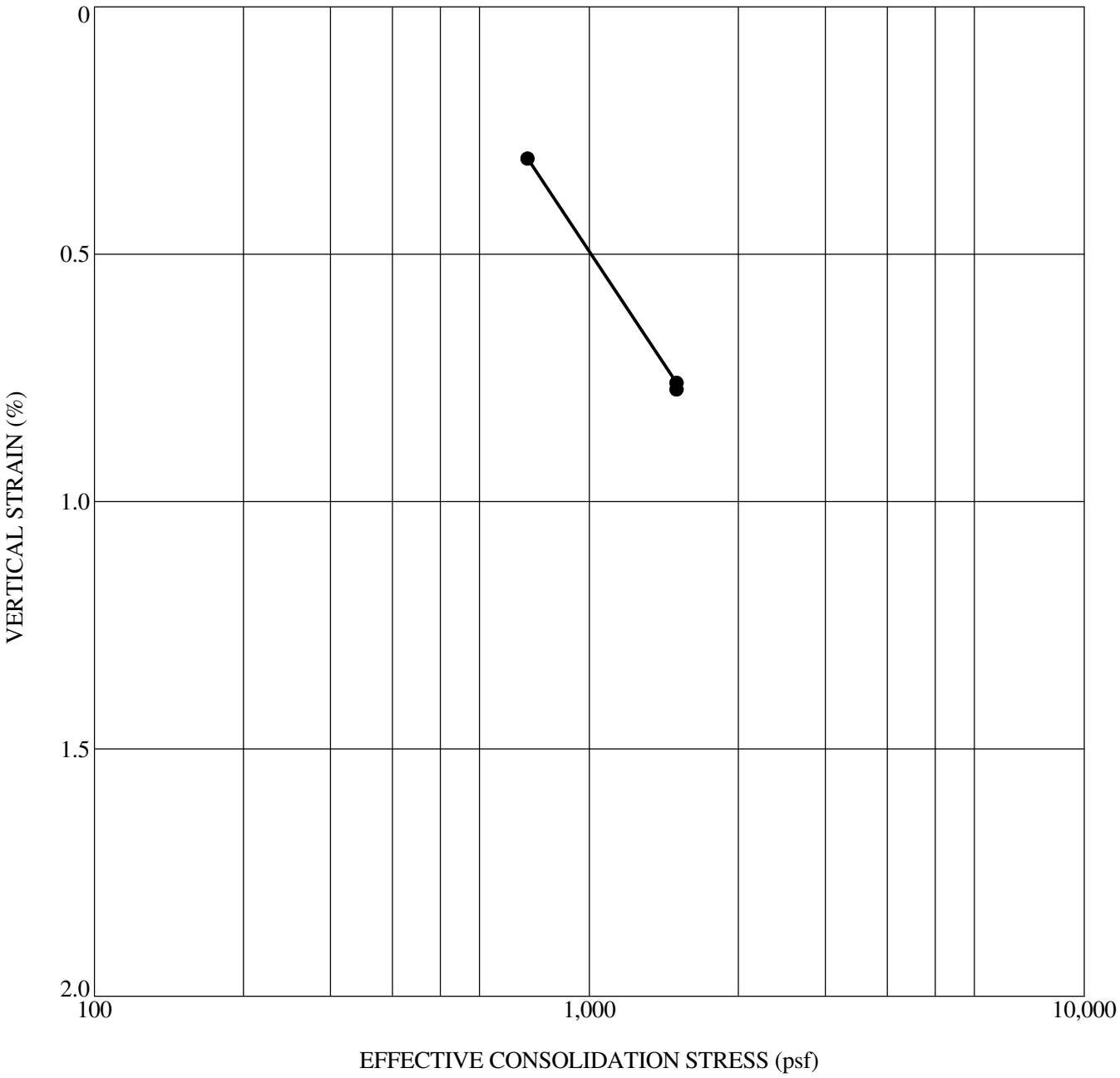
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 19

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-22**	**3.5**	**Lean CLAY**	**93**	**22**	**1500**		**0.01**

GeoStrata

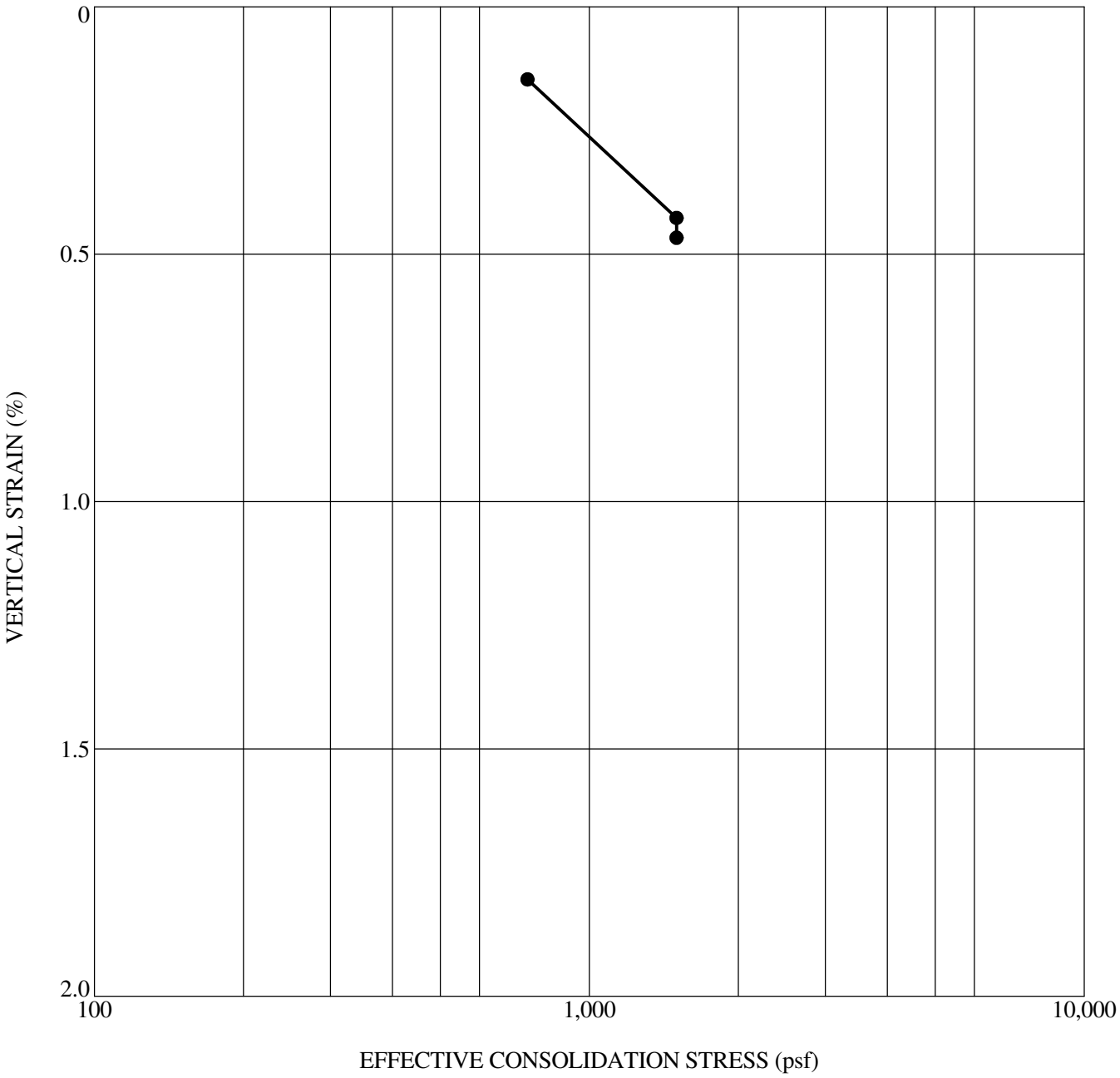
1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 20

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
●	**ME-TP-30**	**5.0**	**Silty SAND**	**83**	**24**	**1500**		**0.04**

GeoStrata

1-D SWELL/COLLAPSE TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 21

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

Source of Material: **ME-TP-04 1.0 ft.**

Material Description: **Lean CLAY**

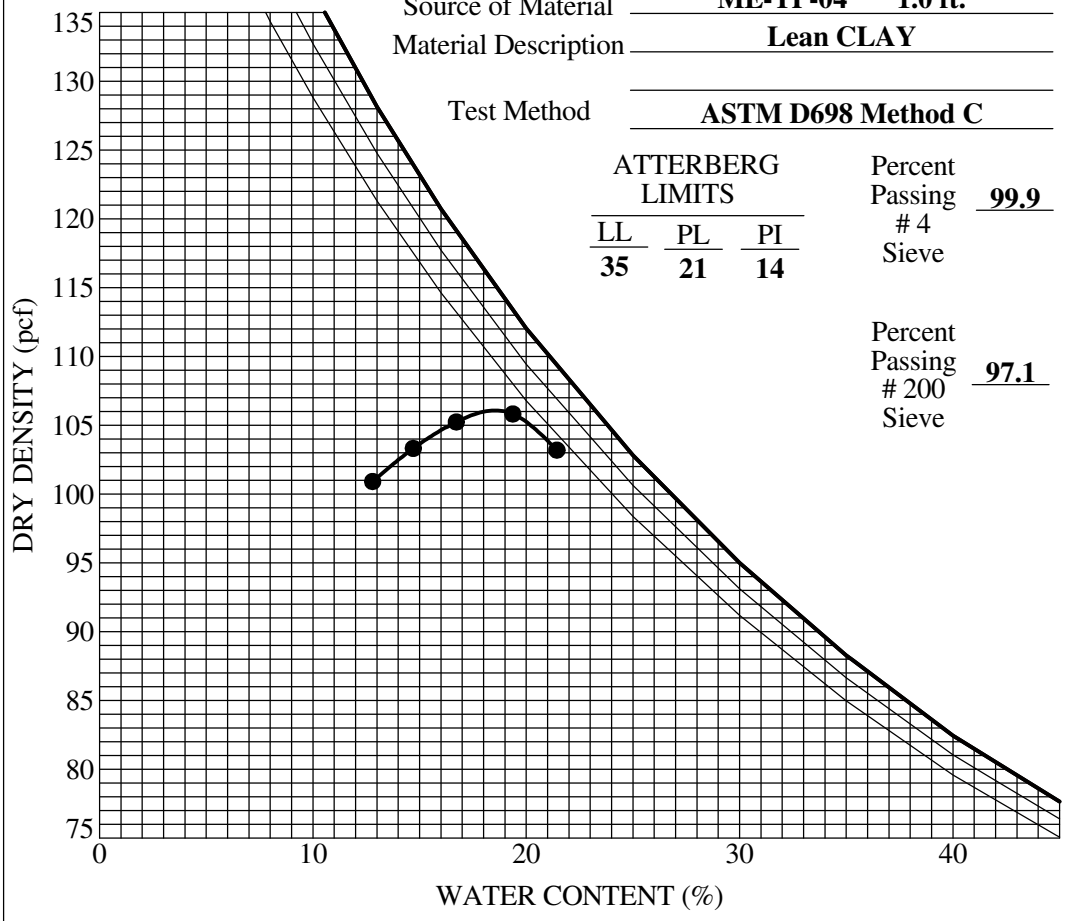
Test Method: **ASTM D698 Method C**

ATTERBERG LIMITS

LL	PL	PI
35	21	14

Percent Passing # 4 Sieve: **99.9**

Percent Passing # 200 Sieve: **97.1**



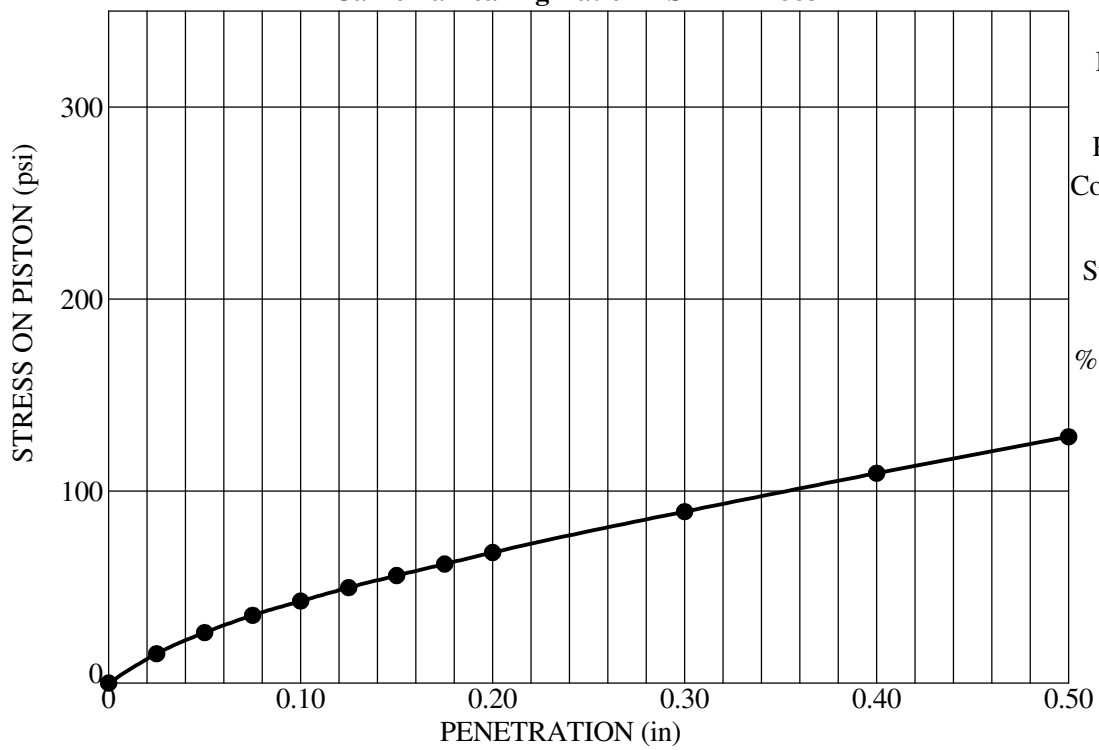
TEST RESULTS

Maximum Dry Density	**107.0** (pcf)
Optimum Water Content	**18.5** (%)
Percent Rock	_____ (%)
Corrected Maximum Dry Density	_____ (pcf)
Corrected Optimum Water Content	_____ (%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80

Califonia Bearing Ratio - ASTM D 1883



Dry Density	**107.0** (pcf)
Relative Compaction	**100** (%)
Surcharge	**51** (psf)
% Standard CBR	**4.30**
Swell	**0.24** (%)

GeoStrata

COMPACTION AND CBR TEST

D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

Plate

C - 22

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

Source of Material: **ME-TP-10 1.0 ft.**

Material Description: **Lean CLAY with sand**

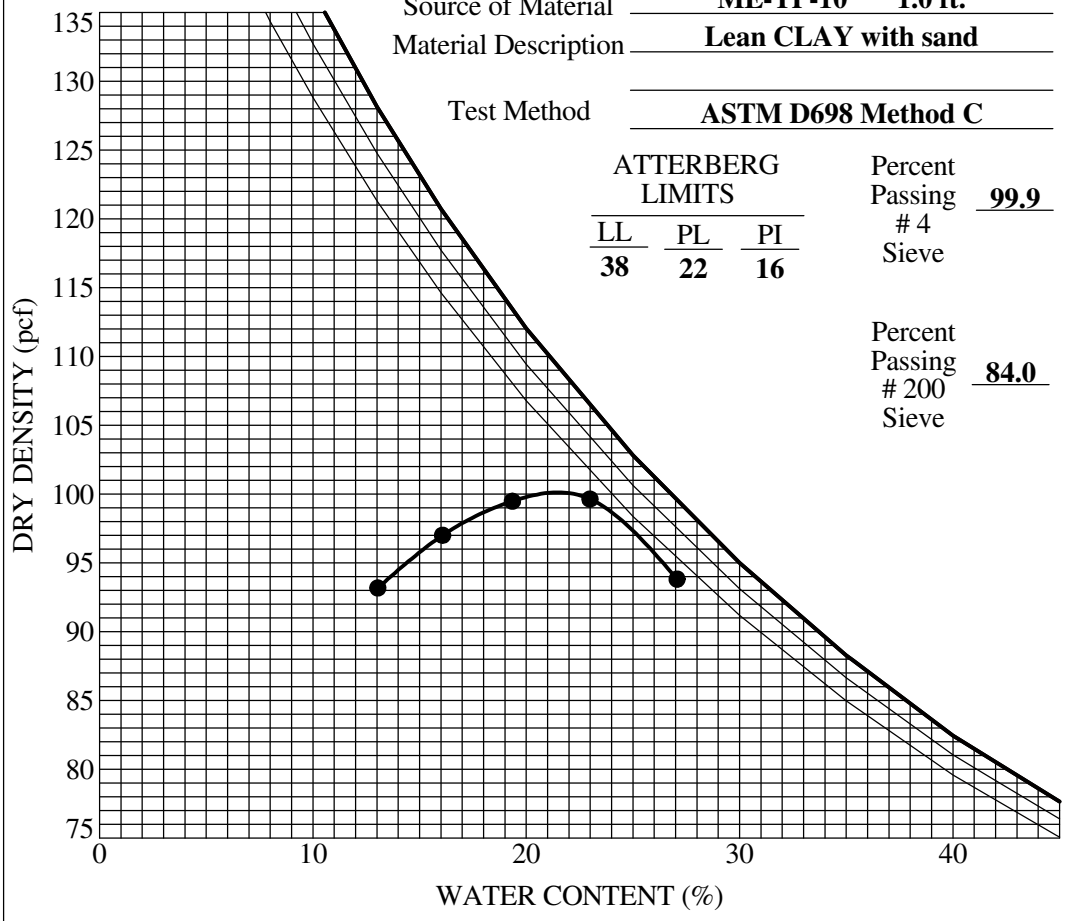
Test Method: **ASTM D698 Method C**

ATTERBERG LIMITS

LL	PL	PI
38	22	16

Percent Passing # 4 Sieve: **99.9**

Percent Passing # 200 Sieve: **84.0**



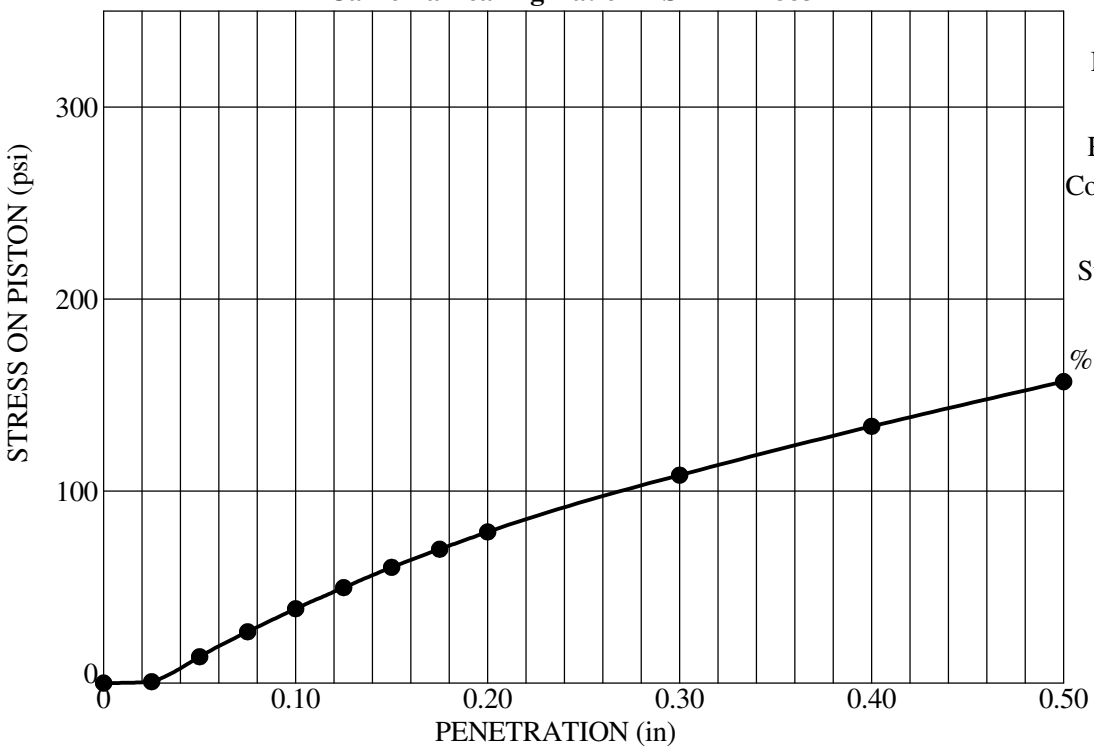
TEST RESULTS

Maximum Dry Density	**100.0** (pcf)
Optimum Water Content	**21.8** (%)
Percent Rock	_____ (%)
Corrected Maximum Dry Density	_____ (pcf)
Corrected Optimum Water Content	_____ (%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80

Califonia Bearing Ratio - ASTM D 1883



Dry Density	**100.5** (pcf)
Relative Compaction	**100** (%)
Surcharge	**50** (psf)
% Standard CBR	**3.90**
Swell	**0.46** (%)

GeoStrata

COMPACTION AND CBR TEST

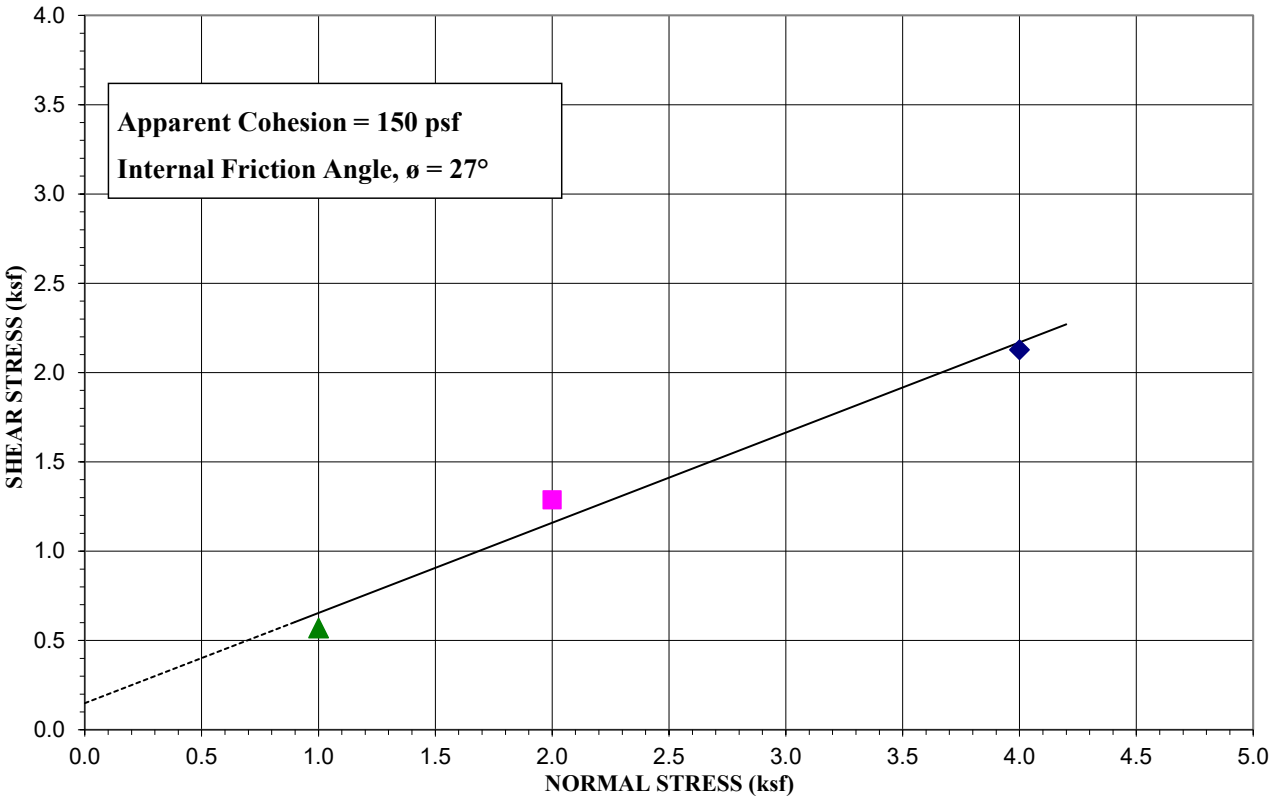
D.R. Horton
Micron Property
Lehi, Utah
Project Number: 589-100

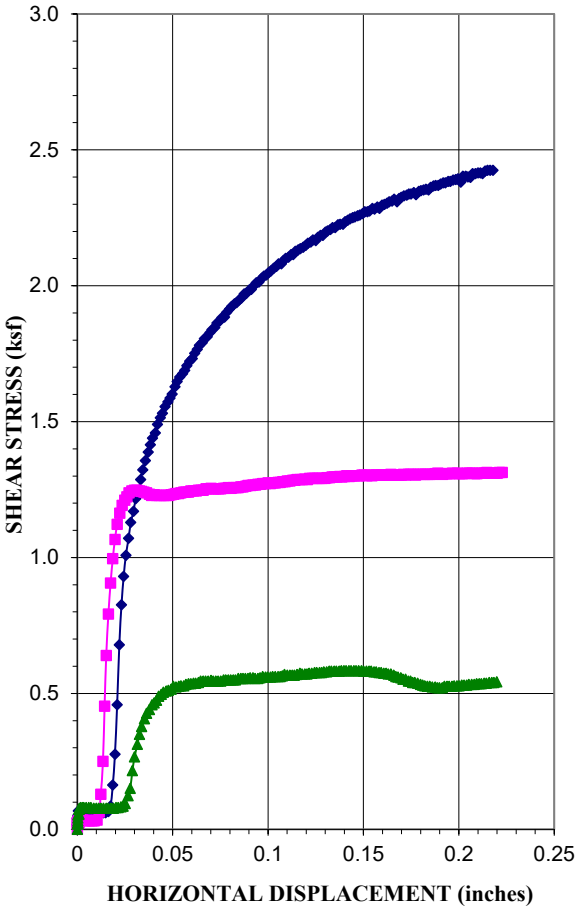
Plate

C - 23

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DIRECT SHEAR TEST





Sample Location:	ME-TP-13 at 5 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.002	0.966	0.975
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	99.8	105.1	104.1
Dry Density After, pcf	101.6	107.0	105.9
Moisture % Before	13.2	14.6	15.3
Moisture % After	23.1	22.9	24.4
Saturation, % Before	53.2	67.5	69.0
Saturation, % After	97.5	111.0	115.1
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.13	1.29	0.57
Strain Rate	0.002592 IN/MIN		

Sample Properties	
Cohesion, psf	150
Friction Angle, ϕ	27
Liquid Limit, %	-
Plasticity Index, %	-
Percent Gravel	1.2
Percent Sand	10.5
Percent Passing No. 200 sieve	88.2
Classification	CL

PROJECT: Micron Property

PROJECT NO.: 589-100

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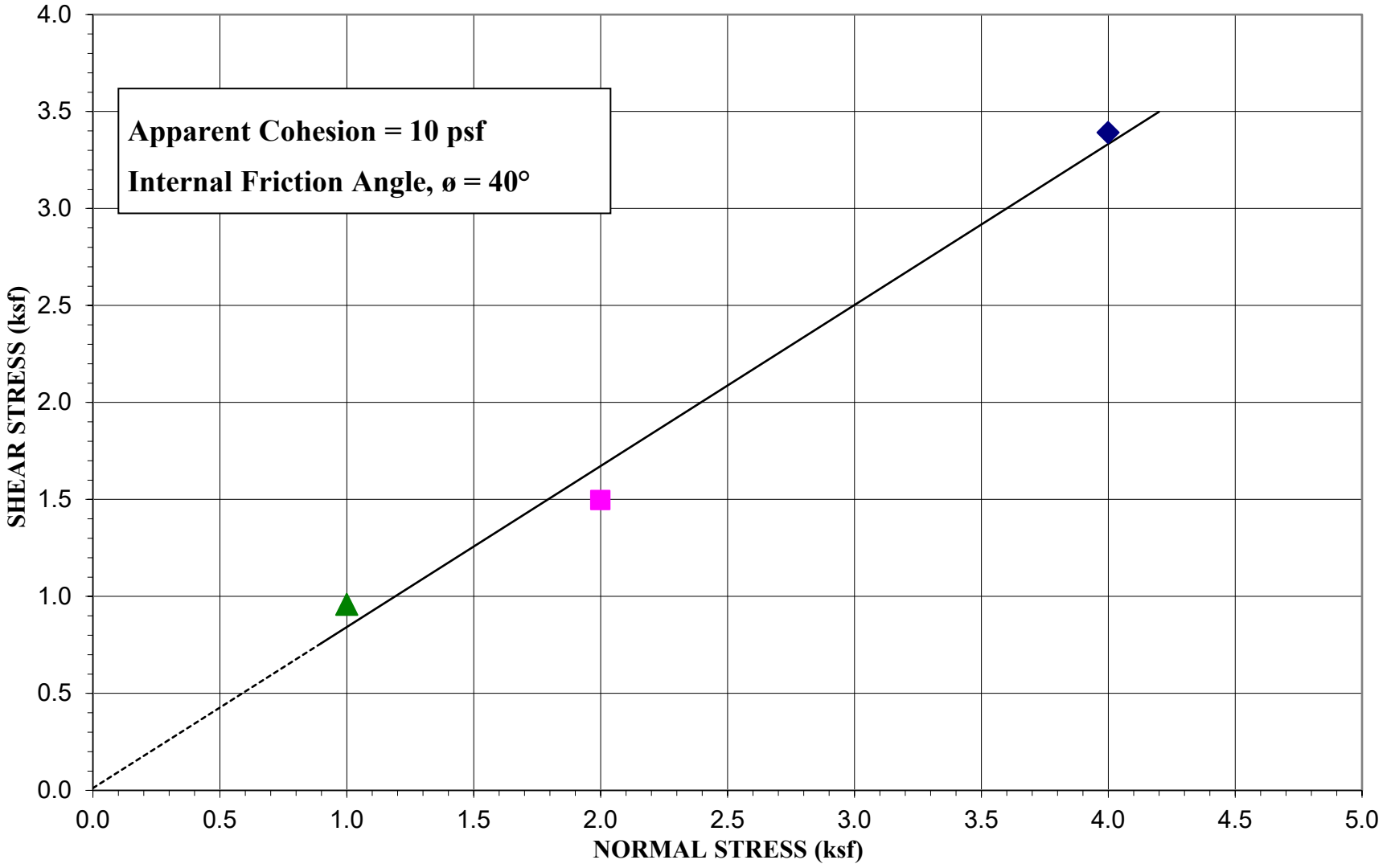
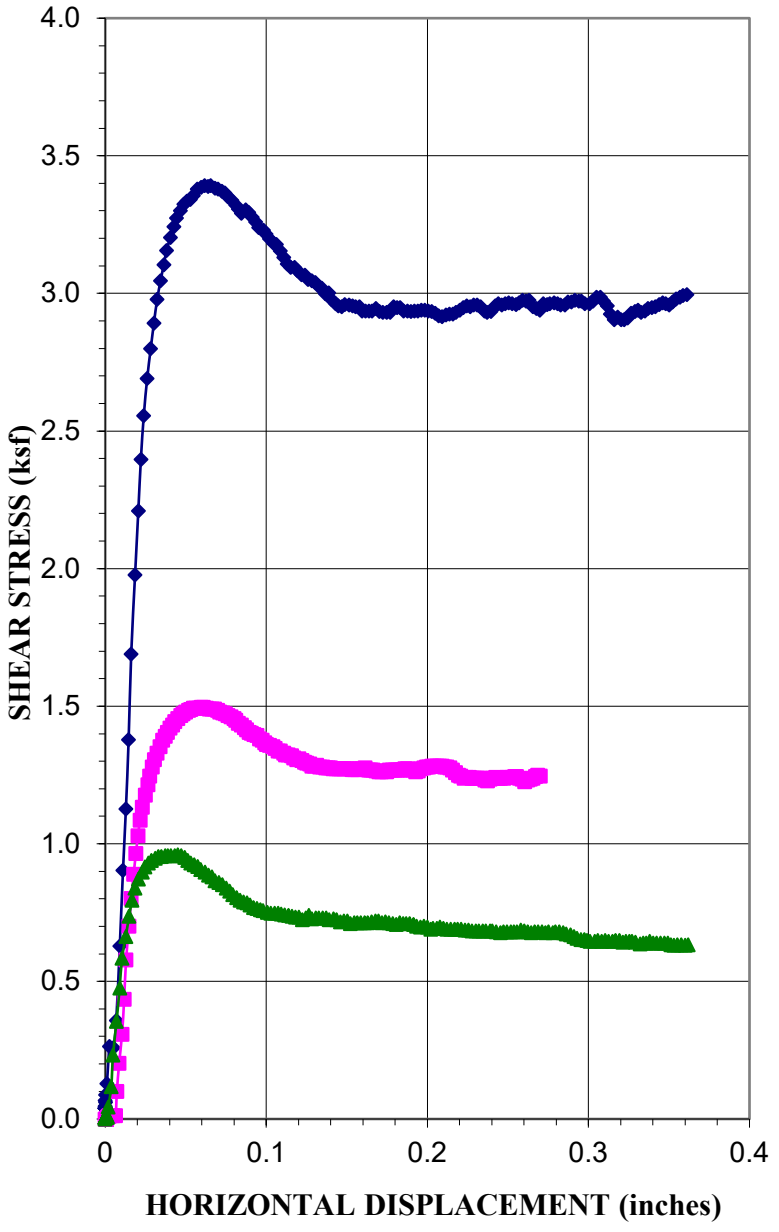
Plate TP-13

DIRECT SHEAR TEST





Source:	ME-TP-29 at 3 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.026	1.033	1.02
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	104.4	103.9	105.4
Dry Density After, pcf	106.5	105.7	107.3
Moisture % Before	5.5	6.9	7.4
Moisture % After	19.7	21.2	19.2
Saturation, % Before	25.1	30.9	34.4
Saturation, % After	94.4	99.6	93.9
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	3.39	1.50	0.96
Strain Rate	0.003333 IN/MIN		

Sample Properties	
Cohesion, psf	10
Friction Angle, ϕ	40
Liquid Limit, %	NP
Plasticity Index, %	NP
Percent Gravel	6.2
Percent Sand	82
Percent Passing No. 200 sieve	11.9
Classification	SP-SM

PROJECT: Micron Property

PROJECT NO.: 589-100

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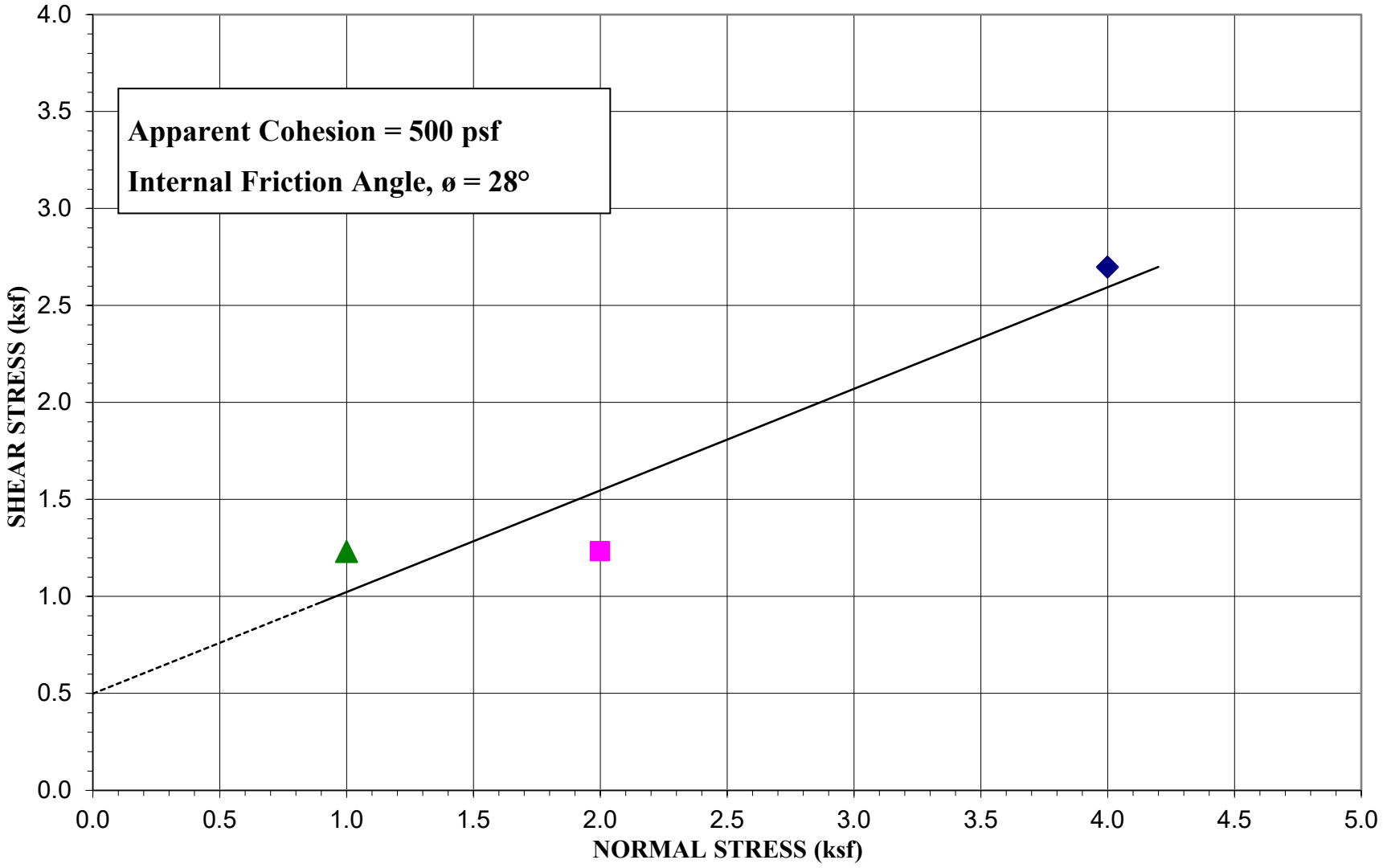
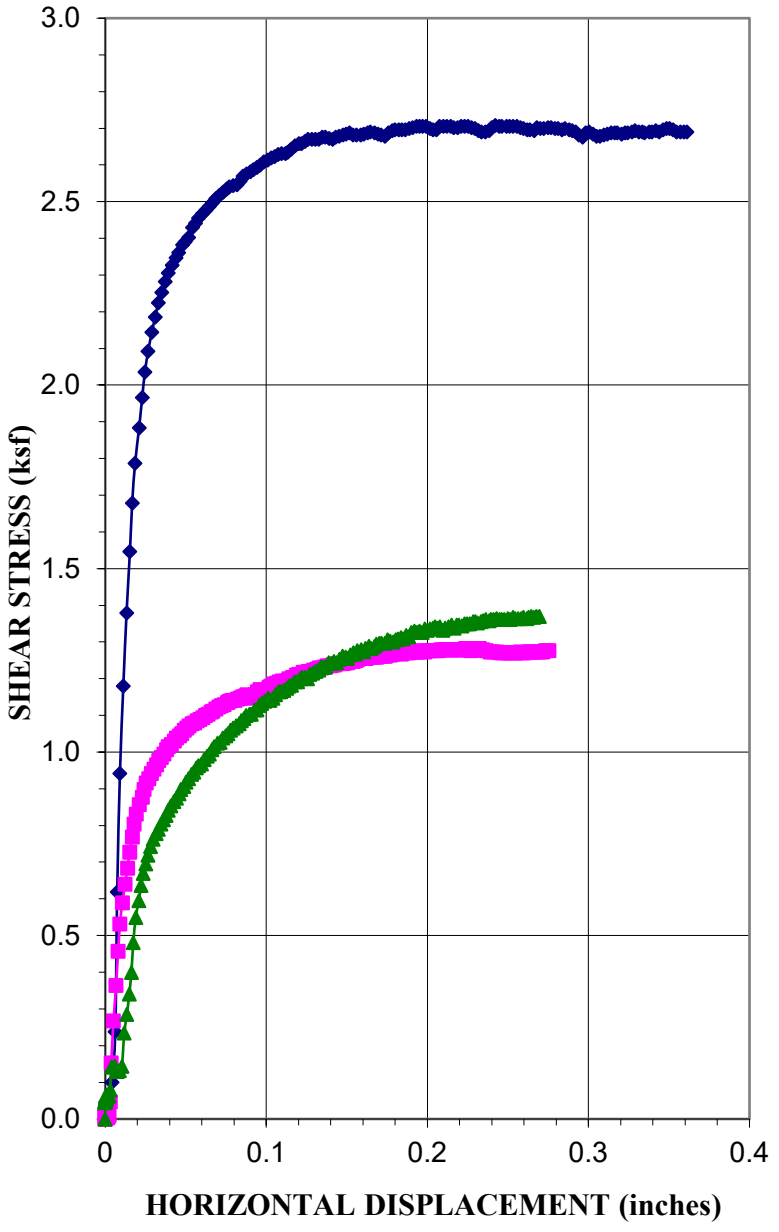
Plate C-25

DIRECT SHEAR TEST





Source:	ME-TP-33 at 5 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	0.901	0.947	0.948
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	96.1	91.9	91.6
Dry Density After, pcf	98.6	94.3	94.1
Moisture % Before	12.6	10.9	9.5
Moisture % After	24.3	28.9	28.5
Saturation, % Before	46.2	36.2	31.4
Saturation, % After	95.2	101.8	99.8
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.70	1.23	1.23
Strain Rate	0.003333 IN/MIN		

Sample Properties	
Cohesion, psf	500
Friction Angle, ϕ	28
Liquid Limit, %	0
Plasticity Index, %	0
Percent Gravel	52.2
Percent Sand	30.5
Percent Passing No. 200 sieve	17.4
Classification	GM

PROJECT: Micron Property

PROJECT NO.: 589-100

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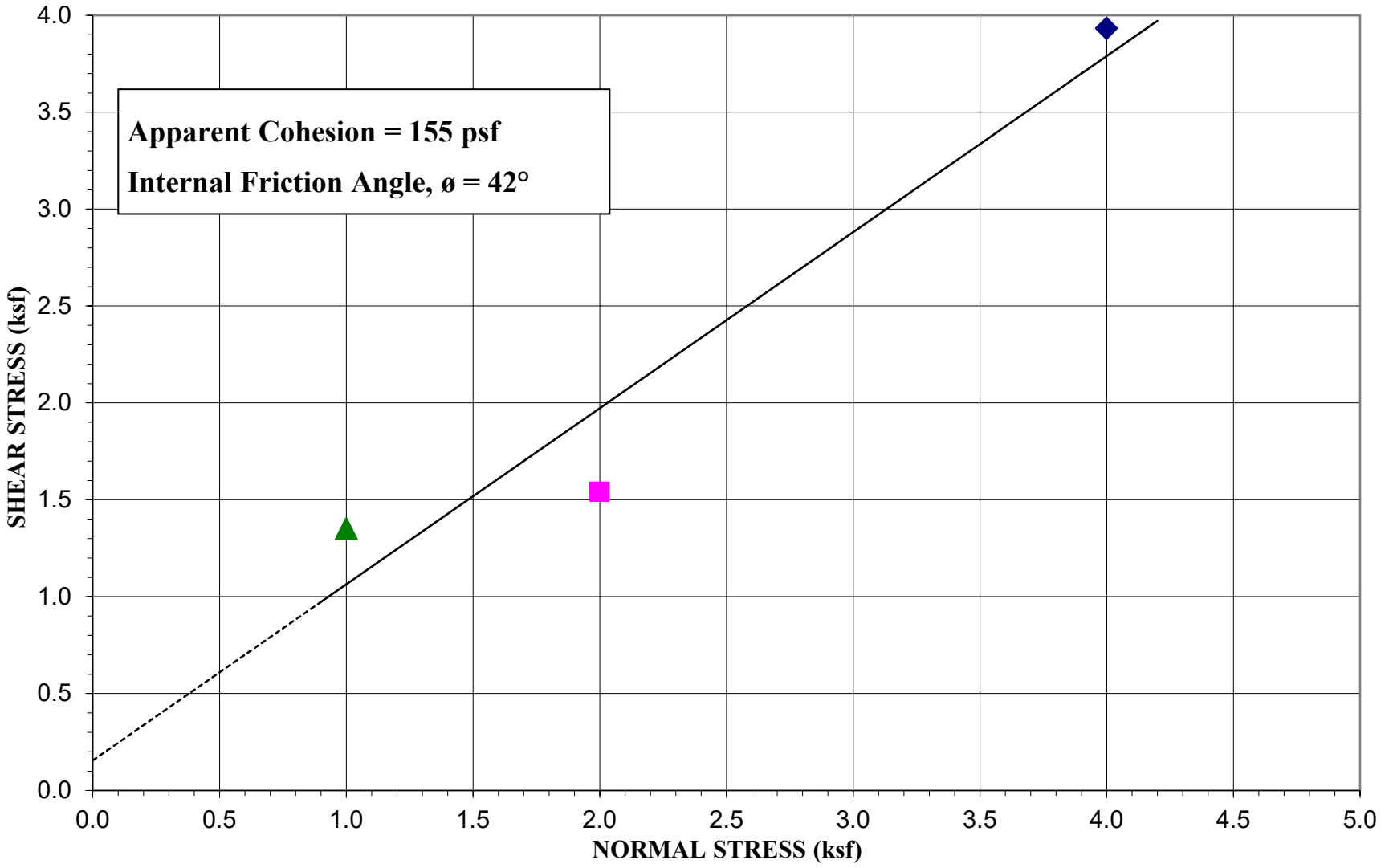
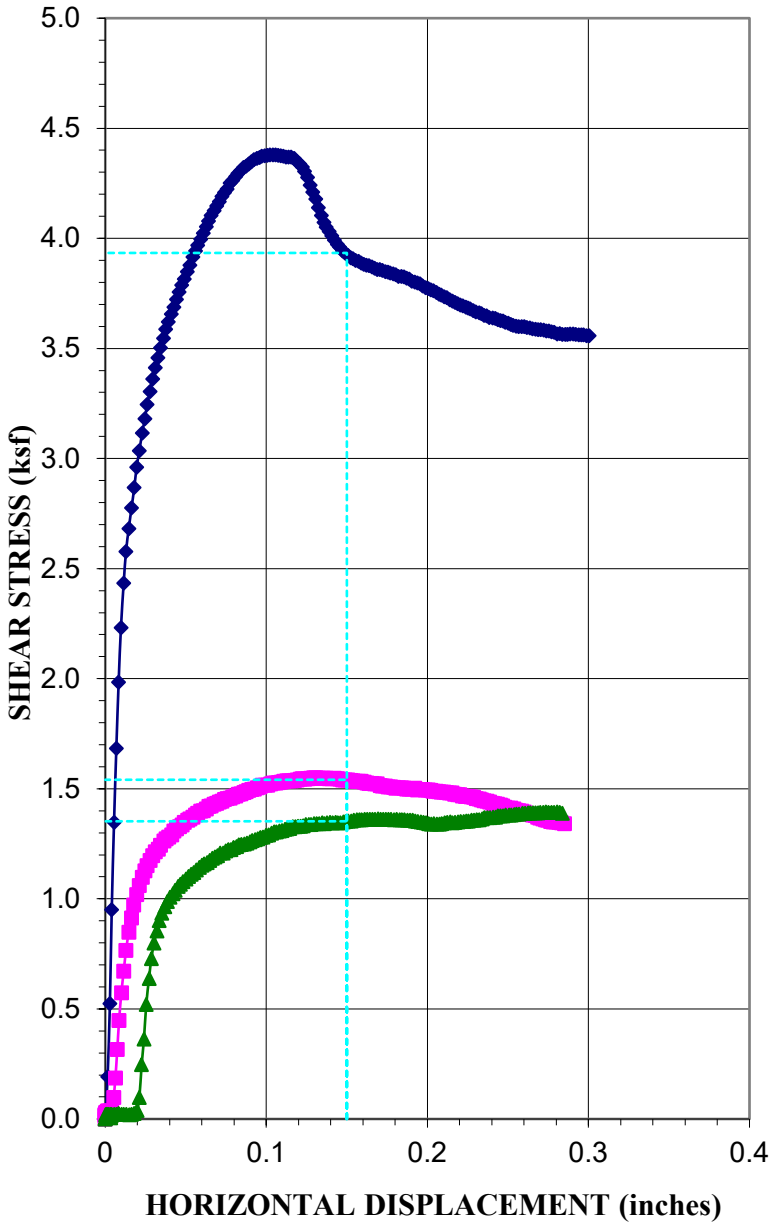
Plate C-26

DIRECT SHEAR TEST





Sample Location:	ME-TP-13 at 5 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.002	0.966	0.975
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	118.4	120.8	120.8
Dry Density After, pcf	119.9	122.3	122.3
Moisture % Before	15.7	17.0	14.2
Moisture % After	29.3	33.0	32.4
Saturation, % Before	105.3	122.2	101.8
Saturation, % After	205.0	249.0	244.2
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	3.93	1.54	1.35
Strain Rate	0.002592 IN/MIN		

Sample Properties	
Cohesion, psf	155
Friction Angle, ϕ	42
Liquid Limit, %	-
Plasticity Index, %	-
Percent Gravel	1.2
Percent Sand	10.5
Percent Passing No. 200 sieve	88.2
Classification	CL

PROJECT: Micron Property

PROJECT NO.: 589-100

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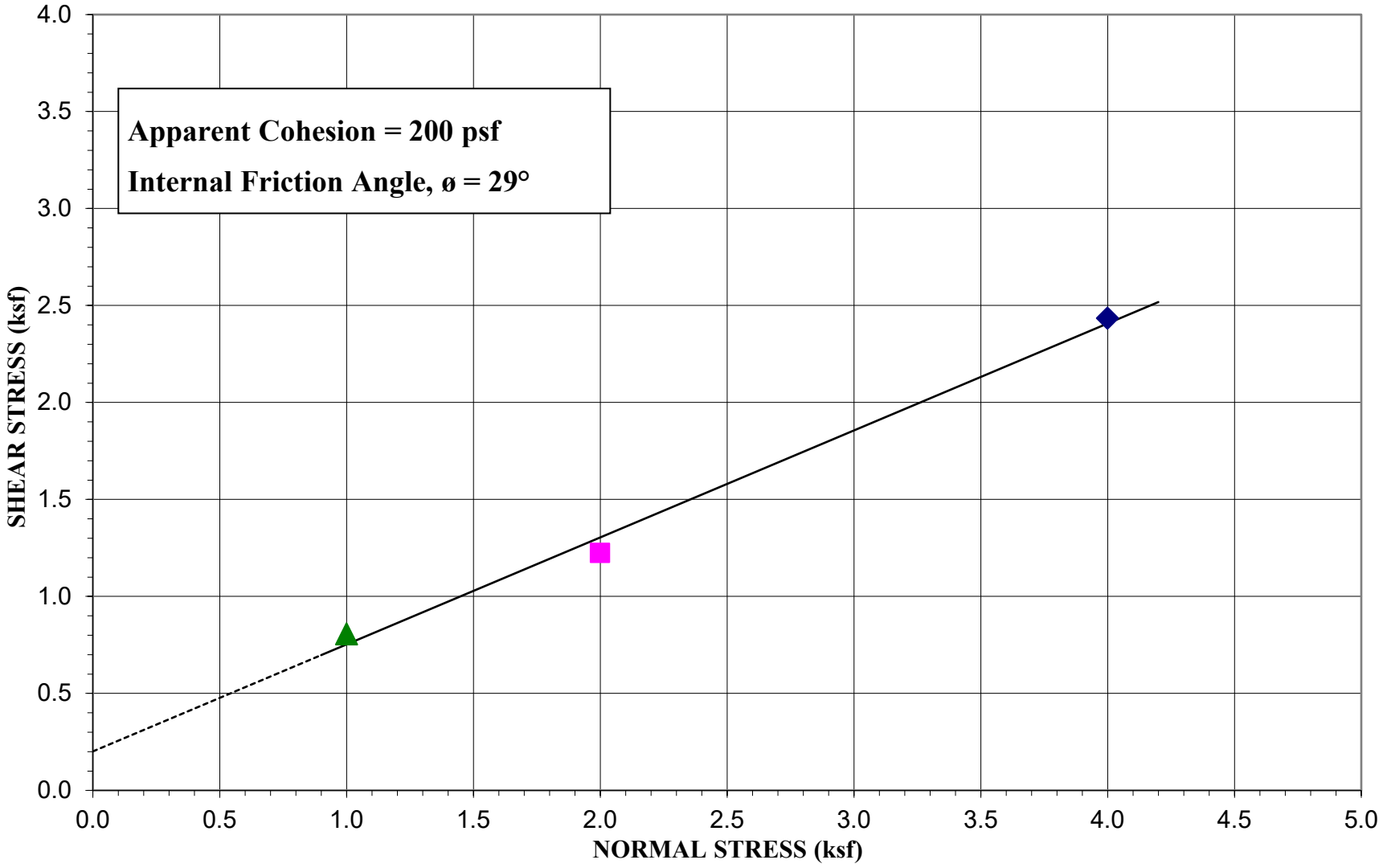
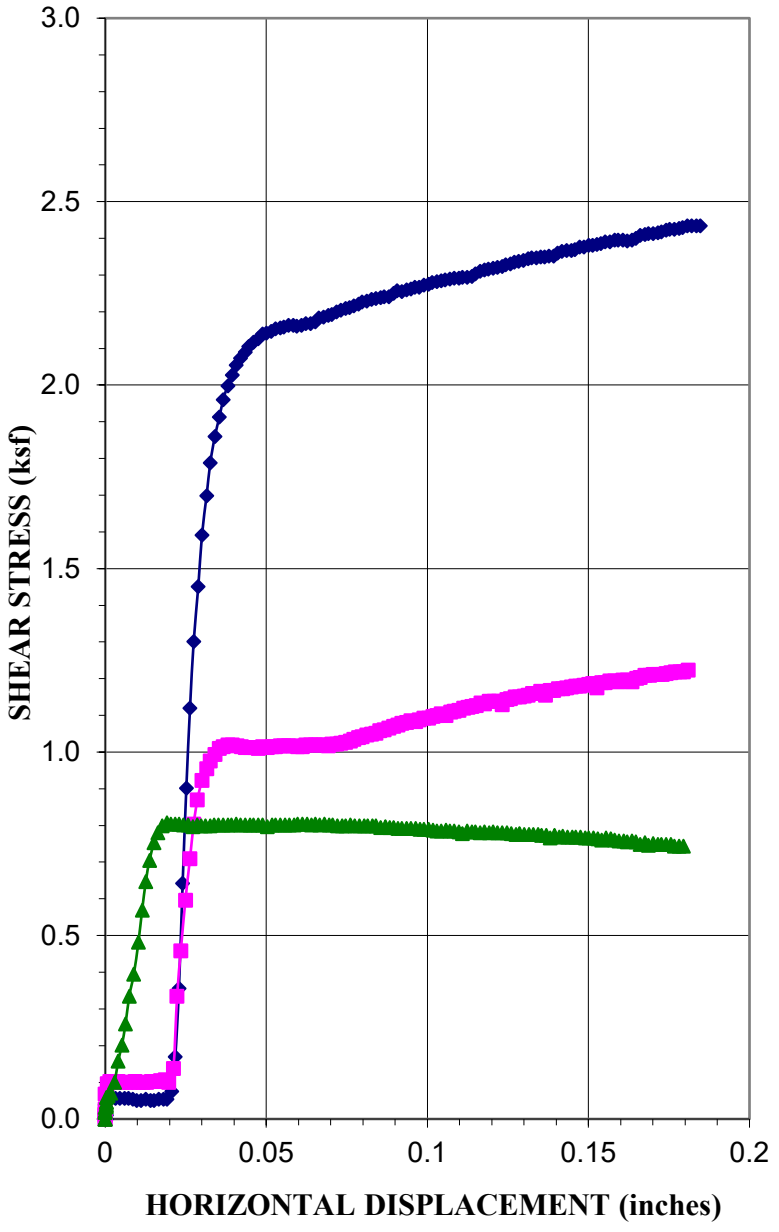
Plate C-27

DIRECT SHEAR TEST





Sample Location:	ME-TP-13 at 5 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.002	0.966	0.975
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	84.3	87.6	86.9
Dry Density After, pcf	86.1	89.4	88.6
Moisture % Before	19.2	20.0	20.0
Moisture % After	29.4	30.9	33.7
Saturation, % Before	52.9	59.7	58.5
Saturation, % After	84.6	96.4	102.9
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.43	1.22	0.81
Strain Rate	0.002592 IN/MIN		

Sample Properties	
Cohesion, psf	200
Friction Angle, ϕ	29
Liquid Limit, %	-
Plasticity Index, %	-
Percent Gravel	39.8
Percent Sand	39.8
Percent Passing No. 200 sieve	20.4
Classification	GM

PROJECT: Micron Property

PROJECT NO.: **589-100**

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Plate C-28

APPENDIX D

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

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Important Information about this Geotechnical Engineering Report

D.R. Horton
Micron Property
Lehi/Drpaer, Utah
Project Number: 589-100

Plate D-1

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration* by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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GeoStrata



Geotechnical Investigation

Skye Property – Inverness Area

Approximately 500 West and State Road 92
Lehi, Utah

January 31, 2023

Prepared For:

D.R. Horton
Attention: Scott Bishop
12351 South Gateway Park Place
Draper, Utah 84020

GeoStrata Job No. 589-147

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Prepared for:

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Preliminary Geotechnical Investigation
Skye Property – Inverness Area
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-147



Caleb R. Allred, P.E.
Project Geotechnical Engineer

Reviewed by:



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January 31, 2023

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.0 INTRODUCTION 2

2.1 PURPOSE AND SCOPE OF WORK 2
2.2 PROJECT DESCRIPTION 2

3.0 METHOD OF STUDY 3

3.1 FIELD INVESTIGATION 3
3.2 LABORATORY INVESTIGATION 3
3.3 ENGINEERING ANALYSIS 4

4.0 GENERALIZED SITE CONDITIONS 5

4.1 SURFACE CONDITIONS 5
4.2 SUBSURFACE CONDITIONS 5
4.2.1 Soils 5
4.2.2 Groundwater 6
4.2.3 Collapsible Soils 6

5.0 GEOLOGIC CONDITIONS 8

5.1 GEOLOGIC SETTING 8
5.2 FAULTING AND SEISMICITY 8
5.3 LIQUEFACTION 10
5.4 OTHER GEOLOGIC HAZARDS 10

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS 11

6.1 GENERAL CONCLUSIONS 11
6.2 EARTHWORK 11
6.2.1 General Site Preparation and Grading 11
6.2.3 Excavation Stability 12
6.2.4 Soft Soil Stabilization 13
6.2.5 Structural Fill and Compaction 13
6.3 FOUNDATIONS 16
6.3.1 Installation and Bearing Material 16
6.3.2 Bearing Pressure 17
6.3.3 Settlement 17
6.3.4 Frost Depth 17

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6.3.5 Construction Observation *18*
6.3.6 Foundation Drainage *18*
6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION 19
6.5 EARTH PRESSURE AND LATERAL RESISTANCE 19
6.6 PAVEMENT SECTION 21
7.0 CLOSURE 24
7.1 LIMITATIONS 24
7.2 ADDITIONAL SERVICES 24
7.3 ACKNOWLEDGEMENTs 25
REFERENCES CITED 26

APPENDICES

Appendix A Plate A-1 .....Site Vicinity Map
Plate A-2 to A-3 .....Exploration Location Map
Plate A-4 to A-5 .....Slope Map

Appendix B Plate B-1 to B-45 .....Test Pit and Trench Location Logs
Plate B-46.....Key to Soil Symbols and Terms

Appendix C Plate C-1 .....Lab Summary Report
Plate C-2 to C-3 .....Atterberg Limits' Results
Plate C-4 to C-5 .....Grain Size Distribution
Plate C-6 to C-7 .....1-D Swell/Collapse Test
Plate C-8 to C-9 .....1-D Consolidation Test
Plate C-10 to C-12 .....Compaction and CBR Test
Plate C-13 to C-14 .....Direct Shear Test

Appendix D Plate D-1 to D-2 .....Important Information About This Report

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1.0 EXECUTIVE SUMMARY

This report presents the preliminary findings of a geotechnical investigation conducted for the Skye Properties at near 500 West and State Road 92, in Lehi of Utah County. We understand that this proposed development consists of a subdivision residential development. The development will include single family residences 1 to 3 stories in height with basements (if feasible). We anticipate footing loads on the order of 2 to 4 kips per lineal foot and column loads of up to 50 kips. The purpose of this investigation is to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork. The area of this site contains some geologic hazards that have not been addressed in this report. All recommendations and conclusion in this report are considered preliminary.

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed development provided that the recommendations contained in this report are incorporated into the design and construction of the project.

As a part of this investigation, subsurface soil conditions were explored by advancing 39 exploratory test pits depths ranging from 10 to 12 feet below the existing site grade. In addition to these test pits GeoStrata observed the excavation of 10 trench excavated as part of a fault rupture hazard analysis. Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is overlain partially by approximately 1-foot of organic topsoil. Underlying the topsoil, we encountered deposits mapped by Biek (2005) as consisting of Historical to Oligocene-Eocene-aged materials deposits. Groundwater was not encountered in any of the completed test pits for the section.

Due to the presence of dense granular soils (sands and gravels) and fine-grained soils with low potential for collapsible soil present at the proposed buildings elevations (between 2 to 8 feet below the existing ground surface), strip and spread footings can be placed entirely on non-collapsible undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.), collapse testing in the laboratory should be performed on a lot-by-lot basis to confirm the that potential collapse will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory collapse testing. According to our preliminary soil collapse testing, structural fill depth below footings will be 0 to 12 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively. Exterior shallow footings and spread footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior strip shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement. Conventional strip and spread footings founded on a native granular soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,600 pounds per square foot (psf)**.

Additional recommendations concerning other aspects of the proposed construction may be found in the body of this report.

IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL-ENGIEERING REPORT:

Do not rely on the executive summary. The executive summary omits a number of details, any one of which could be crucial. Read and refer to the report in full. Do not rely on this report if this report was prepared for a different client, different project, different purpose, different site, and/or before important events occurred at the site or adjacent to it. All recommendations in this report are confirmation dependent. A two-page document prepared by GBA explains these items with greater detail and can be found in Appendix D (Plates D-1 and D-2).

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2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

This report presents the results of a preliminary geotechnical investigation conducted for hillside property above the Micron Property located at approximately 500 West and State Route 92 in Lehi, in Utah County, Utah. The purposes of this investigation were to assess the nature and engineering properties of the subsurface soils at the site and to provide recommendations for general site grading and the design and construction of foundations, slabs-on-grade, and exterior concrete flatwork.

The scope of work completed for this study included a site reconnaissance, subsurface exploration, soil sampling, laboratory testing, engineering analyses, and preparation of this report. Our services were performed in accordance with our proposal and signed authorization, dated October 7, 2022.

The recommendations contained in this report are subject to the limitations presented in the LIMITATIONS section of this report (Section 7.1).

2.2 PROJECT DESCRIPTION

This preliminary geotechnical investigation has been completed for the Sky Property development. The property is located at approximately 500 West and State Route 92, in Lehi, Utah County, Utah (see Plate A-1, *Site Vicinity Map*). Based on information received from the Client, we understand that steep and hard to access (slope exceeding 25 percent grades) portions of the site will either be graded or not developed. This property will be developed with single family residential lots and park space. The resulting construction will include one- to three-story, wood-framed single-family residences founded on conventional spread and strip footings. If larger structures are planned, then GeoStrata should be consulted, and our recommendations should be updated if necessary. Each of these types of structures are anticipated to have basements or crawlspaces if feasible. We anticipate footing loads on the order of 2 to 4 kips per lineal foot and column loads of up to 50 kips. As stated before, if the anticipated footing loads exceed assumptions or the proposed construction is different than what we have assumed, please contact GeoStrata with the updated information and allow for further analysis. Our investigation for the development will be used to provide geotechnical design parameters for construction of buildings, parking areas, driveways, and associated landscaping and utilities.

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3.0 METHOD OF STUDY

3.1 FIELD INVESTIGATION

As a part of this investigation, subsurface soil conditions were explored by advancing 39 exploratory test pits to depths ranging from 10 to 12 feet below the existing site grade. In addition, GeoStrata has observed the excavation of 10 separate trenches that have been excavated as part of GeoStrata's geologic hazard investigation currently being completed at the property. At the time the site work was completed on December 9 to 13, 2023, 6 of the pits were not able to be accessed or we not completed at the time of this report. The approximate locations of the explorations or the proposed locations are shown on Plate A-2 to A-3, Site *Exploration Map,* in Appendix A. Exploration points were placed to provide optimum coverage of the site in the areas of proposed residential development. Logs of the subsurface conditions, as encountered in the test pit explorations, were recorded at the time of excavation and advancement by a staff engineer currently employed at GeoStrata and are presented on Plates B-1 to B-45 in Appendix B. A *Soil Symbols Description Key* used in the borehole and test pit logs is included as Plate B-46.

All test pits were excavated with a client provided tracked excavator. Both bulk and relatively undisturbed soil samples were obtained from the test pits. Relatively undisturbed soil samples were obtained from the test pit and trench locations in the form of tube samples and block samples. All samples were transported to our laboratory for testing to evaluate engineering properties of the various earth materials observed. The soils were classified according to the *Unified Soil Classification System* (USCS) by the Geotechnical Engineer. Classifications for the individual soil units are shown on the attached Test Pit Logs, Plates B-1 to B-45 in Appendix B.

3.2 LABORATORY INVESTIGATION

Geotechnical laboratory tests were conducted on selected relatively undisturbed and bulk soil samples obtained during our field investigation. The laboratory testing program was designed to evaluate the engineering characteristics of onsite earth materials. Laboratory tests conducted during this investigation include:

- Grain Size Distribution Analysis (ASTM D422)
- Atterberg Limits (ASTM D4318)
- California Bearing Ratio Test (ASTM D1883)
- 1-D Swell/Collaspe (ASTM D 2435)
- 1-D Consolidation Test (ASTM D 2435)

The results of laboratory tests are presented on the Test Pit Logs in Appendix B (Plates B-1 to B-45), the test result plates presented in Appendix C (Plates C-2 to C-14) and in the *Summary of Laboratory Test Results* Table (Plate C-1).

3.3 ENGINEERING ANALYSIS

Engineering analyses were performed using soil data obtained from the laboratory test results and empirical correlations from material density, depositional characteristics, and classification. Appropriate factors of safety were applied to the results consistent with industry standards and the accepted standard of care.

4.0 GENERALIZED SITE CONDITIONS

4.1 SURFACE CONDITIONS

At the time of our subsurface investigation of the subject property, no structures existed on the site. The only other site improvements consisted of dirt roadways and fences constructed across the site. The site slopes towards the south and southeast (towards Utah Lake), having a maximum topographic relief of approximately 356 feet. The subject property is north of the former Micron (currently Texas Instruments) facilities. The subject property generally consists of undeveloped hillside.

4.2 SUBSURFACE CONDITIONS

As previously mentioned, the subsurface soil conditions were explored by advancing 39 exploratory test pits to depths ranging from 10 to 12 feet below the existing site grade, and observing 10 excavated trenches that were completed as a part of a geologic hazard investigation for the property. Subsurface soil conditions were logged using the United Soils Classification System (USCS) at the time of the investigation and are included on the Test Pit Logs in Appendix B (Plates B-1 through B-45). The soil and moisture conditions encountered during our investigation are discussed below.

4.2.1 Soils

Based on the results of our field observations as well as on our review of applicable surficial geologic maps, the site is largely overlain by approximately 1 foot of topsoil. Underlying the topsoil, we encountered deposits mapped by Biek (2005) as consisting of a variety of soil deposits ranging from Historical to Oligocene-Eocene in age. Descriptions of the soil units shown in the area are described below;

IPobm – Bingham Mine Formation (Upper Pennsylvanian) – Calcareous Sandstone, minor limestone, quartz sandstone, and shale. This geologic soil unit was encountered in TP-29, TP-25, TP-19, and TP-02. The soils were visual classified as consisted Silty GRAVEL (GM), and SILT with sand (ML).

Qac – Alluvial and Colluvial deposits (Holocene) − Poorly to moderately sorted, generally poorly stratified, clay- to boulder-size, locally derived sediment deposited in swales. This geologic soil unit was encountered in TP-36, TP-30, and TP-41. The soils were visual classified as consisting of granular soils with varying amounts of clay and silt.

Qafo – Older Alluvial-fan deposits (Upper Pleistocene) – Similar to younger undifferentiated alluvial-fan deposits. This geologic soil unit is mapped at TP-5, TP-10, TP-11, TP-12, TP-15, TP-16, TP-17, TP-18, TP-20, TP-21, TP-22, TP-23, TP-24, TP-25, TP-26, TP-27, TP-28, TP-31, TP-34, TP-40, and TP-45. The soils were visual classified as consisting of granular soils with varying amounts of clay and silt.

Taf - Alluvial-fan deposits (Miocene[?] to Oligocene[?]) – Unconsolidated, pebble- to boulder-size, subangular to subrounded orthoquartzite and calcareous sandstone clasts. This geologic soil unit was encountered in TP-3, TP-4, TP-6 TP-8, TP-9, TP-14, TP-15, TP-33, TP-35, TP-38, TP-39, TP-43, TP-44. The soils were visual classified as consisting of granular soils with varying amounts of clay and silt.

The stratification lines shown on the enclosed test pit represent the approximate boundary between soil types USCS classifications of the soils (Plates B-1 to B-22). The actual in-situ transition may be gradual. Due to the nature and depositional characteristics of the native soils, care should be taken in interpolating subsurface conditions between and beyond the exploration locations.

4.2.2 Groundwater

Groundwater was not encountered in any of the completed explorations, but signs of spring runoff were evident throughout the site. Seasonal fluctuations in precipitation, surface runoff from adjacent properties, or other on or offsite sources may increase moisture conditions. The observed groundwater conditions can change seasonally depending on the time of year and will impact the proposed construction. It is recommended that lowest floor slab elevation for each structure should be maintained a minimum of 3 feet above any observed groundwater conditions.

4.2.3 Collapsible or Swelling Soils

Collapse (often referred to as “hydro-collapse”) and swell are phenomena whereby undisturbed soils exhibit volumetric strain and consolidation or expansion upon wetting conditions. Both collapsible and swelling soils can cause differential settling of structures and roadways. Collapsible and swelling soils do not necessarily preclude development and can be mitigated by over-excavating problematic soils and replacing them with engineered fill and by controlling surface drainage and runoff. For some structures that are particularly sensitive to differential settlement, or in areas where collapsible and swelling soils are identified at great depth, a deep foundation system should be considered.

Soils that have a potential to collapse under increased loading and moisture conditions are typically characterized by a pinhole structure and relatively low unit weights. In general, potentially collapsible soils are observed in fine-grained soils that include clay and silt, although collapsible soils may include sandy soils. Swelling soil are typically encountered in blocky dense clay or silt soils.

Our laboratory testing indicated that the native soils have less than 1 percent volume change in both swelling and collapse in a nearly saturated condition. Due to the nature of the soils encountered in the explorations it appears that the soils at the site are generally not consider collapsible or swelling soils. Periodic testing during the construction of the residence may be needed to confirm this observation.

Based on these findings, it is anticipated that between 0 to 12 inches of structural fill may be required under some of the structures that extend into fine-grained soils with a pinhole texture or dense clayey soils. The 0 to 12 inches of structural fill under the footings is recommended to reduce the potential for collapsible or swelling to present a significant risk to the foundation elements within the proposed development. In addition to the structural fill soils, all other recommendations presented in this report should be incorporated into the design and construction of the structures.

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5.0 GEOLOGIC CONDITIONS

5.1 GEOLOGIC SETTING

The site is located at an elevation between 5,075 and 5,4310 feet above mean sea level within the northern portion of Utah Valley. The Utah Valley is a deep, sediment-filled structural basin of Cenozoic age flanked by the Wasatch Range to the east and the Lake Mountains, East Tintic Mountains, and the West Hills to the West (Hintze, 1980). The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah.

The near-surface geology of Utah Valley is dominated by sediments deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983). As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valleys are predominately deep-water deposits of clay, silt and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Surface soil units as mapped by Biek (2005) consisted of Historical to Oligocene-Eocene-aged materials deposits. Based on the soil and groundwater conditions encountered during our investigation, it is considered likely that each of our test pits were terminated in one of the mapped deposits.

5.2 FAULTING AND SEISMICITY

The site lies within the north-south trending belt of seismicity known as the Intermountain Seismic Belt (ISB) (Hecker, 1993). The ISB extends from northwestern Montana through southwestern Utah. An active fault is defined as a fault that has had activity within the Holocene (<11ka). Based on information provided by Geologic Hazards on the Utah Geologic Hazard Portal, faults associated with the Wasatch Fault Zone (WFZ) are present across the subject site GeoStrata is underway with geologic hazards study during the preparations of this report. Once the geologic report is completed, that document should be referred to for recommendations on construction in the special study area. The Skye Property is located approximately 5 miles east of the northern strand of the Provo section of the Wasatch Fault Zone. The Provo section is one of the longest sections of the Wasatch Fault Zone (Hecker, 1993) and is estimated to be approximately 43 miles long with a reported rupture length of 37 miles and a maximum potential to produce earthquakes up to magnitude (M_s) 7.5 to 7.7 (Black and others, 2003). The 145-acre portion of Micron Property is also located approximately 6 miles north of the mapped Utah Lake Faults and Folds (ULFF). The ULFF consists of several northeast to northwest trending faults

and folds located beneath Utah Lake and are reported to have been active in the past 15 ka (Black et al, 2003). However, since the ULFF is at the bottom of a large lake these faults are poorly understood – as such, the USGS does not include ULFF in their fault database for seismic hazard analysis. Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region. Each of the faults listed above show evidence of Holocene-aged movement and is therefore considered active.

Spectral responses for the Risk-Targeted Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a one percent probability of structure collapse in 50 years for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field exploration to 12 feet and our geologic review of the site, it is our opinion that this location is best described as a Site Class C. The spectral accelerations are calculated based on the site's approximate latitude and longitude of 40.449° and -111.841˚ respectively and the Seismic Design Maps web-based application at https://seismicmaps.org/.

Description	Value
Site Class	C
S_s - MCE_R ground motion (period – 0.2s)	1.375
S_1 - MCE_R ground motion (period – 1.0s)	0.506
F_a - Site amplification factor at 1.0s	1.200
F_v - Site amplification factor at 1.0s	1.494
PGA - MCE_G peak ground acceleration	0.621
PGA_M – Site modified peak ground acceleration	0.745

It should be noted that our investigation did not include a site-specific ground motion hazard analysis and a Site Class C has been used to determine the seismic parameters presented above based on maximum depths explored of 12 feet and our geologic review. The seismic parameters presented herein may be used for design of the proposed structures provided that structural design allows for the ground motion hazard analysis exception in ASCE 7-16 Section 11.4.8. Alternatively, GeoStrata may be contacted to complete a ground motion hazard analysis in accordance with ASCE 7-16 Chapter 21.

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5.3 LIQUEFACTION

Certain areas within the intermountain region possess a potential for liquefaction during seismic events. Liquefaction is a phenomenon whereby loose, saturated, granular soil deposits lose a significant portion of their shear strength due to excess pore water pressure buildup resulting from dynamic loading, such as that caused by an earthquake. Among other effects, liquefaction can result in densification of such deposits causing settlements of overlying layers after an earthquake as excess pore water pressures are dissipated. The primary factors affecting liquefaction potential of a soil deposit are: (1) level and duration of seismic ground motions; (2) soil type and consistency; and (3) depth to groundwater.

Based on our review of the *Liquefaction-Special Study Areas, Wastach Front and nearby Area, Utah*, this portion of the Micron Property is located in an area currently designated as having a "Very Low to Low" liquefaction potential. "Low" liquefaction potential indicates that there is between a 5% to 10% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction. "Very Low" liquefaction potential indicates that there is less than 5% probability of having an earthquake within a 100-year period that will be strong enough to cause liquefaction.

The near-surface soils observed within our test pits consisted of unsaturated soils. Groundwater was not observed in the test pits. A liquefaction analysis was beyond the scope of the project; however, if the owner or client wishes to have greater understanding of the liquefaction potential of the soils at greater depths, a liquefaction analysis should be completed at the site.

5.4 OTHER GEOLOGIC HAZARDS

According to the latest update to the Geologic Hazards on Utah Geologic Hazard Portal, the site generally located in special study areas for slope stability. Recommendations for development in these mapped hazards special study areas, should be addressed in geologic hazard report or reports. The results of these reports and findings may limit the development or require mitigation prior to the development of the site.

6.0 ENGINEERING ANALYSIS AND RECOMMENDATIONS

6.1 GENERAL CONCLUSIONS

Based on the subsurface conditions encountered at the site, it is our opinion that the subject site is suitable for the proposed construction provided that the recommendations contained in this report are complied with. This conclusion should be understood as preliminary, and the results of geologic hazard analysis could designate some portions of this development as hazardous or unbuildable.

The recommendations presented in this report are based on our understanding of the proposed project, the subsurface conditions observed during field exploration, the results of laboratory testing, and our engineering analyses. If subsurface conditions other than those described herein are encountered in conjunction with construction, and/or if design and layout changes are initiated, we must be informed so that the recommendations herein can be reviewed and revised as changes or conditions may require.

Based on our observations, the subject site is overlain by 1-foot of topsoil. Increased depth of topsoil may be encountered in the drainages. These soils would need to be over-excavated in all areas underlying footing elements, pavements and any other areas which would underlie structural elements of the new development.

6.2 EARTHWORK

Prior to the placement of foundations, general site grading is recommended to provide proper support for foundations, exterior concrete flatwork, concrete slabs-on-grade, and pavement sections. Site grading is also recommended to provide proper drainage and moisture control on the subject property and to aid in preventing differential movement in foundation soils as a result of variations in moisture conditions.

6.2.1 General Site Preparation

In areas beneath footings and concrete flat work, the highly organic topsoil (top 12 inches) should be stripped and stockpiled for use in landscape areas or disposal. Debris, vegetation, undocumented fill, roots, loose, soft, or other deleterious materials should also be removed. If over-excavation is required, the excavation should extend a minimum of one foot laterally for every foot of depth of over-excavation. The exposed subgrade should be proof-rolled with heavy

equipment to identify loose, soft or otherwise disturbed soils. If soft soils are observed, they should be stabilized in accordance with our recommendations in the Soft Soil Stabilization Section (Section 6.2.4); if loose soils are observed, they should be compacted as recommended in Section 6.2.5.

A GeoStrata representative should observe the site preparation and grading operations to assess that the recommendations presented in this report are complied with.

6.2.2 Demolition

Although no structures were observed during our field investigation, the possibility exists that isolated structures may be present at the subject property. If encountered, demolition of any on-site structures is required prior to subsequent construction. We recommend complete removal of all foundations of any existing structures until native soils are exposed. All debris produced from demolition should be removed from the site to an approved construction and demolition landfill. Loose soils and additional undocumented fill can be created from demolition of existing structures. These loose and deleterious materials should be over-excavated. The upper 12 inches of native soils should be scarified and compacted to 95% of maximum dry density according to ASTM D1557 prior to proceeding with construction.

6.2.3 Excavation Stability

Based on Occupational Safety and Health Administration (OSHA) guidelines for excavation safety, trenches with vertical walls up to 5 feet in depth may be occupied, however, the presence of fill soils, loose soils, or wet soils may require that the walls be flattened to maintain safe working conditions. When the trench is deeper than 5 feet, we recommend a trench-shield or shoring be used as a protective system to workers in the trench. Based on our soil observations, laboratory testing, and OSHA guidelines, native soils at the site classify as Type C soils. Deeper excavations, if required, should be constructed with side slopes no steeper than one and one- and one-half horizontal to one vertical (1.5H:1V). Wet conditions should be anticipated side slopes will likely need to be further flattened to maintain slope stability. Alternatively, shoring or trench boxes may be used to improve safe work conditions in trenches. The contractor is ultimately responsible for trench and site safety. Pertinent OSHA requirements should be met to provide a safe work environment. If site specific conditions arise that require engineering analysis in accordance with OSHA regulations, GeoStrata can respond and provide recommendations as needed.

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We recommend that a GeoStrata representative be on-site during all excavations to assess the exposed soils in trench walls.

6.2.4 Soft Soil Stabilization

Based on observations during our field investigation, if near-surface soils become saturated soft or pumping soils may be exposed in excavations at the site. Once exposed, all subgrade surfaces beneath proposed structure, pavements, and flat work concrete should be proof rolled with heavy wheeled-construction equipment. If soft or pumping soils are encountered, these soils should be stabilized prior to construction of footings. Stabilization of the subgrade soils can be accomplished using a clean, coarse angular material worked into the soft subgrade. We recommend the material be greater than 2-inch diameter, but less than 6 inches. A locally available pit-run gravel may be suitable but should contain a high percentage of particles larger than 2 inches and have less than 7 percent fines (material passing the No. 200 sieve). A pit-run gravel may not be as effective as a coarse, angular material in stabilizing the soft soils and may require more material and greater effort. The stabilization material should be worked (pushed) into the soft subgrade soils until a firm relatively unyielding surface is established. Once a firm, relatively unyielding surface is achieved, the area may be brought to final design grade using structural fill.

In large areas of soft subgrade soils, stabilization of the subgrade may not be practical using the method outlined above. In these areas it may be more economical to place a woven geotextile fabric against the soft soils covered by 18 inches of coarse, sub-rounded to rounded material over the woven geotextile. An inexpensive non-woven geotextile “filter” fabric should also be placed over the top of the coarse, sub-rounded to rounded fill prior to placing structural fill or pavement section soils to reduce infiltration of fines from above. The woven geotextile should be Mirafi RS280i or prior approved equivalent. The filter fabric should consist of a Mirafi 140N, or equivalent as approved by the Geotechnical Engineer.

We recommend that a GeoStrata representative be on-site to assess the exposed excavation soils and be allowed to review the excavation plans when they are prepared in order to evaluate their compatibility with these recommendations.

6.2.5 Structural Fill and Compaction

All fill placed for the support of structures, flatwork, or pavements, should consist of structural fill. Onsite soils may be utilized for structural fill, although the contractor should be aware that due to the over-sized aggregates or the clayey composition of the native soils, it may be difficult

if not impossible to maintain active and accurate proctor values for moisture conditioning and compaction. As such, the native soil onsite may need to be screened and well mixed prior to the use of the native soils as structural fill for development. Onsite undocumented fill soils may likewise be used as structural fill. The contractor should have confidence that the anticipated method of compaction will be suitable for the type of structural fill used. All structural fill should be free of vegetation, debris or frozen material, and should contain no inert materials larger than **4 inches** in nominal diameter.

If an imported material will be used as structural fill, it should consist of a relatively well-graded granular soil with a maximum of 50 percent passing the No. 4 sieve and a maximum fines content (minus No.200 mesh sieve) of 25 percent. Fill material potion finer than the No. 40 sieve should have a liquid limit (LL) less than 35 and a plasticity index (PI) less than 25. The table below provides our recommended gradation and Atterberg limits requirements for structural fill.

Grain Size	Percent Passing
4-inch	100
2-inch	85 to 100
No. 4	15 to 50
No. 200	< 25
Liquid Limit (LL)	<35
Plasticity Index (PI)	<25

All structural fill soils should be approved by the Geotechnical Engineer prior to placement. Earth materials not meeting the aforementioned criteria may be suitable for use as structural fill; however, such material should be evaluated on a case-by-case basis and should be approved by the Geotechnical Engineer prior to use. These requirements for structural fill meet the needs of the site; however, regulating entities including special service districts, cities etc. may require the use of a predefined structural fill for use in their utility corridors/trenches. The contractor should be aware of the special requirements of structural fill by these regulating entities.

All structural fill should be placed in maximum 10-inch loose lifts if compacted by small hand-operated compaction equipment, maximum 12-inch loose lifts if compacted by riding rollers or heavy-duty compaction equipment that is capable of efficiently compacting the entire thickness of the lift. We recommend that all structural fill be compacted on a horizontal plane, unless otherwise approved by the geotechnical engineer. Structural fill should be compacted to at least

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95% of the maximum dry density, as determined by ASTM D-1557, for fill 5 feet or less in thickness. The required compaction should be increased to 98% for fills greater than 5 feet in thickness. The moisture content should be at or slightly above the optimum moisture content at the time of placement and compaction. Also, prior to placing any fill, the excavations should be observed by the geotechnical engineer to observe that any unsuitable materials or loose soils have been removed. In addition, proper grading should precede placement of fill, as described in the **General Site Preparation and Grading** subsection of this report (Section 6.2.1).

We understand that grading fills and structural fill will be placed up to 12 feet in total height. All fill soils placed should be within 3% of the optimum moisture content. Fill soils should be compacted to at least 95% of the maximum dry density as determined by ASTM D-1557, for fills less than 6 feet in depth. Fill soils should compacted to at least 98% of the maximum dry density as determined by ASTM D-1557, for fills more than 6 feet and less than 12 feet in depth. Grading fill soil should bear on nearly horizontal native soils, keyed into the soils, and topsoil removed.

Contact Geostrata for recommendations for fill placement exceed 12 feet in depth. All utility trenches backfilled below the proposed structure, pavements, and flatwork concrete, should be backfilled with onsite soils or structural fill that is within 3% of the optimum moisture content when placed and compacted to at least 95% of the maximum dry density as determined by ASTM D-1557. All other trenches, in landscape areas, should be backfilled and compacted to at least 90% of the maximum dry density (ASTM D-1557).

The gradation, placement, moisture, and compaction recommendations contained in this section meet our minimum requirements but may not meet the requirements of other governing agencies such as city, county, or state entities. If their requirements exceed our recommendations, their specifications should override those presented in this report.

6.2.6 Site Grading

The proposed plan for the site grading for the subject development was not provided by the client at the time this report was completed and GeoStrata assumed that fills and cuts up to 12 feet may be needed for the development. If cuts and fills exceed the depth of 12 feet GeoStrata should be contacted and allowed to review the proposed grading plan and provide updated recommendations for fill placement and slope stability analysis.

Site specific grading will need to be implemented to provide final slopes which meet the conditions of the proposed grading. Recommendations regarding cut and fill areas are summarized below.

1) Permanent cuts and fill slopes may be constructed no greater than 2H:1V and less than 20 feet in height.
2) Permanent fill slopes constructed on grades greater than 10H:1V should be keyed/benched into native materials. We recommend a horizontal key or bench be excavated into the existing slope for every approximately 4 feet of rise.
3) The crest of cut and fill slopes should include a drainage swale to minimize surface water on the slope face.
4) Slopes greater than 15 feet in height should be constructed with back drains installed in the lower key/bench.

The cut and fill slopes should be provided erosion-controlled means and the soil should be revegetated as soon as possible. Otherwise, be aware that maintenance of these slopes will be required on a regular basis. Every effort should be taken to provide controlled drainage and surface run-off away from the crest and face of the slope.

GeoStrata shall observe and approve all exposed cuts and placement of fills. The minimum key widths may be modified in the field if more competent materials are exposed and appropriate slope stability can be demonstrated. GeoStrata should approve any changes and/or modifications to the final slope design.

6.3 FOUNDATIONS

The foundations for the proposed structures may consist of conventional strip and/or spread footings. Strip and spread footings should be a minimum of 20 and 30 inches wide, respectively, and exterior shallow footings should be embedded at least 30 inches below final grade for frost protection and confinement. Interior shallow footings not susceptible to frost conditions should be embedded at least 18 inches for confinement.

6.3.1 Installation and Bearing Material

Strip and spread footings can be placed entirely on non-collapsible, non-swelling undisturbed native soils. If soil at the foundation elevation appears to have a hydro-collapsible nature (pinholes, low natural density, etc.) or swelling soils (dense, blocky clay or silts) swell/collapse testing in the laboratory should be performed on a periodic basis to confirm the that potential

collapse or swell will not adversely affect the proposed construction. Foundation elements should not be founded on collapsible or swelling soils, and if these soils are encountered, they should be over-excavated according to the results of lot-specific laboratory swell/collapse testing. We anticipate structural fill depth below footings will be 0 to 12 inches. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.5 of this report.

Foundation elements should not be founded on undocumented fill, and if these soils are encountered, they should be over-excavated until suitable, native soils are exposed. Foundation elements should not be founded on combination soils, and if these soils condition are encountered, they should be over-excavated a minimum of 1-foot. The site may then be brought back up to design grade using properly placed and compacted structural fill. Structural fill should meet material recommendations and be placed and compacted as recommended in Section 6.2.5 of this report.

All organic material, soft areas, frozen material or other inappropriate material shall be removed from the footing zone to a depth determined by the Geotechnical Engineer and be replaced with structural fill where over excavation is required.

6.3.2 Bearing Pressure

Conventional strip and spread footings founded on a native soil or on structural fill may be proportioned for a maximum net allowable bearing capacity of **1,600 pounds per square foot (psf).** The recommended net allowable bearing pressure refers to the total dead load and can be increased by ⅓ to include the sum of all loads including wind and seismic.

6.3.3 Settlement

Settlements of properly designed and constructed conventional footings, founded as described above, are anticipated to be less than 1 inch. Differential settlements should be on the order of half the total settlement over 30 feet.

6.3.4 Frost Depth

All exterior footings and spread footings are to be constructed at least 30 inches below the ground surface for frost protection and confinement, due to the location of the site and risk of swelling soil consideration to increasing this to 36 inches may be prudent. This includes walk-out areas and may require fill to be placed around buildings. Interior strip footings not

susceptible to frost conditions should be embedded at least 18 inches for confinement. If foundations are constructed through the winter months, all soils on which footings will bear shall be protected from freezing.

6.3.5 Construction Observation

A geotechnical engineer shall periodically monitor excavations prior to installation of footings. Inspection of soil before placement of structural fill or concrete is required to detect any field conditions not encountered in the investigation which would alter the recommendations of this report. All structural fill material shall be tested under the direction of a geotechnical engineer for material and compaction requirements.

6.3.6 Foundation Drainage

As stated in Section 4.2.2 of this report, groundwater was not encountered in the test pits. IRC Section R405 *Foundation Drainage* recommends the construction of a foundation drain around any walls or portions thereof that retain earth and enclose spaces and floors below grade. From our observations at the site we recommend that a foundation drain is constructed for each of the residences in this development.

We recommend that the IRC Section R405 Foundation Drainage recommends be complied with. If a foundation drain is construction it should consist of a 4-inch perforated pipe placed at or below the footing elevation. The pipe should be covered with at least 12 inches of free draining gravel (containing less than 5 percent passing the No. 4 sieve) and be graded to a free gravity outfall or to a pumped sump. A separator fabric, such as Mirafi 140N, should separate the free draining gravel and native soil (i.e. the separator fabric should be placed between the gravel and the native soils at the bottom of the gravel, the side of the gravel where the gravel does not lie against the concrete footing or foundation and at the top of the gravel). We recommend that the gravel extend up the foundation wall to within 2 feet of the final ground surface. As an alternative, the gravel extending up the foundation wall may be replaced with a prefabricated drain panel, such as Ecodrain-E. We recommend that the foundation drain construction be observed and documented in a subsequent observation letter.

As an added precaution, the following moisture protection mitigation recommendations should be implemented to help reduce the risk from potential settlement from occurring. These items are summarized as follows:

- Moisture should not be allowed to infiltrate into the soils in the vicinity of the foundations. As such, design strategies to minimize ponding and infiltration near the home should be implemented.
- The ground surface within 10 feet of the entire perimeter of the building should slope a minimum of five percent away from the structure. Alternatively, a slope of 5% is acceptable if the water is conveyed to a concrete ditch that will convey the water to a point of discharge that is at least 10 feet from the structures.
- Roof runoff devices (rain gutters) should be installed to direct all runoff a minimum of 10 feet away from the structure and preferably day-lighted to the curb where it can be transferred to the storm drain system. Rain gutters discharging roof runoff adjacent to or within the near vicinity of the structure may result in excessive differential settlement.
- We recommend irrigation around foundations be minimized by selective landscaping and that irrigation valves be constructed at least 5 feet away from foundations.
- Jetting (injecting water beneath the surface) to compact backfill against foundation soils may result in excessive settlement beneath the building and is not allowed.
- Backfill against foundations walls should be placed and compacted in accordance with the Section 6.2.4.
- Any additional precautions which may become evident during construction.

6.4 CONCRETE SLAB-ON-GRADE CONSTRUCTION

Concrete slabs-on-grade should be constructed over at least 4 inches of compacted gravel. Disturbed native soils should be compacted to at least 95% of the maximum dry density as determined by ASTM D-1557 (modified proctor) prior to placement of gravel. The gravel should consist of road base or clean drain rock with a ¾-inch maximum particle size and no more than 12 percent fines passing the No. 200 mesh sieve. The gravel layer should be compacted to at least 95 percent of the maximum dry density of modified proctor or until tight and relatively unyielding if the material is non-proctorable. The maximum load on the floor slab should not exceed 100 psf; greater loads would require additional subgrade preparation and additional structural fill. All concrete slabs should be designed to minimize cracking as a result of shrinkage. Consideration should be given to reinforcing the slab with welded wire, re-bar, or fiber mesh.

6.5 EARTH PRESSURE AND LATERAL RESISTANCE

Lateral forces imposed upon conventional foundations due to wind or seismic forces may be resisted by the development of passive earth pressures and friction between the base of the

footing and the supporting subgrade. In determining the frictional resistance, a coefficient of friction of 0.41 should be used for native soils against concrete or 0.43 for structural fill against concrete.

Ultimate lateral earth pressures from native soil backfill acting against retaining walls and buried structures may be computed from the lateral pressure coefficients or equivalent fluid densities presented in the following table:

Condition	Lateral Pressure Coefficient	Equivalent Fluid Density (pounds per cubic foot)
Active[1]	0.33	40
At-rest[2]	0.50	60
Passive[1]	3.00	360
Seismic Active[3]	0.32	39
Seismic Passive[4]	-0.25	-30

[1]Based on Coulomb's equation

[2]Based on Jaky

[3]Based on Lew et al. (2010)

[4]Based on Mononobe-Okabe Equation

These coefficients and densities assume level, granular backfill with no buildup of hydrostatic pressures. The force of the water should be added to the presented values if hydrostatic pressures are anticipated. If sloping backfill is present, we recommend the geotechnical engineer be consulted to provide more accurate lateral pressure parameters once the design geometry is established.

Walls and structures allowed to rotate slightly should use the active condition. If the element is constrained against rotation, the at-rest condition should be used. These values should be used with an appropriate factor of safety against overturning and sliding. A value of 1.5 is typically used. Additionally, if passive resistance is calculated in conjunction with frictional resistance, the passive resistance should be reduced by ½.

For seismic analyses, the *active* and *passive* earth pressure coefficient provided in the table is based on Lew et al (2010) and Mononobe-Okabe respectively and only accounts for the dynamic horizontal thrust produced by ground motion. Hence, the resulting dynamic thrust pressure should be added to the static pressure to determine the total pressure on the wall. The pressure distribution of the dynamic horizontal thrust may be closely approximated as an inverted triangle

with stress decreasing with depth and the resultant acting at a distance approximately 0.6 times the loaded height of the structure, measured upward from the bottom of the structure.

The coefficients shown assume a vertical wall face. Hydrostatic and surcharge loadings, if any, should be added. Over-compaction behind walls should be avoided. Resisting passive earth pressure from soils subject to frost or heave, or otherwise above prescribed minimum depths of embedment, should usually be neglected in design.

6.6 PAVEMENT SECTION

For pavement design, the following CBR laboratory test result was obtained:

Test Location	Depth (ft)	CBR (%)
TP-11	6	32.5

We have elected to use a CBR value of 10.0 in design. This design value well below the test result and is use because of the various soil types encountered at the surface of the site. A traffic study of the site has been completed since by Horrock Engineers titled “Micron TIS, Lehi, UT” and dated September 27, 2022. After a review of the TIS, GeoStrata has used this information to determine the traffic counts for the local and the collector roadways. According the TIS, Horrocks has divided the development into 7 zones. The highest daily trip count for a single zone is Zone 3 with 8,189 vehicles, and the total daily trips for Zones 1 to Zone 5 is 24,844 vehicles. GeoStrata has used these finding to approximately ESAL for the “Local and Private Roadways” and “Collector and Arterial Roadway”. We have attached the referenced table and map to the end of this memorandum.

We assumed that vehicle traffic along the local and private roadways will consist of approximately 8,014 passenger car trips per day, 2 small trucks per day, and 2 large trucks per day with a 20-year design life. Based on these assumptions, our analysis uses 57,680 ESAL’s for a 20-year design life of the pavement. We assumed that vehicle traffic along the local and private roadways will consist of approximately 24,474 passenger car trips per day, 7 small trucks per day, and 7 large trucks per day with a 20-year design life. We assumed that vehicle traffic along the collector and arterial roads will consist of approximately 231,850 ESAL’s for a 20-year design life.

Based on these assumptions, our analysis uses 57,680 and 231,850 ESAL’s as a traffic design basis over the life of the pavement for the “Local and Private Roadways” and “Collector and

Arterial Roadways", respectively. Asphalt has been assumed to be a high stability plant mix or Superpave mix with a minimum CBR of 70. The untreated base course material (road base or UTBC) composed of crushed stone with a minimum CBR of 30. The table below presents equivalent recommended pavement sections based on the above assumptions. The City of Lehi minimum pavement sections governs the pavement design and should be used, the Pavement Recommendations are provided to show GeoStrata calculation according to the procedure described in AASHTO 93. Below is the updated pavement design for the Micron Property Development:

Local and Private Roadways Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)	
	Option I	Option 2
Asphaltic Concrete	3	3
Untreated Base Course	6	12
Granular Borrow/ Engineered Fill	8	-

Collector and Arterials Roadways Pavement Sections

Pavement Materials	Recommended Minimum Thickness (in)	
	Option 1	Option 2
Asphaltic Concrete	4	4
Untreated Base Course	6	14
Granular Borrow/ Engineered Fill	10	-

If traffic conditions vary significantly from our stated assumptions, GeoStrata should be contacted so we can modify our pavement design parameters accordingly. Specifically, if the traffic counts are significantly higher or lower, we should be contacted to review the pavement sections as necessary. The pavement sections thicknesses above assumes that the majority of construction traffic including cement trucks, cranes, loaded haulers, etc. has ceased. If a significant volume of construction traffic occurs after the pavement section has been constructed, the owner should anticipate maintenance or a decrease in the design life of the pavement area.

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In our experience, in areas with heavy truck loads where trucks frequently turn around, backup, or load and unload, such as areas around dumpsters, pavements experience more distress. To prolong the life of the pavement in these areas, consideration should be given to using a Portland cement concrete (rigid) pavement in these areas. The table below presents our recommended rigid pavement section.

Rigid Pavement Section

Pavement Materials	Recommended Minimum Thickness (in)
	Rigid Pavement 1
Concrete	5
Untreated Base Course	6

Concrete should consist of a low slump, low water cement ratio mix with a minimum 28-day compressive strength of 4,000 psi. Base course should be compacted to at least 95% of the maximum dry density as determined by the ASTM D-1557.

The pavement sections discussed above meet our minimum recommendations for pavement design. It should be noted that more stringent pavement section requirements may be enforced by Lehi City or other governing agency.

7.0 CLOSURE

7.1 LIMITATIONS

The recommendations contained in this report are based on our limited field exploration, laboratory testing, and understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the explorations made for this investigation. It is possible that variations in the soil and groundwater conditions could exist between and beyond the points explored. The nature and extent of variations may not be evident until construction occurs. If any conditions are encountered at this site that are different from those described in this report, GeoStrata should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed construction changes from that described in this report, GeoStrata should be notified.

This report was prepared in accordance with the generally accepted standard of practice at the time the report was written. No other warranty, expressed or implied, is made.

It is the Client's responsibility to see that all parties to the project including the Designer, Contractor, Subcontractors, etc. are made aware of this report in its entirety. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

7.2 ADDITIONAL SERVICES

The recommendations made in this report are based on the assumption that an adequate program of tests and observations will be made during construction. GeoStrata staff should be on site to verify compliance with these recommendations. These tests and observations should include, but not necessarily be limited to, the following:

- Observations and testing during site preparation, earthwork and structural fill placement.
- Observation of foundation soils to assess their suitability for footing placement.
- Observation of soft/loose soils over-excavation.
- Observation of temporary excavations and shoring.
- Consultation as may be required during construction.
- Quality control and observation of concrete placement.

We also recommend that project plans and specifications be reviewed by GeoStrata to verify compatibility with our conclusions and recommendations. Additional information concerning the scope and cost of these services can be obtained from our office.

We appreciate the opportunity to be of service on this project. Should you have any questions regarding the report or wish to discuss additional services, please do not hesitate to contact us at your convenience at (801) 501-0583.

7.3 ACKNOWLEDGEMENTS

This project was made possible through the help of Dan Mitchell and Scott Bishop with D.R. Horton, they scheduled excavation equipment with Mitchell X Excavation. Mitchell X spend several days up on the hillside digging test pits and trenches with GeoStrata thank you for the professional manner at which you completed this time-consuming labor. The test pits were logged and sampled by Nyle Sampson with GeoStrata. There are others with GeoStrata, D.R. Horton, and Mitchell X that made this project happen. Thank you.

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APPENDIX A



Legend

Mircon Property Boundaries

4000 0 4000 8000 12000 16000 ft

1:96000

N

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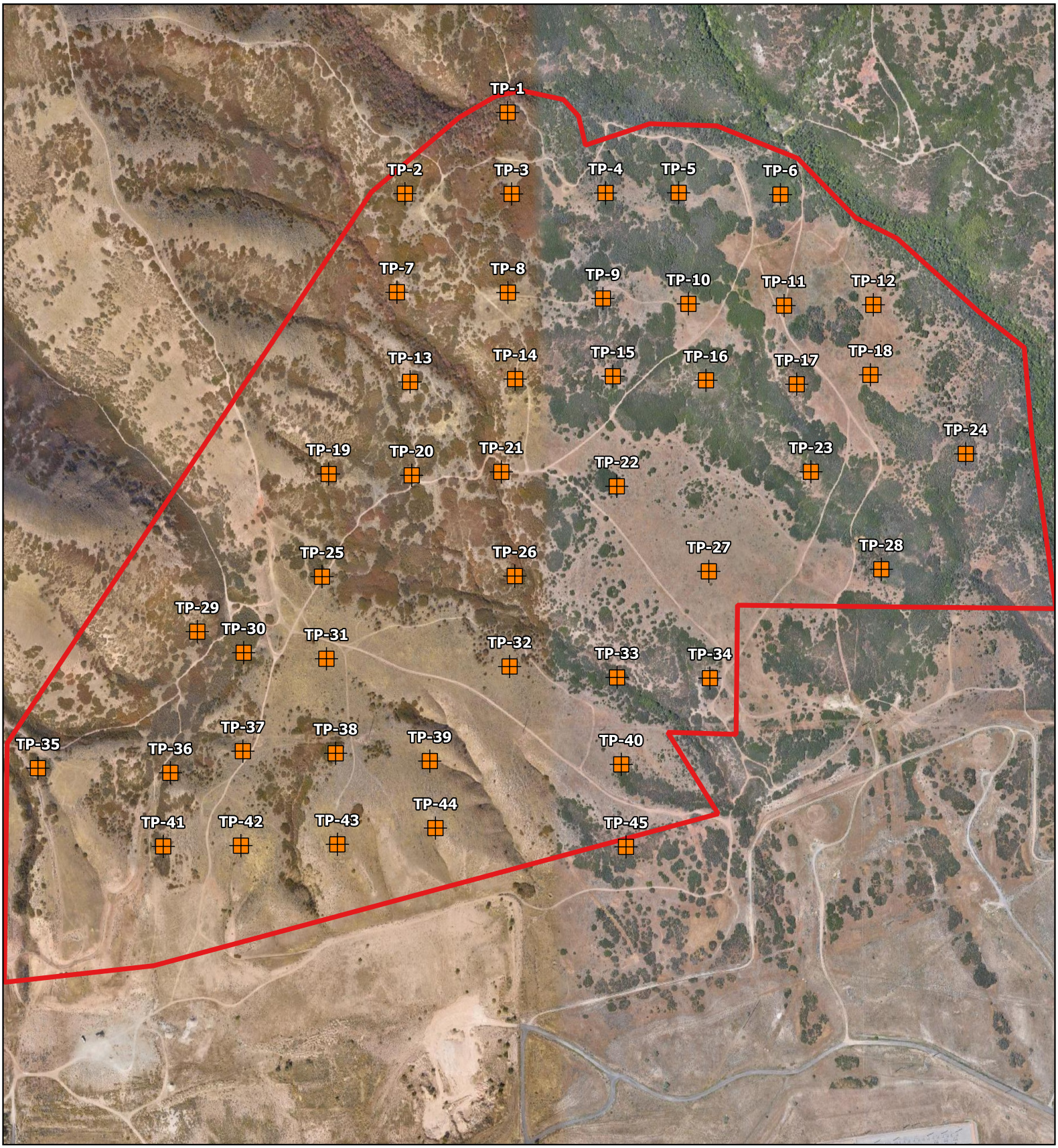
D.R. Horton
Skye Property - Inverness Area
Lehi, Utah
Project No.: 589-147

Site Vicinity Map

Plate A-1

821



Legend

- Approximate Test Pit Location
- Mircon Property Boundaries

300 0 300 600 900 1200 ft

1:8000

N

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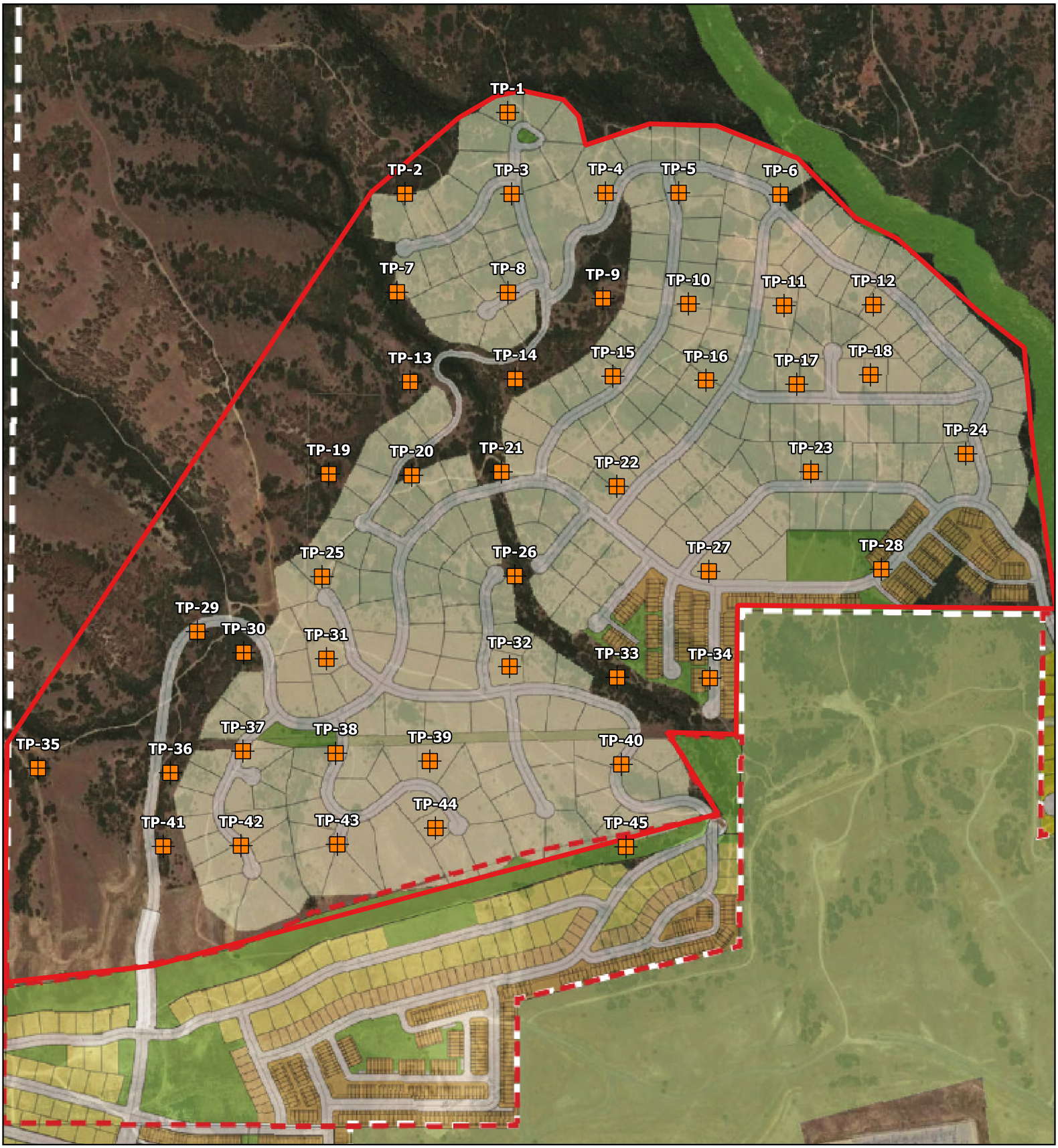
D.R. Horton
Skye Property - Inverness Area
Lehi, Utah
Project No.: 589-147

Exploration Location Map

Plate A-2

822



Legend

- Approximate Test Pit Location
- Mircon Property Boundaries

300 0 300 600 900 1200 ft

1:8000

N

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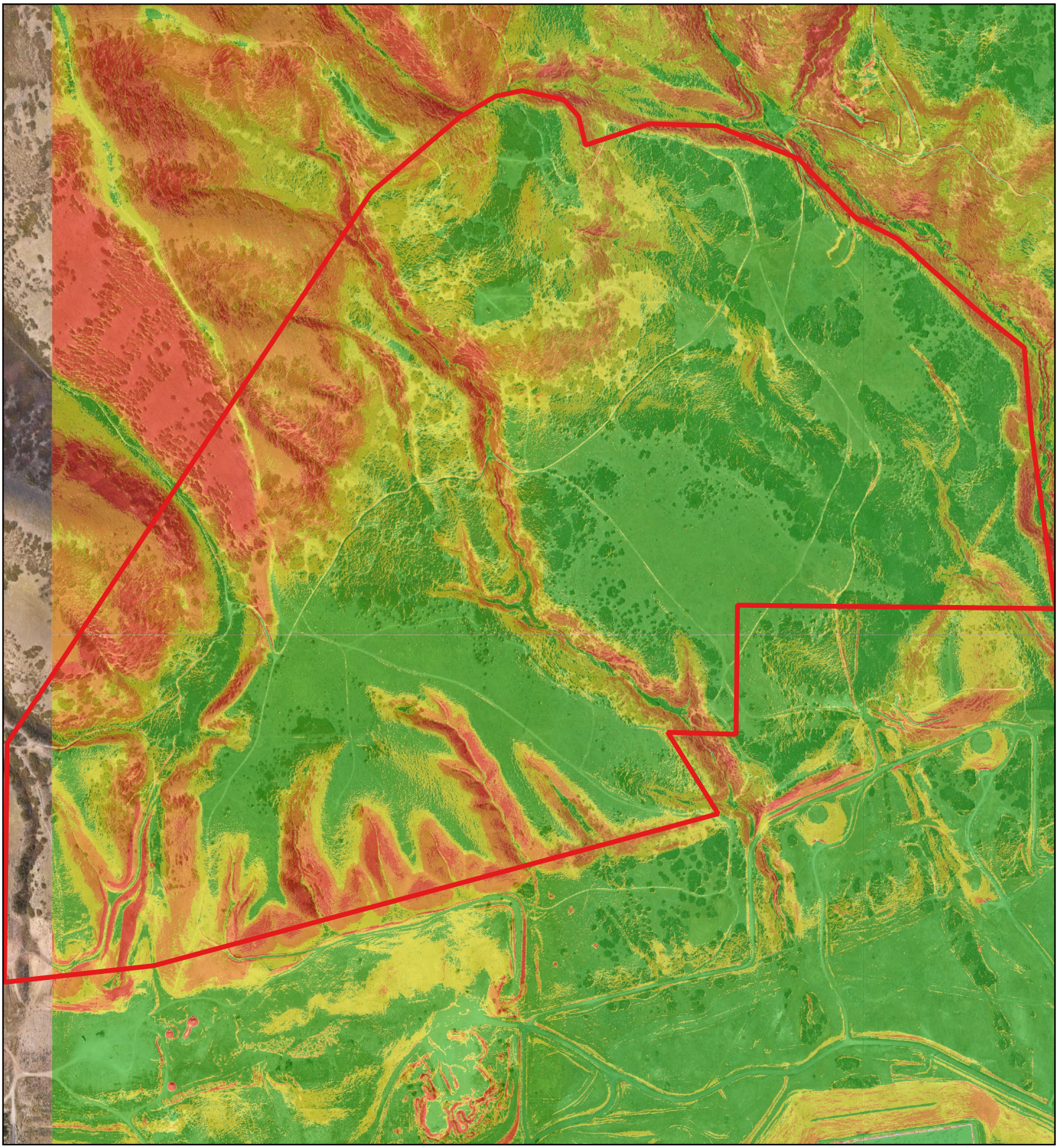
D.R. Horton
Skye Property - Inverness Area
Lehi, Utah
Project No.: 589-147

Exploration Location Map

Plate A-3

823



Legend

Mircon Property Boundaries

Slope

- <= 0
- 0 - 10
- 10-20
- 20 - 30
- 30 - 60

300 0 300 600 900 1200 ft

1:8000

N

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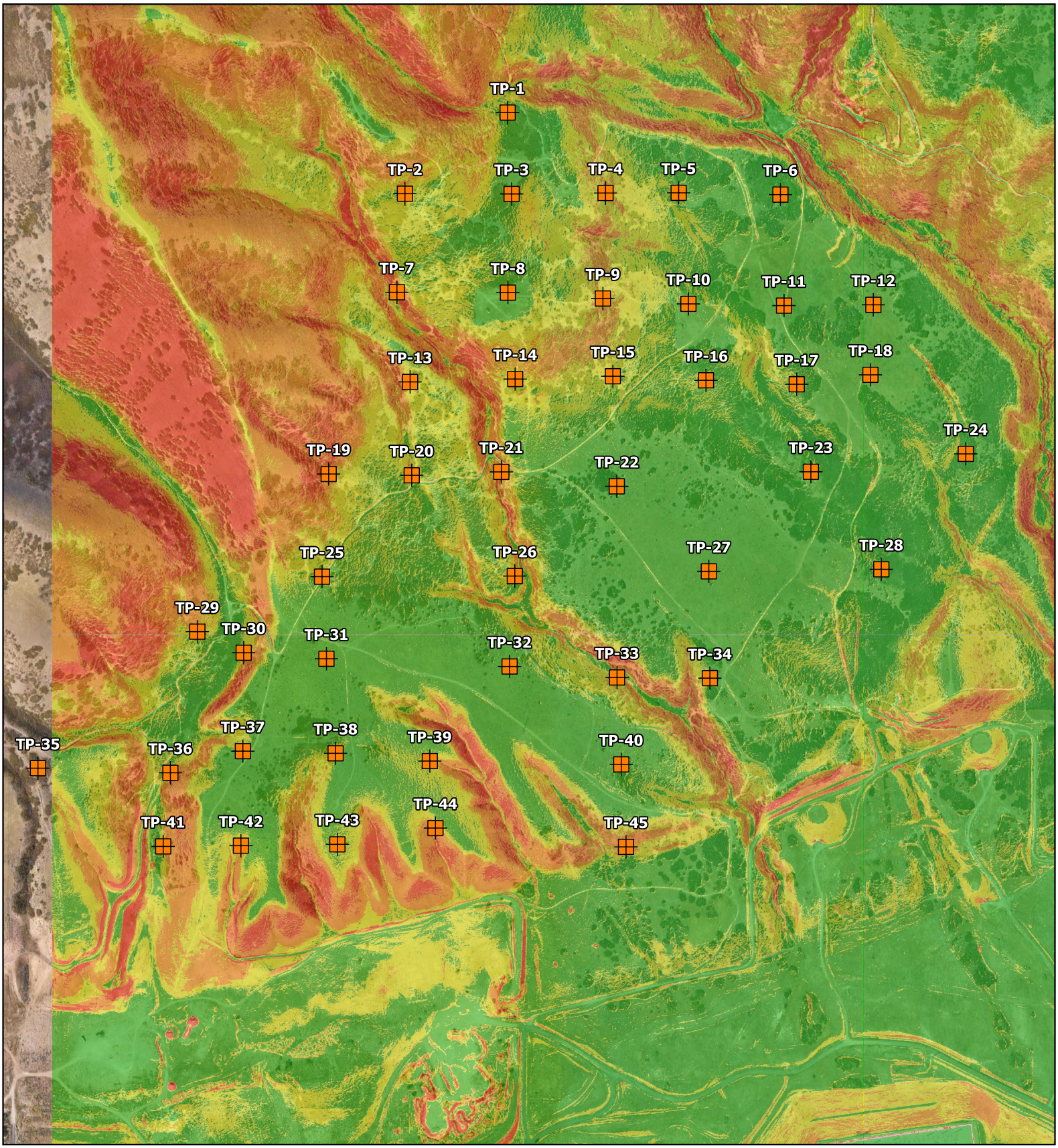
D.R. Horton
Skye Property - Inverness Area
Lehi, Utah
Project No.: 589-147

Slope Map

Plate A-4

824



Legend

Approximate Test Pit Location

Slope

- <= 0
- 0 - 10
- 10-20
- 20 - 30
- 30 - 60

300 0 300 600 900 1200 ft

1:8000

N

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D.R. Horton
Skye Property - Inverness Area
Lehi, Utah
Project No.: 589-147

Slope Map

Plate A-5

APPENDIX B

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-01
Sheet 1 of 1

LOCATION
NORTHING 4,478,833.81 EASTING 428,724.77 ELEVATION 5,593-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is coarse- to fine- grained organics throughout						
					GC	Clayey GRAVEL - medium dense, moist, red- brown, maximum particle size up to 4-inches in diameter, gravel is sub- angular to angular						
1												
	5											
2					GM	Silty GRAVEL with sand - medium dense to dense, moist, brown to light brown, maximum particle size up to 4-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 1

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-02
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

MATERIAL DESCRIPTION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					No Site Access						
						Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 2

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-03
Sheet 1 of 1

LOCATION
NORTHING 4,478,707.28 EASTING 428,722.72 ELEVATION 5,603-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout						
					CL	Lean CLAY with gravel - medium stiff, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5											
2												
					CL	Lean CLAY with sand - medium stiff, moist, brown, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 3

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-04
Sheet 1 of 1

LOCATION
NORTHING 4,478,702.94 EASTING 428,839.78 ELEVATION 5,550-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY with gravel - dark brown, moist, maximum particle size up to 2-inches in diameter, organics throughout						
					GM	Silty GRAVEL with sand - medium dense, moist, light brown, maximum particle size up to 6-inches in diameter, sand is coarse- to fine- grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 4

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-05
Sheet 1 of 1

LOCATION
NORTHING 4,478,692.61 EASTING 429,004.28 ELEVATION 5,423-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout					
					CL	Lean CLAY with sand - medium stiff, moist, brown, sand is medium- to fine- grained	109.0	14.0	77.3	44	26
1											
	5										
2					GM	Silty GRAVEL with sand - medium dense to dense, moist, light brown, maximum particle size up to 4-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained					
	10										
3						- no groundwater encountered					
						Bottom of Test Pit @ 11 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 5

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-06
Sheet 1 of 1

LOCATION
NORTHING 4,478,690.69 EASTING 429,183.78 ELEVATION 5,372-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout						
					CL	Lean CLAY - medium stiff, moist, brown						
1					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
	5											
2					GM	Silty GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 6

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-07
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

MATERIAL DESCRIPTION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					No Site Access						
						Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 7

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-08
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

MATERIAL DESCRIPTION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					No Site Access						
						Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 8

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-09
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

MATERIAL DESCRIPTION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					No Site Access						
						Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 9

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-10
Sheet 1 of 1

LOCATION
NORTHING 4,478,518.47 EASTING 429,000.85 ELEVATION 5,382-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout						
					CL	Lean CLAY with gravel - medium stiff, moist, brown, maximum particle size up to 1-inch in diameter, gravel is sub- angular to angular						
1												
	5				CL	Sandy Lean CLAY - medium stiff, moist, brown, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 10

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-11
Sheet 1 of 1

LOCATION
NORTHING 4,478,517.39 EASTING 429,161.36 ELEVATION 5,336-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is medium- to fine- grained, organics throughout						
					ML	Sandy SILT - medium stiff, moist, brown, sand is medium- to fine-grained						
1												
	5				GM	Silty GRAVEL with sand - medium dense, moist, light brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
2									12.8	NP	NP	
3	10					- no groundwater encountered Bottom of Test Pit @ 11.5 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 11

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-12
Sheet 1 of 1

LOCATION
NORTHING 4,478,521.75 EASTING 429,299.20 ELEVATION 5,305-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is medium- to fine- grained, organics throughout					
					CL	Lean CLAY with sand - medium stiff, moist, brown, sand is medium- to fine- grained					
1											
	5										
2					GP-GC	Poorly Graded GRAVEL with clay and sand - medium dense, moist, brown, maximum particle size up to 4-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained					
					CL	Lean CLAY with sand - medium stiff, moist, brown, sand is coarse- to fine- grained					
3	10										
						- no groundwater encountered					
4						Bottom of Test Pit @ 12 Feet					

Moisture Content and Atterberg Limits

Plastic Limit — Moisture Content — Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 12

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-13
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					No Site Access Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 13

DATE
STARTED:
COMPLETED:
BACKFILLED:

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep:
Rig Type:

TEST PIT NO:
TP-14
Sheet 1 of 1

LOCATION
NORTHING EASTING ELEVATION -ft

MATERIAL DESCRIPTION

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					No Site Access						
						Bottom of Test Pit @ 0 Feet						
1	5											
2												
3	10											
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 14

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-15
Sheet 1 of 1

LOCATION
NORTHING 4,478,384.92 EASTING 428,907.48 ELEVATION 5,376-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Sandy Lean CLAY - dark brown, moist, sand is coarse- to fine- grained, organics throughout						
					CL	Lean CLAY with gravel - medium stiff, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular						
1												
	5				CL	Lean CLAY with sand - medium stiff, moist, brown, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 15

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/13/23
COMPLETED: 12/13/23
BACKFILLED: 12/13/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-16
Sheet 1 of 1

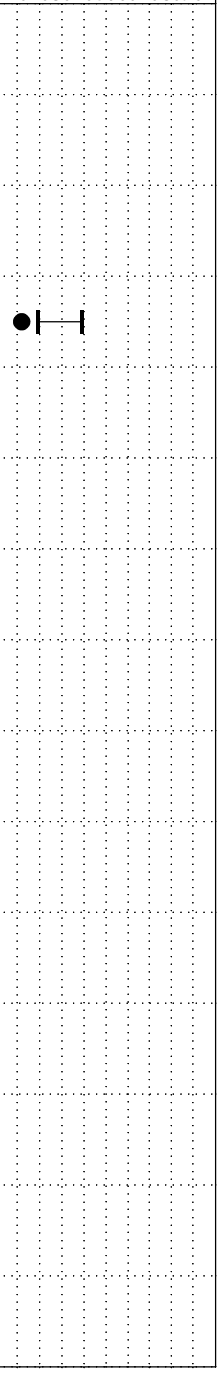
LOCATION
NORTHING 4,478,407.08 EASTING 429,029.22 ELEVATION 5,348-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Clayey GRAVEL with sand - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub-angular, to angular, sand is coarse- to fine- grained					
					GC	Clayey GRAVEL with sand - medium dense, moist, red- brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained	109.2	11.4	17.1	39	20
1											
	5				GP-GC	Poorly Graded GRAVEL with clay and sand - dense, moist, red-brown to brown, maximum particle size up to 15-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine-grained					
2											
					GC	Clayey GRAVEL with san d- medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained					
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90



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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 16

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-17
Sheet 1 of 1

LOCATION
NORTHING 4,478,372.14 EASTING 429,201.88 ELEVATION 5,301-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is medium- to fine- grained, organics throughout						
					CL	Lean CLAY with gravel - medium stiff, moist, brown, maximum particle size up to 1-inch in diameter, gravel is sub- angular to angular						
1					CL	Lean CLAY with sand - medium stiff, moist, white- brown, sand is medium- to fine- grained						
	5					- @ 5 feet, color changes to brown						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 17

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-18
Sheet 1 of 1

LOCATION
NORTHING 4,478,406.47 EASTING 429,293.03 ELEVATION 5,288-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is medium- to fine- grained, organics throughout						
					CLS	Lean CLAY with gravel - medium stiff, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular						
1												
					CLS	Lean CLAY with sand - medium stiff, moist, brown, sand is medium- to fine- grained						
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 18

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-19
Sheet 1 of 1

LOCATION
NORTHING 4,478,244.95 EASTING 428,462.72 ELEVATION 5,461-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Silty GRAVEL with sand - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained, organics throughtout						
					GM	Silty GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 19

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-20
Sheet 1 of 1

LOCATION
NORTHING 4,478,246.94 EASTING 428,580.78 ELEVATION 5,405-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					ML	Sandy SILT - medium stiff, moist, brown, sand is coarse- to fine-grained						
1												
	5				GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 20

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-21
Sheet 1 of 1

LOCATION
NORTHING 4,478,254.97 EASTING 428,727.74 ELEVATION 5,386-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Silty GRAVEL - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, organics throughout					
					GC	Clayey GRAVEL with sand - medium dense, moist, red- brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained	106.9	19.1	41.2	51	31
1											
	5				GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained					
2											
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 21

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-22
Sheet 1 of 1

LOCATION
NORTHING 4,478,230.84 EASTING 428,895.51 ELEVATION 5,346-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					ML	Sandy SILT with gravel - medium stiff, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5											
					GM	Silty GRAVEL with sand - medium dense, moist, light brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

Moisture Content and Atterberg Limits
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 22

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-23
Sheet 1 of 1

LOCATION
NORTHING 4,478,244.83 EASTING 429,235.62 ELEVATION 5,256-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is coarse- to fine- grained, organics throughout					
					CL	Lean CLAY with sand - medium stiff to stiff, moist, brown, sand is coarse- to fine grained					
1											
	5				CH	Fat CLAY with sand - stiff, moist, brown, sand is coarse- to fine-grained	90.4	16.6	79.7	56	30
2											
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 23

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-24
Sheet 1 of 1

LOCATION
NORTHING 4,478,332.59 EASTING 429,428.27 ELEVATION 5,255-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY with sand - dark brown, moist, sand is coarse- to fine- grained, organics throughout						
					ML	Sandy SILT with gravel - medium stiff, moist, brown, maximum particle size up to 4-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5				GM	Silty GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 8-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
2												
					GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, light brown, maximum particle size up to 8-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 24

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-25
Sheet 1 of 1

LOCATION
NORTHING 4,478,088.03 EASTING 428,435.10 ELEVATION 5,409-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is medium- to fine-grained, organics throughout						
					ML	SILT with sand - medium stiff, moist, brown, sand is medium- to fine- grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 25

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-26
Sheet 1 of 1

LOCATION
NORTHING 4,478,075.50 EASTING 428,793.96 ELEVATION 5,315-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Lean CLAY with gravel - dark brown, moist, maximum particle size up to 2-inches in diameter, organics throughout					
					CH	Fat CLAY with sand - medium stiff, moist, brown, sand is coarse- to fine- grained					
1							102.1	15.0	76.4	58	35
					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, light brown, maximum particle size up to 6-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained					
	5										
2											
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 26

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-27
Sheet 1 of 1

LOCATION
NORTHING 4,478,767.25 EASTING 429,046.71 ELEVATION 5,425-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Silty SAND - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					CL	Lean CLAY with sand - medium stiff, moist, red- brown, sand is coarse- to fine- grained						
1					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained, sand is coarse- to fine- grained						
	5											
2									20.2	29	12	
						- no groundwater encountered						
3	10					Bottom of Test Pit @ 11 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 27

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/12/23
COMPLETED: 12/12/23
BACKFILLED: 12/12/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-28
Sheet 1 of 1

LOCATION
NORTHING 4,478,082.45 EASTING 429,291.24 ELEVATION 5,224-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is medium- to fine-grained, organics throughout						
					CL	Lean CLAY with sand - medium stiff, moist, brown, sand is medium- to fine- grained						
1					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 28

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-29
Sheet 1 of 1

LOCATION
NORTHING 4,477,983.48 EASTING 428,234.72 ELEVATION 5,360-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Silty GRAVEL with sand - dark brown, moist, maximum particle size up to 2-inches in diameter, sand is coarse- to fine-grained						10 20 30 40 50 60 70 80 90
					GM	Silty GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 6-inches in diameter, sand is coarse- to fine-grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 29

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-30
Sheet 1 of 1

LOCATION
NORTHING 4,477,975.00 EASTING 428,332.84 ELEVATION 5,390-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Silty GRAVEL - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, organics throughout						
					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained			16.3	33	16	
1												
	5				GM	Silty GRAVEL with sand - dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 30

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-31
Sheet 1 of 1

LOCATION
NORTHING 4,477,962.41 EASTING 428,441.70 ELEVATION 5,388-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout						
					GP-GM	Poorly Graded GRAVEL with silt and sand, medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5											
2												
					GM	Silty GRAVEL - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 31

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-32
Sheet 1 of 1

LOCATION
NORTHING 4,477,950.38 EASTING 428,725.60 ELEVATION 5,311-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					GC	Clayey GRAVEL - medium dense, moist, red- brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular						
1					GM	Silty GRAVEL with sand - medium dense, moist, white- brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
	5											
2					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 32

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-33
Sheet 1 of 1

LOCATION
NORTHING 4,477,992.42 EASTING 428,916.14 ELEVATION 5,286-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is medium- to fine-grained, organics throughout					
					CH	Fat CLAY - medium stiff, moist, brown					
1							83.7	18.1	85.1	55	31
	5										
2					GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, light brown, maximum particle size up to 8-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained					
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 33

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-34
Sheet 1 of 1

LOCATION
NORTHING 4,477,932.74 EASTING 429,051.09 ELEVATION 5,257-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					ML	Sandy SILT - medium stiff, moist, white- brown, sand is coarse- to fine- grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 34

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-35
Sheet 1 of 1

LOCATION
NORTHING 4,477,809.51 EASTING 427,958.86 ELEVATION 5,434-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Lean CLAY - dark brown, moist, organics throughout						
					GM	Silty GRAVEL - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular						
1					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits: 10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 35

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-36
Sheet 1 of 1

LOCATION
NORTHING 4,477,765.28 EASTING 428,172.41 ELEVATION 5,281-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Poorly Graded GRAVEL with sand - dark brown, moist, maximum particle size up to 2-inches in diameter, sand is coarse- to fine- grained						
					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 11.5 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 36

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-37
Sheet 1 of 1

LOCATION
NORTHING 4,477,814.85 EASTING 428,305.36 ELEVATION 5,366-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; SILT with sand - dark brown, moist, sand is coarse- to fine- grained, organics throughout					
					GM	Silty GRAVEL - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained					
1											
					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained					
	5										
2											
3	10							6.1	17.2	28	13
						- no groundwater encountered					
						Bottom of Test Pit @ 11 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 37

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-38
Sheet 1 of 1

LOCATION
NORTHING 4,477,809.34 EASTING 428,463.05 ELEVATION 5,384-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, maximum particle size up to 3-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits: 10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 38

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-39
Sheet 1 of 1

LOCATION
NORTHING 4,477,808.16 EASTING 428,587.28 ELEVATION 5,333-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; SILT with sand - dark brown, moist, sand is medium- to fine- grained, organics throughout					
					CH	Fat CLAY with sand - medium stiff, moist, brown, sand is medium- to fine- grained					
1											
	5						97.5	16.6	82.6	53	28
2											
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 39

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-40
Sheet 1 of 1

LOCATION
NORTHING 4,477,771.82 EASTING 428,894.29 ELEVATION 5,250-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Silty SAND - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					GC	Clayey GRAVEL with sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
1												
	5				GM	Silty GRAVEL with sand - medium dense, moist, white- brown, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
2						- @ 6½ feet, color changes to brown						
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 40

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-41
Sheet 1 of 1

LOCATION
NORTHING 4,477,619.99 EASTING 428,169.58 ELEVATION 5,231-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Poorly Graded GRAVEL with sand - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
					GP	Poorly Graded GRAVEL with sand - medium dense, moist, dark brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1					GP-GM	Poorly Graded GRAVEL with silt sand - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 41

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-42
Sheet 1 of 1

LOCATION
NORTHING 4,477,677.31 EASTING 428,270.63 ELEVATION 5,340-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Clayey GRAVEL - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, organics throughout						
					GC	Clayey GRAVEL - medium dense, moist, red- brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular						
1												
	5				GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, brown, maximum particle size up to 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits: 10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 42

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/8/23
COMPLETED: 12/8/23
BACKFILLED: 12/8/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-43
Sheet 1 of 1

LOCATION
NORTHING 4,477,678.73 EASTING 428,446.28 ELEVATION 5,354-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL; Silty GRAVEL - dark brown, moist, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, organics throughout					
					GC	Clayey GRAVEL - medium dense, moist, red- brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular					
1											
	5				SC	Clayey SAND with gravel - medium dense, moist, brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained	109.5	11.8	49.6	44	27
2											
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 43

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-44
Sheet 1 of 1

LOCATION
NORTHING 4,477,714.85 EASTING 428,616.76 ELEVATION 5,320-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; SILT with sand - dark brown, moist, sand is coarse- to fine- grained, organics throughout						
					GC	Clayey GRAVEL with sand - medium dense, moist, red- brown, maximum particle size upt o 6-inches in diameter, gravel is sub-angular to angular, sand is coarse- to fine- grained						
1												
	5				GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, light brown, maximum particle size up to 2-inches in diameter, sub-angular to angular, sand is coarse- to fine- grained						
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 11 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 44

DATE
STARTED: 12/9/23
COMPLETED: 12/9/23
BACKFILLED: 12/9/23

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number 589-147

GeoStrata Rep: Nyle Sampson
Rig Type: Hitachi Ecco

TEST PIT NO:
TP-45
Sheet 1 of 1

LOCATION
NORTHING 4,477,707.04 EASTING 428,912.50 ELEVATION 5,234-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL; Sandy SILT - dark brown, moist, sand is coarse- to fine-grained, organics throughout						
					GM	Silty GRAVEL with sand - medium dense, moist, light brown to brown, maximum particle size up to 2-inches in diameter, gravel is sub- angular to angular, sand is coarse- to fine- grained						
1												
	5											
2												
3	10					- no groundwater encountered Bottom of Test Pit @ 10 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 45

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/27/23

DESCRIPTION OF SYMBOLS

Sample Type

Disturbed or Bag Sample

2-1/2" OD "California" Style Split Barrel Sampler

2" OD Split Spoon Sampler

3" OD Thin-Walled Shelby Tube Sampler

Water Level

Water Level After a Specific Period of Time

Water Initially Encountered

Exploration Type

Boring

Test Pit

Location and Elevation

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

Classification of Soils for (Unified Soil Classification System)

UNIFIED SOIL CLASSIFICATION SYSTEM (ASTM D 2487)

COARSE GRAINED SOILS (More than half of material is larger than the #200 sieve)	GRAVELS (More than half of coarse fraction is larger than the #4 sieve)	CLEAN GRAVEL WITH <5% FINES	Cu≥4 and 1≤Cc≤3	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
			Cu<4 and/or 1>Cc>3	GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE OR NO FINES
		GRAVELS WITH 5% TO 12% FINES	Cu≥4 and 1≤Cc≤3	GW-GM	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GW-GC	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
			Cu<4 and/or 1>Cc>3	GP-GM	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE FINES
				GP-GC	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES WITH LITTLE CLAY FINES
		GRAVELS WITH > 12% FINES		GM	SILTY GRAVELS, GRAVEL-SILT-SAND MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
				GC-GM	CLAYEY GRAVELS, GRAVEL-SAND-CLAY-SILT MIXTURES
	SANDS (More than half of coarse fraction is smaller than the #4 sieve)	CLEAN SANDS WITH <5% FINES	Cu≥6 and 1≤Cc≤3	SW	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
			Cu<6 and/or 1>Cc>3	SP	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE OR NO FINES
		SANDS WITH 5% TO 12% FINES	Cu≥6 and 1≤Cc≤3	SW-SM	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SW-SC	WELL-GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
			Cu<6 and/or 1>Cc>3	SP-SM	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE FINES
				SP-SC	POORLY GRADED SANDS, SAND-GRAVEL MIXTURES WITH LITTLE CLAY FINES
		SANDS WITH > 12% FINES		SM	SILTY SANDS, SAND-GRAVEL-SILT MIXTURES
				SC	CLAYEY SANDS, SAND-GRAVEL-CLAY MIXTURES
				SC-SM	CLAYEY SANDS, SAND-SILT-CLAY MIXTURES
FINE GRAINED SOILS (More than half of material is smaller than the #200 sieve)	SILTS AND CLAYS (Liquid Limit less than 50)			ML	INORGANIC SILTS AND VERY FINE SANDS, SILTY OR CLAYEY FINE SANDS, SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				CL-ML	INORGANIC CLAYS-SILTS OF LOW PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS & ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (Liquid Limit greater than 50)			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILT
				CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
				OH	ORGANIC CLAYS & ORGANIC SILTS OF MEDIUM-TO-HIGH PLASTICITY

Terms Describing Consistence or Condition

STRENGTH TERMS	RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
	Descriptive Term (Density)	Standard Penetration or N-Value Blows/Ft.	Descriptive Term (Consistency)	Unconfined Compressive Strength Qu, (psf)	Standard Penetration or N-Value Blows/Ft.
	Very Loose	0 - 3	Very Soft	less than 500	0 - 1
	Loose	4 - 9	Soft	500 to 1,000	2 - 4
	Medium Dense	10 - 29	Medium Stiff	1,000 to 2,000	4 - 8
	Dense	30 - 50	Stiff	2,000 to 4,000	8 - 15
	Very Dense	> 50	Very Stiff	4,000 to 8,000	15 - 30
			Hard	> 8,000	> 30

MOISTURE CONTENT

DESCRIPTION	FIELD TEST
Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

CEMENTATION

DESCRIPTION	FIELD TEST
Weakly	Crumbles or breaks with handling or slight finger pressure
Moderately	Crumbles or breaks with considerable finger pressure
Strongly	Will not crumble or break with finger pressure

Angularity

DESCRIPTION	CRITERIA
Angular	Particles have sharp edges and relatively plane sides with unpolished surfaces.
Subangular	Particles are similar to angular description but have rounded edges.
Subrounded	Particles have nearly plane sides but have well-rounded corners and edges.
Rounded	Particles have smoothly curved sides and no edges.

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Soil Symbols Description Key

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Skye Property – Inverness Area
Lehi, Utah
Project Number: 589-147

Plate B-4

APPENDIX C

Test Pit No.	Sample Depth (feet)	USCS Soil Classification	Natural Moisture Content (%)	Natural Dry Density (pcf)	Optimum Moisture Content (%)	Maximum Dry Density (pcf)	Gradation			Atterberg		Consolidation			Collapse (%)	Swell (%)	CBR (%)	Direct Shear		Sulfate Content (ppm)	Resistivity (Ω-cm)	pH
							Gravel (%)	Sand (%)	Fines (%)	LL	PI	Cc	Cr	OCR				Friction Angle (°)	Cohesion (psf)			
TP-05	2	CL	14	109					77.3	44	26	0.158	0.03	4	-	-						
TP-11	6	GM			6.3	130.8	52.2	35.0	12.8	NP	NP						32.5					
TP-16	3	GC	11.4	109.2			48.4	34.5	17.1	39	20							32	25			
TP-18	10	CL																		45	1090	7.84
TP-21	2	GC	19.1	106.9			39.7	19.1	41.2	51	31											
TP-23	5	CH	16.6	90.4			2.9	17.4	79.7	56	30							31	85			
TP-26	3	CH	15	102.1					76.4	58	35	-	-	-	-	0.7						
TP-27	6	GC			7.9	129	43.5	36.3	20.2	29	12						9.5					
TP-30	2	GC			8.3	132	45.5	38.2	16.3	33	16						10.6					
TP-33	3	CH	18.1	83.7					85.1	55	31	0.13	0.017	12.6	-	-						
TP-37	10.5	GC	6.1				58.5	24.3	17.2	28	13							31	0			
TP-39	4	CH	16.6	97.5					82.6	53	28	-	-	-	0.56	-						
TP-43	5	SC	11.8	109.5			15.1	35.3	49.6	44	27											

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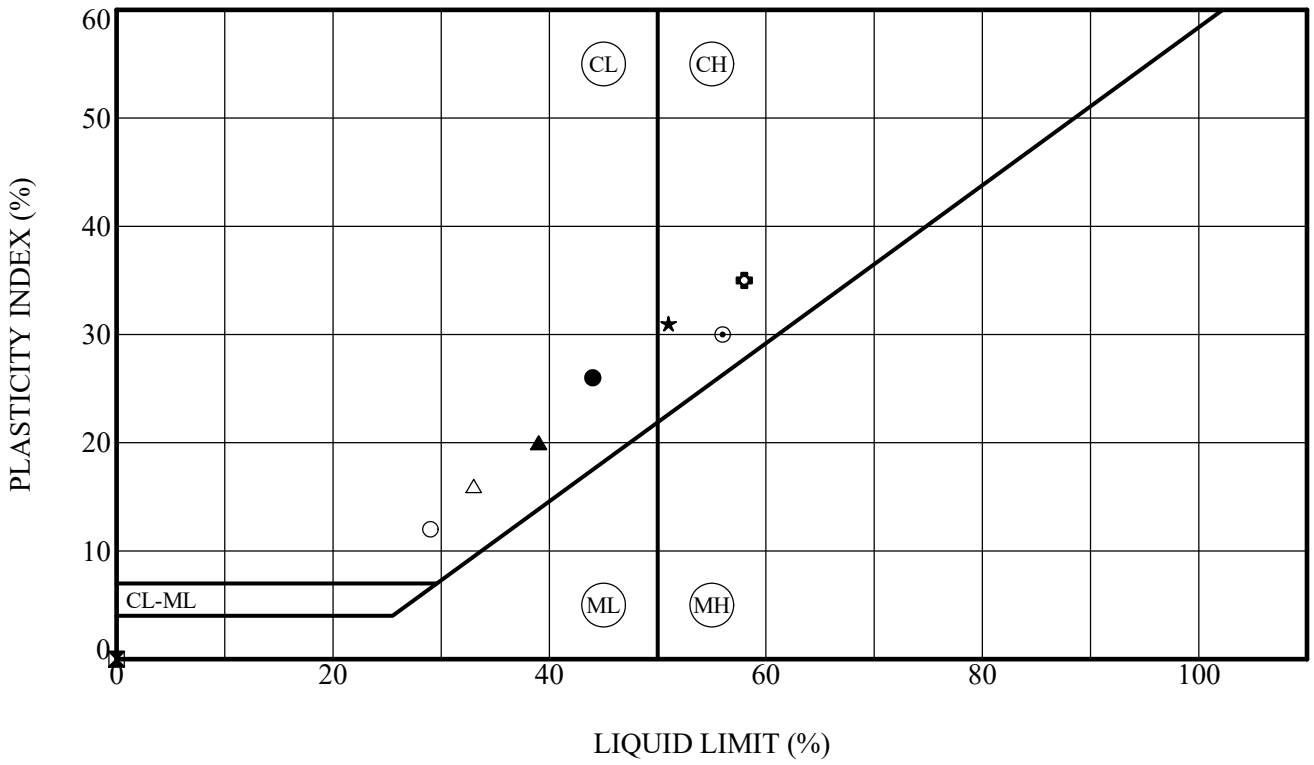
Lab Summary Report

DR Horton
Skye Property – Inverness Area
Lehi, Utah
Project Number: 589-147



Sample Location		Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**TP-05**	**2.0**	**44**	**18**	**26**	**77.3**	**Lean CLAY with sand**
⊠	**TP-11**	**6.0**	**NP**	**NP**	**NP**	**12.8**	**Silty GRAVEL with sand**
▲	**TP-16**	**3.0**	**39**	**19**	**20**	**17.1**	**Clayey GRAVEL with sand**
★	**TP-21**	**2.0**	**51**	**20**	**31**	**41.2**	**Clayey GRAVEL with sand**
⊙	**TP-23**	**5.0**	**56**	**26**	**30**	**79.7**	**Fat CLAY with sand**
✿	**TP-26**	**3.0**	**58**	**23**	**35**	**76.4**	**Fat CLAY with sand**
○	**TP-27**	**6.0**	**29**	**17**	**12**	**20.2**	**Clayey GRAVEL with sand**
△	**TP-30**	**2.0**	**33**	**17**	**16**	**16.3**	**Clayey GRAVEL with sand**

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ATTERBERG LIMITS' RESULTS - ASTM D 4318

DR Horton
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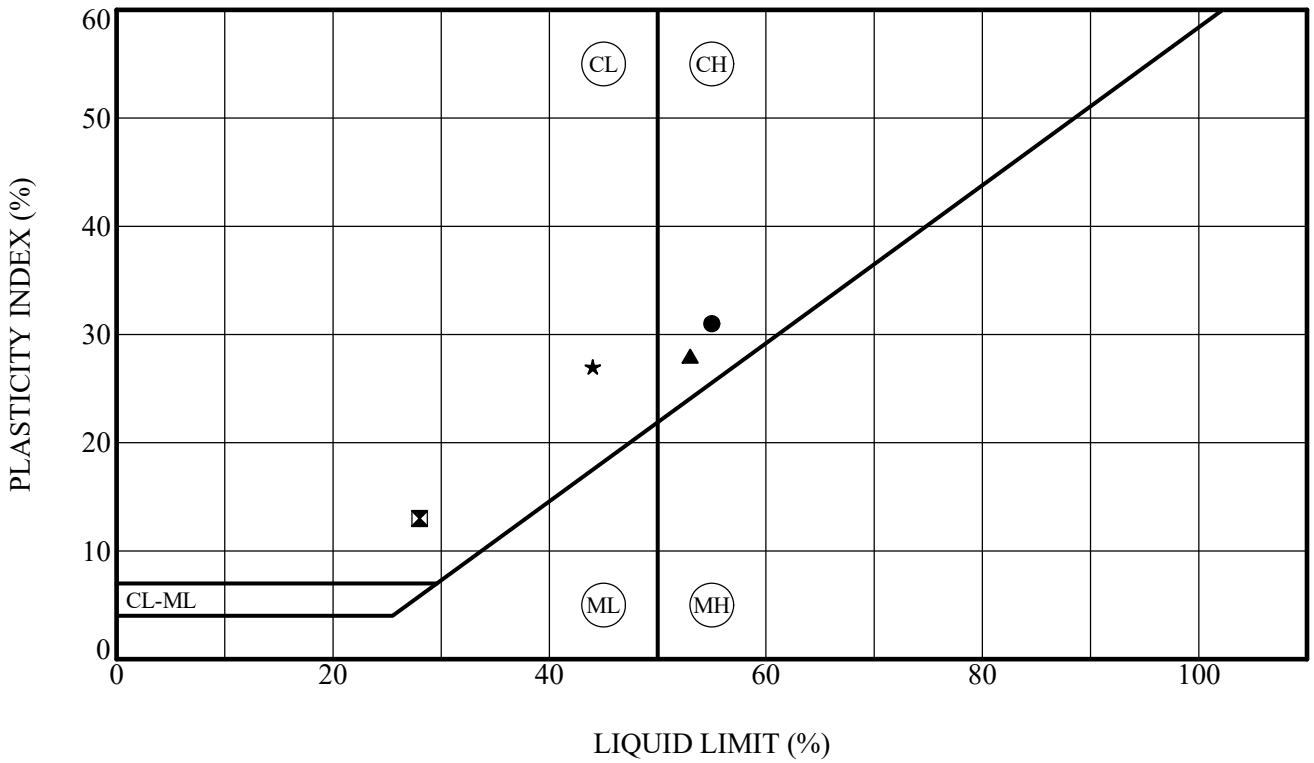
Lehi, Utah
Project Number: 589-147

Plate

C - 2

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



	Sample Location	Depth (ft)	LL (%)	PL (%)	PI (%)	Fines (%)	Classification
●	**TP-33**	**3.0**	**55**	**24**	**31**	**85.1**	**Fat CLAY**
⊠	**TP-37**	**10.5**	**28**	**15**	**13**	**17.2**	**Clayey GRAVEL with sand**
▲	**TP-39**	**4.0**	**53**	**25**	**28**	**82.6**	**Fat CLAY with sand**
★	**TP-43**	**5.0**	**44**	**17**	**27**	**49.6**	**Clayey SAND with gravel**

ATTERBERG LIMITS' RESULTS - ASTM D 4318

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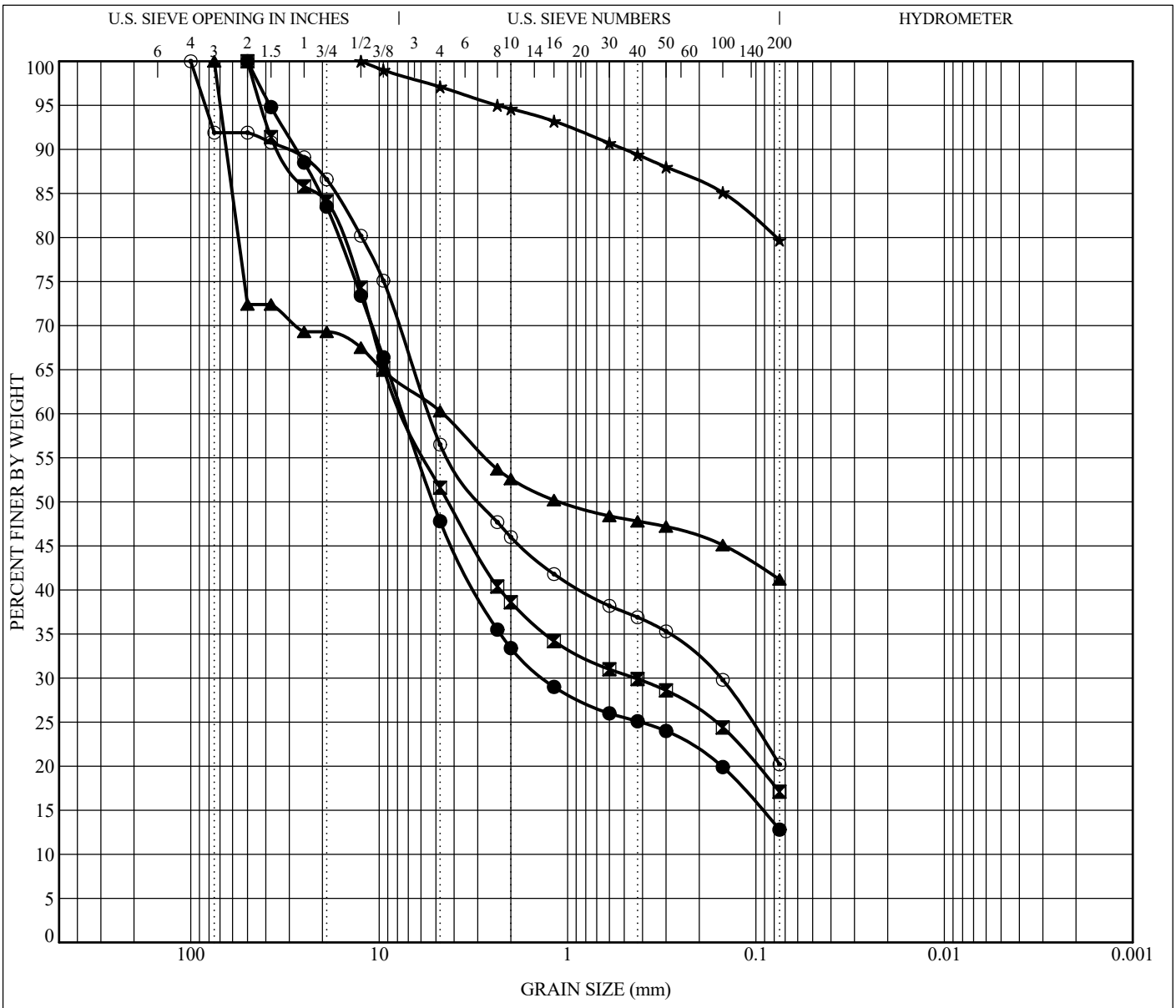
Skye Property - Inverness Area
Lehi, Utah
Project Number: 589-147

Plate

C - 3

C_ATTERBERG 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**TP-11**	**6.0**	**Silty GRAVEL with sand**	**NP**	**NP**	**NP**		
⊠	**TP-16**	**3.0**	**Clayey GRAVEL with sand**	**39**	**19**	**20**		
▲	**TP-21**	**2.0**	**Clayey GRAVEL with sand**	**51**	**20**	**31**		
★	**TP-23**	**5.0**	**Fat CLAY with sand**	**56**	**26**	**30**		
⊙	**TP-27**	**6.0**	**Clayey GRAVEL with sand**	**29**	**17**	**12**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-11**	**6.0**	**50**	**7.484**	**1.33**		**52.2**	**35.0**	**12.8**	
⊠	**TP-16**	**3.0**	**50**	**7.288**	**0.439**		**48.4**	**34.5**	**17.1**	
▲	**TP-21**	**2.0**	**75**	**4.601**			**39.7**	**19.1**	**41.2**	
★	**TP-23**	**5.0**	**12.5**				**2.9**	**17.4**	**79.7**	
⊙	**TP-27**	**6.0**	**100**	**5.412**	**0.154**		**35.8**	**36.3**	**20.2**	

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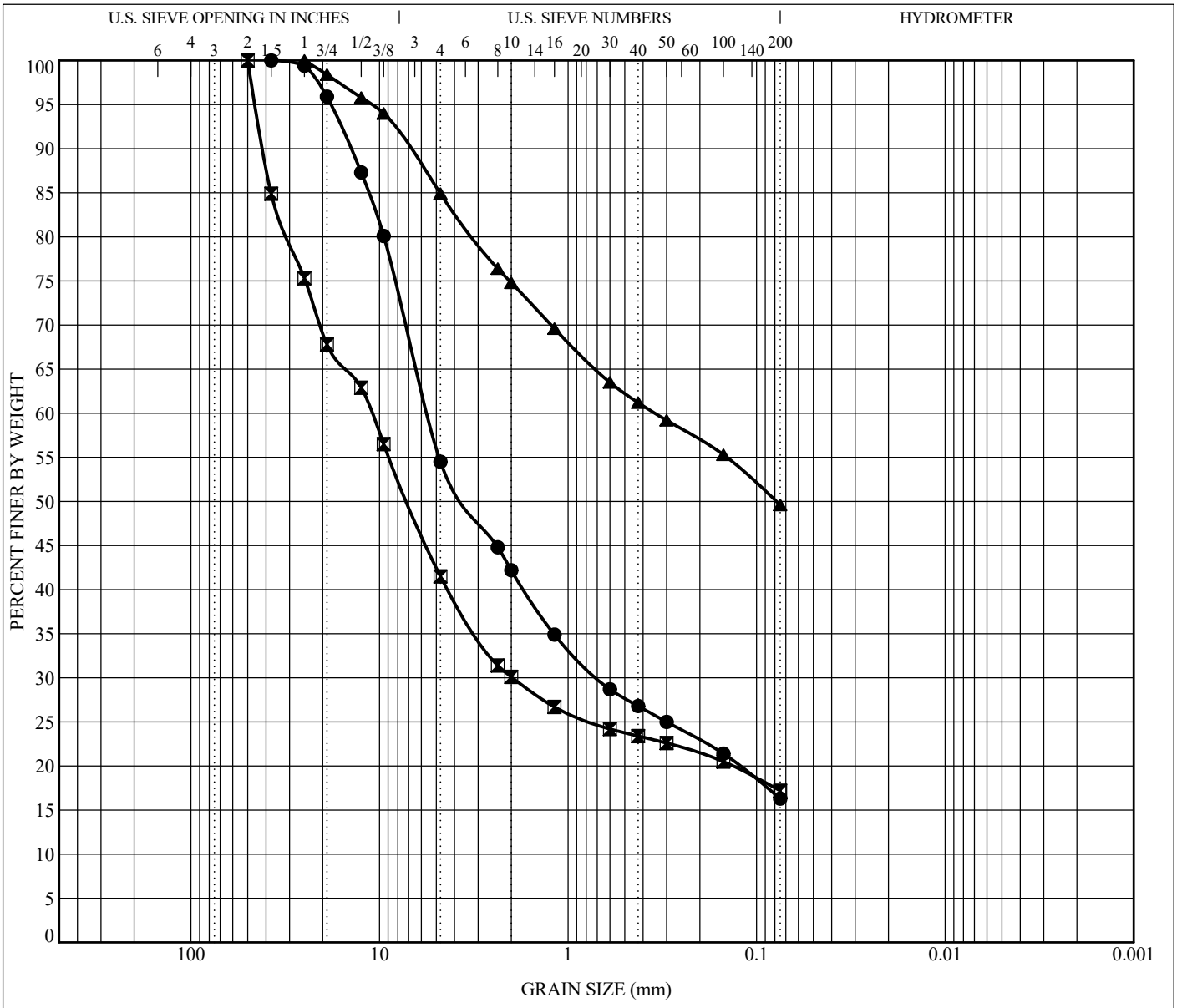
GRAIN SIZE DISTRIBUTION - ASTM D422

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number: 589-147

Plate

C - 4

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample Location	Depth	Classification	LL	PL	PI	Cc	Cu
●	**TP-30**	**2.0**	**Clayey GRAVEL with sand**	**33**	**17**	**16**		
⊠	**TP-37**	**10.5**	**Clayey GRAVEL with sand**	**28**	**15**	**13**		
▲	**TP-43**	**5.0**	**Clayey SAND with gravel**	**44**	**17**	**27**		

	Sample Loctaion	Depth	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-30**	**2.0**	**37.5**	**5.513**	**0.691**		**45.5**	**38.2**	**16.3**	
⊠	**TP-37**	**10.5**	**50**	**11.038**	**1.969**		**58.5**	**24.3**	**17.2**	
▲	**TP-43**	**5.0**	**25**	**0.345**			**15.1**	**35.3**	**49.6**	

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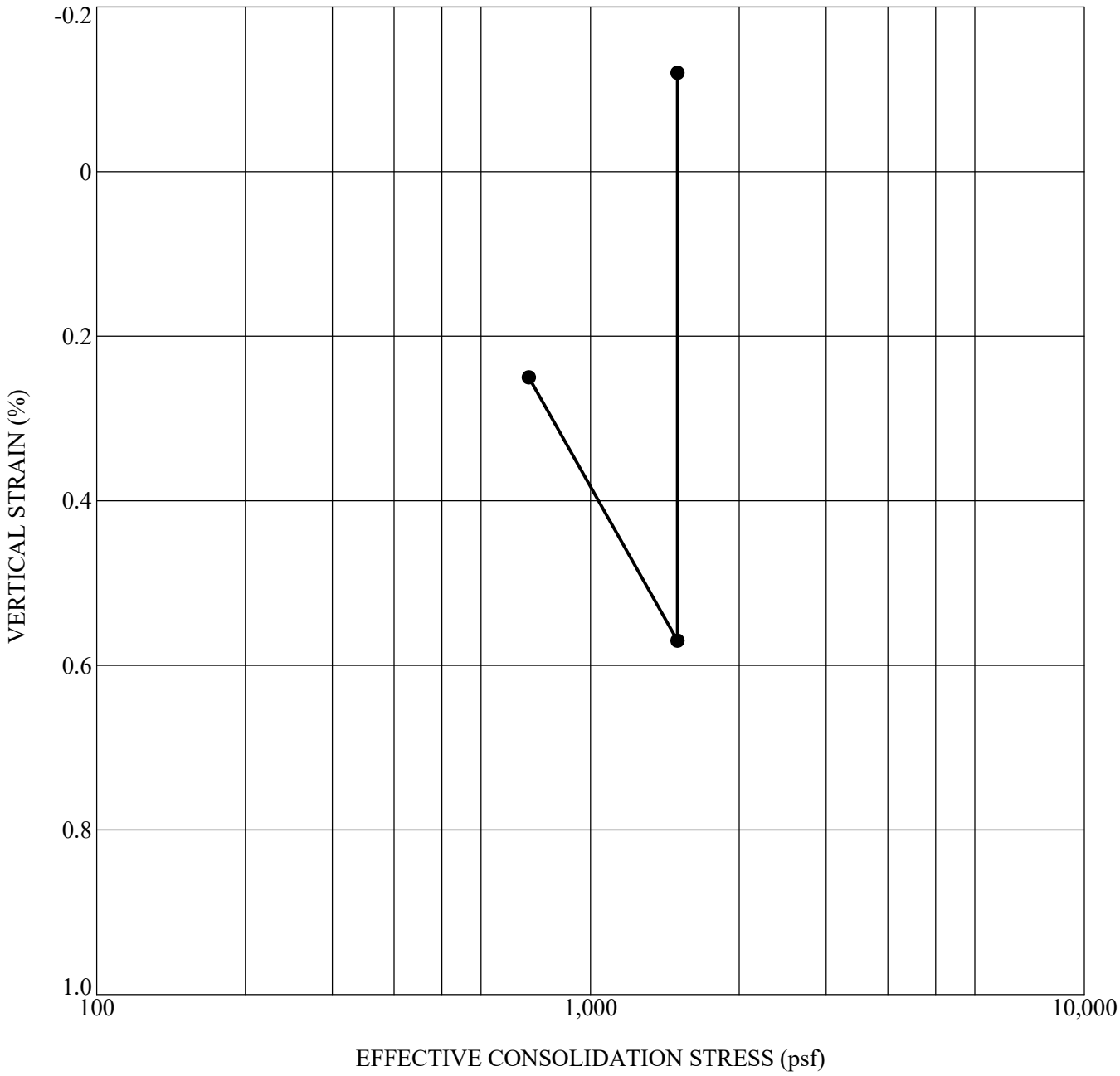
GRAIN SIZE DISTRIBUTION - ASTM D422

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number: 589-147

Plate

C - 5

C_GSD 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **TP-26**	**3.0**	**Fat CLAY with sand**	**102**	**18**	**2**	**0.70**	**-**

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1-D SWELL/COLLAPSE TEST

DR Horton
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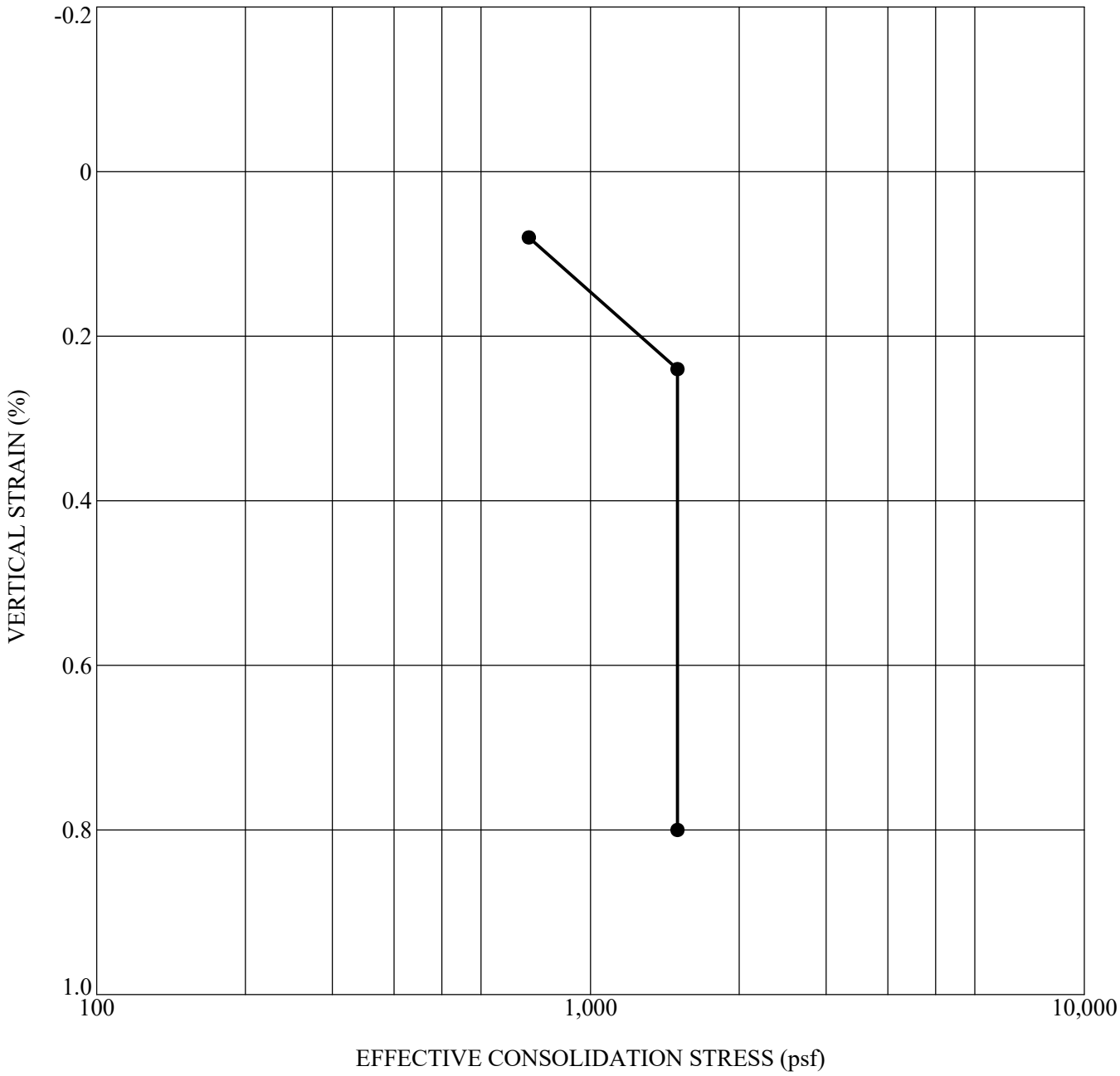
Lehi, Utah
Project Number: 589-147

Plate

C - 6

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	Inundation Load (psf)	Swell (%)	Collapse (%)
● **TP-39**	**4.0**	**Fat CLAY with sand**	**98**	**17**	**1500**	**-**	**0.56**

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1-D SWELL/COLLAPSE TEST

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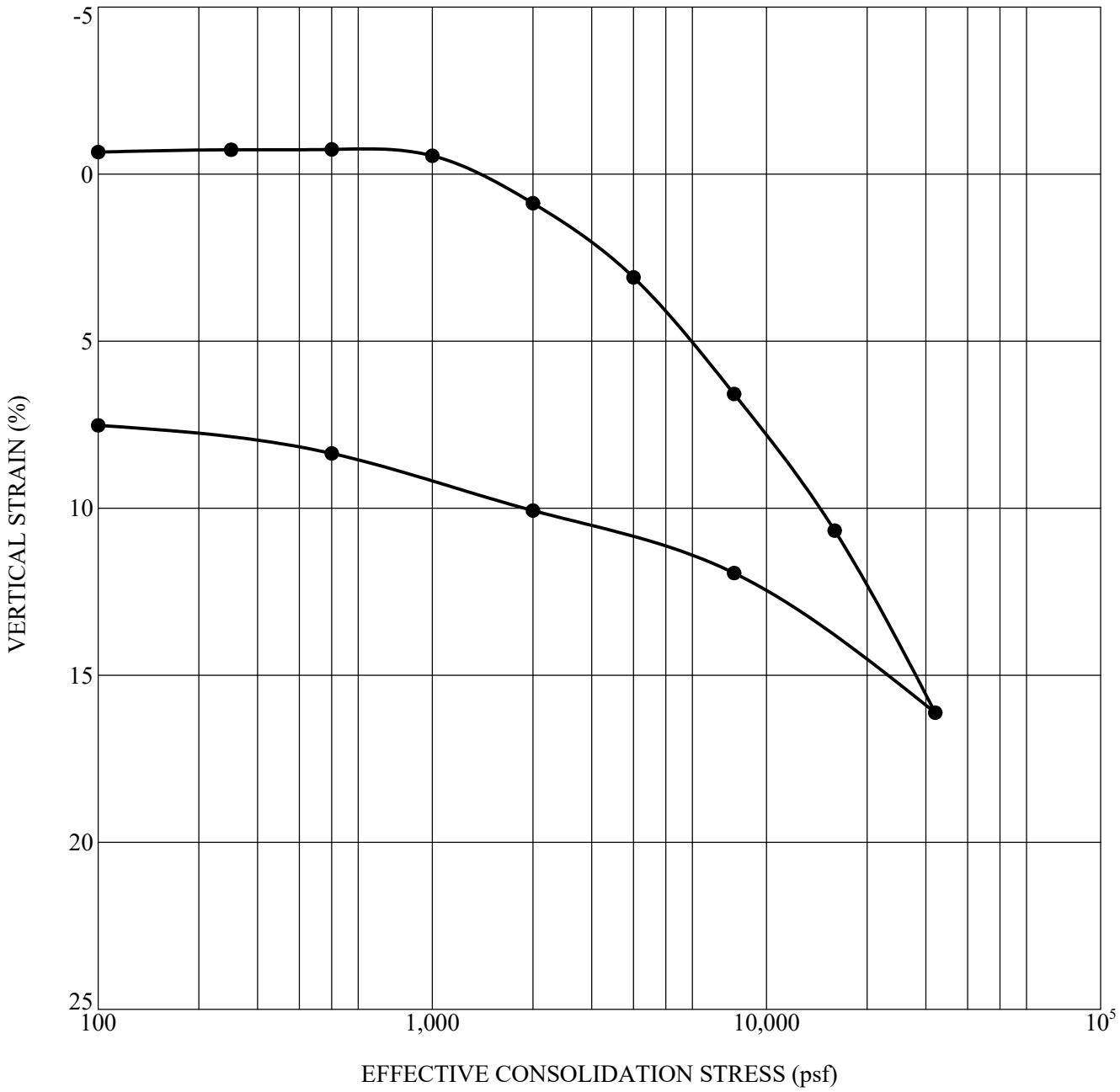
Lehi, Utah
Project Number: 589-147

Plate

C - 7

C_SWELL/COLLAPSE 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR
● **TP-05**	**2.0**	**Lean CLAY with sand**	**109**	**15**	**0.158**	**0.030**	**4.0**

1-D CONSOLIDATION TEST - ASTM D 2435

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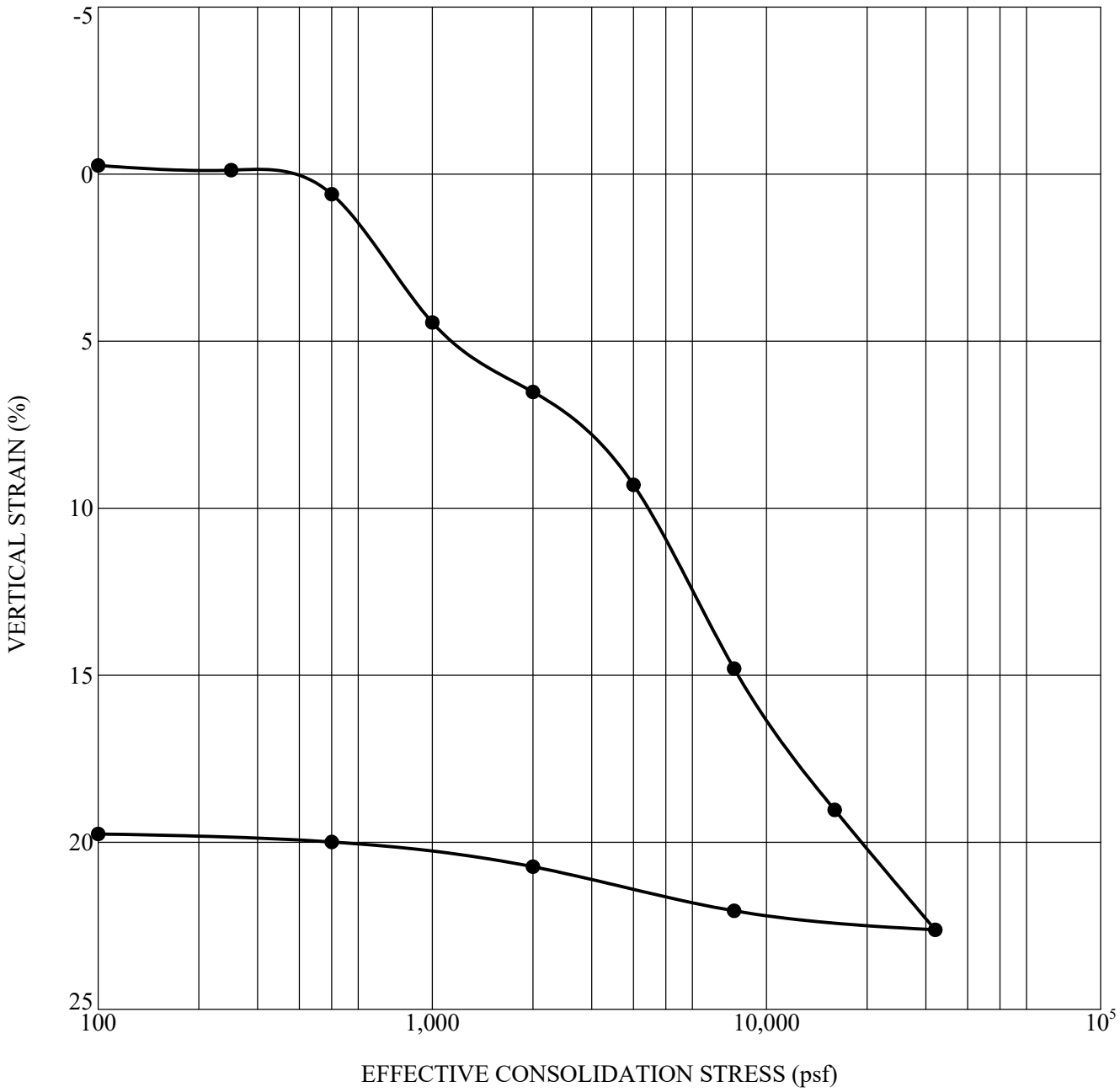
Lehi, Utah
Project Number: 589-147

Plate

C - 8

C_CONSOL 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



	Sample Location	Depth (ft)	Classification	γ_d (pcf)	MC (%)	C'$_c$	C'$_r$	OCR
●	**TP-33**	**3.0**	**Fat CLAY**	**84**	**17**	**0.130**	**0.017**	**12.6**

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1-D CONSOLIDATION TEST - ASTM D 2435

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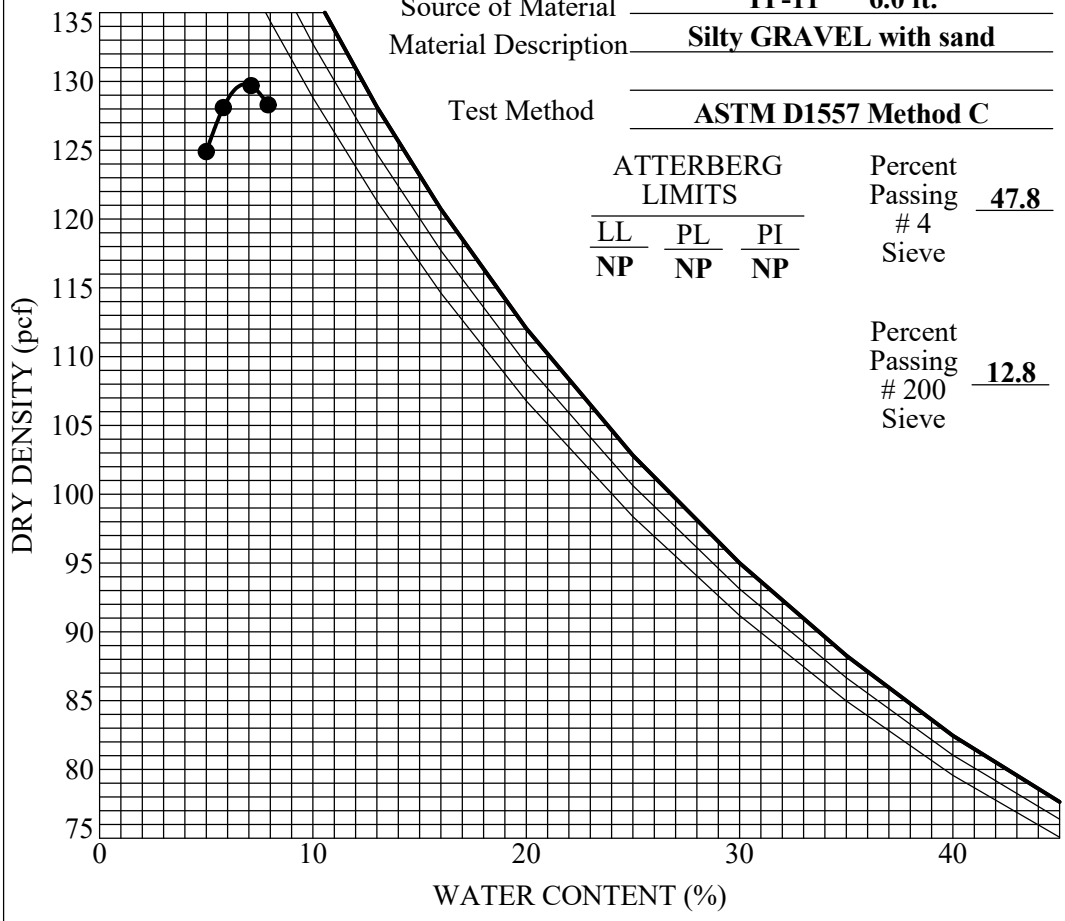
Project Number: 589-147

Plate

C - 9

C_CONSOL 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22



Source of Material: **TP-11 6.0 ft.**

Material Description: **Silty GRAVEL with sand**

Test Method: **ASTM D1557 Method C**

ATTERBERG LIMITS

LL	PL	PI
NP	NP	NP

Percent Passing # 4 Sieve: **47.8**

Percent Passing # 200 Sieve: **12.8**

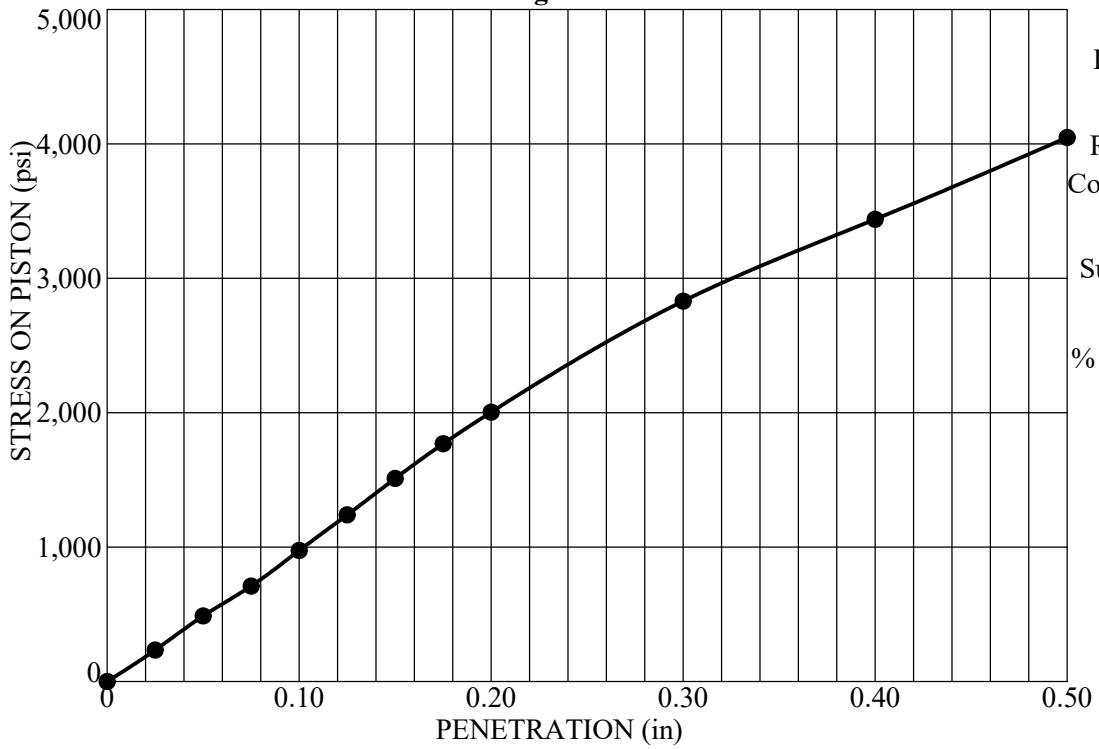
TEST RESULTS

Maximum Dry Density	**130.8** (pcf)
Optimum Water Content	**6.3** (%)
Percent Rock	(%)
Corrected Maximum Dry Density	(pcf)
Corrected Optimum Water Content	(%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80

Califonia Bearing Ratio - ASTM D 1883



Dry Density	**122.0** (pcf)
Relative Compaction	**93** (%)
Surcharge	**51** (psf)
% Standard CBR	**32.50**
Swell	**-1.11** (%)

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COMPACTION AND CBR TEST

DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number: 589-147

Plate

C - 10

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22

Source of Material: **TP-27 6.0 ft.**

Material Description: **Clayey GRAVEL with sand**

Test Method: **ASTM D1557 Method C**

ATTERBERG LIMITS

LL	PL	PI
29	17	12

Percent Passing # 4 Sieve: **56.5**

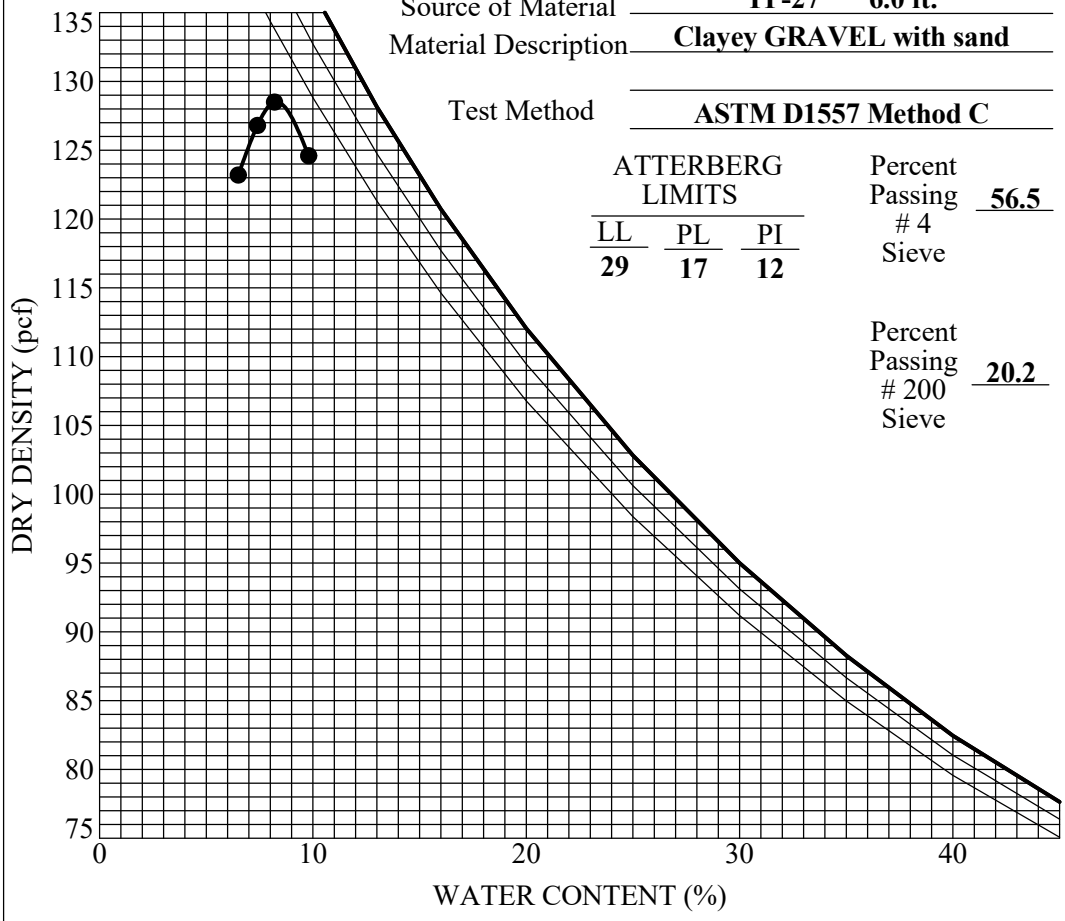
Percent Passing # 200 Sieve: **20.2**

TEST RESULTS

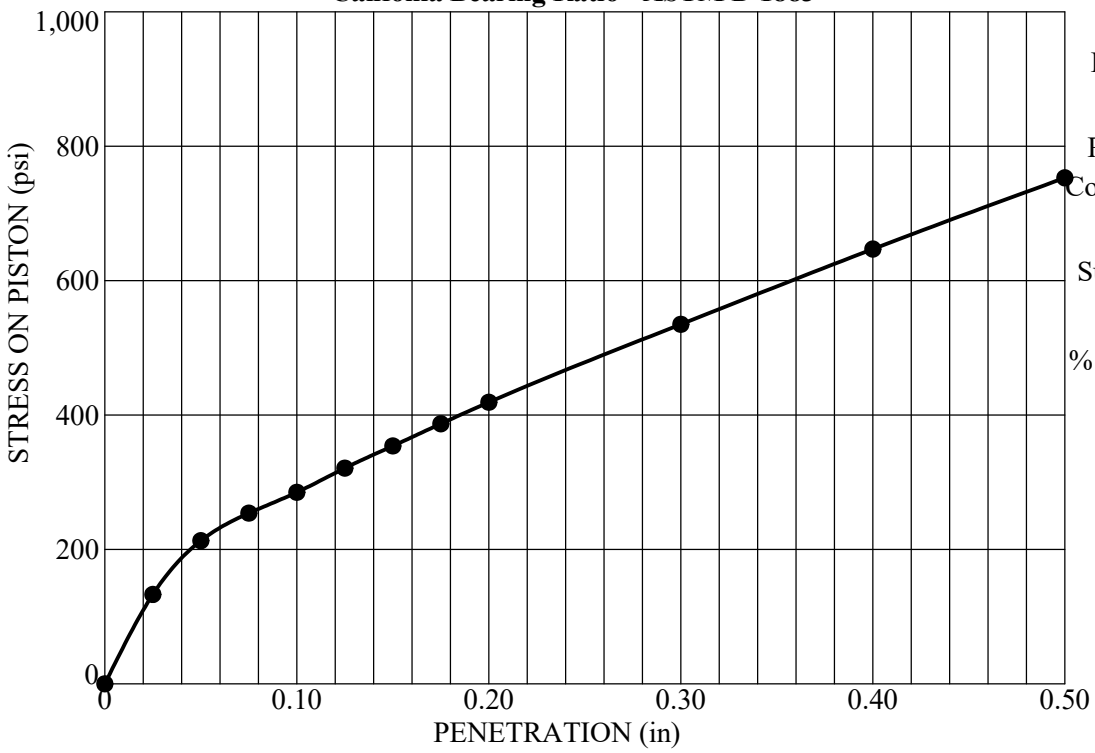
Maximum Dry Density	**129.0** (pcf)
Optimum Water Content	**7.9** (%)
Percent Rock	(%)
Corrected Maximum Dry Density	(pcf)
Corrected Optimum Water Content	(%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80



Califonia Bearing Ratio - ASTM D 1883



Dry Density	**129.0** (pcf)
Relative Compaction	**88** (%)
Surcharge	**51** (psf)
% Standard CBR	**9.50**
Swell	**0.89** (%)

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COMPACTION AND CBR TEST

DR Horton
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Lehi, Utah
Project Number: 589-147

Plate

C - 11

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22

Source of Material: **TP-30 2.0 ft.**

Material Description: **Clayey GRAVEL with sand**

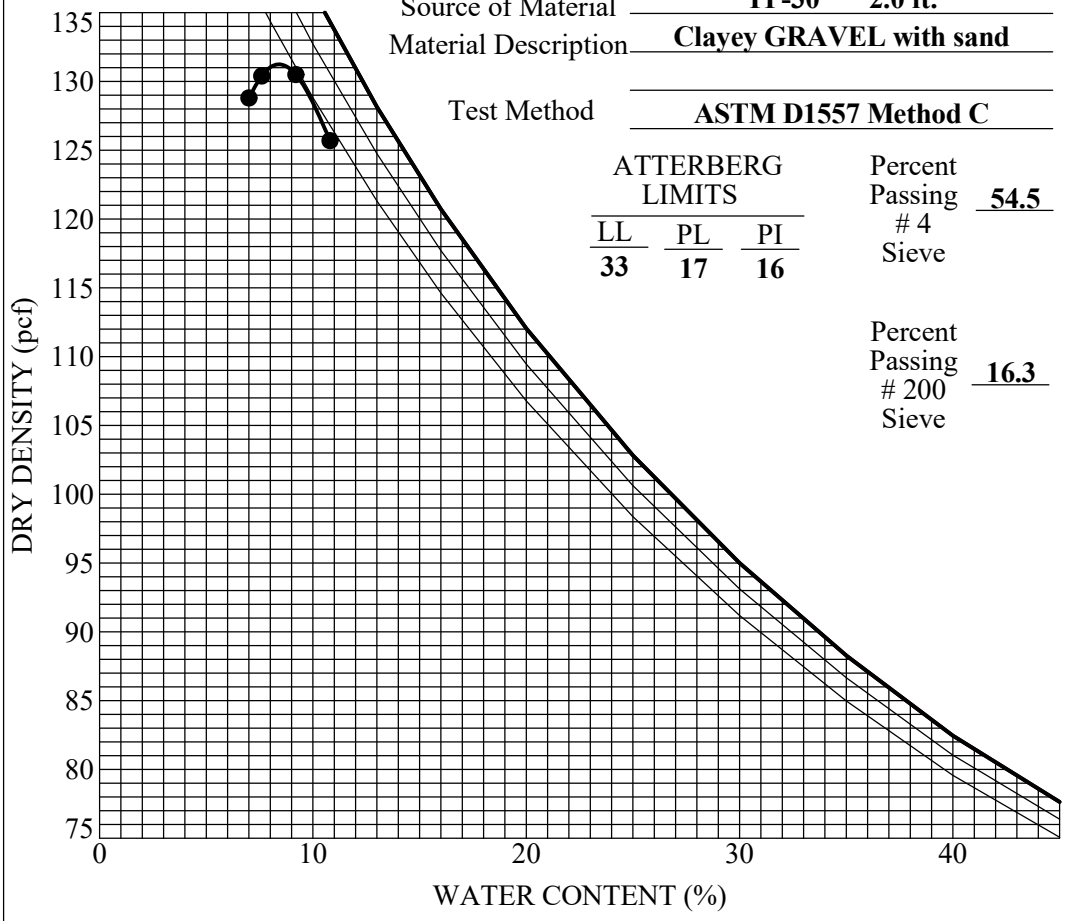
Test Method: **ASTM D1557 Method C**

ATTERBERG LIMITS

LL	PL	PI
33	17	16

Percent Passing # 4 Sieve: **54.5**

Percent Passing # 200 Sieve: **16.3**



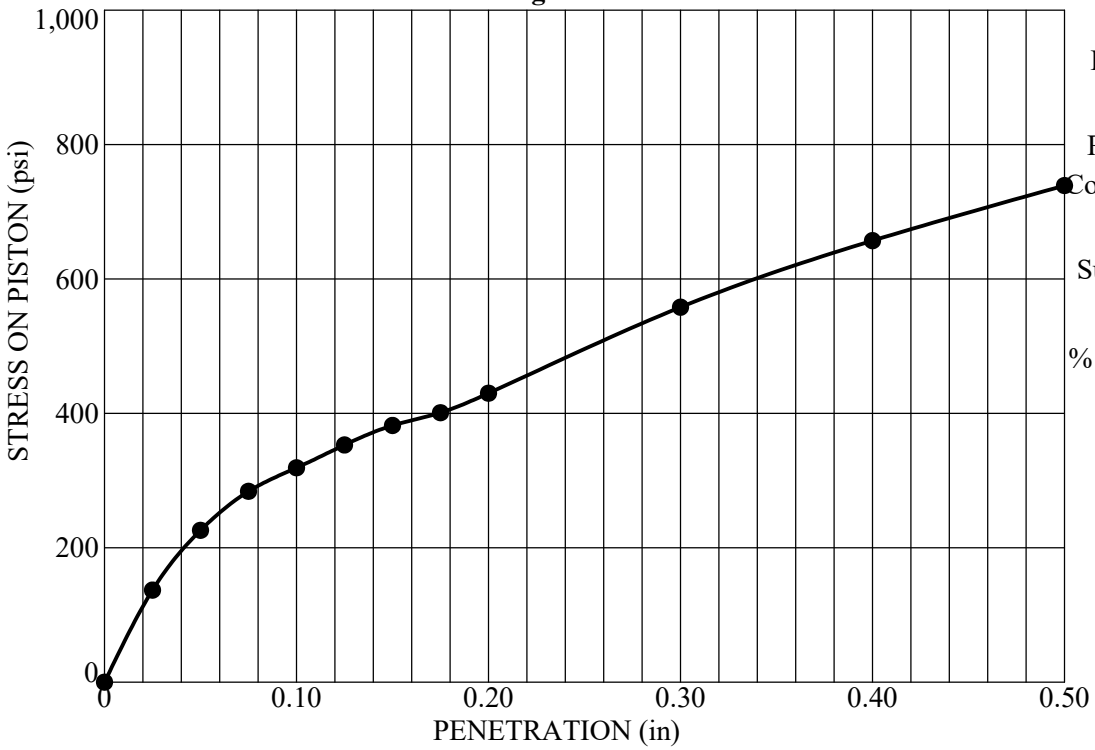
TEST RESULTS

Maximum Dry Density	**132.0** (pcf)
Optimum Water Content	**8.3** (%)
Percent Rock	(%)
Corrected Maximum Dry Density	(pcf)
Corrected Optimum Water Content	(%)

Curves of 100% Saturation for Specific Gravity Equal to:

2.60, 2.70, 2.80

Califonia Bearing Ratio - ASTM D 1883



Dry Density	**117.4** (pcf)
Relative Compaction	**89** (%)
Surcharge	**51** (psf)
% Standard CBR	**10.60**
Swell	**0.55** (%)

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COMPACTION AND CBR TEST

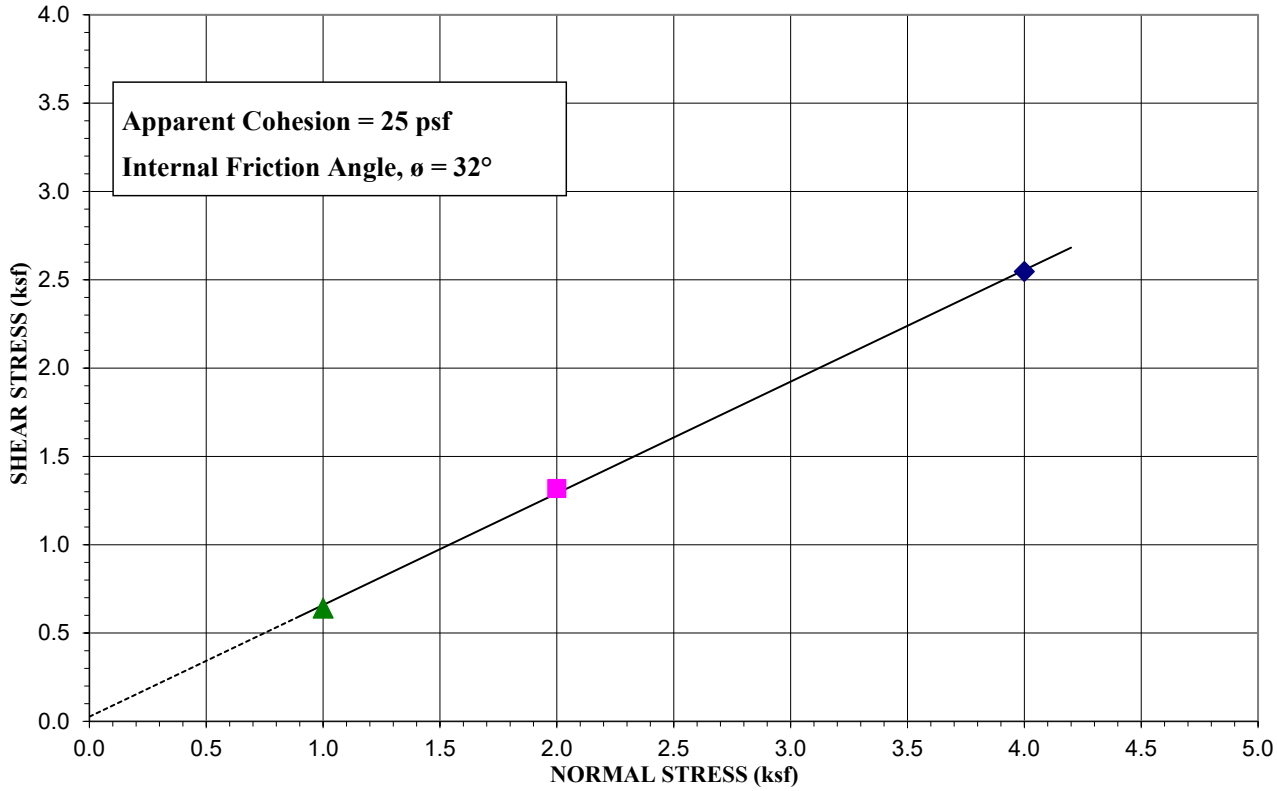
DR Horton
Skye Property - Inverness Area
Lehi, Utah
Project Number: 589-147

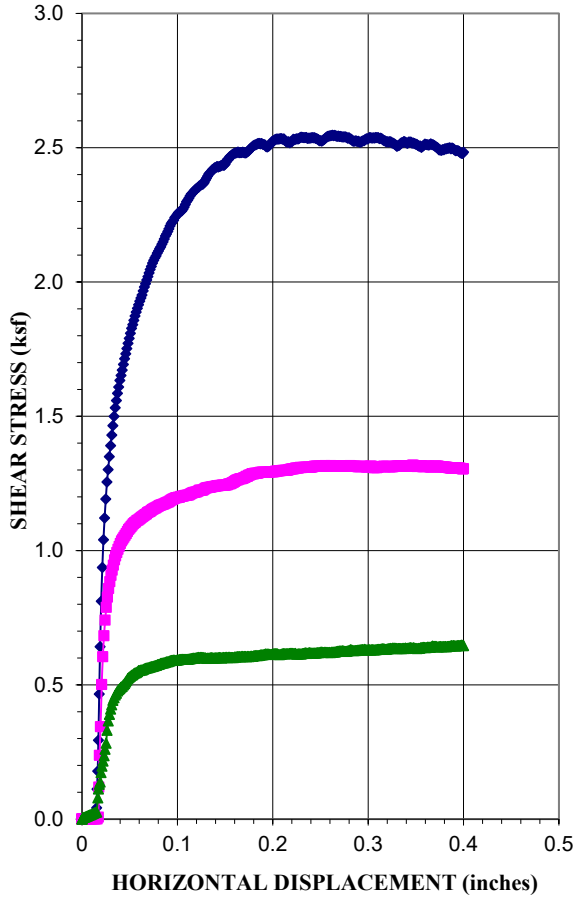
Plate

C - 12

C_COMPACTION SPLIT 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 12/30/22

DIRECT SHEAR TEST





Sample Location:	TP-16 @ 3
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	0.995	0.997	1.086
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	112.1	107.5	95.5
Dry Density After, pcf	113.5	109.4	97.4
Moisture % Before	11.9	17.1	16.9
Moisture % After	26.8	25.3	25.3
Saturation, % Before	66.2	84.4	61.4
Saturation, % After	155.5	131.3	96.0
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.55	1.32	0.6
Strain Rate	0.002460 IN/MIN		

Sample Properties	
Cohesion, psf	25
Friction Angle, ϕ	32
Liquid Limit, %	39
Plasticity Index, %	20
Percent Gravel	48.4
Percent Sand	34.4
Percent Passing No. 200 sieve	17.1
Classification	GC

PROJECT: Skye Property - Inverness Area

PROJECT NO.: 589-147

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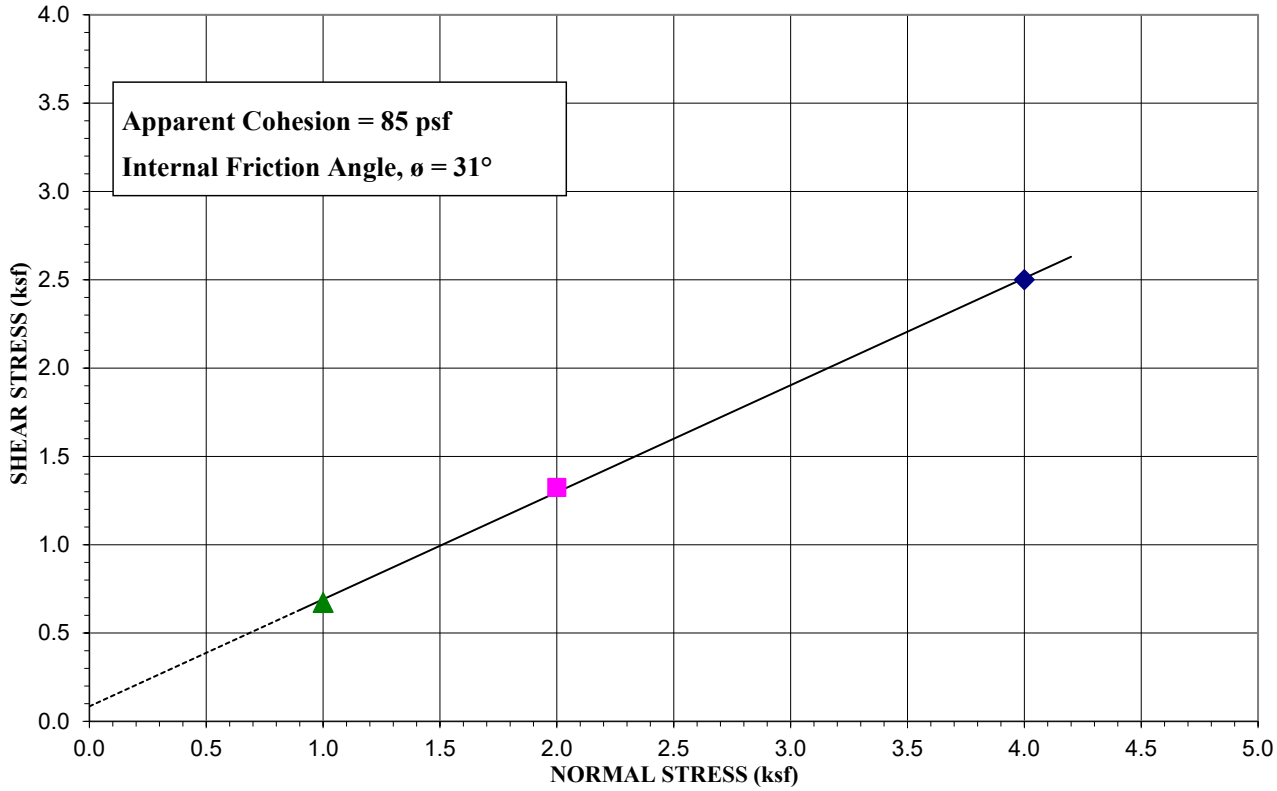
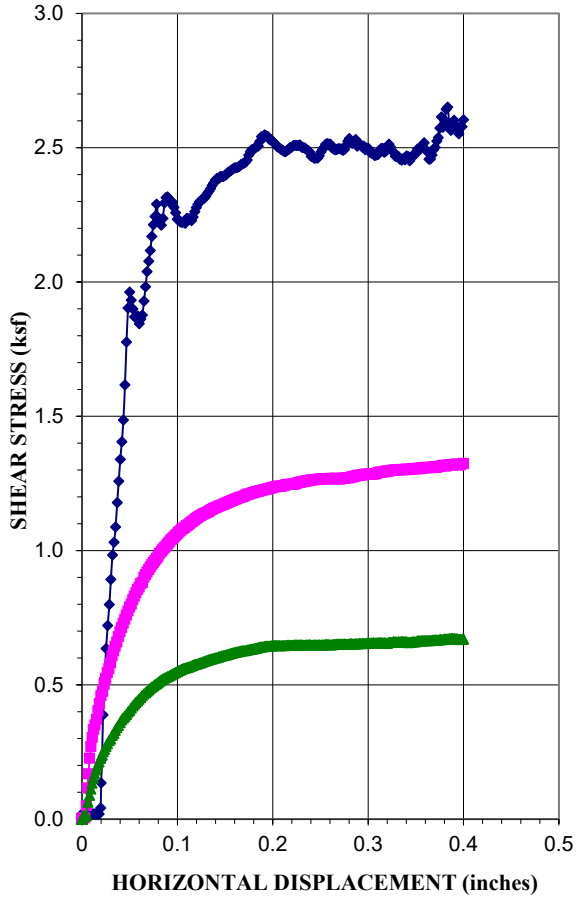
Plate C-13

DIRECT SHEAR TEST





Sample Location:	TP-23 @ 5 feet
Type of Test:	Consolidated Drained/Saturated

Test No. (Symbol)	**1 (◆)**	**2 (■)**	**3 (▲)**
Sample Type	Remolded		
Initial Height, in.	1.042	0.8933	0.888
Diameter, in.	2.5	2.5	2.5
Dry Density Before, pcf	85.3	100.4	100.3
Dry Density After, pcf	87.3	102.7	102.5
Moisture % Before	20.1	23.2	23.3
Moisture % After	16.1	19.1	20.4
Saturation, % Before	56.8	94.8	95.2
Saturation, % After	47.8	83.1	88.1
Normal Load, ksf	4.0	2.0	1.0
Shear Stress, ksf	2.50	1.32	0.7
Strain Rate	0.00333 IN/MIN		

Sample Properties	
Cohesion, psf	85
Friction Angle, ϕ	31
Liquid Limit, %	56
Plasticity Index, %	30
Percent Gravel	2.9
Percent Sand	17.4
Percent Passing No. 200 sieve	79.7
Classification	CH

PROJECT: Skye Property - Inverness Area

PROJECT NO.: 589-147

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Plate C-14

APPENDIX D

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

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Important Information about the Report

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Skye Property – Inverness Area
West Jordan, Utah
Project Number: 589-147

Plate D-1

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, *proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration* by including building-envelope or mold specialists on the design team. *Geotechnical engineers are not building-envelope or mold specialists.*

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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Important Information about the Report

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Skye Property – Inverness Area
West Jordan, Utah
Project Number: 589-147

Plate D-2

14425 South Center Point Way Bluffdale, Utah 84065
Phone (801) 501-0583 | info@geostrata-llc.com

Debris Flow Hazard Study
Micron Project
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

October 11, 2021

Prepared for:

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Debris Flow Hazard Study
Micron Project
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

Prepared by:



Sofia Agopian, P.G.
Staff Geologist



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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1

2.1 PURPOSE AND SCOPE OF WORK 3

2.2 PROJECT DESCRIPTION 4

3.0 METHODS OF STUDY 5

3.1 OFFICE INVESTIGATION 5

3.2 FIELD INVESTIGATION 5

4.0 GEOLOGIC CONDITIONS 7

4.1 REGIONAL GEOLOGIC SETTING 7

4.2 REPORTED SITE GEOLOGY 7

4.3 SITE SPECIFIC GEOMORPHOLOGY 8

4.4 TECTONIC SETTING AND SEISMICITY 8

5.0 GENERALIZED SITE CONDITIONS 9

5.1 SURFACE CONDITIONS 9

5.2 FIELD RECONNAISANCE 9

5.3 SUBSURFACE CONDITIONS 10

5.3.1 Trench 3 Description 10

5.3.2 Trench 6 Description 12

5.3.3 Test Pit Descriptions 12

6.0 GEOLOGIC HAZARDS ANALYSIS AND RECOMMENDATIONS 16

6.1 ALLUVIAL FAN FLOODING 16

6.1.1 Estimates of Debris Volume 17

6.2 STREAM FLOODING 27

7.0 CLOSURE 28

7.1 LIMITATIONS 28

8.0 REFERENCES CITED 29

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APPENDICES

Appendix A Plate A-1 – Site Vicinity Map
Plate A-2 – Topographic Map
Plate A-3 – Geologic Hazards Special Study Zone
Plate A-4 – Hillshade Map
Plate A-5 – Exploration Location Map
Plate A-6 – Site Vicinity Geologic Map
Plate A-7 – Site Vicinity 30’ X 60’ Geologic Map
Plate A-8 – Debris Flow Assessment Map

Appendix B Plate B-1 through B-12 – Trench Logs
Plate B-13 through B-37 – Test Pit Logs
Plate B-38 through B-43 –Test Pit Photos

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1.0 EXECUTIVE SUMMARY

The purpose of our geologic hazards investigation is to assess the 664-acres subject parcel located at approximately 500 West and State Route 92 in Lehi, Utah for geologic hazards that may impact the cost and feasibility of the proposed construction. GeoStrata conducted a preliminary geologic hazard investigation that included a review of published literature and geologic maps, stereographic aerial photograph interpretation, a review of lidar data, and a reconnaissance level field investigation. Based on the results of our preliminary geologic hazards investigation, we assessed that the geologic hazards which posed a potential risk to the subject property are surface fault rupture hazards and debris flow/alluvial fan flooding hazards. GeoStrata planned and conducted a surface fault rupture hazard investigation and a debris flow/alluvial fan flooding hazard investigation for the 664-acres subject parcel. This report was prepared to present our final debris flow/alluvial fan flooding hazard investigation we conducted for the 664-acres subject parcel. A separate report was prepared to present the final surface fault rupture hazard investigation we conducted for the 664-acres subject parcel. The work performed for this report was performed in accordance with our proposal, dated April 20, 2021.

The subject site is located in Utah County along the south facing slopes of the Traverse Mountains. Much of the property is located on gently to moderately sloping hillsides with existing residential subdivisions to the east and west and an undeveloped and steep native hillside to the north. The Micron restricted open space area is centrally located with respect to the proposed planned development. Information concerning this project was provided by the Client. It is our understanding that proposed development will consist of development ranging from single family lots to townhomes and include some mixed-use retail and office buildings as well as churches and public schools. The total overall area to be developed is 664 acres according to the concept plan.

Portions of the subject site are underlain by Holocene age alluvial fan deposits. As such, this report will assess the alluvial fan flooding and debris flow hazard within the subject site. special study area associated with this drainage is warranted within the subject property. Due to the size of the Maple Hollow drainage basin, it is the opinion of GeoStrata that stream flooding hazard associated with this drainage could potentially impact the subject site. As such, GeoStrata will assess the stream flooding hazard associated with Maple Hollow. The other drainage channels north of the subject site trend into the subject property and generally terminate on Holocene age alluvial fans located within the subject property where debris flow hazard special study areas associated with these drainages have been mapped. These other drainage channels will be assessed for debris flow hazards.

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Modern (upper Holocene) alluvial fan deposits are mapped at the mouth of the drainages within the subject site and were assessed as part of this study. A large alluvial fan deposit is mapped as emanating from Drainage 6 (D6) and extending from the foothills to Timpanogos Highway, and described by Beik (2005) as Holocene to upper Pleistocene in age. Based on our review of the soils encountered in the test pits located on this large alluvial fan deposit, it is our opinion that the area of the alluvial fan deposit extending from MW-TP-15 to Timpanogos Highway is an older, Pleistocene, alluvial fan deposit and comprised of alluvial fan flooding deposits interfingered with Lake Bonneville deposits. Debris flow deposits were encountered near the mouth of D6 in DS-TP-06. Based on our field investigation, it is our opinion that the types of alluvial fan deposits emanating from the drainages are predominantly alluvial fan flooding deposits consisting of silt, clay, sand and gravel up to 6 inches in diameter.

The geometry of the channels within the drainages were observed to vary from V-shaped to broad. No water was observed to be flowing in any of the drainages at the time of our site visit in the beginning of July 2021. Based on our subsurface investigation as part of this study and our geotechnical study compiled in a separate report for the subject site, the types of alluvial fan deposits emanating from the drainages are assessed to be water dominated or alluvial fan flooding deposits that are generally 4 to 6 inches thick per event. Based on our review of published geologic maps, our aerial photograph interpretation, our review of hillshade imagery derived from 0.5-meter lidar, and our field observations, the alluvial fan flooding hazard is considered low to moderate. Our assessment of this hazard and calculated debris flow volumes are addressed in more detail in Section 6.1.1 of this report.

Stream flooding hazard was also assessed as part of this investigation. Due to the size of the Maple Hollow drainage basin, it is the opinion of GeoStrata that stream flooding hazard associated with this drainage could potentially impact the subject site. Based on our field and office investigation, it is the opinion of GeoStrata that the stream flooding hazard within the defined channel is considered high. GeoStrata recommends that no development or grading within the drainage channel should be planned, unless properly designed by the civil engineer. All planned roadways that cross the Maple Hollow drainage channel should be designed with culverts sufficiently sized to allow for peak flows within the channel to pass through the culvert and remain confined within the drainage channel.

NOTICE: The scope of services provided within this report are limited to the assessment of the subsurface conditions for the proposed development. This executive summary is not intended to replace the report of which it is part and should not be used separately from the report. The executive summary is provided solely for purposes of overview. The executive summary omits a number of details, any one of which could be crucial to the proper application of this report.

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2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

The purpose of our geologic hazards investigation is to assess the 664-acres subject parcel located at approximately 500 West and State Route 92 in Lehi, Utah for geologic hazards that may impact the cost and feasibility of the proposed construction. GeoStrata conducted a preliminary geologic hazard investigation that included a review of published literature and geologic maps, stereographic aerial photograph interpretation, a review of lidar data, and a reconnaissance level field investigation. Based on the results of our preliminary geologic hazards investigation, we assessed that the geologic hazards which posed a potential risk to the subject property are surface fault rupture hazards and debris flow/alluvial fan flooding hazards. GeoStrata planned and conducted a surface fault rupture hazard investigation and a debris flow/alluvial fan flooding hazard investigation for the 664-acres subject parcel. This report was prepared to present our final debris flow/alluvial fan flooding hazard investigation we conducted for the 664-acres subject parcel. A separate report was prepared to present the final surface fault rupture hazard investigation we conducted for the 664-acres subject parcel. The work performed for this report was performed in accordance with our proposal, dated April 20, 2021. Our scope of services for this final debris flow hazard investigation included the following:

- Review of available references and maps of the area.
- Stereographic aerial photograph interpretation of aerial photographs covering the site area.
- Review of Digital Elevation Models obtained from the State of Utah AGRC.
- Geologic reconnaissance and field review of geologic mapping of the site by an engineering geologist to observe and document pertinent surface features indicative of surface fault rupture and debris flow hazards.
- Subsurface investigation.
- Logs of the exploratory trenches.
- Preparation of this report.

The recommendations contained in this report are subject to the limitations presented in the Limitations segment of this report.

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2.2 PROJECT DESCRIPTION

The subject site is located in Utah County along the south facing slopes of the Traverse Mountains. Much of the property is located on gently to moderately sloping hillsides with existing residential subdivisions to the east and west and an undeveloped and steep native hillside to the north. The Micron restricted open space area is centrally located with respect to the proposed planned development (see Plate A-1 *Site Vicinity Map*, Plate A-2 *Topographic Map*). Information concerning this project was provided by the Client. It is our understanding that proposed development will consist of development ranging from single family lots to townhomes and include some mixed-use retail and office buildings as well as churches and public schools. The total overall area to be developed is 664 acres according to the concept plan.

Portions of the subject site are underlain by Holocene age alluvial fan deposits as shown on Plate A-3 *Geologic Hazards Special Study Map.* As such, this report will assess the alluvial fan flooding and debris flow hazard within the subject site. It should be noted that the debris flow hazard special study zones were delineated by Draper City. After review of the areas identified as debris flow hazards and the most recent geologic map that covers the subject site, no Holocene age alluvial fan deposit is mapped at the mouth of Maple Hollow which is the large drainage located in the western portion of the subject site. Based on the current standards of care for assessing debris flow hazards and since the subject site is no longer located within Draper City, it is the opinion of GeoStrata that no debris flow hazard special study area associated with this drainage is warranted within the subject property. Furthermore, the drainage channel is a deeply incised well defined drainage channel that trends across the subject property and extends farther south into the valley where it terminates into the Dry Creek drainage channel. However, due to the size of the Maple Hollow drainage basin, it is the opinion of GeoStrata that stream flooding hazard associated with this drainage could potentially impact the subject site. As such, GeoStrata will assess the stream flooding hazard associated with Maple Hollow. The other drainage channels north of the subject site trend into the subject property and generally terminate on Holocene age alluvial fans located within the subject property where debris flow hazard special study areas associated with these drainages have been mapped on Plate A-3 *Geologic Hazards Special Study Map*. These other drainage channels will be assessed for debris flow hazards.

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3.0 METHODS OF STUDY

3.1 OFFICE INVESTIGATION

As part of our office investigation, GeoStrata reviewed pertinent literature and maps listed in the references section of this report, which provide background information on the local geologic history of the area and the locations of suspected or known geologic hazards (Beik, 2005; Constenius and others, 2011; Black and others, 2003). A stereographic aerial photograph interpretation was performed for the subject site using a set of stereo aerial photographs obtained from the UGS as shown in Table 1.

Source	Photo Number	Date	Scale
ASCS	AAL_4-33	September 21, 1937	1:20,000
ASCS	AAL_4-34	September 21, 1937	1:20,000

Table 1: Aerial Stereosets.

GeoStrata also conducted a review of 2013-2014 0.5-meter lidar provided by the State of Utah AGRC to assess the subject site for visible lineations or other geologic hazards related geomorphology. The digital elevation models were used to create hillshade imagery that could be reviewed for assessment of geomorphic features related to geologic hazards (Plate A-4 *Hillshade Map*).

3.2 FIELD INVESTIGATION

An engineering geologist investigated the geologic conditions within the general site area. A field geologic reconnaissance was conducted to observe existing geologic conditions and to assess existing geomorphology for surficial evidence of geologic hazards. We used our field observations to assess the observations made during our office research and to observe any evidence of geologic hazards that were not evident in our office research, but which could be observed in the field.

To assess the subject site for the potential of alluvial fan flooding and debris flows impacting the subject site, GeoStrata assessed the geometry and characteristics of the drainages that are identified as a source for active alluvial fan deposits. GeoStrata also collected cross sectional data of the unnamed drainages to further assess the potential storage volume within the drainages. In addition to the above, GeoStrata reviewed the test pits and trenches excavated into

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the mapped alluvial fan deposits as part of our geotechnical investigation and surface fault rupture special study of the subject site. This information will be used to classify the types of debris flow deposits emanating from the drainages north and upslope of the subject site.

4.0 GEOLOGIC CONDITIONS

4.1 REGIONAL GEOLOGIC SETTING

The site is located in Lehi, Utah at an elevation ranging from approximately 4,830 to 5,300 feet above mean sea level. The subject site is located within the southern foothills of the Traverse Mountains, a structural salient denoting the boundary between Salt Lake Valley and Utah Valley and the southern terminus of the Salt Lake City Segment and the northern terminus of the Provo Segment of the Wasatch Fault Zone. Tertiary volcanic rocks and Tertiary alluvial fan deposits dominate the East Traverse Mountains and late Paleozoic shallow marine bedrock constitutes the west Traverse Mountains. The Utah Valley is a northwest trending deep, lacustrine sediment-filled structural basin of Cenozoic age bounded on the northeast and southwest by two normal faults that dip towards the center of the valley. Utah Valley is a fault graben flanked by two uplifted blocks, the Wasatch Range to the east and the Lake Mountains to the west. The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah (Stokes, 1986).

The near-surface geology of the Utah Valley is dominated by sediments, which were deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983; Hintze, 1993; Machette, 1992; Constenius and others, 2011). The lacustrine sediments near the mountain front consist mostly of gravel and sand. As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valley are predominately deep-water deposits of clay, silt, and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Most surficial deposits along the Wasatch fault zone were deposited during the final cycle of the Bonneville Lake Cycle between approximately 32 to 10 ka (thousands of years ago) and in the Holocene (< 10 ka).

4.2 REPORTED SITE GEOLOGY

The surficial deposits overlying the subject site, as reported on available geologic maps, are shown on Plate A-5 *Site Vicinity Geologic Map* (Beik, 2005) and Plate A-6 *Site Vicinity 30x60 Geologic Map* (Constenius and others, 2011). As shown on Plate A-6 and Plate A-7, Beik (2005) and Constenius and others (2011) delineates the surficial deposits within the subject site as Holocene to upper Pleistocene age alluvial-fan deposits (Qaf_{l}, Qafy) emanating from and sourced

by the drainages north of the subject site. These deposits typically occur at drainage mouths. In addition to the above sources, the alluvial fan deposits are also sourced by streams locally incising Lake Bonneville deposits where deposits typically form a coalesced apron at the base of the Wasatch Range. These alluvial fan deposits likely overlying Lake Bonneville lacustrine silt, sand and gravel deposits (Qlsb, Qlgb) that are mapped south and away from the mountain front. The surficial deposits are likely overlying Tertiary alluvial fan deposits (Taf) and Tertiary age volcanic rocks of the east Traverse Mountains (Tv).

4.3 SITE SPECIFIC GEOMORPHOLOGY

GeoStrata reviewed 1937 aerial stereosets, and hillshade imagery derived from 2013-2014 0.5-meter lidar provided by the State of Utah AGRC, to assess the subject site for visible lineations or other geologic hazards related geomorphology. As illustrated on Plate A-4, surface expressions related to Lake Bonneville and surface fault ruptures were identified during our review of hillshade imagery.

4.4 TECTONIC SETTING AND SEISMICITY

The west dipping Provo segment of the WFZ is mapped as trending north-south along the western toe of the Wasatch Mountains east of the subject site. Several fault splays associated with the northern terminus of the Provo segment of the WFZ are mapped trending generally northeast-southwest and generally east-west just north of the subject site. One of these fault splays trends generally northeast-southwest through a portion of the subject site (Plate A-3). The Provo segment of the WFZ trends N14°W and extends approximately 59 km from the Payson Salient where the Nephi segment begins to the Traverse Mountains where the Salt Lake City segment begins. Paleoseismic trenching investigations conducted on the Provo segment indicate that 10 large surface-faulting earthquakes occurred since 13,040 cal BP, which yields a preferred average mid to late Holocene recurrence interval of 1,400 years (Olig and others, 2011). The most recent paleoseismic event occurred approximately 500 ± 150 cal B.P. and produced a displacement of 4.7 ± 0.5 meters.

Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region and surrounding areas. The Provo segment shows evidence of Holocene movement and is therefore considered active.

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5.0 GENERALIZED SITE CONDITIONS

5.1 SURFACE CONDITIONS

The project site is located at approximately 500 West and State Route 92 in Lehi, Utah at an elevation between approximately 4,830 to 5,300 feet above sea level (see Plate A-1; Plate A-2). The subject site is currently an undeveloped 664-acre parcel within relatively established residential neighborhoods to the south, east and west and an undeveloped and steep native hillside to the north. The Micron restricted open space area is centrally located with respect to the proposed planned development. The site and much of the surrounding area are gently to moderately sloping generally to the south toward the valley and consist primarily of native grasses and sagebrush with the higher elevations and drainages covered by mature scrub oak.

5.2 FIELD RECONNAISANCE

Field investigations and observations used to assess the debris flow potential, probability and magnitude can be categorized into two areas of study (Giraud, 2005):

1. Channel Investigation – Studies of debris flows indicate that the majority of material/debris transported onto the alluvial fan comes from existing deposits within the defined drainage channel. The unit volume technique is commonly used to assign applicable debris yield rates (unit volume along distinct reaches of the channel) in order to approximate the potential debris volume.

2. Alluvial Fan Investigation – the thickness of debris deposits measured on the alluvial fan contribute to an understanding of past debris flow magnitude and potential run-out distance.

GeoStrata completed a site reconnaissance of the drainages on July 1, 2021. The site reconnaissance included observations of the surficial deposits in the drainages and collection of cross-sections from each drainage. Along with GeoStrata's field observations, geologic mapping of the site (Plate A-6 *Site Vicinity Geologic Map*; Plate A-7 *Site Vicinity 30'x60' Geologic Map*) was reviewed by GeoStrata as part of this investigation. The drainage basins for each drainage and some profile cross section locations delineated from 2013-2014 0.5-meter lidar are shown on Plate A-8 *Debris Flow Assessment Map*. Cross sections from Drainage 7 through 11 were collected in the field at the time of our site visit and compared to those delineated in the office. Cross sections from Drainage 1 through 6, 12 and 13 were delineated in the office. It was our

objective to produce cross sections that would be representative of the various geometries that exist in the main channel of each drainage.

There are several drainages within the site ranging from small to moderate in size. A total of thirteen drainage basins were assessed as part of this study (Plate A-8 *Debris Flow Assessment Map*), which includes one major drainage basin known as Dry Creek Canyon (D6) and twelve minor drainage basins. Evidence observed within the drainages suggests that surface water is present in the channels during periods of high runoff, however, no water was observed in any of the drainages at the time of our site reconnaissance and therefore these drainages are considered ephemeral stream drainages. No loose sediment or bedrock was observed in any of the drainage channels. The cross-sectional geometry of the channels within each drainage is variable and ranged from a narrow channel bottom to a shallow and broad channel bottom. Drainages 4, 7, 10, 11 and 12 are predominantly vegetated with native grasses while Drainages 1, 2, 3, 5, 8, 9 and 13 were vegetated with scrub oak and native grasses. Brief descriptions of each drainage and their estimated stored debris yield rates can be found on Table 6 of Section 6.3 *Alluvial Fan Flooding* of this report.

5.3 SUBSURFACE CONDITIONS

The subsurface soil conditions were explored during the geotechnical engineering studies completed for the subject property and during a surface fault rupture hazard assessment completed for the subject property. As part of these studies, two trenches and 28 test pits were excavated across the subject property in the area of the alluvial fan flooding/debris flow hazard special study area (Plate A-5 *Exploration Location Map*). Subsurface soil conditions and soil stratigraphy were logged at the time the test pits and trenches were excavated. The following is a description as observed during our field investigation of the test pits and trench excavations located on mapped alluvial fan deposits.

5.3.1 Trench 3 Description

Trench 3 was approximately 400 feet long, oriented generally northwest-southeast (N27°W) and located west of Trench 2A and Trench 2B and along the eastern edge of an abandoned gravel pit (Plate A-5). Trench 3 was excavated with a trackhoe to depths between approximately 5 and 5 ½ feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 3 is presented on Plates B-1 through B-10.

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The soils exposed in Trench 3 have been separated into 9 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 9 on the geologic log of Trench 3. The oldest sediment observed at the bottom of Trench 3 was designated as Unit 1 and the youngest sediment observed at the top of Trench 3 was designated as Unit 9.

Unit 1 was observed to be similar to Unit 2 in Trench 2B and consist of lacustrine silt and sand related to Lake Bonneville. Unit 1 was observed to be slightly cemented, light red-brown, matrix supported and massive to crudely bedded, with calcium carbonate deposits throughout. Unit 1 was observed in the southernmost end of Trench 3 beginning at approximately 389 feet down trench.

Unit 2 was observed to be similar to Unit 1 in Trench 2B, Unit 4 within Trench 1A, Unit 2 in Trench 1B and Unit 1 in Trenches 1C through 1F and consist of lacustrine sand and gravel related to Lake Bonneville. Unit 2 was observed to be comprise of a clast supported and crudely bedded to bedded light brown fine to coarse gravel and fine to coarse sand. Clasts were observed to be subrounded to well-rounded and comprised of quartzite with trace amounts of andesite.

Unit 3 was observed to overlie Unit 2 and was observed between approximately 200 and 353 feet down trench and to consist of a colluvium and/or alluvium deposit comprised of clay to silt with gravel. Unit 3 was observed to be matrix supported and massive. Clasts were observed to be approximately 1 to 3 inches in diameter and subangular to subrounded.

Unit 4 was observed in the northern end of Trench 3 and to consist of a series of alluvial fan deposits sourced by the drainages located north and upslope from Trench 3. Unit 4 was comprised of a red-brown silt with gravel that was observed to be matrix supported and massive with several small 3- to 5-inch-thick stream lenses that were clast supported and bedded. Clasts within Unit 4 were observed to be predominantly 1 to 3 inches in diameter with occasional gravel 4 to 5 inches in diameter and subrounded to subangular. Unit 4 was observed in Trench 3 between 0 and approximately 99 feet down trench.

Unit 5 was observed to consist of undocumented fill comprised of a gray silt with fine sand. Remnants of Unit 5 were also observed within Unit 6.

Unit 6 through Unit 9 were observed to consist of undocumented fill soils as part of the old gravel pit operations within the subject site. These units were observed to consist of sand, silt and

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varying amounts of gravel that were observed to be subrounded to subangular and approximately 1 to 4 inches in diameter.

5.3.2 Trench 6 Description

Trench 6 was approximately 74 feet long, oriented generally northwest-southeast (N40°W) and located east of Trench 3 and west of Trench 2B (Plate A-5). Trench 6 was excavated with a trackhoe to depths between approximately 5 and 12 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 6 is presented on Plates B-11 through B-12.

The soils exposed in Trench 6 have been separated into 2 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 2 on the geologic log of Trench 6. The oldest sediment observed at the bottom of Trench 6 was designated as Unit 1 and the youngest sediment observed at the top of Trench 6 was designated as Unit 2.

Unit 1 was observed to consist of a series of water dominated alluvial fan flooding deposits comprised of a clast supported and crudely bedded coarse gravel with trace amounts of cobbles. The thickness of the alluvial fan flooding deposits ranged from ½ to 1 ½ feet thick.

Unit 2 was observed to overlie Unit 1 and to consist of organic rich topsoil.

5.3.3 Test Pit Descriptions

Four geotechnical investigations were performed within the proposed Micron Project: Draper Single Family Site, High Density and Commercial, Highland Emerald Single Family and Lehi Single Family. Three of the geotechnical investigations included test pits located on mapped alluvial fan deposits. The soils encountered in the test pits during our field investigation are illustrated on Plates B-13 through B-37. Photos of the test pits excavated as part of the geotechnical investigation for the Draper Single Family Site are included on Plates B-38 to B-43. Below is a table that includes a list of test pits located on mapped alluvial fan deposits and a brief description of the alluvial fan flooding or debris flow deposits encountered if applicable.

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Draper Single Family (DS)	High Density and Commercial (MW)	Lehi Single Family Homes (ME)
DS-TP-02	MW-TP-15	ME-TP-28
DS-TP-03	MW-TP-16	ME-TP-31
DS-TP-05	MW-TP-22	
DS-TP-06	MW-TP-23	
DS-TP-07	MW-TP-29	
DS-TP-08	MW-TP-30	
DS-TP-10	MW-TP-33	
DS-TP-11	MW-TP-34	
	MW-TP-37	
	MW-TP-38	
	MW-TP-44	
	MW-TP-45	
	MW-TP-46	
	MW-TP-52	
	MW-TP-53	
	MW-TP-54	

DS-TP-02

The location of DS-TP-02 is near the lateral margin of the alluvial fan deposit mapped at the mouth of Drainage 6 (D6). Based on the type of soils and bedding observed in DS-TP-02, these soils appeared to be related to Lake Bonneville and not alluvial fan deposits.

DS-TP-03

The location of DS-TP03 is east of DS-TP-02 and on the alluvial fan deposit mapped at the mouth of D6. Based on our observations, a series of 8- to 10-inch-thick alluvial fan flooding deposits were encountered in DS-TP-03 as illustrated on Plate B-38.

DS-TP-05

Test pit DS-TP-05 is located west of the mouth of D6. Based on our observations, the Clayey GRAVEL (GC) observed in DS-TP-05 appear to be related to alluvial fan deposits. Cobbles greater than 4 inches in diameter were observed in this test pit.

DS-TP-06

Test pit DS-TP-06 is located at the mouth of D6. The soils encountered in this test pit were classified as Clayey GRAVEL (GC) with sand, Well Graded GRAVEL (GW) with clay and sand and Poorly Graded GRAVEL (GM) with clay and sand. A layer of cobbles over 8 inches and boulders over 12 inches in diameter were encountered between a depth of 3 and 6 feet as shown

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in Plate B-40. Based on our field observations and the location of DS-TP-05, a series of alluvial fan flooding and debris flow deposits were encountered in DS-TP-05 and are sources by D6.

DS-TP-07

Test pit DS-TP-07 is located east of D6 and at the mouth of Drainage 7 (D7). The soils encountered in this test pit were observed to be a Clayey Gravel (GC) with sand. Blocks of calcium carbonate cemented sand and rounded pea size gravel were encountered between 6 and 8 feet in depth (Plate B-41). Based on our field investigation, it is our opinion that the soils encountered in DS-TP-07 are alluvial fan flooding and Lake Bonneville deposits.

DS-TP-08

Test pit DS-TP-08 is located on the apex of the alluvial fan deposit emanating from Drainage 8 (D8). A Silty Clayey SAND (SC-SM) was encountered between a depth of 1 and 6 feet. Based on our field investigation, it is our opinion that the deposits observed between 1 and 6 feet in depth are alluvial fan flooding deposits. Between 6 and 9 feet in depth a 3-foot-thick layer of Clayey GRAVEL (GC) with sand and cobbles 6 inches and greater in diameter was encountered and observed to be similar to the cobble unit overlying Lake Bonneville deposits observed in Trench 1 as part of our Surface Fault Rupture Special Study. Based on our field investigations, it is our opinion that the 3-foot-thick layer of Clayey GRAVEL (GC) with sand and cobbles is related to Lake Bonneville. A bedded Poorly Graded GRAVEL (GP) with sand and a Clayey Sand (SC) were encountered between a depth of 9 and 11 feet and a depth of 11 and 13.5 feet, respectively (Plate B-42). Based on our field observations, it is our opinion that these are also Lake Bonneville deposits.

DS-TP-10

Test pit DS-TP-10 is located on the alluvial fan emanating from Drainage 1 (D1). A Silty Gravel (GM) with sand and a Silty, Clayey GRAVEL (GC-GM) with sand were encountered in DS-TP-10. Based on our field investigation and the location of the test pit, it is our opinion that the soils encountered in DS-TP-10 are alluvial fan flooding deposits.

DS-TP-11

Test pit DS-TP-11 is located at the mouth of Drainage 9 (D9). The soils encountered in DS-TP-11 was a Clayey GRAVEL (GC) with sand. Based on our field investigation, the soils encountered in DS-TP-11 are alluvial fan flooding deposits.

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MW-TP-15 through MW-TP-54

Test pits MW-TP-15 through MW-TP-54 are located on the alluvial fan deposit emanating from D6. This alluvial fan deposit is mapped as stretching from the foothills to Timpanogos Highway and is identified by Beik (2005) as younger undifferentiated alluvial fan deposit with an age ranging from Holocene to upper Pleistocene. Our geotechnical reports previously identify that the soils encountered in MW-TP-15, 16, 22, 23, 29, 30, 33, 34, 37, 38, 44, 45, 46, 52, 53 and 54 are alluvial fan deposits. However, based on further review, the Silty SAND (SM) with gravel encountered in MW-TP-15 the Poorly Graded GRAVEL (GP) with silt and sand and subrounded gravel encountered in MW-TP-16 and the Lean CLAY (CL) encountered in MW-TP-30, it is our opinion that the near surface soils from MW-TP-15 to the southern extent of the alluvial fan deposit are Pleistocene alluvial fan flooding deposits interfingered with Lake Bonneville deposits.

ME-TP-28

Test pit ME-TP-28 is located on the lateral margin of the alluvial fan deposit emanating from Drainage 13 (D13). Based on the Silty SAND (SM) with subrounded gravel encountered in ME-TP-28, it is our opinion that these deposits are related to Lake Bonneville.

ME-TP-31

Test pit ME-TP-31 is located on the lateral margin of Drainage 12 (D12). Based on the size of the drainage, the Silty GRAVEL (GM) encountered in and the location of the test pit, it is our opinion that the soil encountered in ME-TP-31 are alluvial fan flooding and reworked Lake Bonneville deposits.

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6.0 GEOLOGIC HAZARDS ANALYSIS AND RECOMMENDATIONS

6.1 ALLUVIAL FAN FLOODING

Alluvial fan flooding is a hazard that may exist in areas containing Holocene alluvial fan deposits. This type of flooding typically occurs as stream flows, hyperconcentrated flows or debris flows consisting of a mixture of water, soil, organic material, and rock debris with variations in sediment-water concentrations are transported by fast-moving water flows. Stream flows contain approximately less than 20% sediment by volume and involve sediment transport by entrained and suspended sediment load (Bowman and Lund, 2016). Unconfined stream flows are referred to as sheetfloods which are spread over and occur in the distal areas of the alluvial fan or within unchanneled, broad, relatively flat-bottomed portions of drainages. Hyperconcentrated flows are alluvial fan flows with approximately between 20 to 60% sediment by volume whereas debris flows contain approximately 60% to 85% sediment by volume.

Alluvial fan flooding can be a hazard on or below alluvial fans or in stream channels above alluvial fans. Precipitation (rainfall and snowmelt) is generally viewed as an alluvial fan flood "trigger", but this represents only one of the many factors that contribute to alluvial fan flooding hazard. Vegetation, root depth, soil gradation, antecedent moisture conditions, and long-term climatic cycles all contribute to the generation of debris and initiation of alluvial fan flooding. Events of relatively short duration, such as a fire, can significantly alter a basin's absorption of stormwater and snowmelt runoff and natural resistance to sediment mobilization for an extended period of time. These factors are difficult to quantify or predict and vary not only between different watersheds, but also within each sub-area of a drainage basin. In general, there are two methods by which alluvial fan flooding can be mobilized: 1) when shallow landslides from channel side-slopes are conveyed in existing channels when mixed with water and 2) channel scour where debris is initially mobilized by moving water in a channel and then the mobilized debris continues to assemble and transport downstream sediments.

Based on review of published geologic maps, our stereographic aerial photograph interpretation, our review of the hillshade imagery derived from the 0.5-meter lidar elevation data (2013-2014), and our field observations, modern (upper Holocene) alluvial fan deposits are mapped at the mouth of the drainages which were assessed as part of this study (Plate A-5 *Site Vicinity Geologic Map*; Plate A-6 *Site Vicinity 30x60 Geologic Map*).

A large alluvial fan deposit is mapped as emanating from Drainage 6 (D6) and extending from the foothills to Timpanogos Highway, and described by Beik (2005) as Holocene to upper Pleistocene in age. Based on our review of the soils encountered in the test pits located on this large alluvial fan deposit, it is our opinion that the area of the alluvial fan deposit extending from MW-TP-15 to Timpanogos Highway is an older, Pleistocene, alluvial fan deposit and comprised of alluvial fan flooding deposits interfingered with Lake Bonneville deposits. Debris flow deposits were encountered near the mouth of D6 in DS-TP-06. Based on our field investigation, it is our opinion that the types of alluvial fan deposits emanating from the drainages are predominantly alluvial fan flooding deposits consisting of silt, clay, sand and gravel up to 6 inches in diameter.

The geometry of the channels within the drainages were observed to vary from V-shaped to broad. No water was observed to be flowing in any of the drainages at the time of our site visit in the beginning of July 2021. Based on our subsurface investigation as part of this study and our geotechnical study compiled in a separate report for the subject site, the types of alluvial fan deposits emanating from the drainages are assessed to be water dominated or alluvial fan flooding deposits that are generally 4 to 6 inches thick per event. Based on our review of published geologic maps, our aerial photograph interpretation, our review of hillshade imagery derived from 0.5-meter lidar, and our field observations, the alluvial fan flooding hazard is considered low to moderate. Our assessment of this hazard is addressed in subsequent paragraphs.

6.1.1 Estimates of Debris Volume

The prediction of total debris volumes is complex and dependent on several factors which include but are not limited to precipitation and vegetation as previously mentioned. While methods of initiation differ, our observations of the drainage basins and channels lead us to assume that under existing conditions the majority of debris currently available for transport in the drainages would be mobilized from existing deposits within their developed channels beds.

There are several methods available for predicting peak discharge rates and total debris flow volumes associated with debris flows. The methods used in our analysis for this investigation are discussed below. Results of each of the methods of analysis are presented below. As previously mentioned, the deposits observed in the test pits excavated at the mouth of the drainages were observed to range from stream flooding deposits (less than 20% sediment by volume) with some debris flow deposits (60% to 85% sediment by volume). Based on our field observations, the

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total debris flow volumes presented in the *Unit Volume Analysis* and *Debris Flow Bulking with Hydrology for Dry Creek Canyon Analysis* were calculated by assuming flows with sediment loads of 50% which mobilize all of the estimated available sediment within the stream channels.

Unit-Volume Analysis

The unit-volume analysis method involves measuring and estimating the stored erodible sediment in the channel. Cross-sections are taken at various points along a channel and the geometry of the channel is used to estimate the sediment stored in the bottom of the channel (Giraud, 2005). Estimating channel sediment volume available for bulking is critical because study of historical debris flows indicates that 80% to 90% of the debris flow volume comes from bulking of sediment from the bottom of the channel (Bowman and Lund, 2016).

The streambed cross sections used in our analysis were collected in the field and from 2013-2014 0.5-m lidar. Estimates for debris yield at each of these cross sections was calculated as volume per linear foot of channel and this yield was then extrapolated beyond the investigation locations along the length of the channel in order to approximate the potential total debris yield for the unnamed drainages as presented in Table 3 below. The total debris flow volumes presented below were calculated by assuming flows with sediment loads of 50% which mobilize all of the estimated available sediment within the stream channels. The accuracy of these volumes could be improved by using design level flood flow rates and total volumes for each of the drainages from a hydrologic study report in conjunction with the estimated total volumes of erodible sediment, as well as by excavating test pits within the channels to observe the depth of stored sediment at various points. Below is a table summarizing our results:

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Drainage	Cross Section	Erodible Cross-Sectional Area (ft^2)	Reach of Cross Section (ft)	Erodible Sediment (ft^3)	Erodible Sediment (ac-ft)	Total Volume of Erodible Sediment		Total Debris Flow Volume
						V (ft^3)	V (ac-ft)	V (ac-ft)
1	A	30	424	12559	0.29	187596	4.31	8.61
	B	30	386	11647	0.27			
	C	21	383	8020	0.18			
	D	39	541	21267	0.49			
	E	0	677	0	0.00			
	F	0	533	0	0.00			
	G	14	513	7033	0.16			
	H	7	675	4633	0.11			
	I	18	352	6333	0.15			
	J	0	546	0	0.00			
	K	27	577	15326	0.35			
	L	22	391	8557	0.20			
	M	16	199	3224	0.07			
	N	35	565	19839	0.46			
	O	0	393	0	0.00			
	P	8	392	2953	0.07			
	Q	16	650	10660	0.24			
	R	24	557	13514	0.31			
	S	24	865	20549	0.47			
	T	32	675	21483	0.49			
	U	0	703	0	0.00			
2	A	19	286	5486	0.13	10863	0.25	0.50
	B	8	263	2114	0.05			
	C	12	263	3263	0.07			
3	A	13	324	4060	0.09	31846	0.73	1.46
	B	2	300	623	0.01			
	C	27	317	8692	0.20			
	D	10	376	3852	0.09			
	E	21	686	14618	0.34			
4	A	32	186	6016	0.14	19931	0.46	0.92
	B	30	457	13915	0.32			

Table 3: Drainage Characteristics and Volume of Sediment in Stream Channel

Drainage	Cross Section	Erodible Cross Sectional Area (ft^2)	Reach of Cross Section (ft)	Erodible Sediment (ft^3)	Erodible Sediment (ac-ft)	Total Volume of Erodible Sediment		Total Debris Flow Volume
						V (ft^3)	V (ac-ft)	V (ac-ft)
5	A	34	218	7318	0.17	32555	0.75	1.49
	B	0	187	0	0.00			
	C	36	248	9018	0.21			
	D	30	548	16219	0.37			
6	A	0	764	0	0.00	153307	3.52	7.04
	B	0	591	0	0.00			
	C	0	581	0	0.00			
	D	0	352	0	0.00			
	E	0	478	0	0.00			
	F	0	558	0	0.00			
	G	0	597	0	0.00			
	H	0	400	0	0.00			
	I	8	480	3606	0.08			
	J	9	557	4756	0.11			
	K	26	708	18585	0.43			
	L	24	632	14988	0.34			
	M	29	570	16358	0.38			
	N	52	563	29386	0.67			
	O	40	1221	48284	1.11			
	P	8	481	3646	0.08			
	Q	0	329	0	0.00			
	R	6	418	2452	0.06			
	S	9	428	3777	0.09			
	T	9	793	7469	0.17			
7	A	80	208	16571	0.38	16571	0.38	0.76
8	A	4	250	917	0.02	2709	0.06	0.12
	B	3	672	1792	0.04			
9	A	3	540	1620	0.04	1620	0.04	0.07
10	A	7	356	2492	0.06	2492	0.06	0.11
11	A	7	249	1660	0.04	5117	0.12	0.23
	B	10	279	2790	0.06			
	C	2	286	667	0.02			
12	A	11	426	4637	0.11	8064	0.19	0.37
	B	7	503	3427	0.08			
13	A	9	344	3089	0.07	3089	0.07	0.14

Table 3: Drainage Characteristics and Volume of Sediment in Stream Channel Continued

Post-fire Condition Assessment

The Western U.S. regression model was also used to estimate fire-related debris flow volumes (Gartner and others, 2008; Giraud and Castleton, 2009; Cannon and others 2010). The model estimates debris flow volumes as:

$$\ln V = 7.2 + 0.6(\ln A) + 0.7(B)^{1/2} + 0.2(T)^{1/2} + 0.3$$

where:

V = volume (cubic meters)

A = basin area with slopes greater than or equal to 30% (square kilometers)

B = basin area burned at moderate and high severity (square kilometers)

T = total storm rainfall (millimeters)

Based on elevation data derived from 2013-2014 0.5-m lidar, the percent of slopes greater than or equal to 30% to total acres for each basin ranged from 19% to 84% (Table 4: Basin Characteristics and Plate A-8 Debris Flow Assessment Map). None of the basins as part of this assessment were burned at the time of our study. This analysis assumes that 100% of each basin was burned at moderate and high severity.

Basin	D1	D2	D3	D4	D5	D5	D6	D7	D8	D9	D10	D11	D12	D13
Slopes ≥ 30%	76%	65%	69%	35%	47%	84%	84%	29%	34%	48%	59%	28%	32%	19%

Table 4: Basin Characteristics

Cannon and others (2010) recommend evaluation of debris flow events in response to low recurrence (<2-10 years), low-duration (<1 hr) rainstorms. Total storm rainfall was taken from the NOAA Atlas 14, Volume 1, Version 5 Alpine Station Point Precipitation Frequency Estimates for rainstorm events with 60-minute durations with a recurrence interval of 2, 5, 10, and 100 years. Below is a summary of our results for each basin.

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Basin D1

B	0.849	**sq km**		
A	0.644	**sq km**		
R-2 year	13.5	**mm**		
R-5 year	18.5	**mm**		
R-10 year	23.0	**mm**		
V-2 year	5513.0	**m^3**	4.5	**ac-ft**
V-5 year	6251.0	**m^3**	5.1	**ac-ft**
V-10 year	6908.3	**m^3**	5.6	**ac-ft**

Basin D2

B	0.055	**sq km**		
A	0.036	**sq km**		
R-2 year	13.5	**mm**		
R-5 year	18.5	**mm**		
R-10 year	23.0	**mm**		
V-2 year	604.5	**m^3**	0.5	**ac-ft**
V-5 year	685.4	**m^3**	0.6	**ac-ft**
V-10 year	757.5	**m^3**	0.6	**ac-ft**

Basin D3

B	0.105	**sq km**		
A	0.072	**sq km**		
R-2 year	13.5	**mm**		
R-5 year	18.5	**mm**		
R-10 year	23.0	**mm**		
V-2 year	977.9	**m^3**	0.8	**ac-ft**
V-5 year	1108.8	**m^3**	0.9	**ac-ft**
V-10 year	1225.4	**m^3**	1.0	**ac-ft**

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Basin D4

B	0.019	sq km		
A	0.007	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	209.3	m^3	0.2	ac-ft
V-5 year	237.3	m^3	0.2	ac-ft
V-10 year	262.3	m^3	0.2	ac-ft

Basin D5

B	0.031	sq km		
A	0.015	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	336.7	m^3	0.3	ac-ft
V-5 year	381.8	m^3	0.3	ac-ft
V-10 year	421.9	m^3	0.3	ac-ft

Basin D6

B	1.473	sq km		
A	1.234	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	9991.6	m^3	8.1	ac-ft
V-5 year	11329.1	m^3	9.2	ac-ft
V-10 year	12520.4	m^3	10.2	ac-ft

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Basin D7

B	0.022	sq km		
A	0.006	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	203.2	m^3	0.2	ac-ft
V-5 year	230.4	m^3	0.2	ac-ft
V-10 year	254.7	m^3	0.2	ac-ft

Basin D8

B	0.045	sq km		
A	0.015	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	357.1	m^3	0.3	ac-ft
V-5 year	404.9	m^3	0.3	ac-ft
V-10 year	447.5	m^3	0.4	ac-ft

Basin D9

B	0.019	sq km		
A	0.009	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	243.8	m^3	0.2	ac-ft
V-5 year	276.5	m^3	0.2	ac-ft
V-10 year	305.6	m^3	0.2	ac-ft

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Basin D10

B	0.013	sq km		
A	0.008	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	219.8	m^3	0.2	ac-ft
V-5 year	249.2	m^3	0.2	ac-ft
V-10 year	275.4	m^3	0.2	ac-ft

Basin D11

B	0.074	sq km		
A	0.021	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	443.8	m^3	0.4	ac-ft
V-5 year	503.2	m^3	0.4	ac-ft
V-10 year	556.2	m^3	0.5	ac-ft

Basin D12

B	0.075	sq km		
A	0.024	sq km		
R-2 year	13.5	mm		
R-5 year	18.5	mm		
R-10 year	23.0	mm		
V-2 year	485.1	m^3	0.4	ac-ft
V-5 year	550.1	m^3	0.4	ac-ft
V-10 year	607.9	m^3	0.5	ac-ft

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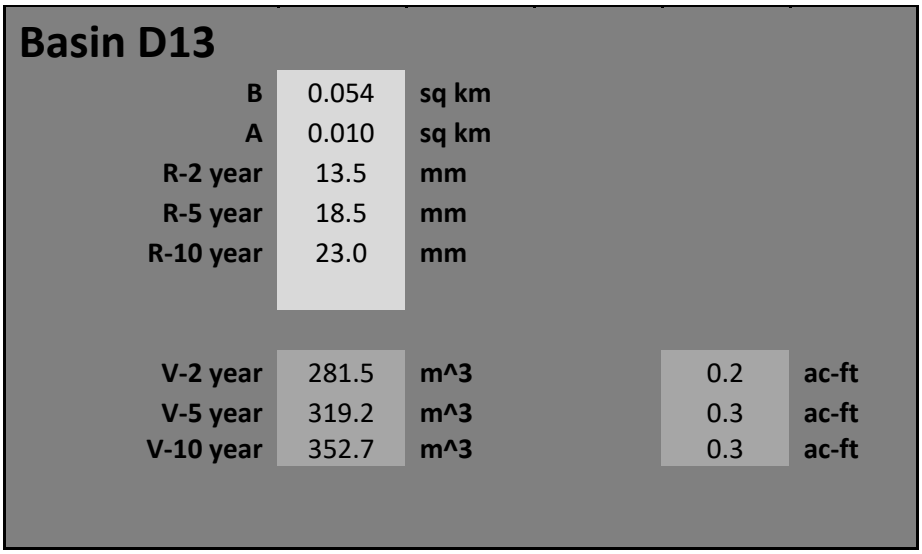

Utilizing this method, we estimate the total volume of a potential post fire debris flow to be relatively consistent with the volume of total debris flow volume that we assessed using the unit volume analysis (Table 5. Debris Flow Volume Comparison).

Basin	D1	D2	D3	D4	D5	D6	D7	D8
Volume Analysis (ac-ft)	8.6	0.5	1.5	0.9	1.5	7.0	0.8	0.1
*Post Fire Volume (ac-ft)	5.6	0.6	1.0	0.2	0.3	10.2	0.2	0.4
Basin	**D9**	**D10**	**D11**	**D12**	**D13**			
Volume Analysis (ac-ft)	0.1	0.1	0.2	0.4	0.1			
*Post Fire Volume (ac-ft)	0.2	0.2	0.5	0.5	0.3			

*Volume from 10 year storm

Table 5: Debris Flow Volume Comparison

Debris Flow Bulking with Hydrology for Dry Creek Canyon (D6)

Analysis of the hydrology of the unnamed drainage was performed by KK&L, LLC to provide peak flow and total volume of rainfall runoff in order to calculate potential peak and total volume debris flow rates (Appendix C). Stream flow is considered to be a debris flow when the concentration by volume of sediment is greater than 60% (Bowman and Lund, 2016). In order to calculate debris flow volumes, we assumed a 50% bulking rate, meaning that of the total rainstorm runoff from a 100-year storm, a volume of sediment equal to the volume of water may be mobilized; therefore, the debris flow volume would equal to 2 times the volume of water. The table below presents stormwater and debris flow volumes and peak flow rates considering a 100-year storm with a duration of 24 hours.

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Total Volume of Water from 100-year storm (ac-ft)	10.9
Total Volume of Debris Flow from 100-year storm (ac-ft)*	21.8
Peak Flow Rate of Stormwater from 100-year storm (cfs)	73.4
Peak Flow Rate of Debris Flow from 100-year storm (cfs)	146.7

*debris flow volume equals volume of water and sediment combined

Table 6: Debris Flow Volumes from Bulking

The total volume of sediment calculated using this method far exceeds the estimated erodible sediment stored within the channel as calculated using the Unit Volume Analysis method as described previously; therefore, it is our opinion that there is a low probability that volumes of debris flow as high as these will occur. However, from this we can conclude that most of the available erodible sediment stored in the channel may be mobilized in a 100-year rainstorm event.

6.2 STREAM FLOODING

Stream flooding can be caused by precipitation, snowmelt or a combination of both. Throughout most of Utah floods are most common in spring during the snowmelt. High flows in drainages can last for a few hours to several weeks. Factors that affect the potential for flooding at a site include surface water drainage patterns and hydrology, site grading and drainage design, and seasonal runoff.

Due to the size of the Maple Hollow drainage basin, it is the opinion of GeoStrata that stream flooding hazard associated with this drainage could potentially impact the subject site. Based on our field and office investigation, it is the opinion of GeoStrata that the stream flooding hazard within the defined channel is considered high. GeoStrata recommends that no development or grading within the drainage channel should be planned, unless properly designed by the civil engineer. All planned roadways that cross the Maple Hollow drainage channel should be designed with culverts sufficiently sized to allow for peak flows within the channel to pass through the culvert and remain confined within the drainage channel.

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7.0 CLOSURE

7.1 LIMITATIONS

The conclusions and recommendations contained in this report, which include professional opinions and judgments, are based on the information available to us at the time of our evaluation, the results of our field observations and our understanding of the proposed site development. If any conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed development changes from that described in this report, our firm should also be notified.

All services were completed in accordance with the current standard of care and generally accepted standard of practice at the time and in the place our services were completed. No other warranty, expressed or implied, is made. Development of property in the immediate vicinity of geologic hazards involves a certain level of inherent risk. It is impossible to predict where geologic hazards will occur. New geologic hazards may develop and existing geologic hazards may expand beyond their current limits.

All services were performed for the exclusive use and benefit of the above addressee. No other person is entitled to rely on GeoStrata's services or use the information contained in this letter without the express written consent of GeoStrata. We are not responsible for the technical interpretations by others of the information described or documented in this report. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

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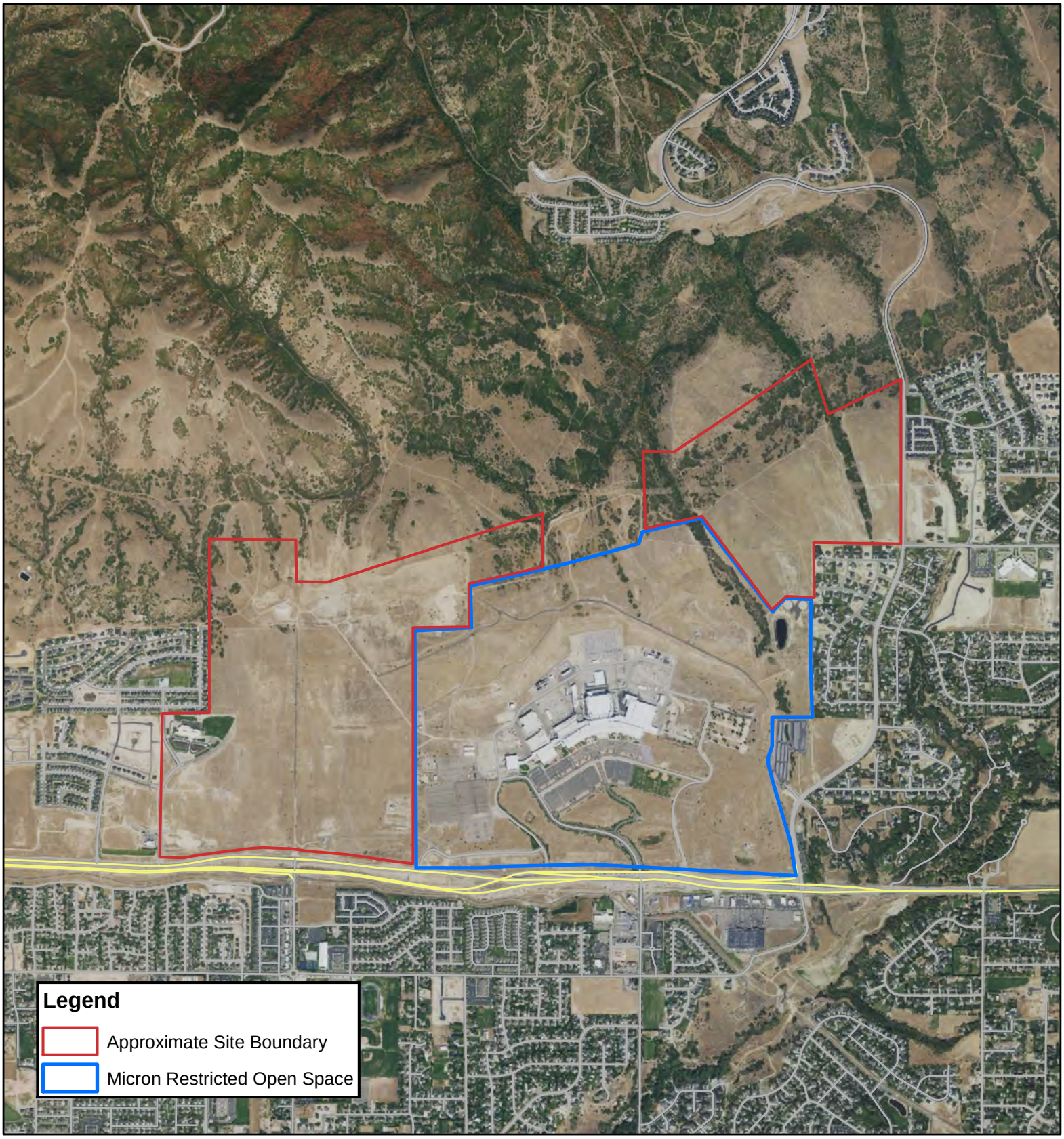
Appendix A



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Basemap:
2012 12.5 cm HRO aerial imagery provided by the State of Utah AGRC

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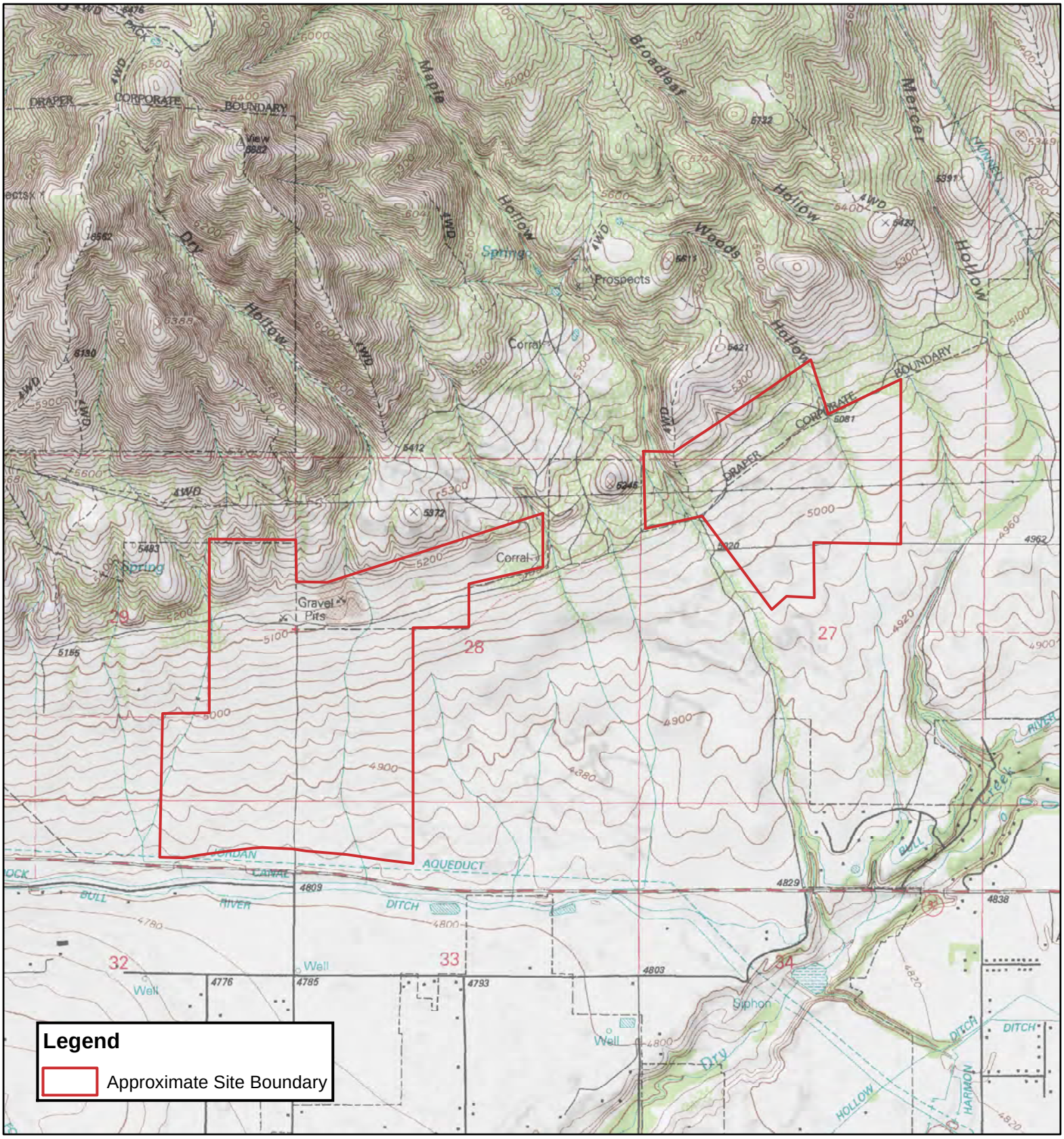
Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Site Vicinity Map

Plate A-1

926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Approximate Site Boundary
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Basemap:
Lehi Quadrangl, Utah, 7.5-Minute Series (Topographic), USGS, 1994 and hillshades derived from DEMs provided by the State of Utah AGRC.
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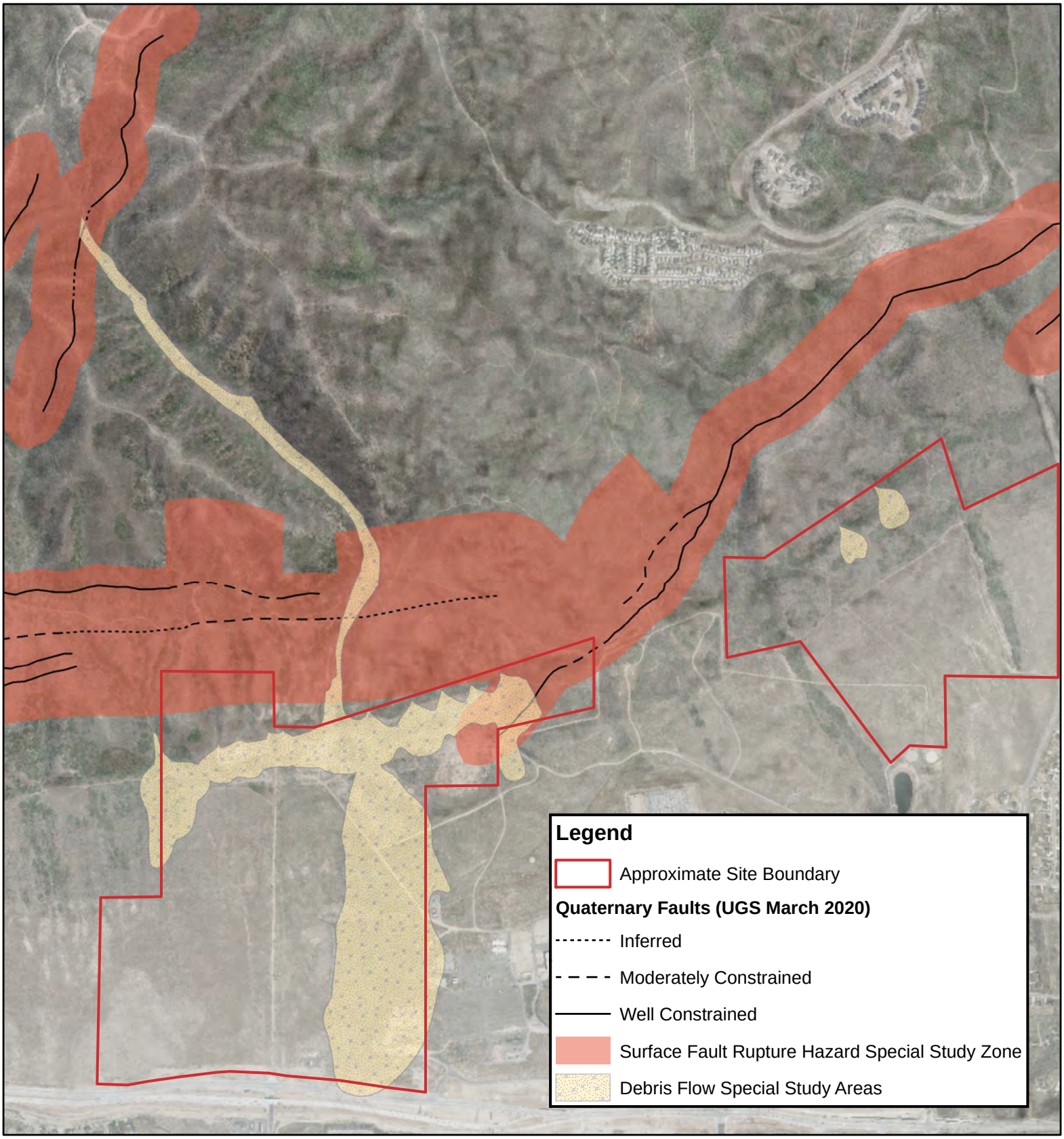
Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100
Topographic Map
Plate
A-2
927



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Basemap:
Lehi Quadrangl, Utah, 7.5-Minute Series (Topographic), USGS, 1994 and hillshades derived from DEMs provided by the State of Utah AGRC.

N

GeoStrata

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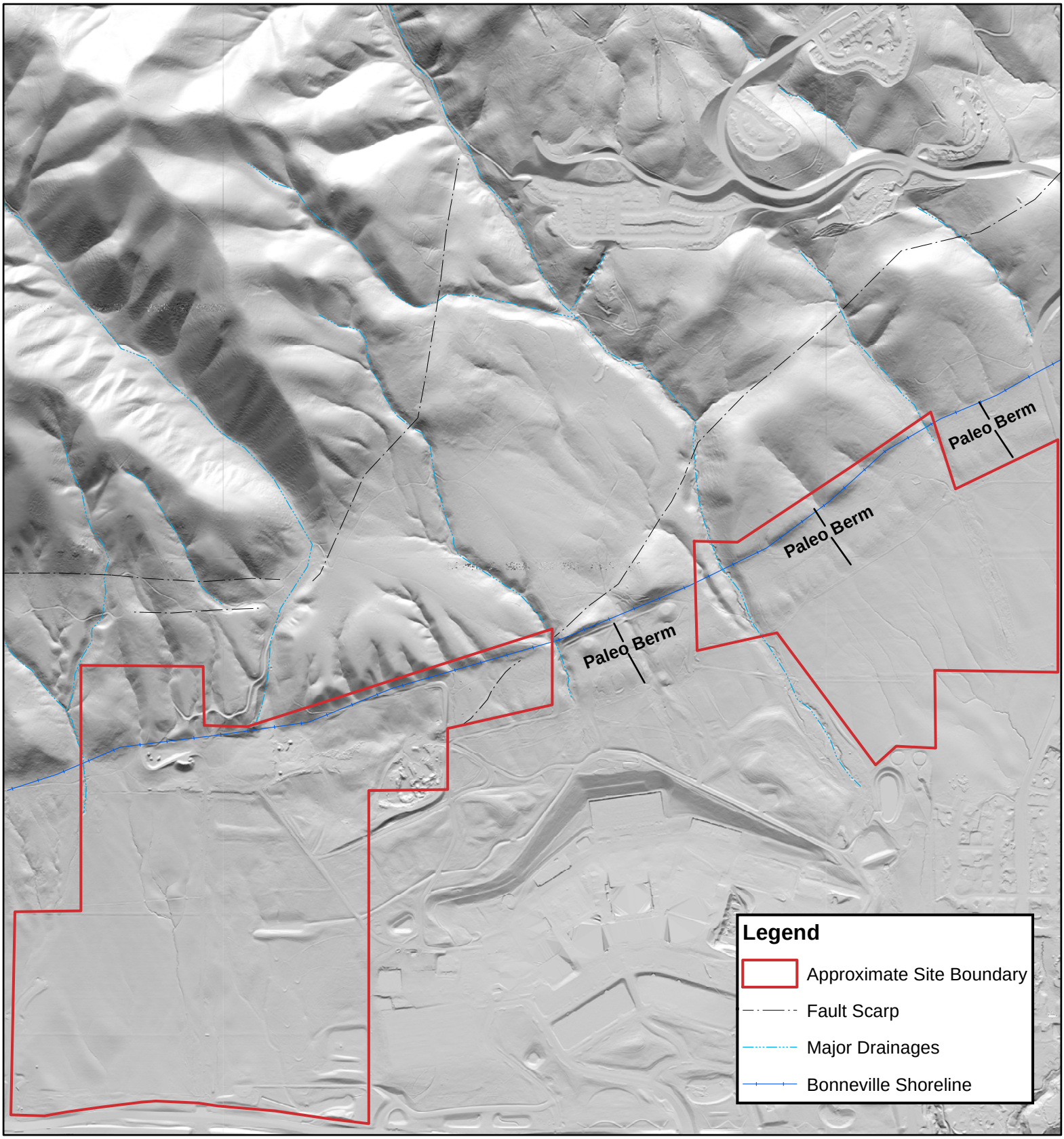
Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Geologic Hazards Special Study Map

Plate A-3

928



0 460 920 1,840 2,760 3,680 Feet

1:17,000

N

Basemap:
Hillshades derived from 2013-2014 0.5m lidar provided by the State of Utah AGRC.

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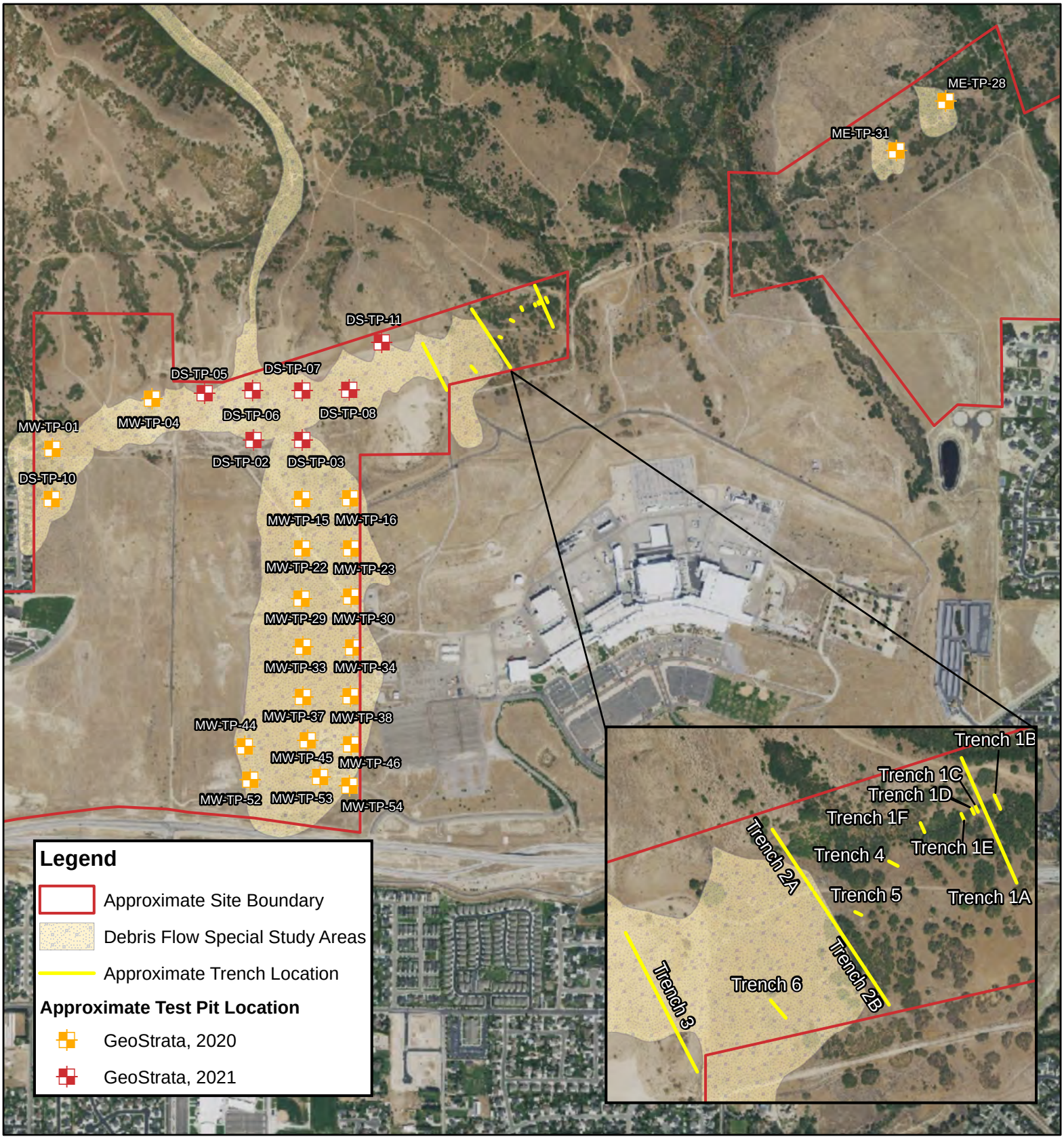
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Hillshade Map

Plate A-3

929



0 405 810 1,620 2,430 3,240 Feet

1:15,000

Basemap:
2018 1m NAIP aerial imagery provided by the State of Utah AGRC.

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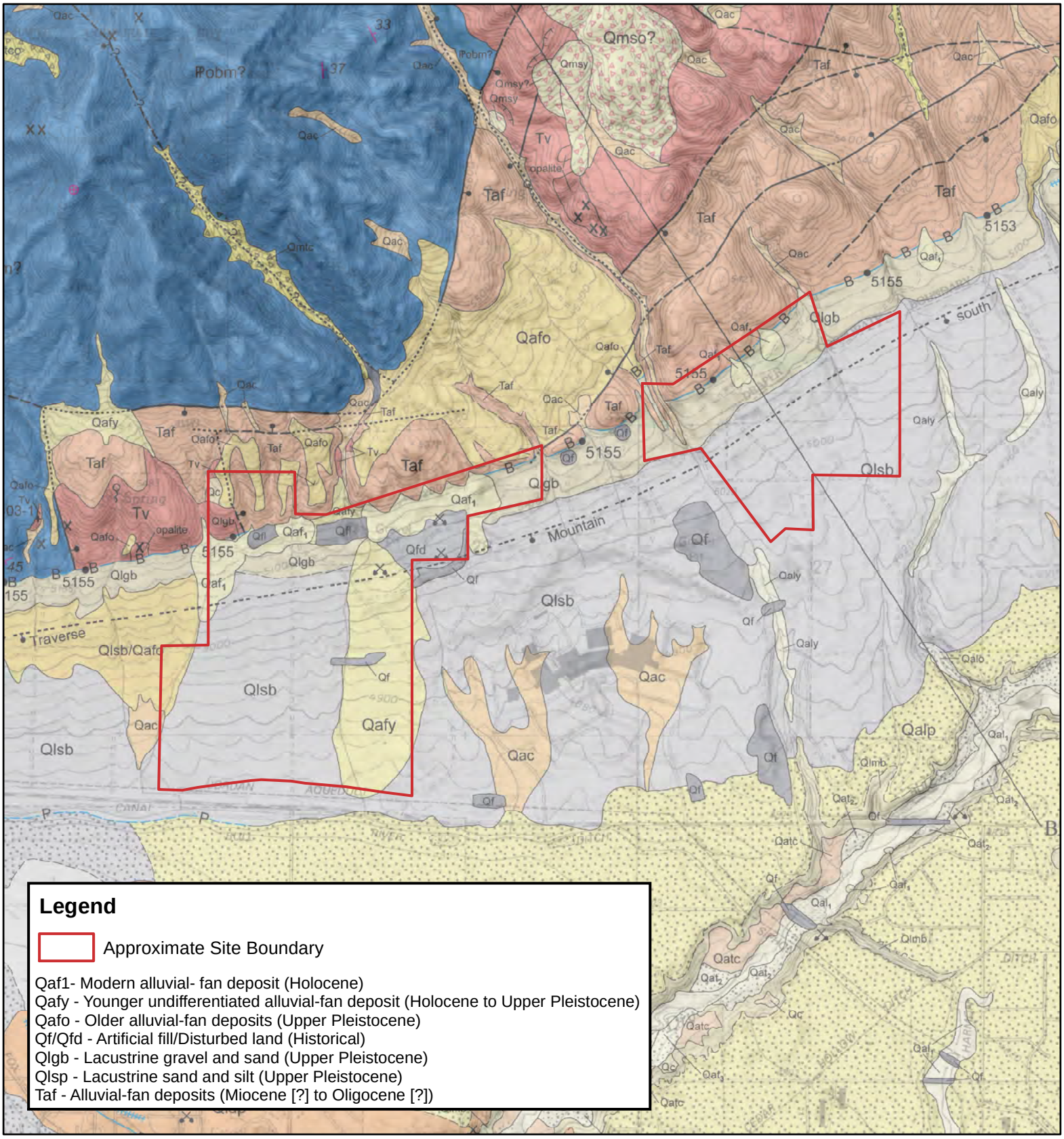
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Exploration Location Map

Plate A-5

930



Legend

Approximate Site Boundary

Qaf1- Modern alluvial- fan deposit (Holocene)
Qafy - Younger undifferentiated alluvial-fan deposit (Holocene to Upper Pleistocene)
Qafo - Older alluvial-fan deposits (Upper Pleistocene)
Qf/Qfd - Artificial fill/Disturbed land (Historical)
Qlgb - Lacustrine gravel and sand (Upper Pleistocene)
Qlsp - Lacustrine sand and silt (Upper Pleistocene)
Taf - Alluvial-fan deposits (Miocene [?] to Oligocene [?])

0 650 1,300 2,600 3,900 5,200 Feet

1:24,000

Basemap:
Geologic Map of the Lehi Quadrangle and Part of the Timpanogos Cave Quadrangle, Salt Lake and Utah Counties, Utah, Beik, 2005.
Hillshades derived from DEMs provided by the State of Utah AGRC.

N

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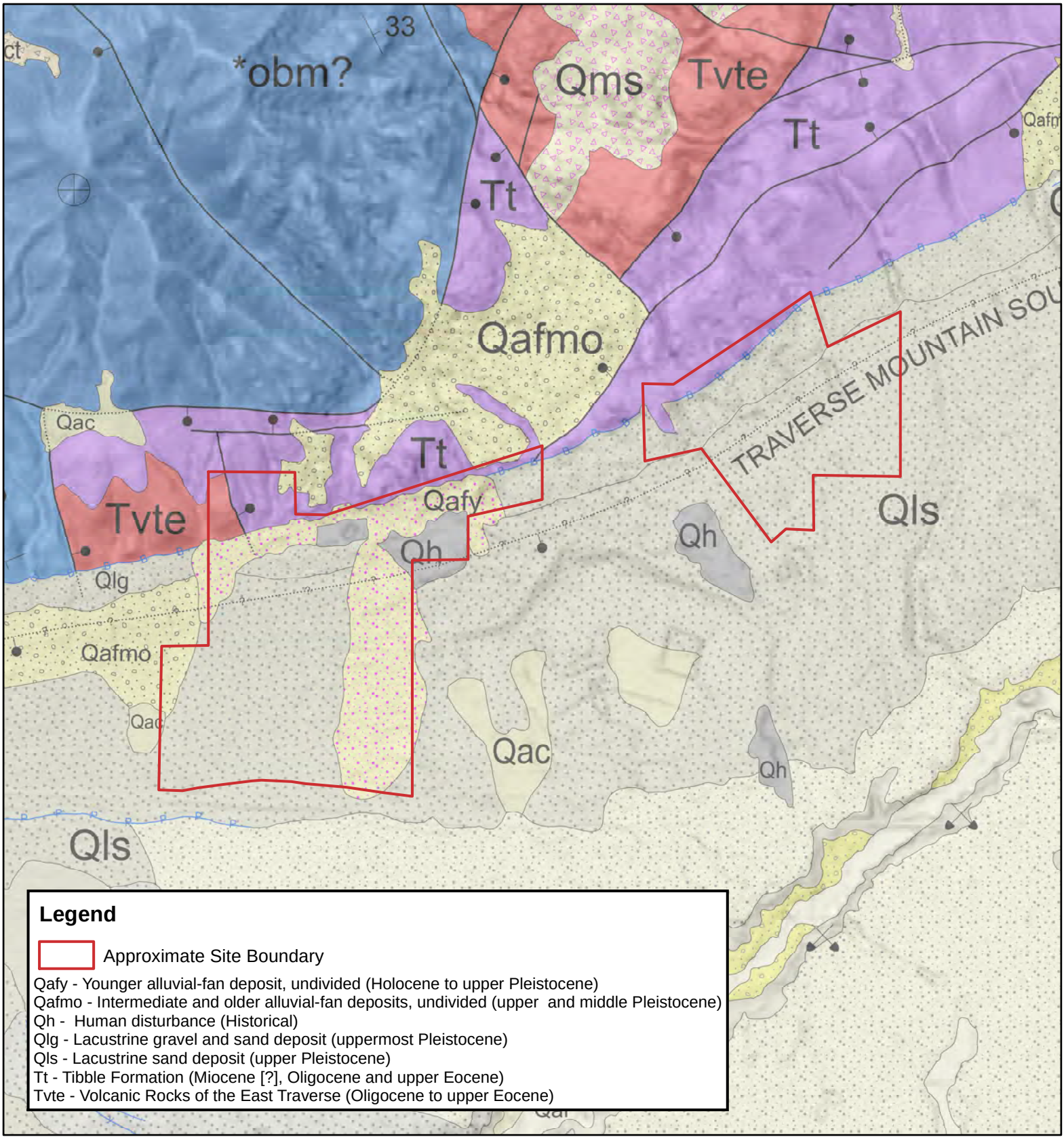
Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Site Vicinity Geologic Map

Plate A-6



Legend

Approximate Site Boundary

Qafy - Younger alluvial-fan deposit, undivided (Holocene to upper Pleistocene)
Qafmo - Intermediate and older alluvial-fan deposits, undivided (upper and middle Pleistocene)
Qh - Human disturbance (Historical)
Qlg - Lacustrine gravel and sand deposit (uppermost Pleistocene)
Qls - Lacustrine sand deposit (upper Pleistocene)
Tt - Tibble Formation (Miocene [?], Oligocene and upper Eocene)
Tvte - Volcanic Rocks of the East Traverse (Oligocene to upper Eocene)

0 650 1,300 2,600 3,900 5,200 Feet

1:24,000

Basemap:
Interim Geologic Map of the Provo 30' X 60' Quadrangle, Utah, Wasatch and Salt Lake Counties, Utah, Constenius and others, 2011. Hillshades derived from DEMs provided by the State of Utah AGRC.

N

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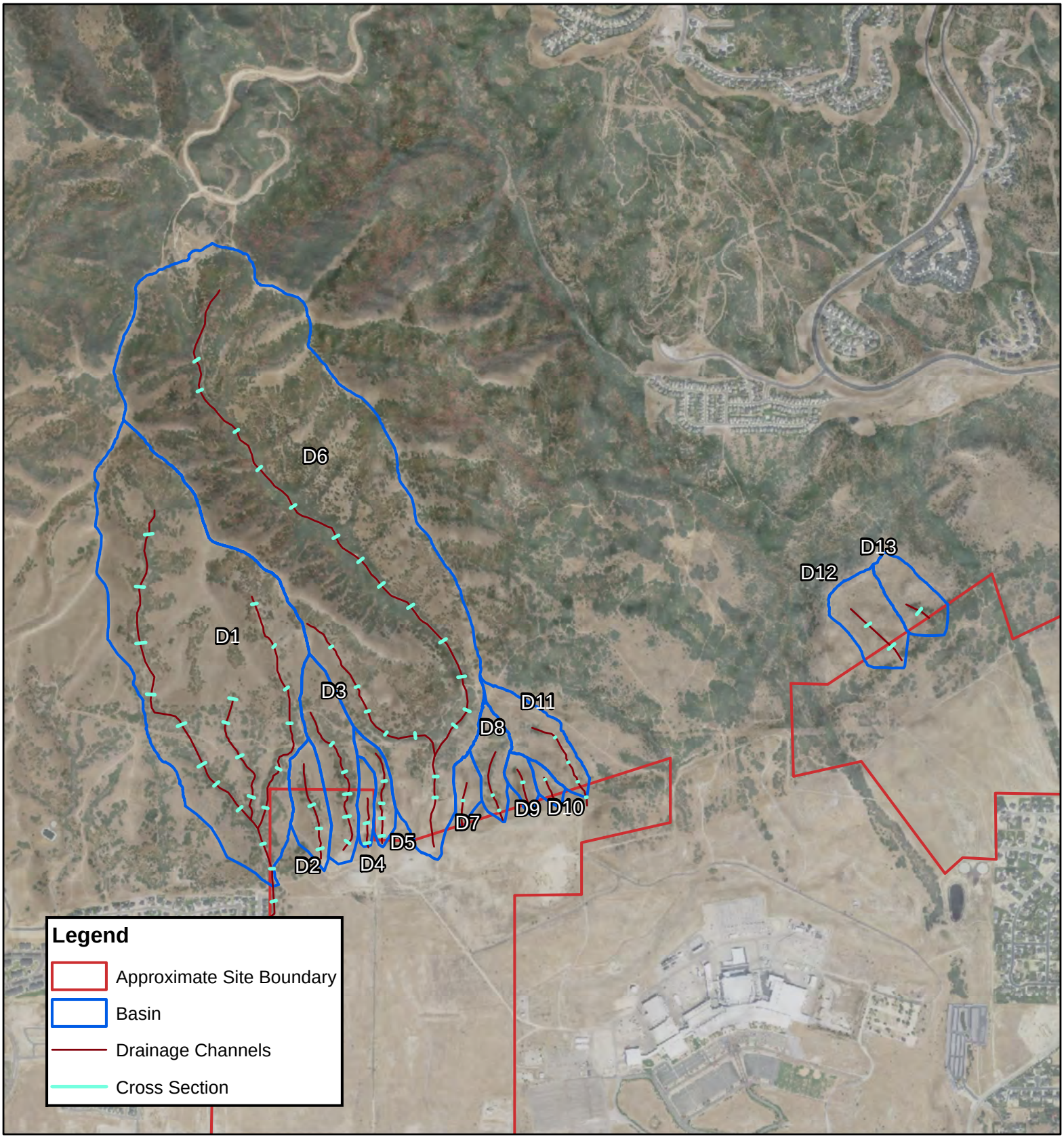
Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Site Vicinity 30x60 Geologic Map

Plate A-7



0 500 1,000 2,000 3,000 4,000 Feet

1:20,000

Basemap:
2012 12.5 cm HRO aerial imagery and hillshades derived from DEMs provided by the State of Utah AGRC

N

GeoStrata

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Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Debris Flow Assessment Map

Plate A-8

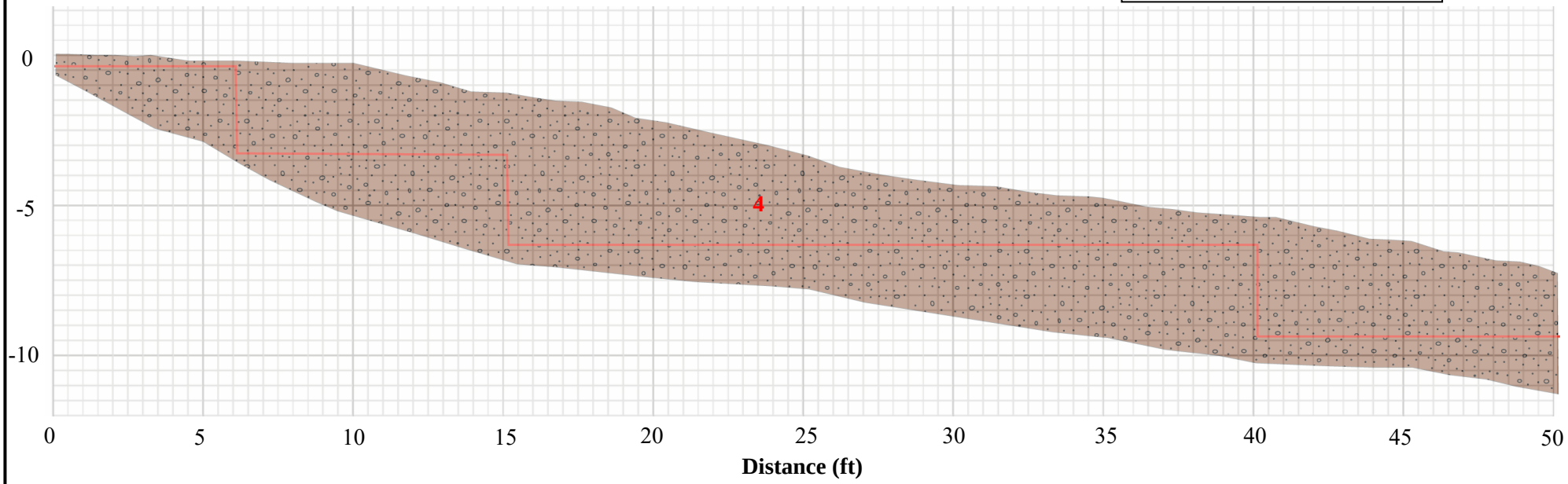
933

Appendix B

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 4 – Alluvial Fan Deposits: Matrix supported and massive red-brown silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter, occasional 4 to 5 inches in diameter. Contains several clast supported, and bedded stream gravel lenses.

Stringline

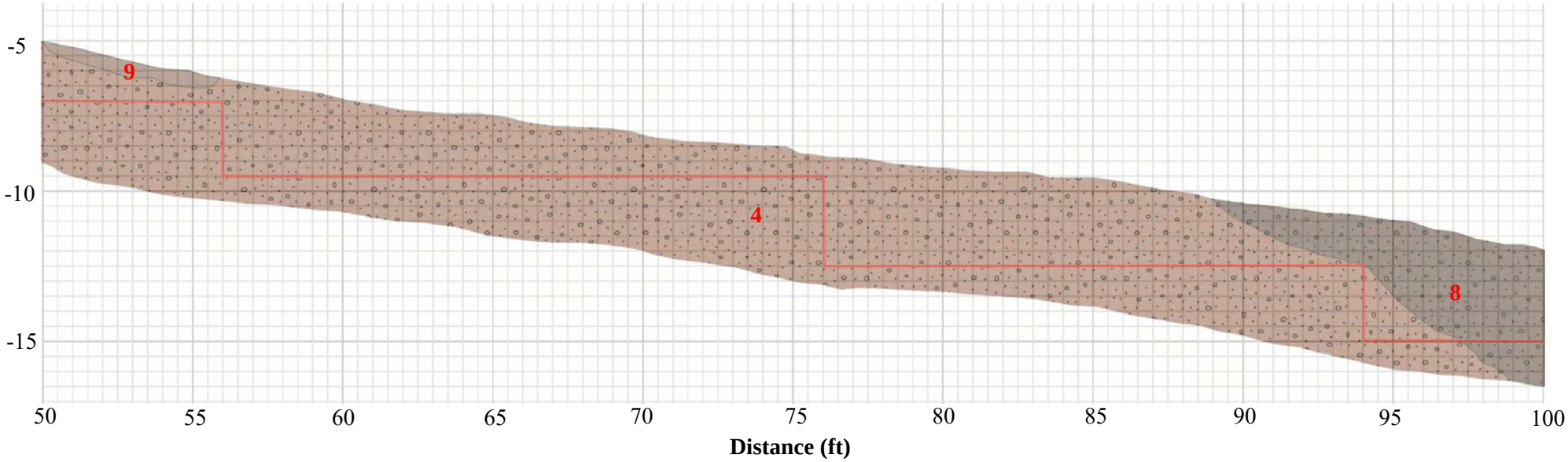
logged by S. Agopian

Plate B-1	Debris Flow Hazard Study DR Horton Micron Property Development Lehi, Utah Project Number: 589-100	**Trench 3 Log 0 to 50 feet**	GeoStrata Copyright GeoStrata , 2935

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 4 – Alluvial Fan Deposits (Qaf_1): Matrix supported and massive red-brown silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter, occasional 4 to 5 inches in diameter. Contains several clast supported, and bedded stream gravel lenses.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-2

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

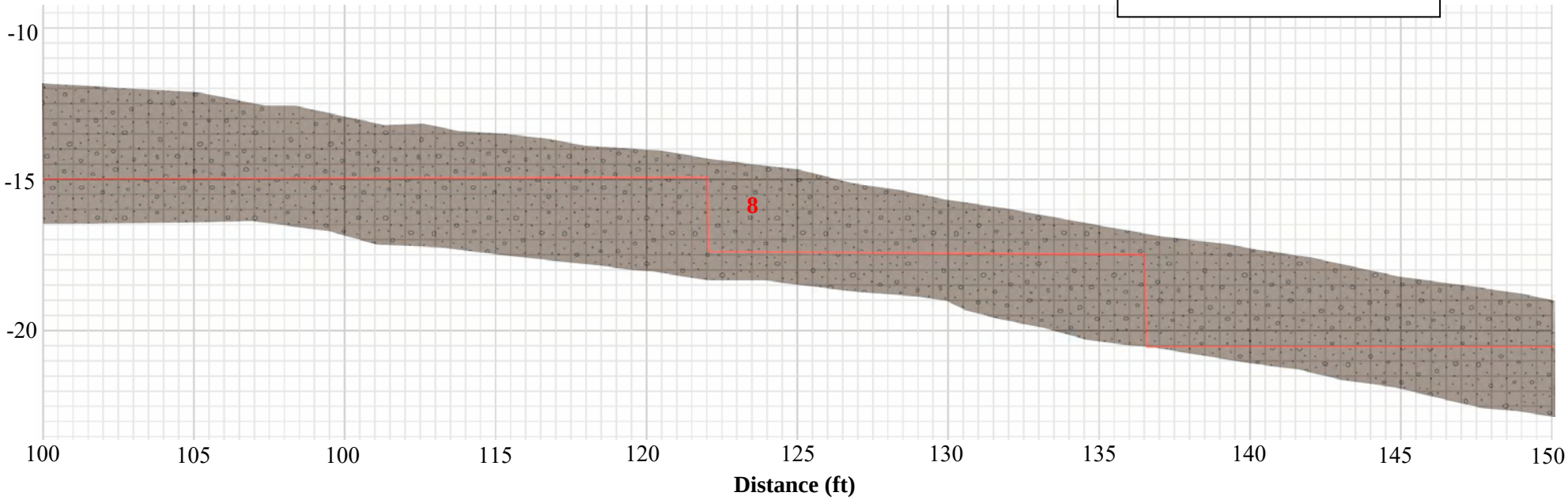
Trench 3 Log
50 to 100 feet

GeoStrata
Copyright GeoStrata , 2

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

Stringline

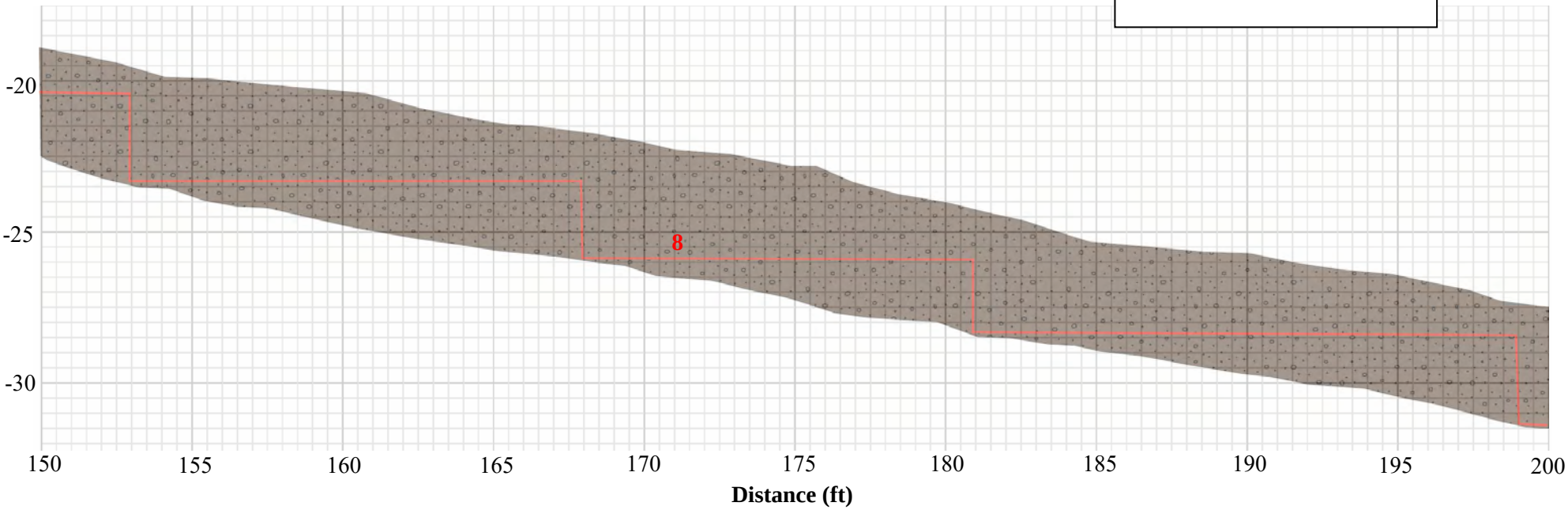
logged by S. Agopian

Plate B-3	Debris Flow Hazard Study DR Horton Micron Property Development Lehi, Utah Project Number: 589-100	**Trench 3 Log 100 to 150 feet**	GeoStrata Copyright GeoStrata , 2937

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-4

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

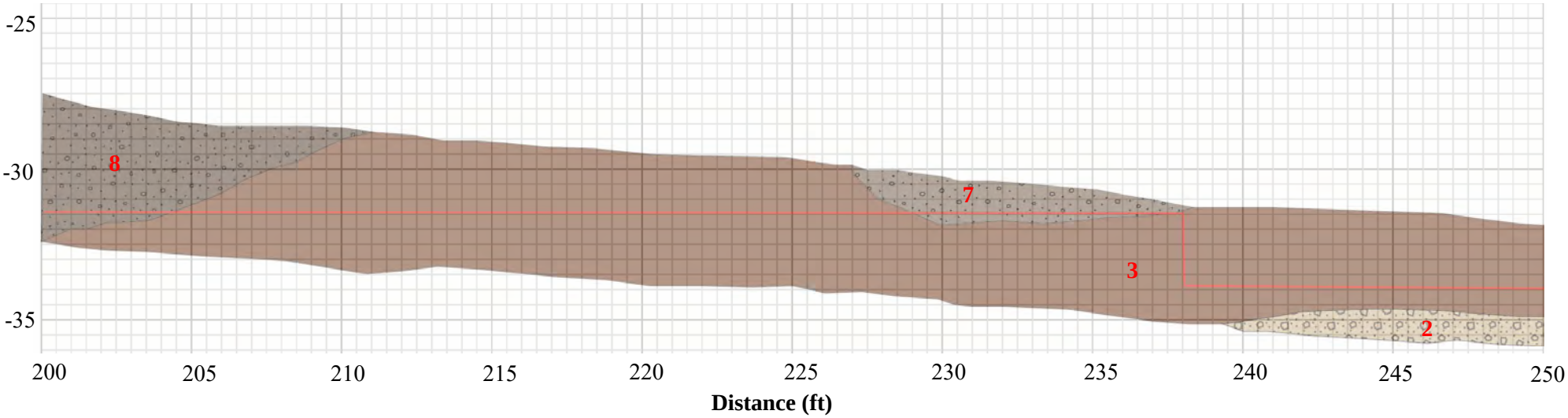
Trench 3 Log
150 to 200 feet

GeoStrata
Copyright GeoStrata , 2

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-5

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

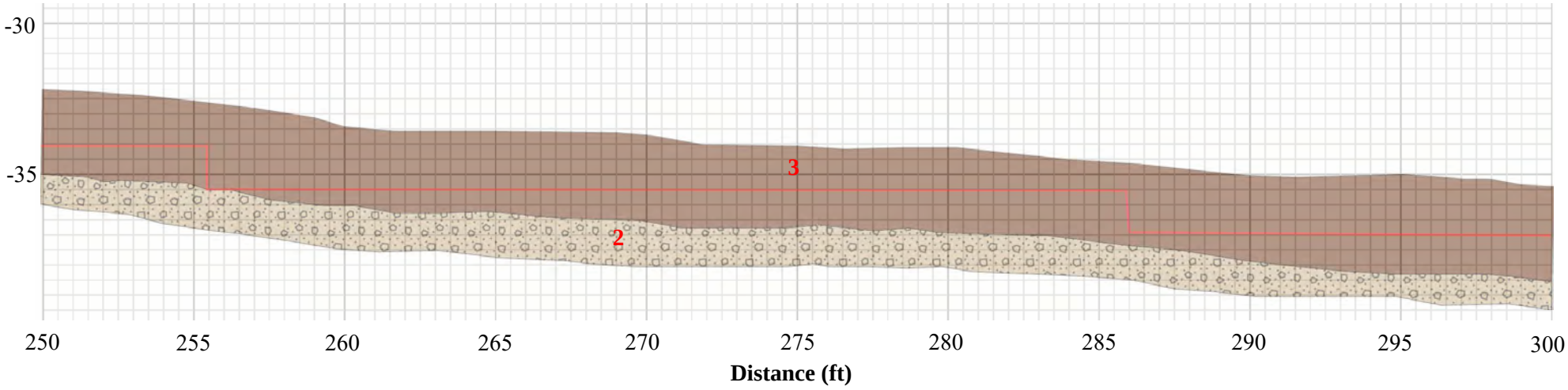
Trench 3 Log
200 to 250 feet

GeoStrata
Copyright GeoStrata , 2939

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Stringline

logged by S. Agopian

Plate B-6

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
250 to 300 feet

GeoStrata

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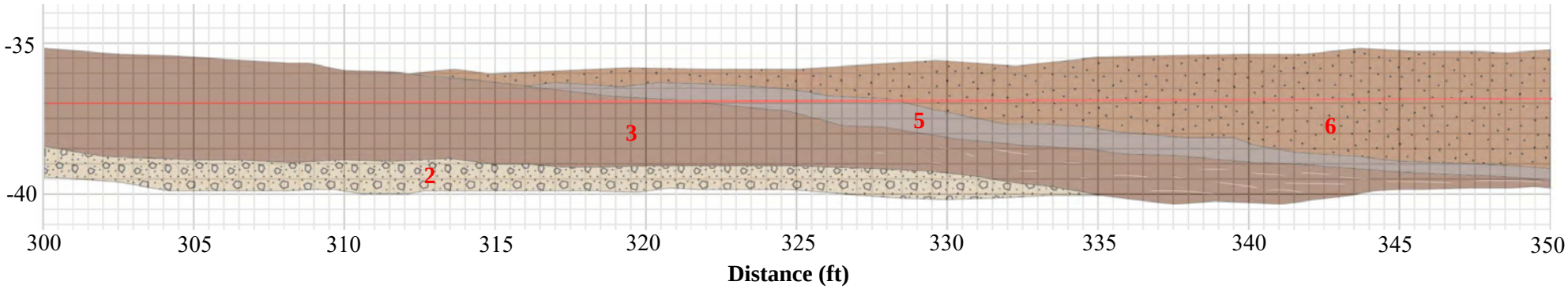
TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-7

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
300 to 350 feet

GeoStrata
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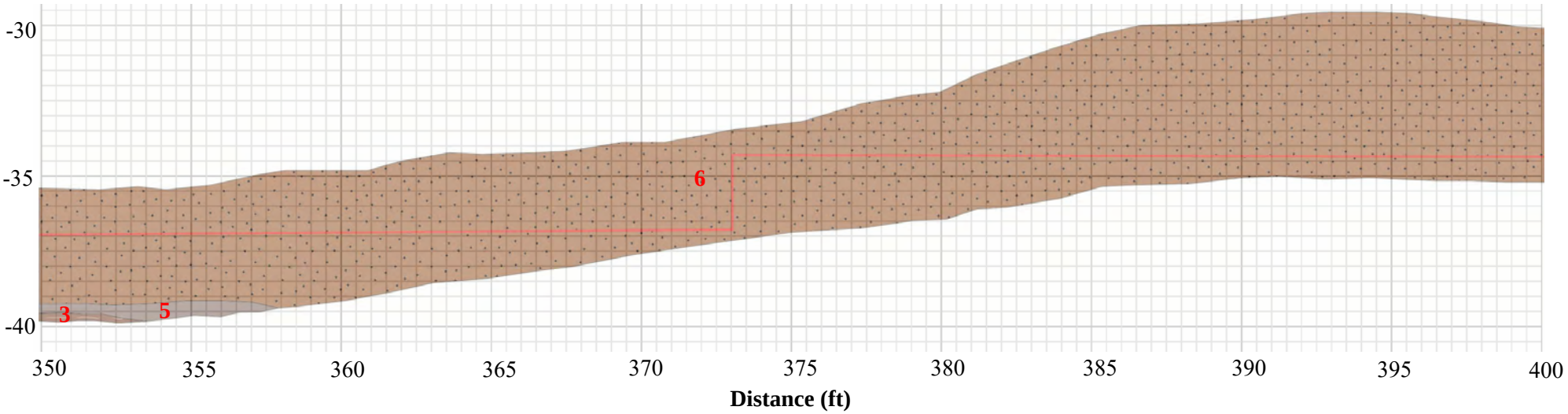
TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-8

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
350 to 400 feet

GeoStrata
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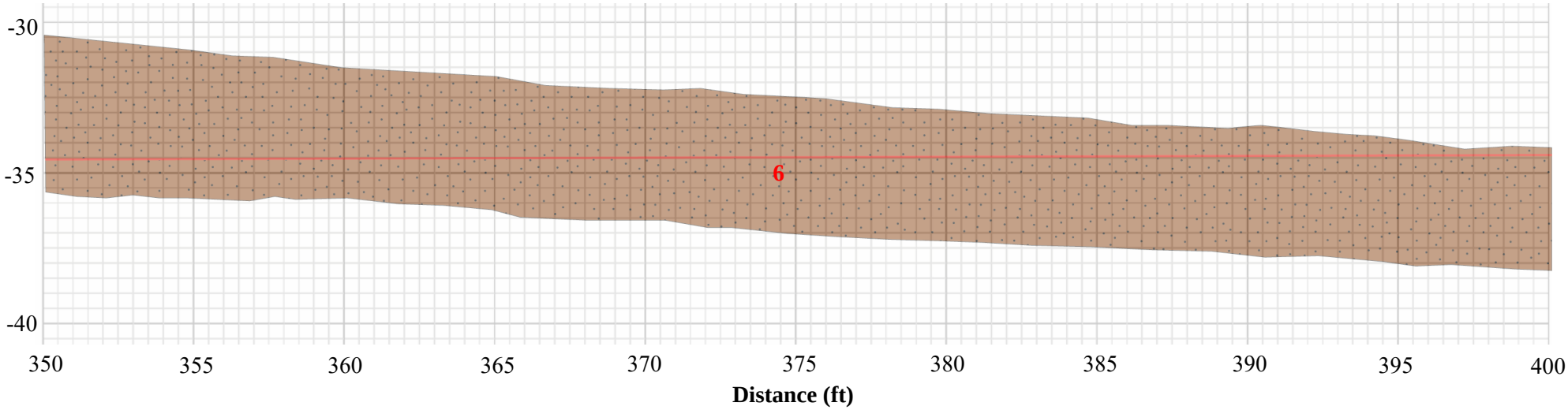
TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

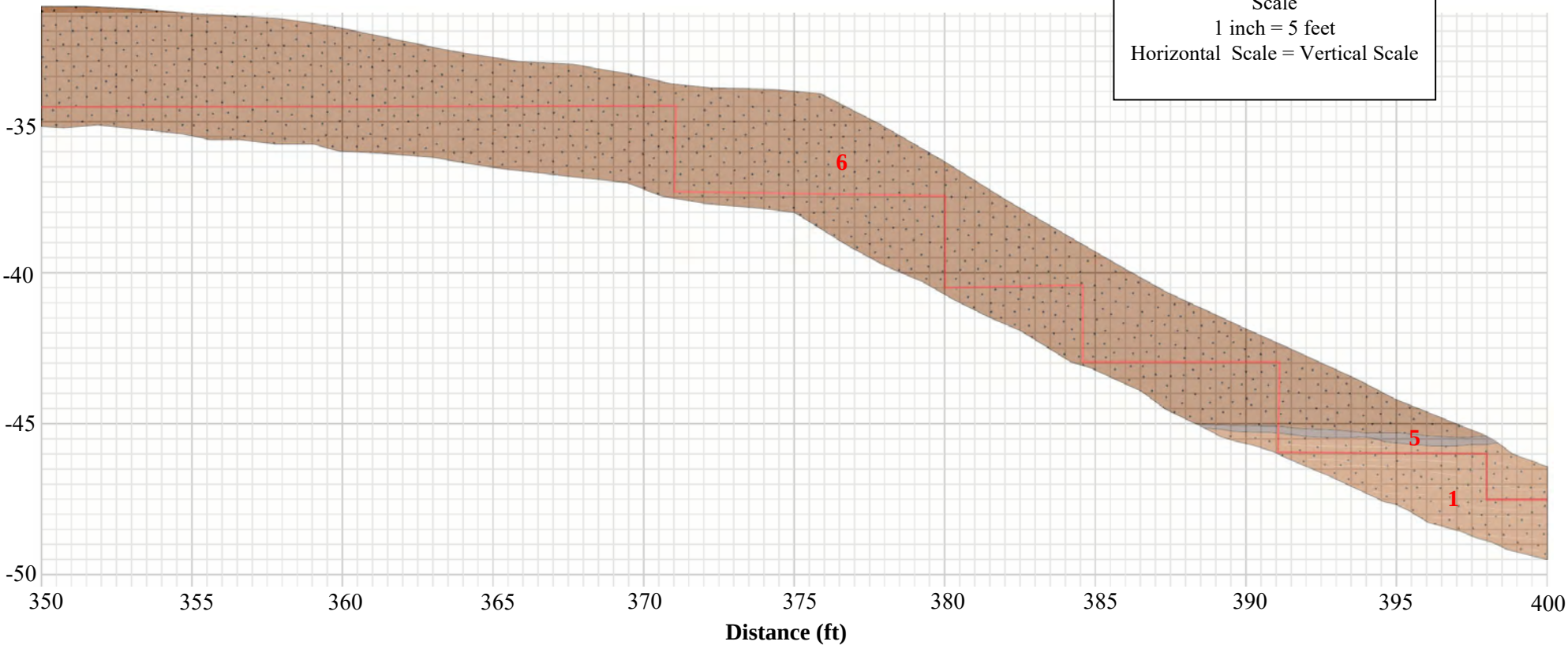
Plate B-9	Debris Flow Hazard Study DR Horton Micron Property Development Lehi, Utah Project Number: 589-100	**Trench 3 Log 350 to 400 feet**	GeoStrata Copyright GeoStrata , 2943

TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Lake Bonneville Silt and Sand (Qlsp, upper Pleistocene): Matrix supported, massive to crudely bedded light red-brown silt and fine sand with calcium carbonate staining, slightly cemented.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-10

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
350 to 400 feet

GeoStrata
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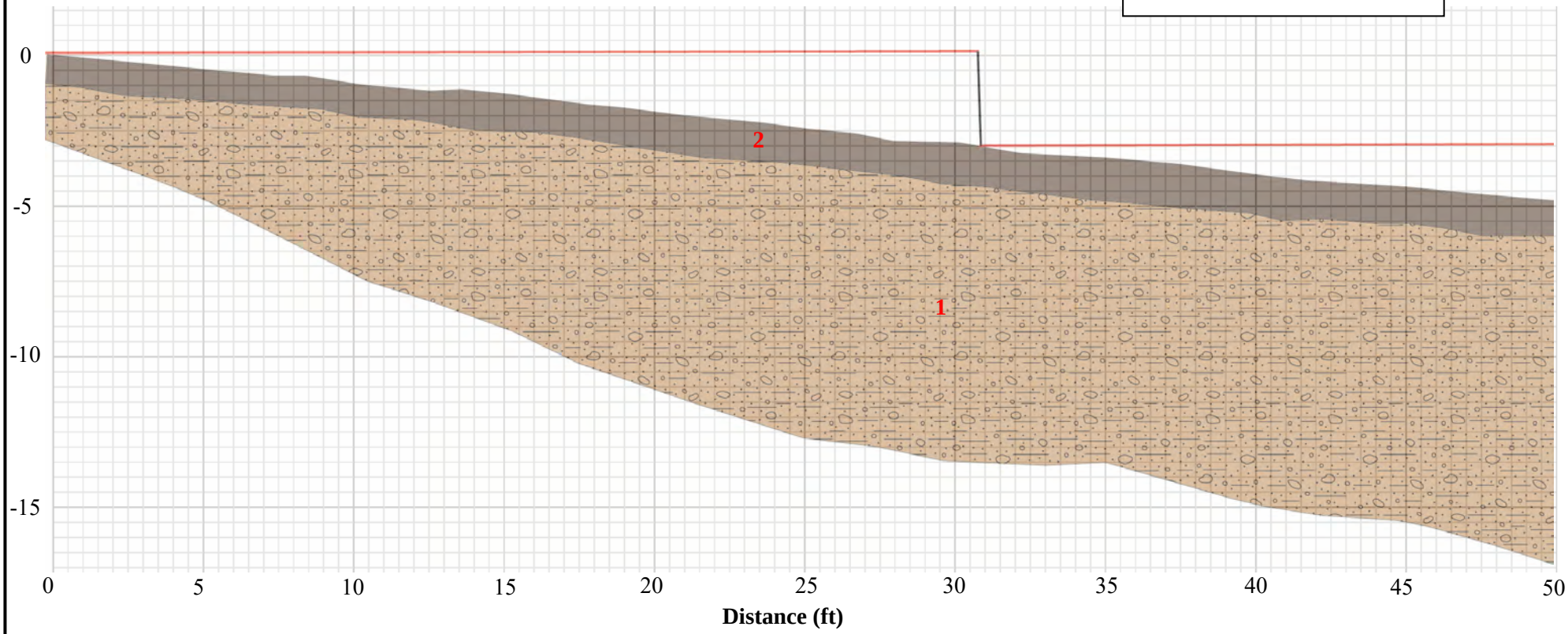
TRENCH 6 EAST WALL

North **South**

Trench Orientation: N40°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 - Alluvial Fan Deposit (Holocene to upper Pleistocene): Clast supported and crudely bedded grey-brown coarse gravel and with trace amounts of cobbles. Clasts were observed to be subrounded to subangular. This unit was observed to consist of a series of water dominated alluvial fan flooding deposits. Several stream channel deposits were also observed within this unit.

Unit 2 - TOPSOIL

Stringline

logged by S. Agopian

Plate B-11

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 6 Log
0 to 50 feet

GeoStrata
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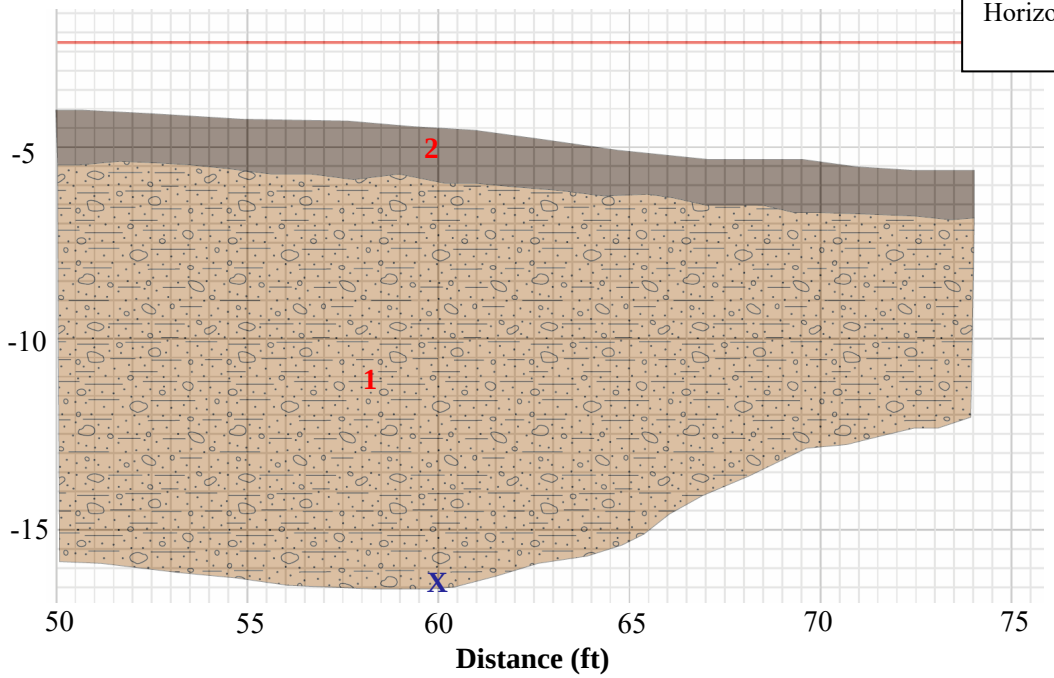
TRENCH 6 EAST WALL

North **South**

Trench Orientation: N40°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 - Alluvial Fan Deposit (Holocene to upper Pleistocene): Clast supported and crudely bedded grey-brown coarse gravel and with trace amounts of cobbles. Clasts were observed to be subrounded to subangular. This unit was observed to consist of a series of water dominated alluvial fan flooding deposits. Several stream channel deposits were also observed within this unit.

Unit 2 - TOPSOIL

X – Radiocarbon Sample — Stringline

logged by S. Agopian

Plate B-12

Debris Flow Hazard Study
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 6 Log
50 to 74 feet

GeoStrata
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DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-02
Sheet 1 of 1

LOCATION
NORTHING 4,477,281.70 EASTING 428,174.30 ELEVATION 5,114-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOP SOIL; loose, slightly moist, light brown, organics from dried vegetation of grass and sage brush					
					SC	UNDOCUMENTED FILL; Clayey SAND with gravel - dense, moist, dark brown, maximum gravel size 2", fill is possibly comprised of re-used grubbed soil material					
1					SP	Poorly Graded SAND with gravel - loose, moist, light brown, medium to coarse grain sized sand with silty clumps having iron staining interbedded through out layer					
	5							3.2	3.7		
2											
3	10										
					SM	Silty SAND with gravel, medium dense, moist, light brown, medium to coarse grain sized sand with silty clumps having iron staining interbedded through out layer		8.4	14.6		
4						Bottom of Test Pit @ 13 Feet					
	15										
5											
6											

Moisture Content and Atterberg Limits
Plastic Limit — Moisture Content — Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 13

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-03
Sheet 1 of 1

LOCATION
NORTHING 4,477,276.70 EASTING 428,310.30 ELEVATION 5,096-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOP SOIL; Sitly SAND with gravel - slightly moist, brown, organics from dried vegetation and sage brush						
					SP	Poorly Graded SAND with gravel - dense, moist, light brown, coarse grain sized sand						
					GP-GM	Poorly Graded GRAVEL with silt and sand - dense, moist, light brown, gravel shape ranges from subangular to angular with maximum partical size ranging to 2", coarse grain sized sand		4.7	10.9	NP	NP	
1	5											
2												
3	10				SC	Clayey SAND - medium dense, moist, light brown, fine to medium grain sized sand with clay that is low in plasticity						
4						Bottom of Test Pit @ 13 Feet						
	15											
5												
6												

Moisture Content and Atterberg Limits: Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 14

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-05
Sheet 1 of 1

LOCATION
NORTHING 4,477,403.00 EASTING 428,018.40 ELEVATION 5,149-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOP SOIL; Silty SAND with gravel - slightly moist, brown, organics from vegetation from dried grass and sage brush						
					GC	Clayey GRAVEL with sand - medium dense, moist, brown to reddish brown, gravel shape ranges from subrounded to subangular, cobbles greater than 4" observed		6.0	13.1			
1	5											
2												
3	10							7.5	29.2	31	16	
4						Bottom of Test Pit @ 12 Feet						
	15											
5												
6												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 15

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-06
Sheet 1 of 1

LOCATION
NORTHING 4,477,422.00 EASTING 428,171.30 ELEVATION 5,127-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0				GC	TOP SOIL; Silty SAND with gravel - slightly moist, brown, organics from vegetation of grass and sage brush Clayey GRAVEL with sand - medium dense, moist, brown		8.8	18.8	33	19
1	5				GW-GC	Well Graded GRAVEL with clay and sand - very dense, moist, brown, gravel shape ranges from subrounded to angular, cobbles over 8" observed, boulders over 12" observed					
2					GC	Clayey GRAVEL with sand - medium dense, moist, brown, coarse grain sized sand		8.1	14.5	24	11
3	10				GP-GC	Poorly Graded GRAVEL with clay and sand - medium dense, moist, brown, coarse grain sized sand		6.2	6.0		
4						Bottom of Test Pit @ 13 Feet					
5	15										
6											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 16

Upper few feet looks like fill overlying alluvial fan deposits.

DATE	
STARTED:	5/11/21
COMPLETED:	5/11/21
BACKFILLED:	5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO: DS-TP-07
Sheet 1 of 1

LOCATION
NORTHING 4,477,417.40 EASTING 428,315.90 ELEVATION 5,134-ft

DEPTH: METERS / FEET

SAMPLES | WATER LEVEL | GRAPHICAL LOG | UNIFIED SOIL CLASSIFICATION

MATERIAL DESCRIPTION

TOP SOIL; Silty SAND with gravel - slightly moist, brown, organics from vegetation of dried grass and patches of weeds

GC — Clayey GRAVEL with sand - medium dense to dense, moist, brown, gravel shape ranges from sub-rounded to angular, gravel size ranges from #4 to +6" cobbles, at depths of 6 to 8 feet observed high concentration of dense +6" sized gravel clumps cemented by calcium carbonate, sand size ranged from fine to coarse grain

Bottom of Test Pit @ 12 Feet

Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
	6.3	13.1	22	9

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 17

Looks like Lake Bonneville deposits in bottom of test pit.

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-08
Sheet 1 of 1

LOCATION
NORTHING 4,477,425.40 EASTING 428,454.00 ELEVATION 5,136-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOP SOIL; Silty SAND with gravel - slightly moist, brown, organics from vegetation of dried grass and patches of weeds						
					SC-SM	Silty, Clayey SAND - loose, moist, brown, fine grain sized sand						
1												
	5											
2					GC	Clayey GRAVEL with sand - dense, moist, brown, gravel shape ranges from sub-rounded to angular, gravel size ranges from #4 to +6" cobbles						
					GP	Poorly Graded GRAVEL with sand - loose, moist, brown, coarse grain sized sand		5.8	1.6			●
3	10				SC	Clayey SAND - medium dense, moist, brown, coarse grain sized sand						
4												
						Bottom of Test Pit @ 13.5 Feet						
	15											
5												
6												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 18

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO:
DS-TP-10
Sheet 1 of 1

LOCATION
NORTHING 4,477,498.40 EASTING 428,370.40 ELEVATION 5,183-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOP SOIL; Silty GRAVEL with sand - slightly moist, brown, organcis from vegetation of dried grass and sage brush					
					GM	Silty GRAVEL with sand - dense, moist, brown, gravel shape ranges from sub-rounded to angular, gravel size ranges from #4 to +2" cobbles		3.5	17.0		
1											
	5										
2											
3	10				GC-GM	Silty, Clayey GRAVEL with sand - medium dense, moist, brown, coarse grain sized sand with sub-rounded to sub-angular gravel		5.3	23.1	23	6
						Bottom of Test Pit @ 12 Feet					
4											
	15										
5											
6											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 19

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

DATE
STARTED: 5/11/21
COMPLETED: 5/11/21
BACKFILLED: 5/11/21

DR Horton
Micron Additon
Lehi, Utah
Project Number 589-100

GeoStrata Rep: N. F.
Rig Type: Hitachi EX-200

TEST PIT NO: DS-TP-11
Sheet 1 of 1

LOCATION
NORTHING 4,477,543.40 EASTING 428,514.80 ELEVATION 5,182-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOP SOIL; Clayey SAND with gravel, slightly moist, brown, organcis from vegetation from dried grass and sage brush					
					GC	Clayey GRAVEL with sand - medium dense, moist, brown, gravel shape ranges from sub-rounded to angular, gravel size is predominately fine gravel (#4 to 3/4) though +3" cobbles were observed, fine to coarse grain sized sand		8.1	14.9	27	15
1	5										
2											
3	10					Bottom of Test Pit @ 12 Feet					
4											
	15										
5											
6											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 7/9/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 20

DATE		
STARTED:	12/2/20	
COMPLETED:	12/2/20	
BACKFILLED:	12/2/20	

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-15
Sheet 1 of 1

LOCATION
NORTHING 4,477,102.00 EASTING 4,477,102.00 ELEVATION 5,046-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit — Moisture Content — Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, light brown						
1												
	5											
					SM	Silty SAND - dense, moist, light brown						
2												
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 21

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-16
Sheet 1 of 1

LOCATION
NORTHING 4,477,097.00 EASTING 4,477,097.00 ELEVATION 5,040-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, brown, subrounded gravel up to 3 inches in diameter		3.6	7.0	NP	NP	
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 22

DATE
STARTED: 12/2/20
COMPLETED: 12/2/20
BACKFILLED: 12/2/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-22
Sheet 1 of 1

LOCATION
NORTHING 4,476,953.00 EASTING 4,476,953.00 ELEVATION 5,009-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					CL	Sandy Lean CLAY - stiff, moist, tan		7.5	65.5	29	13	
1					CL	Lean CLAY with sand and gravel - stiff to hard, moist, dark brown						
	5				SP	Poorly Graded SAND with gravel - dense, moist, tan, gravels, cobbles and boulders up to 12 inches in diameter						
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 23

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-29
Sheet 1 of 1

LOCATION
NORTHING 4,476,807.40 EASTING 4,476,807.40 ELEVATION 4,961-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT with gravel - stiff, moist, brown						
					SC	Clayey SAND with gravel - medium dense, moist, tan		4.7	31.3	30	15	
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 24

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-30
Sheet 1 of 1

LOCATION
NORTHING 4,476,814.60 EASTING 4,476,814.60 ELEVATION 4,963-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					ML	Sandy SILT with gravel - stiff, moist, dark brown					
					CL	Lean CLAY - stiff, moist. dark brown					
1							126.6	14.2	92.5	35	15
	5					- some white mottling					
2						- some iron staining					
3	10					Bottom of Test Pit @ 10 Feet					
4											

Moisture Content and Atterberg Limits
Plastic Limit | Moisture Content | Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 25

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-33
Sheet 1 of 1

LOCATION
NORTHING 4,476,667.00 EASTING 4,476,667.00 ELEVATION 4,923-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout					
					CL	Lean CLAY with sand - stiff, moist, light brown					
1											
	5										
2							90.0	10.6	86.7		
3	10				GP-GM	Poorly Graded GRAVEL with silt and sand - medium dense, moist, tan		1.0	2.0		
						Bottom of Test Pit @ 12 Feet					
4											

Moisture Content and Atterberg Limits

Plastic Limit | Moisture Content | Liquid Limit

10 20 30 40 50 60 70 80 90

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 26

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-34
Sheet 1 of 1

LOCATION
NORTHING 4,476,662.00 EASTING 4,476,662.00 ELEVATION 4,928-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Lean CLAY with sand and gravel - dark brown, moist, organics throughout						
					SM	Silty SAND - dense, moist, brown						
1												
	5							7.4				●
2					CL	Lean CLAY with sand - stiff, moist, tan, sand was observed to be fine-grained, some iron staining						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 27

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-37
Sheet 1 of 1

LOCATION
NORTHING 4,476,523.00 EASTING 4,476,523.00 ELEVATION 4,892-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1						-tan						
	5											
2					GP	Poorly Graded GRAVEL with sand - medium dense, moist, tan		1.0	1.4			●
3	10					-becomes more sandy, smaller gravel up to 1/2 inches						
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 28

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-38
Sheet 1 of 1

LOCATION
NORTHING 4,476,523.00 EASTING 4,476,523.00 ELEVATION 4,893-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1					SP	Poorly Graded SAND with gravel - medium dense, moist, tan						
	5											
2												
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 29

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-44
Sheet 1 of 1

LOCATION
NORTHING 4,476,377.00 EASTING 4,476,377.00 ELEVATION 4,866-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, dark brown, pinholes throughout						
1												
					SM	Silty SAND - medium dense, moist, light tan, pinholes throughout						
	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 30

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-45
Sheet 1 of 1

LOCATION
NORTHING 4,476,386.00 EASTING 4,476,386.00 ELEVATION 4,865-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Sandy Lean CLAY - stiff, moist, brown		6.0	68.6	27	10	●
1					SM	Silty SAND with gravel - medium dense, moist, dark brown						
2	5				SP	Poorly Graded SAND with gravel - medium dense, moist, tan, subrounded gravel						
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 31

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-46
Sheet 1 of 1

LOCATION
NORTHING 4,476,379.00 EASTING 4,476,379.00 ELEVATION 4,860-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					GM	Silty GRAVEL with sand - very dense, moist, dark brown		6.0	40.9			●
1	5											
2												
3	10					Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 32

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-52
Sheet 1 of 1

LOCATION
NORTHING 4,476,274.00 EASTING 4,476,274.00 ELEVATION 4,849-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, dark brown						
1						- iron staining	104.4	14.7	93.1			●
	5											
2												
					SM	Silty SAND - medium dense, moist, gray						
3	10											
						Bottom of Test Pit @ 12 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 33

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-53
Sheet 1 of 1

LOCATION
NORTHING 4,476,263.00 EASTING 4,476,263.00 ELEVATION 4,844-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					SM	Silty SAND with gravel - medium dense, moist, dark brown						
1					CL	Gravelly Lean CLAY with sand - stiff. moist, dark brown		7.0	56.9	27	11	● ⊢
	5				SP	Poorly Graded SAND with gravel - medium dense, moist, tan, subrounded gravel						
2												
3	10					Bottom of Test Pit @ 8 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 34

DATE
STARTED: 12/3/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: B.J.
Rig Type: Trackhoe

TEST PIT NO:
MW-TP-54
Sheet 1 of 1

LOCATION
NORTHING 4,476,268.00 EASTING 4,476,268.00 ELEVATION 4,852-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit)
0	0					TOPSOIL - Sandy SILT with gravel - dark brown, moist, organics throughout						
					CL	Lean CLAY - stiff, moist, light brown						
1	5											
2							86.7	13.6	88.6			●
3	10					Bottom of Test Pit @ 12 Feet						
4												

Moisture Content and Atterberg Limits
Plastic Limit / Moisture Content / Liquid Limit
10 20 30 40 50 60 70 80 90

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/18/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 35

DATE
STARTED: 12/3/20
COMPLETED: 12/3/20
BACKFILLED: 12/3/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: A. Peay
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-28
Sheet 1 of 1

LOCATION
NORTHING 4,478,254.00 EASTING 4,478,254.00 ELEVATION 5,138-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL; Lean CLAY - moist, brown, organics throughout						
					SM	Silty SAND with gravel - dense, moist, light brown, subrounded cobbles up to 7 inches in diameter						
1	5											
2												
3	10					Bottom of Test Pit @ 10 Feet						
4												

SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 36

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2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

DATE
STARTED: 12/4/20
COMPLETED: 12/4/20
BACKFILLED: 12/4/20

D.R. Horton
Micron Property
Lehi, Utah
Project Number 589-100

GeoStrata Rep: J.M.
Rig Type: Kamatsu 200 Trackhoe

TEST PIT NO:
ME-TP-31
Sheet 1 of 1

LOCATION
NORTHING 4,478,121.00 EASTING 4,478,121.00 ELEVATION 5,135-ft

DEPTH METERS	DEPTH FEET	SAMPLES	WATER LEVEL	GRAPHICAL LOG	UNIFIED SOIL CLASSIFICATION	MATERIAL DESCRIPTION	Dry Density(pcf)	Moisture Content %	Percent minus 200	Liquid Limit	Plasticity Index	Moisture Content and Atterberg Limits (Plastic Limit / Moisture Content / Liquid Limit; 10 20 30 40 50 60 70 80 90)
0	0					TOPSOIL - Silty SAND with gravel - dark brown, moist, organics throughout						
					ML	Sandy SILT - stiff, moist, tan, minor cementation						
					GM	Silty GRAVEL - dense, moist, reddish brown, subangular cobbles and boulders up to 30 inches in diameter						
1												
	5											
2												
3	10					Bottom of Test Pit @ 11 Feet						
4												

2020 LOG OF TEST PIT - PLATE (B) 2020 GINT UPDATE TEMPLATE.GPJ GEOSTRATA.GDT 1/26/21

GeoStrata

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SAMPLE TYPE
- GRAB SAMPLE
- 2.5" O.D. THIN-WALLED HAND SAMPLER

WATER LEVEL
- MEASURED
- ESTIMATED

NOTES:

Plate
B - 37





Plate B-38

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah Project Number: 589-100

Test Pit 3 at 13' and Stockpile from Test Pit 3

GeoStrata 972

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Plate B-39

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah Project Number: 589-100

Test Pit 5 at 12’ and Stockpile from Test Pit 5

GeoStrata 973

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Plate B-40

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah Project Number: 589-100

Test Pit 6 at 9’ and Stockpile from Test Pit 6

GeoStrata 974

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Plate B-41	Debris Flow Hazard Study DR Horton Micron Project Lehi, Utah Project Number: 589-100	**Test Pit 7 at 12’ and Stockpile from Test Pit 7**

GeoStrata 975
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Plate B-42

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah Project Number: 589-100

Test Pit 8 at 10’ and Stockpile from Test Pit 8

GeoStrata 976

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Plate B-43

Debris Flow Hazard Study
DR Horton
Micron Project
Lehi, Utah Project Number: 589-100

Test Pit 11 at 12' and Stockpile from Test Pit 11

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Surface Fault Rupture Study
Micron Project
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

August 25, 2021

Prepared for:

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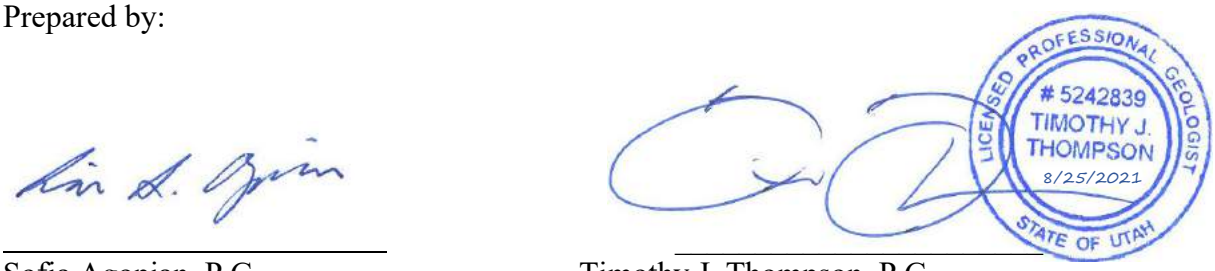
Surface Fault Rupture Study
Micron Project
Approximately 500 West and State Road 92
Lehi, Utah

GeoStrata Job No. 589-100

Prepared by:



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August 25, 2021

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY 1
2.0 INTRODUCTION 3
2.1 PURPOSE AND SCOPE OF WORK 3
2.2 PROJECT DESCRIPTION 4
3.0 METHODS OF STUDY 5
3.1 OFFICE INVESTIGATION 5
3.2 FIELD INVESTIGATION 5
4.0 GEOLOGIC CONDITIONS 7
4.1 REGIONAL GEOLOGIC SETTING 7
4.2 REPORTED SITE GEOLOGY 7
4.3 SITE SPECIFIC GEOMORPHOLOGY 8
4.4 TECTONIC SETTING AND SEISMICITY 8
5.0 GENERALIZED SITE CONDITIONS 10
5.1 SURFACE CONDITIONS 10
5.2 SUBSURFACE CONDITIONS 10
5.2.1 Trench 1A Description 10
5.2.2 Trench 1B Description 12
5.2.3 Trench 1C Description 13
5.2.4 Trench 1D Description 14
5.2.5 Trench 1E Description 15
5.2.6 Trench 1F Description 16
5.2.7 Trench 2A Description 17
5.2.8 Trench 2B Description 18
5.2.9 Trench 3 Description 19
5.2.10 Trench 4 Description 20
5.2.11 Trench 5 Description 21
5.2.12 Trench 6 Description 23
5.3 RADIOCARBON DATING 23
5.4 INTERPRETATION OF SUBSURFACE CONDITIONS 24
6.0 SURFACE FAULT RUPTURE HAZARD ANALYSIS 25
7.0 CLOSURE 28
7.1 LIMITATIONS 28
8.0 REFERENCES CITED 29

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APPENDICES

Appendix A Plate A-1 – Site Vicinity Map
Plate A-2 – Topographic Map
Plate A-3 – Surface Fault Rupture Special Study Zone
Plate A-4 – Hillshade Map
Plate A-5 – Exploration Location Map
Plate A-6 – Site Vicinity Geologic Map
Plate A-7 – Site Vicinity 30’ X 60’ Geologic Map
Plate A-8 – Fault Setback Map

Appendix B Plate B-1 through B-40 – Trench Logs

Appendix C Radiocarbon Dating Documents

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1.0 EXECUTIVE SUMMARY

The purpose of our geologic hazards investigation is to assess the 664-acres subject parcel located at approximately 500 West and State Road 93 in Lehi, Utah for geologic hazards that may impact the cost and feasibility of the proposed construction. GeoStrata conducted a preliminary geologic hazard investigation that included a review of published literature and geologic maps, stereographic aerial photograph interpretation, a review of lidar data, and a reconnaissance level field investigation. Based on the results of our preliminary geologic hazards investigation, we assessed that the geologic hazards which pose a potential risk to the subject property are surface fault rupture hazards and debris flow/ alluvial fan flooding hazards. GeoStrata planned and conducted a surface fault rupture hazard investigation and a debris flow/ alluvial fan flooding hazard investigation for the 664-acres subject parcel. This report was prepared to present our final surface fault rupture hazard investigation we conducted for the 664-acres subject parcel. A separate report was prepared to present the final debris flow/ alluvial fan flooding hazard investigation we conducted for the 664-acres subject parcel. The work performed for this report was performed in accordance with our proposal, dated April 20, 2021.

The subject site is located in Utah County along the south facing slopes of the Traverse Mountains. Much of the property is located on gently to moderately sloping hillsides with existing residential subdivisions to the east and west and an undeveloped and steep native hillside to the north. It is our understanding that proposed development will consist of development ranging from single family lots to townhomes and include some mixed-use retail and office buildings as well as churches and public schools. The total overall area to be developed is 664 acres according to the concept plan. Several fault splays associated with the northern terminus of the Provo segment of the Wasatch Fault Zone (WFZ) are mapped trending generally northeast-southwest and generally east-west just north of the subject site with one splay trending generally northeast-southwest that trends through a portion of the subject site. Due to the mapped locations of these active fault splays, portions of the subject site are located within the surface fault rupture special study zone.

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Given the close proximity of the subject site to the Provo segment of the WFZ, GeoStrata conducted a surface fault rupture hazard investigation to assess the subject site for the presence or absence of active faults. Trenches 1A, 1B, 1C, 1D, 1E, 1F, 2A, 2B, 3, 4, 5 and 6 were excavated to intercept any active faults that would trend through the subject site (Plate A-5, *Exploration Location Map)*. A surface fault rupture fault splay (fault F1) associated with the northern terminus of the Provo segment of the WFZ was observed in Trenches 1B, 1C, 1D, 1E, 4 and 5 (Plates B-8 through B-11, B-37 and B-38). No surface fault ruptures were observed in Trenches 1A, 1F, 2A, 2B, 3 and 6. Based on the surface fault rupture fault F1 exposed in the trenches, it is the opinion of GeoStrata that fault F1 likely extends across Trenches 1A,2B, 3 and 6, but at greater depths than were exposed in these trenches. Based on our radiocarbon dating, it is the opinion of GeoStrata that fault F1 is an active fault splay associated with the Provo segment of the WFZ. Since the observed fault F1 is considered to be an active splay of the Provo segment of the Wasatch fault zone, a setback area needs to be established on either side of the observed fault following the guidelines defined in Bowman and Lund (2020).

Based on the data presented in this surface fault rupture hazard investigation, it is our opinion that an active surface fault rupture fault splay (fault F1) associated with the northern terminus of the Provo Segment of the WFZ trends through the subject site. The recommended minimum setbacks of 15 feet are greater than the calculated average setbacks, therefore our recommended setbacks from the surface fault rupture fault splay (fault F1) are 15 feet on both sides of the fault. No structures or any portions of any structures intended for human occupancy should be located within the fault setback area. It is generally accepted practice to allow roadways, landscaping, driveways, and non-habitable structures such as detached garages and sheds to be located within these areas. Given the observations made during the fieldwork conducted for this investigation, it is the opinion of GeoStrata that the surface fault rupture hazard within the subject site is considered low and should not preclude development within the subject site provided that the recommendations stated above are implemented.

NOTICE: The scope of services provided within this report are limited to the assessment of the subsurface conditions for the proposed development. This executive summary is not intended to replace the report of which it is part and should not be used separately from the report. The executive summary is provided solely for purposes of overview. The executive summary omits a number of details, any one of which could be crucial to the proper application of this report.

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2.0 INTRODUCTION

2.1 PURPOSE AND SCOPE OF WORK

The purpose of our geologic hazards investigation is to assess the 664-acres subject parcel located at approximately 500 West and State Road 93 in Lehi, Utah for geologic hazards that may impact the cost and feasibility of the proposed construction. GeoStrata conducted a preliminary geologic hazard investigation included a review of published literature and geologic maps, stereographic aerial photograph interpretation, a review of lidar data, and a reconnaissance level field investigation. Based on the results of our preliminary geologic hazards investigation, we assessed that the geologic hazards which posed a potential risk to the subject property are surface fault rupture hazards and debris flow/ alluvial fan flooding hazards. GeoStrata planned and conducted a surface fault rupture hazard investigation and a debris flow/ alluvial fan flooding hazard investigation for the 664-acres subject parcel. This report was prepared to present our final surface fault rupture hazard investigation we conducted for the 664-acres subject parcel. A separate report was prepared to present the final debris flow/ alluvial fan flooding hazard investigation we conducted for the 664-acres subject parcel. The work performed for this report was performed in accordance with our proposal, dated April 20, 2021. Our scope of services for this final surface fault rupture hazard investigation included the following:

- Review of available references and maps of the area.
- Stereographic aerial photograph interpretation of aerial photographs covering the site area.
- Review of Digital Elevation Models obtained from the State of Utah AGRC.
- Geologic reconnaissance and field review of geologic mapping of the site by an engineering geologist to observe and document pertinent surface features indicative of surface fault rupture and debris flow hazards.
- Subsurface investigation.
- Logs of the exploratory trenches.
- Preparation of this report.

The recommendations contained in this report are subject to the limitations presented in the Limitations section of this report.

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2.2 PROJECT DESCRIPTION

The subject site is located in Utah County along the south facing slopes of the Traverse Mountains. Much of the property is located on gently to moderately sloping hillsides with existing residential subdivisions to the east and west and an undeveloped and steep native hillside to the north. The Micron restricted open space area is centrally located with respect to the proposed planned development (see Plate A-1 *Site Vicinity Map*, Plate A-2 *Topographic Map*). Information concerning this project was provided by the Client. It is our understanding that proposed development will consist of development ranging from single family lots to townhomes and include some mixed-use retail and office buildings as well as churches and public schools. The total overall area to be developed is 664 acres according to the concept plan.

Several fault splays associated with the northern terminus of the Provo segment of the Wasatch Fault Zone (WFZ) are mapped trending generally northeast-southwest and generally east-west just north of the subject site with one splay trending generally northeast-southwest that trends through a portion of the subject site. Due to the mapped locations of these active fault splays, portions of the subject site are located within the surface fault rupture special study zone (Plate A-3 *Geologic Hazards Special Study Map*). This report will assess the surface fault rupture hazards within the portion of the subject site that is located within the Utah Geological Survey's (UGS) designated surface fault rupture special study zone that is planned for development. The portion of the subject site that is located within the UGS's designated surface fault rupture special study zone that is not planned for development will be designated as a non-studied setback area.

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3.0 METHODS OF STUDY

3.1 OFFICE INVESTIGATION

As part of our office investigation, GeoStrata reviewed pertinent literature and maps listed in the references section of this report, which provided background information on the local geologic history of the area and the locations of suspected or known surface fault rupture hazards and other geologic hazards (Beik, 2005; Constenius and others, 2011; Black and others, 2003). A stereographic aerial photograph interpretation was performed for the subject site using a set of stereo aerial photographs obtained from the UGS as shown in Table 1.

Source	Photo Number	Date	Scale
ASCS	AAL_4-33	September 21, 1937	1:20,000
ASCS	AAL_4-34	September 21, 1937	1:20,000

Table 1: Aerial Stereosets.

GeoStrata also conducted a review of 2013-2014 0.5-meter lidar provided by the State of Utah AGRC to assess the subject site for visible lineations or other geologic hazards related geomorphology. The digital elevation models were used to create hillshade imagery that could be reviewed for assessment of geomorphic features related to surface fault rupture hazards and other geologic hazards (Plate A-4 *Hillshade Map*).

3.2 FIELD INVESTIGATION

An engineering geologist investigated the geologic conditions within the general site area. A field geologic reconnaissance was conducted to observe existing geologic conditions and to assess existing geomorphology for surficial evidence of surface fault rupture hazards and other geologic hazards. We used our field observations to assess the observations made during our office research and to observe any evidence of geologic hazards that were not evident in our office research, but which could be observed in the field.

To assess the subject property for the presence or absence of surface rupture faults, four trenches ranging from 235 and 400 feet long and to depths ranging from 5 to 6 feet were excavated roughly perpendicular to the trend of the one fault splay that trends generally northeast-southwest through a portion of the subject site (N41°E). In addition, eight shorter trenches approximately 19 to 74 feet in length and to depths ranging from 12 to 15 feet deep were

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excavated roughly perpendicular to the trend of the fault splay (N941°E). The approximate locations of the trenches are shown on Plate A-5 *Exploration Location Map*. Geologic logs of the trenches were completed as part of this study and are presented as Plates B-1 to B-40 within Appendix B of this report.

4.0 GEOLOGIC CONDITIONS

4.1 REGIONAL GEOLOGIC SETTING

The site is located in Lehi, Utah at an elevation ranging from approximately 4,835 to 5,280 feet above mean sea level. The subject site is located within the southern foothills of the Traverse Mountains, a structural salient denoting the boundary between Salt Lake Valley and Utah Valley and the southern terminus of the Salt Lake City Segment and the northern terminus of the Provo Segment of the Wasatch Fault Zone. Tertiary volcanic rocks and Tertiary alluvial fan deposits dominate the eastern portion of the East Traverse Mountains and late Paleozoic shallow marine bedrock constitutes the western portion of the East Traverse Mountains. The Utah Valley is a northwest trending deep, lacustrine sediment-filled structural basin of Cenozoic age bounded on the northeast and southwest by two normal faults that dip towards the center of the valley. Utah Valley is a fault graben flanked by two uplifted blocks, the Wasatch Range to the east and the Lake Mountains to the west. The Wasatch Range is the easternmost expression of pronounced Basin and Range extension in north-central Utah (Stokes, 1986).

The near-surface geology of the Utah Valley is dominated by sediments, which were deposited within the last 30,000 years by Lake Bonneville (Scott and others, 1983; Hintze, 1993; Machette, 1992; Constenius and others, 2011). The lacustrine sediments near the mountain front consist mostly of gravel and sand. As the lake receded, streams began to incise large deltas formed at the mouths of major canyons along the Wasatch Range, and the eroded material was deposited in shallow lakes and marshes in the basin and in a series of recessional deltas and alluvial fans. Sediments toward the center of the valley are predominately deep-water deposits of clay, silt, and fine sand. However, these deep-water deposits are in places covered by a thin post-Bonneville alluvial cover. Most surficial deposits along the Wasatch fault zone were deposited during the final cycle of the Bonneville Lake Cycle between approximately 32 to 10 ka (thousands of years ago) and in the Holocene (< 10 ka).

4.2 REPORTED SITE GEOLOGY

The surficial deposits overlying the subject site, as reported on available geologic maps, are shown on Plate A-6 *Site Vicinity Geologic Map* (Beik, 2005) and Plate A-7 *Site Vicinity 30x60 Geologic Map* (Constenius and others, 2011). As shown on Plate A-6 and Plate A-7, Beik (2005) and Constenius and others (2011) delineates the surficial deposits within the subject site as

Holocene to upper Pleistocene age alluvial-fan deposits ($Qaf_{l,}$ Qafy) emanating from and sourced by the drainages north of the subject site. These deposits typically occur at drainage mouths. In addition to the above sources, the alluvial fan deposits are also sourced by streams locally incising Lake Bonneville deposits where deposits typically form a coalesced apron at the base of the Wasatch Range. These alluvial fan deposits likely overlying Lake Bonneville lacustrine silt, sand and gravel deposits (Qlsb, Qlgb) that are mapped south and away from the mountain front. The surficial deposits are likely overlying Tertiary alluvial fan deposits (Taf) and Tertiary age volcanic rocks of the east Traverse Mountains (Tv).

4.3 SITE SPECIFIC GEOMORPHOLOGY

GeoStrata reviewed 1937 aerial stereosets, and hillshade imagery derived from 2013-2014 0.5-meter lidar provided by the State of Utah AGRC, to assess the subject site for visible lineations or other geologic hazards related geomorphology. As illustrated on Plate A-4, surface expressions related to Bonneville Lake Cycle transgressive deposits and surface fault ruptures were identified during our review of hillshade imagery.

4.4 TECTONIC SETTING AND SEISMICITY

The west dipping Provo segment of the WFZ is mapped as trending north-south along the western toe of the Wasatch Mountains east of the subject sites. Several fault splays associated with the northern terminus of the Provo segment of the WFZ are mapped trending generally northeast-southwest and generally east-west just north of the subject site. One of these fault splays trends generally northeast-southwest through a portion of the subject site (Plate A-3). The Provo segment of the WFZ trends N14°W and extends approximately 59 km from the Payson Salient where the Nephi segment begins to the Traverse Mountains where the Salt Lake City segment begins. Paleoseismic trenching investigations conducted on the Provo segment indicate that 10 large surface-faulting earthquakes occurred since 13,040 cal BP, which yields a preferred average mid to late Holocene recurrence interval of 1,400 years (Olig and others, 2011). The most recent paleoseismic event occurred approximately 500 ± 150 cal B.P. and produced a displacement of 4.7 ± 0.5 meters.

Analysis of the ground shaking hazard along the Wasatch Front suggests that the Wasatch Fault Zone is the single greatest contributor to the seismic hazard in the Salt Lake City region and surrounding areas. The Provo segment shows evidence of Holocene movement and is therefore considered active.

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Spectral responses for the Risk-Targeted Maximum Considered Earthquake (MCE_R) are shown in the table below. These values generally correspond to a one percent probability of structure collapse in 50 years for a "firm rock" site. To account for site effects, site coefficients which vary with the magnitude of spectral acceleration are used. Based on our field exploration and the estimated soil conditions from the areas geologic conditions of the Holocene to upper Pleistocene alluvial fan deposits (Qaf_2, Qafy) and lacustrine deposits (Qlsb, Qlgb), it is our opinion that this location is best described as a Site Class C (Very Dense Soil or Stiff Rock). The spectral accelerations are calculated based on the site's approximate latitude and longitude of 40.444507° and -111.839740° respectively and the Seismic Design Maps web-based application at https://seismicmaps.org/.

Description	Value
Site Class	C
S_s - MCE_R ground motion (period – 0.2s)	1.363
S_1 - MCE_R ground motion (period – 1.0s)	0.501
F_a - Site amplification factor at 1.0s	1.200
F_v - Site amplification factor at 1.0s	1.499
PGA - MCE_G peak ground acceleration	0.615
PGA_M – Site modified peak ground acceleration	0.738

Table 2. Seismic Data

It should be noted that our investigation did not include a site-specific ground motion hazard analysis and a Site Class C (Very Dense Soil or Stiff Rock) has been used to determine the seismic parameters presented above based on known geologic conditions of the Holocene to upper Pleistocene alluvial fan deposits (Qaf_2, Qafy) and lacustrine deposits (Qlsb, Qlgb) according to the Section 20.1 of ASCE 7. The seismic parameters presented herein may be used for design of the proposed structures provided that structural design allows for the ground motion hazard analysis exception in ASCE 7-16 Segment 11.4.8. The seismic data provide above should be used by the project geotechnical and structural engineers for proper site and structural design. GeoStrata recommends that a licensed structural engineer provide proper structural designs for all proposed structures which account for and mitigate this hazard. It is the opinion of GeoStrata that earthquake ground shaking hazard should not preclude development of the proposed addition.

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5.0 GENERALIZED SITE CONDITIONS

5.1 SURFACE CONDITIONS

The project site is located at approximately 500 West and State Road 93 in Lehi, Utah at an elevation between approximately 4,835 to 5,280 feet above sea level (see Plate A-1; Plate A-2). The subject site is currently an undeveloped 664-acre parcel within relatively established residential neighborhoods to the south, east and west and an undeveloped and steep native hillside to the north. The Micron restricted open space area is centrally located with respect to the proposed planned development. The site and much of the surrounding area are gently to moderately sloping generally to the south toward the valley and consist primarily of native grasses and sagebrush with the higher elevations and drainages covered by mature scrub oak.

5.2 SUBSURFACE CONDITIONS

The subsurface soil conditions were explored for the purpose of evaluating the presence or absence of active faults at the subject property by excavating eleven trenches in the northeast portion of the subject site and oriented generally north to south and approximately perpendicular to the mapped splay of the Provo segment of the WFZ. The trenches were located and oriented across the surface fault rupture hazard special study zone designated by the UGS in their Quaternary Fault Map (March 2020) to assess that portion of the site located within the UGS's special study zone (Plate A-5). Subsurface soil conditions and soil stratigraphy were logged at the time of trenching (Plates B-1 to B-40). The following is a description of the trenches excavations as observed during our field investigation.

5.2.1 Trench 1A Description

Trench 1A was approximately 340 feet long, oriented generally north-south (N15°W) in the northeastern portion of the subject site (Plate A-5). Trench 1A was excavated with a trackhoe to depths between approximately 4 ½ and 5 ½ feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1 is presented on Plates B-1 through B-7.

The soils exposed in Trench 1A have been separated into 9 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 9 on the geologic log of Trench 1. The oldest sediment

observed at the bottom of Trench 1A was designated as Unit 1 and the youngest sediment observed at the top of Trench 1 was designated as Unit 9.

Unit 1 was observed at the end of the trench between approximately 317 and 332 feet and at the lowest elevation along the trench. Unit 1 was observed to consist of a highly weathered and friable andesite block.

Unit 2 was observed to consist of Tertiary alluvial fan deposits (Taf) and was observed to be comprised of matrix supported and massive red-brown clay with gravel. Calcium carbonate stringers were observed throughout Unit 2. Clasts within Unit 2 were observed to be subangular to subrounded ranging from ½ inch to 2 inches in diameter and to consist of light red to grey quartzite. Highly weathered and friable sandstone clasts ranging from 3 to 6 inches in diameter were also observed throughout this unit. Unit 2 was observed between approximately 0 and 23 feet down trench and at the highest elevation along the trench.

Unit 3 was observed to overlie Unit 1 and to consist of Lake Bonneville gravel and cobbles with sand. Unit 3 was observed to be comprised of a light brown clast supported and massive unit with well-rounded to subrounded clasts ranging from 1 to 6 inches in diameter. The grain size of the sand observed in this unit was fine to coarse. A cobble layer was observed at the base of this Unit and directly overlying Unit 1. Unit 3 was observed at the end of the trench between approximately 315 and 340 feet.

Unit 4 was observed to overlie Unit 3 and to consist of Lake Bonneville sand and gravel. Unit 4 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were observed to be well rounded to subrounded and to comprise of quartzite with trace amounts of andesite. A 4-to-6-inch layer of well-rounded cobbles were observed at the top of this unit and between 195 and 225 feet down trench.

Units 5 through 7 were observed to consist of various shades of red brown colluvial and/or alluvial deposits that were observed to be predominantly matrix supported and contain varying amounts of gravel. Unit 5 was observed to overlie Unit 4 and located between approximately 177 and 220 feet down trench. Unit 5 was observed to be comprised of silt with fine gravel. Clasts were observed to be subrounded to subangular and to consist of quartzite. Unit 6 was observed to be predominantly comprised of clay with minor amounts of subrounded to subangular gravel. Between 125 and 160 feet down trench this unit was observed to be very stiff. Unit 6 was

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observed at the bottom of the trench between 39 and 100 feet and reappeared between 124 and 190 feet down trench. Unit 7 was observed to be clast supported and massive at approximately 20 to 35 feet down trench and transitioned to a more matrix supported unit. Unit 7 was observed to be comprised of a clay with subrounded to subangular gravel approximately 1 to 2 inches in diameter with some 4 to 6 inches in diameter. Clasts were observed to consist of grey and light red quartzite and occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 was observed to overlie Units 2 through 7 and to consist of a B soil horizon comprised of a red-brown clay with gravel and roots throughout. This unit was continuous across the entire trench except between approximately 170 and 180 feet down trench where a root ball was observed. Unit 8 was observed to be between ½ to 1 ½ feet thick with the thickest areas observed on relatively flat terrain.

Unit 9 was observed to overlie Unit 8 and to consist of an A soil horizon and to be comprised of a dark brown clay with gravel and numerous roots throughout. This unit was observed across the entire trench and was thickest at approximately 170 and 180 feet down trench where a root ball was observed due to dense and mature vegetation. Unit 9 was approximately ½ to 1 ½ feet thick with the thickest areas observed on relatively flat terrain.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 1A.

5.2.2 Trench 1B Description

Trench 1B was approximately 45 feet long, oriented generally north-south (N10°W) and located east of Trench 1A (Plate A-5). Trench 1B was excavated with a trackhoe to depths between approximately 4 and 12 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1B is presented on Plate B-8.

The soils exposed in Trench 1B have been separated into 5 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 5 on the geologic log of Trench 1B. The oldest sediment observed at the bottom of Trench 1B was designated as Unit 1 and the youngest sediment observed at the top of Trench 1B was designated as Unit 5.

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Unit 1 was observed at the bottom of Trench 1B between 5 and 20 feet down trench and to consist of a red-brown Lake Bonneville lacustrine clay. This unit was observed to be offset by a near vertical fault (F1: N68E, 75°NW) at approximately 16 feet down trench. Cracks within the clay and south of F1 were observed to be near vertical and parallel to F1.

Unit 2 was observed to overlie Unit 1 and to be similar to Unit 4 in Trench 1A and to consist of Lake Bonneville sand and gravel. Unit 4 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were observed to be well rounded to subrounded and to be comprised of quartzite with trace amounts of andesite. A 4-to-6-inch layer of well-rounded cobbles were observed at the top of this unit. Unit 2 was observed to be offset by F1 by approximately 2 feet.

Unit 3 was observed to overlie Unit 2 and to consist of a series of colluvium and/or alluvium deposits similar to Units 5 through 7 in Trench 1A. Unit 3 was observed to be matrix supported and massive and to be comprised of clay with gravel that grades into a silt with gravel from top to bottom. Clasts were observed to be subrounded to subangular and approximately 1 to 2 inches in diameter. Unit 3 did not appear to be offset by F1, but was observed to overlie Unit 2 and fault F1.

Unit 4 was observed to overlie Unit 3 and to consist of a B soil horizon comprised of red-brown clay with gravel and roots throughout.

Unit 5 was observed to overlie Unit 4 and consist of an A soil horizon comprised of a dark brown clay with gravel and numerous roots throughout.

5.2.3 Trench 1C Description

Trench 1C was approximately 20 feet long, oriented generally northwest-southeast (N20°W) and located west of Trench 1A (Plate A-5). Trench 1C was excavated with a trackhoe to depths between approximately 5 and 12 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1C is presented on Plate B-9.

The soils exposed in Trench 1C have been separated into 4 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 4 on the geologic log of Trench 1C. The oldest sediment observed at the bottom of Trench 1C was designated as Unit 1 and the youngest sediment observed at the top of Trench 1C was designated as Unit 4.

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Unit 1 was observed across the entire the bottom of Trench 1C and to consist of Lake Bonneville sand and gravel. Unit 4 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were observed to be well rounded to subrounded and to be comprised of quartzite with trace amounts of andesite. Unit 1 was observed to be offset by F1 (N60E, 67°NW) by approximately 1 foot.

Unit 2 was observed to overlie Unit 1 and to consist of a series of colluvium and/or alluvium deposits similar to Units 5 through 7 in Trench 1A. Unit 2 was observed to be matrix supported and massive and to be comprised of clay with gravel that grades into a silt with gravel from top to bottom. Clasts were observed to be subrounded to subangular and approximately 1 to 2 inches in diameter. Unit 3 did not appear to be offset by F1, but was observed to overlie Unit 1 and fault F1.

Unit 3 was observed to overlie Unit 2 and to consist of a B soil horizon comprised of red-brown clay with gravel and roots throughout.

Unit 4 was observed to overlie Unit 3 and consist of an A soil horizon comprised of a dark brown clay with gravel and numerous roots throughout.

5.2.4 Trench 1D Description

Trench 1D was approximately 19 feet long, oriented generally northwest-southeast (N15°W) and located west of Trench 1C (Plate A-5). Trench 1D was excavated with a trackhoe to depths between approximately 5 and 14 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1C is presented on Plate B-10.

The soils exposed in Trench 1D have been separated into 4 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 4 on the geologic log of Trench 1D. The oldest sediment observed at the bottom of Trench 1D was designated as Unit 1 and the youngest sediment observed at the top of Trench 1D was designated as Unit 4.

Unit 1 was observed across the entire the bottom of Trench 1D and to consist of Lake Bonneville sand and gravel. Unit 1 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were

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observed to be well rounded to subrounded and to be comprised of quartzite with trace amounts of andesite. Unit 1 was observed to be offset by F1 (N60E, 70°NW) by approximately 1 foot.

Unit 2 was observed to overlie Unit 1 and to consist of a series of colluvium and/or alluvium deposits similar to Units 5 through 7 in Trench 1A. Unit 2 was observed to be matrix supported and massive and to be comprised of clay with gravel that grades into a silt with gravel from top to bottom. Clasts were observed to be subrounded to subangular and approximately 1 to 2 inches in diameter. Unit 3 did not appear to be offset by F1, but was observed to overlie Unit 1 and fault F1.

Unit 3 was observed to overlie Unit 2 and to consist of a B soil horizon comprised of red-brown clay with gravel and roots throughout.

Unit 4 was observed to overlie Unit 3 and consist of an A soil horizon comprised of a dark brown clay with gravel and numerous roots throughout.

5.2.5 Trench 1E Description

Trench 1E was approximately 19 feet long, oriented generally northwest-southeast (N20°W) and located west of Trench 1E (Plate A-5). Trench 1E was excavated with a trackhoe to depths between approximately 5 and 13 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1E is presented on Plate B-11.

The soils exposed in Trench 1E have been separated into 4 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 4 on the geologic log of Trench 1E. The oldest sediment observed at the bottom of Trench 1E was designated as Unit 1 and the youngest sediment observed at the top of Trench 1E was designated as Unit 4.

Unit 1 was observed across the entire the bottom of Trench 1E and to consist of Lake Bonneville sand and gravel. Unit 1 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were observed to be well rounded to subrounded and to be comprised of quartzite with trace amounts of andesite. Unit 1 was observed to be offset by F1 (N60E, 68°NW) by approximately ½ to 1 foot.

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Unit 2 was observed to overlie Unit 1 and to consist of a series of colluvium and/or alluvium deposits similar to Units 5 through 7 in Trench 1A. Unit 2 was observed to be matrix supported and massive and to be comprised of clay with gravel that grades into a silt with gravel from top to bottom. Clasts were observed to be subrounded to subangular and approximately 1 to 2 inches in diameter. Unit 2 did not appear to be offset by F1, but was observed to overlie Unit 1 and fault F1.

Unit 3 was observed to overlie Unit 2 and to consist of a B soil horizon comprised of red-brown clay with gravel and roots throughout.

Unit 4 was observed to overlie Unit 3 and consist of an A soil horizon comprised of a dark brown clay with gravel and numerous roots throughout.

5.2.6 Trench 1F Description

Trench 1F was approximately 19 feet long, oriented generally northwest-southeast (N25°W) and located west of Trench 1F (Plate A-5). Trench 1F was excavated with a trackhoe to depths between approximately 5 and 11 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 1F is presented on Plate B-12.

The soils exposed in Trench 1F have been separated into 4 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 4 on the geologic log of Trench 1F. The oldest sediment observed at the bottom of Trench 1F was designated as Unit 1 and the youngest sediment observed at the top of Trench 1F was designated as Unit 4.

Unit 1 was observed across the entire the bottom of Trench 1F and to consist of Lake Bonneville sand and gravel. Unit 1 was observed to be clast supported and crudely bedded to bedded. The grain size of the gravel and sand within this unit was observed to be fine to coarse. Clasts were observed to be well rounded to subrounded and to be comprised of quartzite with trace amounts of andesite. A 6-inch layer of well-rounded cobbles was observed at the top of this unit.

Unit 2 was observed to overlie Unit 1 and to consist of a series of colluvium and/or alluvium deposits similar to Units 5 through 7 in Trench 1A. Unit 2 was observed to be matrix supported and massive and to be comprised of clay with gravel that grades into a silt with gravel from top to bottom. Clasts were observed to be subrounded to subangular and approximately 1 to 2 inches in diameter.

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Unit 3 was observed to overlie Unit 2 and to consist of a B soil horizon comprised of red-brown clay with gravel and roots throughout.

Unit 4 was observed to overlie Unit 3 and consist of an A soil horizon comprised of a dark brown clay with gravel and numerous roots throughout.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 1F.

5.2.7 Trench 2A Description

Trench 2A was approximately 235 feet long, oriented generally northwest-southeast (N57°W), and located between Trench 1A and Trench 3 (Plate A-5). Trench 2A was excavated with a trackhoe to depths between approximately 4 and 5 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 2A is presented on Plates B-13 through B-17.

The soils exposed in Trench 2A have been separated into 3 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 3 on the geologic log of Trench 2A. The oldest sediment observed at the bottom of Trench 2A was designated as Unit 1 and the youngest sediment observed at the top of Trench 2A was designated as Unit 3.

Unit 1 in Trench 2A was observed to consist of a colluvium/alluvium deposit and was observed to be comprised of a matrix supported and massive, red-brown clay and silt with calcium carbonate stringers throughout. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter with occasional clasts up to 6 inches in diameter and comprised of feldspar rich quartzite. Unit 1 was observed across the bottom of Trench 2A between approximately 0 and 184 feet down trench.

Unit 2 was observed to overlie Unit 1 between approximately 179 and 184 feet down trench. Unit 2 was observed to consist of colluvium and/or colluvium similar to Unit 1, except Unit 2 was observed to contain less gravel and clay. Unit 2 was observed to be matrix supported and massive, red-brown silt and fine sand with some gravel. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter and comprised of feldspar rich quartzite.

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Unit 3 was observed to overlie Units 1 and 2 and to consist dark brown organic rich A Soil Horizon comprised of silt and gravel with numerous roots throughout. Unit 3 was observed to be between approximately ½ to 4 feet thick. Unit 4 was observed to be thickest between 87 and 114 feet down trench where vegetation at the surface was thick.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 2A.

5.2.8 Trench 2B Description

Trench 2B was approximately 433 feet long, oriented generally northwest-southeast (N57°W) and located south of Trench 2A (Plate A-5). Trench 2B was excavated with a trackhoe to depths between approximately 5 and 5 ½ feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 2 is presented on Plates B-20 through B-26.

The soils exposed in Trench 2B have been separated into 5 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 5 on the geologic log of Trench 2B. The oldest sediment observed at the bottom of Trench 2B was designated as Unit 1 and the youngest sediment observed at the top of Trench 2B was designated as Unit 5.

Unit 1 in Trench 2B was observed to be similar to Unit 4 within Trench 1A, Unit 2 in Trench 1B and Unit 1 in Trenches 1C through 1F. Unit 1 was observed to consist of Lake Bonneville sand and gravel comprised of a clast supported light brown fine gravel to coarse gravel and fine to coarse sand. Unit 1 was observed to transition from crudely bedded grading to bedded from north to south down trench. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses were observed between approximately 320 feet and 415 feet down trench. Occasional well-rounded cobbles 4 to 6 inches in diameter were observed on top of Unit 1 between approximately 175 feet to 200 feet down trench. Unit 1 was observed between 175 to 415 feet down trench.

Unit 2 was observed to overlie Unit 1 between approximately 381 and 415 feet down trench and to consist of Lake Bonneville silt and sand comprised of matrix supported and massive to crudely bedded light red-brown silt and fine sand with calcium carbonate staining. This Unit was observed to be slightly cemented.

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Unit 3 was observed to overlie Unit 1 and to consist of colluvium and/or alluvium that is similar to Unit 2 in Trench 2A. Unit 3 was observed to be comprised of a matrix supported and massive red-brown silt and sand with fine gravel. Pockets of very stiff clay with gravel were observed between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter. Unit 3 was observed between approximately 0 and 217 feet down trench.

Unit 4 was observed to overlie Unit 3 between approximately 0 and 217 feet down trench, Unit 1 between approximately 217 and 381 feet down trench and Unit 2 between approximately 381 and 433 feet down trench and to consist of a red brown B Soil Horizon comprised of silt with gravel, and to contain roots throughout the unit.

Unit 5 was observed to overlie Unit 4 and to consist of dark brown organic rich A Soil Horizon comprised of silt with gravel and with numerous roots throughout.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 2B.

5.2.9 Trench 3 Description

Trench 3 was approximately 400 feet long, oriented generally northwest-southeast (N27°W) and located west of Trench 2A and Trench 2B and along the eastern edge of an abandoned gravel pit (Plate A-5). Trench 3 was excavated with a trackhoe to depths between approximately 5 and 5 ½ feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 3 is presented on Plates B-27 through B-36.

The soils exposed in Trench 3 have been separated into 9 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 9 on the geologic log of Trench 3. The oldest sediment observed at the bottom of Trench 3 was designated as Unit 1 and the youngest sediment observed at the top of Trench 3 was designated as Unit 9.

Unit 1 was observed to be similar to Unit 2 in Trench 2B and consist of lacustrine silt and sand related to Lake Bonneville. Unit 1 was observed to be slightly cemented, light red-brown, matrix supported and massive to crudely bedded, with calcium carbonate deposits throughout. Unit 1 was observed in the southernmost end of Trench 3 beginning at approximately 389 feet down trench.

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Unit 2 was observed to be similar to Unit 1 in Trench 2B, Unit 4 within Trench 1A, Unit 2 in Trench 1B and Unit 1 in Trenches 1C through 1F and consist of lacustrine sand and gravel related to Lake Bonneville. Unit 2 was observed to be comprise of a clast supported and crudely bedded to bedded light brown fine to coarse gravel and fine to coarse sand. Clasts were observed to be subrounded to well-rounded and comprised of quartzite with trace amounts of andesite.

Unit 3 was observed to overlie Unit 2 and was observed between approximately 200 and 353 feet down trench and to consist of a colluvium and/or alluvium deposit comprised of clay to silt with gravel. Unit 3 was observed to be matrix supported and massive. Clasts were observed to be approximately 1 to 3 inches in diameter and subangular to subrounded.

Unit 4 was observed in the northern end of Trench 3 and to consist of a series of alluvial fan deposits sourced by the drainages located north and upslope from Trench 3. Unit 4 was comprised of a red-brown silt with gravel that was observed to be matrix supported and massive with several small 3- to 5-inch-thick stream lenses that were clast supported and bedded. Clasts within Unit 4 were observed to be predominantly 1 to 3 inches in diameter with occasional gravel 4 to 5 inches in diameter and subrounded to subangular. Unit 4 was observed in Trench 3 between 0 and approximately 99 feet down trench.

Unit 5 was observed to consist of undocumented fill comprised of a gray silt with fine sand. Remnants of Unit 5 were also observed within Unit 6.

Unit 6 through Unit 9 were observed to consist of undocumented fill soils as part of the old gravel pit operations within the subject site. These units were observed to consist of sand, silt and varying amounts of gravel that were observed to be subrounded to subangular and approximately 1 to 4 inches in diameter.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 3.

5.2.10 Trench 4 Description

Trench 4 was approximately 40 feet long, oriented generally northwest-southeast (N62°W) and located east of Trench 2A and 2B and west of Trench 1F (Plate A-5). Trench 4 was excavated

with a trackhoe to depths between approximately 6 and 14 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 4 is presented on Plates B-37.

The soils exposed in Trench 4 have been separated into 4 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 4 on the geologic log of Trench 4. The oldest sediment observed at the bottom of Trench 4 was designated as Unit 1 and the youngest sediment observed at the top of Trench 4 was designated as Unit 4.

Unit 1 in Trench 4 was observed to be similar to Unit 2 in Trench 3, Unit 1 in Trench 2B, Unit 4 within Trench 1A, Unit 2 in Trench 1B and Unit 1 in Trenches 1C through 1F and consist of 3- to 6-inch-thick interbedded layers of fine to coarse sand and gravel related to the transgressive phase of the Bonneville Lake Cycle. Unit 1 was observed to be comprised of clast supported and crudely bedded to bedded light brown fine to coarse gravel and fine to coarse sand. Clasts were observed to be well rounded and approximately ¼ inches to 3 inches in diameter occasional 3 to 6 inches in diameter.

Unit 2 was observed to overlie Unit 1 and to consist of a colluvium and/or alluvium deposit comprised of red brown matrix supported and crudely bedded silt with gravel. Clasts were observed to be subrounded to rounded and approximately 1 to 2 inches in diameter.

Unit 3 was observed to overlie Unit 2 and to also consist of a colluvium and/or alluvium deposit comprised of red brown matrix supported and massive silt and sand with subrounded to rounded fine gravel.

Unit 4 was observed to overlie Unit 3 and to consist of organic rich topsoil.

Unit 1 through Unit 3 were observed to be offset by fault F1 (S255W, 55°NE) at approximately 18 feet down trench. Unit 4 was observed to thicken on the north side (downthrown side) of fault F1, however fault F1 was not observed to extend into Unit 4. The amount of offset on fault F1 observed in Unit 1 through Unit 3 was approximately 3 feet and Unit 4 was observed to thicken approximately 6 inches to the north across fault F1.

5.2.11 Trench 5 Description

Trench 5 was approximately 20 feet long, oriented generally northwest-southeast (N65°W) and located southwest of Trench 4 and east of Trench 2B (Plate A-5). Trench 5 was excavated with a

trackhoe to depths between approximately 6 and 13 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 5 is presented on Plate B-38.

The soils exposed in Trench 5 have been separated into 5 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 5 on the geologic log of Trench 5. The oldest sediment observed at the bottom of Trench 5 was designated as Unit 1 and the youngest sediment observed at the top of Trench 5 was designated as Unit 5.

Unit 1 in Trench 5 was observed to consist of completely weathered and friable Tertiary alluvial fan. The Tertiary alluvial fan was observed to weather to a clast supported and massive gravel and clay. Clasts within Unit 1 were observed to be subangular to subrounded andesite and quartzite approximately ½ to 4 inches in diameter.

Unit 2 was observed to overlie Unit 1 and be similar to Unit 1 in Trench 4, Unit 2 in Trench 3, Unit 1 in Trench 2B, Unit 4 within Trench 1A, Unit 2 in Trench 1B and Unit 1 in Trenches 1C through 1F and consist of 3- to 6-inch-thick interbedded layers of fine to coarse sand and gravel related to the transgressive phase of the Bonneville Lake Cycle. Unit 1 was observed to be comprised of clast supported and crudely bedded to bedded light brown fine to coarse gravel and fine to coarse sand. Clasts were observed to be well rounded and approximately ¼ inches to 3 inches in diameter with occasional 3 to 6 inches in diameter.

Unit 3 was observed to overlie Unit 2 and to be similar to Unit 2 in Trench 4. Unit 3 was observed to consist of a colluvium and/or alluvium deposit comprised of matrix supported and crudely bedded red brown silt with gravel. Clasts were observed to be approximately 1 to 2 inches in diameter and subrounded to rounded.

Unit 4 was observed to overlie Unit 3 and to be similar to Unit 3 in Trench 4. Unit 4 was observed to consist of a colluvium and/or alluvium deposit comprised of red brown matrix supported and massive silt and sand with subrounded to rounded fine gravel.

Unit 5 was observed to overlie Unit 4 and to consist of organic rich topsoil.

Unit 1 through Unit 4 were observed to be offset by F1 (S220W, 65°NE) at approximately 15 feet down trench. Unit 5 was observed to thicken on the north side (downthrown side) of fault F1, however fault F1 was not observed to extend into Unit 5. The amount of offset on fault F1

observed in Unit 1 through Unit 4 was approximately 3 feet and Unit 4 was observed to thicken approximately 6 to 8 inches to the north across fault F1.

5.2.12 Trench 6 Description

Trench 6 was approximately 74 feet long, oriented generally northwest-southeast (N40°W) and located east of Trench 3 and west of Trench 2B (Plate A-5). Trench 6 was excavated with a trackhoe to depths between approximately 5 and 12 feet below the existing site grade as it existed at the time of our investigation. A hand log of Trench 6 is presented on Plates B-39 through B-40.

The soils exposed in Trench 6 have been separated into 2 stratigraphic units and labeled from oldest to youngest as Unit 1 through Unit 2 on the geologic log of Trench 6. The oldest sediment observed at the bottom of Trench 6 was designated as Unit 1 and the youngest sediment observed at the top of Trench 6 was designated as Unit 2.

Unit 1 was observed to consist of a series of water dominated alluvial fan flooding deposits comprised of a clast supported and crudely bedded coarse gravel with trace amounts of cobbles. The thickness of the alluvial fan flooding deposits ranged from ½ to 1 ½ feet thick.

Unit 2 was observed to overlie Unit 1 and to consist of organic rich topsoil.

No deformation or offsets, associated with surface fault rupture, were observed within the soil units exposed in Trench 6.

5.3 RADIOCARBON DATING

Three soil samples were collected as part of our subsurface investigation from Trench 1A Unit 8, Trench 4 Unit 3 and Trench 6 Unit 1. The locations of these samples are shown on Plates B-6, B-37 and B-40. Each sample was sent to Beta Analytic Testing laboratory in Miami Florida for radiocarbon dating. It should be noted that the three samples were identified as carbonate sediment, however no pretreatment was performed on the samples. Carbonate precipitates within the samples that are of a younger age that the sediment deposits could result in a younger are result that the actual age of the soil units. The radiocarbon ages of the samples should be considered “at least” ages. The results of this radiocarbon dating are included in the Appendix B

of this report. A summary of the radiocarbon test results is presented in Radiocarbon Test Results presented in Table 3 below.

Radiocarbon Test Results					
Sample Number	**Trench Number**	**Approximate Location Down Trench (ft)**	**Approximate Depth in Trench (ft)**	**Unit Number Sampled**	**Radiocarbon Age Date (cal years BP)**
1	1A	255	3	8	8,457 to 8,373
2	4	12	5	3	5,277 to 4,572
3	6	60	12	1	7,305 to 6,698

Table 3. Radiocarbon Test Results

5.4 INTERPRETATION OF SUBSURFACE CONDITIONS

As previously discussed, much of the subsurface conditions encountered in the eastern portion of our subsurface explorations are consistent with upper Pleistocene lacustrine gravel and sand deposits (Qlgb, Qlg) as mapped by Beik (2005) and Constenius and others (2011). Based on our subsurface investigations, it is the opinion of GeStrata that much of this area is covered by colluvium and/or alluvium deposits that overlie the lacustrine deposits and pinch out from north to south away from the foothills. Upper lacustrine sand and silt (Qlsp, Qls) as mapped by Beik (2005) and Constenius and others (2011) were encountered in the easternmost portions of Trench 2B and Trench 3. Holocene to upper Pleistocene alluvial fan deposits (Qaf_1, Qafy) as mapped by Beik (2005) and Constenius and others (2011) were encountered in the western portion of the subject site in Trench 3 and Trench 6.

6.0 SURFACE FAULT RUPTURE HAZARD ANALYSIS

Movement along faults within the crustal rocks beneath the ground surface generates earthquakes. During large magnitude earthquakes (generally Richter magnitude 5.0 or greater) along the normal faults in the intermountain region, fault ruptures can propagate to the ground surface resulting in a surface fault rupture (Smith and Arabasz, 1991). The fault scarp formed during a surface fault rupture event along a normal fault is generally nearly vertical. A surface rupture fault may be comprised of a larger single surface rupture or several smaller surface ruptures across a fault zone. For all structures designed for human occupancy, a surface rupturing fault is considered active if it has experienced movement in approximately the past 10,000 radiocarbon years before present [14C yr B.P.], or about 11,700 calibrated years before present [cal yr B.P.]) (Lund and others, 2016). Qaf_2

Based on the close proximity of the subject site to the Provo segment of the WFZ (Plate A-3 *Surface Fault Rupture Special Study Map*, Plate A-6 *Site Vicinity Geologic Map* and Plate A-7 *Site Vicinity 30x60 Geologic Map*), the site is located within the surface fault rupture special study zone. Based on fault studies of the Provo segment, the last three events on the Provo segment occurred 600 ± 350 cal BP, 2,850 ± 650 cal BP and 5,300 cal BP (Olig, 2011). These three events resulted in approximately 4.7 ± 0.5 meters, 0.5 to 2.2 meters, and 2.2 to 2.7 meters of displacement, respectively. Given the close proximity of the subject site to the Provo segment of the WFZ, GeoStrata conducted a surface fault rupture hazard investigation to assess the subject site for the presence or absence of active faults.

Trenches 1A, 1B, 1C, 1D, 1E, 1F, 2A, 2B, 3, 4, 5 and 6 were excavated to intercept any active faults that would trend through the subject site Plate A-5, *Exploration Location Map*. A surface fault rupture trace (F1) associated with the northern terminus of the Provo segment of the WFZ was observed in Trenches 1B, 1C, 1D, 1E, 4 and 5 (Plates B-8 through B-11, B-37 and B-38). No surface fault ruptures were observed in Trenches 1A, 1F, 2A, 2B, 3 and 6. Based on the surface fault rupture fault F1 exposed in the trenches, it is the opinion of GeoStrata that fault F1 likely extends across Trenches 1A and 2B, 3 and 6, but at greater depths than were exposed in these Trenches. Based on our radiocarbon dating, it is the opinion of GeoStrata that fault F1 is an active fault splay associated with the Provo segment of the WFZ.

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Since the observed fault F1 is considered to be an active and splay of the Provo segment of the Wasatch fault zone, a setback area needs to be established on either side of the observed fault following the guidelines defined in Bowman and Lund (2020).

The fault setback for the downthrown block should be calculated using the following formula:

$S = U [2D + (F/\tan\theta)]$
where:
S = Setback within which buildings are not permitted.
U = Criticality factor, based on the IBC building occupancy class (table 1 Christenson and others (2003) page 4).
D = Expected fault displacement per event (use the maximum vertical displacement measured for past events or, if not measurable, estimated based on paleoseismic data). Along main traces where displacement is not measurable, a maximum estimated single-event displacement should be used.
F = Maximum depth of footing or subgrade portion of the building.
θ = Dip of the fault (degrees).

The setback for the upthrown side of the fault should be calculated as:

$S= U (2D)$

Based on the data observed in the trenches, the following values were used to calculate setbacks for the observed faults:

U = 1.5 for residential structures
D = 1 to 3 feet (See Table 5)
F = assumed to be 8 feet
θ = 55° to 75° (See Table 5)

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The following table shows the pertinent fault data and the calculated setback for the observed fault:

Trench	Dip	Dip Direction	Offset (ft)	Calculated Downthrown Setback (ft)	Calculated Upthrown Setback (ft)	Recommended Minimum Downthrown Setback (ft)	Recommended Minimum Upthrown Setback (ft)
1B	75°	NW	2	9.2	6	15	15
1C	67°	NW	1	8.1	3	15	15
1D	70°	NW	1.5	8.9	4.5	15	15
1E	60°	NW	1	9.9	3	15	15
4	55°	NW	3	17.4	9	15	15
5	65°	NW	3	14.6	9	15	15
Average				11.4	5.8	15	15

Table 5. Fault Setback Calculations

The IBC recommended minimum setback for single family residential structures is 15 feet (Cristenson and others, 2003). The calculated average setbacks for the surface fault rupture fault splay (F1) as shown in Table 5 are 11.4 feet on the downthrown side of the fault and 5.8 feet on the upthrown side of the fault. The recommended minimum setbacks of 15 feet are greater than the calculated average setbacks, therefore our recommended setbacks from the surface fault rupture fault splay (F1) are 15 feet on both sides of the fault.

Based on the data presented in this surface fault rupture hazard investigation, it is our opinion that an active surface fault rupture fault splay (F1) associated with the northern terminus of the Provo Segment of the WFZ trends through the subject site as shown on Plate A-8, *Setback Map*. Plate A-9 illustrates the recommended minimum fault setback of 15 feet as presented in Table 5. No structures or any portions of any structures intended for human occupancy should be located within the fault setback area as shown on Plate A-8. It is generally accepted practice to allow roadways, landscaping, driveways, and non-habitable structures such as detached garages and sheds to be located within these areas. Given the observations made during the fieldwork conducted for this investigation, it is the opinion of GeoStrata that the surface fault rupture hazard within the subject site is considered low and should not preclude development within the subject site provided that the recommendations stated above are implemented.

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7.0 CLOSURE

7.1 LIMITATIONS

The conclusions and recommendations contained in this report, which include professional opinions and judgments, are based on the information available to us at the time of our evaluation, the results of our field observations and our understanding of the proposed site development. If any conditions are encountered at this site that are different from those described in this report, our firm should be immediately notified so that we may make any necessary revisions to recommendations contained in this report. In addition, if the scope of the proposed development changes from that described in this report, our firm should also be notified.

All services were completed in accordance with the current standard of care and generally accepted standard of practice at the time and in the place our services were completed. No other warranty, expressed or implied, is made. Development of property in the immediate vicinity of geologic hazards involves a certain level of inherent risk. It is impossible to predict where geologic hazards will occur. New geologic hazards may develop and existing geologic hazards may expand beyond their current limits.

All services were performed for the exclusive use and benefit of the above addressee. No other person is entitled to rely on GeoStrata's services or use the information contained in this letter without the express written consent of GeoStrata. We are not responsible for the technical interpretations by others of the information described or documented in this report. The use of information contained in this report for bidding purposes should be done at the Contractor's option and risk.

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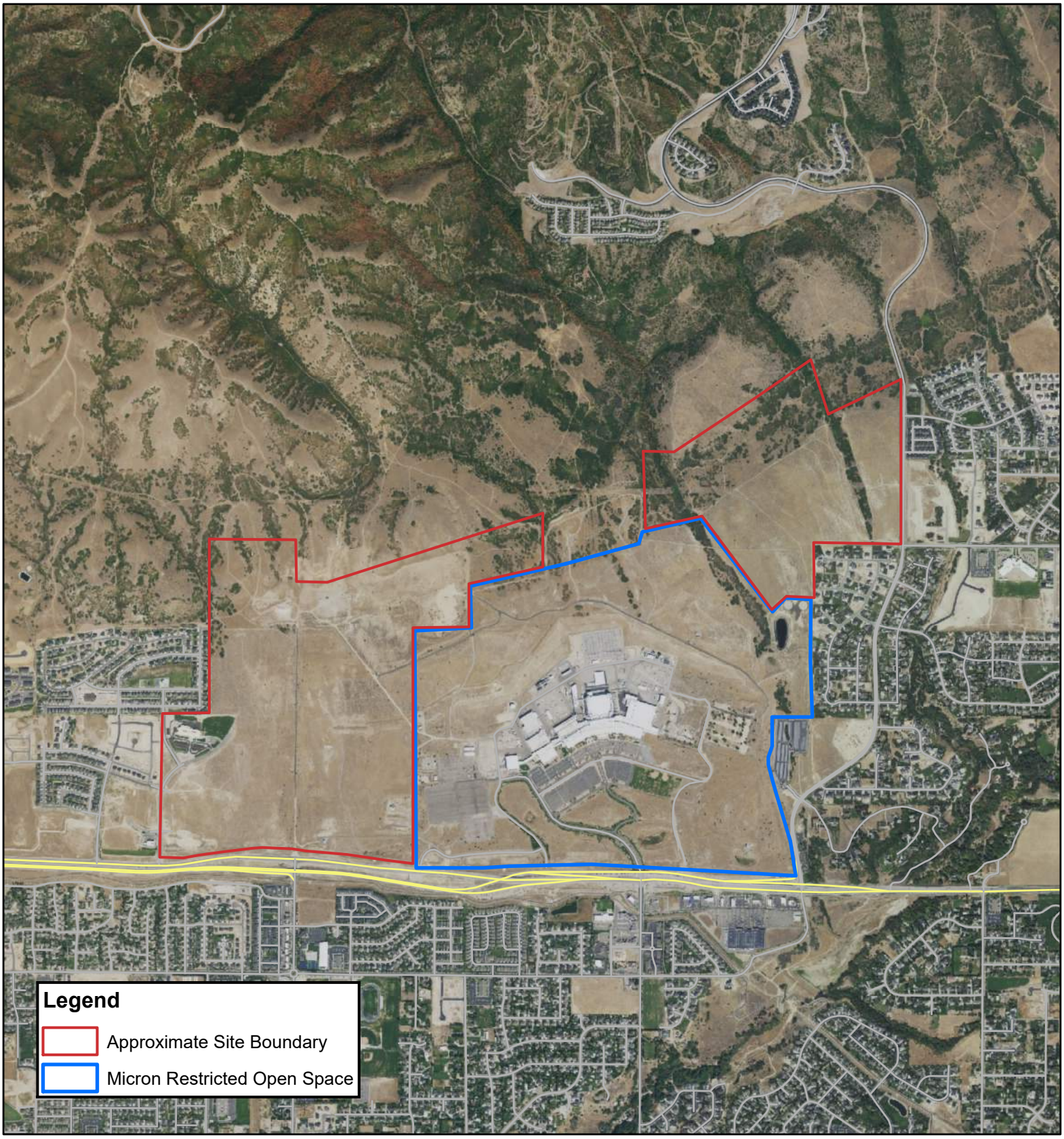
Appendix A



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Basemap:
2012 12.5 cm HRO aerial imagery provided by the State of Utah AGRC

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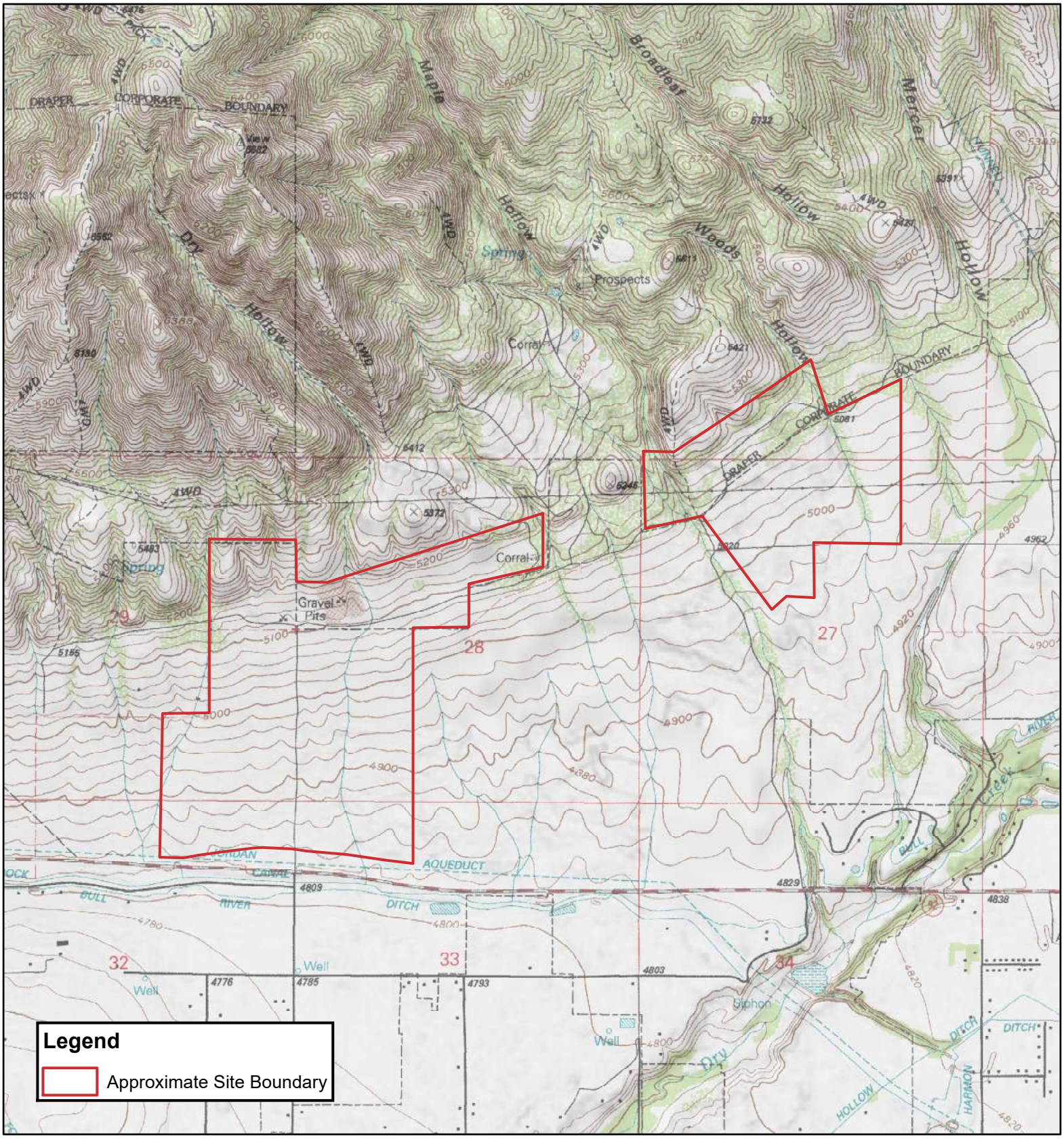
DR Horton
Micron Project
Lehi, Utah
Project Number: 589-100

Site Vicinity Map

Plate A-1

1013



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Basemap:
Lehi Quadrangl, Utah, 7.5-Minute Series (Topographic), USGS, 1994 and hillshades derived from DEMs provided by the State of Utah AGRC.

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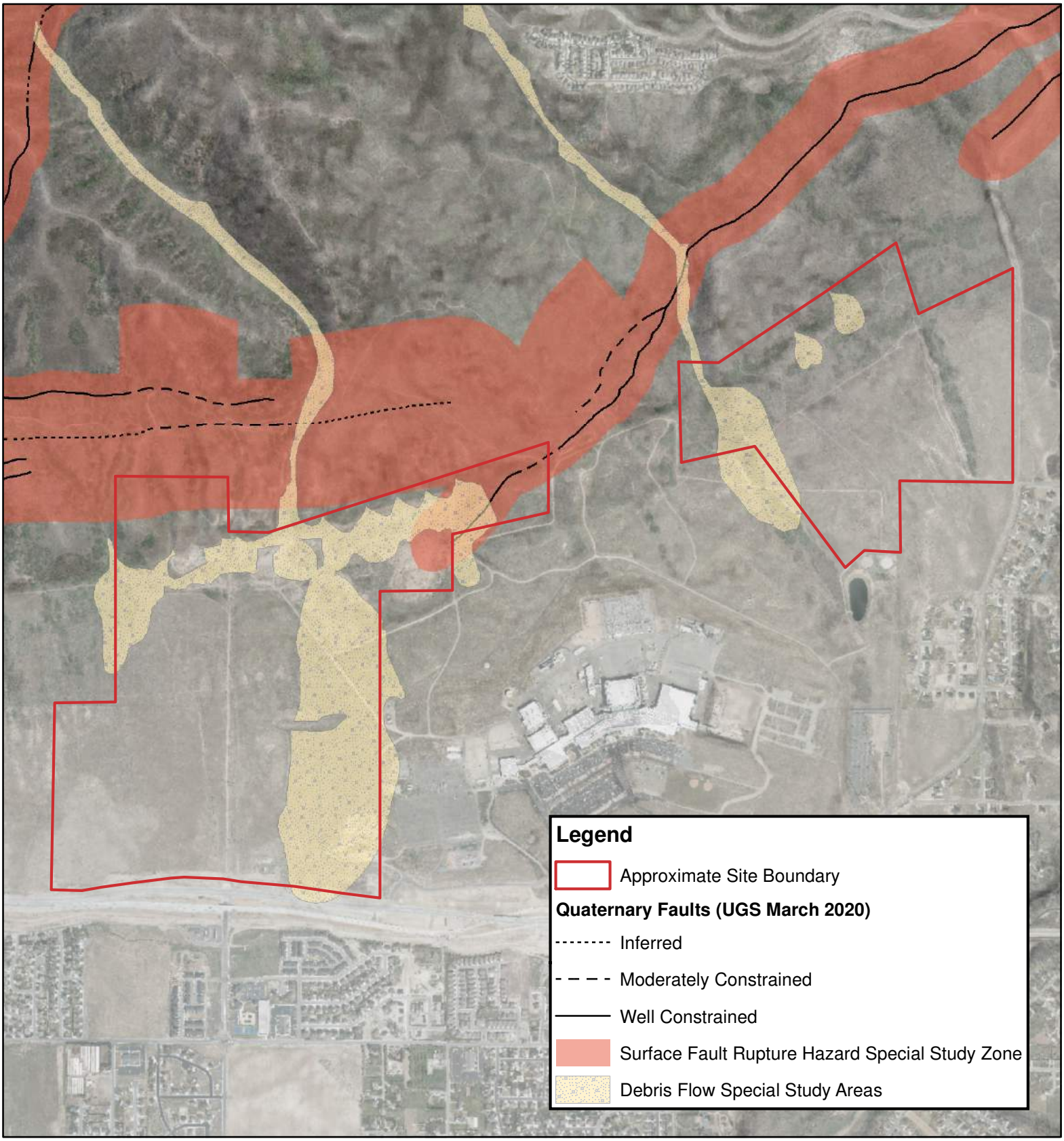
Project Number: 589-100

Topographic Map

Plate A-2

1014



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Basemap:
Lehi Quadrangl, Utah, 7.5-Minute Series (Topographic), USGS, 1994 and hillshades derived from DEMs provided by the State of Utah AGRC.

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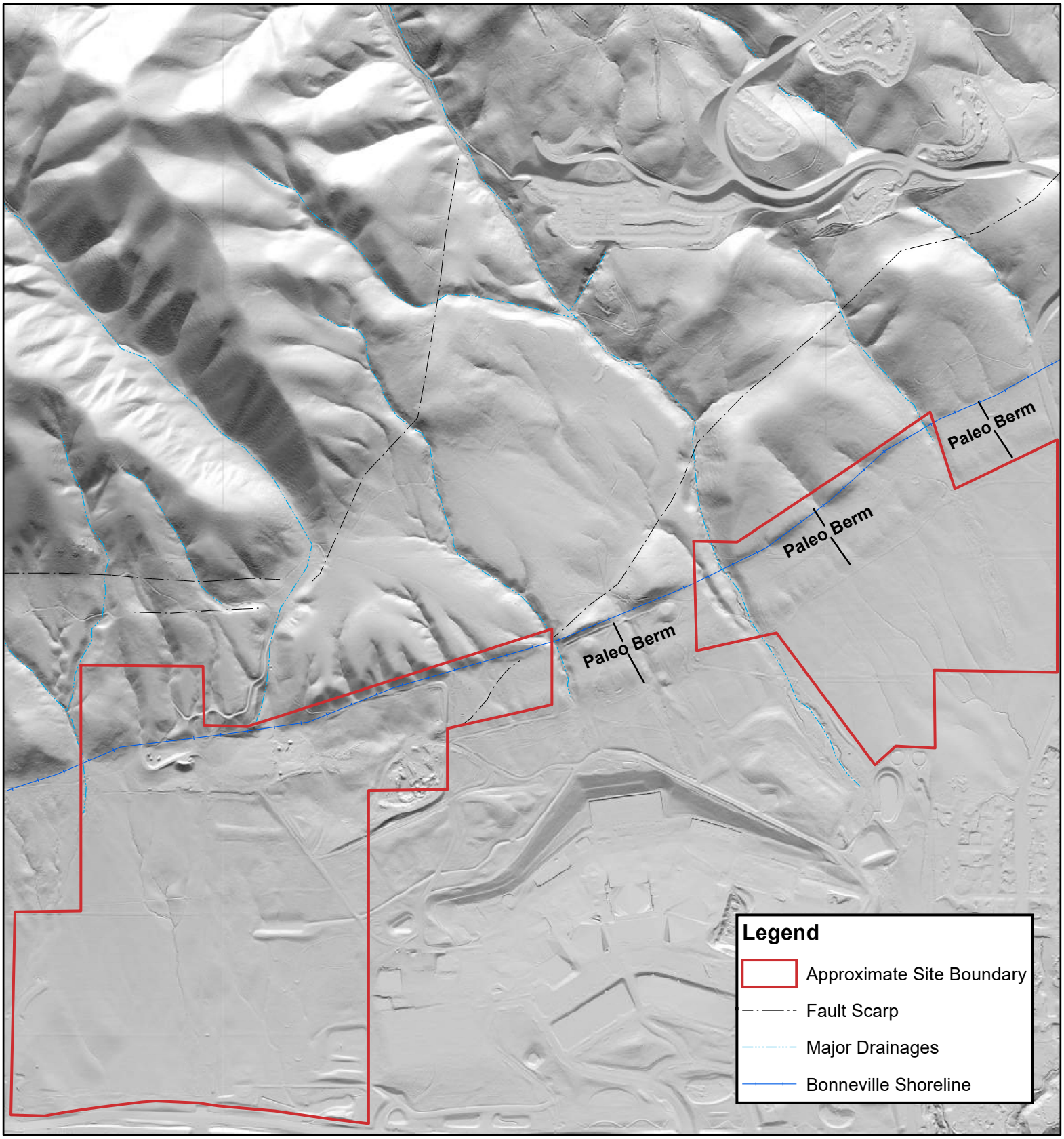
Geologic Hazards Special Study Map

Plate A-3

1015



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Basemap:
Hillshades derived from 2013-2014 0.5m lidar provided by the State of Utah AGRC.

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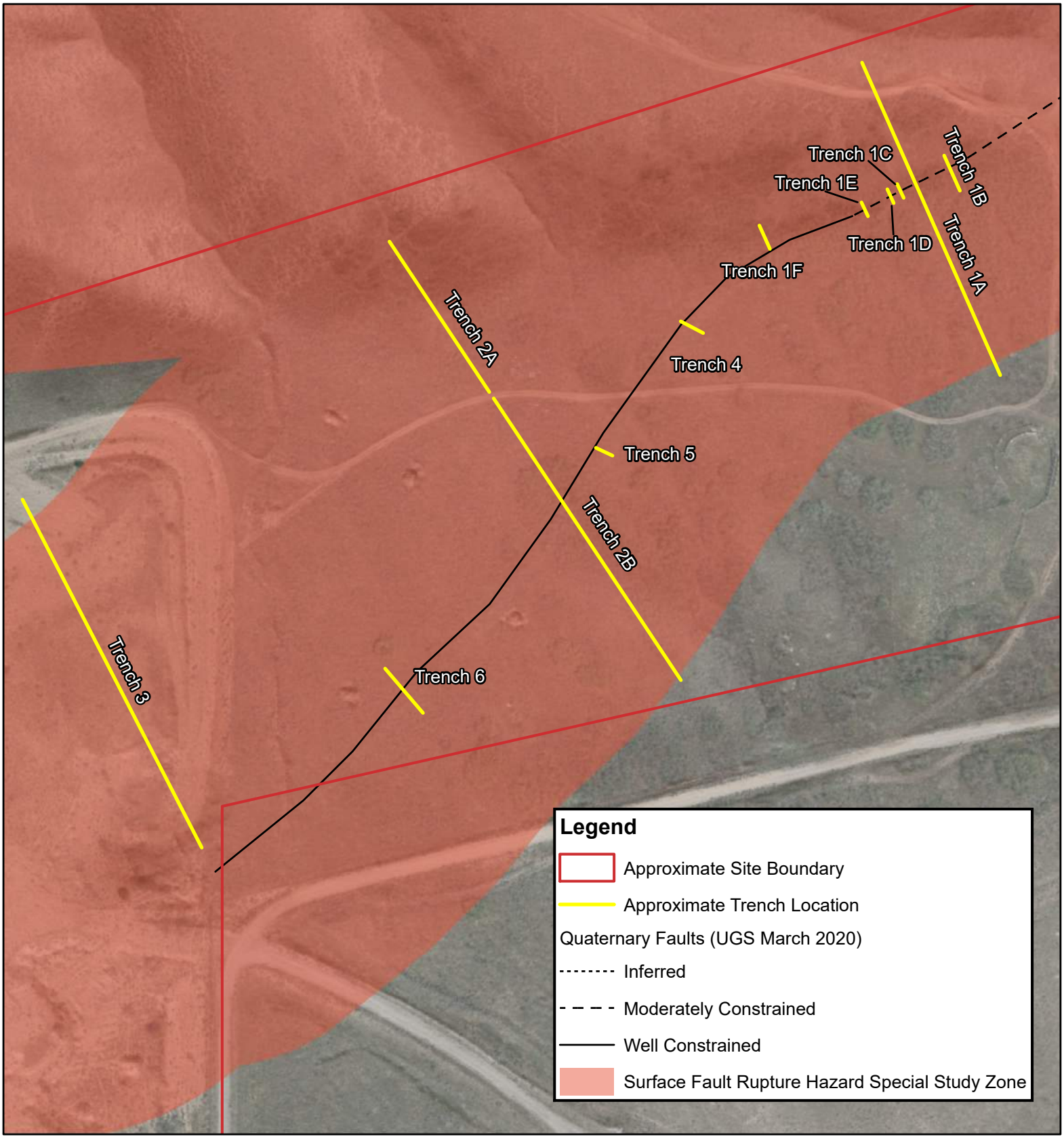
Hillshade Map

Plate A-3

1016



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Basemap:
2012 12.5cm HRO aerial imagery and hillshades derived from DEMs provided by the State of Utah AGRC.

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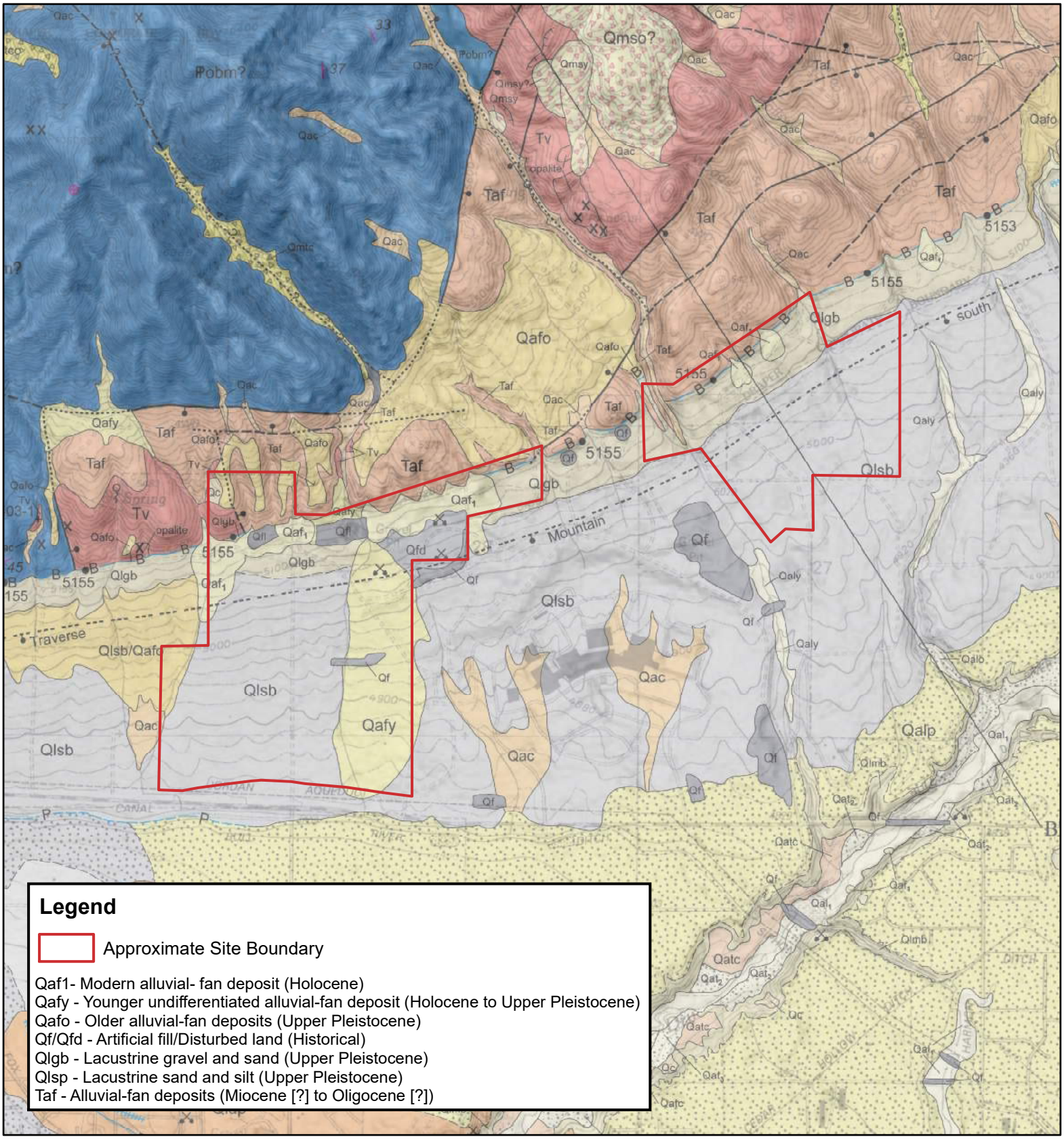
Exploration Location Map

Plate A-5



Legend

Approximate Site Boundary

Qaf1- Modern alluvial- fan deposit (Holocene)
Qafy - Younger undifferentiated alluvial-fan deposit (Holocene to Upper Pleistocene)
Qafo - Older alluvial-fan deposits (Upper Pleistocene)
Qf/Qfd - Artificial fill/Disturbed land (Historical)
Qlgb - Lacustrine gravel and sand (Upper Pleistocene)
Qlsp - Lacustrine sand and silt (Upper Pleistocene)
Taf - Alluvial-fan deposits (Miocene [?] to Oligocene [?])

0 650 1,300 2,600 3,900 5,200 Feet

1:24,000

Basemap:
Geologic Map of the Lehi Quadrangle and Part of the Timpanogos Cave Quadrangle, Salt Lake and Utah Counties, Utah, Beik, 2005.
Hillshades derived from DEMs provided by the State of Utah AGRC.

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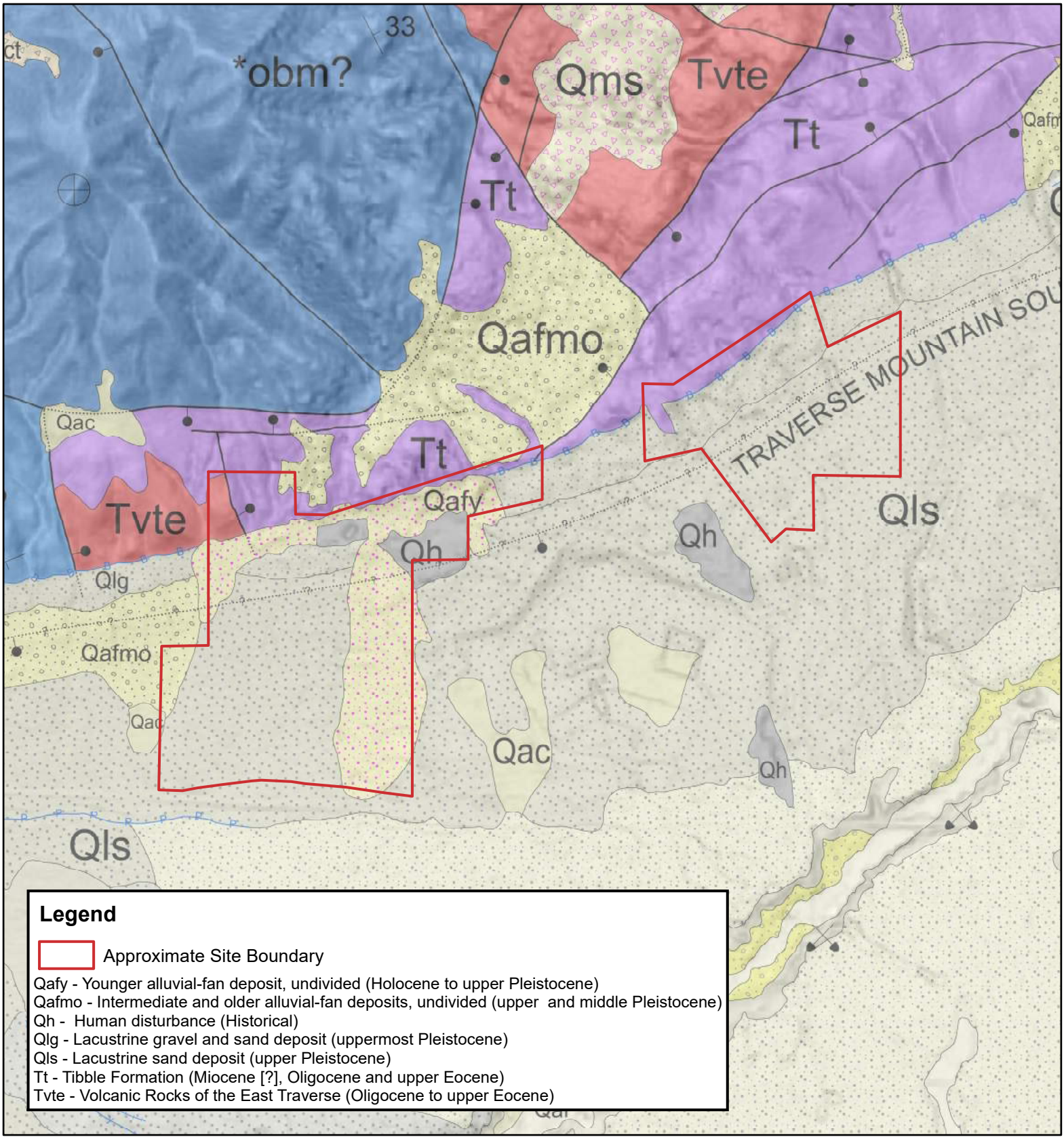
Site Vicinity Geologic Map

Plate A-6



Legend

Approximate Site Boundary

Qafy - Younger alluvial-fan deposit, undivided (Holocene to upper Pleistocene)
Qafmo - Intermediate and older alluvial-fan deposits, undivided (upper and middle Pleistocene)
Qh - Human disturbance (Historical)
Qlg - Lacustrine gravel and sand deposit (uppermost Pleistocene)
Qls - Lacustrine sand deposit (upper Pleistocene)
Tt - Tibble Formation (Miocene [?], Oligocene and upper Eocene)
Tvte - Volcanic Rocks of the East Traverse (Oligocene to upper Eocene)

Feet
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1:24,000

Basemap:
Interim Geologic Map of the Provo 30' X 60' Quadrangle, Utah, Wasatch and Salt Lake Counties, Utah, Constenius and others, 2011. Hillshades derived from DEMs provided by the State of Utah AGRC.

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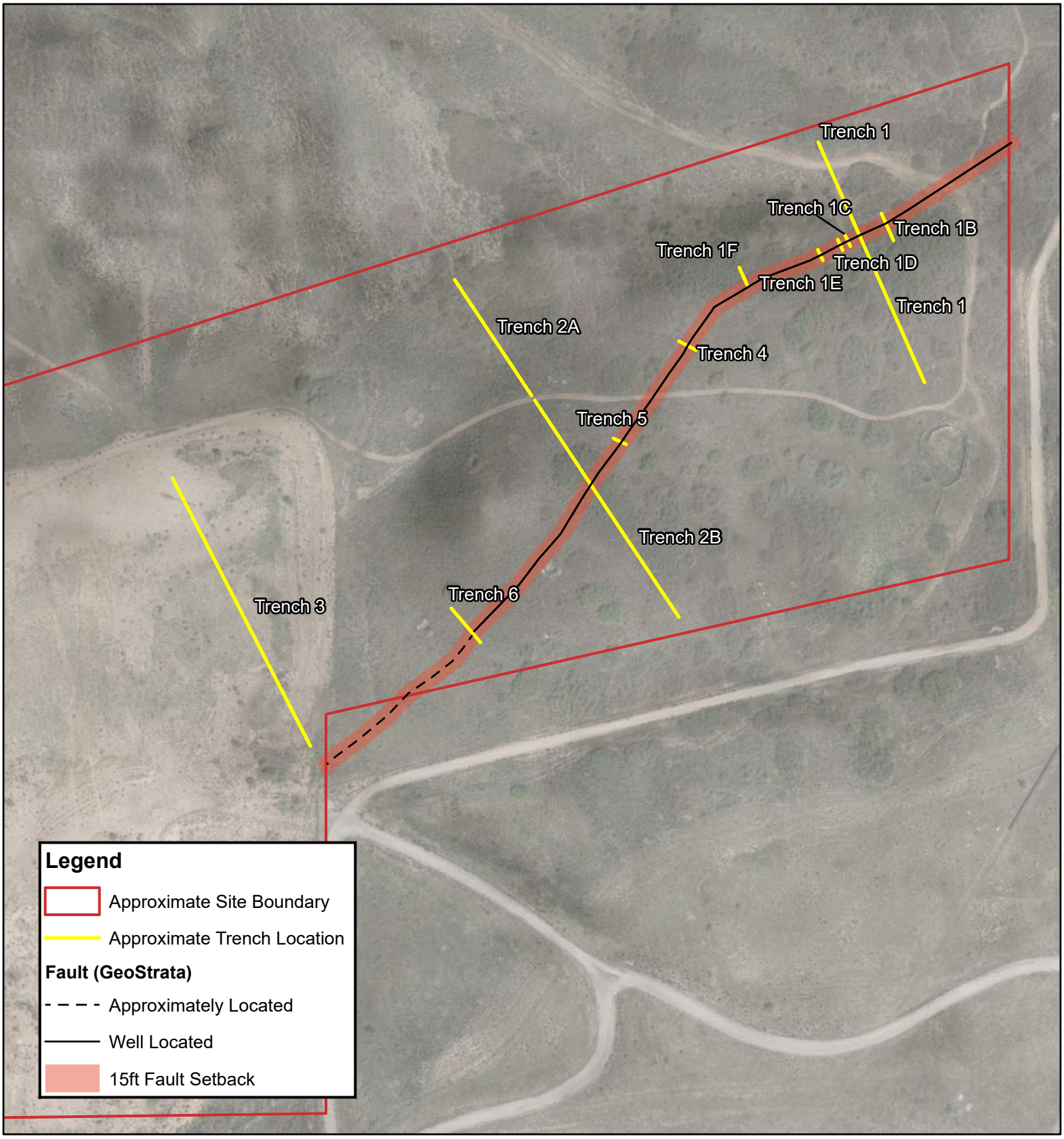
Site Vicinity 30x60 Geologic Map

Plate A-7

1019



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Basemap:
2012 12.5cm HRO aerial imagery and hillshades derived from DEMs provided by the State of Utah AGRC.

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Setback Map

Plate A-8

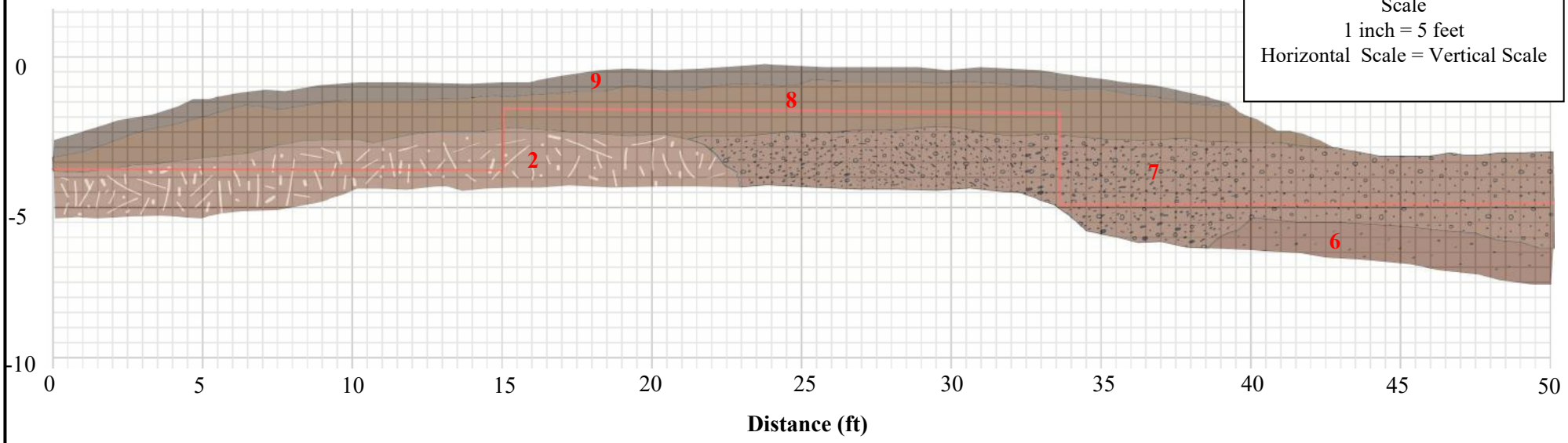
1020

Appendix B

TRENCH 1A EAST WALL

North **South**

Trench Orientation: N15°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 – Tertiary Alluvial Fan Deposit, Taf (Miocene? to Oligocene?): Matrix supported, massive, red-brown clay with gravel, calcium carbonate stringers throughout. Contains highly weathered and friable sandstone clasts ranging from 3 to 6 inches in diameter. Light red to grey subrounded to subangular quartzite clasts predominantly ranging from ½ to 2 inches in diameter with occasional 3 to 5 inches in diameter.

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with gravel, minor calcium carbonate staining. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-1

Geologic Hazards Investigation
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Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1A Log
0 to 50 feet

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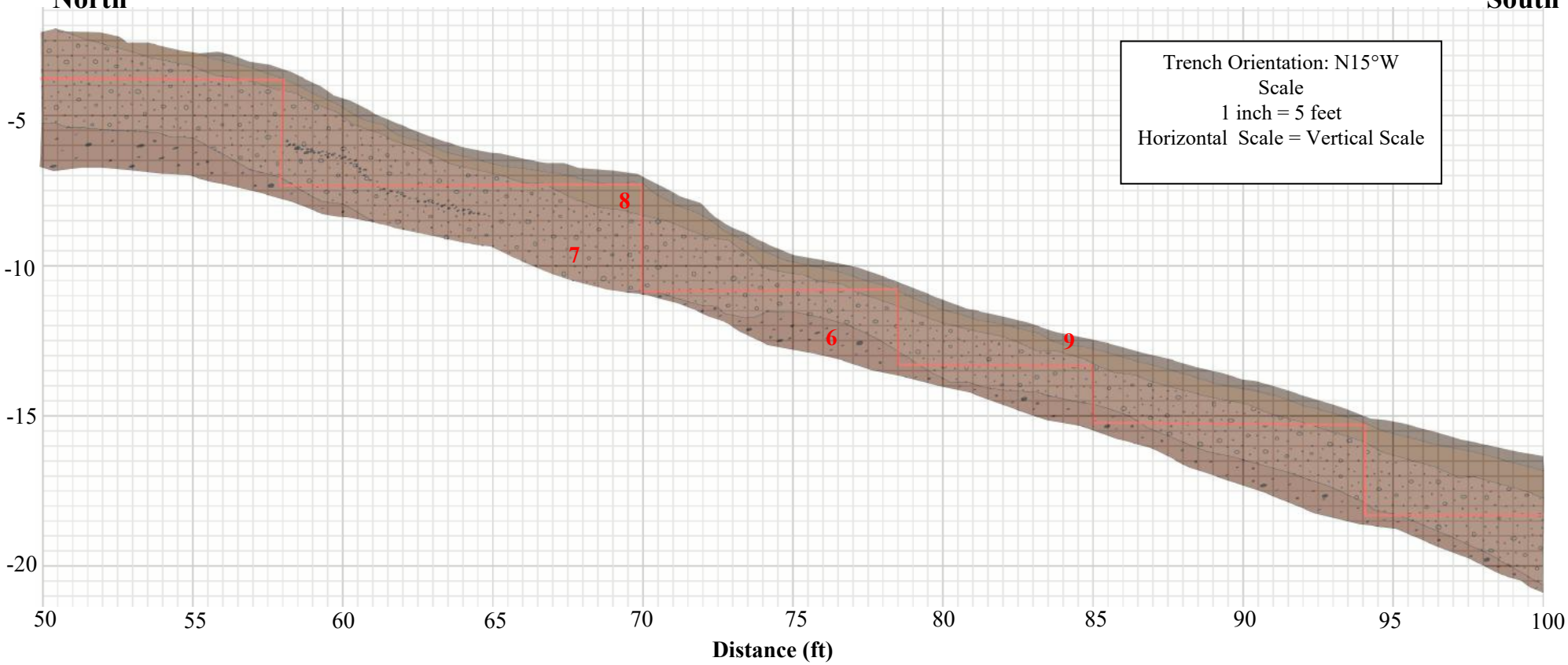
TRENCH 1A EAST WALL



LEGEND

7
6
5

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with some gravel, minor calcium carbonate staining. Very stiff between 125 feet and 160 feet down trench. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-2

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1A Log
50 to 100 feet

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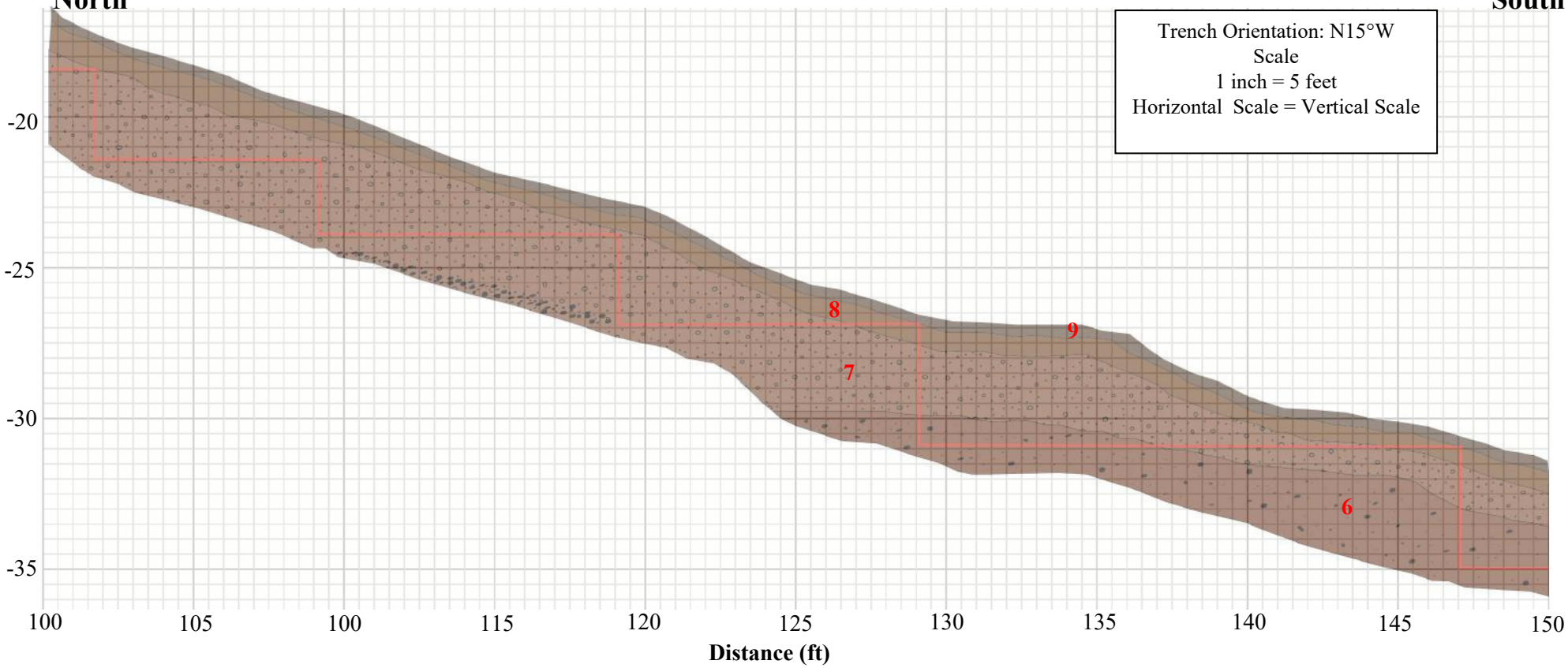
TRENCH 1A EAST WALL



LEGEND

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with some gravel, minor calcium carbonate staining. Very stiff between 125 feet and 160 feet down trench. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-3

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1A Log
100 to 150 feet

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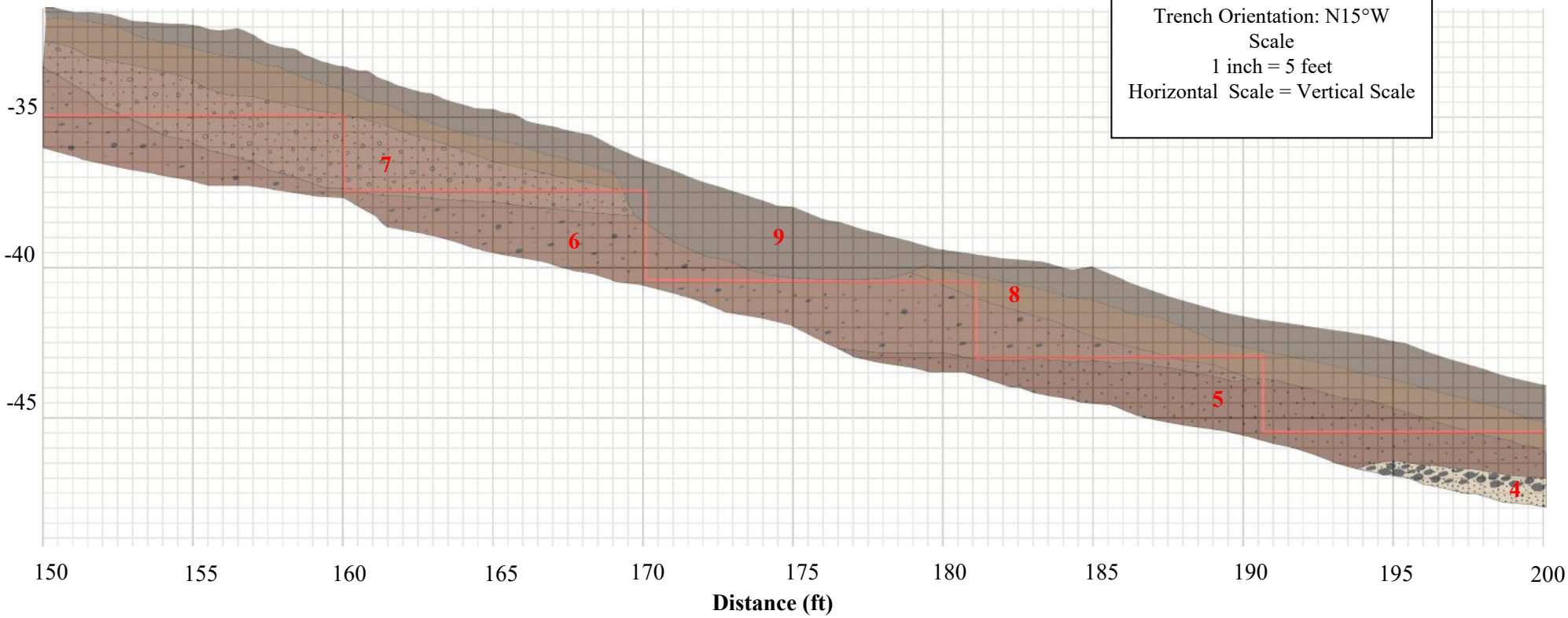
TRENCH 1A EAST WALL



LEGEND

Unit 4 – Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit between approximately 195 and 225 feet. Occasional 1- to 2-inch-thick fine sand lenses.

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with some gravel, minor calcium carbonate staining. Very stiff between 125 feet and 160 feet down trench. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-4

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1A Log
150 to 200 feet

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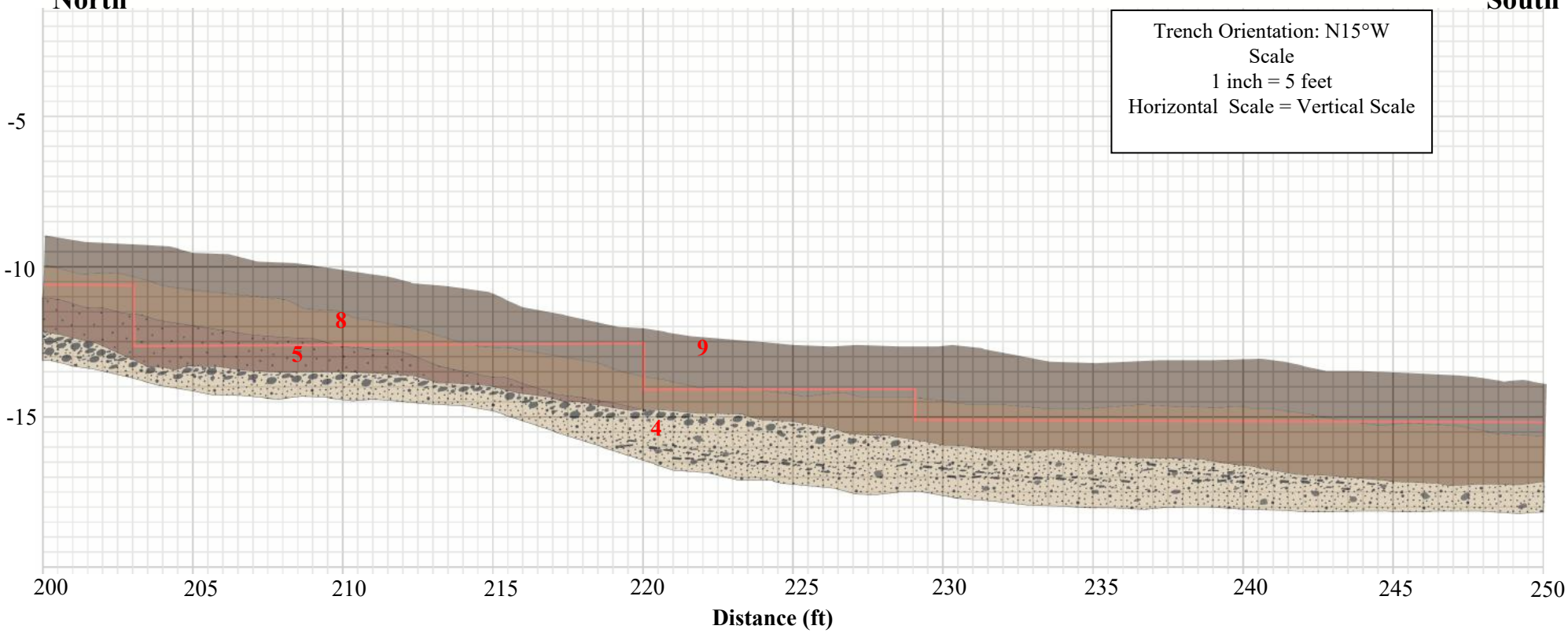
TRENCH 1A EAST WALL



LEGEND

Unit 4 – Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit between approximately 195 and 225 feet. Occasional 1- to 2-inch-thick fine sand lenses.

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with some gravel, minor calcium carbonate staining. Very stiff between 125 feet and 160 feet down trench. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-5

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1A Log
200 to 250 feet

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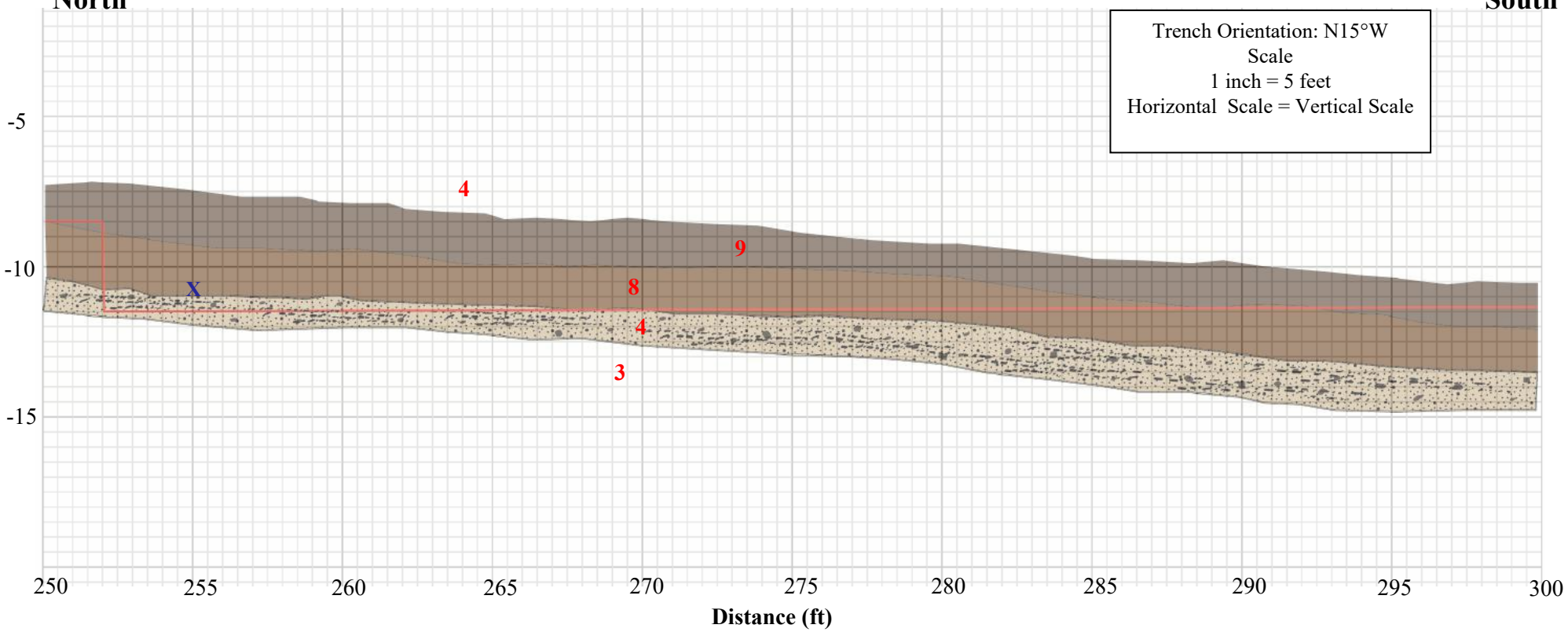
TRENCH 1A EAST WALL



LEGEND

Unit 4 – Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit between approximately 195 and 225 feet. Occasional 1- to 2-inch-thick fine sand lenses.

Unit 5 through 7 – Colluvium and/or Alluvium: All units were matrix supported and massive with varying amounts of gravel. **Unit 5 –** red-brown silt with fine gravel. Clasts were predominantly ½ to 2 inches in diameter with some up to 4 inches in diameter. **Unit 6 -** red-brown clay with some gravel, minor calcium carbonate staining. Very stiff between 125 feet and 160 feet down trench. Clasts were observed to be subrounded to subangular and ranging from 1 to 3 inches in diameter. Contains approximately 10 to 15 percent gravel. **Unit 7 -** Clast supported and massive from 20 to 35 feet down trench. The remainder of this unit was observed to be matrix supported and massive. Red-brown clay with calcium carbonate staining throughout. Clasts were observed to be subrounded to subangular and predominantly 1 to 2 inches in diameter with some 4 to 6 inches in diameter and consisting of light red and grey slightly weathered quartzite, occasional slightly weathered andesite and highly weathered and friable sandstone.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

X – Radiocarbon Sample

Stringline

logged by S. Agopian

Plate B-6

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

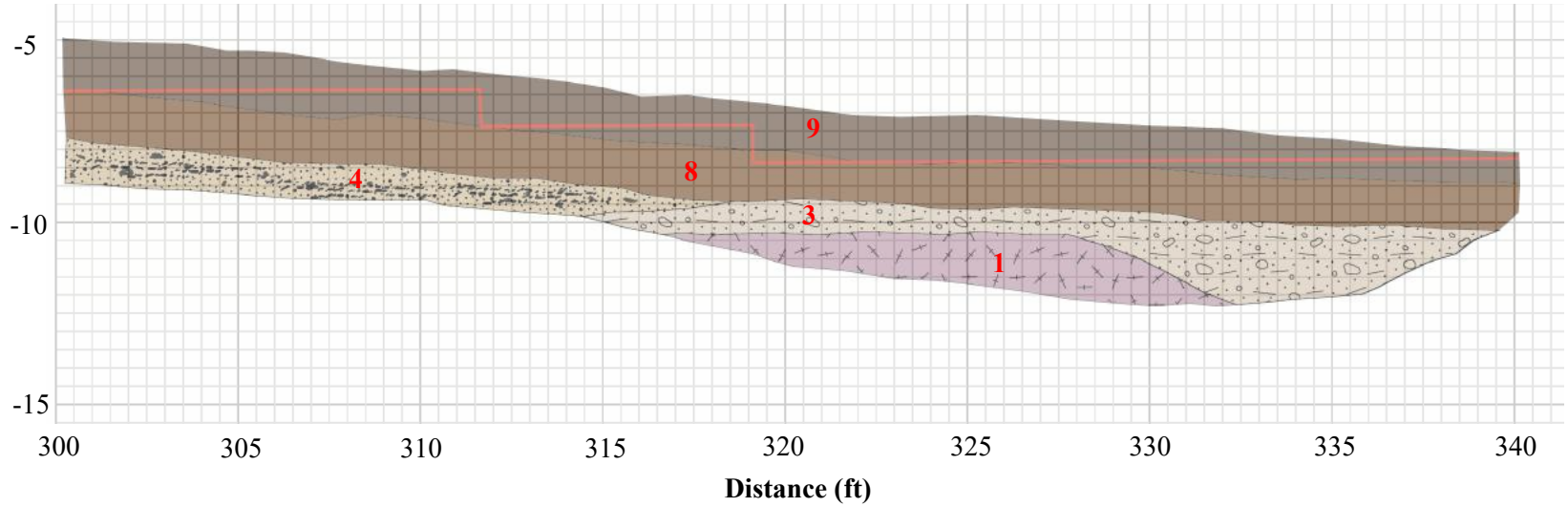
Trench 1A Log
250 to 300 feet

GeoStrata
Copyright GeoStrata 1027

TRENCH 1A EAST WALL

North **South**

Trench Orientation: N15°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Andesite Block: Highly weathered and friable light purple andesite block.

Unit 3 – Lake Bonneville Gravel with Sand (Qlgb, upper Pleistocene): Clast supported, massive light brown coarse gravel and cobbles with fine to coarse sand. Clasts were observed to be well rounded to subrounded and range from 1 to 6 inches in diameter. Six-inch-thick cobble layer was observed at the top of this unit.

Unit 4 – Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit between approximately 195 and 225 feet. Occasional 1- to 2-inch-thick fine sand lenses.

Unit 8 – B-Soil Horizon: Red-brown clay and gravel. Roots throughout.

Unit 9 – A-Soil Horizon: Brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-7

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

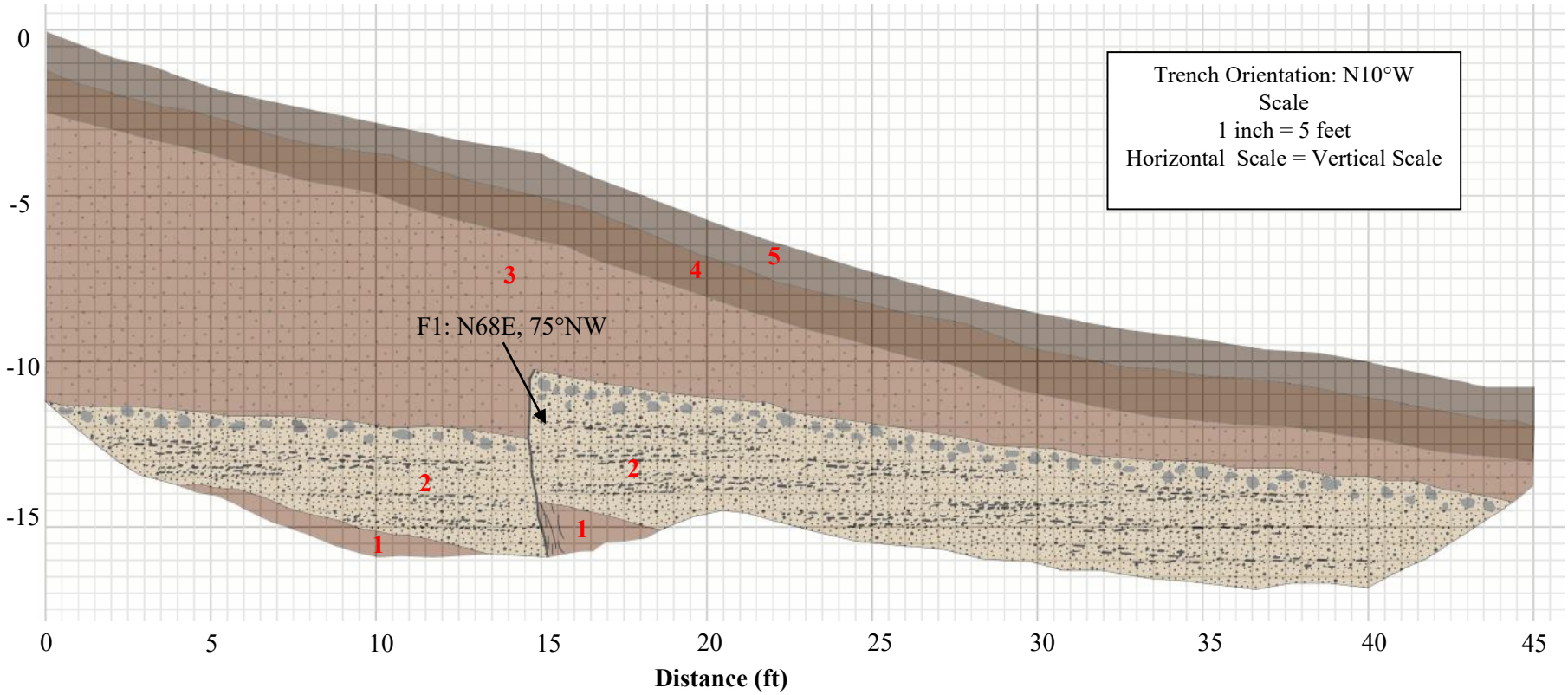
Trench 1A Log
250 to 300 feet

GeoStrata
Copyright GeoStrata 1028

TRENCH 1B EAST WALL

North

South



LEGEND

Unit 1 – Lake Bonneville Lacustrine Clay: Matrix supported, massive, red-brown clay.

Unit 2 – Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts ranged from 1 to 3 inches, well rounded to subrounded and comprised of quartzite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit.

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown clay with some gravel. Grades into a silt with gravel. Clasts were subangular to subrounded and 1 to 2 inches in diameter.

Unit 4 – B Soil Horizon: Red-brown clay and gravel. Numerous roots throughout.

Unit 5 – A Soil Horizon: Similar to Unit 4. Brown.

Stringline

logged by S. Agopian

Plate B-8

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

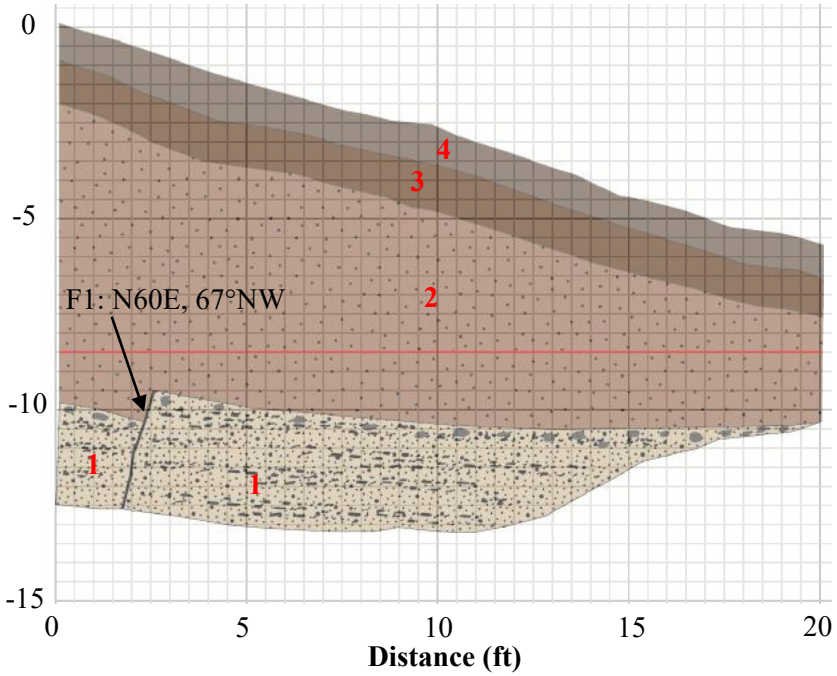
Trench 1B Log
0 to 45 feet

GeoStrata
Copyright GeoStrata 1029

TRENCH 1C EAST WALL

North **South**

Trench Orientation: N20°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts ranged from 1 to 3 inches, well rounded to subrounded and comprised of quartzite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit.

Unit 2 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown clay with some gravel. Grades into a silt with gravel. Clasts were subangular to subrounded and 1 to 2 inches in diameter.

Unit 4 – B Soil Horizon: Red-brown clay and gravel. Numerous roots throughout.

Unit 5 – A Soil Horizon: Similar to Unit 4. Brown.

Stringline

logged by S. Agopian

Plate B-9

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

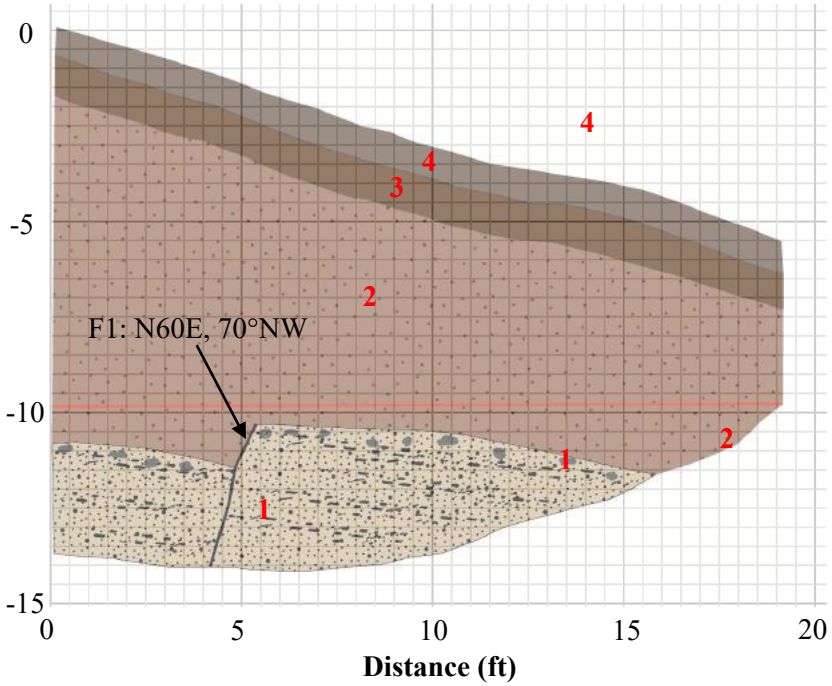
Trench 1C Log
0 to 20 feet

GeoStrata
Copyright GeoStrata 1030

TRENCH 1D EAST WALL

North **South**

Trench Orientation: N15°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts ranged from 1 to 3 inches, well rounded to subrounded and comprised of quartzite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit.

Unit 2 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown clay with some gravel. Grades into a silt with gravel. Clasts were subangular to subrounded and 1 to 2 inches in diameter.

Unit 4 – B Soil Horizon: Red-brown clay and gravel. Numerous roots throughout.

Unit 5 – A Soil Horizon: Similar to Unit 4. Brown.

Stringline

logged by S. Agopian

Plate B-10

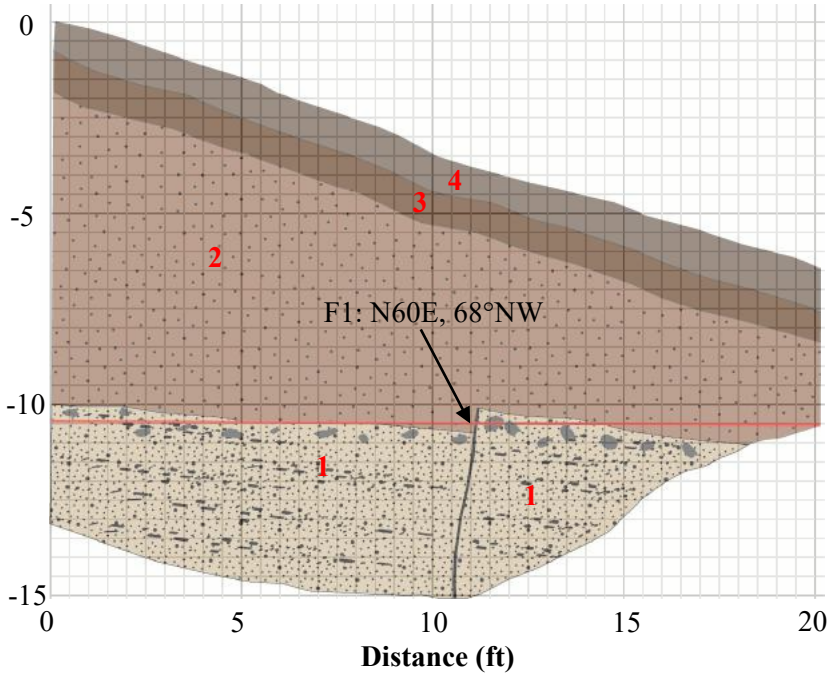
Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 1D Log
0 to 19 feet

GeoStrata
Copyright GeoStrata 1031

TRENCH 1E EAST WALL

North **South**



Trench Orientation: N20°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale

LEGEND

Unit 1 – Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts ranged from 1 to 3 inches, well rounded to subrounded and comprised of quartzite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit.

Unit 2 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown clay with some gravel. Grades into a silt with gravel. Clasts were subangular to subrounded and 1 to 2 inches in diameter.

Unit 4 – B Soil Horizon: Red-brown clay and gravel. Numerous roots throughout.

Unit 5 – A Soil Horizon: Similar to Unit 4. Brown.

Stringline

logged by S. Agopian

Plate B-11

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

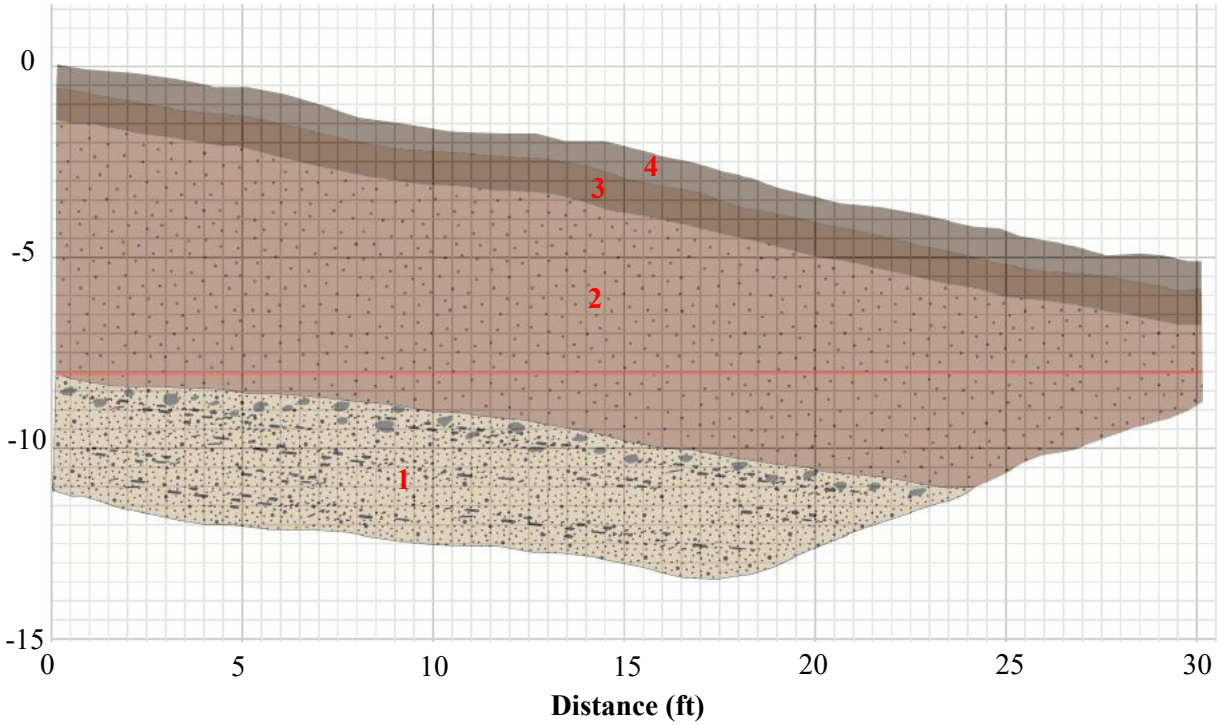
Trench 1E Log
0 to 20 feet

GeoStrata
Copyright GeoStrata 1032

TRENCH 1F EAST WALL

North

South



Trench Orientation: N25°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale

LEGEND

Unit 1 – Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts ranged from 1 to 3 inches, well rounded to subrounded and comprised of quartzite. Cobbles 4 to 6 inches in diameter were observed at the top of this unit.

Unit 2 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown clay with some gravel. Grades into a silt with gravel. Clasts were subangular to subrounded and 1 to 2 inches in diameter.

Unit 4 – B Soil Horizon: Red-brown clay and gravel. Numerous roots throughout.

Unit 5 – A Soil Horizon: Similar to Unit 4. Brown.

Stringline

logged by S. Agopian

Plate B-12

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

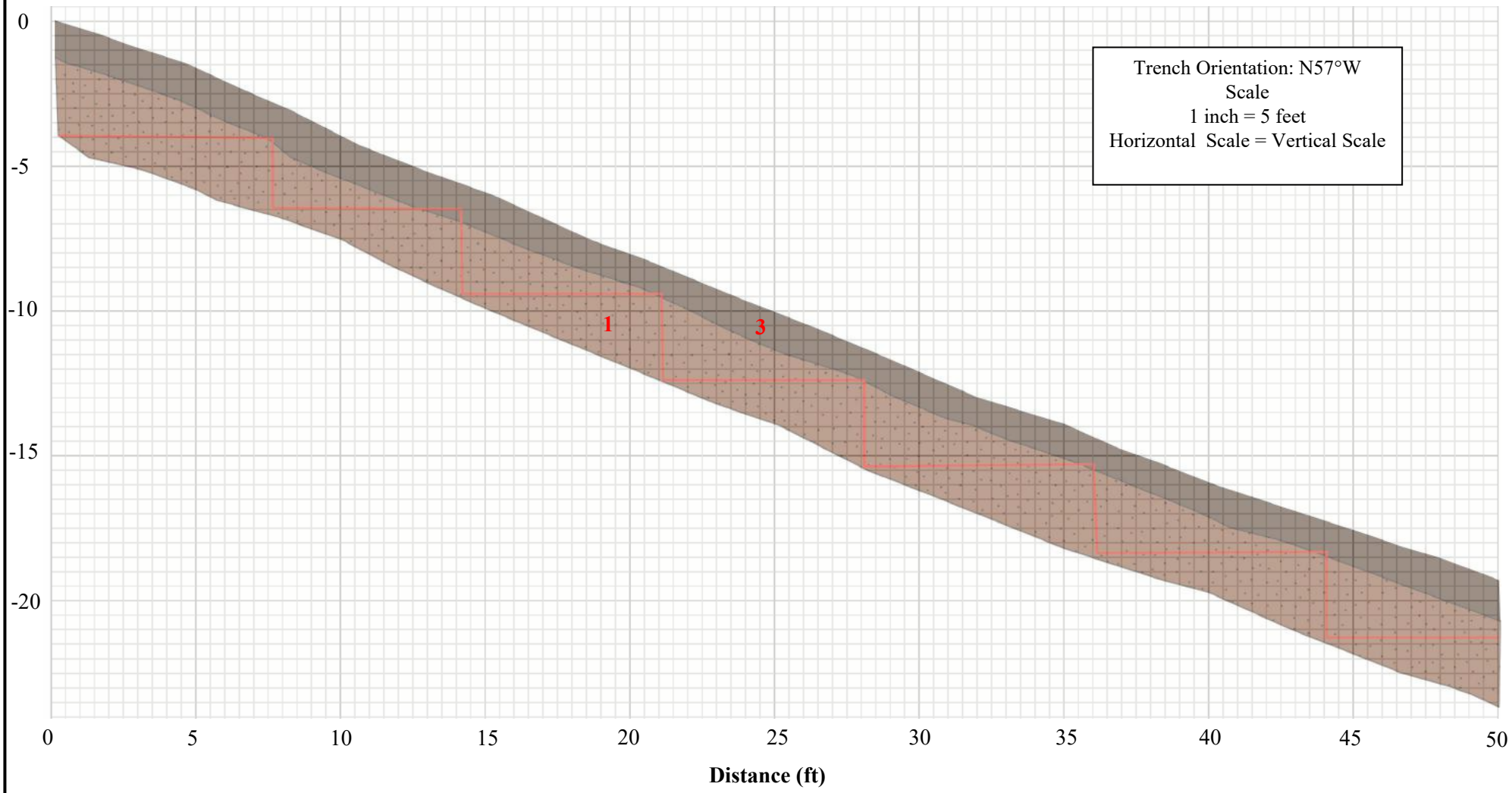
Trench 1F Log
0 to 30 feet

GeoStrata
Copyright GeoStrata 1033

TRENCH 2A EAST WALL

North

South



LEGEND

Unit 1 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown clay and silt with calcium carbonate stringers throughout. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter with occasional clasts up to 6 inches in diameter and comprised of feldspar rich quartzite.

Unit 3 – TOPSOIL; brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-13

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

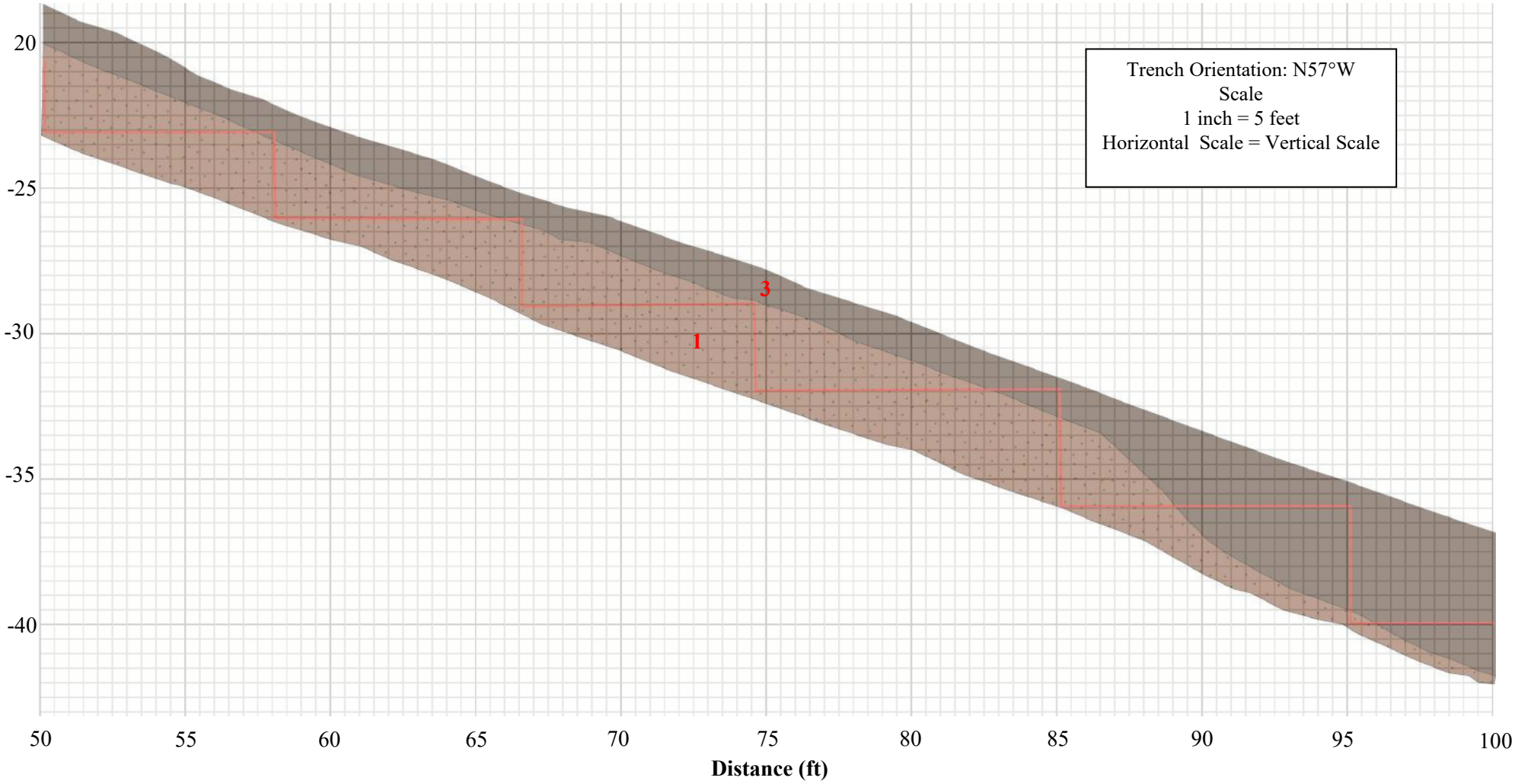
Trench 2A Log
0 to 50 feet

GeoStrata
Copyright GeoStrata 1034

TRENCH 2A EAST WALL

North

South



LEGEND

Unit 1 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown clay and silt with calcium carbonate stringers throughout. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter with occasional clasts up to 6 inches in diameter and comprised of feldspar rich quartzite.

Unit 3 – TOPSOIL; brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-14

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

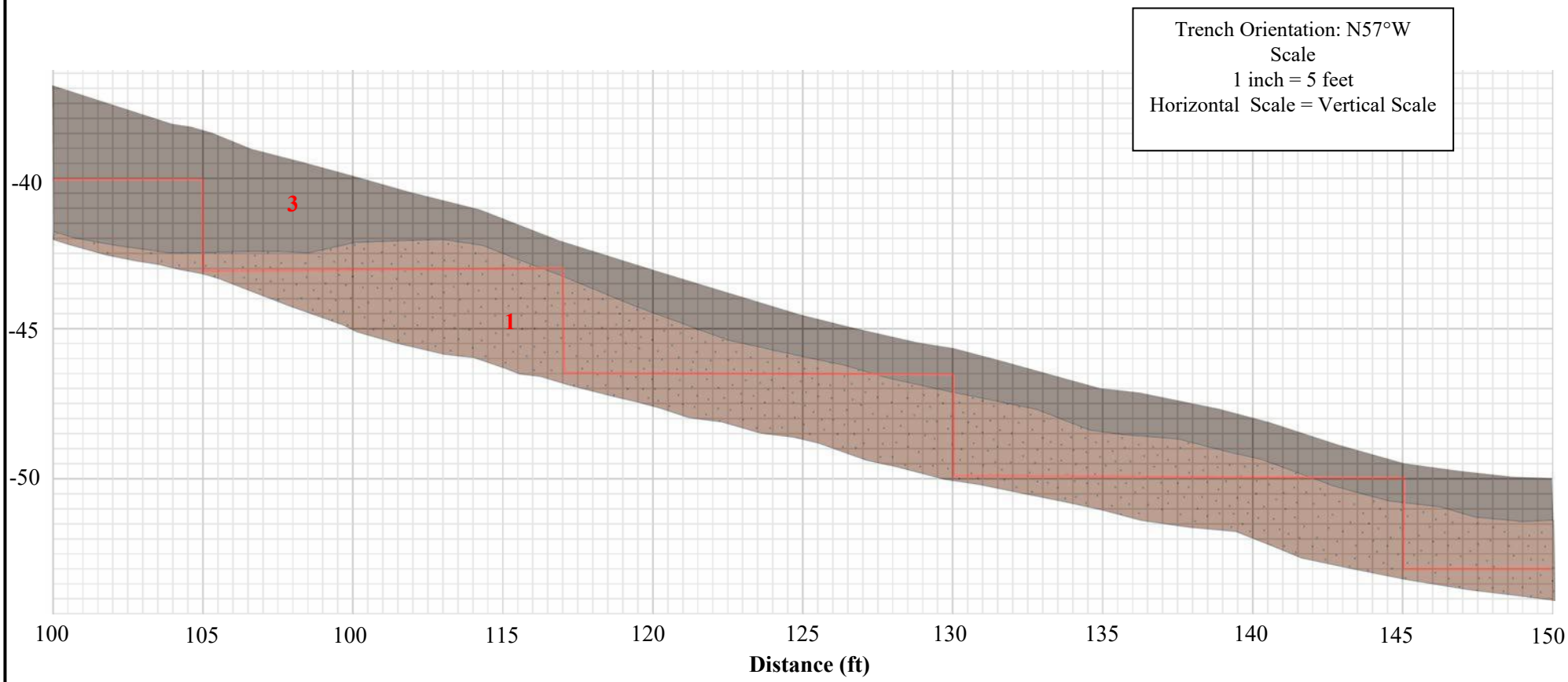
Trench 2A Log
50 to 100 feet

GeoStrata
Copyright GeoStrata 1035

TRENCH 2A EAST WALL

North

South



LEGEND

Unit 1 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown clay and silt with calcium carbonate stringers throughout. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter with occasional clasts up to 6 inches in diameter and comprised of feldspar rich quartzite.

Unit 3 – TOPSOIL; brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-15

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

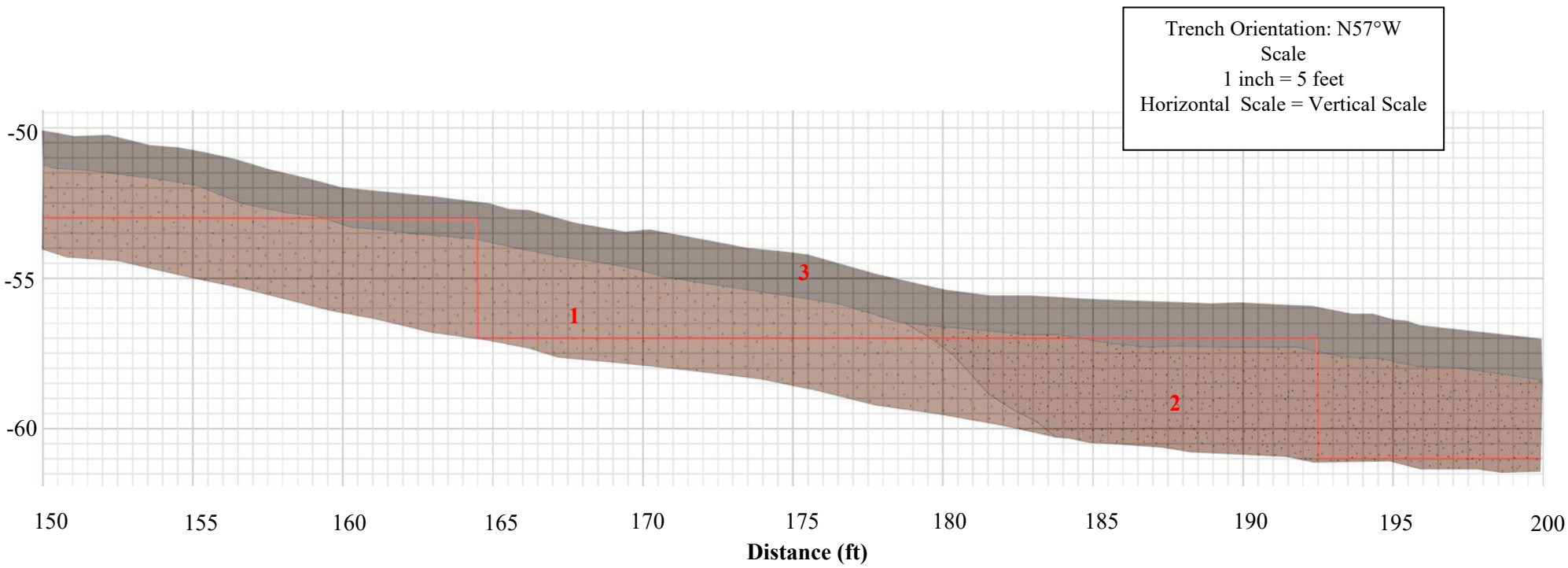
Trench 2A Log
100 to 150 feet

GeoStrata
Copyright GeoStrata 1036

TRENCH 2A EAST WALL

North

South



LEGEND

Unit 1 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown clay and silt with some gravel. Calcium carbonate stringers throughout. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter with occasional clasts up to 6 inches in diameter and comprised of feldspar rich quartzite.

Unit 2 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown silt and fine sand with some gravel. Less rock than Unit 1. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter and comprised of feldspar rich quartzite.

Unit 3 – TOPSOIL; brown clay and gravel. Numerous roots throughout.

Stringline

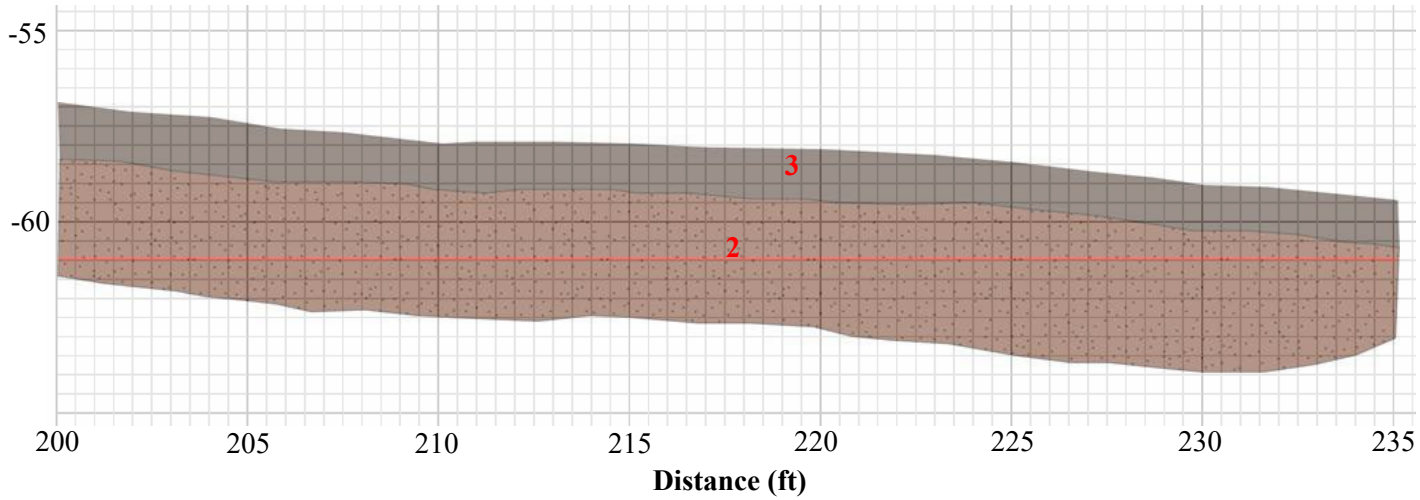
logged by S. Agopian

Plate B-16	Geologic Hazards Investigation DR Horton Micron Property Development Lehi, Utah Project Number: 589-100	**Trench 2A Log 150 to 200 feet**	GeoStrata Copyright GeoStrata **1037**

TRENCH 2A EAST WALL

North **South**

Trench Orientation: N57°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 – Colluvium and/or Alluvium: Matrix supported and massive, red-brown silt and fine sand with some gravel. Less rock than Unit 1. Clasts were observed to be subrounded to angular, approximately 1 to 3 inches in diameter and comprised of feldspar rich quartzite.

Unit 3 – TOPSOIL; brown clay and gravel. Numerous roots throughout.

Stringline

logged by S. Agopian

Plate B-17

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

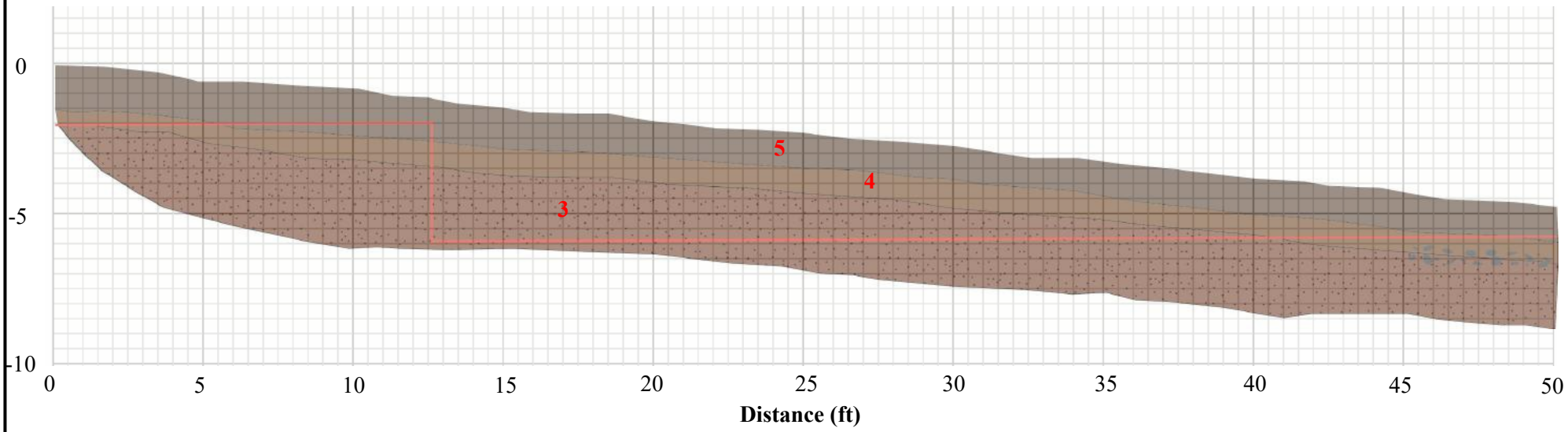
Trench 2A Log
200 to 235 feet

GeoStrata
Copyright GeoStrata 1038

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel, pockets of clay between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-18

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

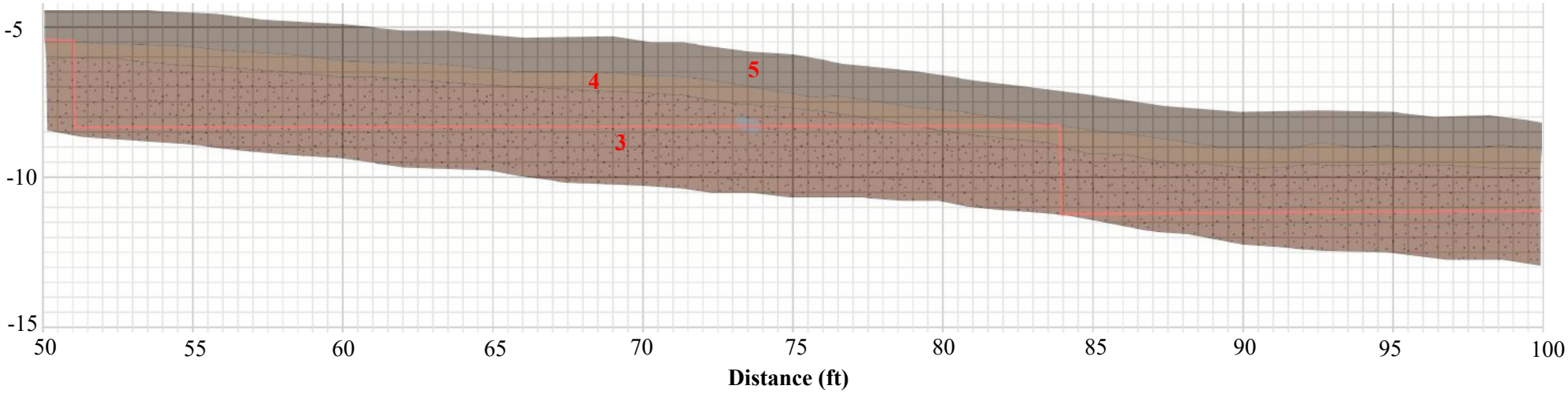
Trench 2B Log
0 to 50 feet

GeoStrata
Copyright GeoStrata 1039

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel, pockets of clay between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-19

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

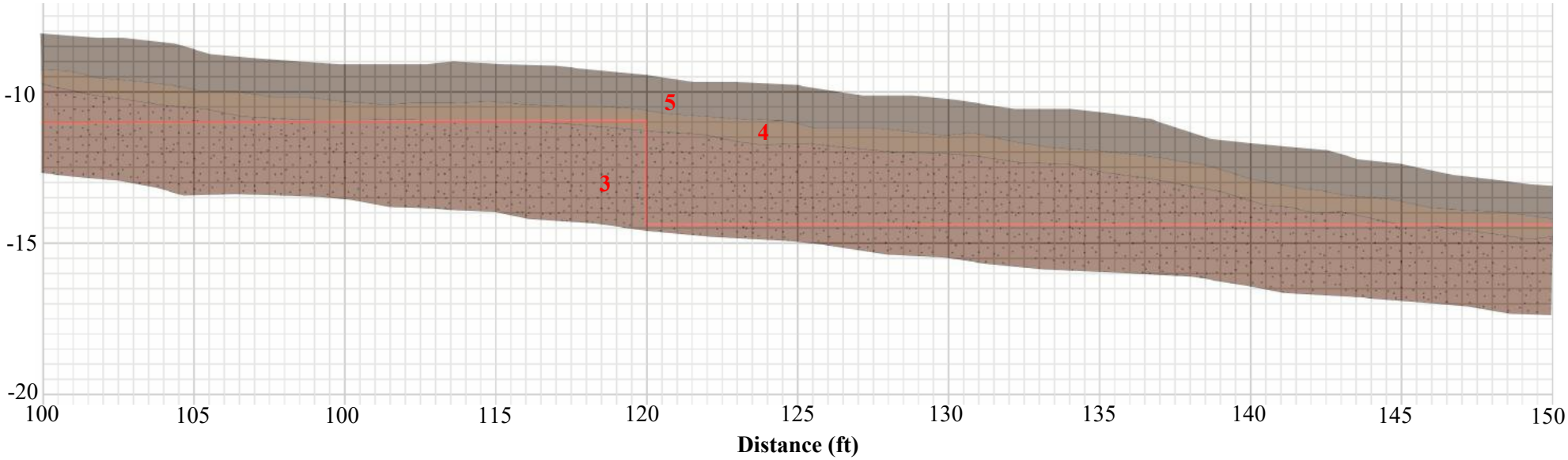
Trench 2B Log
50 to 100 feet

GeoStrata
Copyright GeoStrata 1040

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel, pockets of clay between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-20

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

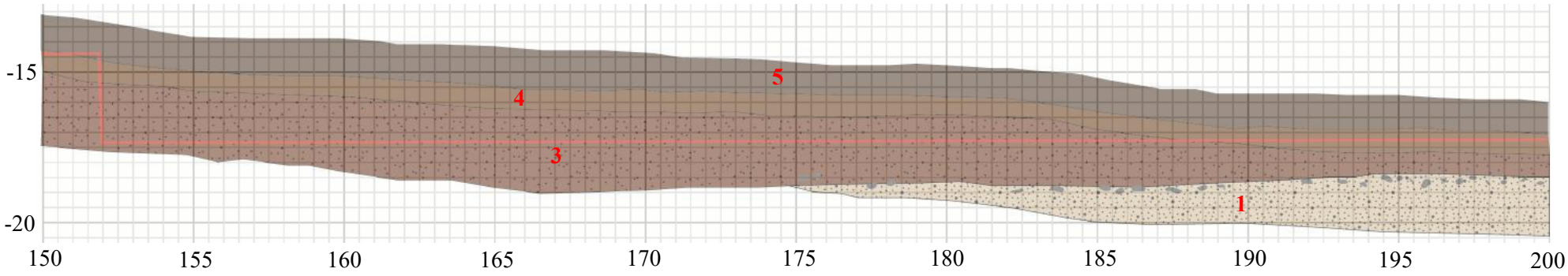
Trench 2B Log
100 to 150 feet

GeoStrata
Copyright GeoStrata 1041

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



Distance (ft)

LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel, pockets of clay between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter.

Unit 4 – B Soil Horizon ***Unit 5 – A Soil Horizon***

Stringline

logged by S. Agopian

Plate B-21

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

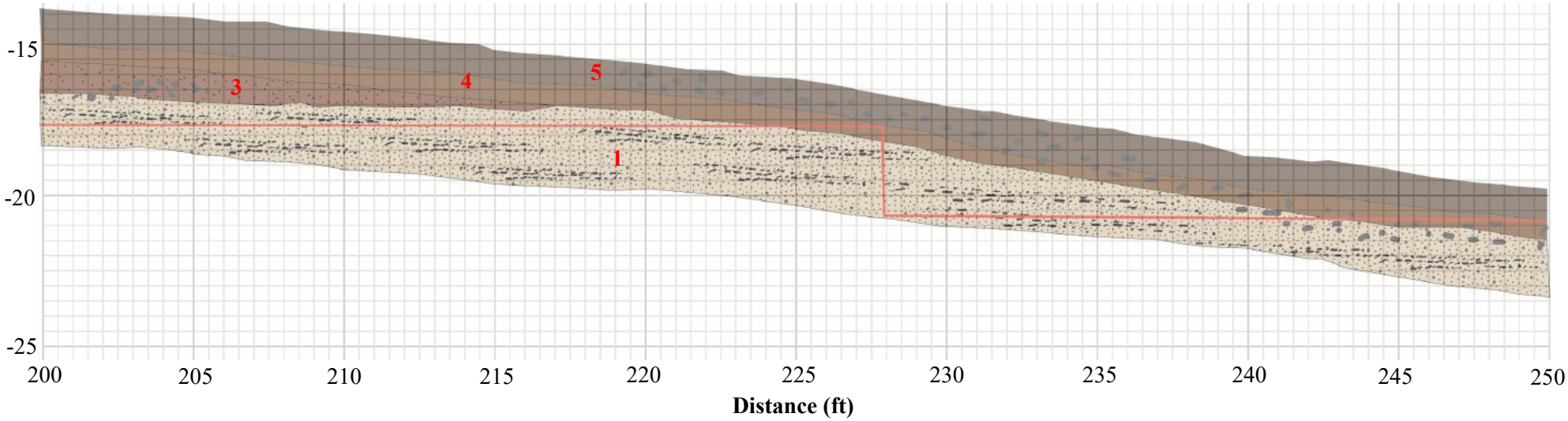
Trench 2B Log
150 to 200 feet

GeoStrata
Copyright GeoStrata 1042

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel, pockets of clay between 120 feet to 150 feet down trench. Clasts were observed to be subrounded to angular and approximately 1 to 3 inches in diameter.

Unit 4 – B Soil Horizon ***Unit 5 – A Soil Horizon***

Stringline

logged by S. Agopian

Plate B-22

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

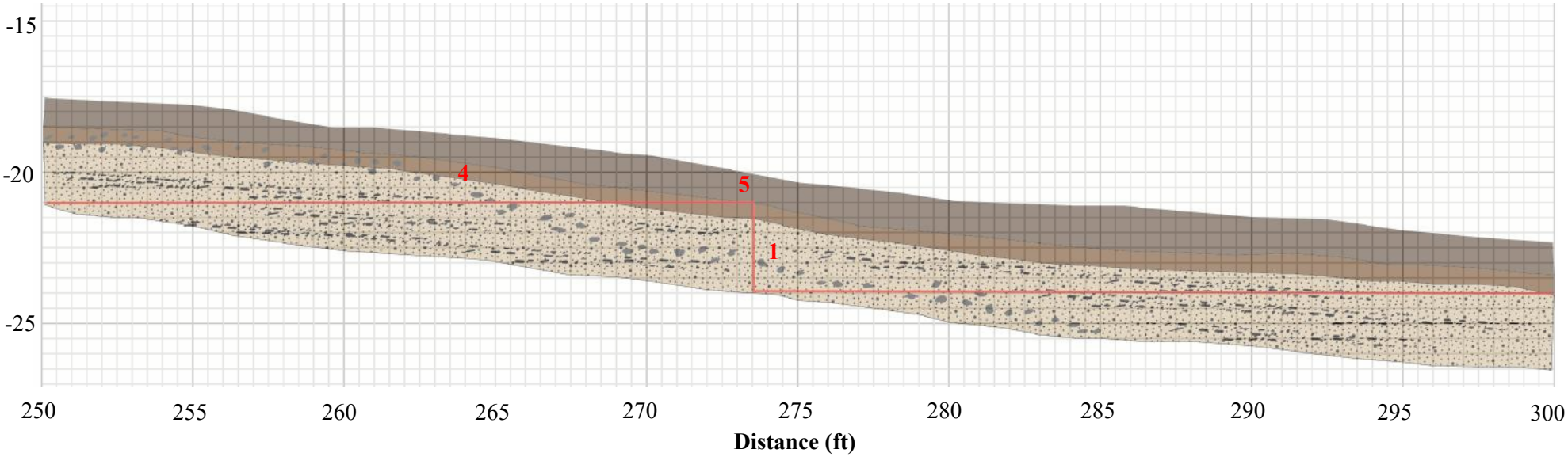
Trench 2B Log 200 to 250 feet

GeoStrata
Copyright GeoStrata 1043

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-23

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

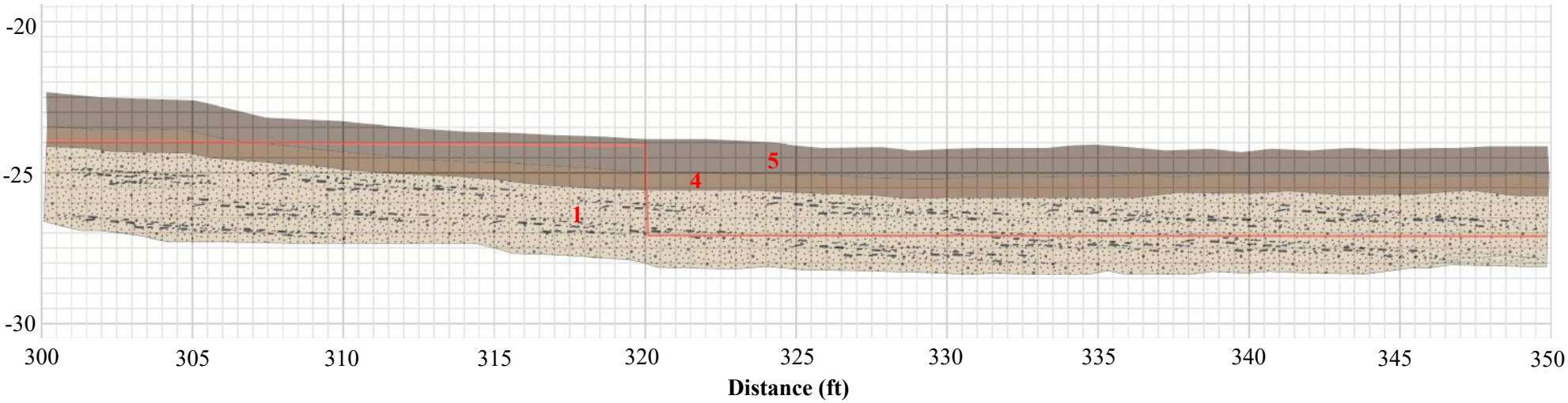
Trench 2B Log
250 to 300 feet

GeoStrata
Copyright GeoStrata 1044

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-24

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

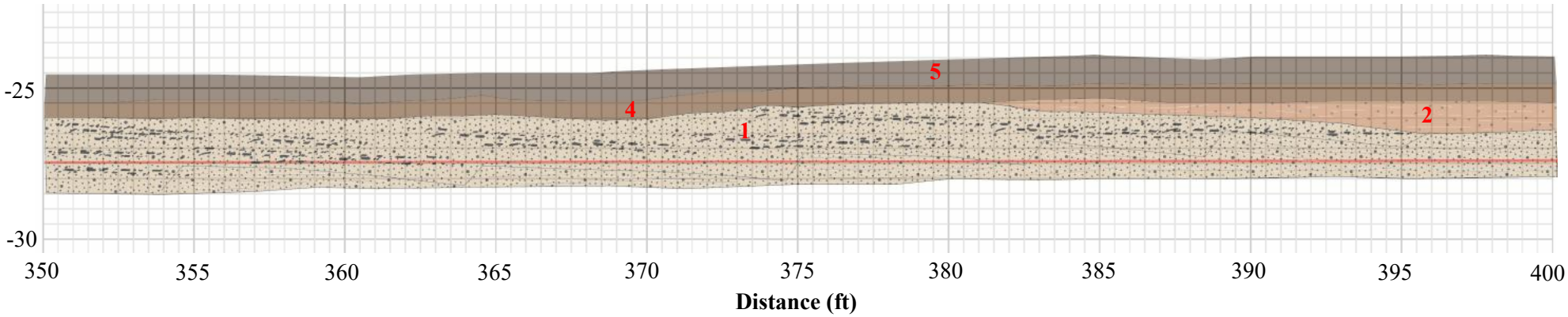
Trench 2B Log 300 to 350 feet

GeoStrata
Copyright GeoStrata 1045

TRENCH 2B EAST WALL

North **South**

Trench Orientation: N33°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 2 – Lake Bonneville Silt and Sand (Qlsp, upper Pleistocene): Matrix supported, massive to crudely bedded light red-brown silt and fine sand with calcium carbonate staining, slightly cemented.

Unit 4 – B Soil Horizon ***Unit 5 – A Soil Horizon***

Stringline

logged by S. Agopian

Plate B-25

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 2B Log 350 to 400 feet

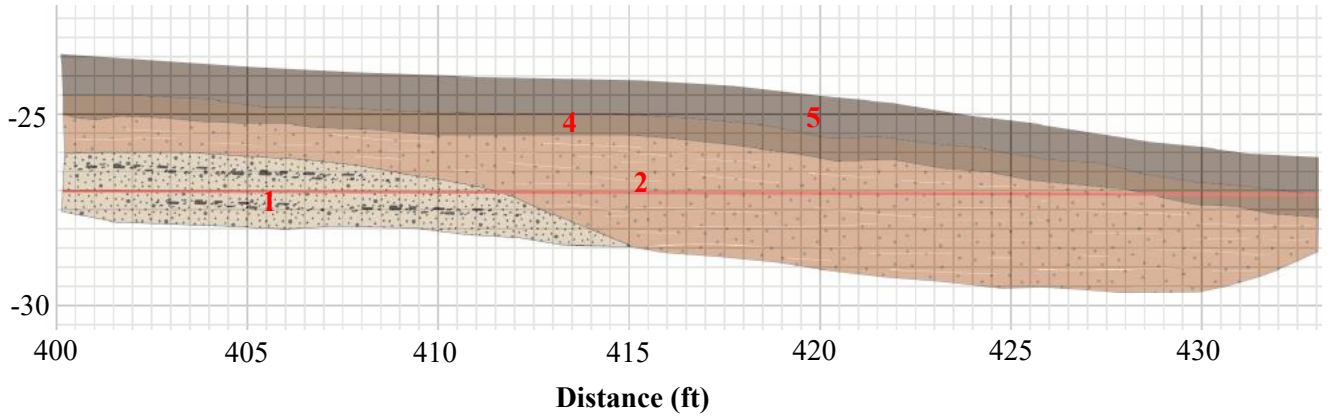
GeoStrata Copyright GeoStrata 1046

North

TRENCH 2B EAST WALL

South

Trench Orientation: N57°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1– Lake Bonneville Sand and Gravel (Qlgb, upper Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite. 1- to 2-inch-thick fine sand lenses between approximately 320 feet and 415 feet down trench. Occasional well rounded cobbles 4 to 6 inches in diameter on top of unit and between approximately 175 feet to 200 feet down trench.

Unit 2 – Lake Bonneville Silt and Sand (Qlsp, upper Pleistocene): Matrix supported, massive to crudely bedded light red-brown silt and fine sand with calcium carbonate staining, slightly cemented.

Unit 4 – B Soil Horizon

Unit 5 – A Soil Horizon

Stringline

logged by S. Agopian

Plate B-26

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

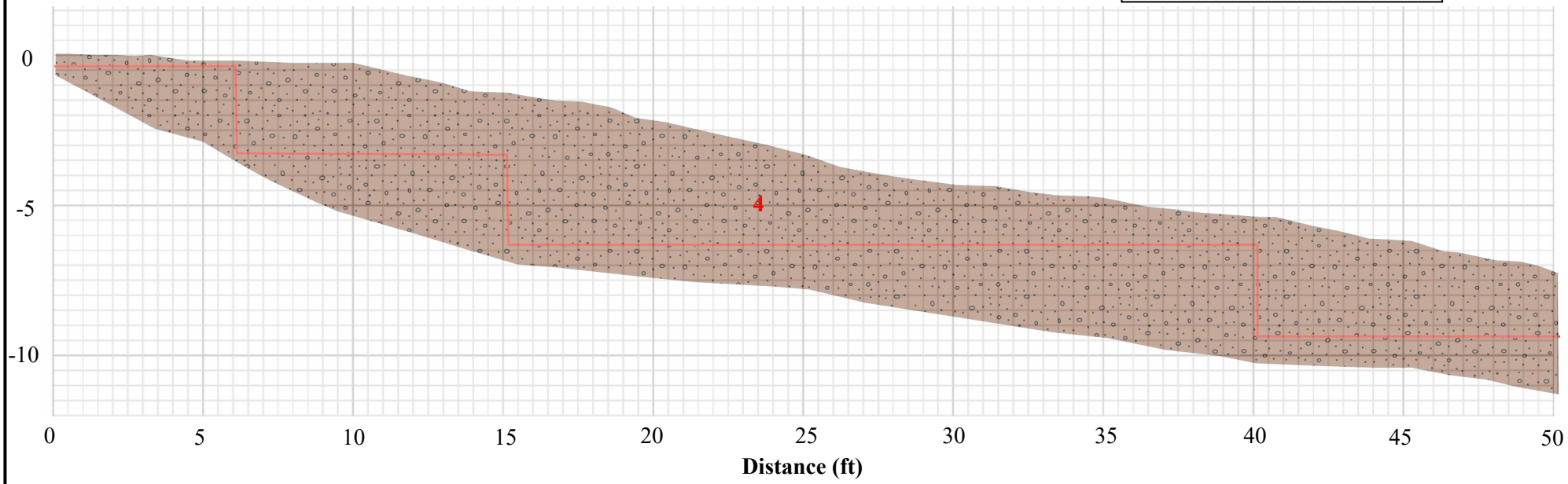
Trench 2B Log
400 to 433 feet

GeoStrata
Copyright GeoStrata 1047

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 4 – Alluvial Fan Deposits: Matrix supported and massive red-brown silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter, occasional 4 to 5 inches in diameter. Contains several clast supported, and bedded stream gravel lenses.

Stringline

logged by S. Agopian

Plate B-27

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

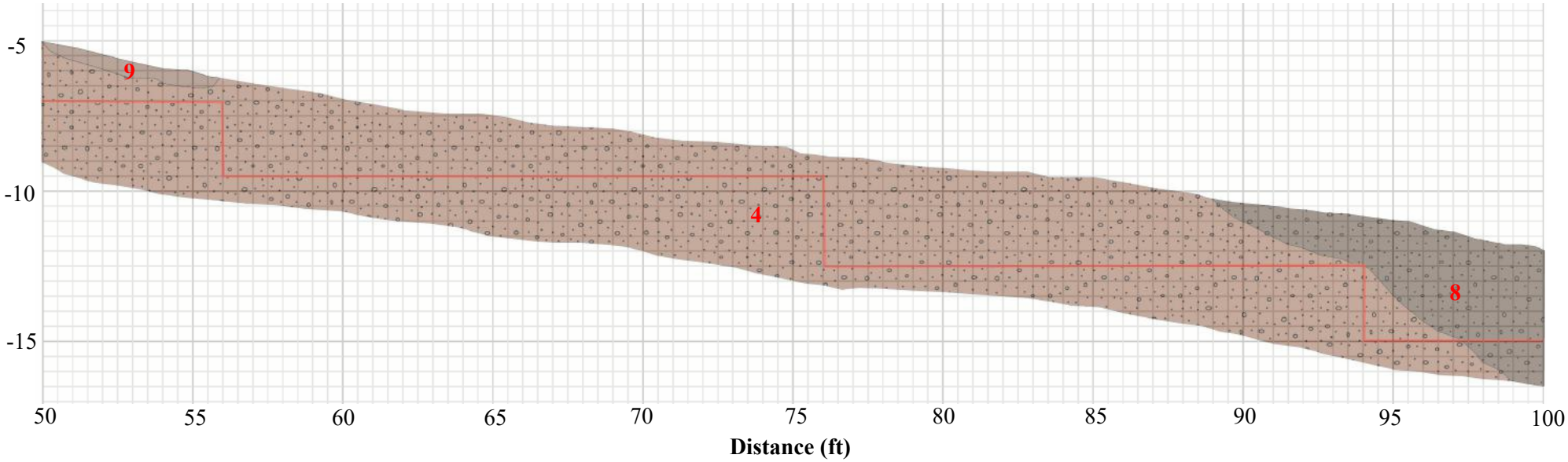
Trench 3 Log
0 to 50 feet

GeoStrata
Copyright GeoStrata 1048

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 4 – Alluvial Fan Deposits (Qaf$_1$): Matrix supported and massive red-brown silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter, occasional 4 to 5 inches in diameter. Contains several clast supported, and bedded stream gravel lenses.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-28

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
50 to 100 feet

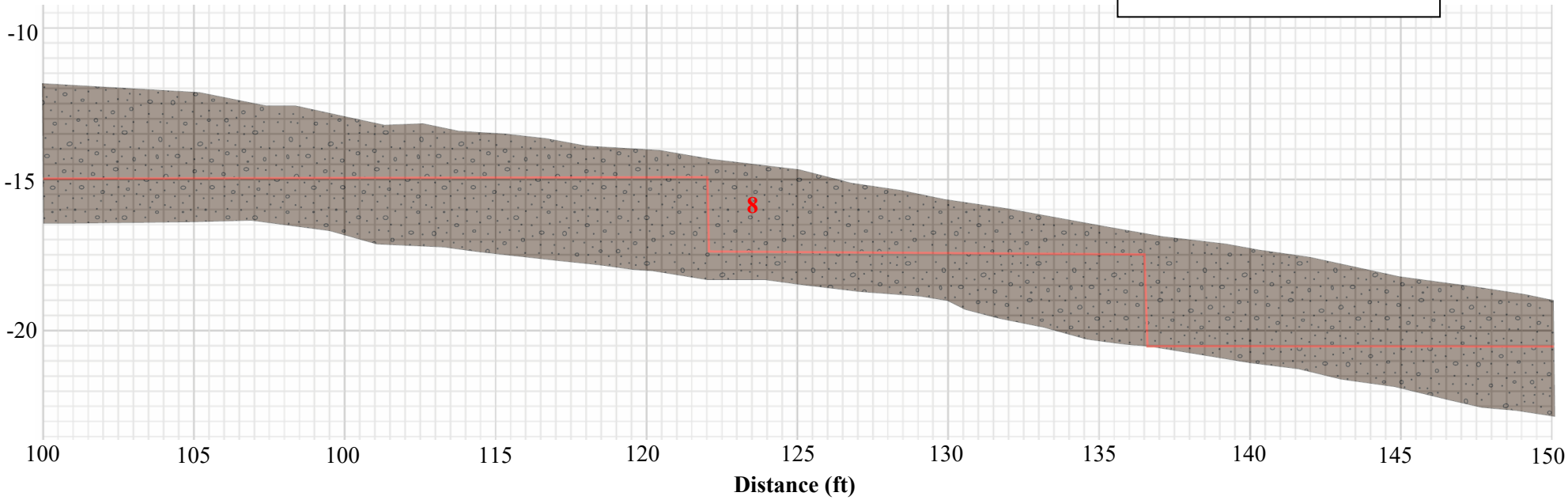
GeoStrata
Copyright GeoStrata 1049

TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-29

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
100 to 150 feet

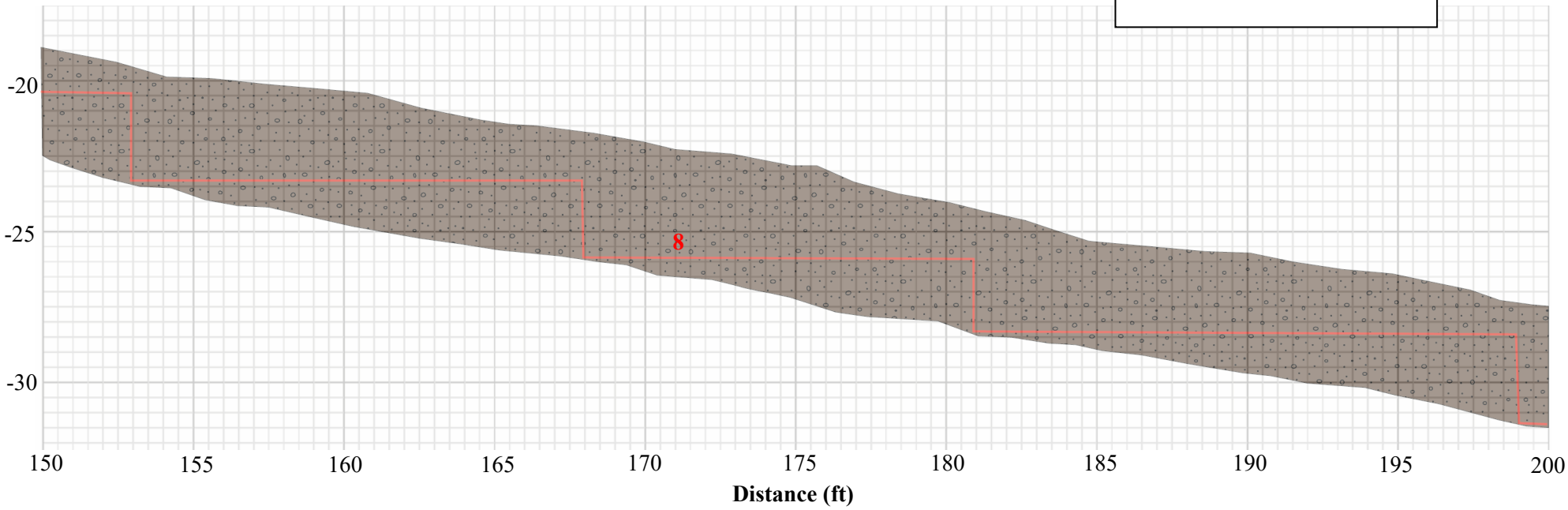
GeoStrata
Copyright GeoStrata
1050

TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

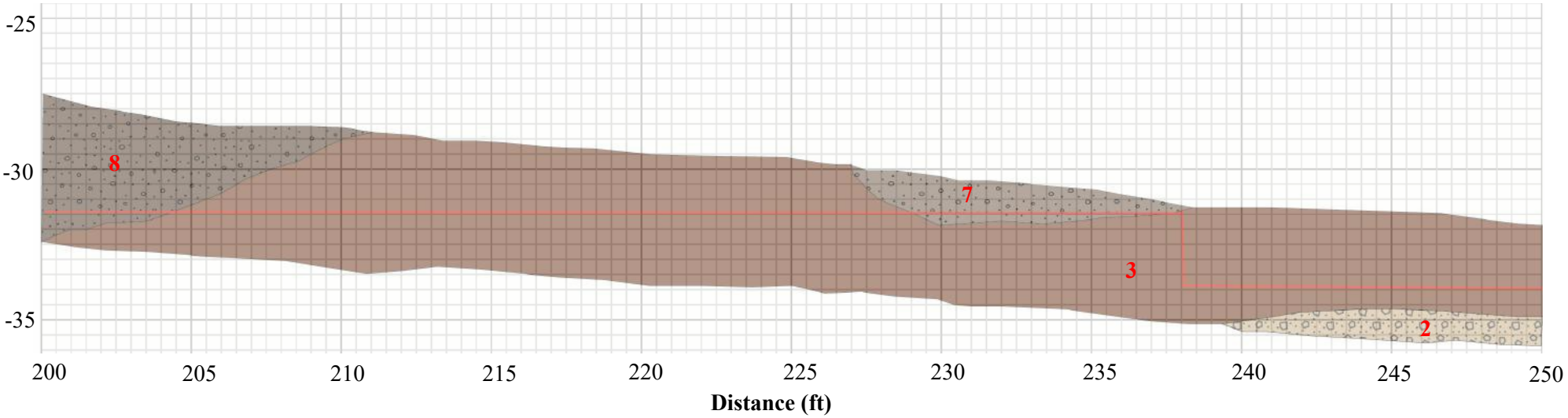
Stringline
logged by S. Agopian

Plate B-30	Geologic Hazards Investigation DR Horton Micron Property Development Lehi, Utah Project Number: 589-100	**Trench 3 Log 150 to 200 feet**	GeoStrata Copyright GeoStrata **1051**

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-31

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

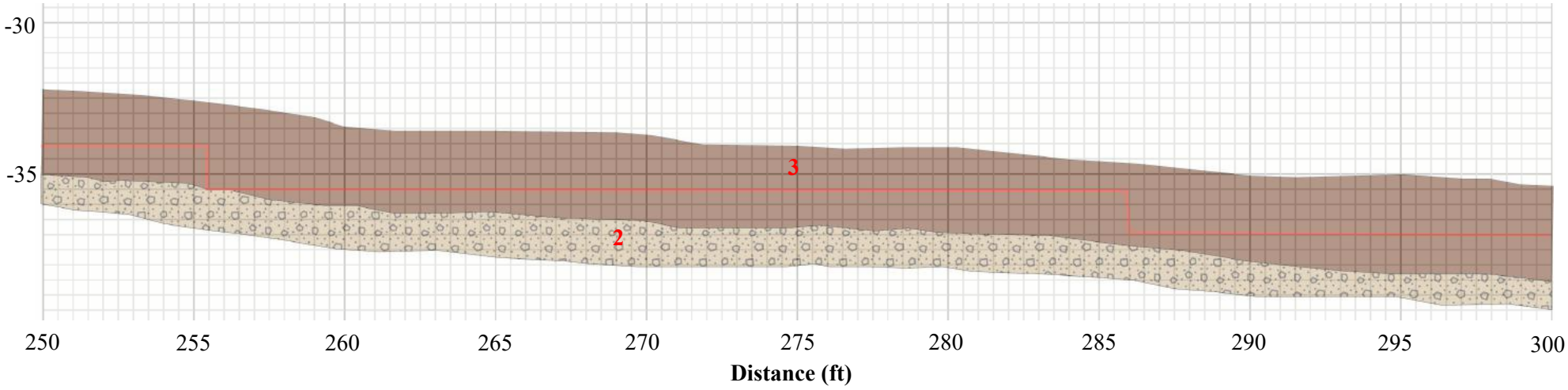
Trench 3 Log
200 to 250 feet

GeoStrata
Copyright GeoStrata 1052

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Stringline

logged by S. Agopian

Plate B-32

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

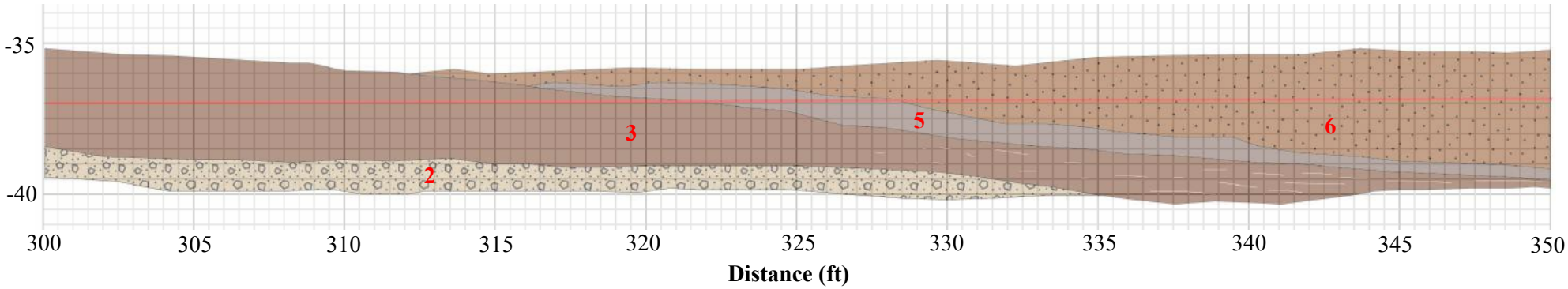
Trench 3 Log
250 to 300 feet

GeoStrata
Copyright GeoStrata 1053

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 2 - Lake Bonneville Sand and Gravel (Pleistocene): Clast supported, crudely bedded to bedded light brown fine gravel to coarse gravel and fine to coarse sand. Clasts were well rounded to subrounded and comprised of quartzite with trace amounts of andesite.

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-33

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
300 to 350 feet

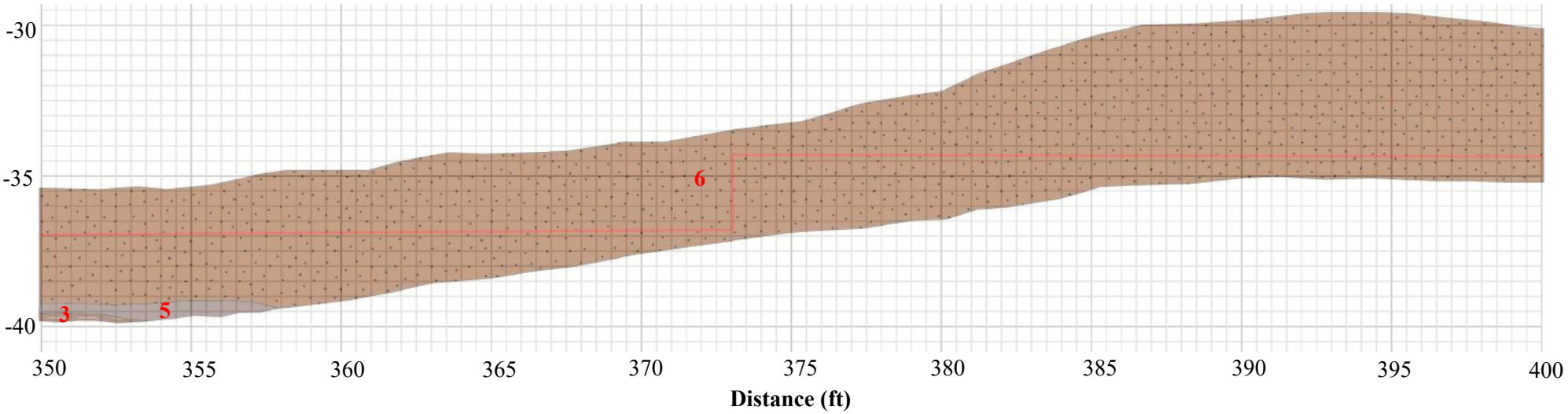
GeoStrata
Copyright GeoStrata 1054

TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 3 – Colluvium and/or Alluvium: Matrix supported and massive red-brown clay to silt with gravel. Subangular to subrounded clasts ranging from 1 to 3 inches in diameter. Calcium carbonate stringers between approximately 327 feet and 354 feet down trench.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-34

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

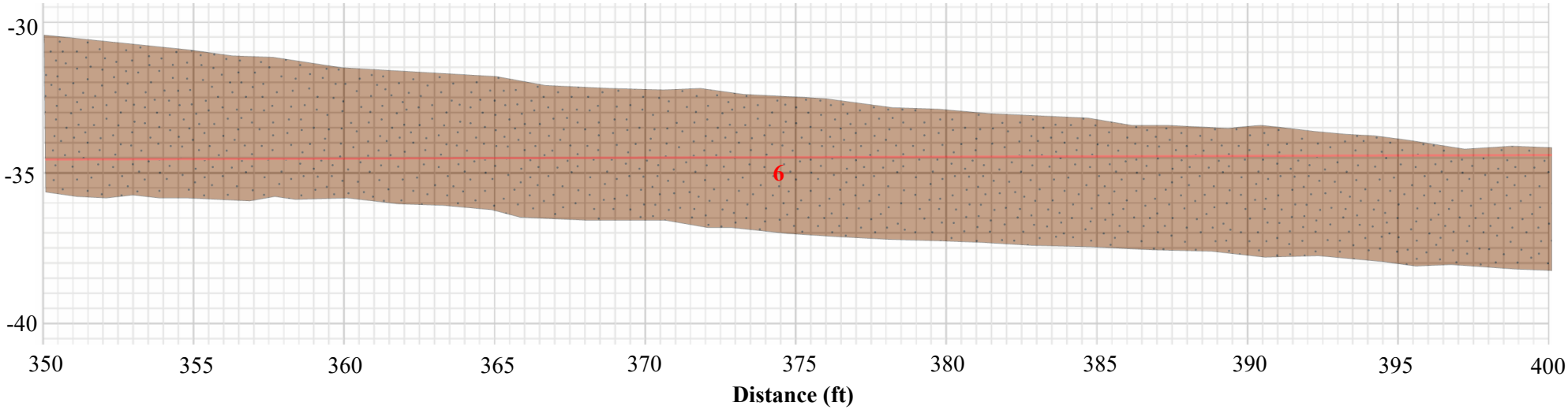
Trench 3 Log
350 to 400 feet

GeoStrata
Copyright GeoStrata 1055

TRENCH 3 EAST WALL

North **South**

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 5, 6, 7, 8, 9- FILL

Stringline
logged by S. Agopian

Plate B-35

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 3 Log
350 to 400 feet

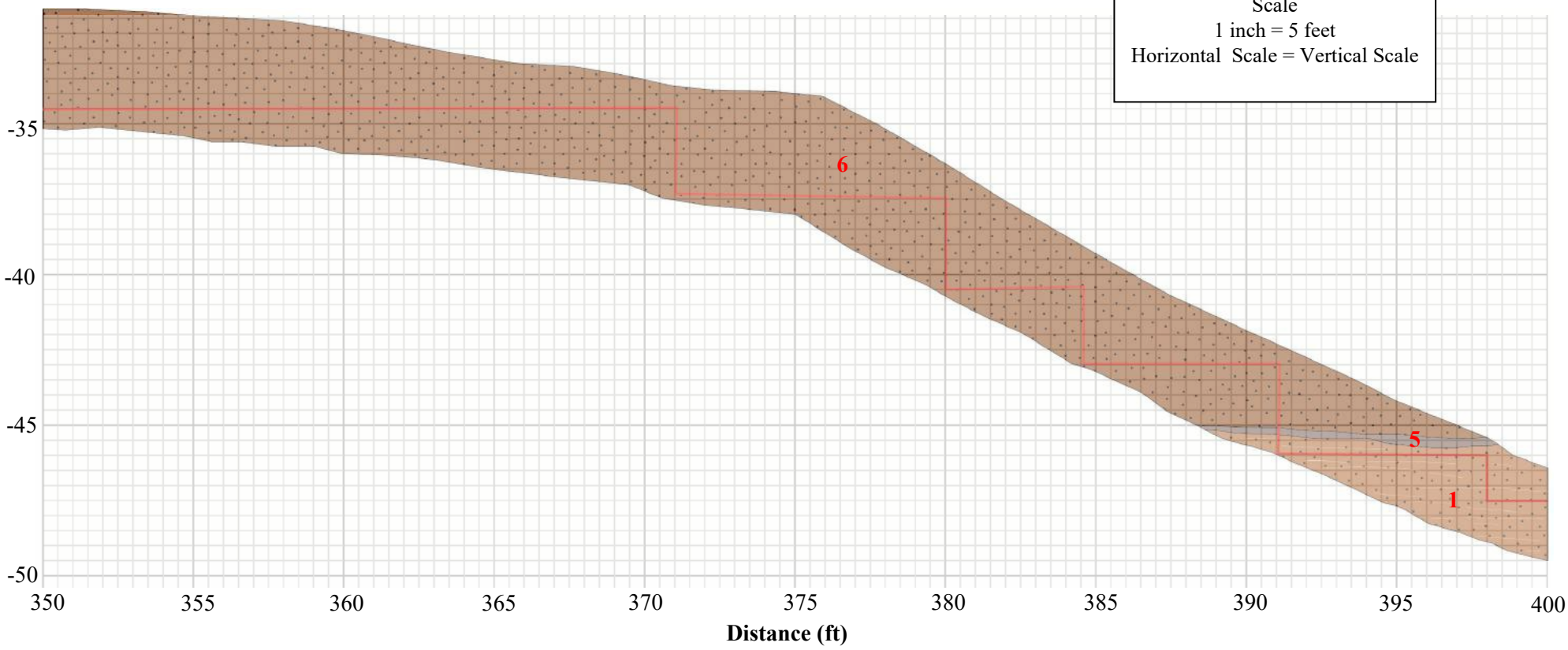
GeoStrata
Copyright GeoStrata 1056

TRENCH 3 EAST WALL

North

South

Trench Orientation: N27°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Lake Bonneville Silt and Sand (Qlsp, upper Pleistocene): Matrix supported, massive to crudely bedded light red-brown silt and fine sand with calcium carbonate staining, slightly cemented.

Unit 5, 6, 7, 8, 9- FILL

Stringline

logged by S. Agopian

Plate B-36

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

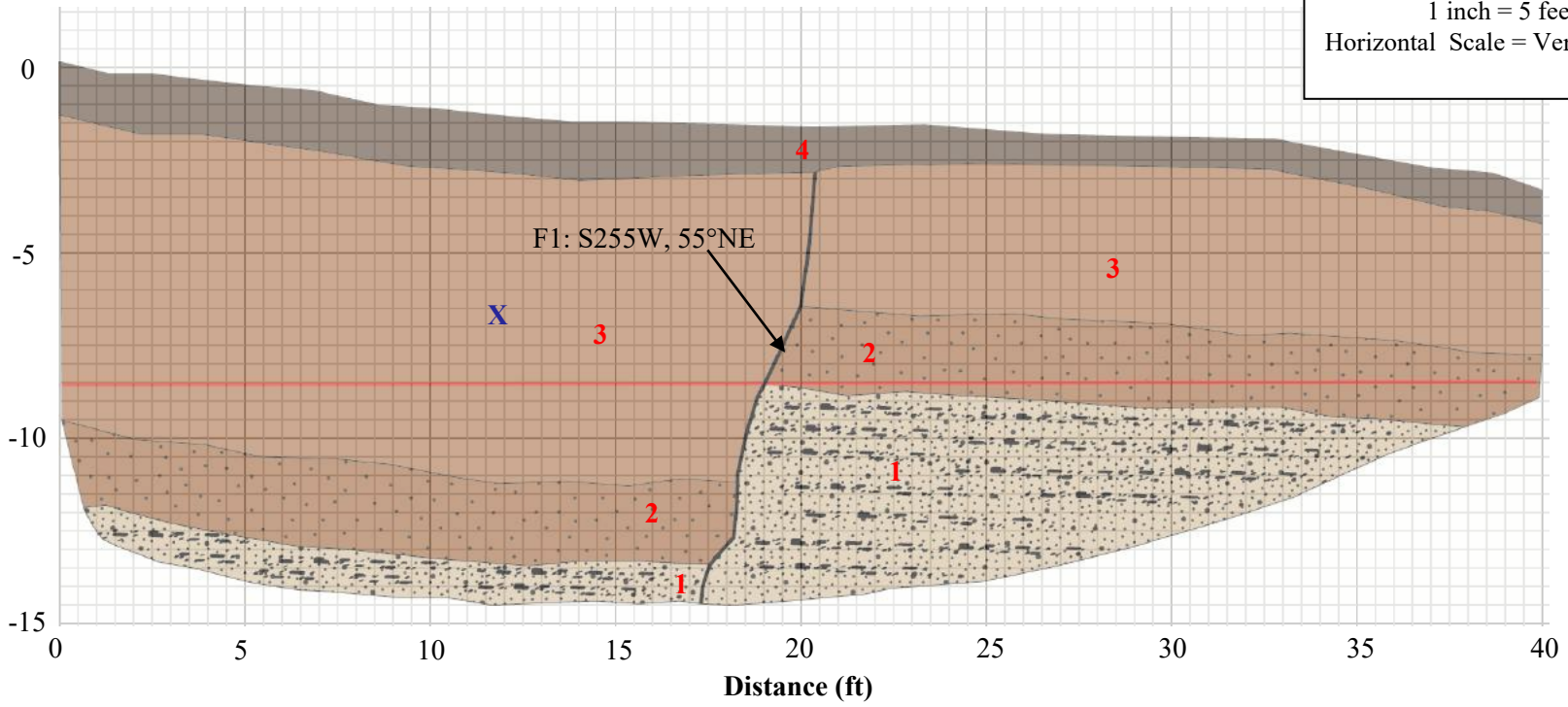
Trench 3 Log
350 to 400 feet

GeoStrata
Copyright GeoStrata 1057

TRENCH 4 EAST WALL

North **South**

Trench Orientation: N62°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Lake Bonneville sand and gravel (Qlgb, upper Pleistocene): Light tan and bedded 3- to 6-inch-thick layers of fine to coarse sand and gravel with some coarse sand. Clasts were observed to be well rounded to rounded and approximately ¼ inch to 3 inches in diameter with occasional 3 to 6 inches in diameter.

Unit 2 – Colluvium and/or Alluvium: Matrix supported, crudely bedded, red-brown silt with gravel. Clasts were observed to be approximately 1 to 2 inches in diameter and subrounded to rounded.

Unit 3 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel. Clasts were observed to be approximately ½ inch to 2 inches in diameter and subrounded to rounded.

Unit 4 - TOPSOIL

X – Radiocarbon Sample — Stringline

logged by S. Agopian

Plate B-37

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

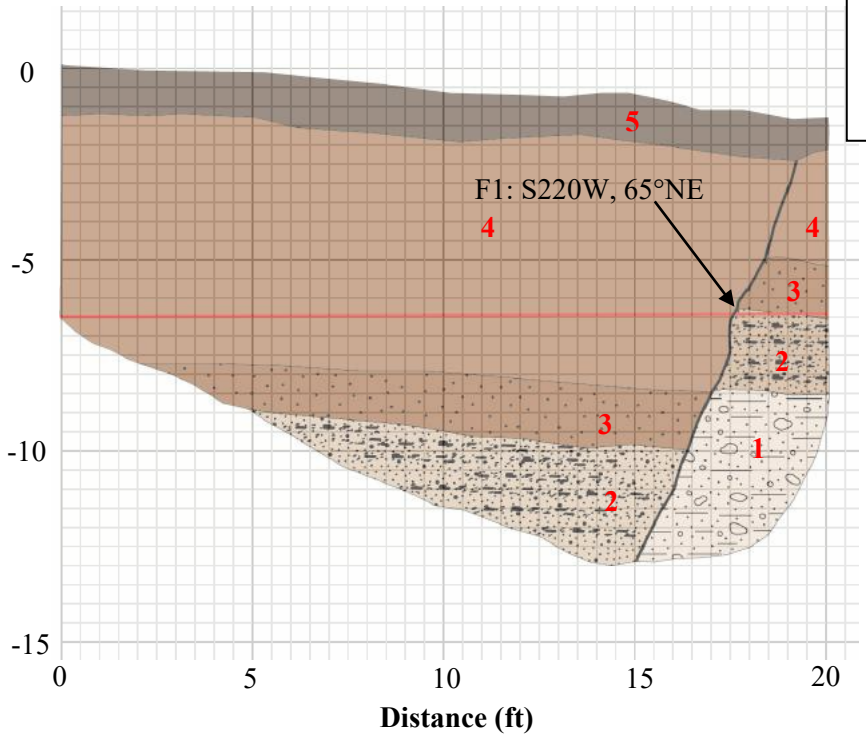
Trench 4 Log
0 to 30 feet

GeoStrata
Copyright GeoStrata 1058

TRENCH 5 EAST WALL

North **South**

Trench Orientation: N65°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 – Taf? (Tertiary Alluvial Fan): Clast supported, massive, red-brown gravel with clay and coarse sand. Clasts were observed to be subangular to subrounded andesite and quartzite approximately ½ to 4 inches in diameter.

Unit 2 – Lake Bonneville sand and gravel (upper Pleistocene): Light tan and bedded 3- to 6-inch-thick layers of fine to coarse sand and gravel with some coarse sand. Clasts were observed to be well rounded to rounded and approximately ¼ inch to 3 inches in diameter with occasional 3 to 6 inches in diameter.

Unit 3 – Colluvium and/or Alluvium: Matrix supported, crudely bedded, red-brown silt with gravel. Clasts were observed to be approximately 1 to 2 inches in diameter and subrounded to rounded.

Unit 4 – Colluvium and/or Alluvium: Matrix supported, massive, red-brown silt and sand with fine gravel. Clasts were observed to be approximately ½ inch to 2 inches in diameter and subrounded to angular.

Unit 5 - TOPSOIL

Stringline

logged by S. Agopian

Plate B-38

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 5 Log
0 to 20 feet

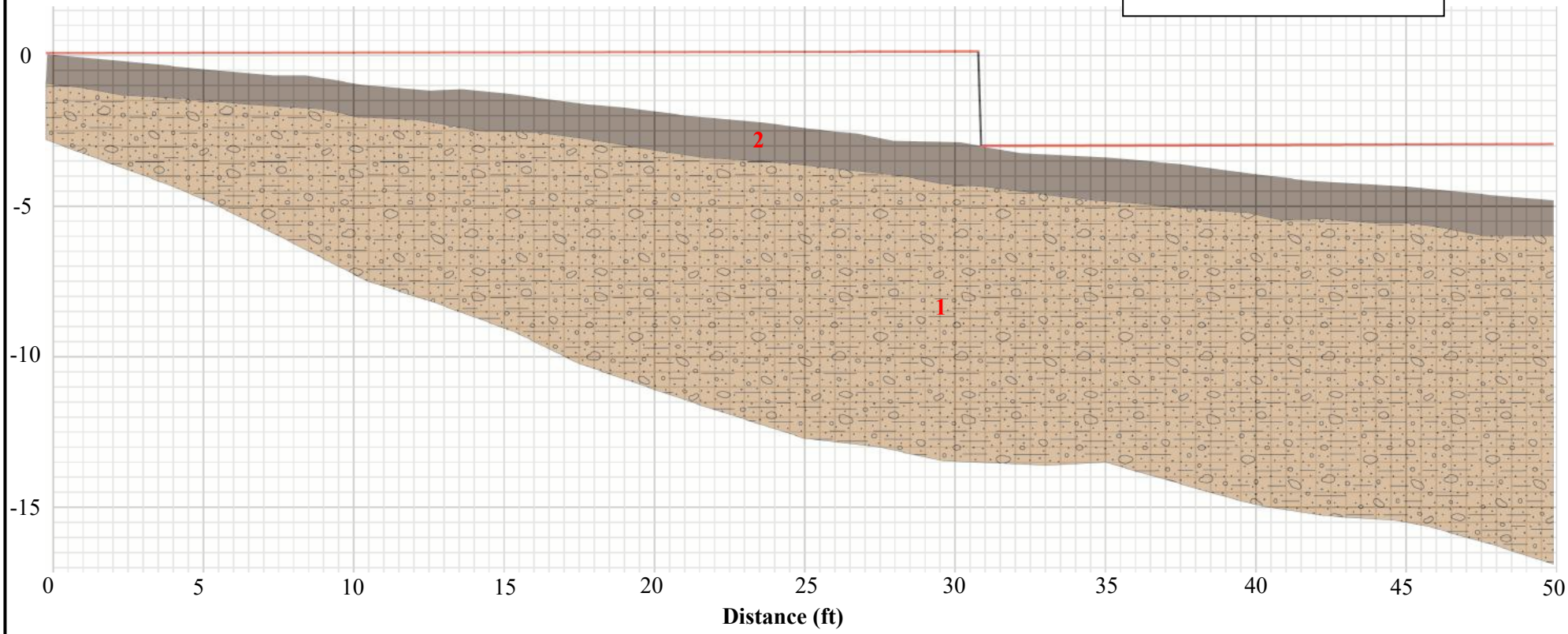
GeoStrata
Copyright GeoStrata 1059

TRENCH 6 EAST WALL

North

South

Trench Orientation: N40°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 - Alluvial Fan Deposit (Holocene to upper Pleistocene): Clast supported and crudely bedded grey-brown coarse gravel and with trace amounts of cobbles. Clasts were observed to be subrounded to subangular. This unit was observed to consist of a series of water dominated alluvial fan flooding deposits. Several stream channel deposits were also observed within this unit.

Unit 2 - TOPSOIL

Stringline

logged by S. Agopian

Plate B-39

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

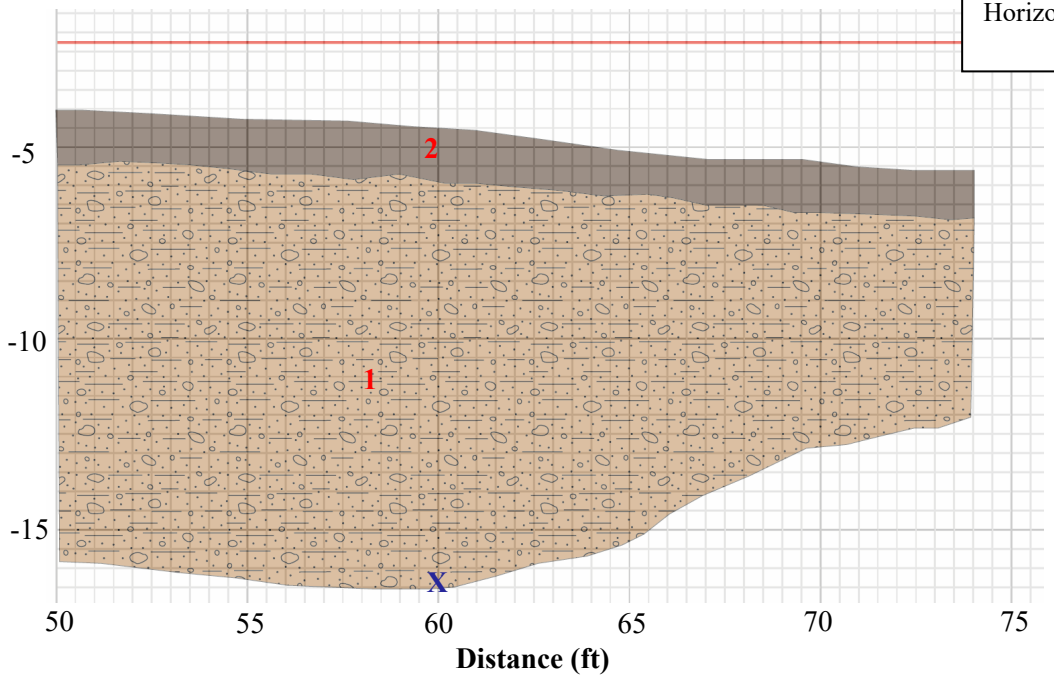
Trench 6 Log
0 to 50 feet

GeoStrata
Copyright GeoStrata 1060

TRENCH 6 EAST WALL

North **South**

Trench Orientation: N40°W
Scale
1 inch = 5 feet
Horizontal Scale = Vertical Scale



LEGEND

Unit 1 - Alluvial Fan Deposit (Holocene to upper Pleistocene): Clast supported and crudely bedded grey-brown coarse gravel and with trace amounts of cobbles. Clasts were observed to be subrounded to subangular. This unit was observed to consist of a series of water dominated alluvial fan flooding deposits. Several stream channel deposits were also observed within this unit.

Unit 2 - TOPSOIL

X – Radiocarbon Sample — Stringline

logged by S. Agopian

Plate B-40

Geologic Hazards Investigation
DR Horton
Micron Property Development
Lehi, Utah
Project Number: 589-100

Trench 6 Log
50 to 74 feet

GeoStrata
Copyright GeoStrata 1061

Appendix C

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

June 28, 2021

Mr. James Moore
GeoStrata
14425 Center Point Way
Bluffdale, UT 84065
United States

RE: Radiocarbon Dating Results

Dear Mr. Moore,

Enclosed are the radiocarbon dating results for four samples recently sent to us. As usual, the method of analysis is listed on the report with the results and calibration data is provided where applicable. The Conventional Radiocarbon Ages have all been corrected for total fractionation effects and where applicable, calibration was performed using 2020 calibration databases (cited on the graph pages).

The web directory containing the table of results and PDF download also contains pictures, a cvs spreadsheet download option and a quality assurance report containing expected vs. measured values for 3-5 working standards analyzed simultaneously with your samples.

Reported results are accredited to ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 standards and all chemistry was performed here in our laboratory and counted in our own accelerators here. Since Beta is not a teaching laboratory, only graduates trained to strict protocols of the ISO/IEC 17025:2017 Testing Accreditation PJLA #59423 program participated in the analyses.

As always Conventional Radiocarbon Ages and sigmas are rounded to the nearest 10 years per the conventions of the 1977 International Radiocarbon Conference. When counting statistics produce sigmas lower than +/- 30 years, a conservative +/- 30 BP is cited for the result unless otherwise requested. The reported d13C values were measured separately in an IRMS (isotope ratio mass spectrometer). They are NOT the AMS d13C which would include fractionation effects from natural, chemistry and AMS induced sources.

When interpreting the results, please consider any communications you may have had with us regarding the samples.

Thank you for prepaying the analyses. As always, if you have any questions or would like to discuss the results, don't hesitate to contact us.

Sincerely,



Ronald E. Hatfield President

1063

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

James Moore — Report Date: June 28, 2021

GeoStrata — Material Received: June 08, 2021

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes
Beta - 594363	**Trench 6@60**	**6790 +/- 30 BP**
		IRMS δ13C: -20.4 o/oo
		IRMS δ18O: -19.0 o/oo
(95.4%)	**5356 - 4749 cal BC**	**(7305 - 6698 cal BP)**

Submitter Material: Carbonate Sediment
Pretreatment: (carbonate sediment) none
Analyzed Material: Carbonate Sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 42.94 +/- 0.16 pMC
Fraction Modern Carbon: 0.4294 +/- 0.0016
D14C: -570.56 +/- 1.60 o/oo
Δ14C: -574.23 +/- 1.60 o/oo (1950:2021)
Measured Radiocarbon Age: (without d13C correction): 6710 +/- 30 BP
Calibration: BetaCal4.20: HPD method: MARINE20
DeltaR: 77 +/- 120

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

Beta Analytic, Inc.
4985 SW 74th Court
Miami, FL 33155 USA
Tel: 305-667-5167
Fax: 305-663-0964
info@betalabservices.com

ISO/IEC 17025:2017-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

James Moore — Report Date: June 28, 2021

GeoStrata — Material Received: June 08, 2021

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes	
Beta - 594364	**Trench 4@12**	**4910 +/- 30 BP**	IRMS δ13C: -21.7 o/oo IRMS δ18O: -19.1 o/oo
	(95.4%) 3328 - 2623 cal BC	**(5277 - 4572 cal BP)**	

Submitter Material: Carbonate Sediment
Pretreatment: (carbonate sediment) none
Analyzed Material: Carbonate Sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 54.27 +/- 0.20 pMC
Fraction Modern Carbon: 0.5427 +/- 0.0020
D14C: -457.32 +/- 2.03 o/oo
Δ14C: -461.96 +/- 2.03 o/oo (1950:2021)
Measured Radiocarbon Age: (without d13C correction): 4860 +/- 30 BP
Calibration: BetaCal4.20: HPD method: MARINE20
DeltaR: 77 +/- 120

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

Beta Analytic, Inc.
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ISO/IEC 17025:2017-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

James Moore — Report Date: June 28, 2021

GeoStrata — Material Received: June 08, 2021

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes
Beta - 594365	**Trench 1A@255**	**5900 +/- 30 BP** IRMS δ13C: -23.1 o/oo IRMS δ18O: -19.5 o/oo
	(95.4%) 4370 - 3771 cal BC	**(6319 - 5720 cal BP)**

Submitter Material: Carbonate Sediment
Pretreatment: (carbonate sediment) none
Analyzed Material: Carbonate Sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 47.98 +/- 0.18 pMC
Fraction Modern Carbon: 0.4798 +/- 0.0018
D14C: -520.24 +/- 1.79 o/oo
Δ14C: -524.35 +/- 1.79 o/oo (1950:2021)
Measured Radiocarbon Age: (without d13C correction): 5870 +/- 30 BP
Calibration: BetaCal4.20: HPD method: MARINE20
DeltaR: 77 +/- 120

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

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ISO/IEC 17025:2017-Accredited Testing Laboratory

REPORT OF RADIOCARBON DATING ANALYSES

James Moore — Report Date: June 28, 2021

GeoStrata — Material Received: June 08, 2021

Laboratory Number	Sample Code Number	Conventional Radiocarbon Age (BP) or Percent Modern Carbon (pMC) & Stable Isotopes	
Beta - 594366	**Trench 1B@10**	**1540 +/- 30 BP**	IRMS δ13C: -11.0 o/oo
			IRMS δ18O: -15.1 o/oo
	(95.4%)	**803 - 1347 cal AD**	**(1147 - 603 cal BP)**

Submitter Material: Carbonate Sediment
Pretreatment: (carbonate sediment) none
Analyzed Material: Carbonate Sediment
Analysis Service: AMS-Standard delivery
Percent Modern Carbon: 82.55 +/- 0.31 pMC
Fraction Modern Carbon: 0.8255 +/- 0.0031
D14C: -174.45 +/- 3.08 o/oo
Δ14C: -181.51 +/- 3.08 o/oo (1950:2021)
Measured Radiocarbon Age: (without d13C correction): 1310 +/- 30 BP
Calibration: BetaCal4.20: HPD method: MARINE20
DeltaR: 77 +/- 120

Results are ISO/IEC-17025:2017 accredited. No sub-contracting or student labor was used in the analyses. All work was done at Beta in 4 in-house NEC accelerator mass spectrometers and 4 Thermo IRMSs. The "Conventional Radiocarbon Age" was calculated using the Libby half-life (5568 years), is corrected for total isotopic fraction and was used for calendar calibration where applicable. The Age is rounded to the nearest 10 years and is reported as radiocarbon years before present (BP), "present" = AD 1950. Results greater than the modern reference are reported as percent modern carbon (pMC). The modern reference standard was 95% the 14C signature of NIST SRM-4990C (oxalic acid). Quoted errors are 1 sigma counting statistics. Calculated sigmas less than 30 BP on the Conventional Radiocarbon Age are conservatively rounded up to 30. d13C values are on the material itself (not the AMS d13C). d13C and d15N values are relative to VPDB-1. References for calendar calibrations are cited at the bottom of calibration graph pages.

BetaCal 4.20

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE20)

(Variables: d13C = -20.4 o/oo : Delta-R = 77 ± 120)

Laboratory number **Beta-594363**

Conventional radiocarbon age **6790 ± 30 BP**

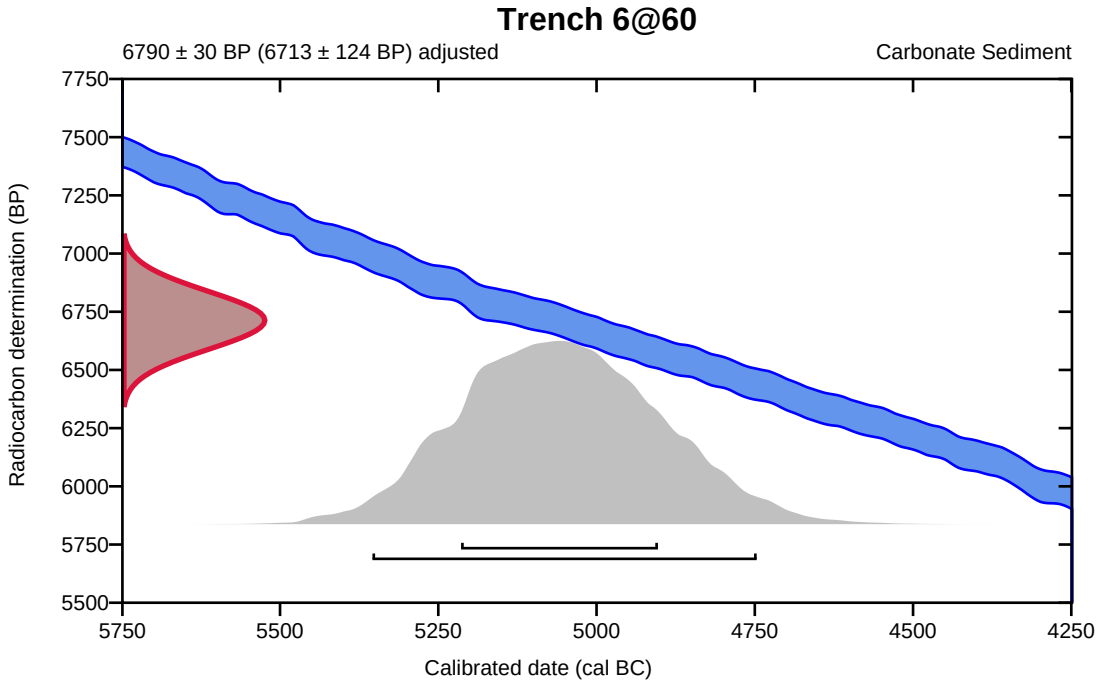
6713 ± 124 Adjusted for local reservoir correction

95.4% probability

(95.4%) 5356 - 4749 cal BC (7305 - 6698 cal BP)

68.2% probability

(68.2%) 5216 - 4905 cal BC (7165 - 6854 cal BP)



Database used

MARINE20

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE20

Heaton, et al., 2020, Radiocarbon 62(4);779-820.

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE20)

(Variables: d13C = -21.7 o/oo : Delta-R = 77 ± 120)

Laboratory number **Beta-594364**

Conventional radiocarbon age **4910 ± 30 BP**

4833 ± 124 Adjusted for local reservoir correction

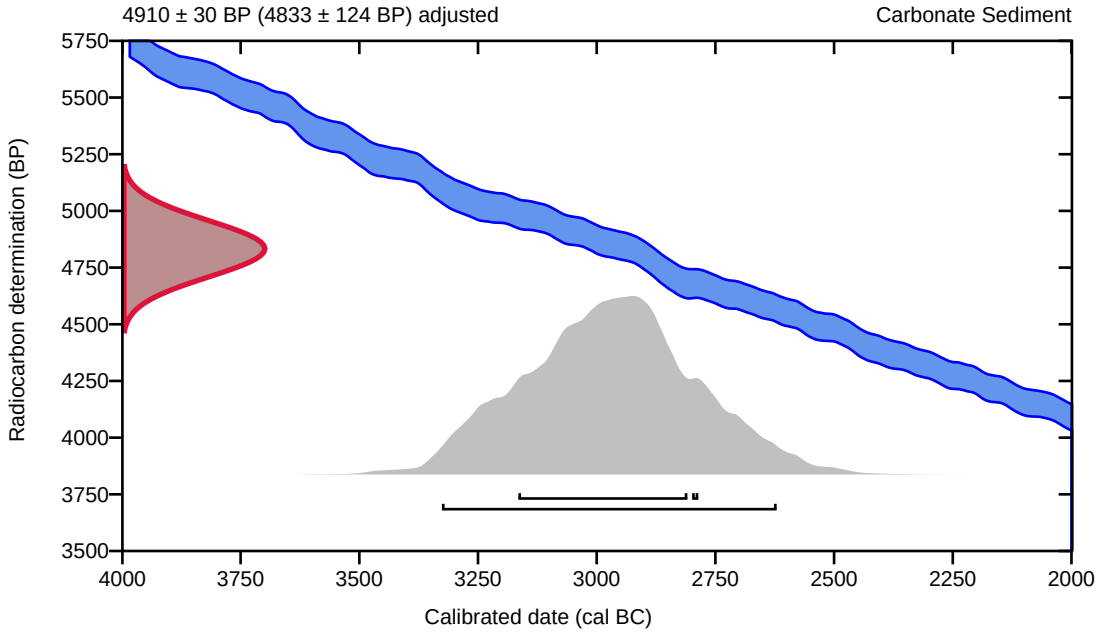
95.4% probability

(95.4%)	3328 - 2623 cal BC	(5277 - 4572 cal BP)

68.2% probability

(66.6%)	3167 - 2811 cal BC	(5116 - 4760 cal BP)
(1.6%)	2801 - 2788 cal BC	(4750 - 4737 cal BP)

Trench 4@12



Database used

MARINE20

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE20

Heaton, et al., 2020, Radiocarbon 62(4);779-820.

BetaCal 4.20

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE20)

(Variables: d13C = -23.1 o/oo : Delta-R = 77 ± 120)

Laboratory number **Beta-594365**

Conventional radiocarbon age **5900 ± 30 BP**

5823 ± 124 Adjusted for local reservoir correction

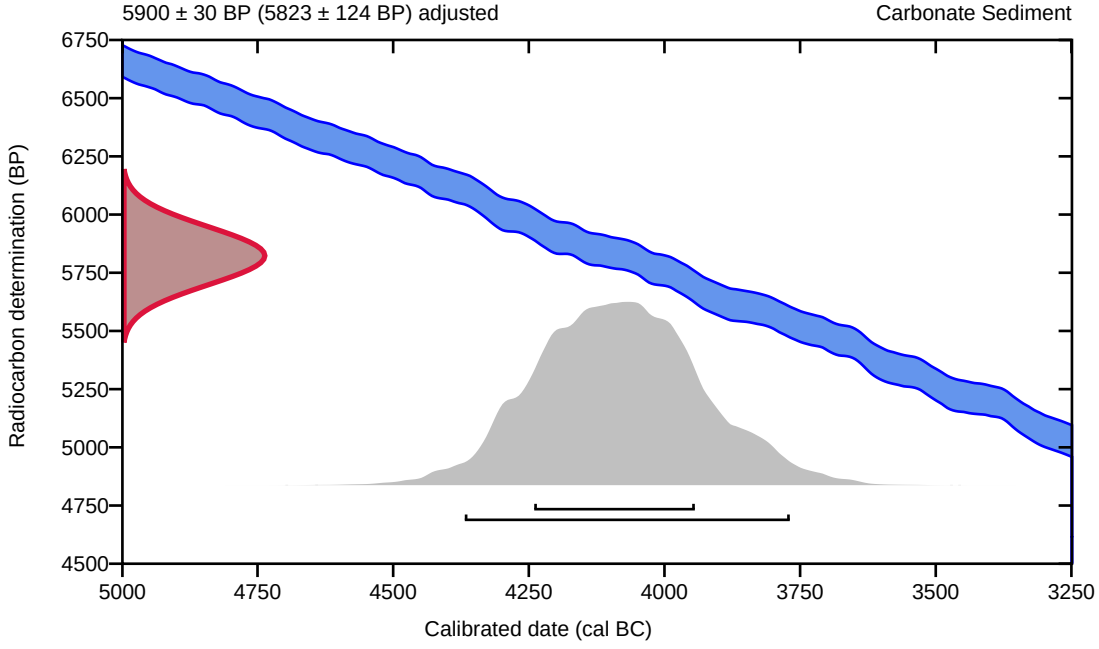
95.4% probability

(95.4%) 4370 - 3771 cal BC (6319 - 5720 cal BP)

68.2% probability

(68.2%) 4242 - 3946 cal BC (6191 - 5895 cal BP)

Trench 1A@255



Database used

MARINE20

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE20

Heaton, et al., 2020, Radiocarbon 62(4);779-820.

BetaCal 4.20

Calibration of Radiocarbon Age to Calendar Years

(High Probability Density Range Method (HPD): MARINE20)

(Variables: d13C = -11.0 o/oo : Delta-R = 77 ± 120)

Laboratory number **Beta-594366**

Conventional radiocarbon age **1540 ± 30 BP**

1463 ± 124 Adjusted for local reservoir correction

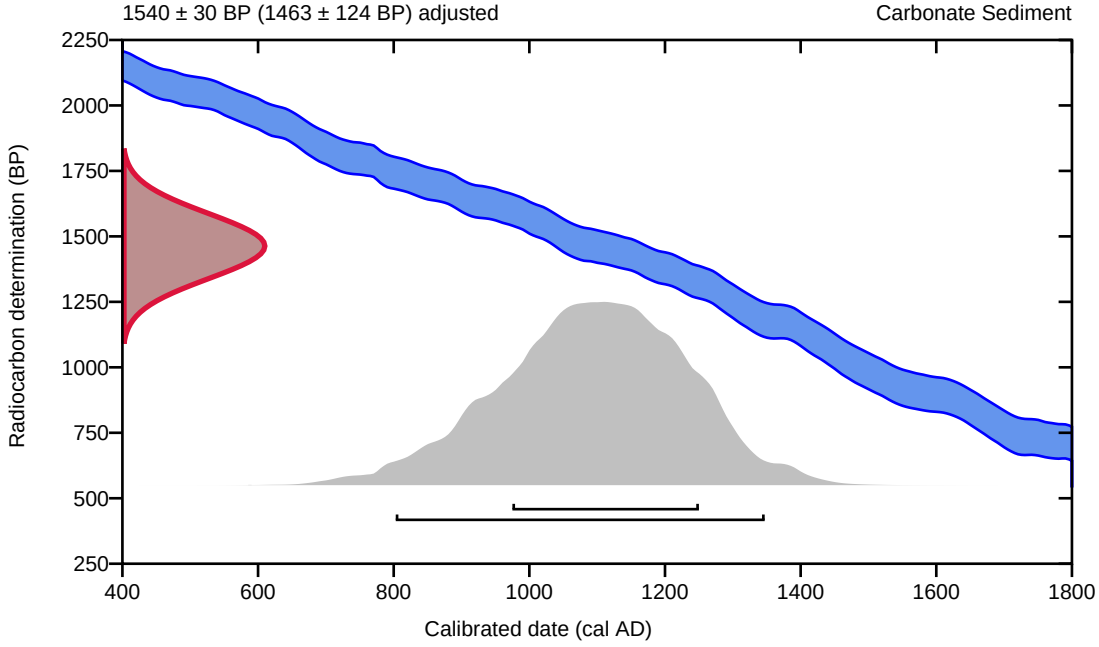
95.4% probability

(95.4%) 803 - 1347 cal AD (1147 - 603 cal BP)

68.2% probability

(68.2%) 975 - 1250 cal AD (975 - 700 cal BP)

Trench 1B@10



Database used

MARINE20

References

References to Probability Method

Bronk Ramsey, C. (2009). Bayesian analysis of radiocarbon dates. Radiocarbon, 51(1), 337-360.

References to Database MARINE20

Heaton, et al., 2020, Radiocarbon 62(4);779-820.

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ISO/IEC 17025:2005-Accredited Testing Laboratory

Quality Assurance Report

This report provides the results of reference materials used to validate radiocarbon analyses prior to reporting. Known-value reference materials were analyzed quasi-simultaneously with the unknowns. Results are reported as expected values vs measured values. Reported values are calculated relative to NISTSRM-1990C and corrected for isotopic fractionation. Results are reported using the direct analytical measure percent modern carbon (pMC) with one relative standard deviation. Agreement between expected and measured values is taken as being within 2 sigma agreement (error x 2) to account for total laboratory error.

Report Date: June 28, 2021
Submitter: Mr. James Moore

QA MEASUREMENTS

Reference 1	
Expected Value:	129.41 +/- 0.06 pMC
Measured Value:	129.24 +/- 0.35 pMC
Agreement:	Accepted
Reference 2	
Expected Value:	0.44 +/- 0.10 pMC
Measured Value:	0.46 +/- 0.03 pMC
Agreement:	Accepted
Reference 3	
Expected Value:	98.52 +/- 0.30 pMC
Measured Value:	99.00 +/- 0.30 pMC
Agreement:	Accepted

COMMENT: All measurements passed acceptance tests.

Validation: Digital signature on file

Date: June 28, 2021

Skye Area Plan

2nd Amendment

Section 6 – Fiscals

- Culinary Water
- Pressurized Irrigation
- Storm Water
- Sewer Capital Improvements
- Power Capital Improvements
- Road Capital Improvements
- Parks Improvements

Skye Area Plan

Proposed Culinary Water Capital Improvements vs. Projected Impact Fee Income

Capital Improvements - Culinary

Item	Quantity	Units	Cost/Unit	Item Cost
First Area Plan Amendment				
Family Park Well Construction including wellhouse, permits, fees, connection	1	ls	$ 3,270,000	$ 3,270,000
8" Culinary Line from well to exising water lines (existing roads)	2,700	lf	$ 228	$ 615,600
12" Booster Pump Line	1,868	lf	$ 395	$ 737,860
Booster pump station at Existing Low Hills Tank	1	ls	$ 750,000	$ 750,000
Culinary storage tank	1,091,520	gal	$ 2.85	$ 3,110,832
Sub-Total				$ 8,484,292
Second Area Plan Amendment				
Inverness Culinary storage tank	221,760	gal	$ 2.85	$ 632,016
Booster Pump Station @ Maple Hollow Tank	1	ls	$ 350,000	$ 350,000
All-weather access road through TI Property (50% included here, 50% with P.I.)	1,140	lf	$ 1.85	$ 2,109
Sub-Total				$ 984,125
Sub-Total Estimated Capital Improvements				$ 9,468,417
Contingency (Engineering, Surveying, Soft Costs)			10%	$ 946,842
Developer Cost	1	ls	$ (7,146,555)	$ (7,146,555)
Total Estimated Capital Improvements				**$ 3,268,704**

Impact Fee Generation - Culinary

Land Use	#ERU	Impact Fee	Total
First Area Plan Amendment			
Non-Residential			
Commercial/Civic/Clubhouse	250	$ 1,194.07	$ 298,518
Schools	24	$ 30,385.55	$ 30,386
Residential			
LD	182	$ 1,194.07	$ 217,321
MD	484	$ 1,194.07	$ 577,930
HD	228	$ 1,194.07	$ 272,248
VHD (Mixed Use Area)	609	$ 1,194.07	$ 727,189
Sub-Total	1777		$ 2,123,590
Second Area Plan Amendment			
Non-Residential			
Clubhouse	6	$ 1,194.07	$ 7,164
Residential			
LD	328	$ 1,194.07	$ 391,655
MD	305	$ 1,194.07	$ 364,191
HD	320	$ 1,194.07	$ 382,102
Sub-Total	959		$ 1,145,113
Total Estimated Impact Fees			**$ 3,268,703**
NET:			**$ (0)**

Notes:

1. Facilities to be constructed by the developer with reimbursement through impact fees.
2. After impact fees have been paid in the Skye Area Plan, they may be redeemed by the developer from the Lehi City Building Department. The maximum amount of impact fees that may be redeemed are the total of impact fees paid within the Skye Area Plan.
3. Developer will obtain and dedicate to Lehi City, at their cost, all necessary easements required for these improvements.
4. Costs include all engineering, surveying, and contingency fees.
5. Refer to the culinary utility section of the area plan for details on how many Skye ERU's can be serviced by the existing Seasons Tank.
6. The developer will dedicate property without cost to the city for the required culinary storage tanks and accesses.
7. Total reimbursement from Lehi City not to exceed total impact fee paid.

Skye Area Plan

Proposed Pressurized Irrigation (PI) Capital Improvements vs. Projected Fee Income

Capital Improvements - Pressurized Irrigation

Item	Quantity	Units	Cost/Unit	Item Cost
First Area Plan Amendment				
1200 E Well Construction including wellhouse, permits, fees, connection	1	ls	$ 3,600,000	$ 3,600,000
Booster pump station at existing Low Hills Reservoir	1	ls	$ 750,000	$ 750,000
12" Booster Pump Line	2,538	lf	$ 395	$ 1,002,510
PI Storage Reservoir	1,273,680	gal	$ 1.50	$ 1,910,520
Sub-Total				$ 7,263,030
Second Area Plan Amendment				
Booster pump station at Maple Hollow Reservoir	1	ls	$ 300,000	$ 300,000
PI Storage Reservoir	794,880	gal	$ 1.50	$ 1,192,320
All weather access road through TI property (50% included here, 50% with Culinary)	1,140	lf	$ 1.85	$ 2,109
Sub-Total				$ 1,494,429
Sub-Total Estimated Capital Improvements				$ 8,757,459
Contingency (Engineering, Surveying, Soft Costs)			10%	$ 875,746
Developer Cost	1	ls	$ (7,687,017)	$ (7,687,017)
Total Estimated Capital Improvements				**$ 1,946,188**

Impact Fee Generation - PI

Land Use	#ERU	Acreage	Impact Fee	Total
First Area Plan Amendment				
Non-Residential				
Commercial/Civic/Clubhouse		28.19	$ 6,736.35	$ 189,927
Schools	24		$ 171,130.62	$ 171,131
Residential				
LD	182		$ 1,094.66	$ 199,228
MD	484		$ 1,094.66	$ 529,814
HD		10.36	$ 4,378.63	$ 45,363
VHD (Mixed Use Area)		7.28	$ 4,378.63	$ 31,857
Sub-Total[10]	690	45.83		**$ 1,167,319**
Second Area Plan Amendment				
Non-Residential				
Clubhouse		1.86	$ 6,736.35	$ 12,543
Residential				
LD	328		$ 1,094.66	$ 359,048
MD	305		$ 1,094.66	$ 333,871
HD		16.77	$ 4,378.63	$ 73,408
Sub-Total[10]	633	18.63		**$ 778,869**
Total Estimated Impact Fees				**$ 1,946,188**
NET:				**$ 0**

Notes:

1. Facilities to be constructed by the developer with reimbursement through impact fees.
2. After impact fees have been paid in the Skye Area Plan, they may be redeemed by the developer from the Lehi City Building Department. The maximum amount of impact fees that may be redeemed are the total of impact fees paid within the Skye Area Plan.
3. Developer will obtain and dedicate to Lehi City, at their cost, all necessary easements required for these improvements.
4. Costs include all engineering, surveying, and contingency fees.
5. All Mixed Use, commercial, and civic sites assumed to have 25% pervious area.
6. All Townhome (HD) areas assumed to have 50% pervious area.
7. Refer to the PI utility section of the area plan for details on how many Skye ERU's can be serviced by the existing Seasons reservoir.
8. The developer will dedicate property without cost to the city for the required pressurized irrigation reservoir and access.
9. Total reimbursement from Lehi City not to exceed total impact fee paid.
10. The PI impact fee is calculated using both ERU's and irrigated area. The impact fees calculated here cover all 2,736 proposed ERU's as shown in the land use plan.

Skye Area Plan

Proposed Storm Water Capital Improvements vs. Projected Fee Income

Capital Improvements - Storm Water

Item	Quantity	Units	Cost/Unit	Item Cost
36" RCP Trunkline with Manholes	3,206	lf	$ 235	$ 753,410
30" RCP Trunkline	1,958	lf	$ 175	$ 342,650
24" RCP Trunkline with Manholes	3,545	lf	$ 115	$ 407,675
Developer Cost	1	ls	$ (709,018)	$ (709,018)
Total Estimated Capital Improvements				**$ 794,717**

Impact Fee Generation - Storm Water

Land Use	#ERU	Acreage	Impact Fee	Total
First Area Plan Amendment				
Non-Residential				
Commercial/Civic		112.78	$ 1,391	$ 156,873
Schools	24		$ 59,813	$ 59,813
Residential				
LD	182		$ 347.75	$ 63,291
MD	484		$ 347.75	$ 168,311
HD		20.72	$ 1,391	$ 28,822
VHD (Mixed Use Area)		29.10	$ 1,391	$ 40,482
Sub-Total[3]	690	162.60		$ 517,591
Second Area Plan Amendment				
Non-Residential				
Clubhouse		7.45	$ 1,391	$ 10,360
Residential				
LD	328		$ 347.75	$ 114,062
MD	305		$ 347.75	$ 106,064
HD		33.53	$ 1,391	$ 46,640
Sub-Total[3]	633	40.98		$ 277,126
Total Estimated Impact Fees				**$ 794,717**
NET:				**$ (0)**

Notes:

1. Facilities to be constructed by the developer with reimbursement through impact fee certificates that can be redeemed on units in the Skye Area Plan.
2. Developer will obtain and dedicate to Lehi City, at their cost, all necessary easements required for these improvements.
3. The Storm Drain impact fee is calculated using both ERU's and land area. The impact fees calculated here cover all 2,736 proposed ERU's as shown in the land use plan.

Skye Area Plan

Proposed Sewer Capital Improvements vs. Projected Fee Income

Capital Improvements - Sewer

Item	Quantity	Units	Cost/Unit	Item Cost
First Area Plan Amendment				
Upsize 12" Sewer Main to 18" Sewer Main with Manholes (Located between Center Street and 500 W)	2,083	lf	$ 60	$ 124,980
Metering Station, vault, power extension, site prep[3]	1	ls	$ 200,000	$ 200,000
Regional Improvements	1	ls	$ 1,781,616	$ 1,781,616
Total Estimated Capital Improvements				**$ 2,106,596**

Impact Fee Generation - Sewer

Land Use	#ERU	Impact Fee	Total
First Area Plan Amendment			
Non-Residential			
Commercial/Civic/Clubhouse	250	$ 761.43	$ 190,358
Schools	24	$ 41,597.95	$ 41,598
Residential			
LD	182	$ 761.43	$ 138,580
MD	484	$ 761.43	$ 368,532
HD	228	$ 761.43	$ 173,606
VHD (Mixed Use Area)	609	$ 761.43	$ 463,711
Sub-Total	1777		$ 1,376,385
Second Area Plan Amendment			
Non-Residential			
Clubhouse	6	$ 761.43	$ 4,569
Residential			
LD	328	$ 761.43	$ 249,749
MD	305	$ 761.43	$ 232,236
HD	320	$ 761.43	$ 243,658
Sub-Total	959		$ 730,211
Total Estimated Impact Fees			**$ 2,106,596**
NET:			**$ 0**

Notes:

1. Facilities to be constructed by the developer with reimbursement through impact fee certificates that can be redeemed on units in the Skye Area Plan.
2. Developer will obtain and dedicate to Lehi City, at their cost, all necessary easements required for these improvements.
3. The Timpanogos Special Service District (TSSD) has agreed to service the east side of the Skye Area Plan per the agreement made between Lehi City and TSSD approved on July 21, 2022. TSSD wants additional coordination with Texas Instruments before the east side sewer line is constructed.

Skye Area Plan

Proposed Power Capital Improvements vs. Projected Fee Income

Capital Improvements - Power

Item	Quantity	Units	Cost/Unit	Item Cost
First Area Plan Amendment				
Substation site geotechnical, engineering, grading, access roads design & construction, erosion control	1	ls	$ 1,300,000	$ 1,300,000
Regional Improvements	1	ls	$ 1,858,967	$ 1,858,967
Sub-Total				$ 3,158,967
Second Area Plan Amendment				
Regional Improvements	1	ls	$ 1,882,638	$ 1,882,638
Sub-Total				$ 1,882,638
Total Estimated Capital Improvements				**$ 5,041,605**

Impact Fee Generation - Power

Land Use	Units	Approx. KVA	Impact Fee per Unit or KVA	Total
First Area Plan Amendment				
Non-Residential				
Commercial/Civic/Clubhouse	250	7938	$ 53.62	$ 425,655
Schools	24		$ 319,154.44	$ 319,154
Residential				
LD	182	1456	$ 1,979.52	$ 360,273
MD	484	3872	$ 1,979.52	$ 958,088
HD	228	1368	$ 1,484.64	$ 338,498
VHD (Mixed Use Area)	609	3654	$ 1,484.64	$ 904,146
Sub-Total	1777			$ 3,305,814
Second Area Plan Amendment				
Non-Residential				
Clubhouse	6	83	$ 92.42	$ 7,671
Residential				
LD	328	2624	$ 1,979.52	$ 649,283
MD	305	2440	$ 1,979.52	$ 603,754
HD	320	1920	$ 1,484.64	$ 475,085
Sub-Total	959			$ 1,735,792
Total Estimated Impact Fees				**$ 5,041,605**
NET:				**$ 0**

Notes:

1. Facilities to be constructed by the developer with reimbursement through impact fee certificates that can be redeemed on units in the Skye Area Plan.
2. Developer will obtain and dedicate to Lehi City, at their cost, all necessary easements required for these improvements.
3. Single family panel size assumed to be 200 A
4. Multi family panel size assumed to be 125 A
5. KVA of overall commercial area was found from the equation kVA = (kW)*(Power Factor). Power Factor is assumed to be 60% and kW is assumed to be 13,230 kW per the master plan.
6. Impact fee per kVA for Commercial/Civic area was calculated by averaging the costs per kVA from the city's impact fee table.
7. Impact fee for the clubhouse assumes a 200 A 3-phase commercial panel.
8. Some of the improvements, including the transformer and the metal-clad switchgear, will need to be pre-ordered. This will be done by the city, after which the developer will reimburse the city in installments as mutually agreed upon. The developer will then be re-imbursed for these payments through impact fees.

Skye Area Plan

Proposed Roads Capital Improvements vs. Projected Fee Income

Capital Improvements - Roads

Item	Quantity	Units	Cost/Unit	Item Cost
First Area Plan Amendment				
4330 N				
Additional ROW dedication required beyond standard cross section	0.23	ac	$ 160,000	$ 36,217
Upper 500 W				
Additional ROW dedication required beyond standard cross section	0.19	ac	$ 160,000	$ 30,817
East Side Roads				
Additional ROW dedication required beyond standard cross section	0.69	ac	$ 160,000	$ 109,826
Upper Center St				
Additional 3" Asphalt, 6" Base, 8" Subbase	3,810	sf	$ 4.25	$ 16,193
Additional ROW dedication required beyond standard cross section	0.31	ac	$ 160,000	$ 48,981
3950 N				
Additional 3" Asphalt, 8" Base, 15" Subbase	2,148	sf	$ 4.25	$ 9,129
Additional ROW dedication required beyond standard cross section	0.07	ac	$ 160,000	$ 11,835
Middle Center Street				
Additional 3" Asphalt, 8" Base, 15" Subbase	1,756	sf	$ 4.25	$ 7,463
Additional ROW dedication required beyond standard cross section	0.16	ac	$ 160,000	$ 25,800
Traverse Terrace Dr				
Additional 3" Asphalt, 8" Base, 15" Subbase	4,138	sf	$ 4.25	$ 17,587
Lower Center Street				
Additional 3" Asphalt, 8" Base, 15" Subbase	10,460	sf	$ 4.25	$ 44,455
Additional ROW dedication required beyond standard cross section	0.77	ac	$ 160,000	$ 122,946
Intersection Improvements				
Traffic Signal at Highland Blvd/Grant Blvd	1	ls	$ 350,000	$ 350,000
Intersection Improvements at Highland Blvd/Grant Blvd	1	ls	$ 120,000	$ 120,000
Traffic Signal at Highland Blvd/11800 N[1]	1	ls	$ 116,667	$ 116,667
Intersection Improvements at Highland Blvd/11800 N	1	ls	$ 120,000	$ 120,000
Traffic Signal at Center Street/SR92	1	ls	$ 500,000	$ 500,000
Intersection Improvements at Center Street/SR92[2]	1	ls	$ 600,000	$ 600,000
Regional Improvements	1	ls	$ 184,239	$ 184,239
Sub-Total				$ 2,472,152
Second Area Plan Amendment				
Upper Center Street				
Additional ROW dedication required beyond standard cross section	1.08	ac	$ 160,000	$ 173,370
Regional Improvements	1	ac	$ 820,845	$ 820,845
Sub-Total				$ 994,215
Total Estimated Capital Improvements				**$ 3,466,367**

Impact Fee Generation - Roads

Land Use	Building Area (SF)	ERU's	Impact Fee PER Unit/SF	Total
First Area Plan Amendment				
Non-Residential				
Commercial/Civic/Clubhouse	1240000	250	$ 0.88	$ 1,091,200
Schools		24	$ 39,994.46	$ 39,994
Residential				
LD		182	$ 1,163	$ 211,666
MD		484	$ 1,163	$ 562,892
HD		228	$ 708	$ 161,424
VHD (Mixed Use Area)		609	$ 708	$ 431,172
Sub-Total		1777		$ 2,498,348
Second Area Plan Amendment				
Non-Residential				
Clubhouse	6000	6	$ 0.88	$ 5,280
Residential				
LD		328	$ 1,163	$ 381,464
MD		305	$ 1,163	$ 354,715
HD		320	$ 708	$ 226,560
Sub-Total		959		$ 968,019
Total Estimated Impact Fees				**$ 3,466,367**
NET:				**$ 0**

Notes:

1. A tri-party agreement between Lehi City, Draper City, and the developer requires that each party participates in 1/3 of the cost of this traffic signal.
2. Any modifications requested by the city to any of the existing roadway improvements in 500 West, Traverse Terrace Blvd, 3950 N, Center Street (including south of SR 92), & Maple Hollow Blvd shall be reimbursed by the city through funds not generated by impact fees from this development.

Skye Area Plan

Proposed Parks Improvements vs. Projected Fee Income

Capital Improvements - Parks

Item	Quantity	Units	Cost/Unit	Item Cost
First & Second Area Plan Amendment				
10' asphalt trail w/3" asphalt and 6" roadbase (within Residential Areas)	19,479	lf	$ 50	$ 973,950
10' asphalt trail w/ 3" asphalt and 6" roadbase (within Technical Manufacturing Buffer)	8,852	lf	$ 50	$ 442,600
Multi-use natural surface trail (See Sheets OS 4.1-OS 4.2 for details)[1]	10,227	lf	$ 12	$ 122,724
Trailhead with Parking Lot	1	ls	$ 300,000	$ 300,000
Improved Public Open Space (Open Space 4)[4]	404,199	sf	$ 5	$ 2,020,995
Trailhead Bathroom	2	ls	$ 125,000	$ 250,000
Regional park improvements[3]	1	ls	$ 2,286,461	$ 2,286,461
Total Estimated Capital Improvements				$ 6,396,730

Impact Fee Generation - Parks

Land Use			Total
First Area Plan Amendment			
Residential			
LD	182	$ 2,772.98	$ 504,682
MD	484	$ 2,772.98	$ 1,342,122
HD	228	$ 2,415.41	$ 550,713
VHD (Mixed Use Area)	609	$ 2,415.41	$ 1,470,985
Sub-Total	1503		$ 3,868,503
Second Area Plan Amendment			
Residential			
LD	328	$ 2,772.98	$ 909,537
MD	305	$ 2,772.98	$ 845,759
HD	320	$ 2,415.41	$ 772,931
Sub-Total	953		$ 2,528,228
Total Estimated Impact Fees			**$ 6,396,730**
NET:			**$ 0**

Notes:

1. Any natural surface trails are to be constructed by a professional trail builder as approved by the city.

2. All capital improvements shown here are public improvements. Additional private parks improvements shall be installed by the developer at their expense.

3. The intended regional park improvements will be built at some future time and may include the following: trailheads, parkings lots, bike maintenance facilities, trails, and any additional onsite or offsite city facilities/parks or amenities as necessary. The improvements may be constructed by Lehi City or the developer as mutually agreed upon.

4. The funds for the improvements of Open Space 4 can be used in other areas of the Skye Area Plan if desired and as mutually agreed upon by the developer and Lehi City.

Exhibit A

D.R. Horton – Skye Area Plan Amendment Additional Changes

As part of the submitted Skye Area Plan Amendment, Texas Instruments has requested to make some additional changes that we would like the Planning Commission and City Council to consider and include in their vote/approval as follows:

1. **Land Use Section 2: Sheet OS-3.1 – Add Note:** The Technical Manufacturing Buffer (TMB) will not be open to the public and, is not included in the private open space calculations.
2. **Land Use Section 2: Sheet OS-4.1 – Change:** Trail 1 shall be colored gold similar to Trail 10. (When Trail 1 is constructed initially it will end at Texas Instrument's delivery entrance near our property boundary, not at a dead-end at the corner of the site.
3. **Land Use Section 2: Bulk and Intensity Table (Mixed Use/Non Residential) – Change TMB Note:** Texas Instruments would like to amend the current note at the bottom of the page to read as follows: *"See the "Skye Area Plan Technical Manufacturing Buffer Set Back Exhibit" that is in this section of the Area Plan for a depiction of the setback distances from adjacent properties relating to the TMB where the land must remain as open-space and where no vertical improvements, buildings or infrastructure will be allowed to be built or improved.*
   Inclusive of the setback areas as noted on the exhibit: Of the total TMB, (a) 40% must remain as native/open space, (b) 40% is allowed to be used for solar energy and related solar facilities only and, 20% may be used for solar energy or any other purpose allowed by the Table of Uses."

Exhibit B

D.R. Horton – Skye Area Plan Amendment Request for DRC Exceptions

The applicant is willing to include and comply with all the current DRC comments. However, we would like to propose to, and discuss with the Planning Commission and City Council to allow an exception to items #2 and #3 on the DRC comment sheet which refer to the text in italics below. The DRC has requested that we remove the last two bullet points. We would like to keep the second bullet point in the Area Plan as it is written, and we would also like to keep the third bullet point but to include the red text as a revision to what is currently written. Lastly, we would like to include a fourth bullet point in red text to be added.

However, there are a few exceptions to this restriction described above as listed in the bullet points below:

- *Church / Civic 1 Site: This site has been sold to and is owned by the Church of Jesus Christ of Latter-Day Saints. There shall be no restrictions on site plan approvals, plat approvals, recording of plats, building permits or the approval of certificates of occupancy.*

- *D.R. Horton Office / Mixed Use 3 Site: Within the Mixed Use 2 site, D.R. Horton plans to build a local division office building on approximately 4 acres of this portion of the Area Plan. There shall be no restrictions on site plan approvals, plat approvals, recording of plats or building permits for this specific site and use. However, the certificate of occupancy and final approval for use of the building shall not be granted until the water projects as described in the "Utility - Water Sections" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

- *60 Residential ERU's: One final plat containing a maximum of 60 ERU's shall be allowed with no restrictions on site plan approvals, plat approvals, recording of plats, or building permits. However, the certificate of occupancy and final approval for use of homes shall not be granted until the water projects as described in the "Utility - Water Sections" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

- *D.R. Horton Sky Clubhouse Site: D.R. Horton plans to build a Clubhouse and pool within the Area Plan. There shall be no restrictions on site plan approvals, plat approvals, recording of plats or building permits for this specific site and use. However, the certificate of occupancy and final approval for use of the building shall not be granted until the water projects as described in the "Utility - Water Sections" of the Area Plan are completed or it is otherwise approved by Lehi City DRC and Lehi City Public Works Department.*

Skye Area Plan Parking Requirements

Parking stalls that are accessed from the city public streets but that are perpendicular with the street shall be allowed to be counted as off-street parking and can be used to meet the city's guest parking requirements.

All other parking requirements shall meet city code as of date of the recording of this document.

Mixed Use 1&2 Optional Multifamily Residential Parking Requirements

To create more variety in parking options and offer a more desirable experience for the residents, an appropriate mix of parking options will be provided, including enclosed garage spaces, covered parking spaces, surface parking spaces, EV charging spaces, bicycle and/or micro-mobility spaces, and interior bike storage spaces. Greater variety in parking offerings leads to more options, both financially and in lifestyle choices, for residents. Optimizing the mix of parking styles and options will also help enhance the overall look and experience of the community and will increase open space, site connectivity, visibility, safety, function, and aesthetics. **Parking for multifamily residential areas of mixed use zones shall meet either the Development Code Parking Requirements in effect as of the effective date of the Area Plan or the following parking requirements**:

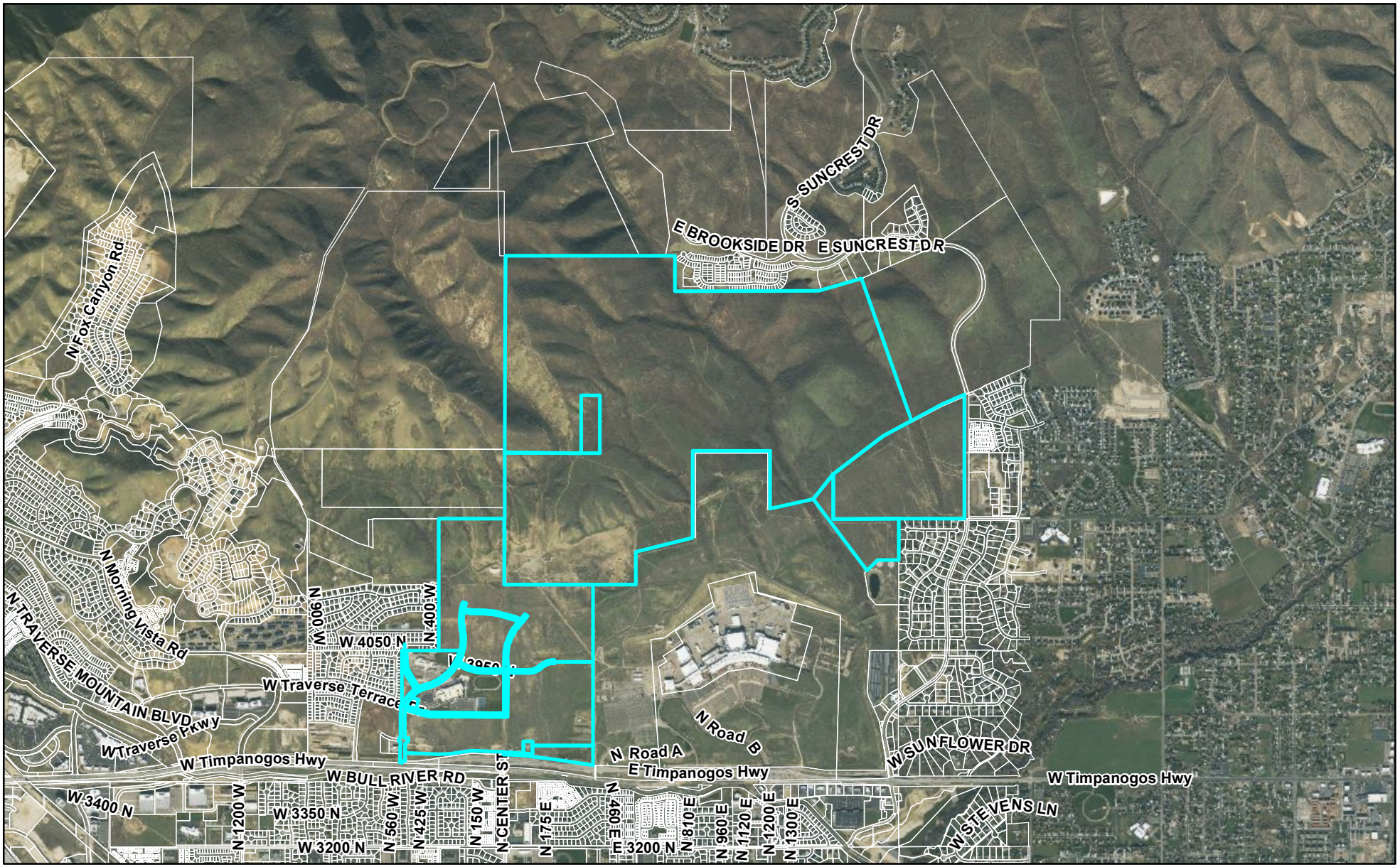
- Min. 80% of units shall have access to either an enclosed garage or a covered parking space.
- Min. 60% of the total enclosed garages and covered parking spaces shall be enclosed garages.
- Max. 10% of the total number of parking spaces shall be compact surface parking.
- Min. of (1) EV charging station for every (60) units shall be provided.
- Bicycle and/or micro-mobility parking stalls shall be provided at a min. of 10% of the total vehicular parking stalls required.
- Min. 25% of bicycle parking stalls provided shall be in an interior bike storage area.

Skye Area Plan Access Requirements

The required number of site vehicle access points (roads) to multi-family sites shall be determined by Appendix D Fire Apparatus Access Roads – Section D106, of the International Fire Code edition adopted by the City of Lehi.

Skye Second Area Plan Amendment

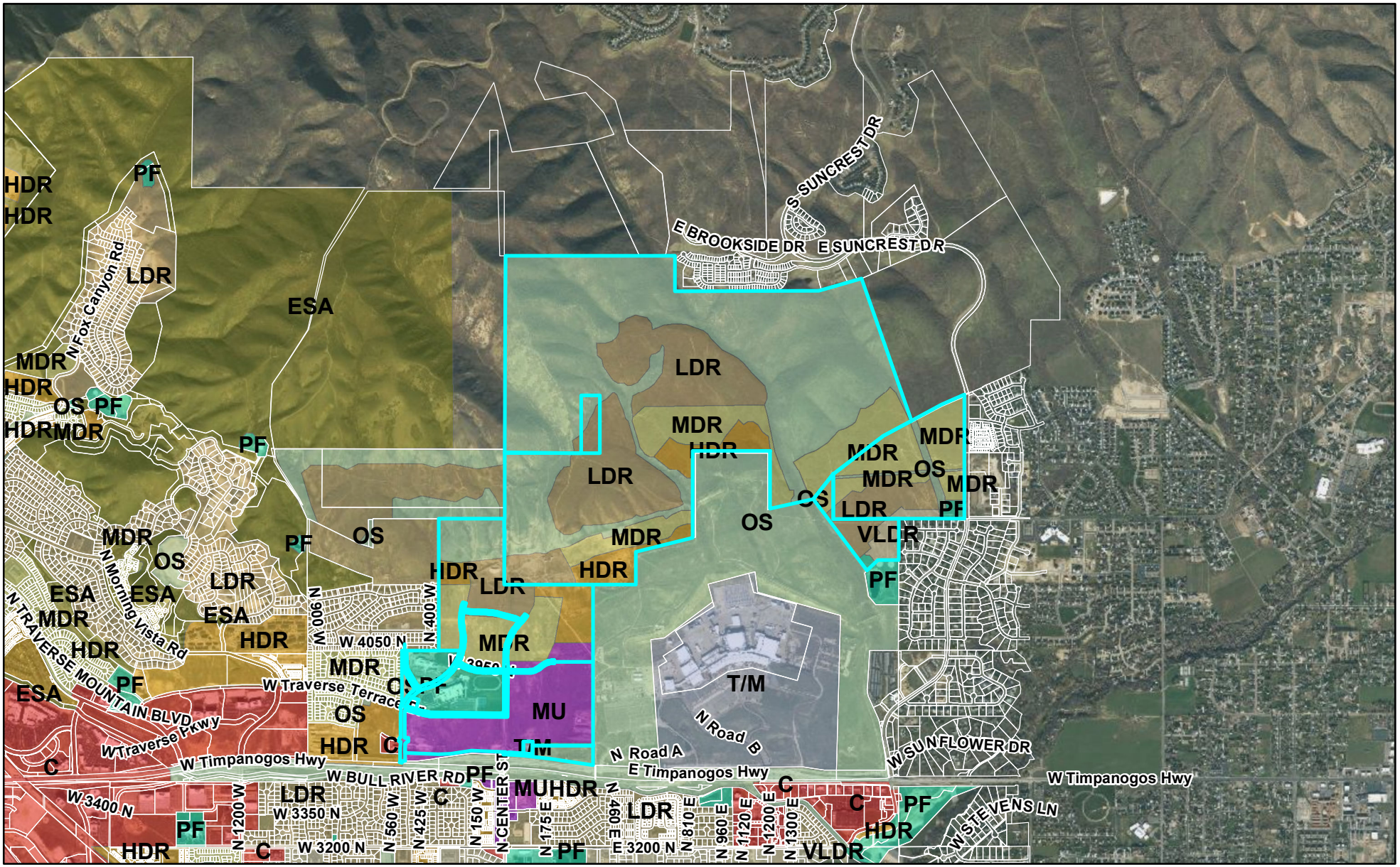
Aerial



LEHI CITY

Skye Second Area Plan Amendment

General Plan

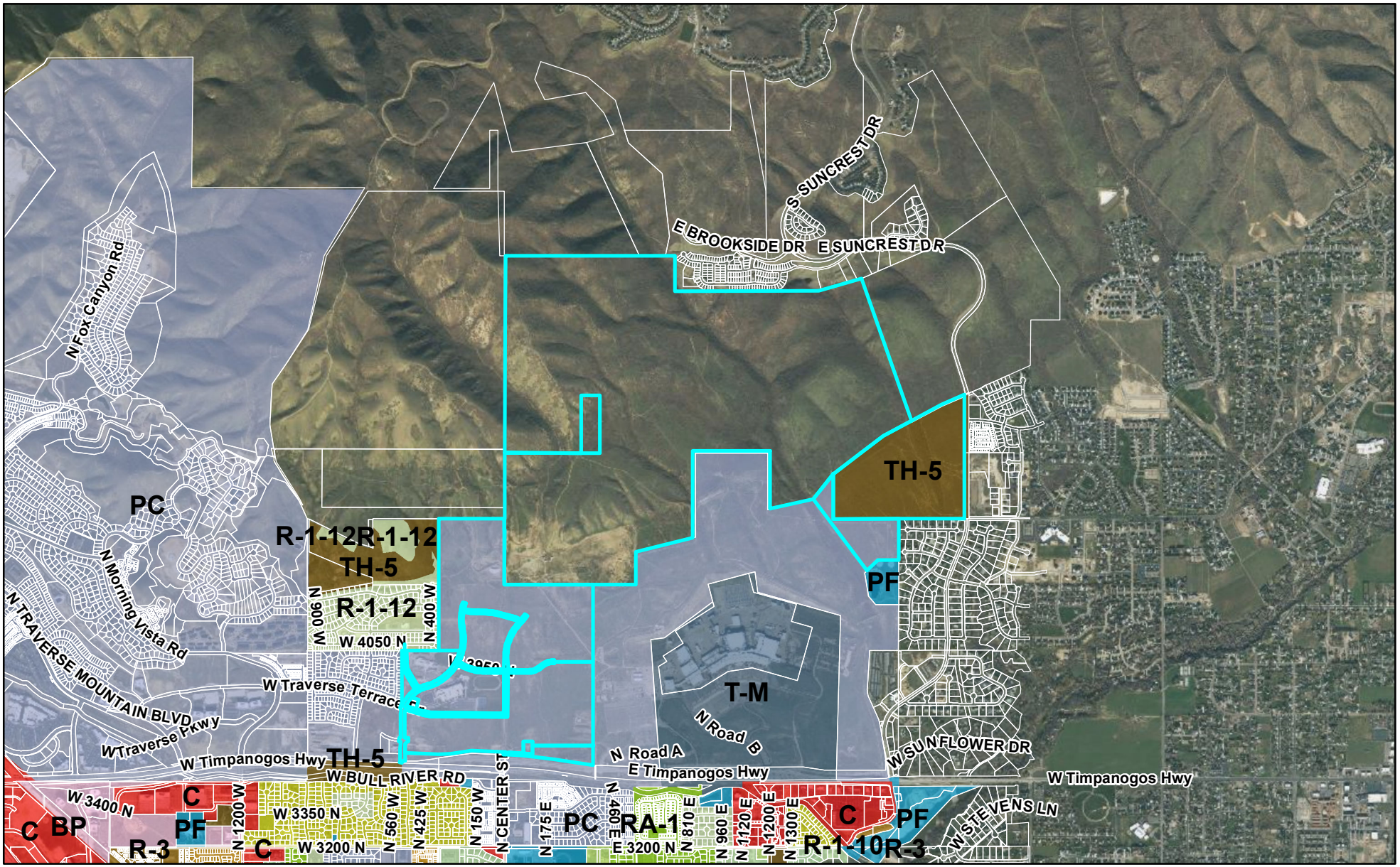


0 3,300 6,600 Feet

LEHI CITY

Skye Second Area Plan Amendment

Zoning



0 3,300 6,600 Feet

LEHI CITY

Agenda Item No: 12

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Brittney Harris
Submitting Department: Planning Division
Item Type: Action Item
Agenda Section: Regular Agenda

Subject:
Consideration of Final subdivision approval of the Ridge Holding Plat, a 5-lot commercial subdivision with no improvements located at approximately Ridge Road and Triumph Boulevard.

Suggested Action:

Attachments:

CC Staff Report Ridge Holdings Final Subdivision No Improvements 09.19.23.docx

Ridge Holding Final Subdivision DRC 09.06.23.docx

Ridge Holdings Plat.pdf

Aerial Map.pdf

General Plan Map.pdf

Zoning Map.pdf

RIDGE HOLDINGS
FINAL SUBDIVISION WITH NO IMPROVEMENTS
CITY COUNCIL REPORT

Applicant	Howland Partners		
Meeting Date	September 19, 2023		
Requested Action/Purpose	Approval of a final subdivision with no improvements		
Location	Approximately Ridge Drive and Triumph Boulevard		
Existing Land Use	Undeveloped		
Existing Zoning	Commercial		
General Plan Land Use Designation	Commercial		
Number of Lots/Units	5 Lots		
Adjacent Zoning and Land Use	*North*	Commercial	Undeveloped
	South	Regional Commercial	Carvana
	East	Commercial	Undeveloped
	West	I-15	I-15
Date of DRC Review	September 6, 2023		
Assigned Planner	Brittney		

REQUIRED ACTION

City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 11.130. Final Subdivision with No Improvements.
The Final Plat Subdivision with No Improvements Application allows for a legal subdivision of land but does not allow for the construction of any new utilities, roads, or other improvements.

PROPERTY HISTORY

June 30, 1978 The property came into Lehi City as part of the Calvin G. Fox Annexation

REPORT ANALYSIS

The applicant requests approval of the Ridge Holding Final Subdivision with No Improvements consisting of five commercial lots located at Ridge Drive and Triumph Boulevard. The proposed subdivision is a legal subdividing of land, all of the public improvements will take place with future site plans. All of the proposed lots meet the requirements for commercial lots.

The DRC reviewed the proposed final plat with no improvements and had five redline comments including:

1. Add a note that reciprocal cross access is provided between the lots.
2. Add a note that drainage will be shared between the lots.
3. Provide a table with site tabulations including overall acreage, number of lots, and zoning.

Please consider including all DRC comments in your motion

POSSIBLE MOTIONS AND FINDINGS

The City Council may move to approve or approve with modifications the proposed final subdivision. Any motion should include findings. Possible findings include:

1. The proposed subdivision does not include any improvements and is simply a legal subdividing of land.
2. The proposed subdivision does/does not meet the requirements of the Development Code in regard to subdivision approvals.
3. Other findings based upon information presented at the public meeting.

Ridge Holding Subdivision
DRC Redline Comments

Howland Partners- request final subdivision review of the Ridge Holding, a 5-lot subdivision with no improvements located at Ridge Drive & Triumph Blvd.

DRC Members Present: Glade Kirkham, Garion Rowett, Ryan Allred, Shelbey Brewer, Kim Struthers, Gary Smith, Ross Dinsdale, James Farnsworth
Assigned Planner: Brittney
Representatives of the Applicant Present: Dana Howland and Wade Edwards
Date of Plans Reviewed: 8/29/23
Time Start: 3:40pm
Time End: 3:45pm

DRC REDLINE COMMENTS:
Glade – Power: No comments
Garion – Fire: No comments
Ryan – Water/Sewer: No comments
James – Parks: No comments
Gary – Building/Inspections: No comments
Shelbey – Public Works: No comments
Ross – Engineering:
1. Double check if PUE has been recorded, change wording if not. And label as PUE and RCE.
2. Add a note that reciprocal cross access is provided between the lots.
3. Add a note that drainage will be shared between the lots.

Kim – Planning:
4. Coordinate with Brittney on addresses for the lots.
5. Provide a table with site tabulations including overall acreage, number of lots, and zoning.

PRIOR TO RECORDING OF PLAT:
1. Provide a Mylar of the final plat for recording with the owners notarized signature(s).
2. Include surveyor's and engineer's stamps and signatures on the plat.
3. Submit a title report to be reviewed by Lehi City Attorney.

DRC GENERAL COMMENTS:
1. On the power, developer will install conduit; Lehi City Power will install all other required power infrastructure shown on the plans and charge the developer for the costs. These costs are separate from power impact fees that are paid with the building permit.
2. Developer is responsible to purchase, move or remove any existing RMP facilities.
3. Developer is responsible to furnish adequate rights of way or easements for construction of off-site power line extensions.
4. Once approved by the Planning Commission or City Council (whichever is applicable) plans may be submitted for check-off. Check-off plans consist of one 24x36 set of plans submitted to the Planning Department. When changes need to be made to a check-off set, revise the affected sheets only. Each new submittal will require a revision date on each new sheet.
5. Prior to the pre-construction meeting, Lehi City Staff will make copies of plans for the meeting from the check-off set and the developer will pay fees for the copies.
6. All signage will require a separate review and approval process
7. All required private improvements (except private landscaping) shall be completed prior to the certificate of occupancy being granted.
8. The approval of a development shall be effective for a period of two (2) years from the date the development is approved by the Planning Commission or City Council, whichever is applicable.
9. Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

provided by either a twenty (20) foot minimum width temporary or permanent road, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be kept clear of all fencing, barricades, dumpsters, vehicles, construction materials and debris and maintained until permanent fire apparatus access roads are available.

THIS ITEM WILL BE SCHEDULED FOR CITY COUNCIL ON SEPTEMBER 19, 2023

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

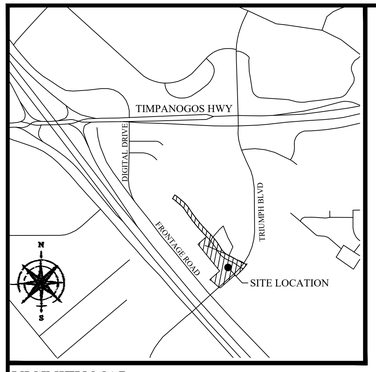
RIDGE HOLDINGS

COMMERCIAL SUBDIVISION

PLAT 1

VACATING & AMENDING A PART OF LOTS 2 & 3 OF LEHI POINTE - PHASE 2

LOCATED IN THE WEST HALF OF SECTION 31, T4S, R1E,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH



VICINITY MAP

LEGEND

- BOUNDARY
- SECTION LINE
- EASEMENT
- RIGHT-OF-WAY LINE
- CENTERLINE
- BUILDING SETBACK
- EXISTING PROPERTY LINE
- SECTION MONUMENT (FOUND)
- STREET MONUMENT (TO BE SET)
- BOUNDARY MARKERS

Curve Table					
CURVE	RADIUS	DELTA	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	15.00	101°44'48"	26.64	N08°16'01"W	23.27
C2	2460.00	1°24'06"	60.18	N59°50'28"W	60.17
C3	2468.00	1°20'23"	57.71	S64°22'40"E	57.71
C4	2468.00	2°48'18"	120.83	N63°38'42"W	120.82
C5	332.00	35°47'58"	207.44	N47°08'52"W	204.08
C6	868.00	14°59'13"	227.04	N36°44'30"W	226.40
C7	332.00	0°28'18"	2.73	S29°29'02"E	2.73
C8	2468.00	1°27'55"	63.12	S62°58'31"E	63.11
C9	332.00	35°19'41"	204.71	S47°23'01"E	201.48
C10	400.00	9°22'45"	65.48	S53°51'54"E	65.41
C11	2500.00	6°28'07"	282.24	S61°48'48"E	282.09
C12	400.00	14°56'26"	104.30	S41°42'19"E	104.01
C13	300.00	35°47'58"	187.45	S47°08'52"E	184.41
C14	2000.00	10°00'00"	349.07	S39°14'06"E	348.62
C15	900.00	14°59'13"	235.41	S36°44'30"E	234.74
C16	785.00	4°17'22"	58.77	N40°27'42"E	58.76
C17	785.00	6°12'22"	85.03	N45°42'26"E	84.99
C18	785.00	3°49'24"	52.38	N36°24'19"E	52.37

NOTES

1. #5 REBAR & CAP (FOCUS ENG) TO BE SET AT ALL LOT CORNERS. NAILS OR PLUGS TO BE SET IN TOP BACK OF CURB AT EXTENSION OF SIDE LOT LINES, IN LIEU OF REBAR AND CAPS AT FRONT LOT CORNERS.

2. ALL PUBLIC UTILITY EASEMENTS PLATTED HEREON ARE IN PERPETUITY FOR INSTALLATION, MAINTENANCE, REPAIR AND REPLACEMENT OF PUBLIC UTILITIES, SIDEWALKS AND APPURTENANT PARTS THEREOF AND THE RIGHT TO REASONABLE ACCESS TO GRANTOR'S PROPERTY FOR THE ABOVE DESCRIBED PURPOSES. THE EASEMENT SHALL RUN WITH THE REAL PROPERTY AND SHALL BE BINDING UPON THE GRANTOR AND THE GRANTOR'S SUCCESSORS, HEIRS, AND ASSIGNS.

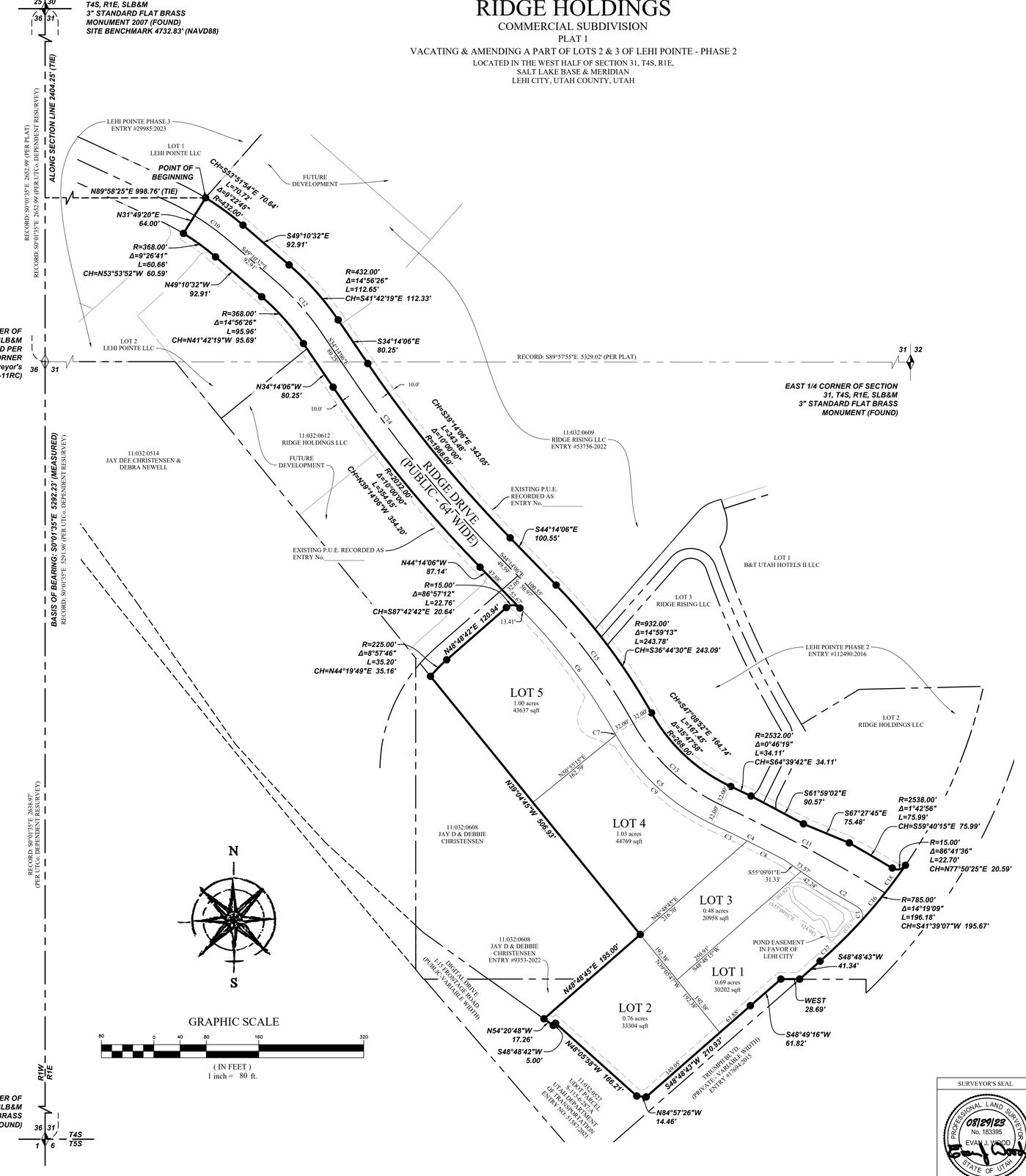
5. THE INSTALLATION OF IMPROVEMENTS SHALL CONFORM TO ALL CITY STANDARDS, RESOLUTIONS AND ORDINANCES.

6. BUILDING PERMITS WILL NOT BE ISSUED UNTIL ALL IMPROVEMENTS HAVE BEEN INSTALLED AND ACCEPTED BY THE CITY IN WRITING OR BONDED FOR.

7. THIS AREA IS SUBJECT TO THE NORMAL, EVERYDAY SOUNDS, ODORS, SIGHTS, EQUIPMENT, FACILITIES, AND ANY OTHER ASPECTS ASSOCIATED WITH AGRICULTURAL LIFESTYLES. FUTURE RESIDENTS SHOULD ALSO RECOGNIZE THE RISK INHERENT WITH LIVESTOCK.

8. PERMANENT DETENTION FACILITY TO BE OWNED AND MAINTAINED BY THE OWNERS OF THIS PROPERTY, NOT TO BE ALTERED OR REMOVED WITHOUT APPROVAL FROM THE LEHI CITY COUNCIL AND LEHI CITY ENGINEER.

9. PARTS OF PRIVATE ROAD IN LEHI POINTE PHASE 2 WERE VACATED BY EASEMENT AGREEMENT RECORDED AS ENTRY NO. 90115:2022 IN THE UTAH COUNTY RECORDER'S OFFICE.



1 OF 1	8/23/2023

PREPARED FOR

OWNER/DEVELOPER
HOWLAND PARTNERS INC.
9450 SOUTH REDWOOD ROAD
SOUTH JORDAN, UTAH 84095
(801) 253-8950
DANA HOWLAND

FOCUS ©
ENGINEERING AND SURVEYING, LLC
6949 SOUTH HIGH TECH DRIVE SUITE 200
MIDVALE, UT 84047 PH: (801) 352-0075
www.focusutah.com

SURVEYOR'S CERTIFICATE

I, Evan J. Wood, do hereby certify that I am a Professional Land Surveyor, and that I hold License No. 183395 in accordance with Title 58, Chapter 22 of Utah State Code. I further certify by authority of the owners(s) that I have completed a Survey of the property described on this Plat in accordance with Section 17-23-17 of said Code, and have subdivided said tract of land into lots, streets, and easements, and the same has, or will be correctly surveyed, staked and monumented on the ground as shown on this Plat,

Evan J. Wood — 08/29/2023

Evan J. Wood
Professional Land Surveyor
License No. 183395

Date

BOUNDARY DESCRIPTION

A tract of land being situate in the West Half of Section 31, Township 4 South, Range 1 East, Salt Lake Base and Meridian, vacating and amending a part of Lots 2 and 3 of Lehi Pointe - Phase 2 Commercial Subdivision recorded as Entry #112490:2016 on file with Utah County Recorder, more particularly described as follows:

Beginning on the southerly corner of Lot 1, Lehi Pointe - Phase 3 recorded as Entry #29985:2023 of official records, said point also being located S00°01'35"E 2404.25 feet along the Section Line and N89°58'25"E 998.76 feet from the Northwest Corner of Section 31, Township 4 South, Range 1 East, Salt Lake Base and Meridian, thence Southeasterly 70.72 feet along a curve to the right having a radius of 432.00 fee through a central angle of 09°22'45" (Chord: S53°51'54"E 70.64 feet); thence S49°10'32"E 92.91 feet; thence Southeasterly 112.65 feet along a curve to the right having a radius of 432.00 feet through a central angle of 14°56'26" (Chord: S41°42'19"E 112.33 feet); thence S34°14'06"E 80.25 feet; thence Southeasterly 343.48 feet along a curve to the left having a radius of 1,968.00 feet through a central angle of 10°00'00" (Chord: S39°14'06"E 343.05 feet); thence S44°14'06"E 100.55 feet; thence Southeasterly 243.78 feet along a curve to the right having a radius of 932.00 feet through a central angle of 14°59'13" (Chord: S36°44'30"E 243.09 feet); thence Southeasterly 167.45 feet along a reverse curve to the left having a radius of 268.00 feet through a central angle of 35°47'58" (Chord: S47°08'52"E 164.74 feet); thence Southeasterly 34.11 feet along a reverse curve to the right having a radius of 2,532.00 feet through a central angle of 00°46'19" (Chord: S64°39'42"E 34.11 feet); thence S61°59'02"E 90.57 feet; thence S67°27'45"E 75.48 feet; thence Southeasterly 75.99 feet along a non-tangent curve to the right having a radius of 2,538.00 feet through a central angle of 01°42'56" (Chord: S59°40'15"E 75.99 feet); thence Easterly 22.70 feet along a reverse curve to the left having a radius of 15.00 feet through a central angle of 86°41'36" (Chord: N77°50'25"E 20.59 feet) to the northwesterly Right-of-way of Triumph Boulevard, dedicated and recorded on March 05, 2015 as Entry No. 17694:2015 of official records; thence along said Right-of-way the following two (2) courses: (1) Southwesterly 196.18 feet along a non-tangent curve to the right having a radius of 785.00 feet through a central angle of 14°19'09 (Chord: S41°39'07"W 195.67 feet); thence (2) S48°48'43"W 41.34 feet to a northerly line of a parcel of land identified by Utah County Recorder as number 11:032:0527, also being identified as UDOT Parcel No. S 115-6:287:A as described by a Deed, recorded on March 18, 2021 as Entry No. 51587:2021, of official records; thence along said parcel the following seven (7) courses: (1) West 28.69 feet; thence (2) S48°49'16"W 61.82 feet; thence (3) S48°48'43"W 210.93 feet; thence (4) N84°57'26"W 14.46 feet; thence (5) N48°05'58"W 166.21 feet; thence (6) S48°48'42"W 5.00 feet; thence (7) N54°20'48"W 17.26 feet to the southeasterly deed line as described in Quit Claim Deed recorded as Entry #9353:2022 of official records; thence along and beyond said deed line N48°48'45"E 195.00 feet; thence N39°04'45"W 506.93 feet; thence Northeasterly 35.20 feet along a non-tangent curve to the right having a radius of 225.00 feet through a central angle of 08°57'46" (Chord: N44°19'49"E 35.16 feet); thence N48°48'42"E 120.94 feet; thence Easterly 22.76 feet along a curve to the right having a radius of 15.00 feet through a central angle of 86°57'12" (Chord: S87°42'42"E 20.64 feet); thence N44°14'06"W 87.14 feet; thence Northwesterly 354.65 feet along a curve to the right having a radius of 2,032.00 feet through a central angle of 10°00'00" (Chord: N39°14'06"W 354.20 feet); thence N34°14'06"W 80.25 feet to and along the east lot line of Lot 2 of said Lehi Pointe - Phase 3; thence along said Lot 2 the following three (3) courses: (1) Northwesterly 95.96 feet along a curve to the left having a radius of 368.00 feet through a central angle of 14°56'26" (Chord: N41°42'19"W 95.69 feet); thence (2) N49°10'32"W 92.91 feet; thence (3) Northwesterly 60.66 feet along a curve to the left having a radius of 368.00 feet through a central angle of 09°26'41" (Chord: N53°53'52"W 60.59 feet) to a subdivision line of said Lehi Pointe - Phase 3; thence along said subdivision line N31°49'20"E 64.00 feet to the point of beginning.

Contains: 270,331 SQ feet or 6.21 acres±

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENT THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, BLOCKS, STREETS AND EASEMENTS AND DO HEREBY DEDICATE ANY PUBLIC STREETS AND OTHER PUBLIC AREAS AS INDICATED HEREON FOR PERPETUAL USE OF THE PUBLIC.

IN WITNESS WHEREOF WE HAVE HEREUNTO SET OUR HANDS THIS _____ DAY OF _____ A.D. 20__

BY: _____
(PRINTED NAME)

ITS: _____

LIMITED LIABILITY ACKNOWLEDGMENT

STATE OF UTAH
S.S.
COUNTY OF _____

ON THE ____ DAY OF _____A.D. 20____ PERSONALLY APPEARED BEFORE ME , THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR THE COUNTY OF _____,IN SAID STATE OF UTAH, _____, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE/SHE IS THE _____OF _____ L.L.C., A UTAH L.L.C. AND THAT HE/SHE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID LIMITED LIABILITY COMPANY FOR THE PURPOSES THEREIN MENTIONED.

MY COMMISSION EXPIRES:_____ _____
A NOTARY PUBLIC COMMISSIONED IN UTAH RESIDING IN _____ COUNTY

MY COMMISSION No._____ _____
PRINTED FULL NAME OF NOTARY

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY OF LEHI, COUNTY OF UTAH, APPROVES THIS SUBDIVISION SUBJECT TO THE CONDITIONS AND RESTRICTIONS STATED HEREON AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC THIS _____ DAY OF _____, A.D. 20__

APPROVED BY MAYOR

APPROVED_____ ATTEST: _____
CITY ENGINEER (SEE SEAL BELOW) CLERK/RECORDER (SEE SEAL BELOW)

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, A.D. 20____, BY THE LEHI CITY PLANNING COMMISSION.

DIRECTOR - SECRETARY CHAIRMAN, PLANNING COMMISSION

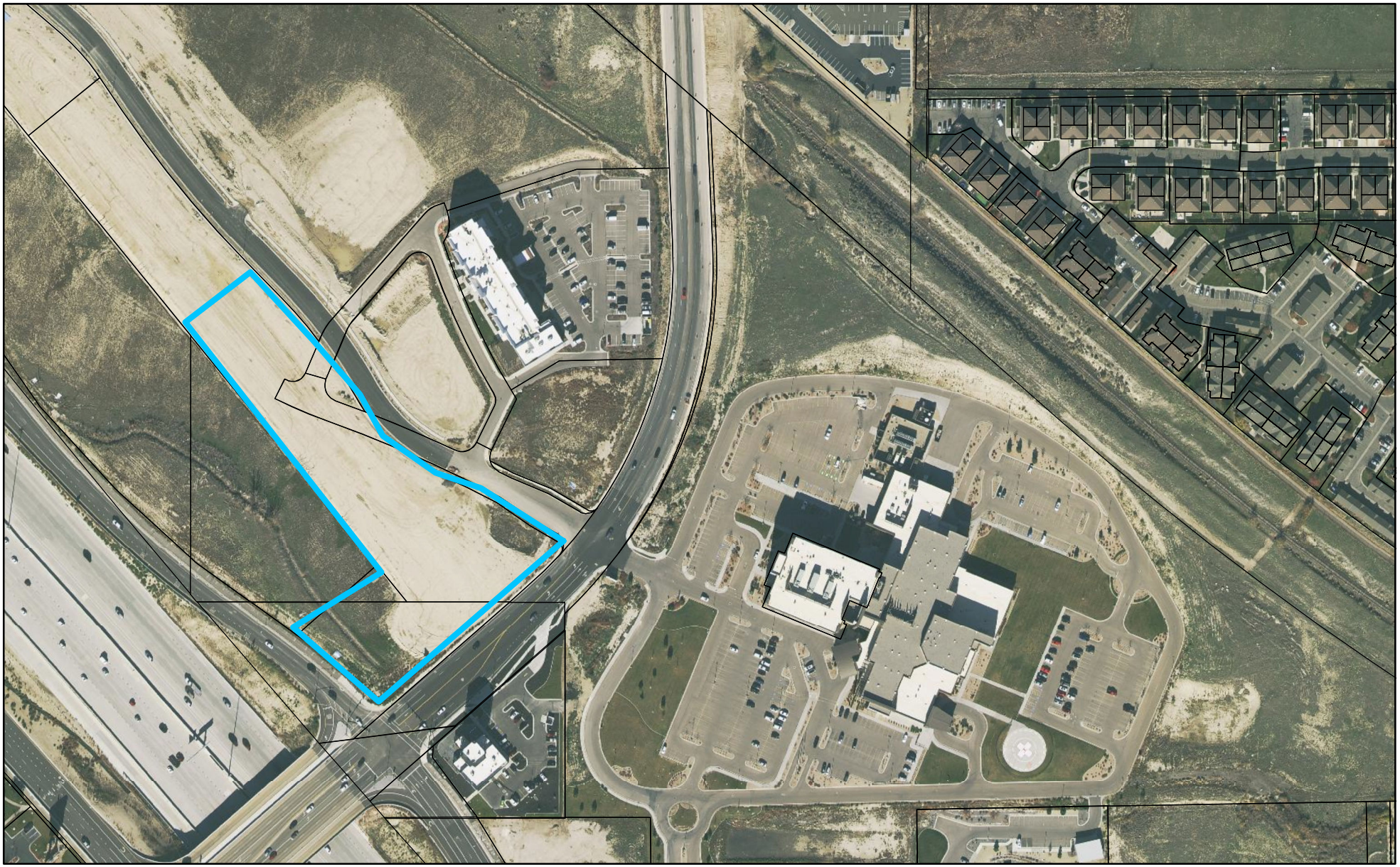
RIDGE HOLDINGS
COMMERCIAL SUBDIVISION
PLAT 1
VACATING & AMENDING A PART OF LOTS 2 & 3 OF LEHI POINTE - PHASE 2
LOCATED IN THE WEST HALF OF SECTION 31, T4S, R1E,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH

SURVEYOR'S SEAL	CITY ENGINEER'S SEAL	CITY RECORDER'S SEAL	COUNTY RECORDER'S SEAL
PROFESSIONAL LAND SURVEYOR 08/29/23 No. 183395 EVAN J. WOOD STATE OF UTAH			

Z:_2023\23-0016 Torchy's_Shake Shack Site Plan\design 23-0016\dwg\sheets\C2.0 Preliminary.dwg

Ridge Holdings

Aerial



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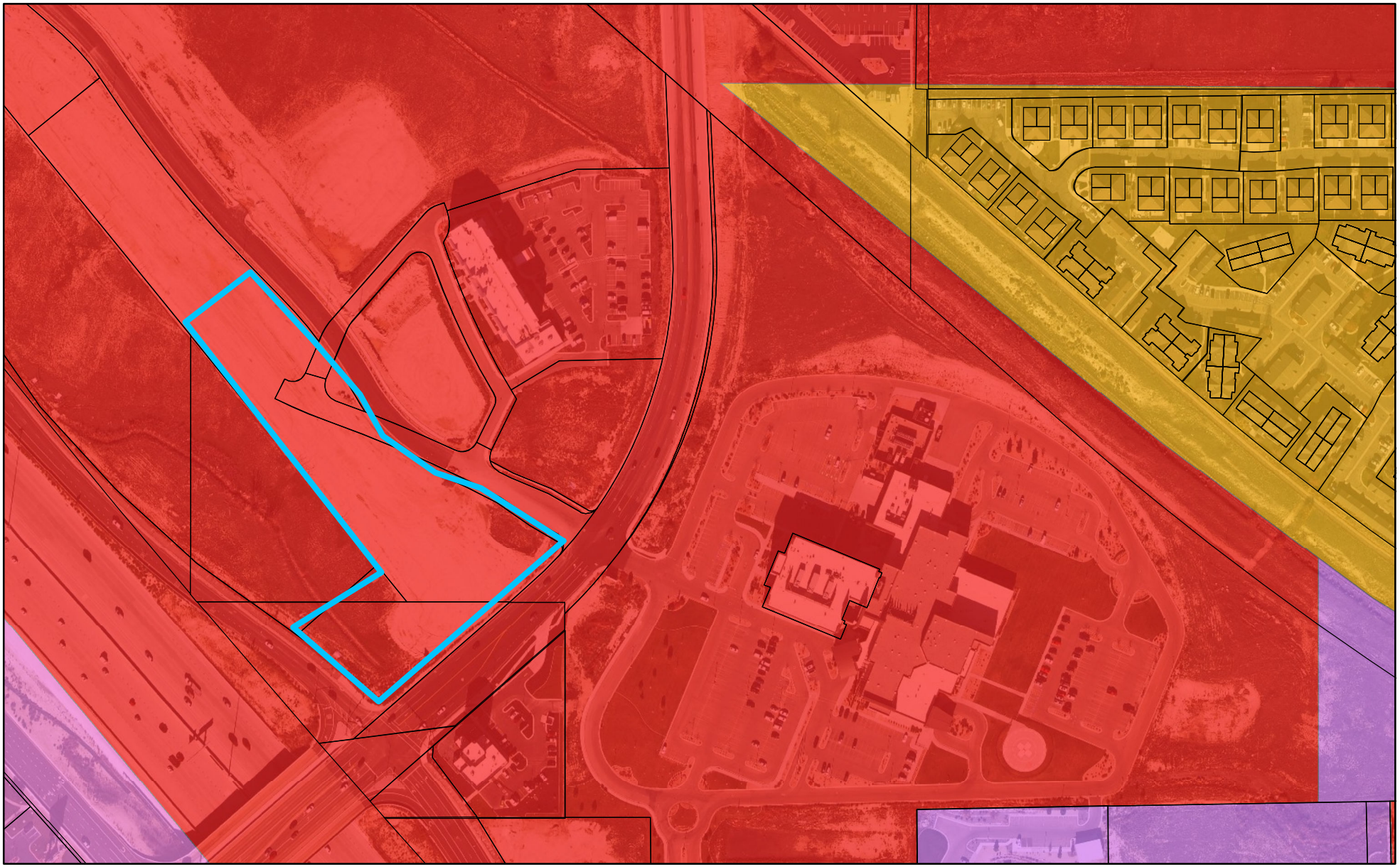
LEHI CITY

1093

Ridge Holdings

General Plan



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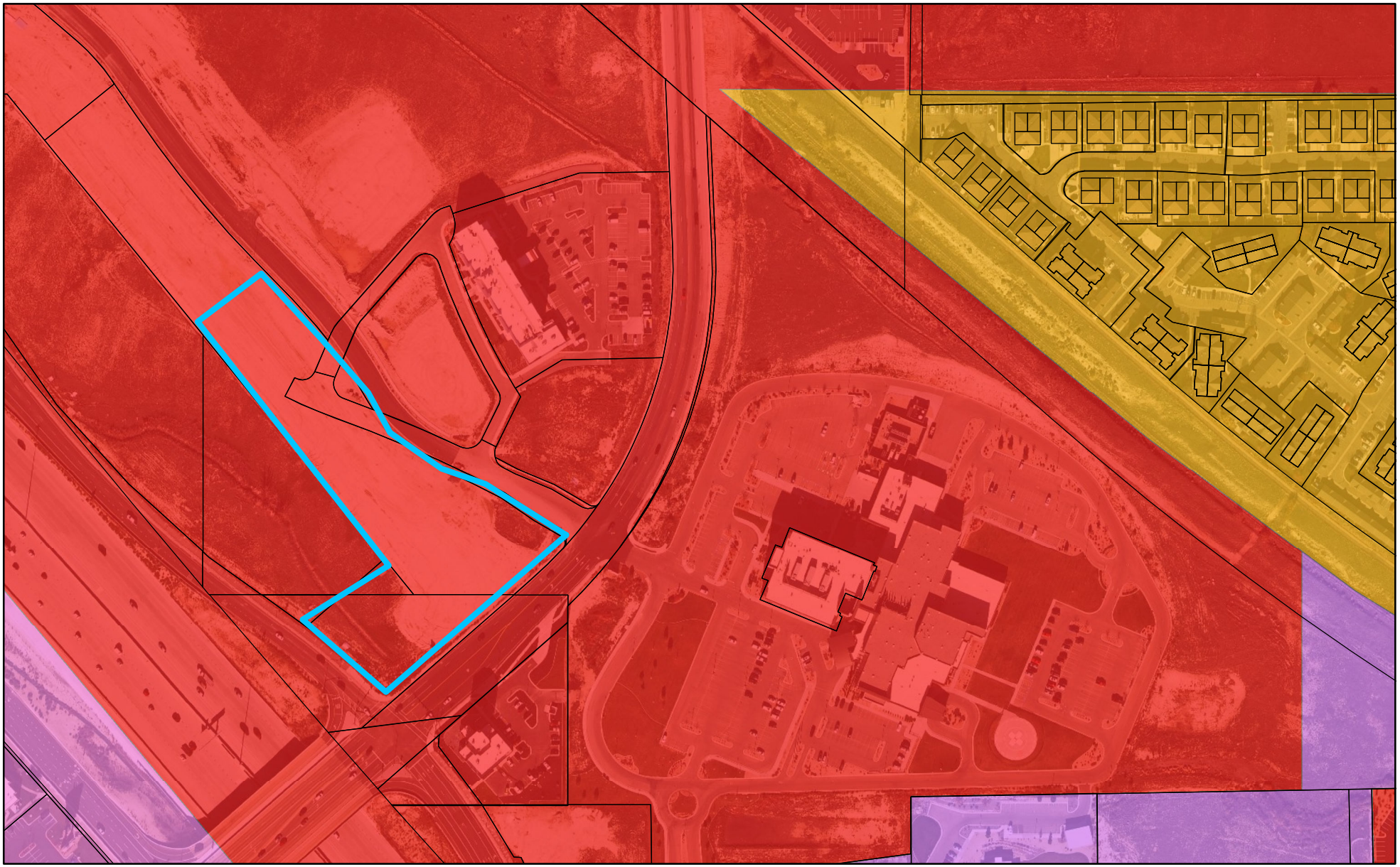
LEHI CITY

1094

Ridge Holdings

Zoning



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LEHI CITY

1095

Agenda Item No: 13

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Brittney Harris
Submitting Department: Planning Division
Item Type: Action Item
Agenda Section: Regular Agenda

Subject:
Consideration of Final subdivision approval of the Mountain Slopes Urban Living, a commercial subdivision with no improvements located at approximately Ridge Road and Stockton Lane.

Suggested Action:

Attachments:

CC Staff Report Mountain Slopes Final Subdivision No Improvements 09.19.23.docx

Mountain Slopes Urban Living DRC 08.16.23.docx

Mountain Slopes Urban Living Plat.pdf

Aerial Map.pdf

General Plan Map.pdf

Zoning Map.pdf

MOUNTAIN SLOPES URBAN LIVING
FINAL SUBDIVISION WITH NO IMPROVEMENTS
CITY COUNCIL REPORT

Applicant	Howland Partners		
Meeting Date	September 19, 2023		
Requested Action/Purpose	Approval of a final subdivision with no improvements		
Location	Approximately Ridge Road and Stockton Lane		
Existing Land Use	Undeveloped		
Existing Zoning	Commercial		
General Plan Land Use Designation	Commercial		
Number of Lots/Units	5 Lots		
Adjacent Zoning and Land Use	*North*	Rail Trail	Rail Trail
	South	Commercial	Undeveloped
	East	Commercial	Undeveloped
	West	Commercial	Lehi Pointe Shopping Center
Date of DRC Review	August 16, 2023		
Assigned Planner	Brittney Harris		

REQUIRED ACTION

City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 11.130. Final Subdivision with No Improvements.
The Final Plat Subdivision with No Improvements Application allows for a legal subdivision of land but does not allow for the construction of any new utilities, roads, or other improvements.

PROPERTY HISTORY

June 30, 1978	The property came into Lehi City as part of the Calvin G. Fox Annexation
November 19, 2019	City Council approved the Lehi Pointe Phase 3 Subdivision

REPORT ANALYSIS

The applicant requests approval of the Mountain Slopes Urban Living commercial subdivision with no improvements located at approximately Ridge Road and Stockton Lane. The proposed subdivision includes five commercial lots and public access and utility easements. This further subdivides what was previously lot 1 of the Lehi Pointe Phase 3 Subdivision.

All the proposed lots meet the requirements for commercial lots. All improvements of these lots will occur with future site plans.

The DRC reviewed the proposed final plat with no improvements and had eight redline comments including:

1. Show Power (PUE) and other dry utilities as a separate easement from the wet utilities and access easements.
2. Show and label PUE along Ridge Road on Lot 105
3. Label as a "Commercial Subdivision" in the title block
4. Include a tabulation on the plat including acreage, number of lots, and the zoning.
5. Include a note on the plat that this is just a legal subdividing of land and that all improvements will take place with the site plans.
6. Show public access easement for the trail.

Please consider including all DRC comments in your motion.

POSSIBLE MOTIONS AND FINDINGS

The City Council may move to approve or approve with modifications the proposed final subdivision. Any motion should include findings. Possible findings include:

1. The proposed subdivision does not include any improvements and is simply a legal subdividing of land.
2. The proposed subdivision does/does not meet the requirements of the Development Code in regard to subdivision approvals.
3. Other findings based upon information presented at the public meeting.

Mountain Slopes Urban Living
DRC Redline Comments

Howland Partners- requests review of the Mountain Slopes Urban Living subdivision with no improvements located at approximately Ridge Road and Stockton Lane.

DRC Members Present: Glade Kirkham, Garion Rowett, Ryan Allred, Shelbey Brewer, Mike West, Gary Smith, Ross Dinsdale, James Farnsworth
Assigned Planner: Brittney
Representatives of the Applicant Present: Dana Howland and Wade Edwards
Date of Plans Reviewed: 8/8/23
Time Start: 2:42pm
Time End: 2:49pm

DRC REDLINE COMMENTS:
Glade – Power:
1. Show Power (PUE) and other dry utilities as a separate easement from the wet utilities and access easements.
2. Show and label PUE along Ridge Road on Lot 105
3. Easement at C3, C4 lots 102 & 103 do not work for power routing in compliance with Lehi Power Standards
4. Provide PUE/ power easement along unlabeled access on the S.E. side of the subdivision.

Garion – Fire: No comments
Ryan – Water/Sewer: No comments
James – Parks: No comments
Gary – Building/Inspections: No comments
Shelbey– Public Works: No comments
Ross – Engineering: See Glade's comments above
Mike – Planning:
5. Label as a "Commercial Subdivision" in the title block
6. Include a tabulation on the plat including acreage, number of lots, and the zoning.
7. Include a note on the plat that this is just a legal subdividing of land and that all improvements will take place with the site plans.
8. Show public access easement for the trail.

PRIOR TO RECORDING OF PLAT:
1. Provide a Mylar of the final plat for recording with the owners notarized signature(s).
2. Include surveyor's and engineer's stamps and signatures on the plat.
3. Provide a signed easement verification sheet (for proposed public utility easements on the plat).

DRC GENERAL COMMENTS:
1. On the power, developer will install conduit; Lehi City Power will install all other required power infrastructure shown on the plans and charge the developer for the costs. These costs are separate from power impact fees that are paid with the building permit.
2. Developer is responsible to purchase, move or remove any existing RMP facilities.
3. Developer is responsible to furnish adequate rights of way or easements for construction of off-site power line extensions.
4. Once approved by the Planning Commission or City Council (whichever is applicable) plans may be submitted for check-off. Check-off plans consist of one 24x36 set of plans submitted to the Planning Department. When changes need to be made to a check-off set, revise the affected sheets only. Each new submittal will require a revision date on each new sheet.
5. Prior to the pre-construction meeting, Lehi City Staff will make copies of plans for the meeting from the check-off set and the developer will pay fees for the copies.
6. All signage will require a separate review and approval process

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

7. All required private improvements (except private landscaping) shall be completed prior to the certificate of occupancy being granted.
8. The approval of a development shall be effective for a period of two (2) years from the date the development is approved by the Planning Commission or City Council, whichever is applicable.
9. Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either a twenty (20) foot minimum width temporary or permanent road, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be kept clear of all fencing, barricades, dumpsters, vehicles, construction materials and debris and maintained until permanent fire apparatus access roads are available.

THIS ITEM WILL BE SCHEDULED FOR CITY COUNCIL ON SEPTEMBER 19th

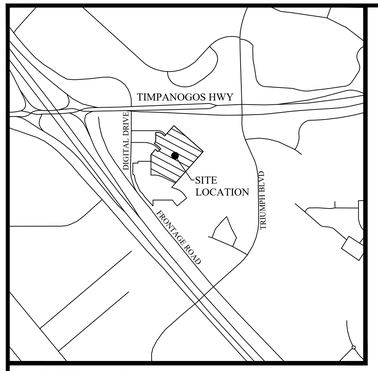
Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

MOUNTAIN SLOPES URBAN LIVING

SUBDIVISION

VACATING & AMENDING ALL OF LOT 1, LEHI POINTE - PHASE 3

LOCATED IN THE NORTHWEST QUARTER OF SECTION 31, T4S, R1E,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH



VICINITY MAP

LEGEND

- BOUNDARY
- SECTION LINE
- EASEMENT
- RIGHT-OF-WAY LINE
- CENTERLINE
- BUILDING SETBACK
- EXISTING PROPERTY LINE
- SECTION MONUMENT (FOUND)
- STREET MONUMENT (TO BE SET)
- BOUNDARY MARKERS

NOTES

1. #5 REBAR & CAP (FOCUS ENG) TO BE SET AT ALL LOT CORNERS. NAILS OR PLUGS TO BE SET IN TOP BACK OF CURB AT EXTENSION OF SIDE LOT LINES, IN LIEU OF REBAR AND CAPS AT FRONT LOT CORNERS.

2. ALL PUBLIC UTILITY EASEMENTS PLATTED HEREON ARE IN PERPETUITY FOR INSTALLATION, MAINTENANCE, REPAIR AND REPLACEMENT OF PUBLIC UTILITIES, SIDEWALKS AND APPURTENANT PARTS THEREOF AND THE RIGHT TO REASONABLE ACCESS TO GRANTOR'S PROPERTY FOR THE ABOVE DESCRIBED PURPOSES. THE EASEMENT SHALL RUN WITH THE REAL PROPERTY AND SHALL BE BINDING UPON THE GRANTOR AND THE GRANTOR'S SUCCESSORS, HEIRS, AND ASSIGNS.

3. ALL COMMON AREAS AND STREETS OR DRIVES TO SERVE AS PUBLIC UTILITY EASEMENTS.

4. ALL AREAS ARE COMMON AREAS AND FACILITIES EXCEPT AS OTHERWISE SPECIFICALLY DESIGNATED.

5. THE INSTALLATION OF IMPROVEMENTS SHALL CONFORM TO ALL CITY STANDARDS, RESOLUTIONS AND ORDINANCES.

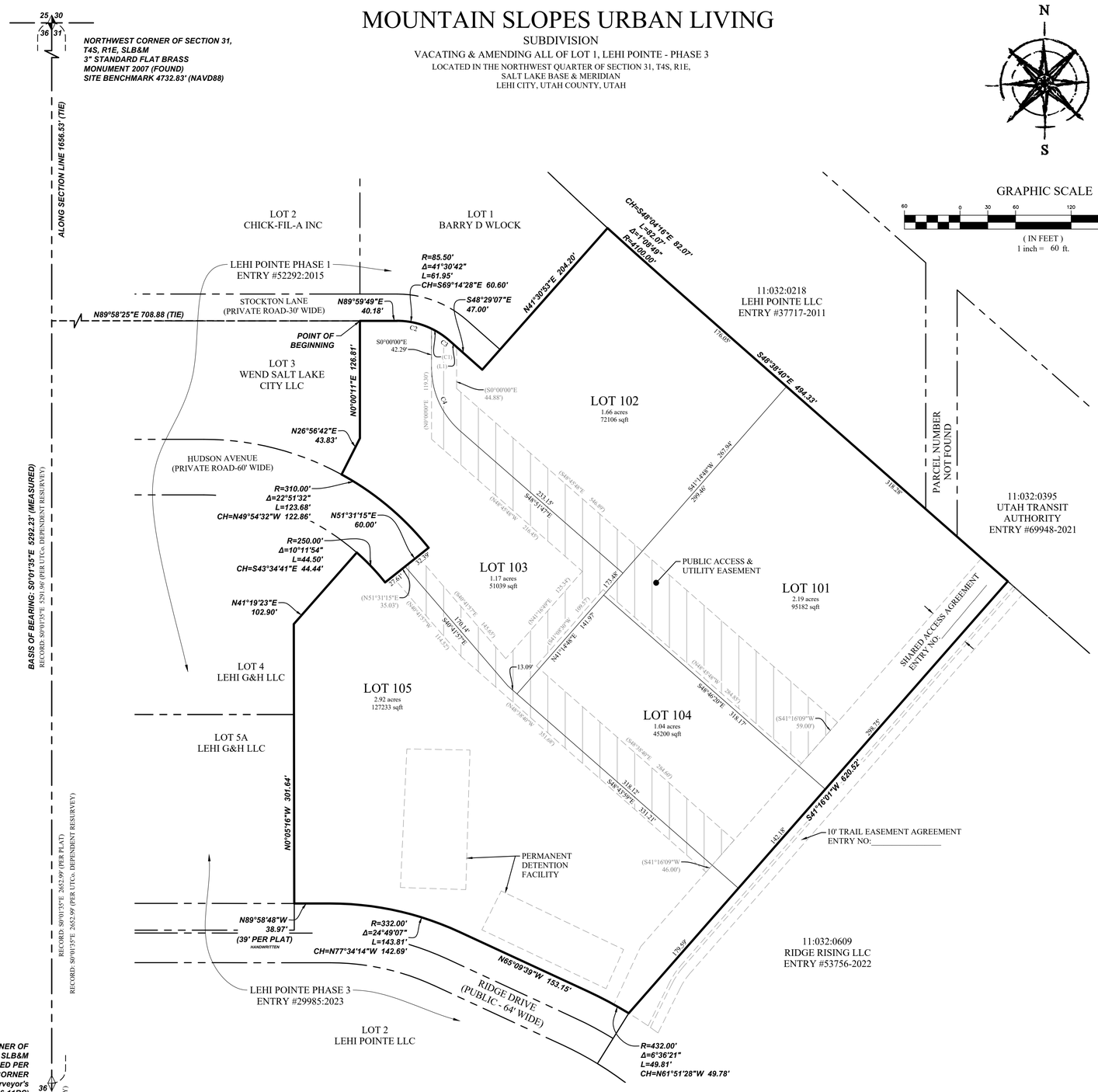
6. BUILDING PERMITS WILL NOT BE ISSUED UNTIL ALL IMPROVEMENTS HAVE BEEN INSTALLED AND ACCEPTED BY THE CITY IN WRITING OR BONDED FOR.

7. THIS AREA IS SUBJECT TO THE NORMAL, EVERYDAY SOUNDS, ODORS, SIGHTS, EQUIPMENT, FACILITIES, AND ANY OTHER ASPECTS ASSOCIATED WITH AGRICULTURAL LIFESTYLES. FUTURE RESIDENTS SHOULD ALSO RECOGNIZE THE RISK INHERENT WITH LIVESTOCK.

8. PERMANENT DETENTION FACILITY TO BE OWNED AND MAINTAINED BY THE OWNERS OF THIS PROPERTY, NOT TO BE ALTERED OR REMOVED WITHOUT APPROVAL FROM THE LEHI CITY COUNCIL AND LEHI CITY ENGINEER.

Curve Table					
CURVE	RADIUS	DELTA	LENGTH	CHORD DIRECTION	CHORD LENGTH
(C1)	85.50	15°43'40"	23.47	S56°20'57"E	23.40
C2	85.50	25°47'01"	38.48	S77°06'18"E	38.15
C3	85.50	15°43'40"	23.47	S56°20'57"E	23.40
C4	90.50	48°51'47"	77.18	S24°25'54"E	74.86

Line Table		
LINE	DIRECTION	LENGTH
(L1)	S48°29'07"E	10.05



GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

1 OF 1	8/4/2023

PREPARED FOR

OWNER/DEVELOPER
HOWLAND PARTNERS INC.
9450 SOUTH REDWOOD ROAD
SOUTH JORDAN, UTAH 84095
(801) 253-8950
DANA HOWLAND

FOCUS©
ENGINEERING AND SURVEYING, LLC
6949 SOUTH HIGH TECH DRIVE SUITE 200
MIDVALE, UT 84047 PH: (801) 352-0075
www.focusutah.com

SURVEYOR'S CERTIFICATE

I, Evan J. Wood, do hereby certify that I am a Professional Land Surveyor, and that I hold License No. 183395 in accordance with Title 58, Chapter 22 of Utah State Code. I further certify by authority of the owners(s) that I have completed a Survey of the property described on this Plat in accordance with Section 17-23-17 of said Code, and have subdivided said tract of land into lots, streets, and easements, and the same has, or will be correctly surveyed, staked and monumented on the ground as shown on this Plat,

Evan J. Wood
Professional Land Surveyor
License No. 183395

08/08/2023
Date

BOUNDARY DESCRIPTION

All of Lot 1 Lehi Pointe Phase 3, according to the Official Plat thereof recorded as Entry #29985:2023 of Section 31, Township 4 South, Range 1 East, Salt Lake Base & Meridian, more particularly described as follows:

Beginning at located on the Northeast Corner of Lot 3 Lehi Pointe Phase 1 recorded as Entry #52292:2015 on file with the Utah County Recorder's Office, said point also being located S0°01'35"E 1656.53 feet along the Section line and N89°58'25"E 708.89 feet from the Northwest Corner of Section 31, Township 4 South, Range 1 East, Salt Lake Base and Meridian; thence running along said Lehi Pointe Phase 1 the following four (4) courses: (1) N89°59'49"E 40.18 feet; thence (2) Easterly along the arc of a non-tangent curve to the right having a radius of 85.50 feet a distance of 61.95 feet through a central angle of 41°30'42" (Chord: S69°14'28"E 60.60 feet); thence (3) S48°29'07"E 47.00 feet; thence (4) N41°30'53"E 204.20 feet to the westerly deed line as described in a Quit Claim Deed recorded as Entry #37714:2011 of official records; thence along said deed line the following (2) courses: Southeasterly along the arc of a non-tangent curve to the left having a radius of 4,100.00 feet a distance of 82.07 feet through a central angle of 01°08'49" (Chord: S48°04'16"E 82.07 feet); thence (2) S48°38'40"E 494.33 feet to the northwesterly deed line as described in a Quit Claim Deed recorded as Entry #53756:2022 of official records; thence along said deed line S41°16'01"W 620.52 feet to the northerly Right-of-way of Ridge Drive; thence along said Right-of-way the following four (4) courses: (1) Northwesterly along the arc of a non-tangent curve to the left having a radius of 432.00 feet a distance of 49.81 feet through a central angle of 06°36'21" (Chord: N61°51'28"W 49.78 feet); thence (2) N65°09'39"W 153.15 feet; thence (3) Westerly along the arc of a curve to the left having a radius of 332.00 feet a distance of 143.81 feet through a central angle of 24°49'07" (Chord: N77°34'14"W 142.69 feet); thence (4) N89°58'48"W 38.97 feet to the easterly subdivision line of said Lehi Pointe Phase 1; thence along said subdivision line the following seven (7) courses: (1) N00°05'16"W 301.64 feet; thence (2) N41°19'23"E 102.90 feet; thence (3) Southeasterly along the arc of a non-tangent curve to the right having a radius of 250.00 feet a distance of 44.50 feet through a central angle of 10°11'54" (Chord: S43°34'41"E 44.44 feet); thence (4) N51°31'15"E 60.00 feet; thence (5) Northwesterly along the arc of a non-tangent curve to the left having a radius of 310.00 feet a distance of 123.68 feet through a central angle of 22°51'32" (Chord: N49°54'32"W 122.86 feet); thence (6) N26°56'42"E 43.83 feet; (7) thence N00°00'11"E 126.81 feet to the point of beginning.

Contains: 390,794 square feet or 8.97 acres±

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENT THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, BLOCKS, STREETS AND EASEMENTS AND DO HEREBY DEDICATE ANY PUBLIC STREETS AND OTHER PUBLIC AREAS AS INDICATED HEREON FOR PERPETUAL USE OF THE PUBLIC.

IN WITNESS WHEREOF WE HAVE HEREUNTO SET OUR HANDS THIS _____ DAY OF _____ A.D. 20__

BY:_____
(PRINTED NAME)

ITS:_____

LIMITED LIABILITY ACKNOWLEDGMENT

STATE OF UTAH
S.S.
COUNTY OF _____

ON THE ____ DAY OF _____ A.D. 20____ PERSONALLY APPEARED BEFORE ME , THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR THE COUNTY OF _____, IN SAID STATE OF UTAH, _____, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE/SHE IS THE _____ OF _____ L.L.C., A UTAH L.L.C. AND THAT HE/SHE SIGNED THE OWNER'S DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID LIMITED LIABILITY COMPANY FOR THE PURPOSES THEREIN MENTIONED.

MY COMMISSION EXPIRES:_____

_____
A NOTARY PUBLIC COMMISSIONED IN UTAH RESIDING IN _____ COUNTY

MY COMMISSION No._____

_____
PRINTED FULL NAME OF NOTARY

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY OF LEHI, COUNTY OF UTAH, APPROVES THIS SUBDIVISION SUBJECT TO THE CONDITIONS AND RESTRICTIONS STATED HEREON AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC THIS _____ DAY OF _____, A.D. 20__

_____
APPROVED BY MAYOR

APPROVED_____ ATTEST: _____
CITY ENGINEER (SEE SEAL BELOW) CLERK/RECORDER (SEE SEAL BELOW)

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, A.D. 20___, BY THE LEHI CITY PLANNING COMMISSION.

_____ _____
DIRECTOR - SECRETARY CHAIRMAN, PLANNING COMMISSION

MOUNTAIN SLOPES URBAN LIVING
SUBDIVISION
VACATING & AMENDING ALL OF LOT 1, LEHI POINTE - PHASE 3
LOCATED IN THE NORTHWEST QUARTER OF SECTION 31, T4S, R1E,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH

SURVEYOR'S SEAL	CITY ENGINEER'S SEAL	CITY RECORDER'S SEAL	COUNTY RECORDER'S SEAL
PROFESSIONAL LAND SURVEYOR 08/08/23 No. 183395 EVAN J. WOOD STATE OF UTAH			

Z:\...2022\22-0257 Lehi Pointe\design 22-0257\dwg\sheets\Mountain Slopes Urban Living\22-0257 C2 Preliminary.dwg

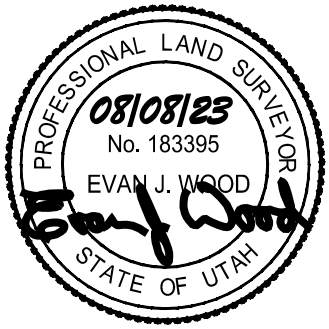
LEGAL DESCRIPTION
PREPARED FOR HOWLAND PARTNERS
MOUNTAIN SLOPES URBAN LIVING
LEHI CITY, UTAH
(8/7/2023)
22-0257
(ARS)

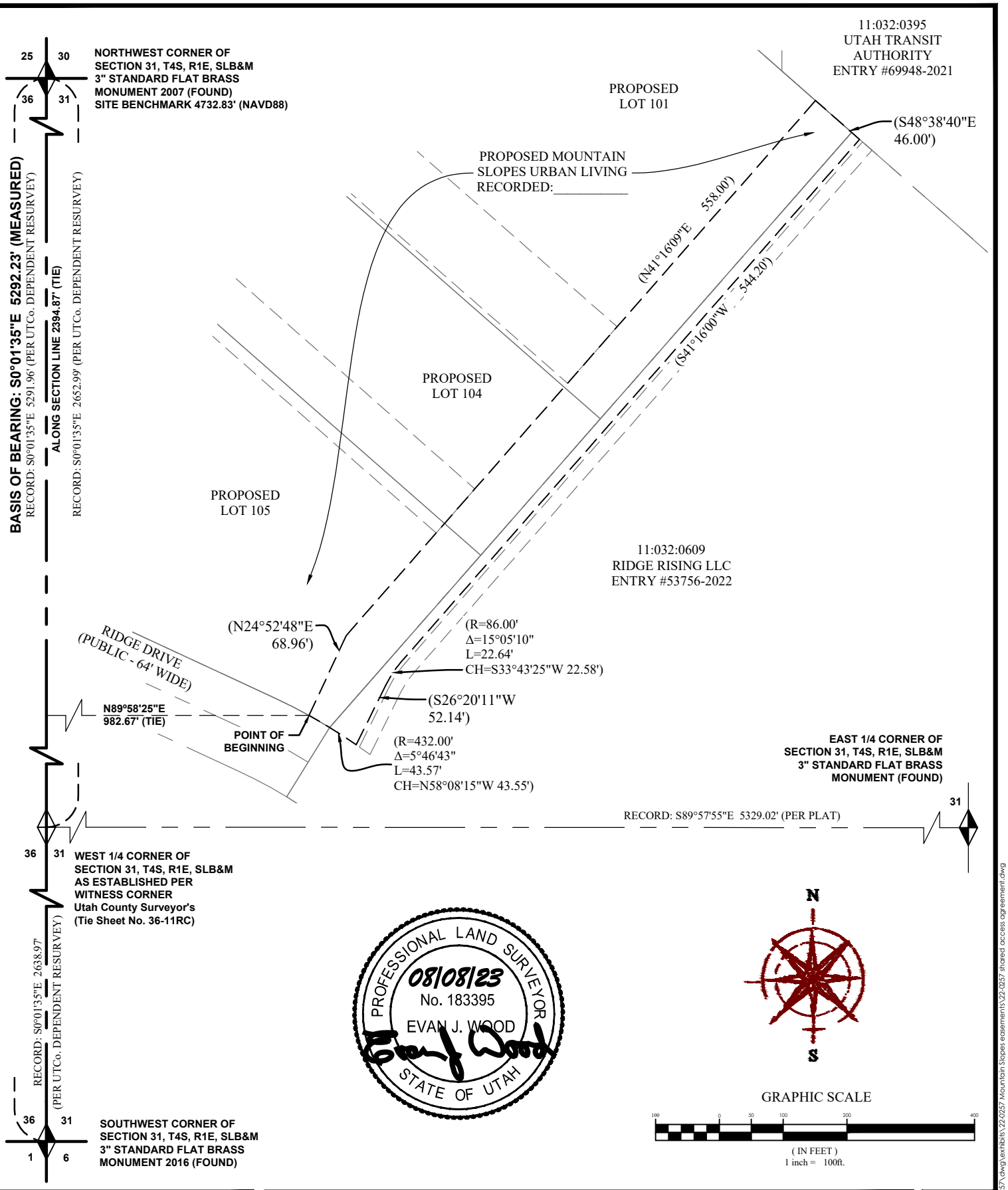
SHARED ACCESS AGREEMENT LEGAL DESCRIPTION

Located in the Northwest Quarter of Section 31, Township 4 South, Range 1 East, Salt Lake Base & Meridian, more particularly described as follows:

Beginning at a point located on the Northeasterly Right-of-way line of Ridge Drive, said point located S0º01’35”E 2394.87 feet along the Section line and N89º58’25”E 982.67 feet from the Northwest Corner of Section 31, Township 4 South, Range 1 East, Salt Lake Base and Meridian; thence N24°52'48"E 68.96 feet; thence N41°16'09"E 558.00 feet to the Northeasterly subdivision line of Lehi Pointe – Phase 3 Commercial Subdivision recorded as Entry #29985:2023 on file with the Utah County Recorder; thence along and beyond said subdivision line S48°38'40"E 46.00 feet; thence S41°16'00"W 544.20 feet; thence Southwesterly along the arc of a curve to the left having a radius of 86.00 feet a distance of 22.64 feet through a central angle of 15°05'10" Chord: S33°43'25"W 22.58 feet; thence S26°20'11"W 52.14 feet; thence Northwesterly along said Right-of-way along the arc of a non-tangent curve to the left having a radius of 432.00 feet a distance of 43.57 feet through a central angle of 05°46'43" Chord: N58°08'15"W 43.55 feet to the point of beginning.

Contains: 28,530 SQ feet±





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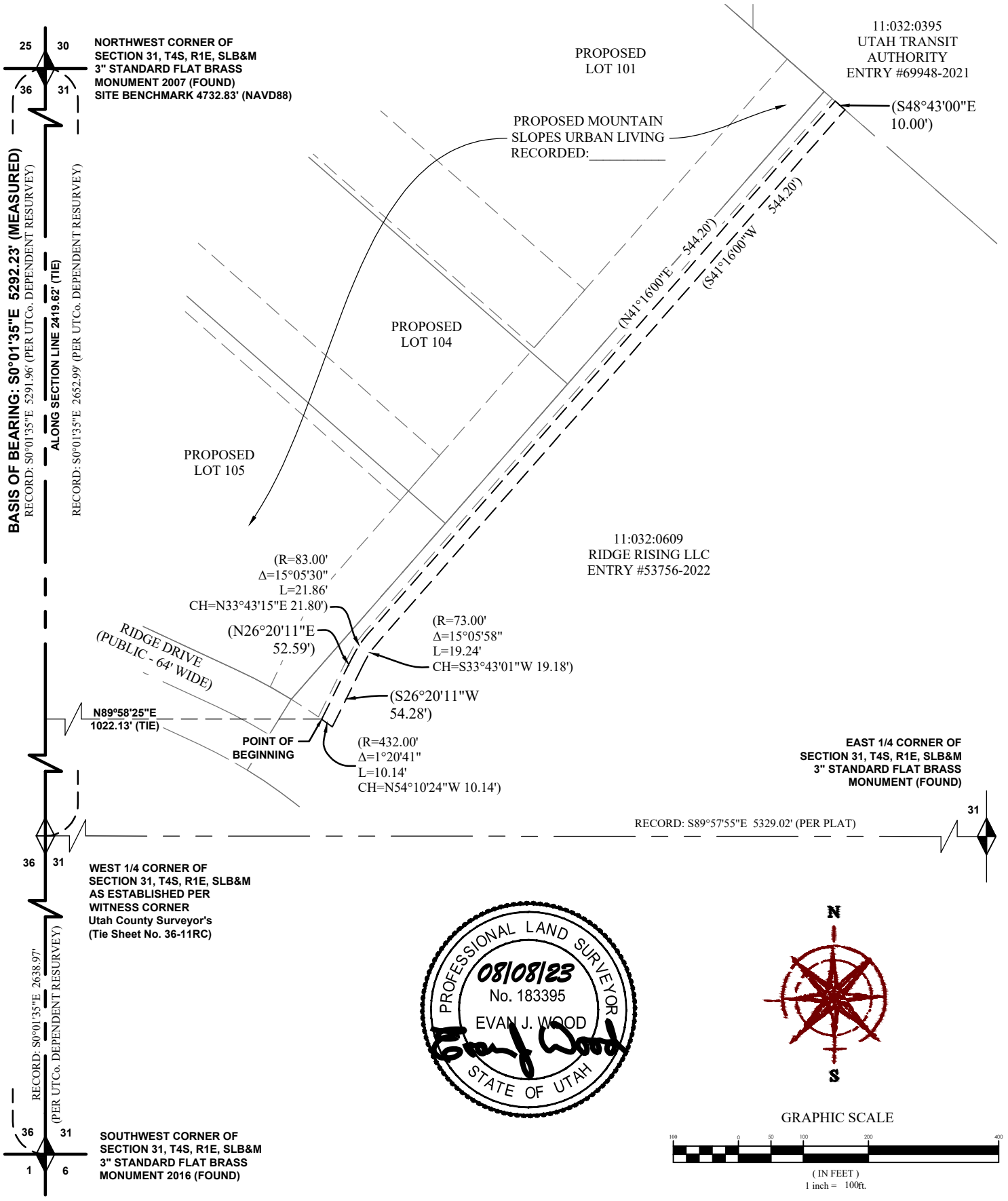
ENGINEERING AND SURVEYING, LLC
6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

SHARED ACCESS AGREEMENT
MOUNTAIN SLOPES URBAN LIVING

Date Created:	8/7/2023
Scale:	1"=100'
Drawn:	ARS
Job:	22-0257
Sheet:	1 OF 1

P:\22-0257 Lehi Pointe\design 22-0257\dwg\exhibits\22-0257 Mountain Slopes easements\22-0257 shared access agreement.dwg



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MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

10' TRAIL EASEMENT AGREEMENT
MOUNTAIN SLOPES URBAN LIVING

Date Created:	8/7/2023
Scale:	1"=100'
Drawn:	ARS
Job:	22-0257
Sheet:	1 OF 1

2\22-0257 Lehi Pointe\design 22-0257\dwg\exhibits\22-0257 Mountain Slopes easements\22-0257 10' trail easement agreement.dwg

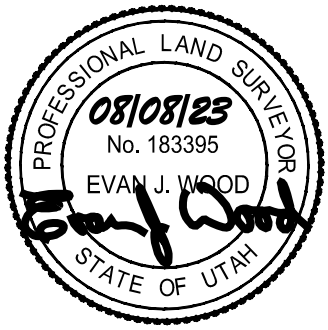
LEGAL DESCRIPTION
PREPARED FOR HOWLAND PARTNERS
MOUNTAIN SLOPES URBAN LIVING
LEHI CITY, UTAH
(8/7/2023)
22-0257
(ARS)

10' TRAIL EASEMENT LEGAL DESCRIPTION

Located in the Northwest Quarter of Section 31, Township 4 South, Range 1 East, Salt Lake Base & Meridian, more particularly described as follows:

Beginning at a point located S0º01'35"E 2419.62 feet along the Section line and N89º58'25"E 1022.13 feet from the Northwest Corner of Section 31, Township 4 South, Range 1 East, Salt Lake Base and Meridian; thence N26°20'11"E 52.59 feet; thence Northeasterly along the arc of a curve to the right having a radius of 83.00 feet a distance of 21.86 feet through a central angle of 15°05'30" Chord: N33°43'15"E 21.80 feet; thence N41°16'00"E 544.20 feet to the southwesterly parcel line of Parcel #11:032:0395; thence along said parcel line S48°43'00"E 10.00 feet; thence S41°16'00"W 544.20 feet; thence Southwesterly along the arc of a non-tangent curve to the left having a radius of 73.00 feet a distance of 19.24 feet through a central angle of 15°05'58" Chord: S33°43'01"W 19.18 feet; thence S26°20'11"W 54.28 feet; thence Northwesterly along the arc of a non-tangent curve to the left having a radius of 432.00 feet a distance of 10.14 feet through a central angle of 01°20'41" Chord: N54°10'24"W 10.14 feet to the point of beginning.

Contains: 6,181 SQ. feet±



Mountain Slopes Urban Living

Aerial

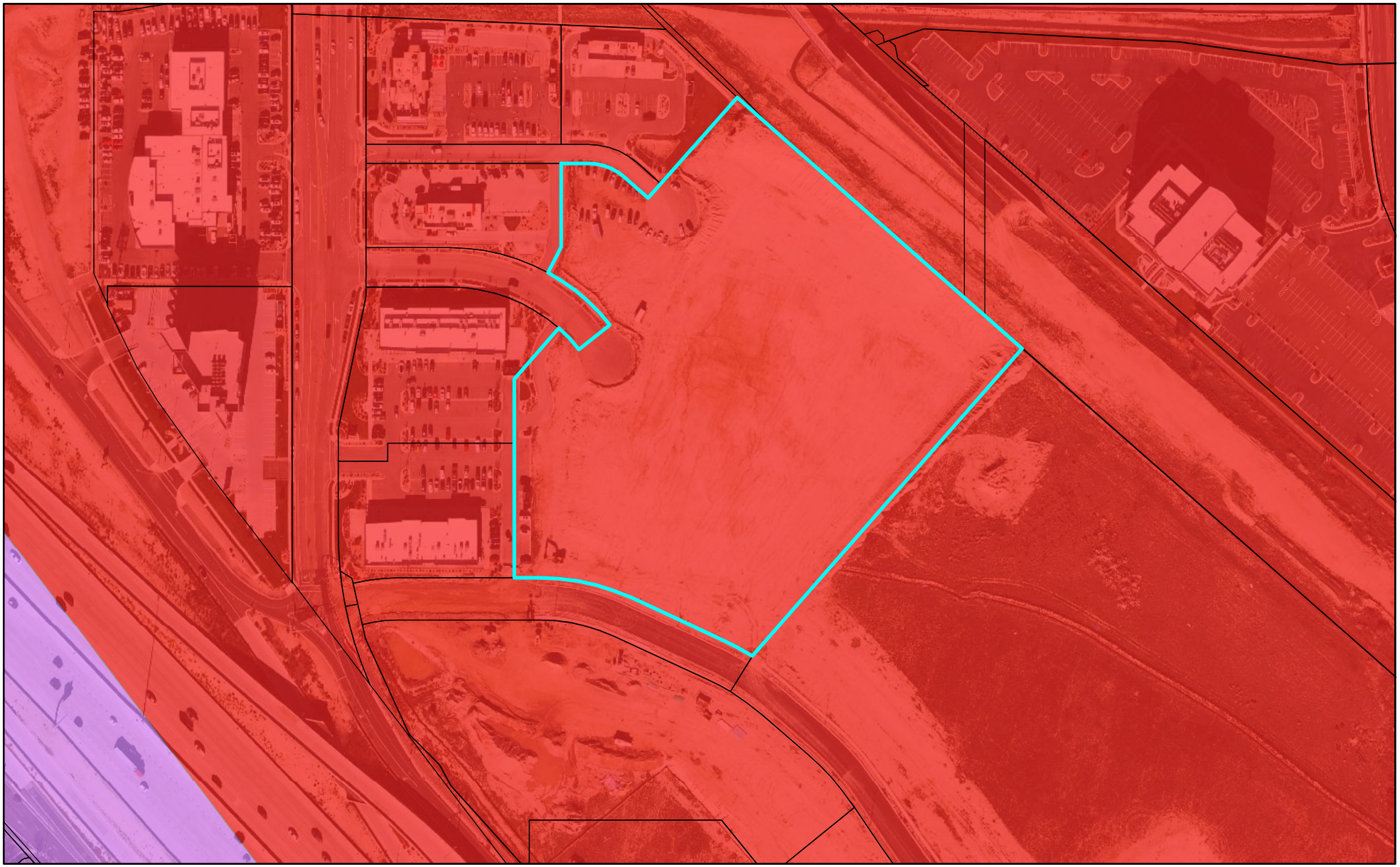


0 250 500 Feet

LEHI CITY

Mountain Slopes Urban Living

General Plan

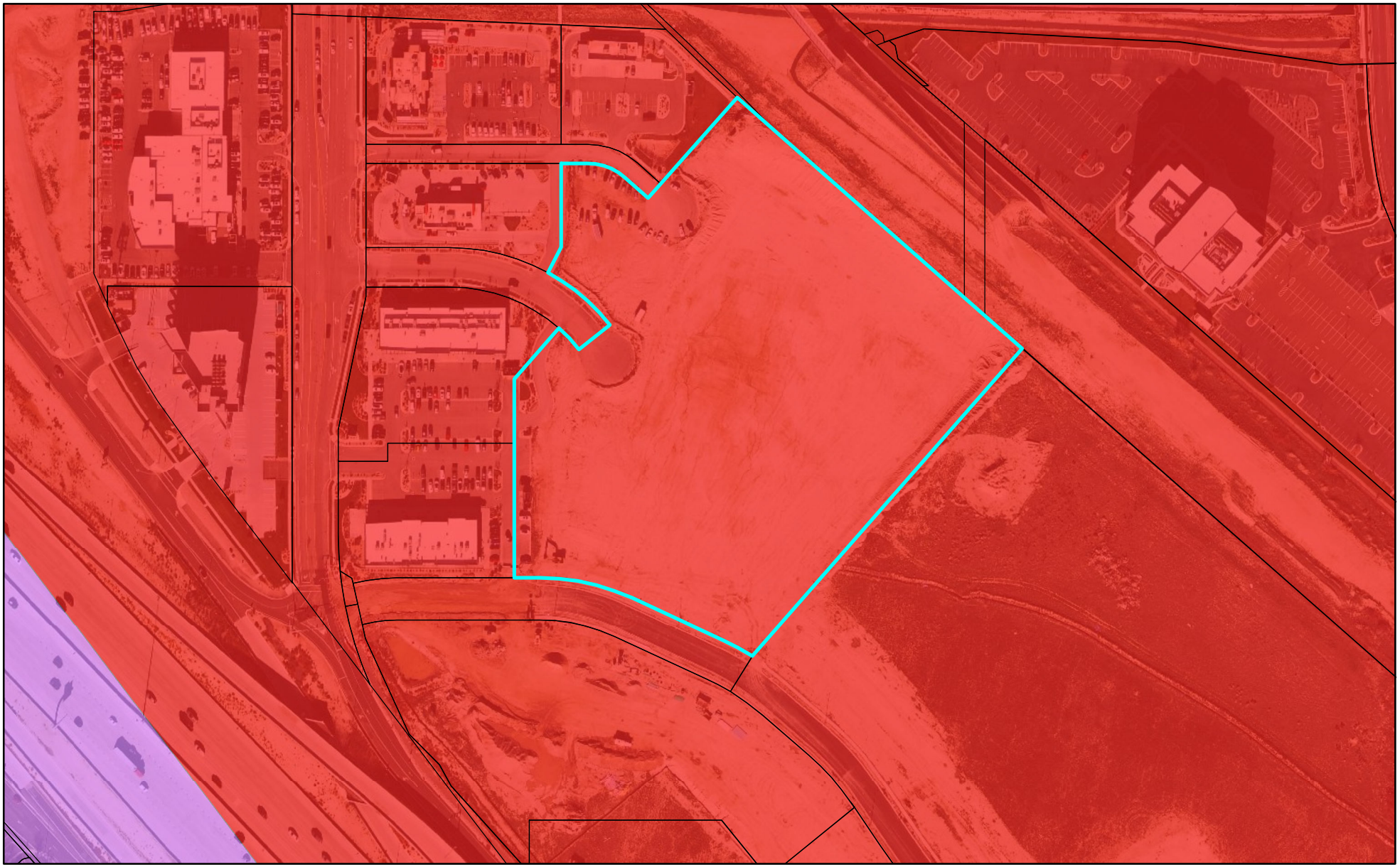


0 250 500 Feet

LEHI CITY

Mountain Slopes Urban Living

Zoning



0 250 500 Feet

LEHI CITY

Agenda Item No: 14

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Katie Bussell
Submitting Department: Planning Division
Item Type: Action Item
Agenda Section: Regular Agenda

Subject:
Consideration of Final subdivision approval of the Jordan Walk Towns Phase 2, a 33-unit residential subdivision located at approximately 3600 West Hardman Way.

Suggested Action:

Attachments:

CC Staff Report Jordan Walk Towns Phase 2 Final Subdivision 09.19.23.docx

Jordan Walk Towns Phase 2 Final DRC 08.16.23.docx

Jordan Walk Towns Phase 2 Narrative.pdf

Jordan Walk Towns Phase 2 Final Civil Plans.pdf

Aerial Map.pdf

General Plan Map.pdf

Zoning Map.pdf

JORDAN WALK TOWNS PHASE 2
FINAL SUBDIVISION
CITY COUNCIL REPORT

Applicant	Ivory Homes		
Meeting Date	September 19, 2023		
Requested Action/Purpose	Approval of a final subdivision		
Location	Approximately 3600 West Hardman Way		
Existing Land Use	Vacant		
Existing Zoning	R-3		
General Plan Land Use Designation	HDR (High Density Residential)		
Number of Lots/Units	33 units		
Adjacent Zoning and Land Use	*North*	Commercial	Vacant
	South	TH-5	Agrarian
	East	R-3	Jordan Walk Towns Phase 1
	West	PF	Exchange Park
Date of DRC Review	August 16, 2023		
Assigned Planner	Katie Bussell		

REQUIRED ACTION

City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 11.180. Effective Period of Final Subdivision Plat Approval.
The approval of a final subdivision plat shall be effective for a period of two (2) years from the date the final plat is approved and signed by the City Council, at the end of which time such final subdivision plat shall have been recorded in the office of the Utah County Recorder.

Section 37.010. Multi-Family Residential Design Standards
Site Planning and Design Standards.

1. Townhome Building Orientation. Townhomes shall be oriented towards all public streets with rear loading garages access by a paved parking area or alley way. In addition, rear loading townhomes shall be required for a minimum of 50 percent of the total townhome units in a development with building entrances being oriented towards public streets, parks, courtyards, and other open spaces. Units required to orient towards public streets may be considered toward meeting the 50 percent requirement. Off-street parking shall not be allowed between the building entrance of rear-loading townhomes and the street sidewalk.

PROPERTY HISTORY

June 14, 1994	Recorded as part of the Hunter Estates Plat A subdivision.
June 16, 2008	Part of the Holbrook 1 Annexation.
September 14, 2021	Lehi City Council approved a zone change from TH-5 to R-3.

December 13, 2022	Lehi City Council approved the Jordan Walk Towns Preliminary Subdivision Plat.

REPORT ANALYSIS

The applicant is requesting approval of the Jordan Walk Towns Phase 2 Final Subdivision, a residential subdivision consisting of 33 townhomes located at approximately 3600 West Hardman Way.

The final plat for Jordan Walk Towns Phase 2 will cover 2.6 acres of the 5-acre parcel. The townhome lots are rear loaded with all units either facing a public street or common open space. The overall density for Phase 2 is 12 units/acre, which is consistent with the goals of the General Plan designation and zoning. The R-3 zone establishes a maximum density of 12 units per acre for multi-family dwellings. No significant changes have been made to the plan since preliminary subdivision approval on December 13th, 2022.

There were 11 DRC comments, mostly pertaining to utilities. Some of note include:

1. Add additional plant material. Development code requires 50% plant coverage at maturity.
2. Please include irrigation plan.
3. Remove bump-out on Hardman Way.

Please consider all DRC comments as part of your motion.

POSSIBLE MOTIONS AND FINDINGS

The City Council may move to approve, approve with modifications, or deny the proposed final subdivision. Any motion should include findings. Possible findings include:

1. The proposed subdivision meets the requirements of the Lehi City Development Code regarding subdivision approvals.
2. The proposed subdivision does/does not meet the requirements of the Development Code in regard to subdivision approvals.
3. Other findings based upon information presented at the public meeting.

Jordan Walk Towns Phase 2
DRC Redline Comments

Ivory- requests final subdivision review of Jordan Walk Towns Phase 2, a 33-unit residential development located at approximately 3600 West Hardman Way.

DRC Members Present: Glade Kirkham, Garion Rowett, Ryan Allred, Matt Meier, Kim Struthers, Gary Smith, Ross Dinsdale, James Farnsworth
Assigned Planner: Katie
Representatives of the Applicant Present: Ben Duzett, Brad Macky
Date of Plans Reviewed: 8/8/23
Time Start: 2:15 PM
Time End: 2:40 PM

DRC REDLINE COMMENTS:
Glade – Power: No comments.
Garion – Fire: No comments.
Ryan – Water/Sewer:
1. Move inlet box north of existing blow off.
2. Lehi city standards is 12' deep sump. Detail sewer/drain-10 add detail to plan set,
3. cut in 8" tee with 8" valve
4. cut in 8x6 tee with 6" valve fl to tee.
5. add construction valves where you tie in on both mains.
6. move both pi Main line valves out of intersection.
7. Install 4" blow off to 8" fl tee with 4" valve.

James – Parks:
8. Add additional plant material. Development code requires 50% plant coverage at maturity.
9. Please include irrigation plan.

Gary – Building/Inspections: No comments.
Shelby – Public Works: No comments.
Ross – Engineering:
10. Remove bump-out on Hardman Way.

Kim – Planning:
11. Trails are typically asphalt. There are differences of opinion, but I prefer asphalt.

General Comments:
12. Parks - I am not sure that Sumac would be my choice for a front yard shrub. Suggestion; switch out Sumac for boxwood or yew. Add plants to ensure 50% plant coverage at maturity.

PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING:
1. Provide an engineer's cost estimate for the cost of all improvements to Lehi City Engineering. (Stefanie Daggs- Sdaggs@lehi-ut.gov or 385-201-2523)
2. 10% Warranty Escrow Bond or Letter of Credit and Public/Private Improvement Agreement for all public and private improvements must be in place (from a financial institution with a branch in Utah).
3. Pay all necessary inspection fees and any up-front supply costs required by the City for power supplies, water system supplies, public signs (stop signs, address signs, etc.) and any other associated costs so that the City can order all necessary supplies for the development.
4. Reimbursement Agreement for widening of 3600 West must be in place.
5. Include surveyor's and engineer's stamps and signatures on the construction drawings.
6. Show lot addresses on the final plat (must coordinate with Planning Division).
7. New property line adjacent to existing roads and any new trails must be staked and reviewed by the City.
8. Submit Storm Water Pollution Prevention Plan (SWPPP) through ComplianceGo.com for review by Lehi Public Works (Contact Matt Meier at mmeier@lehi-ut.gov or (385)-234-0270).

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

9. Schedule a SWPPP inspection through Daniel Hadlock at (801) 836-3523 or Greg Soper at (385) 415-4073). This should be the last item completed prior to scheduling a preconstruction meeting.
10. Provide a Long Term Storm Water Management Plan and Agreement to Planning Division and Public Works (Matt Meier mmeier@lehi-ut.gov) for review and approval (signed by Mayor). Final signed agreement must be recorded by developer and a copy submitted to the City.
11. Obtain PLSS (Public Land Survey System) clearance letter from the Utah County Surveyor Office. If there are PLSS monuments located on or adjacent to property a monument excavation permit may be required.
    Per Utah Code 17-23-14 and 17-23-15. Contact info. Email surveyor@utahcounty.gov Address 2855 South State Street, Provo, UT 84606 (801) 851-8671 or (801) 851-8669.
12. Address any comments or conditions from City Council approval.
13. Plans need to be signed by Community Development Director and Public Works Director before precon can be scheduled

PRIOR TO RECORDING OF PLAT:

1. Provide a Mylar of the final plat for recording with the owners notarized signature(s).
2. Include surveyor's and engineer's stamps and signatures on the plat.
3. Submit a title report to be reviewed by Lehi City Attorney.
4. Developer shall provide a letter with an exhibit of the property covered from their title company guaranteeing that the property taxes including rollback/greenbelt taxes have been paid of open space or right of way is being dedicated.
5. Provide a signed easement verification sheet (for proposed public utility easements on the plat).
6. Provide a signed original copy of the CC&Rs to record with the plat (to be reviewed by City Attorney).
7. All City utilities/infrastructure has been accepted and signed off by all Lehi City Inspectors.

DRC GENERAL COMMENTS:

1. On the power, developer will install conduit; Lehi City Power will install all other required power infrastructure shown on the plans and charge the developer for the costs. These costs are separate from power impact fees that are paid with the building permit.
2. Developer is responsible to purchase, move or remove any existing RMP facilities.
3. Developer is responsible to furnish adequate rights of way or easements for construction of off-site power line extensions.
4. Once approved by the Planning Commission or City Council (whichever is applicable) plans may be submitted for check-off. Check-off plans consist of one 24x36 set of plans submitted to the Planning Department. When changes need to be made to a check-off set, revise the affected sheets only. Each new submittal will require a revision date on each new sheet.
5. Prior to the pre-construction meeting, Lehi City Staff will make copies of plans for the meeting from the check-off set and the developer will pay fees for the copies.
6. All signage will require a separate review and approval process
7. All required private improvements (except private landscaping) shall be completed prior to the certificate of occupancy being granted.
8. The approval of a development shall be effective for a period of two (2) years from the date the development is approved by the Planning Commission or City Council, whichever is applicable.
9. Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either a twenty (20) foot minimum width temporary or permanent road, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be kept clear of all fencing, barricades, dumpsters, vehicles, construction materials and debris and maintained until permanent fire apparatus access roads are available.

THIS ITEM WILL BE SCHEDULED FOR CITY COUNCIL SEPTEMBER 19TH.

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

Memorandum

To: Lehi City

CC: Ivory Development

From: Focus Engineering and Surveying

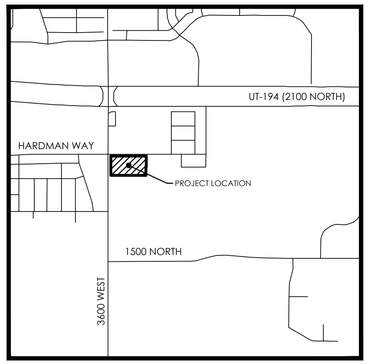
Date: 8/8/2023

Re: Jordan Walk Towns Phase 1 Development Narrative

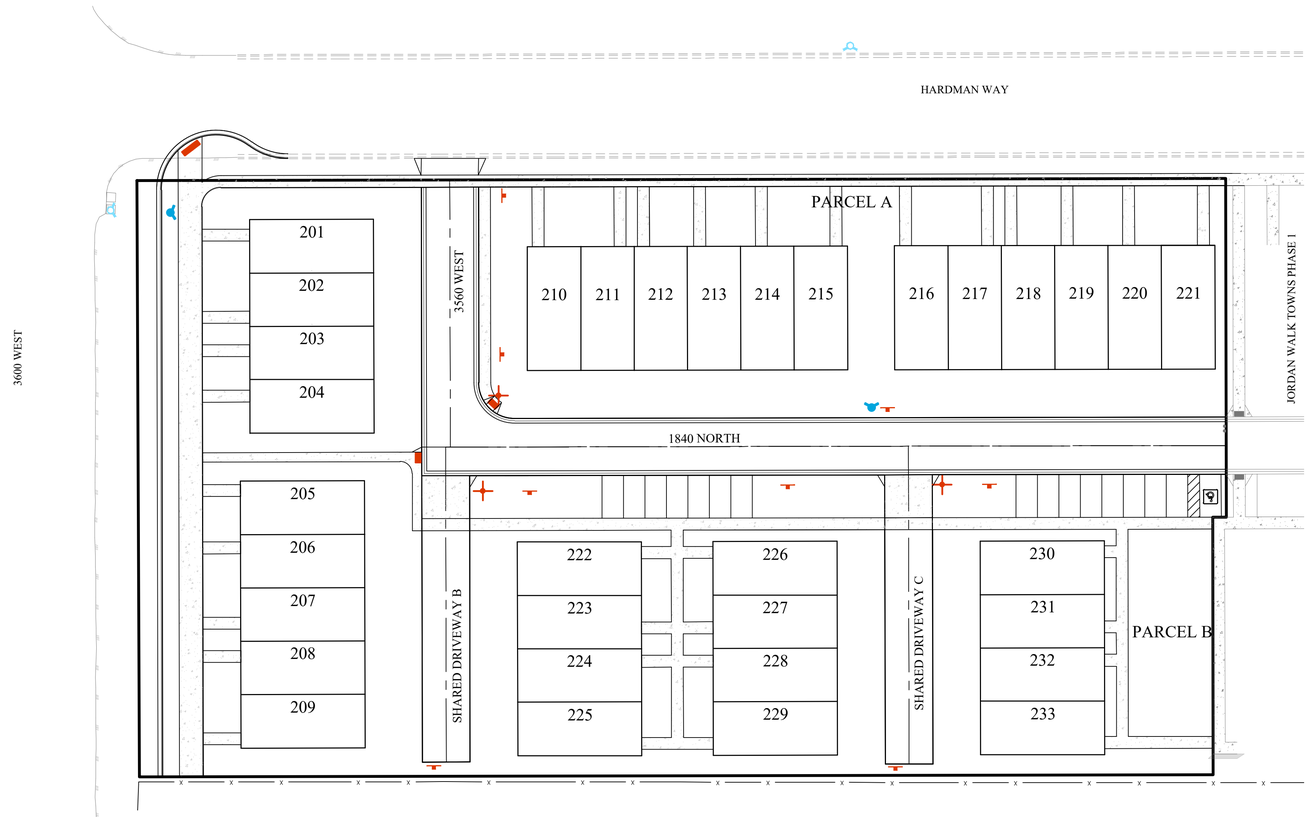
Ivory Development is submitting for final plat review and approval for a development named Jordan Walk Towns Phase 2 on the corner of 3600 West and Hardman Way. This development will consist of 33 townhome units. These plans follow the preliminary plans for Jordan Walk Towns that was reviewed previously for Lehi City.

JORDAN WALK TOWNS PHASE 2

PREPARED FOR:
IVORY DEVELOPMENT
LOCATED IN:
LEHI, UT



VICINITY MAP
NTS



SITE MAP

Sheet List Table	
Sheet Number	Sheet Title
C1	COVER SHEET
C2	FINAL PLAT
C2.1	PUE SPACING PLAN
C3	SITE PLAN
C3.1	HARDSCAPE PLAN
C4	GRADING PLAN
C4.1	SOUTH BOUNDARY DETAILED GRADING PLAN
C5	DRAINAGE PLAN
C5.1	POND CALCS
C6	SEWER PLAN
C7	WATER PLAN
C7.1	FIRE HYDRANT SPACING PLAN
C8	EROSION CONTROL PLAN
C9	POWER PLAN
PP01	STREET B
PP02	1840 NORTH
PP03	SHARED DRIVEWAY B
PP04	3600 WEST TBC
D1	DETAILS
D2	DETAILS
D3	DETAILS
L1.0	LANDSCAPE PLAN

LEHI CITY NOTES

1. ONE (1) COLOR ELECTRONIC COPY OF AS-BUILT DRAWINGS, FORMATTED IN ACCORDANCE WITH SECTION 3 OF THE 2016 EDITION OF LEHI CITY DESIGN STANDARDS, SHALL BE SUBMITTED TO THE CITY UPON COMPLETION OF THE PUBLIC IMPROVEMENTS; INCLUDING, WATER, SEWER, STORM DRAIN, AND POWER.
2. ALL CONSTRUCTION IS TO BE DONE AS PER THE 2016 EDITION OF THE LEHI CITY DESIGN STANDARDS AND PUBLIC IMPROVEMENTS SPECIFICATIONS AND 2016 LEHI CITY POWER SPECIFICATIONS.
3. ALL ADA ACCESSIBLE SIDEWALK RAMPS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE 2016 EDITION OF THE LEHI CITY DESIGN STANDARDS AND PUBLIC IMPROVEMENT SPECIFICATIONS.
4. PRIOR TO CONSTRUCTION, AN EROSION AND SEDIMENTATION CONTROL PLAN WILL BE SUBMITTED TO THE PUBLIC WORKS DIRECTOR FOR APPROVAL WHICH IS INCLUDED IN SHEETS M6-D1.
5. PRIOR TO COMMENCEMENT OF ANY WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE PUBLIC WORKS DIRECTOR, CHIEF BUILDING OFFICIAL, CITY INSPECTORS, THE CONTRACTOR AND THE PROPERTY OWNER.
6. LEHI POWER WILL NOT SET EQUIPMENT OR PULL CONDUCTOR PRIOR TO CONCRETE FOR CURB AND SIDEWALK BEING PLACED.

GENERAL NOTES

1. CONTRACTOR TO FIELD VERIFY HORIZONTAL AND VERTICAL LOCATIONS OF ALL EXISTING UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION, AND REPORT ANY DISCREPANCIES TO THE ENGINEER.

2. ANY AND ALL DISCREPANCIES IN THESE PLANS ARE TO BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO COMMENCEMENT OF CONSTRUCTION.

3. ALL CONSTRUCTION SHALL ADHERE TO LEHI CITY STANDARD PLANS AND SPECIFICATIONS.

4. ALL UTILITIES AND ROAD IMPROVEMENTS SHOWN ON THE PLANS HEREIN SHALL BE CONSTRUCTED USING REFERENCE TO SURVEY CONSTRUCTION STAKES PLACED UNDER THE SUPERVISION OF A PROFESSIONAL LICENSED SURVEYOR WITH A CURRENT LICENSE ISSUED BY THE STATE OF UTAH. ANY IMPROVEMENTS INSTALLED BY ANY OTHER VERTICAL OR HORIZONTAL REFERENCE WILL NOT BE ACCEPTED OR CERTIFIED BY THE ENGINEER OF RECORD.

5. THIS DRAWING SET IS SCALED TO BE PRINTED ON A 24" X 36" SIZE OF PAPER (ARCH. D). IF PRINTED ON A SMALLER PAPER SIZE, THE DRAWING WILL NOT BE TO SCALE AND SHOULD NOT BE USED TO SCALE MEASUREMENTS FROM THE PAPER DRAWING. ALSO USE CAUTION, AS THERE MAY BE TEXT OR DETAIL THAT MAY BE OVERLOOKED DUE TO THE SMALL SIZE OF THE DRAWING.

NOTICE

BEFORE PROCEEDING WITH THIS WORK, THE CONTRACTOR SHALL CAREFULLY CHECK AND VERIFY ALL CONDITIONS, QUANTITIES, DIMENSIONS, AND GRADE ELEVATIONS, AND SHALL REPORT ALL DISCREPANCIES TO THE ENGINEER.

ENGINEER'S NOTES TO CONTRACTOR

1. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN ON THESE PLANS WERE OBTAINED BY A SEARCH OF THE AVAILABLE RECORDS, TO THE BEST OF OUR KNOWLEDGE, THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE PLANS. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITY LINES SHOWN ON THESE DRAWINGS. THE CONTRACTOR FURTHER ASSUMES ALL LIABILITY AND RESPONSIBILITY FOR THE UTILITY PIPES, CONDUITS OR STRUCTURES SHOWN OR NOT SHOWN ON THESE DRAWINGS. IF UTILITY LINES ARE ENCOUNTERED DURING CONSTRUCTION THAT ARE NOT IDENTIFIED BY THESE PLANS, CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY.

2. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE CITY, THE OWNER, AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

3. UNAUTHORIZED CHANGES & USES: THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

4. ALL CONTOUR LINES SHOWN ON THE PLANS ARE AN INTERPRETATION BY CAD SOFTWARE OF FIELD SURVEY WORK PERFORMED BY A LICENSED SURVEYOR. DUE TO THE POTENTIAL DIFFERENCES IN INTERPRETATION OF CONTOURS BY VARIOUS TYPES OF GRADING SOFTWARE BY OTHER ENGINEERS OR CONTRACTORS, FOCUS DOES NOT GUARANTEE OR WARRANTY THE ACCURACY OF SUCH LINEWORK. FOR THIS REASON, FOCUS WILL NOT PROVIDE ANY GRADING CONTOURS IN CAD FOR ANY TYPE OF USE BY THE CONTRACTOR. SPOT ELEVATIONS AND PROFILE ELEVATIONS SHOWN IN THE DESIGN DRAWINGS GOVERN ALL DESIGN INFORMATION ILLUSTRATED ON THE APPROVED CONSTRUCTION SET. CONSTRUCTION EXPERTISE AND JUDGMENT BY THE CONTRACTOR IS ANTICIPATED BY THE ENGINEER TO COMPLETE BUILD-OUT OF THE INTENDED IMPROVEMENTS.

CONTACTS

ENGINEER & SURVEYOR
FOCUS ENGINEERING & SURVEYING, LLC
6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047
(801) 352-0075
PROJECT MANAGER: BEN DUZETT
SURVEY MANAGER: JUSTIN LUDBERG

OWNER/DEVELOPER
IVORY DEVELOPMENT
3340 NORTH, CENTER STREET
LEHI, UTAH 84043
(801) 407-6841
CONTACT: BRAD MACKAY



GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

811 Know what's below. Call 811 before you dig.

FOCUS©
ENGINEERING AND SURVEYING, LLC
6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

LICENSED PROFESSIONAL ENGINEER
No. 13530191-2202
BENJAMIN B. DUZETT
8/0/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2
LEHI, UT
COVER SHEET

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

COVER SHEET

Scale:	1"=30'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C1		

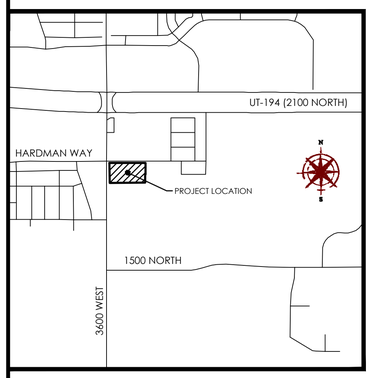
Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199.dwg\sheets\C1 COVER SHEET.dwg

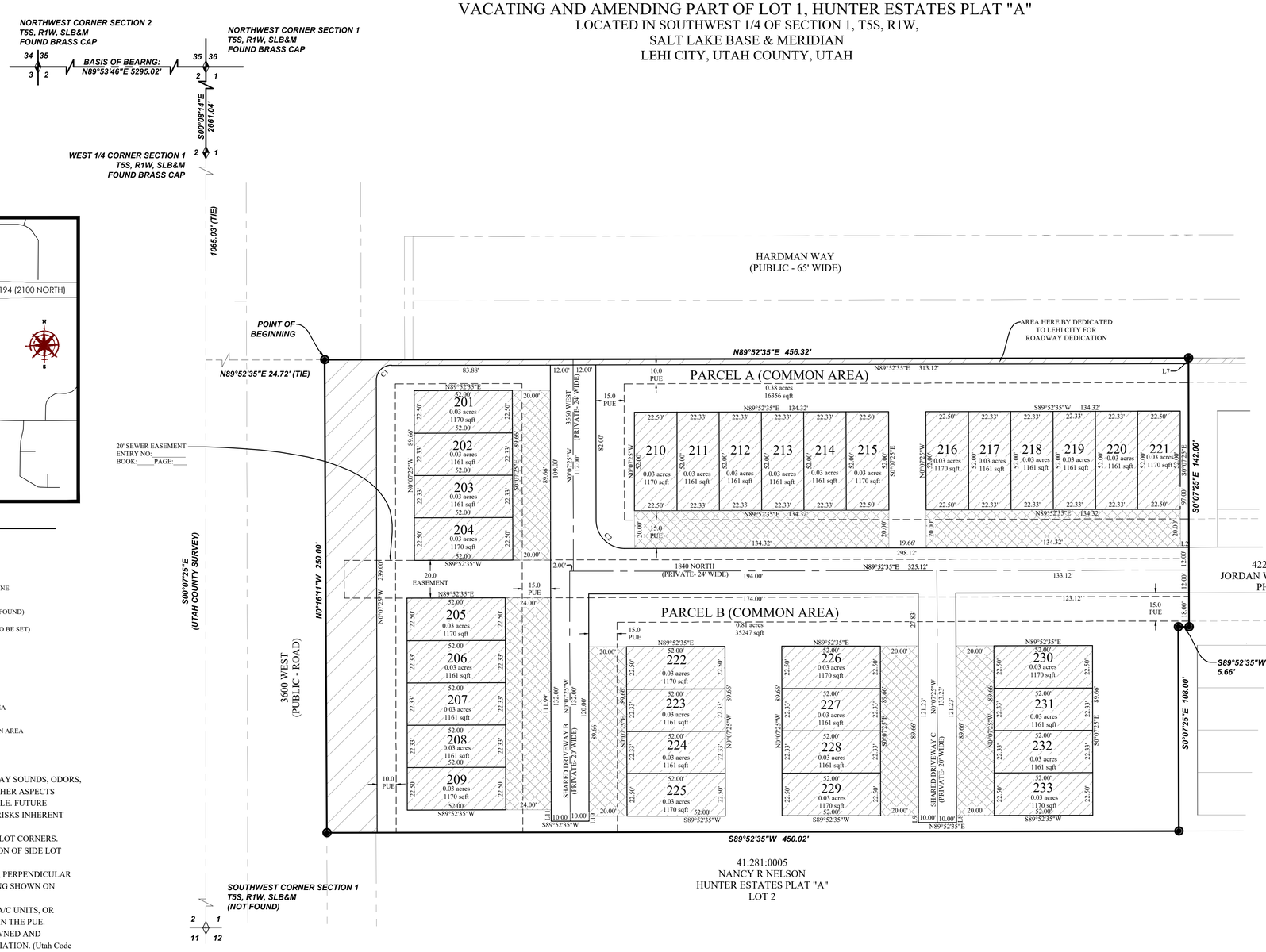
JORDAN WALK TOWNS SUBDIVISION

PHASE 2

VACATING AND AMENDING PART OF LOT 1, HUNTER ESTATES PLAT "A"

LOCATED IN SOUTHWEST 1/4 OF SECTION 1, T5S, R1W,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH





LEGEND

- BOUNDARY
- SECTION LINE
- EASEMENT
- RIGHT-OF-WAY LINE
- CENTERLINE
- BUILDING SETBACK
- EXISTING PROPERTY LINE
- SECTION MONUMENT (FOUND)
- STREET MONUMENT (TO BE SET)
- BOUNDARY MARKERS
- COMMON AREA
- PRIVATE OWNERSHIP
- LIMITED COMMON AREA
- ROADWAY DEDICATION AREA

NOTES:

1. THIS AREA IS SUBJECT TO NORMAL EVERYDAY SOUNDS, ODORS, SITES, EQUIPMENT, FACILITIES, AND ANY OTHER ASPECTS ASSOCIATED WITH AGRICULTURAL LIFESTYLE. FUTURE RESIDENTS SHOULD ALSO RECOGNIZE THE RISKS INHERENT WITH LIVESTOCK.
2. #5 REBAR AND CAP TO BE SET AT ALL REAR LOT CORNERS. PLUG/NAIL TO BE SET IN CURB AT PROJECTION OF SIDE LOT LINES.
3. ALL BUILDING WALLS ARE PARALLEL WITH, PERPENDICULAR TO, OR AT 45° ANGLE TO REFERENCE BEARING SHOWN ON BUILDING
4. NO PORCHES, FOOTINGS, CONCRETE STEPS, A/C UNITS, OR WINDOW WELLS ARE TO BE LOCATED WITHIN THE PUE.
5. PARCEL A, AND B TO BE COMMON AREAS OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION. (Utah Code 57-8a-102 (5)
6. ALL COMMON AREAS, LIMITED COMMON AREA AND PRIVATE STREETS TO SERVE AS PUBLIC UTILITY EASEMENTS
7. WHERE A PUBLIC UTILITY EASEMENT WITHIN THE BUILDABLE AREA OF A LOT EXISTS, THE PUE WILL TAKE PRECEDENCE OVER THE SETBACK.
8. ALL TOWNHOMES WILL BE REAR LOADED
9. FOUNDATION DRAINS ARE NOT REQUIRED BASED ON GROUNDWATER ELEVATIONS FROM THE GEOTECHNICAL INVESTIGATION REPORT DATED NOVEMBER 8, 2022 IGES PROJECT NO. 02058-199

IRRIGATION SERVICE AREA TABULATION:
(1) 2" PI SERVICE LOCATED TO THE WEST OF UNIT 113
IRRIGATED AREA:
PARCEL A,B,&C PHASE 1: 1.22 ACRES
PARCEL A&B PHASE 2: 1.18 ACRES
TOTAL: 2.40 IRRIGATED ACRES

Line Table		
LINE	DIRECTION	LENGTH
L2	N89°52'35"E	4.48
L7	S00°07'25"E	3.00
L8	S00°07'25"E	3.74
L9	S00°07'25"E	3.74
L10	S00°07'25"E	2.51
L11	N00°07'25"W	6.01

Curve Table					
CURVE	RADIUS	DELTA	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	8.00	90°00'00"	12.57	S44°52'35"W	11.31
C2	15.00	90°00'00"	23.56	S45°07'25"E	21.21

SITE TABULATIONS

TOTAL ACREAGE	2.6	ACRES
TOTAL TOWNHOME UNITS	33	UNITS
TOTAL ACREAGE IN UNITS	0.88	ACRES
TOTAL OPEN SPACE (2 PARCELS)	1.19	ACRES
LANE MILES OF ROAD	0.13	MILES
TOTAL UNITS PER ACRE	12	UNITS/ACRE
ZONE:	R-3	

W/CONDITIONAL USE PERMIT FOR TOWNHOMES, VOIDING THE SETBACK REQUIREMENTS FROM THE R-3 ZONE.

GRAPHIC SCALE

30 0 15 30 40 120

(IN FEET)
1 inch = 30 ft.

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LEHI, UTAH 84043
(801) 407-6841
CONTACT: BRAD MACKAY

SURVEYOR'S CERTIFICATE

I, Justin Lundberg, do hereby certify that I am a Professional Land Surveyor, and that I hold Licence No. 12554439 in accordance with Title 58, Chapter 22 of Utah State Code. I further certify by authority of the owners(s) that I have completed a Survey of the property described on this Plat in accordance with Section 17-23-17 of said Code, and have subdivided said tract of land into lots, parcels, streets, and easements, and the same has, or will be correctly surveyed, staked and monumented on the ground as shown on this Plat.

Justin Lundberg
Professional Land Surveyor
Licence No. 12554439

Date

BOUNDARY DESCRIPTION

A part of Lot 1, PLAT "A", HUNTER ESTATES SUBDIVISION, according to the Official Plat thereof recorded as Entry No. 49523 on June 14, 1994, also being a portion of the that real property as described and conveyed in a Special Warranty Deed Entry No. 183845:2021 of the official records of the Utah County Recorder, located in the Southwest Quarter of Section 1, Township 5 South, Range 1 West, Salt Lake Base & Meridian, being more particularly described as follows:

Beginning at a point located on the northerly line of Lot 1 of said Subdivision, said point also being located S00°07'25"E 1065.03 feet along the Section Line and N89°52'35"E 24.72 feet from the West Quarter Corner of Section 1, Township 5 South, Range 1 West, Salt Lake Base & Meridian; thence along said Lot 1, HUNTER ESTATES SUBDIVISION N 89°52'35" E 456.32 feet to the Westerly boundary line of the JORDAN WALK TOWNS PHASE 1 SUBDIVISION according to the Official Plat thereof recorded as Entry No. 42283:2023 on June 29, 2023; thence along said Subdivision the following three (3) courses: (1) S 00°07'25" E 142.00 feet; (2) S 89°52'35" W 5.66 feet; (3) S 00°07'25" E 108.00 feet to the Southerly line of Lot 1 in said HUNTER ESTATES SUBDIVISION ; thence along said Lot 1 the following two (2) courses: (1) S 89°52'35" W 450.02 feet; (2) N 00°16'11" W 250.00 feet to the POINT OF BEGINNING.

Containing 113,388 square feet or 2.6 acres +/-

OWNER'S DEDICATION

KNOW ALL MEN BY THESE PRESENT THAT WE, ALL OF THE UNDERSIGNED OWNERS OF ALL OF THE PROPERTY DESCRIBED IN THE SURVEYOR'S CERTIFICATE HEREON AND SHOWN ON THIS MAP, HAVE CAUSED THE SAME TO BE SUBDIVIDED INTO LOTS, PARCELS, STREETS AND EASEMENTS AND DO HEREBY DEDICATE ANY PUBLIC STREETS AND OTHER PUBLIC AREAS AS INDICATED HEREON FOR PERPETUAL USE OF THE PUBLIC. PURSUANT TO UTAH CODE 10-9A-604(1)(D), THE OWNER HEREBY CONVEYS THE COMMON AREA, LIMITED COMMON AREA AND PRIVATE STREETS AND DRIVEWAYS, AS INDICATED HEREON, TO THE JORDAN WALK TOWNS HOMEOWNERS ASSOCIATION.

IN WITNESS WHEREOF WE HAVE HEREUNTO SET OUR HANDS THIS _____ DAY OF _____ A.D. 20__

IVORY DEVELOPMENT LLC

BY: CHRISTOPHER P. GAMVROULAS
(PRINTED NAME)

ITS: PRESIDENT

LIMITED LIABILITY ACKNOWLEDGMENT

STATE OF UTAH
S.S.
COUNTY OF _____

ON THE ____ DAY OF _____A.D. 20____ PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AN FOR THE COUNTY OF _____, IN SAID STATE OF UTAH, CHRISTOPHER P. GAMVROULAS, WHO AFTER BEING DULY SWORN, ACKNOWLEDGED TO ME THAT HE IS THE PRESIDENT OF IVORY DEVELOPMENT LLC, A UTAH LLC AND THAT HE SIGNED THE OWNERS DEDICATION FREELY AND VOLUNTARILY FOR AND IN BEHALF OF SAID LIMITED LIABILITY COMPANY FOR THE PURPOSES THEREIN MENTIONED.

MY COMMISSION EXPIRES:_____

A NOTARY PUBLIC COMMISSIONED IN UTAH RESIDING IN _____ COUNTY

MY COMMISSION No._____

PRINTED FULL NAME OF NOTARY

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY COUNCIL OF LEHI CITY, COUNTY OF UTAH, APPROVES THIS SUBDIVISION AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSES FOR THE PERPETUAL USE OF THE PUBLIC THIS _____ DAY OF _____, A.D. 20__

ATTEST _____
APPROVED BY MAYOR

CLERK-RECORDER
(SEE SEAL BELOW)

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, A.D. 20____, BY THE LEHI CITY PLANNING COMMISSION.

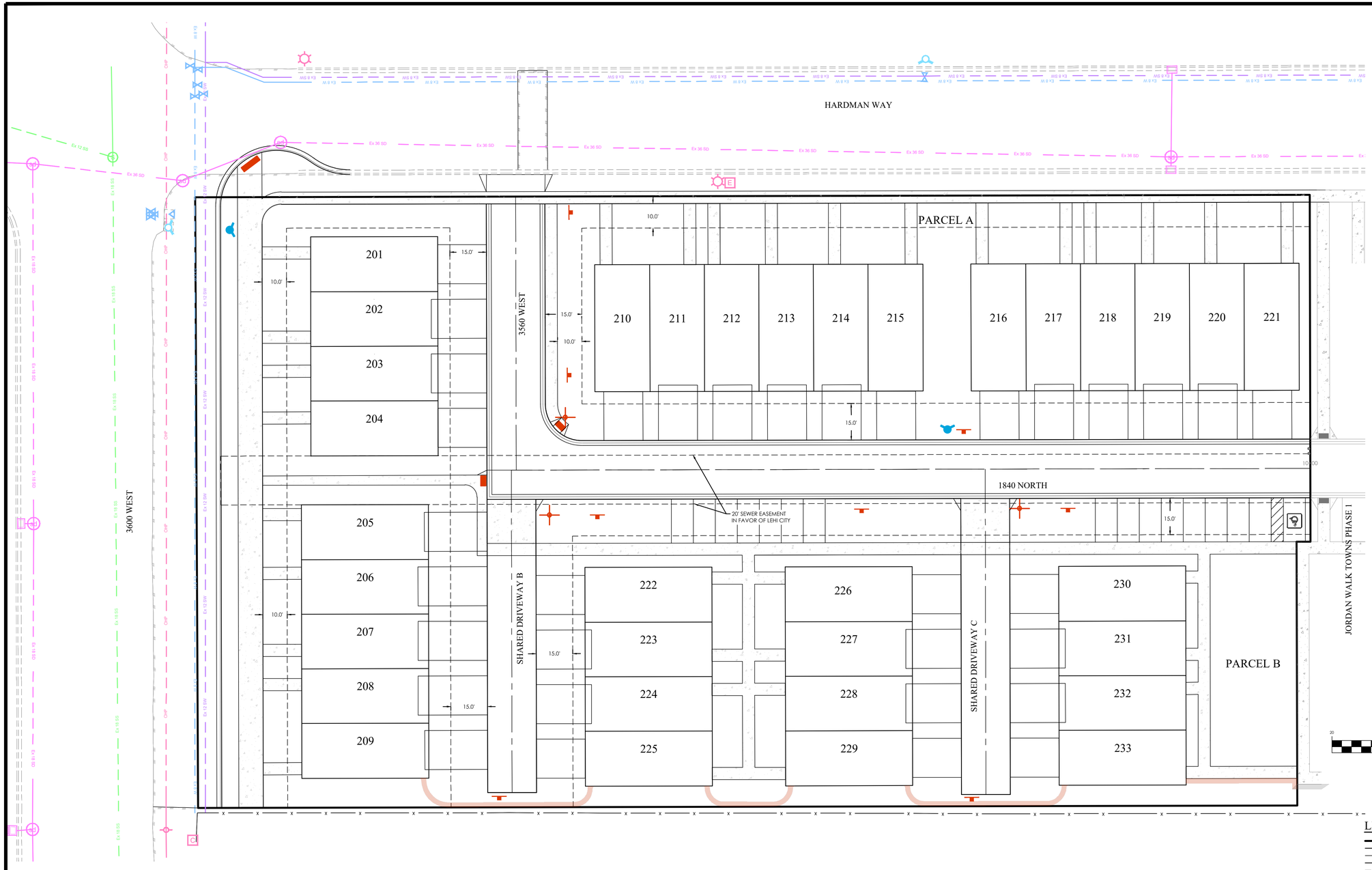
DIRECTOR - SECRETARY

CHAIR, PLANNING COMMISSION

JORDAN WALK TOWNS

A RESIDENTIAL SUBDIVISION
PHASE 2
VACATING AND AMENDING
PART OF LOT 1, HUNTER ESTATES PLAT "A"
LOCATED IN SOUTHWEST 1/4 OF SECTION 1, T5S, R1W,
SALT LAKE BASE & MERIDIAN
LEHI CITY, UTAH COUNTY, UTAH

SURVEYOR'S SEAL	NOTARY PUBLIC SEAL	LEHI CITY ENGINEER SEAL	LEHI CITY RECORDER SEAL	COUNTY RECORDER'S SEAL
FOR REVIEW ONLY				



Know what's below. Call 811 before you dig.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15 SD — 15" STORM DRAIN
- 8 SS — 8" SANITARY SEWER
- 8 W — 8" CULINARY WATER
- 8 SW — 8" SECONDARY WATER
- XXXX — CONTOUR MAJOR
- XXXX — CONTOUR MINOR
- Ex SD — EXIST. STORM DRAIN
- Ex SS — EXIST. SANITARY SEWER
- Ex W — EXIST. CULINARY WATER
- x x x — EXIST. FENCE
- (XXXX) — EXIST. CONTOUR MAJOR
- (XXXX) — EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX — SPOT ELEVATION

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ENGINEERING AND SURVEYING, LLC
6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

LICENSED PROFESSIONAL ENGINEER
No. 13530191-2202
BENJAMIN B. DUZETT
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

PUE SPACING PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

PUE SPACING PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C2.1		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199.dwg\sheets\C2.1 PUE SPACING.dwg

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8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

SITE PLAN

EXIST. 12" SEC. WATER MAIN
EXIST. 8" CUL. WATER MAIN
EXIST. OHP
EXIST. STREET LIGHT
ASPHALT CUT AND T-PATCH PER LEHI CITY STDS.
EXIST. 8" SEC. WATER
EXIST. 8" CUL. WATER
EXIST. FIRE HYDRANT
HARDMAN WAY
EXIST. CURB TO BE REMOVED FOR INTERSECTION BULB OUT PER LEHI CITY STD. RD-17
EXIST. 36" STORM DRAIN LINE
ADA RAMP #102 PER LEHI CITY STD. ROAD-9
PROP. DRIVE APPROACH PER LEHI CITY STND. RD-11
EXIST. STREET LIGHT TO REMAIN
EXIST. ELECTRICAL BOX TO REMAIN
EXIST. CURB & GUTTER (TYP.)
7.0' PARKSTRIP
CONNECT TO EXIST. SDMH
EXIST. BLOWOFF TO BE RELOCATED WITHIN PARKSTRIP
EXIST. HYDRANT TO BE RELOCATED WITHIN PARKSTRIP
EXIST. 21" SEWER LINE
PHASE 1 POUR IN PLACE SSMH
10' CONCRETE TRAIL
2' HIGH BACK CURB & GUTTER (TYP.)
3600 WEST
ADA RAMP #104 PER LEHI CITY STD. ROAD-9
CONNECT TO SEWER BUILT WITH PHASE1
SHARED DRIVEWAY CONCRETE FLARED ENTRANCE
STREET SIGN #102 PER LEHI CITY STD.
20' SEWER EASEMENT IN FAVOR OF LEHI CITY
SHARED DRIVEWAY B
8" SEWER (TYP.)
EXIST. EOA
7.0' PARKSTRIP
EXIST. COMM. BOX TO BE RELOCATED
EXIST. POWER POLE TO BE RELOCATED
NO PARKING SIGN #208
TEMP. BLOWOFF
EXIST. FENCE TO REMAIN
PROP. BOULDER RETAINING WALL SEE SHEET C4.1 FOR DETAILS (TYP.)
NO PARKING SIGN #209
NO PARKING SIGN #210
2' ROLLED CURB & GUTTER (TYP.)
PARCEL A
5' SIDEWALK (TYP.)
NO PARKING SIGN #211
NO PARKING SIGN #212
STREET SIGN #103 PER LEHI CITY STD
4" SEWER LATERAL STUBS TO BE BUILT WITH PHASE 1
ADA RAMP #103 PER LEHI CITY STD. ROAD-9
FIRE HYDRANT #101 PER LEHI CITY, WT-02
CONNECT TO SEWER BUILT WITH PHASE1
PHASE 1 TEMP. BLOW-OFFS TO BE REMOVED AND WATER LINES CONNECTED
SWWM
1840 NORTH
8" SEWER LINE TO BE BUILT WITH PHASE 1
NO PARKING SIGN #214
PARKING STALLS SEE C3.1 HARDSCAPE PLAN (TYP.)
STREET SIGN #101 PER LEHI CITY STD.
SHARED DRIVEWAY CONCRETE FLARED ENTRANCE
NO PARKING SIGN #213
SHARED DRIVEWAY C
PARCEL B
JORDAN WALK TOWNS PHASE 1
201 202 203 204 205 206 207 208 209
210 211 212 213 214 215 216 217 218 219 220 221
222 223 224 225 226 227 228 229 230 231 232 233

N
S

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

LEGEND

	BOUNDARY
	ROW
	CENTERLINE
	LOT LINE
	EASEMENT
15 SD	15" STORM DRAIN
8 SS	8" SANITARY SEWER
8 W	8" CULINARY WATER
8 SW	8" SECONDARY WATER
XXXX	CONTOUR MAJOR
XXXX	CONTOUR MINOR
Ex SD	EXIST. STORM DRAIN
Ex SS	EXIST. SANITARY SEWER
Ex W	EXIST. CULINARY WATER
	EXIST. FENCE
(XXXX)	EXIST. CONTOUR MAJOR
(XXXX)	EXIST. CONTOUR MINOR
	SIGN
	STREET LIGHT
	SD MH, INLET, AND COMBO
	SEWER MANHOLE
	CULINARY VALVE, TEE & BEND
	SECONDARY VALVE, TEE & BEND
	WATER BLOW-OFF
	FIRE HYDRANT
	STREET MONUMENT (TO BE SET)
	EXIST. STREET MONUMENT
	EXIST. SD INLET & MH
	EXIST. SEWER MH
	EXIST. VALVE, TEE, & BEND
	EXIST. FIRE HYDRANT
o XXXX.XX	SPOT ELEVATION

TOTAL: 93' SECTION: 70.50' RIGHT-OF-WAY
10.00' TRAIL
7.00' PARKSTRIP
2.00'
24.00' PROP. ROADWAY
25.50' EXIST. ROADWAY
EAST
WEST
-.01'
-.19'
-0.52'
VARIES (~2.00%)
0.00'
6" THICK CONCRETE SIDEWALK W/6" ROADBASE (TYP.)
CURB & GUTTER WITH 6" ROADBASE (TYP.)
3" ASPHALT OVER 6" ROADBASE OVER 13" SUBBASE CBR VALUE = 4.8

3600 W - 93' ROW RESIDENTIAL ROAD
N.T.S.

20.00' RIGHT-OF-WAY
10.00' ROADWAY
10.00' ROADWAY
NO PARKING SIGNS PER LEHI CITY STD.
0.20'
2.00%
00.0'
2.00%
0.20'
6" CONCRETE OVER 6" ROADBASE (TYP.)
8" SEWER

20' SHARED DRIVEWAY
N.T.S

24.00' RIGHT-OF-WAY
2.00'
10.00' ROADWAY
10.00' ROADWAY
2.00'
NO PARKING SIGNS PER LEHI CITY STD.
0.03'
-0.20'
2.00%
00.0'
2.00%
-0.20'
0.03'
3" ASPHALT OVER 6" ROADBASE OVER 13" SUBBASE
8" SEWER
8" CULINARY WATER
CBR VALUE = 4.8
10.00'
2.00'
8" SECONDARY WATER
2' ROLLED CURB & GUTTER (TYPE G) WITH 6" ROADBASE (TYP.)

24' PRIVATE ROAD
N.T.S.

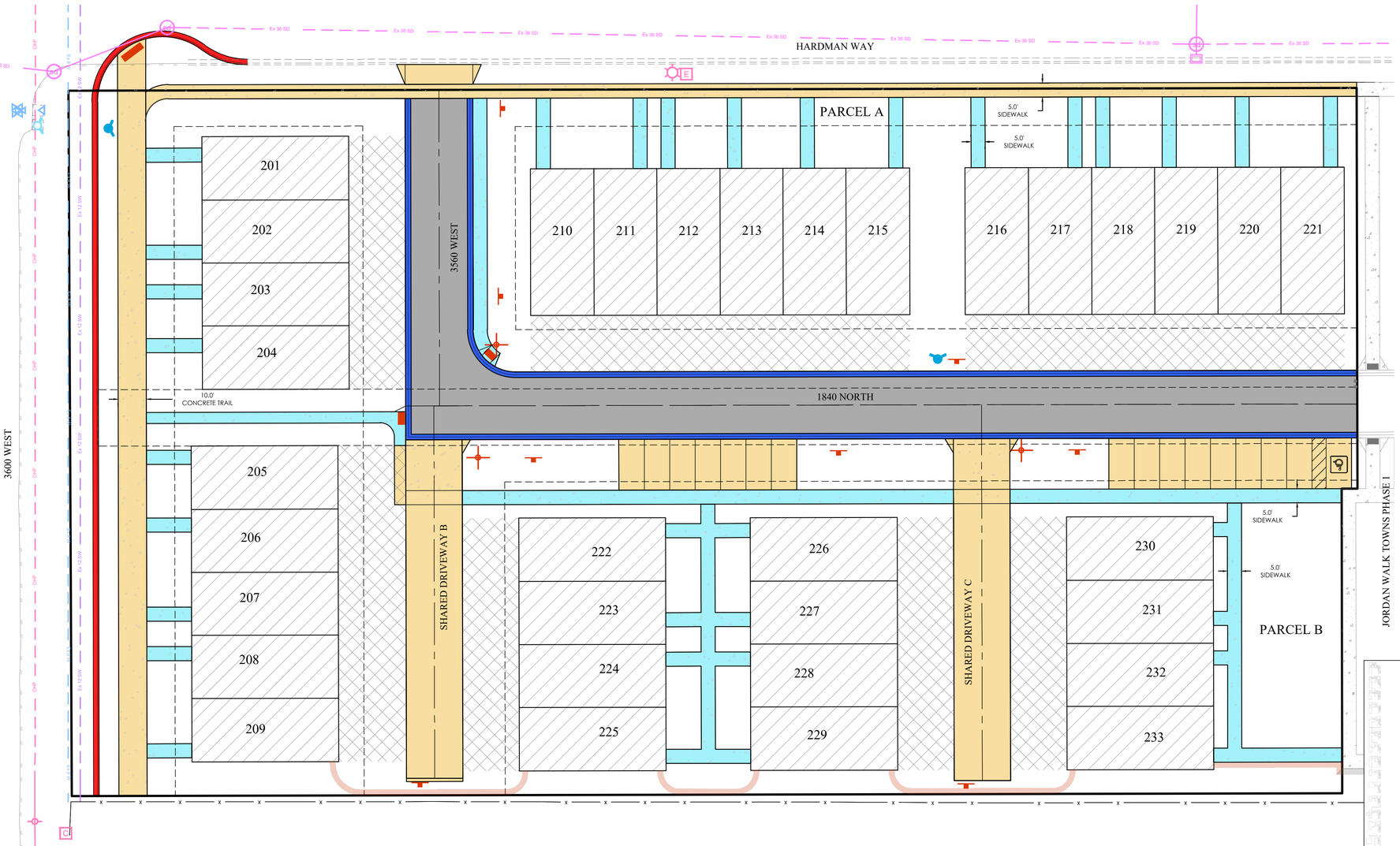
REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

SITE PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C3		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C3 SITE PLAN.dwg



HARDSCAPE LEGEND

- ROLLED CURB AND GUTTER PER APWA TYPE G
- 6" CONCRETE OVER 6" ROADBASE
- 4" CONCRETE OVER 5" ROADBASE
- 3" ASPHALT OVER 8" ROADBASE
- PROPOSED DRIVEWAYS
- 2' HIGH BACK CURB & GUTTER PER LEHI CITY STD. RD-05

811 Know what's below. Call 811 before you dig.

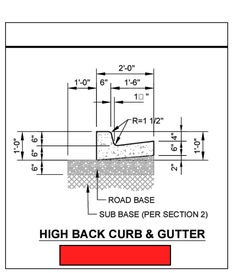
N

S

GRAPHIC SCALE

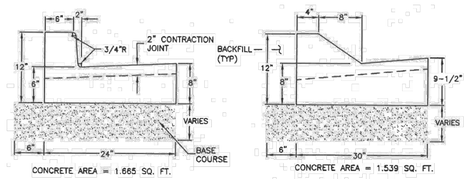
20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

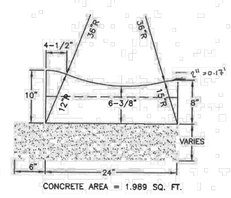


HIGH BACK CURB & GUTTER

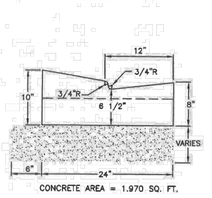
BACKFILL BEHIND CURB BEFORE PAVING AGAINST LIP OF GUTTER



Type E

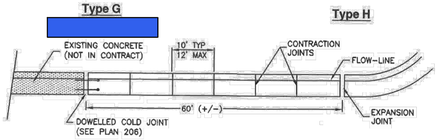


Type F



Type G

Type H



JOINT DETAIL

APWA Utah Chapter

Curb and gutter

Plan 205.2
April 2011

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BENJAMIN B. DUZETT
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

HARDSCAPE PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

HARDSCAPE PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C3.1		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199.dwg\sheets\C3.1 HARDSCAPE PLAN.dwg

HARDMAN WAY

3600 WEST

3540 WEST

1840 NORTH

CARCEL A

CARCEL B

SHARED DRIVEWAY B

SHARED DRIVEWAY C

JORDAN WALK TOWNS PHASE 1

TOF=4531.99
FF=4533.16

TOF=4532.93
FF=4534.10

TOF=4531.96
FF=4533.13

TOF=4533.46
FF=4534.63

TOF=4532.46
FF=4533.63

TOF=4531.19
FF=4532.36

TOF=4532.58
FF=4533.75

FGD=4531.30

FGD=4532.20

FGD=4532.00

FGD=4531.00

FGD=4530.40

FGD=4531.70

PROP. BOULDER RETAINING WALL
SEE SHEET C4.1 FOR DETAILS (TYP.)

RETAINING WALL TO TIE INTO PHASE 1

SWWM

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
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- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- SPOT ELEVATION

Know what's below.
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BENJAMIN B. DUZETT
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

GRADING PLAN

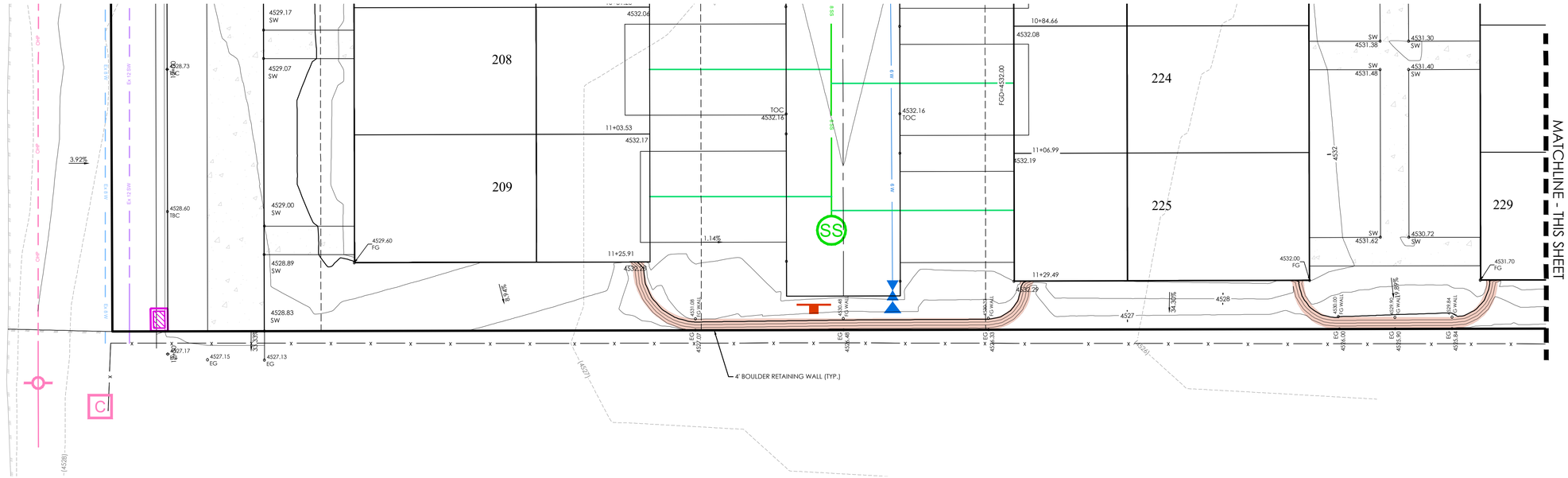
REVISION BLOCK

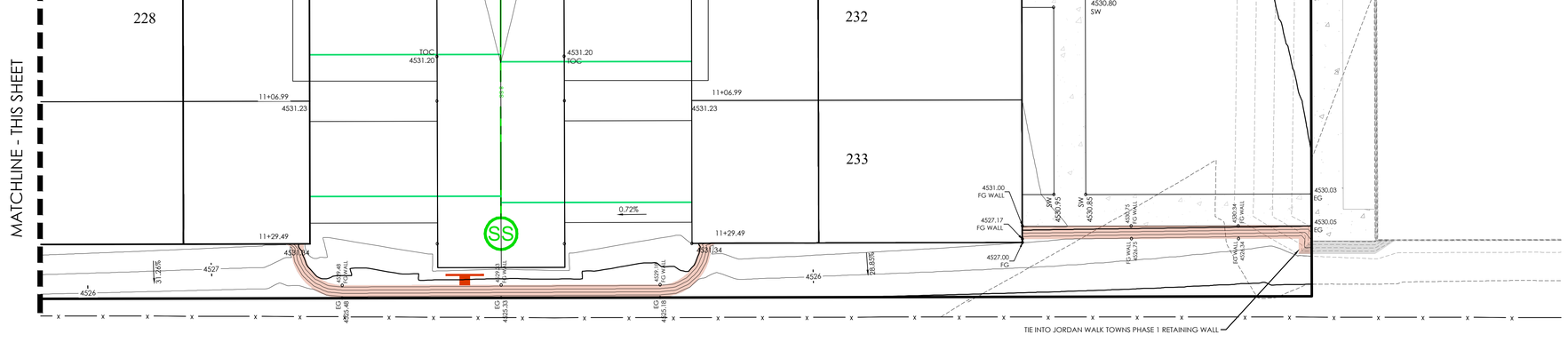
#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

GRADING PLAN

Scale: 1"=20'	Drawn: LCB
Date: 08/08/23	Job #: 23-0199
Sheet: C4	

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C4 GRADING PLAN.dwg





N

S

GRAPHIC SCALE

10 0 10 10 20 40

(IN FEET)
1 inch = 10 ft.

Know what's below. Call 811 before you dig.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
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- EXIST. SANITARY SEWER
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- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- SPOT ELEVATION

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8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

SOUTH BOUNDARY DETAILED GRADING PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

SOUTH BOUNDARY DETAILED GRADING PLAN

Scale:	1"=10'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C4.1		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C4.1 DETAILED GRADING PLAN.dwg

EXIST SDMH #103
RIM=4529.32
INV. IN=4519.92 (E)

EXIST SDMH #102
RIM=4529.13
INV. IN=4523.43 (E)
INV. OUT=4523.43 (W)
INV. IN=4523.43 (SE)

EXIST SDMH #101
RIM=4528.91
INV. IN=4520.26 (E)
INV. OUT=4520.26 (W)

HARDMAN WAY

EXIST 36" STORM DRAIN LINE

CONNECT TO EXIST. SDMH

12" RCP
L=28.4'
S=0.50%

SD INLET #101
TBC=4528.33
INV. OUT=4523.29 (NW)
PER LEHI CITY STD. RD-07

3560 WEST

1840 NORTH

PARCEL A

PARCEL B

201 202 203 204 205 206 207 208 209

210 211 212 213 214 215 216 217 218 219 220 221

222 223 224 225 226 227 228 229 230 231 232 233

SHARED DRIVEWAY B

SHARED DRIVEWAY C

JORDAN WALK TOWNS PHASE 1

SWWM

PROP. DRY WELL
TBC=4528.51
W/ 8' SUMP
PER LEHI CITY STD. RD-07

4635.38
POLE N-S N 12IN
SURVEY POINT

4537.08
COMM BOX
SURVEY POINT

N

S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15 SD — 15" STORM DRAIN
- 8 SS — 8" SANITARY SEWER
- 8 W — 8" CULINARY WATER
- 8 SW — 8" SECONDARY WATER
- XXXX — CONTOUR MAJOR
- XXXX — CONTOUR MINOR
- Ex SD — EXIST. STORM DRAIN
- Ex SS — EXIST. SANITARY SEWER
- Ex W — EXIST. CULINARY WATER
- X — X — EXIST. FENCE
- (XXXX) — EXIST. CONTOUR MAJOR
- (XXXX) — EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX — SPOT ELEVATION

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8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

DRAINAGE PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

DRAINAGE PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C5		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C5 DRAINAGE PLAN.dwg

Underground Storage Basin

Project: Jordan Walk Towns
Location Lehi, Utah
Date: 3/21/2023
Designer: Ben Duzett

100-Year Detention Sizing

Design Criteria

Intensity Table: Per NOAA Atlas 14
Return Period: **100 year**
Allowable Discharge: **0.20 cfs/acre** Per Lehi City Standards

Allowable Discharges

Storm Drain Discharge: 0.76 cfs
Other Discharge: 0.00 cfs Source:
Total Discharge: **0.755 cfs**

Weighted "C" Value

Surface Type	Area (sf)	"C" Value	C*A
Buildings	33,695	0.90	30,326
Drives	22,084	0.90	19,876
Roadway and Sidewalk	34,743	0.90	31,269
Landscape	73,928	0.15	11,089
Totals	164,450		92,559
Weighted "C" Value		**0.56**	

Drainage Calculations

Duration	Intensity	Runoff C	Area	Rainfall	Accumulated Flow	Allowable Discharge	Discharge	Required Storage
min	in/hr		Ac	cfs	cf	cfs	cf	cf
15.0	3.91	0.56	3.78	8.31	7,477	0.76	680	6,798
30.0	2.63	0.56	3.78	5.59	10,059	0.76	1,359	8,700
60.0	1.63	0.56	3.78	3.46	12,469	0.76	2,718	9,751
120.0	0.89	0.56	3.78	1.88	13,540	0.76	5,436	8,103
180.0	0.59	0.56	3.78	1.26	13,631	0.76	8,155	5,477
360.0	0.32	0.56	3.78	0.67	14,549	0.76	16,309	-1,760
720.0	0.18	0.56	3.78	0.38	16,431	0.76	32,618	-16,187
1440.0	0.09	0.56	3.78	0.20	16,890	0.76	65,236	-48,346

Maximum Storage Requirement: ***9,751***
Maximum Storage Requirement (ac-ft): 0.22

Detention Basin Design

Storage Requirement: 9,751 cf
Allowable Depth: 1.0 ft
Detention Pond Volume: cf
Underground Storage: 10,087 cf
Total Storage **10,087** ***DETENTION ADEQUATE***

Orifice Design

Restriction Rate 0.20 CFS/ACRE
Allowable Outfall Rate Q (cfs) 0.76

Orifice Sizing: h = 3 ft
C = 0.6
A = 0.091 sf
dia. = 4.07 inches

Orifice Size= **4.1** **inch**

LID Calculations

Project: Jordan Walk Towns
Location Lehi, Utah
Date: 8/31/2022
Designer Ben Duzett

BMP 80th Percentile Storm Calculations

Step 1: Determine 80th Percentile Rainfall Depth

Location: **Lehi City Corporation**
Rainfall Table: 0.50 inches

Step 2: Determine Percent Impervious

Project Imperviousness (*i*): 0.55
BMP Imperviousness (*i*):

Step 3: Determine Volumetric Runoff Coefficient

Method 1 - Reese Method: 0.48

Method 2 - Hydrologic Soil Groups:

A	B	C/D
0.39	0.42	0.42

Method 3 - Granato Method: 0.26

Rv: ***0.26***

Step 4: Determine 80th Percentile Volume

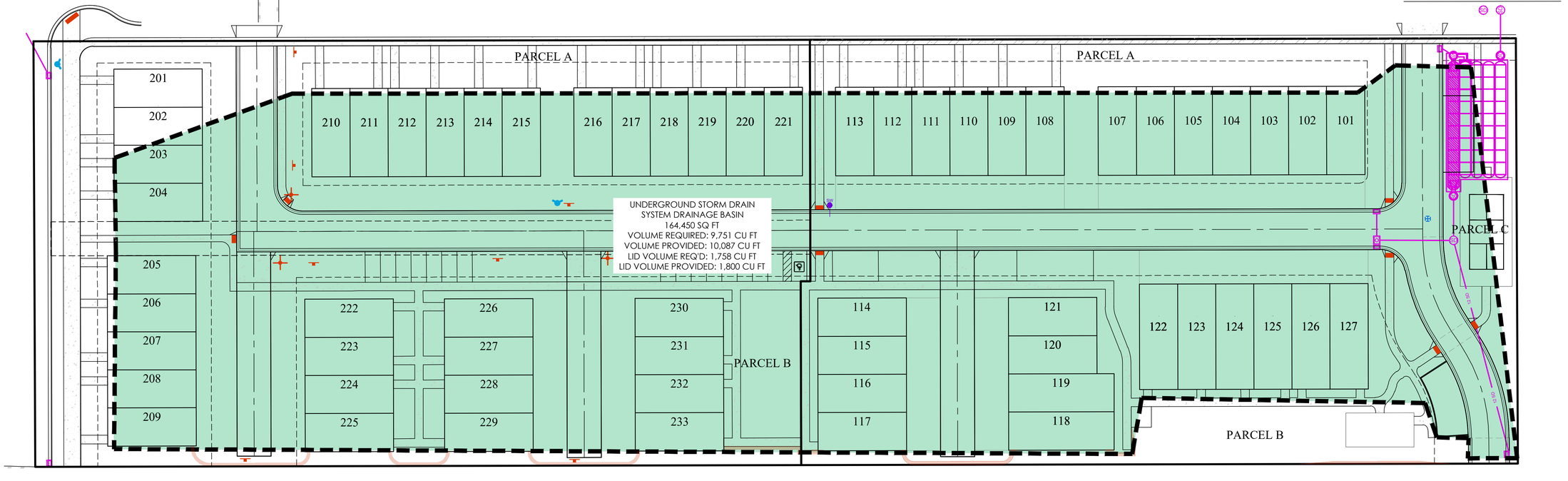
$V_{goal} = R_v dA$ OR $WQV = R_v dA$

Where:

V_{goal} & $WQV = 80^{th}$ *Percentile Volume, cf*
$R_v = Volumetric\ Runoff\ coefficeient, unitless$
$d = 80^{th}$ *Percentile Storm Depth, ft*
$A = Project\ Area\ or\ BMP\ Drainage\ Area, sf$

V_{goal} = **1758 cf**

DRAINAGE SYSTEM TO BE BUILT WITH JORDAN WALK TOWNS PHASE 1 -- FURTHER DETAIL PROVIDED IN PHASE 1 PLANS



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No. 13530191-2201
BENJAMIN B. DUZETT
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

POND CALCS

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

POND CALCS

Scale:
Drawn: LCB
Date: 08/08/23
Job #: 23-0199
Sheet: C5.1

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199.dwg\sheets\C5.1 POND CALCS.dwg

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No. 13530191-2202
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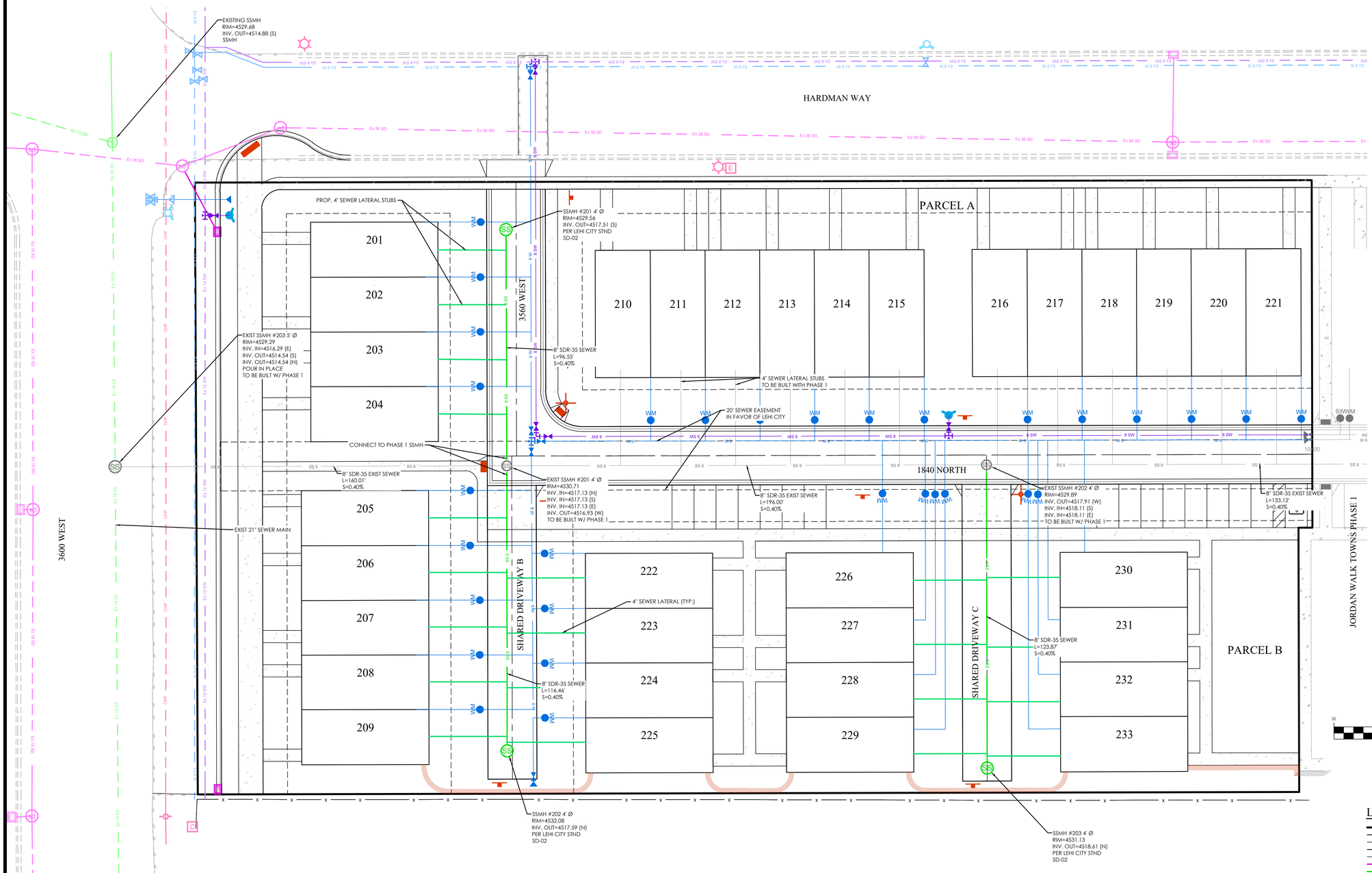
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2
LEHI, UT
SEWER PLAN



GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

	BOUNDARY
	ROW
	CENTERLINE
	LOT LINE
	EASEMENT
15 SD	15" STORM DRAIN
8 SS	8" SANITARY SEWER
8 W	8" CULINARY WATER
8 SW	8" SECONDARY WATER
XXXX	CONTOUR MAJOR
XXXX	CONTOUR MINOR
Ex SD	EXIST. STORM DRAIN
Ex SS	EXIST. SANITARY SEWER
Ex W	EXIST. CULINARY WATER
x x x	EXIST. FENCE
(XXXX)	EXIST. CONTOUR MAJOR
(XXXX)	EXIST. CONTOUR MINOR
	SIGN
	STREET LIGHT
SD	SD MH, INLET, AND COMBO
SS	SEWER MANHOLE
	CULINARY VALVE, TEE & BEND
	SECONDARY VALVE, TEE & BEND
	WATER BLOW-OFF
	FIRE HYDRANT
	STREET MONUMENT (TO BE SET)
	EXIST. STREET MONUMENT
EX SD	EXIST. SD INLET & MH
EX SS	EXIST. SEWER MH
	EXIST. VALVE, TEE, & BEND
	EXIST. FIRE HYDRANT
○ XXXX.XX	SPOT ELEVATION

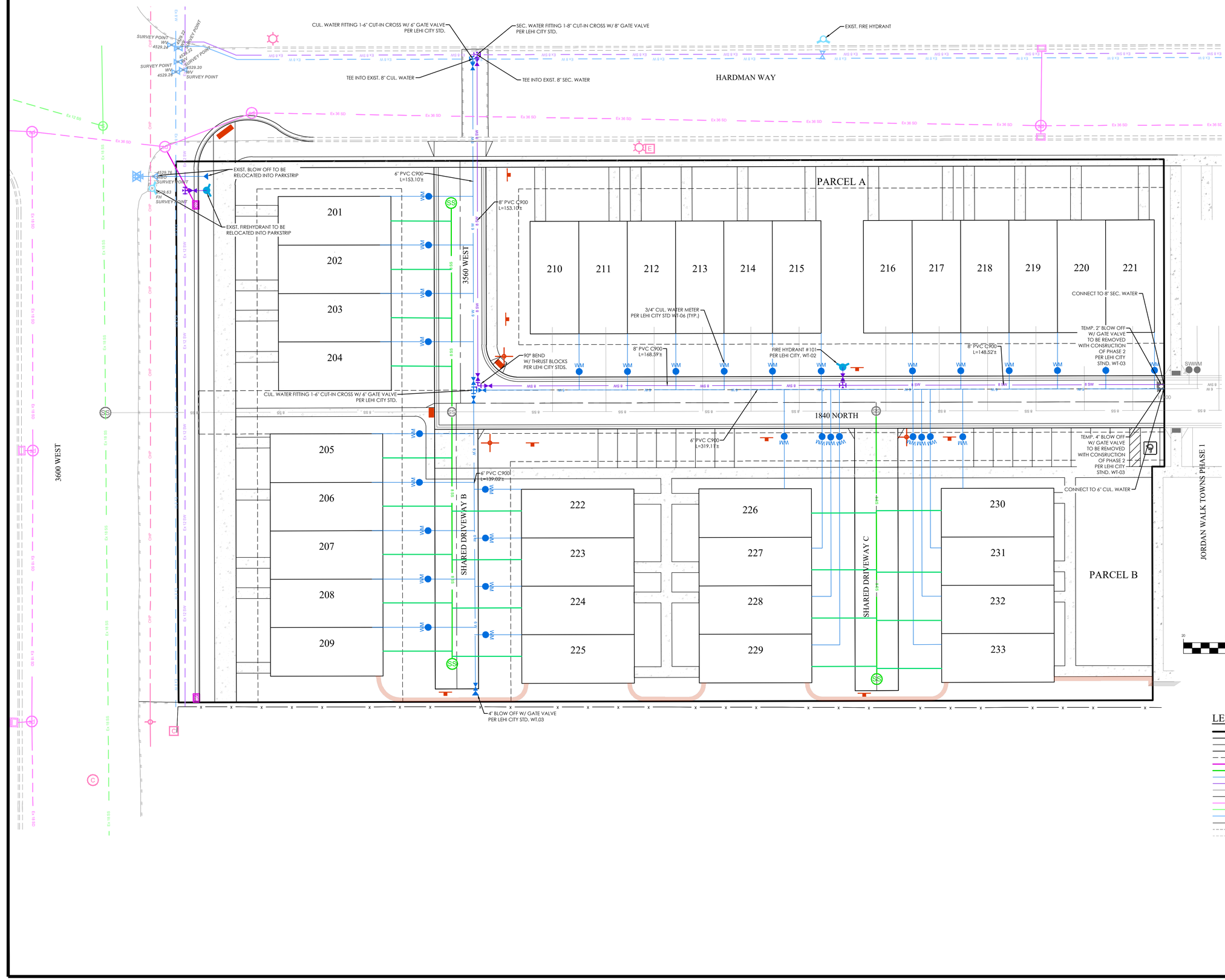
REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

SEWER PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C6		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C6 SEWER PLAN.dwg



LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
- EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- SPOT ELEVATION

o XXXX.XX

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8/8/23
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JORDAN WALK TOWNS PHASE 2

LEHI, UT

WATER PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

WATER PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C7		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C7 WATER PLAN.dwg

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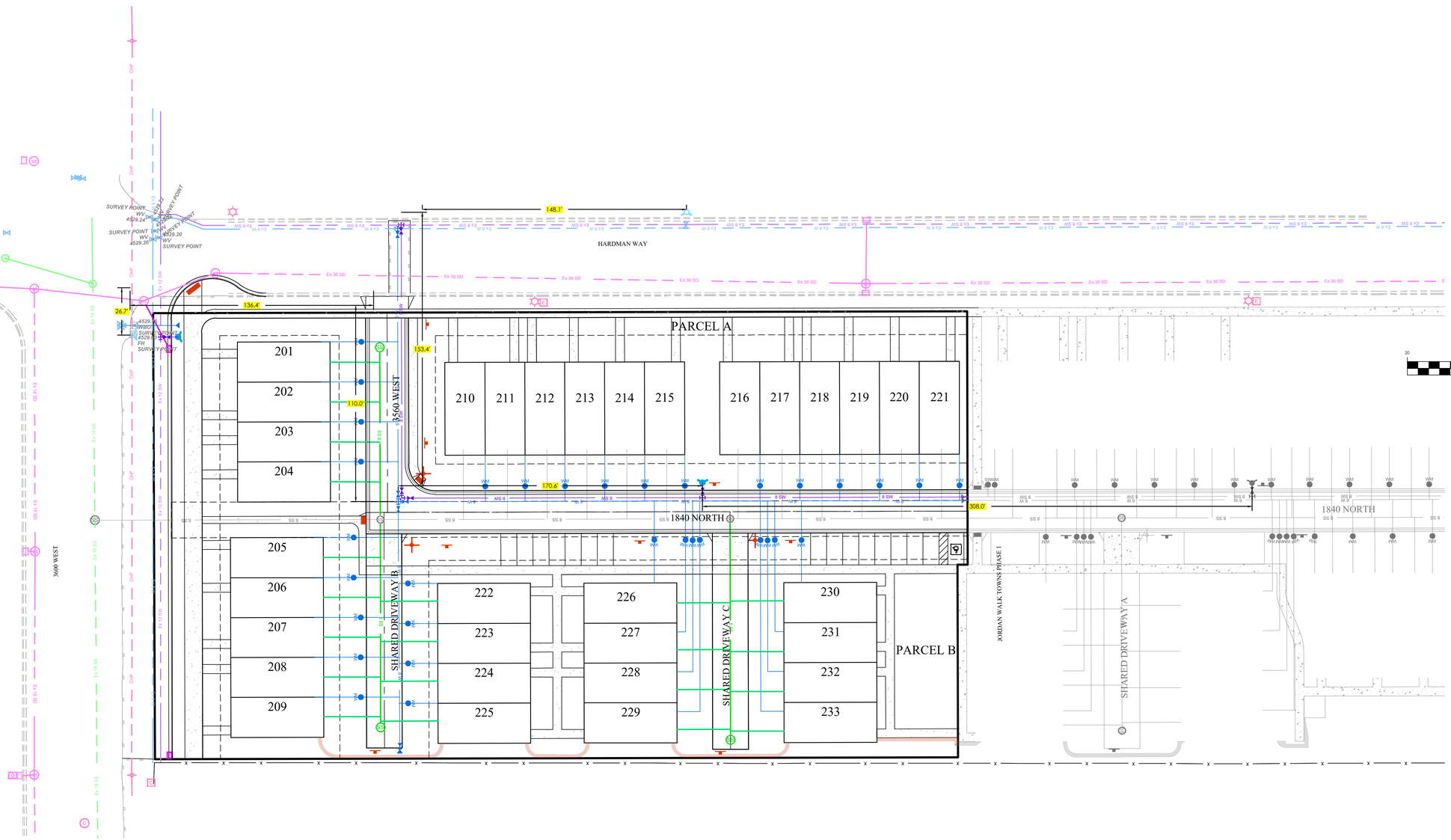

N

S

NOTES:

TOTAL SPAN BETWEEN HYDRANTS:
170.6'+153.4'+148.1'=472.1'

26.7'+136.4'+110'+170.6'=443.7'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
- EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX SPOT ELEVATION

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LEHI, UT

FIRE HYDRANT SPACING PLAN

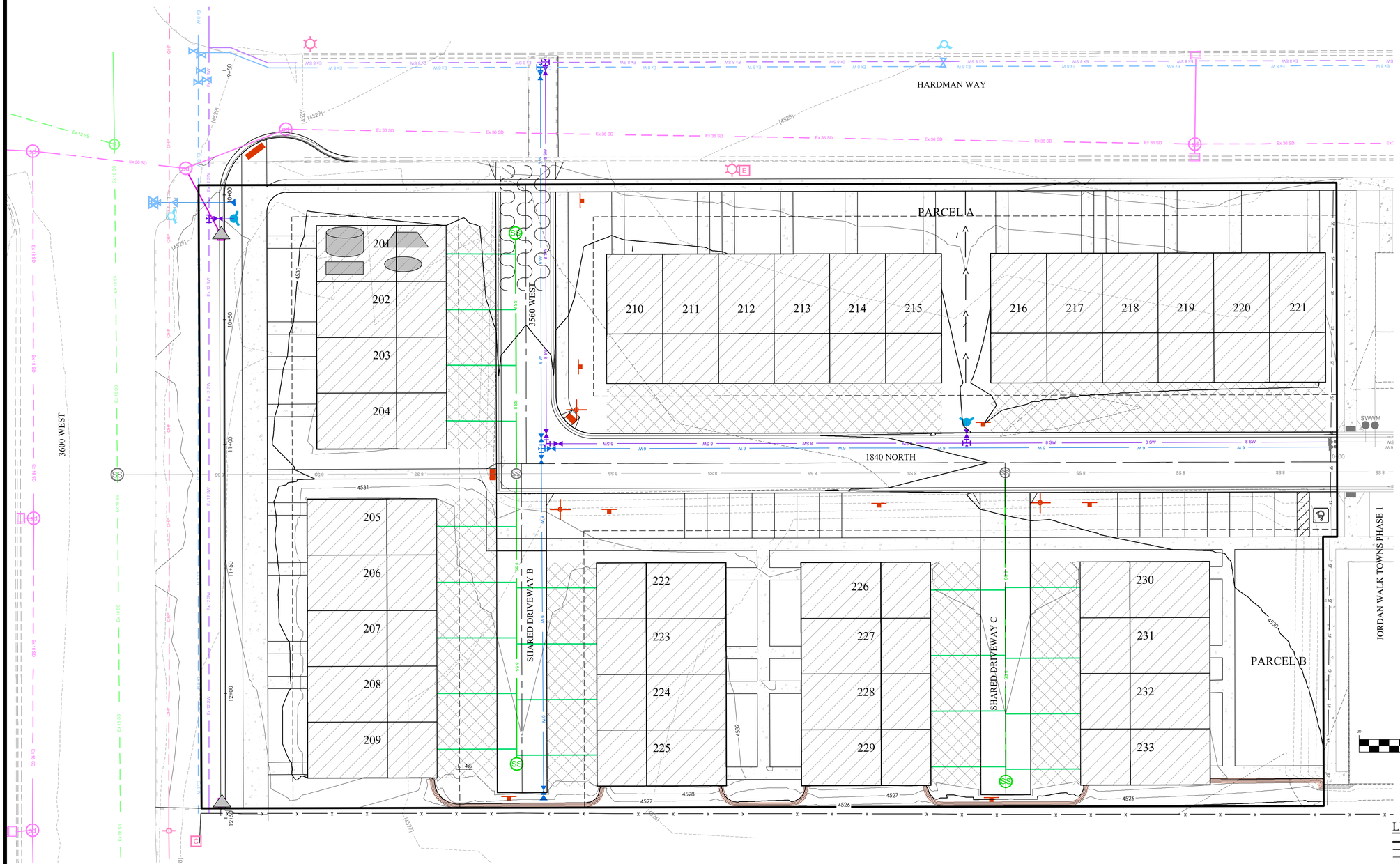
REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

FIRE HYDRANT SPACING PLAN

Scale:	1"=30'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C7.1		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C7 FIRE HYDRANT SPACING.dwg



EROSION CONTROL LEGEND

- CONSTRUCTION ENTRANCE
- MATERIALS STORAGE
- FUEL TANKS
- CONCRETE WASHOUT
- TRASH BIN
- PORTABLE TOILET
- CONSTRUCTION TRAILER
- INLET PROTECTION
- SURFACE WATERS
- OUTFALL
- SILT FENCE OR BERM
- CUTBACK CURB
- FIBER ROLL

N

S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15 SD — 15" STORM DRAIN
- 8 SS — 8" SANITARY SEWER
- 8 W — 8" CULINARY WATER
- 8 SW — 8" SECONDARY WATER
- XXXX — CONTOUR MAJOR
- XXXX — CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- (XXXX) — EXIST. CONTOUR MAJOR
- (XXXX) — EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX — SPOT ELEVATION

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08/08/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

EROSION CONTROL PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

EROSION CONTROL PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C8		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\C8 EROSION CONTROL PLAN.dwg

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EXIST. OHP

HARDMAN WAY

EXIST. STREET LIGHT TO REMAIN

EXIST. ELECTRICAL BOX TO REMAIN

PARCEL A

201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233

3560 WEST

3600 WEST

1840 NORTH

SHARED DRIVEWAY B

SHARED DRIVEWAY C

PARCEL B

JORDAN WALK TOWNS PHASE 1

PROPOSED END OF ASPHALT

EXIST. COMM. BOX

EXIST. POWER POLE

N

S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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JORDAN WALK TOWNS PHASE 2

LEHI, UT

POWER PLAN

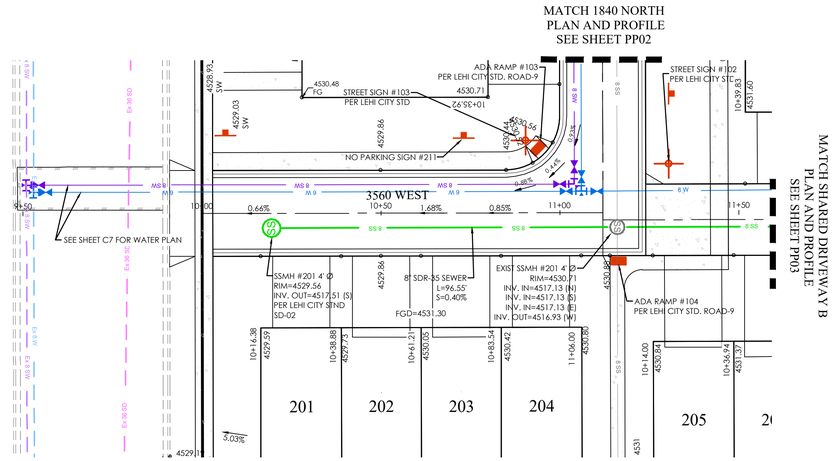
REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

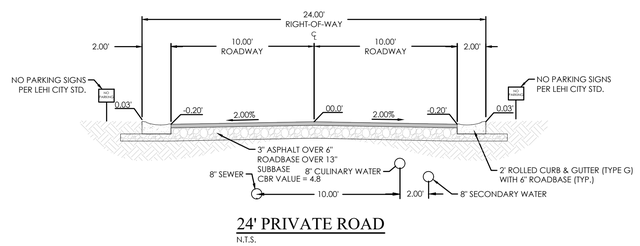
POWER PLAN

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	C9		

z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheet\C9 POWER PLAN.dwg

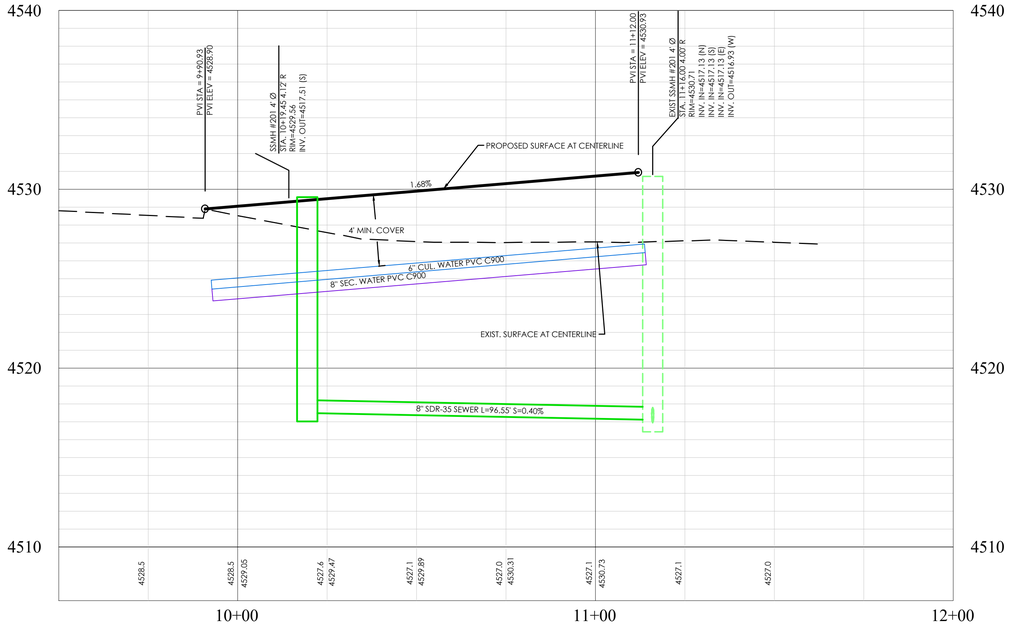


3560 WEST PLAN



24' PRIVATE ROAD

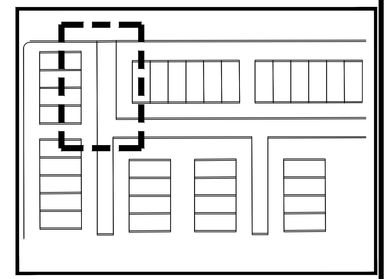
N.T.S.



3560 WEST PROFILE

LEGEND

	BOUNDARY
	ROW
	CENTERLINE
	LOT LINE
	EASEMENT
15 SD	15" STORM DRAIN
8 SS	8" SANITARY SEWER
8 W	8" CULINARY WATER
8 SW	8" SECONDARY WATER
XXXX	CONTOUR MAJOR
XXXX	CONTOUR MINOR
Ex SD	EXIST. STORM DRAIN
Ex SS	EXIST. SANITARY SEWER
Ex W	EXIST. CULINARY WATER
x x x	EXIST. FENCE
[XXXX]	EXIST. CONTOUR MAJOR
[XXXX]	EXIST. CONTOUR MINOR
	SIGN
	STREET LIGHT
	SD MH, INLET, AND COMBO
	SEWER MANHOLE
	CULINARY VALVE, TEE & BEND
	SECONDARY VALVE, TEE & BEND
	WATER BLOW-OFF
	FIRE HYDRANT
	STREET MONUMENT (TO BE SET)
	EXIST. STREET MONUMENT
	EXIST. SD INLET & MH
	EXIST. SEWER MH
	EXIST. VALVE, TEE, & BEND
	EXIST. FIRE HYDRANT
o XXXX.XX	SPOT ELEVATION



KEY MAP

N.T.S

BENCHMARK

SOUTHEAST QUARTER OF SECTION 1,
TOWNSHIP 5 SOUTH, RANGE 1 WEST,
SALT LAKE BASE AND MERIDIAN
ELEV: 4536.22
DATUM: NAVD88



GRAPHIC SCALE



(IN FEET)
1 inch = 20 ft.

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8/10/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

3560 WEST PLAN AND PROFILE

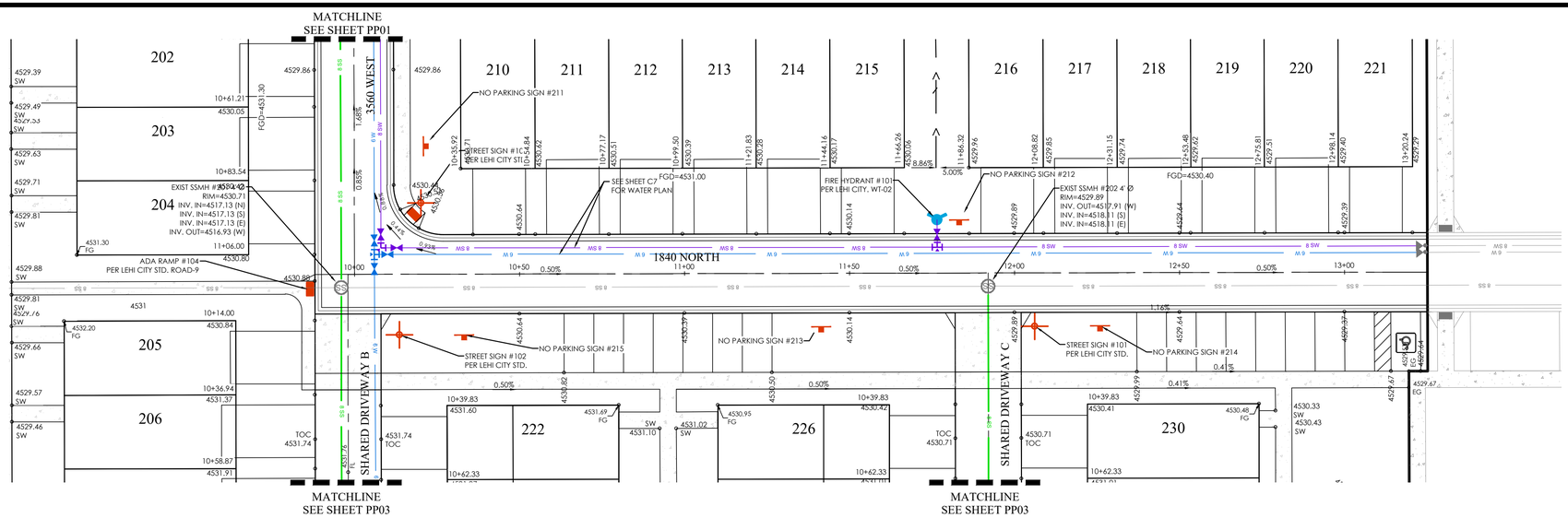
REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

3560 WEST PLAN AND PROFILE

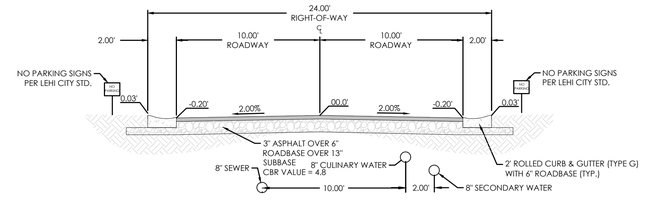
Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	PP01		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\PP01.dwg



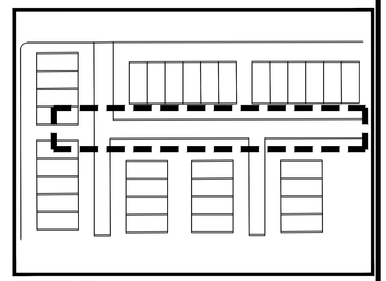
LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
- EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX — SPOT ELEVATION

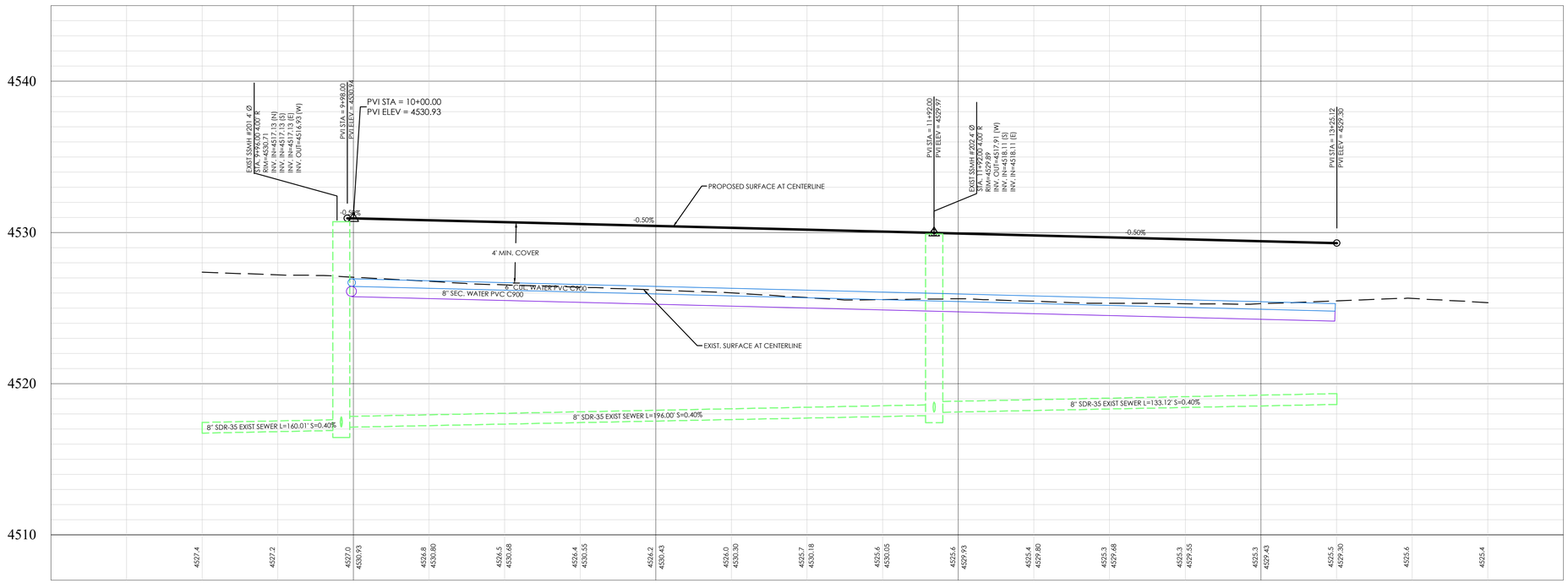


24' PRIVATE ROAD
N.T.S.

1840 NORTH PLAN



KEY MAP
N.T.S



1840 NORTH PROFILE

BENCHMARK

SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SALT LAKE BASE AND MERIDIAN
ELEV: 4536.22
DATUM: NAVD88



GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

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STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

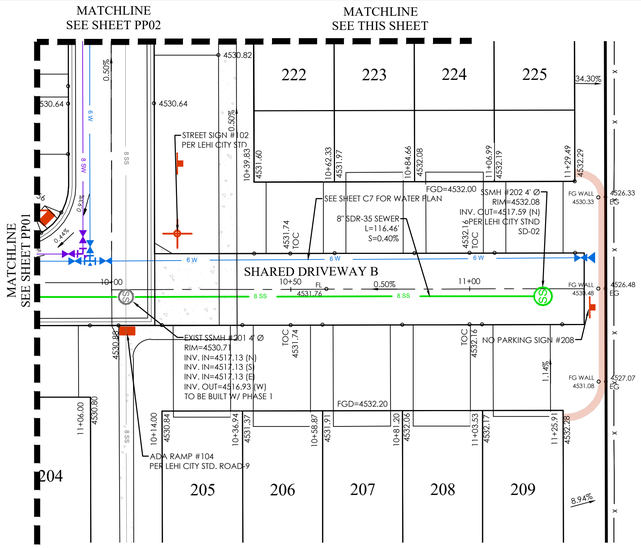
1840 NORTH PLAN AND PROFILE

REVISION BLOCK		
#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

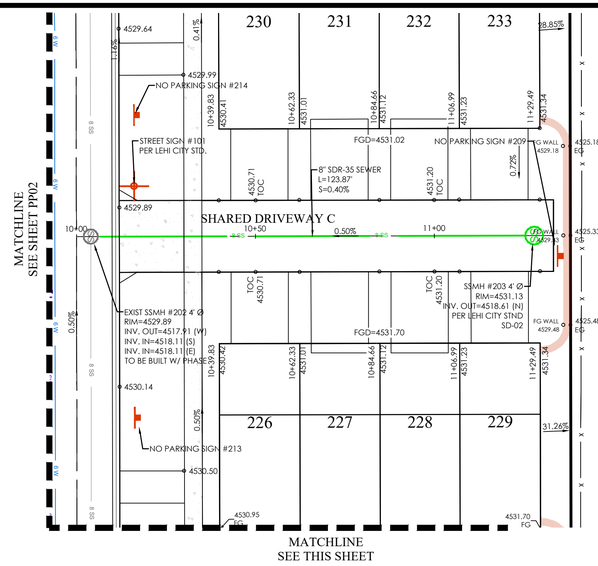
1840 NORTH PLAN AND PROFILE

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	PP02		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\PP02.dwg



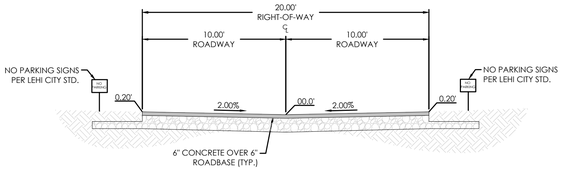
SHARED DRIVEWAY B PLAN



SHARED DRIVEWAY C PLAN

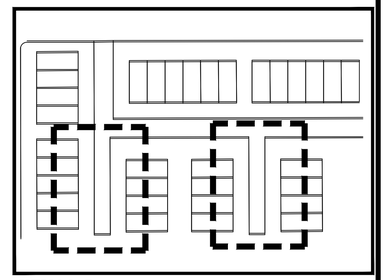
LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
- EXIST. CONTOUR MINOR
- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
- SECONDARY VALVE, TEE & BEND
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- o XXXX.XX SPOT ELEVATION



20' SHARED DRIVEWAY

N.T.S

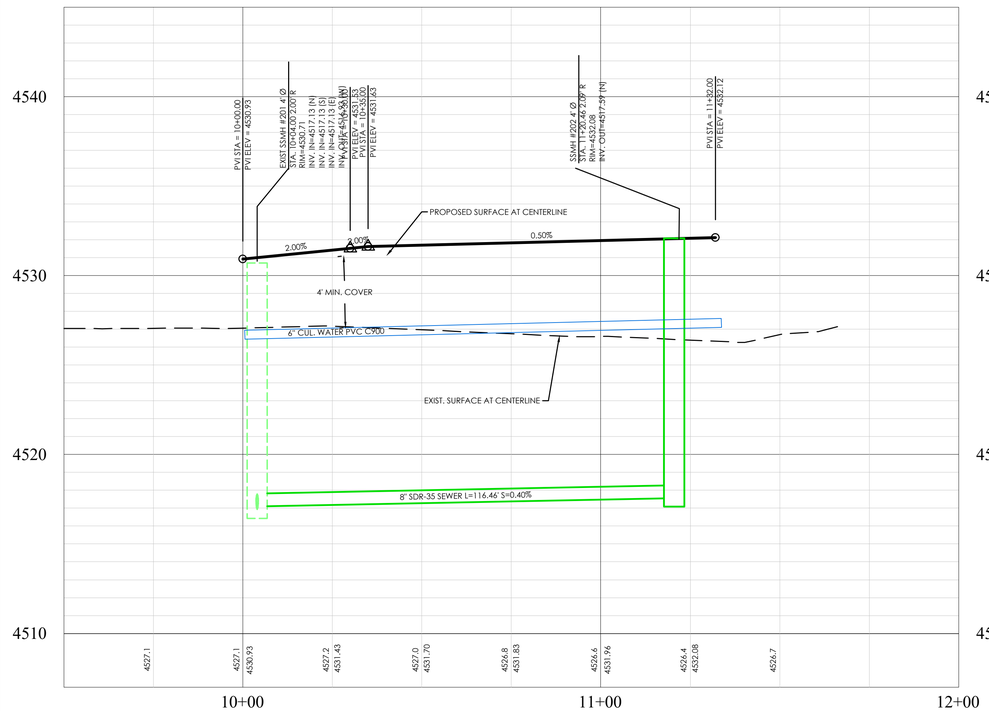


KEY MAP
N.T.S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



SHARED DRIVEWAY B PROFILE



SHARED DRIVEWAY C PROFILE

BENCHMARK

SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SALT LAKE BASE AND MERIDIAN
ELEV: 4536.22
DATUM: NAVD88

811 Know what's below. Call 811 before you dig.

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6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

LICENSED PROFESSIONAL ENGINEER
No. 13530191-2201
BENJAMIN B. DUZETT
01/0/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

SHARED DRIVEWAY B PLAN AND PROFILE

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
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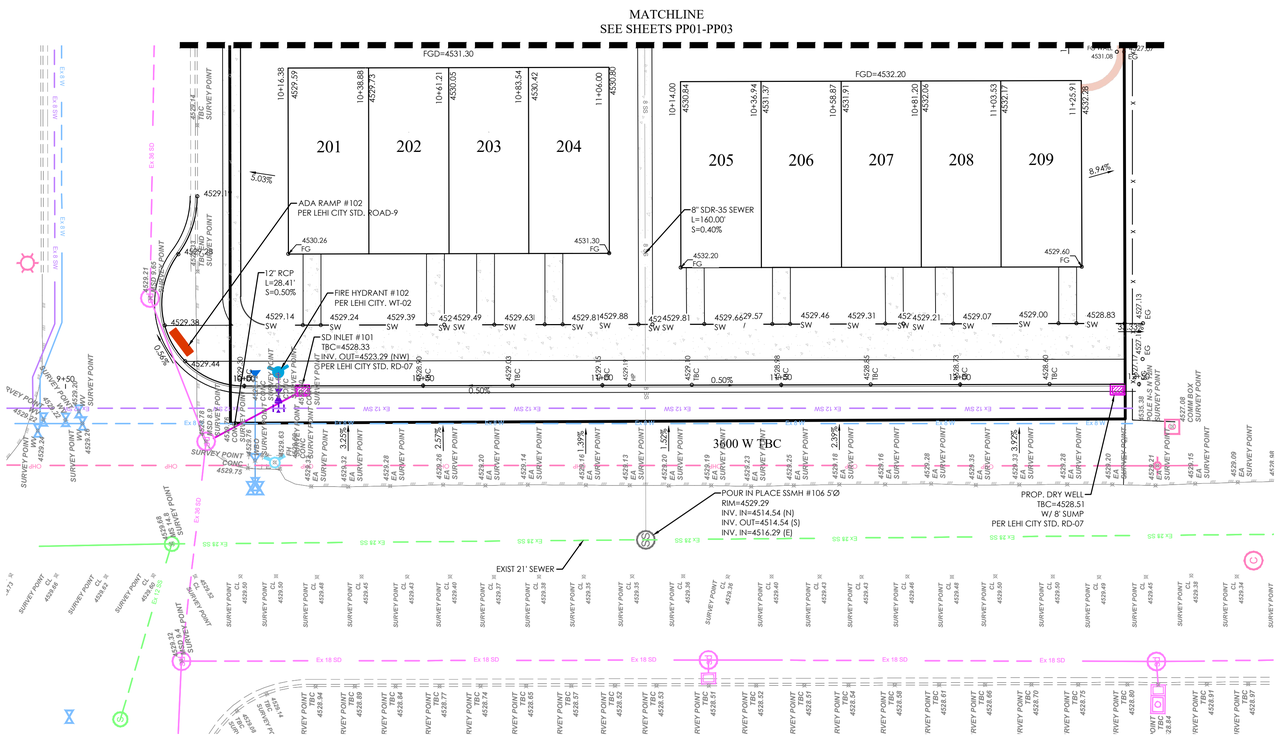
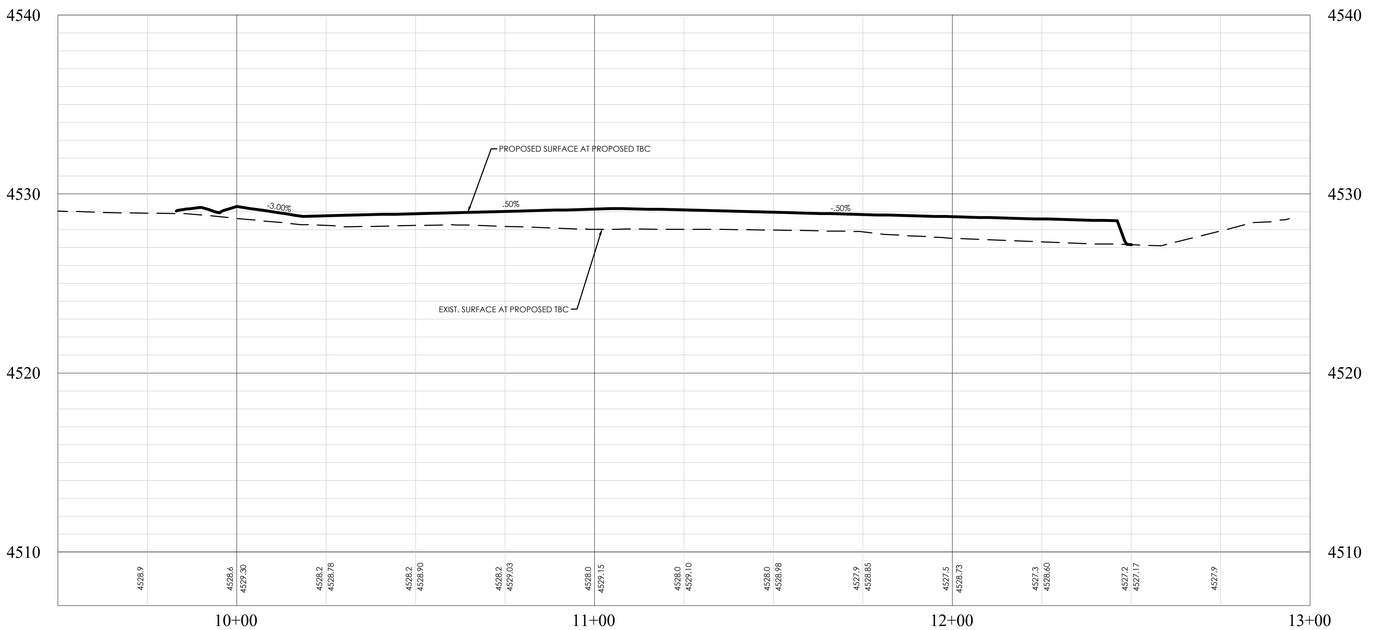
SHARED DRIVEWAY B PLAN AND PROFILE

Scale:	1"=20'	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	PP03		

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheet\PP03.dwg



3600 WEST TBC PLAN



3600 W TBC PROFILE

LEGEND

- BOUNDARY
- ROW
- CENTERLINE
- LOT LINE
- EASEMENT
- 15" STORM DRAIN
- 8" SANITARY SEWER
- 8" CULINARY WATER
- 8" SECONDARY WATER
- CONTOUR MAJOR
- CONTOUR MINOR
- EXIST. STORM DRAIN
- EXIST. SANITARY SEWER
- EXIST. CULINARY WATER
- EXIST. FENCE
- EXIST. CONTOUR MAJOR
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- SIGN
- STREET LIGHT
- SD MH, INLET, AND COMBO
- SEWER MANHOLE
- CULINARY VALVE, TEE & BEND
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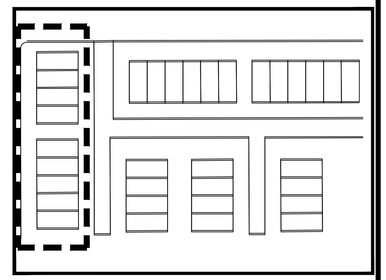
- WATER BLOW-OFF
- FIRE HYDRANT
- STREET MONUMENT (TO BE SET)
- EXIST. STREET MONUMENT
- EXIST. SD INLET & MH
- EXIST. SEWER MH
- EXIST. VALVE, TEE, & BEND
- EXIST. FIRE HYDRANT
- SPOT ELEVATION



KEY MAP
N.T.S

N S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

BENCHMARK

SOUTHEAST QUARTER OF SECTION 1, TOWNSHIP 5 SOUTH, RANGE 1 WEST, SALT LAKE BASE AND MERIDIAN
ELEV: 4536.22
DATUM: NAVD88

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BENJAMIN B. DUZETT
01/03/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

3600 WEST TBC PLAN AND PROFILE

REVISION BLOCK

#	DATE	DESCRIPTION
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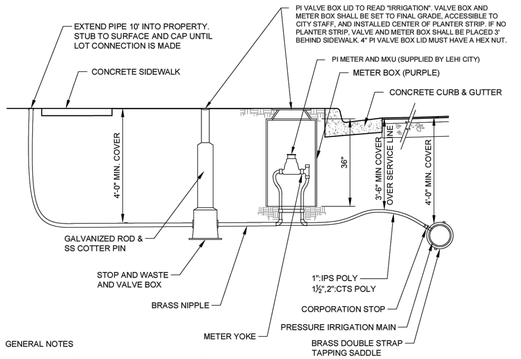
3600 WEST TBC PLAN AND PROFILE

Scale: 1"=20'	Drawn: LCB
Date: 08/08/23	Job #: 23-0199
Sheet: PP04	

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheet\PP04.dwg



GENERAL NOTES

1. 10'-0" EDGE TO EDGE HORIZONTAL CLEARANCE IS REQUIRED BETWEEN WATER AND SEWER LATERAL SERVICE LINES.
2. WHERE WATER AND SEWER LATERALS MUST CROSS, WATER LATERAL SHALL BE 18" ABOVE THE SEWER LATERAL AS MEASURED FROM THE BOTTOM OF THE WATER LATERAL TO THE TOP OF THE SEWER LATERAL. THIS SEPARATION SHALL BE MAINTAINED FOR A MINIMUM OF 10'-0" EITHER SIDE OF THE CROSSING POINT.
3. ALL PRESSURE IRRIGATION METERS SHALL BE CONSTRUCTED BEHIND PROPOSED CURB AND GUTTER, AND SHALL BE SERVICEABLE FROM THE STREET, REGARDLESS OF WHETHER OR NOT THE TYPICAL STREET CROSS SECTION CONTAINS A PLANTER STRIP.
4. COORDINATE PLACEMENT OF PI METER WITH LEHI WATER DEPARTMENT.
5. TEFLON TAPE REQUIRED ON ALL THREADED CONNECTIONS.
6. PRESSURE IRRIGATION METERS SHALL NOT BE PLACED WITHIN DRIVABLE AREAS UNLESS OTHERWISE APPROVED BY WATER DEPARTMENT.
7. ALL PIPING, FITTINGS, ECT WILL BE PROVIDED BY DEVELOPER AND INSPECTED BY LEHI CITY WATER INSPECTOR.
8. METER AND MXU WILL BE SUPPLIED BY LEHI CITY.
9. ALL BRASS FITTINGS, VALVES, ETC. SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C-800, LATEST REVISION. ALL BRASS PRODUCTS ARE TO BE CERTIFIED TO THE REQUIREMENTS OF NSF / ANSI 61 ANNEX F&G AND NSF / ANSI 372.
10. METERS THAT FALL WITHIN DRIVEWAYS MAY BE RELOCATED A MAXIMUM OF 3' LATERALLY, OTHERWISE THE SERVICE MUST BE TERMINATED AT THE MAIN AND REINSTALLED OUTSIDE OF THE DRIVEWAY.

PARTS LIST			
PART NAME	METER SIZE		
	1" METER	1 1/2" METER	2" METER
SETTER	FORD VB-74-1SWI-11-44	FORD VB876-15-11-66	FORD VB877-15-11-77
NIPPLE	1X12 BRASS	1-1/2X12 BRASS	2X12 BRASS
STOP AND WASTE	FORD BC-11-444-SW 1	FORD B11-6665W-NL 1 1/2	Ford B11-777SW-NL2
RING	D&L L-2244	D&L L-2242	
RING ADAPTER	NA	L-2336 3D CI MTR ADPT RING	
LID	DFW1AAUT-SMW+T-RRIG-LID PURPLE		
METER INSULATOR	4x28 FOAM	4x30 FOAM	
VALVE BOX	9SD CAST IRON W/HEX NUT		
BASE	NA		M-9094-01
ROD	M-9080 W/COTTER OSW EXT KEY		
METER BOX	SIGMA RMP-212436-PTR	SIGMA RMP-203036-PTR	
SERVICE LINE	1" IPS POLY	1 1/2" CTS POLY	2" CTS POLY

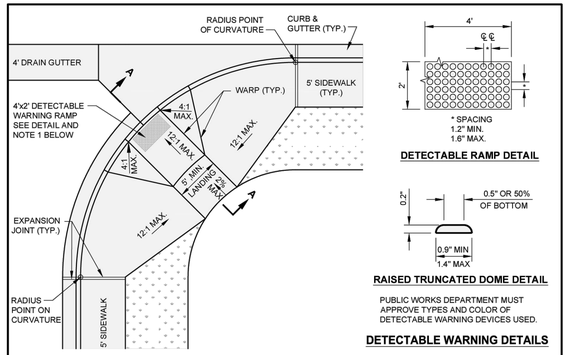
*LISTED MODEL NUMBERS OR APPROVED EQUAL REQUIRED

LEHI CITY

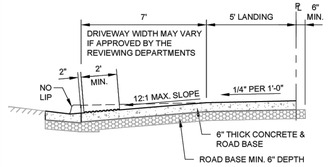
LEHI CITY STANDARD DETAIL

PRESSURE IRRIGATION SERVICE CONNECTION

WT-08 DATE: *JANUARY 2022*



PLAN VIEW



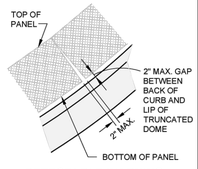
SECTION A-A

DETECTABLE RAMP DETAIL

RAISED TRUNCATED DOME DETAIL

PUBLIC WORKS DEPARTMENT MUST APPROVE TYPES AND COLOR OF DETECTABLE WARNING DEVICES USED.

DETECTABLE WARNING DETAILS



DETECTABLE WARNING SURFACE PANEL GAP DETAIL

GENERAL NOTES:

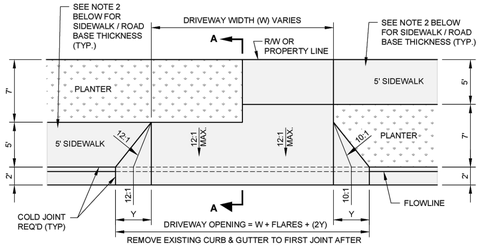
1. ROAD/FIELD GRADES MAY REQUIRE ADJUSTMENT AS PER APPROVAL BY PUBLIC WORKS DEPARTMENT
2. DETECTABLE WARNING SURFACES SHALL EXTEND (24 IN) MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP (EXCLUSIVE OF FLARES), THE LANDING, OR THE BLENDED TRANSITION.

LEHI CITY

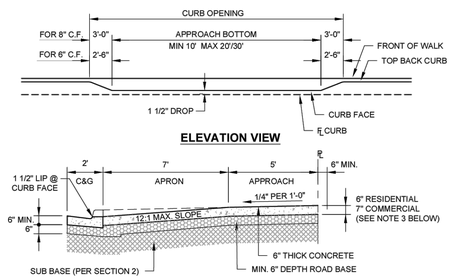
LEHI CITY STANDARD DETAIL

ADA RAMP COMBINATION CURB, GUTTER & SIDEWALK (AT INTERSECTION)

RD-07 DATE: *JANUARY 2022*



PLAN VIEW



ELEVATION VIEW

SECTION A-A

GENERAL NOTES:

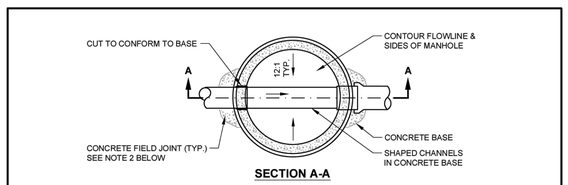
1. ALL PROPOSED DRIVEWAY PLACEMENTS SHALL BE INSPECTED BY THE LEHI CITY STREET DEPARTMENT PRIOR TO POURING OF CONCRETE.
2. IN THE EVENT THAT SIDEWALKS ARE INSTALLED PRIOR TO THE INSTALLATION OF DRIVE APPROACHES, AND THEY ARE NOT CONSTRUCTED TO MEET THE STANDARDS ABOVE, ALL NON-COMPLIANT SIDEWALK SECTIONS SHALL BE REMOVED & REPLACED AS PART OF THE DRIVE APPROACH CONSTRUCTION.
3. MESH, REBAR AND/OR A THICKER CONCRETE AND ROAD BASE SECTION MAY BE REQUIRED BASED UPON ANTICIPATED TRAFFIC LOADS
4. MAX. DRIVEWAY WIDTH 20' FOR 2 CAR GARAGE, 30' FOR 3 CAR GARAGE

LEHI CITY

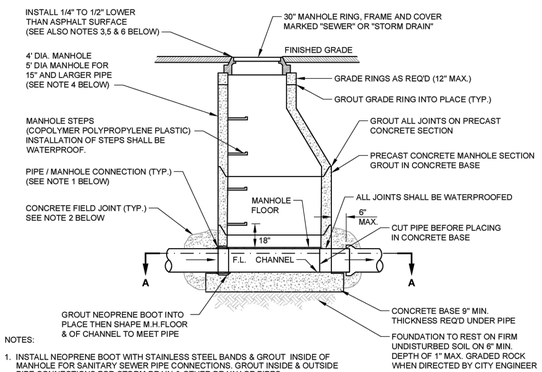
LEHI CITY STANDARD DETAIL

FLARED DRIVE APPROACH

RD-11 DATE: *JANUARY 2022*



SECTION A-A



NOTES:

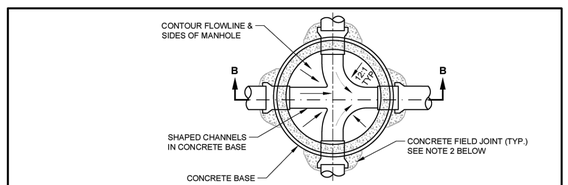
1. INSTALL NEOPRENE BOOT WITH STAINLESS STEEL BANDS & GROUT INSIDE OF MANHOLE FOR SANITARY SEWER PIPE CONNECTIONS. GROUT INSIDE & OUTSIDE PIPE CONNECTIONS FOR STORM DRAIN & OTHER DRAINAGE PIPES.
2. INSTALL 8" THICK CONCRETE FIELD JOINT AROUND ALL STORM DRAINAGE PIPES (TYP.). INSTALL AROUND ALL CONCRETE SEWER PIPES 18" DIA. & LARGER.
3. MANHOLE RING & COVER SHALL MATCH GRADE & CROSS SLOPE OF ROADWAY. ("TWIST", ROTATING OR ADJUSTABLE MANHOLE RING & COVER MAY BE REQUIRED).
4. LARGER MANHOLES MAY BE REQUIRED DEPENDING ON PIPE SIZINGS AND ORIENTATION WITHIN MANHOLE.
5. TOP OF MANHOLE COVER SHALL BE SET TO FINAL GRADE PRIOR TO PAVING. CONCRETE COLLARS MAY BE ALLOWED, BUT ONLY AFTER PRIOR APPROVAL OF LEHI CITY STREET DEPARTMENT. IF APPROVED, CONCRETE COLLARS SHALL BE 12" MIN. WIDE (FROM EDGE OF MANHOLE RING) AND 12" MIN. THICKNESS.
6. IN NON-PAVED AREAS, A 12" THICK BY 12" WIDE (FROM EDGE OF MANHOLE RING) CONCRETE COLLAR SHALL BE PROVIDED FLUSH WITH THE TOP OF THE MANHOLE COVER.

LEHI CITY

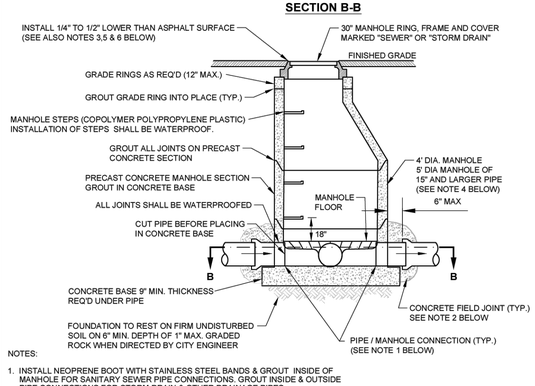
LEHI CITY STANDARD DETAIL

LINE MANHOLE (SEWER & STORM DRAIN)

SD-01 DATE: *JANUARY 2022*



SECTION B-B



NOTES:

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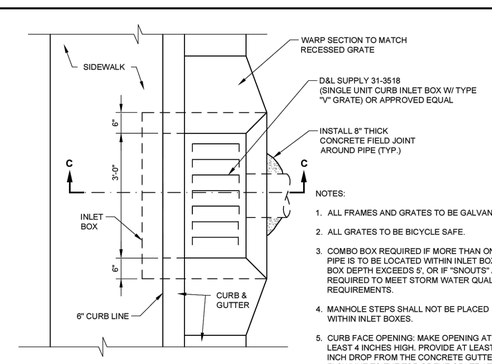
6. IN NON-PAVED AREAS, A 12" THICK BY 12" WIDE (FROM EDGE OF MANHOLE RING) CONCRETE COLLAR SHALL BE PROVIDED FLUSH WITH THE TOP OF THE MANHOLE COVER.

LEHI CITY

LEHI CITY STANDARD DETAIL

JUNCTION MANHOLE (SEWER & STORM DRAIN)

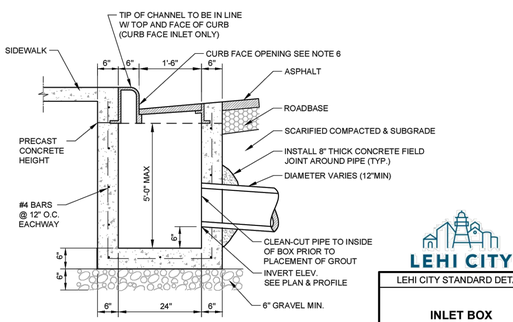
SD-02 DATE: *JANUARY 2022*



PLAN VIEW

NOTES:

1. ALL FRAMES AND GRATES TO BE GALVANIZED.
2. ALL GRATES TO BE BICYCLE SAFE.
3. COMBO BOX REQUIRED IF MORE THAN ONE PIPE IS TO BE LOCATED WITHIN INLET BOX, BOX DEPTH EXCEEDS 5', OR IF "SNOUTS" ARE REQUIRED TO MEET STORM WATER QUALITY REQUIREMENTS.
4. MANHOLE STEPS SHALL NOT BE PLACED WITHIN INLET BOXES.
5. CURB FACE OPENING: MAKE OPENING AT LEAST 4 INCHES HIGH. PROVIDE AT LEAST A 2 INCH DROP FROM THE CONCRETE GUTTER FLOWLINE TO MEET STORM WATER QUALITY REQUIREMENTS. THE TOP OF THE GRATE AT THE CURB FACE OPENING.



SECTION C

LEHI CITY

LEHI CITY STANDARD DETAIL

INLET BOX

SD-07 DATE: *JANUARY 2022*

FOCUS ENGINEERING AND SURVEYING, LLC
6949 S. HIGH TECH DRIVE SUITE 200
MIDVALE, UTAH 84047 PH: (801) 352-0075
www.focusutah.com

LEHI CITY

NOTE: QR CODE LINKS TO LEHI CITIES MOST UP TO DATE STANDARD DRAWINGS. SOME DETAILS MAY NOT BE APPLICABLE.

LICENSED PROFESSIONAL ENGINEER
No. 13530191-2202
BENJAMIN B. DUZETT
8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE

LEHI, UT

DETAILS

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

DETAILS

Scale: N/A | Drawn: LCB
Date: 08/08/23 | Job #: 23-0199
Sheet: D1

Know what's below. Call 811 before you dig.

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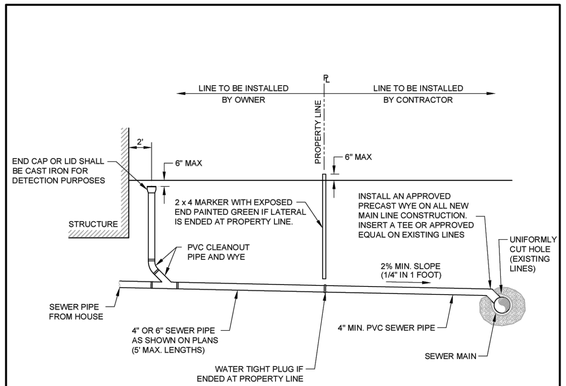
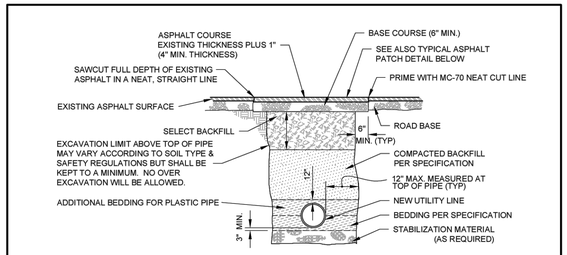


NOTES:

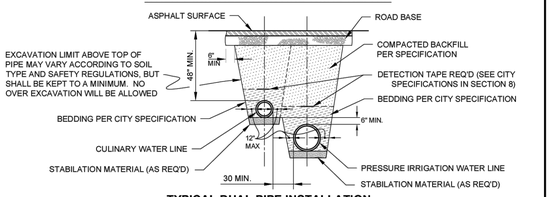
1. MAXIMUM DISTANCE BETWEEN CLEANOUTS: 100 FEET
2. LATERALS SHALL NOT ENTER MANHOLES UNLESS OTHERWISE APPROVED BY CITY ENGINEER

LEHI CITY

LEHI CITY STANDARD DETAIL	
SEWER LATERAL	
SD-05	DATE: JANUARY 2022

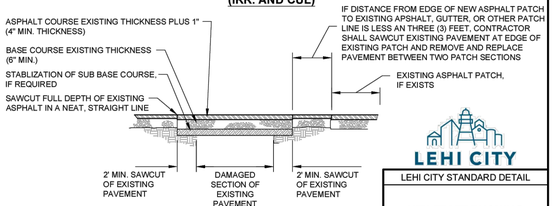


UTILITY INSTALLATION AND ROAD REPAIR



TYPICAL DUAL PIPE INSTALLATION

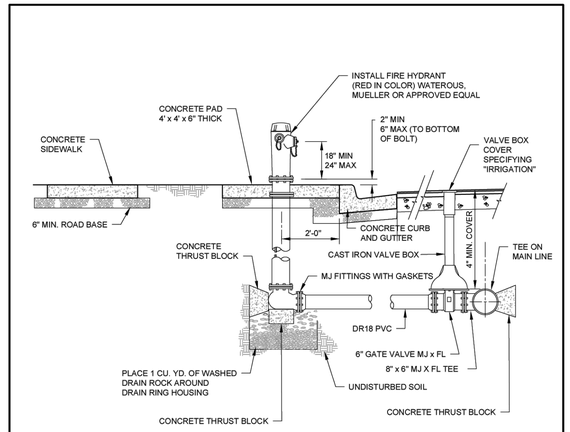
(IRR. AND CUL)



TYPICAL ASPHALT PATCH DETAIL

LEHI CITY

LEHI CITY STANDARD DETAIL	
UTILITY TRENCHING	
WT-01	DATE: JANUARY 2022



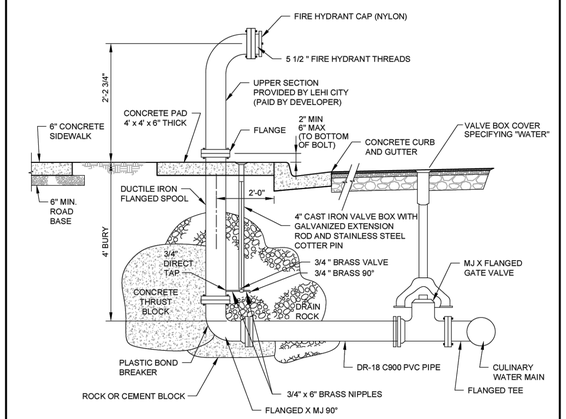
FIRE HYDRANT WITH VALVE

NOTES:

1. ALL BOLTS SHALL BE FREE FROM CONCRETE AND FULLY ACCESSIBLE.
2. HYDRANT SHALL BE INSTALLED 2' BEHIND THE WALK WITH CONCRETE PAD WHEN THERE IS NO PLANTER.
3. WHEN INSTALLING CONCRETE PAD AROUND FIRE HYDRANT, CONTRACTOR SHALL PLACE CRACK CONTROL JOINTS DIAGONALLY FROM THE HYDRANT TO THE CORNERS OF SAID PAD.
4. A THREE (3) FOOT HORIZONTAL CLEARANCE MUST BE MAINTAINED AROUND THE OUTSIDE OF ALL FIRE HYDRANTS.
5. STEAMER OUTLET SHALL FACE THE ROAD.

LEHI CITY

LEHI CITY STANDARD DETAIL	
FIRE HYDRANT	
WT-02	DATE: JANUARY 2022

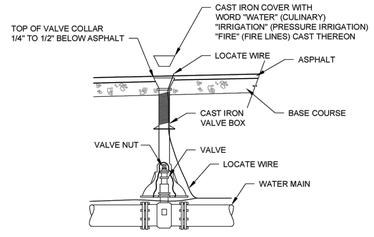


NOTE:

1. 4" SIZE FOR 8" OR SMALLER LINES 6" SIZE FOR 10" OR LARGER LINES OTHER SIZES AS DIRECTED BY THE WATER DEPARTMENT DIRECTOR.
2. BLOWOFF SHALL BE INSTALLED 2' BEHIND THE WALK WITH CONCRETE PAD WHEN THERE IS NO PLANTER.
3. WHEN INSTALLING CONCRETE PAD AROUND BLOW-OFF, CONTRACTOR SHALL PLACE CRACK CONTROL JOINTS DIAGONALLY FROM THE BLOW-OFF TO THE CORNERS OF SAID PAD.
4. A THREE (3) FOOT HORIZONTAL CLEARANCE MUST BE MAINTAINED AROUND THE OUTSIDE OF ALL BLOW-OFFS.
5. BLOWOFF TOP, ADAPTOR, AND CAP TO BE SUPPLIED BY LEHI CITY WATER DEPARTMENT.

LEHI CITY

LEHI CITY STANDARD DETAIL	
BLOW-OFF	
WT-03	DATE: JANUARY 2022

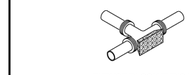


NOTES:

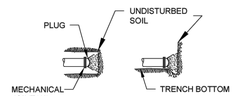
1. TOP OF VALVE COLLAR SHALL BE SET TO FINAL GRADE PRIOR TO PAVING. CONCRETE COLLARS MAY BE ALLOWED ONLY AFTER PRIOR APPROVAL OF LEHI CITY STREET DEPARTMENT. IF APPROVED, VALVE COLLARS SHALL BE 12" MIN. WIDE (FROM EDGE OF COLLAR), 12" THICK AND 1/4" TO 1/2" BELOW ASPHALT.
2. IN NON PAVED AND PLANTER STRIP AREAS, A *4' x 4' x 6"* THICK CONCRETE PAD MUST BE PROVIDED FLUSH WITH THE TOP OF THE VALVE BOX.

LEHI CITY

LEHI CITY STANDARD DETAIL	
VALVE BOX	
WT-04	DATE: JANUARY 2022



THRUST BLOCK TYPICAL



PLAN **ELEVATION**

PLUG DETAIL

SIZE	BENDS 30°	45°	22 1/2°	11 1/4°	TEES *	GATE VALVES	DEAD ENDS	CROSS W/ 1 BRANCH PLUGGED	CROSS W/ 2 BRANCH PLUGGED
3	1.0	0.8	0.3	0	0.7	0.5	0.7	0.7	0.7
4	1.8	1.0	0.5	0	1.3	0.5	1.3	1.3	1.3
6	4.0	2.2	1.1	0	2.8	0.7	2.8	2.8	2.8
8	7.1	3.8	2.0	1.0	5.0	2.4	5.0	5.0	5.0
10	11.1	6.0	3.0	1.5	7.8	4.5	7.8	7.8	7.8
12	16.0	8.6	4.4	2.2	11.3	7.3	11.3	11.3	11.3
14	21.7	11.8	6.0	3.0	15.4	11.0	15.4	15.4	15.4
15	25.0	13.5	7.0	3.5	17.6		17.6	17.6	17.6
16	28.4	15.3	8.0	4.0	20.0		20.0	20.0	20.0
18	35.8	19.4	10.0	5.0	25.4		25.4	25.4	25.4
20	44.2	24.0	12.2	6.1	31.4		31.4	31.4	31.4
21	49.0	26.5	13.5	6.8	34.6		34.6	34.6	34.6
22	54.0	29.0	14.8	7.4	38.0		38.0	38.0	38.0
24	64.0	34.5	17.7	8.8	45.0		45.0	45.0	45.0
30	100.0	54.0	27.6	13.8	71.0		71.0	71.0	71.0
36	144.0	78.0	40.0	20	102.0		102.0	102.0	102.0

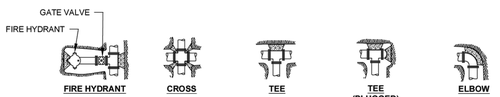
SPECIAL DESIGN

* SIZE IS BRANCH SIZE

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I. AND A SOIL BEARING CAPACITY OF 1000 LBS. PER SQ. FT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".

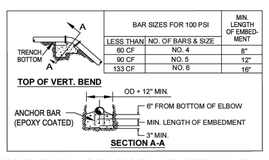
F= ACTUAL SPECIFIED TEST PRESSURE IN HUNDREDS OF LBS/SQ. IN. / ACTUAL SOIL BEARING CAPACITY IN THOUSANDS OF LBS.

TABLE OF BEARING AREAS IN SQ. FT. FOR CONCRETE THRUST BLOCKING



FIRE HYDRANT **CROSS** **TEE** **TEE (PLUGGED)** **ELBOW**

FOR 100 P.S.I. INTERNAL STATIC PRESSURE AND 1000 LBS. PER SQ. FT. SOIL BEARING CAPACITY.



	BAR SIZES FOR 100 PSI		MIN. LENGTH OF EMBED-MENT
	LESS THAN	NO. OF BARS & SIZE	
TRENCH BOTTOM	60 CF	NO. 4	8"
	90 CF	NO. 5	12"
	133 CF	NO. 6	16"

SIZE	BENDS 45°	22 1/2°	11 1/2°
3	3.7	1.9	1.4
4	6.5	3.3	1.7
6	14.6	7.5	3.7
8	26.0	13.2	6.6
10	40.5	20.7	10.3
12	58.5	30.0	14.8
14	79.5	40.7	20.2
15	91.0	46.6	23.2
16	104.0	53.0	26.5
18		67.3	33.4
20		83.0	41.0
21			45.5
22	SPECIAL DESIGN REQUIRED		50.0
24			59.5
30			
36			

RECD FOR VERT. BEND ANCHOR BLOCKS FOR 100 P.S.I. PRESSURE ADJUST VOLUMES BY MULTIPLYING TABULATED VALUES BY A CORRECTION FACTOR "F".

F= ACTUAL SPECIFIED TEST PRESSURE / 100

TABLE OF VOLUMES OF CONCRETE (IN CU. FT.)

NOTES:

1. ALL FITTINGS SHALL BE COVERED WITH PLASTIC OR OTHER APPROVED MATERIAL PRIOR TO POURING THE THRUST BLOCK
2. FM GRADE GREASE SHALL BE USED FOR ALL BOLTED FITTINGS.
3. ALL TRUST BLOCKS AGAINST NON-NATIVE MATERIALS SHALL BE UPSIZED UNLESS A BEARING PRESSURE OF 1000 LBS. PER SQ.FT. IS PROVIDED.
4. POST MIX OR SAC-CRETE IS NOT ALLOWED FOR THRUST BLOCKS.

LEHI CITY

LEHI CITY STANDARD DETAIL	
THRUST BLOCKING	
WT-05	DATE: JANUARY 2022

NOTE: QR CODE LINKS TO LEHI CITIES MOST UP TO DATE STANDARD DRAWINGS. SOME DETAILS MAY NOT BE APPLICABLE.

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LICENSED PROFESSIONAL ENGINEER
No. 13530191-2202
BENJAMIN B. DUZETT
08/08/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE 2

LEHI, UT

DETAILS

REVISION BLOCK		
#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

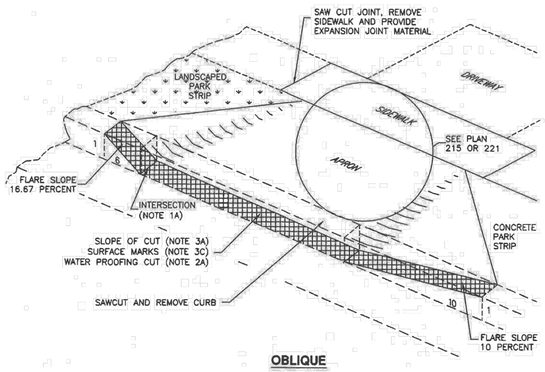
DETAILS

Scale: N/A	Drawn: LCB
Date: 08/08/23	Job #: 23-0199
Sheet: D2	

Know what's below. Call 811 before you dig.

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\D2 - DETAILS.dwg

NARRATIVE: THIS PLAN IS USED IF AN EXISTING CURB MUST BE CUT TO INSTALL A DRIVEWAY APPROACH. THE SLOPE OF THE CURB FLARE DEPENDS UPON WHETHER THE PARK STRIP IS LANDSCAPED OR IF THE PARK STRIP IS CONCRETE.



OBLIQUE

APWA Utah Chapter

Saw-cut driveway approach

Plan **222** February 2011

NOTE: QR CODE LINKS TO LEHI CITIES MOST UP TO DATE STANDARD DRAWINGS. SOME DETAILS MAY NOT BE APPLICABLE.

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8/8/23
STATE OF UTAH

JORDAN WALK TOWNS PHASE

LEHI, UT

DETAILS

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

DETAILS

Scale:	N/A	Drawn:	LCB
Date:	08/08/23	Job #:	23-0199
Sheet:	D3		

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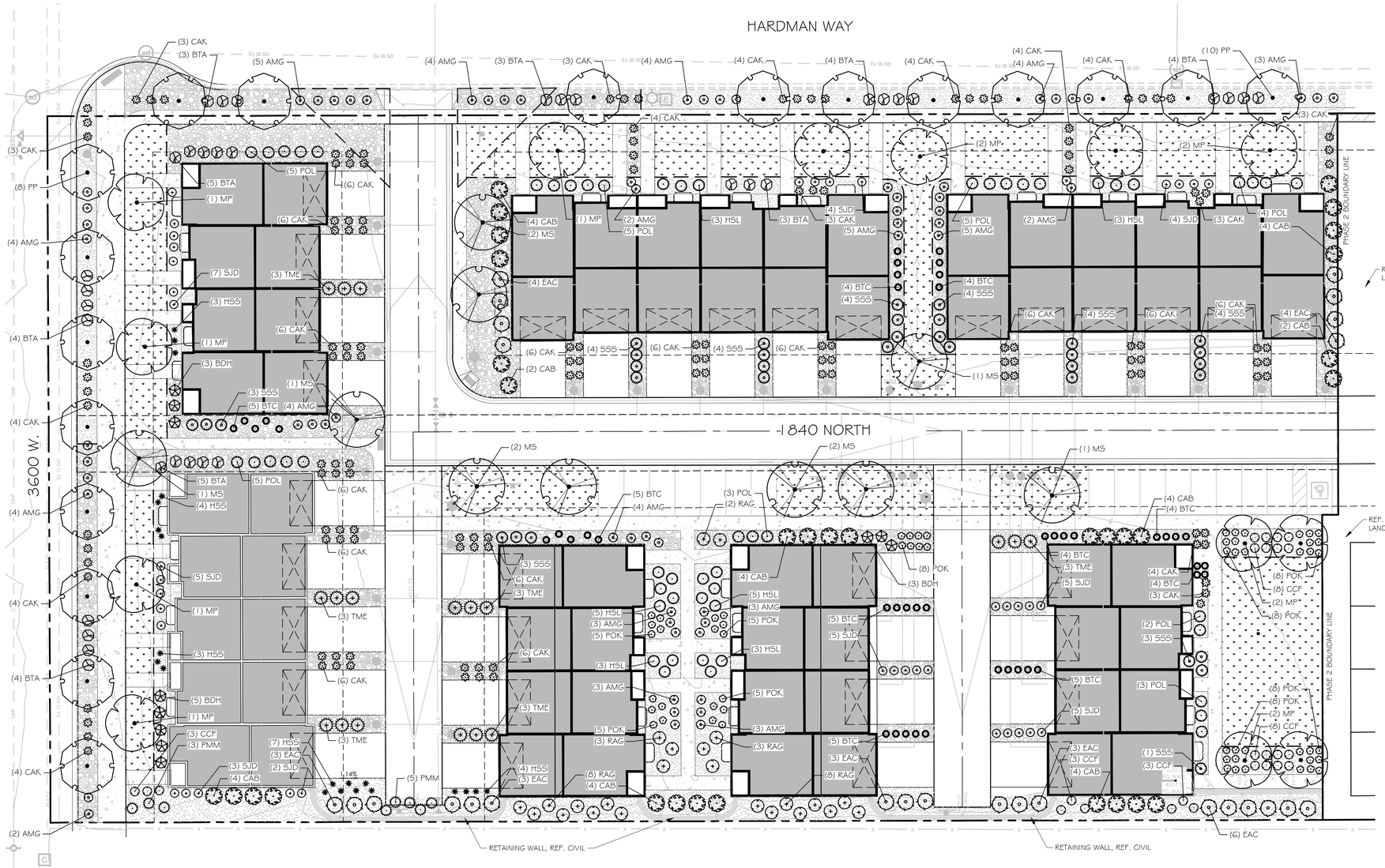
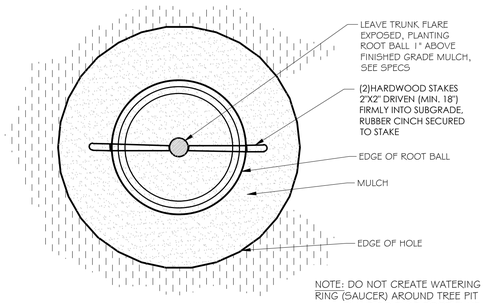
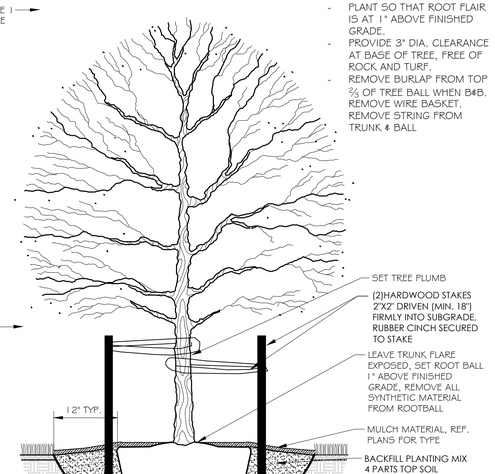




NOTE: DO NOT CREATE WATERING RING (SAUCER) AROUND TREE PIT
- PLANT SO THAT ROOT FLAIR IS AT 1" ABOVE FINISHED GRADE.
- PROVIDE 3" DIA. CLEARANCE AT BASE OF TREE, FREE OF ROCK AND TURF.
- REMOVE BURLAP FROM TOP ⅔ OF TREE BALL WHEN B&B. REMOVE WIRE BASKET. REMOVE STRING FROM TRUNK & BALL



NOTE: AUGER EXCAVATION OF TREE PIT IS NOT ACCEPTABLE.

1 CANOPY TREE W/ STAKES

3/4" = 1'-0"

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	SIZE	QTY
MP	Malus x 'Prairifire'	Prairifire Crabapple	2" Cal.	13
MS	Malus x 'Spring Snow'	Spring Snow Crabapple	2" Cal.	10
PP	Prunus x virginiana	Canada Red Chokecherry	2" Cal.	18

SHRUBS	BOTANICAL NAME	COMMON NAME	SIZE	QTY
AMG	Aronia melanocarpa `UCONNAM012` TM	Ground Hug Black Chokeberry	5 gal.	64
BTC	Berberis thunbergii `Concorde`	Concorde Japanese Barberry	5 gal.	45
BTA	Berberis thunbergii 'Aurea Nana'	Golden Dwarf Japanese Barberry	5 gal.	35
BDH	Buddleja davidii `Buzz Hot Raspberry`	Hot Raspberry Butterfly Bush	2 gal.	11
CCF	Caryopteris x clandonensis `First Choice`	First Choice Bluebeard	2 gal.	25
CAB	Cornus alba `Bailhalo` TM	Ivory Halo Dogwood	5 gal.	32
EAC	Euonymus alatus 'Grove Compactus'	Grove Compact Burning Bush	5 gal.	26
HSL	Hibiscus syriacus `SHIMRV24` TM	Lil` Kim Violet Rose of Sharon	5 gal.	22
POL	Physocarpus opulifolius `Donna May` TM	Little Devil Ninebark	5 gal.	32
PMM	Pinus mugo `Mops`	Mugo Pine	5 gal.	8
RAG	Rhus aromatica `Gro-Low`	Gro-Low Fragrant Sumac	5 gal.	24
SSS	Sorbaria sorbifolia `Sem`	Sem Ash Leaf Spirea	5 gal.	34
SJD	Spiraea japonica `Double Play Doozie`	Doozie Spirea	2 gal.	40
TME	Taxus x media `Everlow`	Everlow Yew	5 gal.	18

ORNAMENTAL GRASSES	BOTANICAL NAME	COMMON NAME	SIZE	QTY
CAK	Calamagrostis x acutiflora `Karl Foerster`	Karl Foerster Feather Reed Grass	1 gal.	141
HSS	Helictotrichon sempervirens `Sapphire`	Sapphire Blue Oat Grass	1 gal.	21
POK	Pennisetum alopecuroides `Karley Rose`	Karley Rose Fountain Grass	1 gal.	60

GROUND COVERS	CODE	BOTANICAL NAME	COMMON NAME	SIZE	QTY
	PP2	Poa pratensis	Kentucky Bluegrass	sod	12,619 sf

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION	QTY
1	RIVER COBBLE, SOUTH TOWN RIVER COBBLE, SIZE: 1"-3", FROM UTAH LANDSCAPING ROCK FROM NEPHI, UTAH OR APPROVED EQUAL.	12,696 sf
2	CRUSHED ROCK, SAHARA COBBLE ROCK, SIZE: 3"-5", FROM UTAH LANDSCAPING ROCK FROM NEPHI, UTAH OR APPROVED EQUAL.	11,202 sf

LANDSCAPE NOTES

1. LAWN AREAS WILL BE SODDED WITH KENTUCKY BLUEGRASS BLEND OVER 4 INCHES GOOD GRADE TOPSOIL.
2. TOP DRESS ALL SHRUB BED AREAS AND OTHER AREAS LABELED ROCK MULCH WITH 4" DEPTH OF ROCK MULCH OVER DEWITT PRO-5 WEED BARRIER FABRIC. FABRIC SHALL BE INSTALLED AFTER PRE-EMERGENT HAS BEEN APPLIED. SEE REFERENCE NOTES FOR ROCK TYPE.
3. INSTALL STEEL EDGING FOR MOW STRIPS BETWEEN LAWN AREAS AND PLANTING BEDS.
4. CONTRACTOR TO CONDUCT THEIR OWN QUANTITY TAKE-OFFS IN THE PLAN AND VERIFY ANY DISCREPANCIES WITH THE LANDSCAPE ARCHITECT.

N

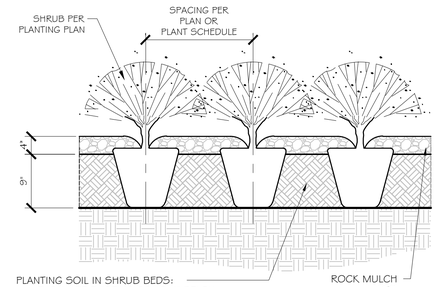
S

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

Know what's below. Call 811 before you dig.



2 TYP. SHRUB PLANTING W/ROCK MULCH

1" = 1'-0"

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FOR REVIEW ONLY

JORDAN WALK TOWNS PHASE 2

LEHI, UT

LANDSCAPE PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1	----	----
2	----	----
3	----	----
4	----	----
5	----	----
6	----	----

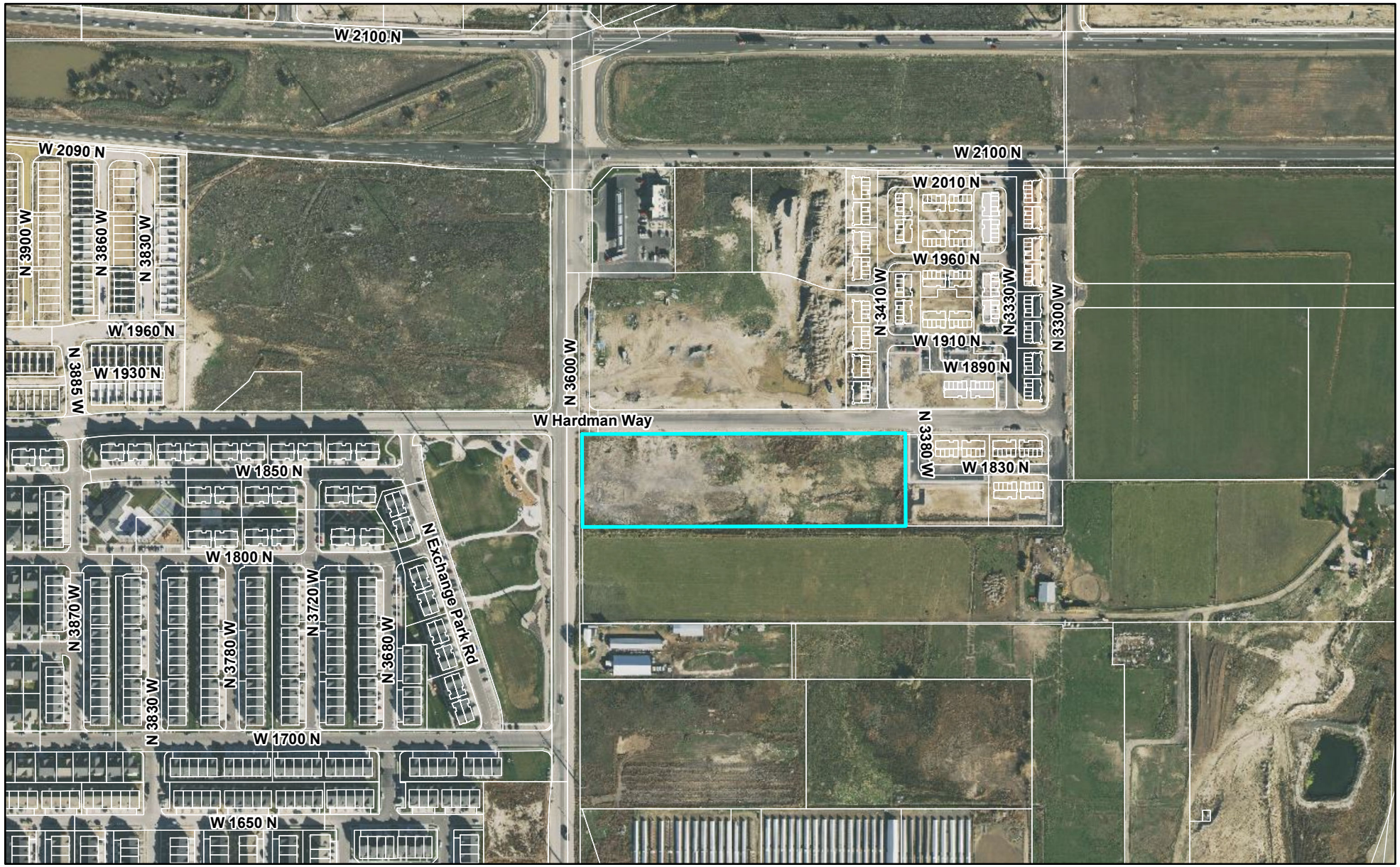
LANDSCAPE PLAN

Scale: 1"=20' | Drawn: BW
Date: 08/04/2023 | Job #: 23-0199
Sheet: L1.0

Z:_2023\23-0199 jordan walk towns phase 2\design 23-0199\dwg\sheets\L1.0 LANDSCAPE PLAN.dwg

Jordan Walk Towns Final Subdivision

Aerial Map



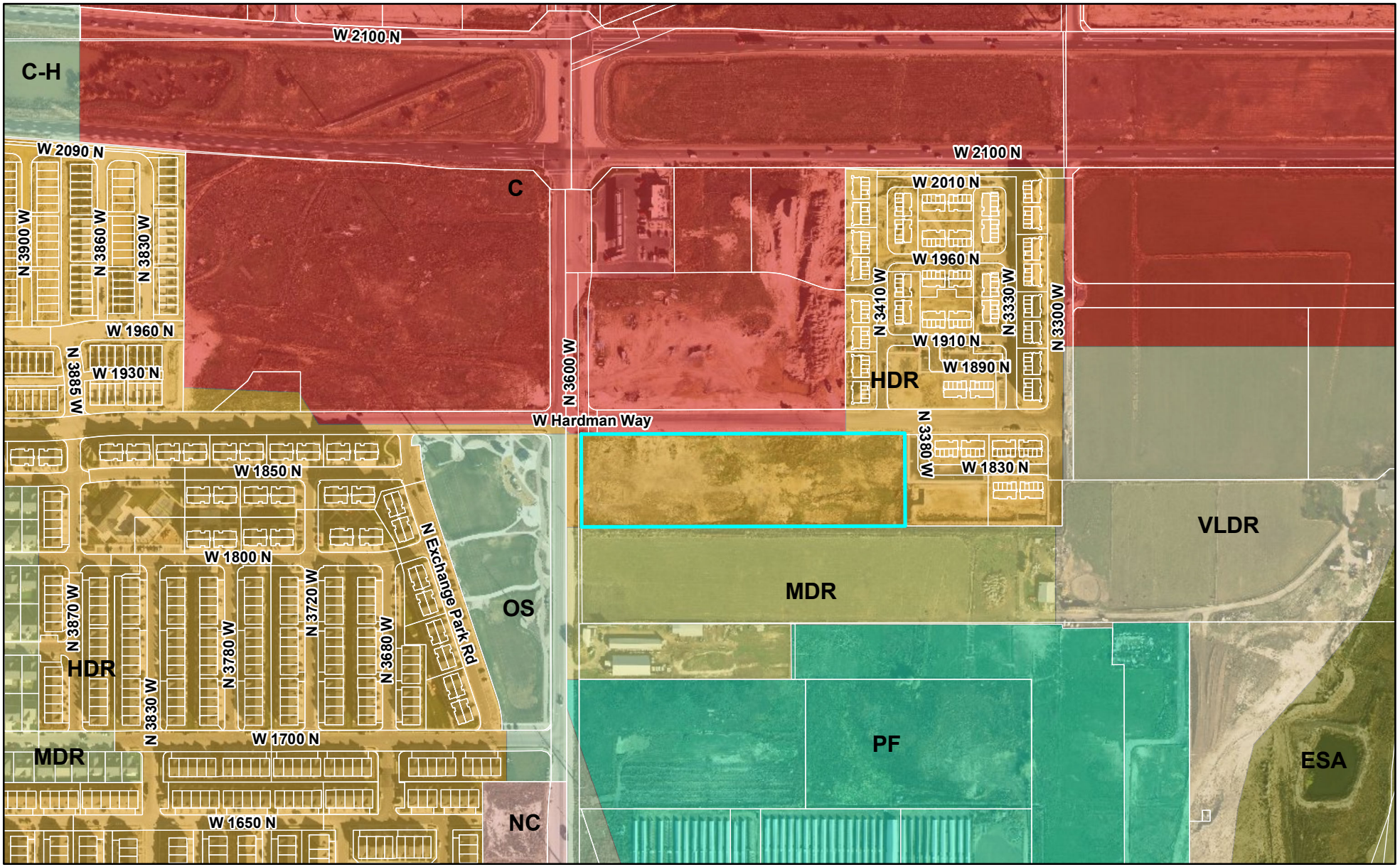
Feet

0 440 880

LEHI CITY

Jordan Walk Towns Final Subdivision

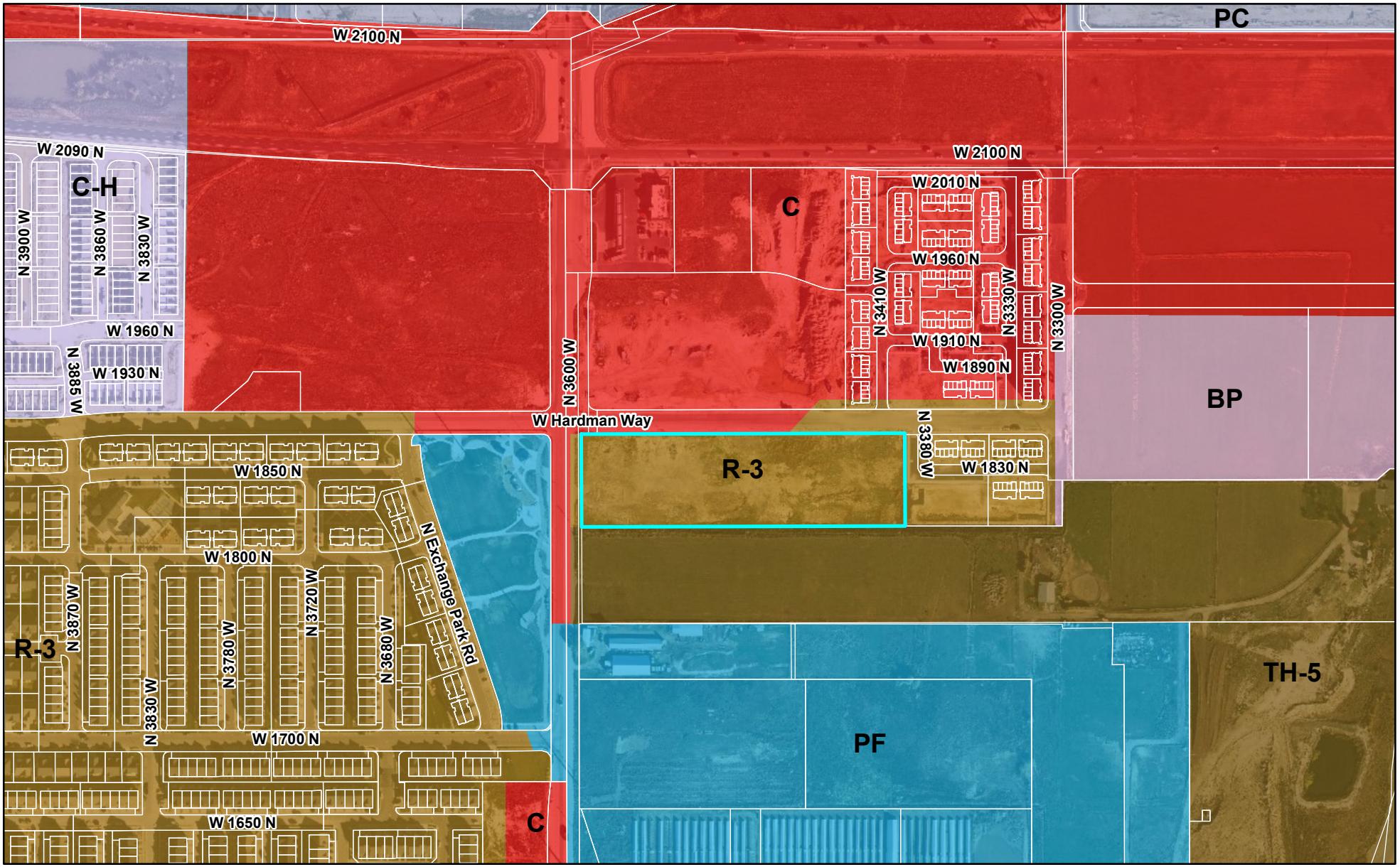
Zoning Map



LEHI CITY

Jordan Walk Towns Final Subdivision

Zoning Map



LEHI CITY

Agenda Item No: 15

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Brittney Harris
Submitting Department: Planning Division
Item Type: Ordinance
Agenda Section: Regular Agenda

Subject:
Consideration of Ordinance #57-2023 a Development Code Amendment to Tables 05.040.A and Table O5.030.A, adding twin homes as a permitted use in the R-2 zone.

Suggested Action:

Attachments:

CC Staff Report Twin Homes Dev Code Amendment 09.19.23.docx

Table 05.040 Lot size requirement DRC 07.19.23.docx

Ord 57-2023.docx

TBL05.030-AResUses Twin Homes.pdf

TBL05.040-A ResBulkIntensity-Twin Homes.pdf

TALBE 05.040 AND TABLE 05.030 A- TWIN HOMES DEVELOPMENT CODE AMENDMENT

CITY COUNCIL REPORT

Applicant	Lehi City
Meeting Date	September 19, 2023
Requested Action/Purpose	Approval of proposed amendments to the Lehi City Development Code
Decision Type	Legislative
Date of DRC Review	July 19, 2023
Date of Planning Commission Review	August 10, 2023

REQUIRED ACTION

Planning Commission	Review and recommendation
City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 04.060. Criteria for Approval.
No amendment to this Code, or the Zoning District Map(s), may be recommended for approval by the Commission nor approved by the City Council unless such amendment or conditions thereto are consistent with the General Plan. In considering a Code amendment, or Zoning District Map(s) amendment, the applicant shall identify, and the City Staff, DRC, Commission, and the City Council may consider the following factors, among others:

1. The effect of the proposed amendment on the character of the surrounding area;
2. Consistency with the goals and policies of the General Plan.
3. Consistency and Compatibility of the proposed zone with the General Plan land uses of nearby and adjoining properties.
4. The suitability of the properties for the uses requested and their suitability for the existing uses identified by the General Plan;
5. Whether a change in the uses allowed for the affected properties will unduly affect the uses, or proposed uses for nearby and adjoining properties;
6. The gain to the public health, safety and welfare from the existing classification to the proposed amendment; and
7. The overall community benefit of the proposed amendment.

REPORT ANALYSIS

The applicant requests approval of proposed amendments to Table 05.040.A and Table 05.030.A allowing twin homes as a permitted use in the R-2 zone.

This amendment came after staff received a phone call from someone wanting to build twin homes in the R-2 zone. The current code would require each lot to meet the 8,000 square foot requirement which makes it nearly impossible to build twin homes.

Twin homes are attached single family. Each side is individually owned on its own lot. Duplexes are on one lot with one owner. Duplexes are rental units, while twin homes provide an opportunity for cheaper home ownership with a yard and without an HOA. Allowing twin homes provides an affordable housing option.

The proposed amendment changes attached single family in the R-2 zone to not have a minimum lot size. It also emphasizes that projects cannot exceed the maximum density of six units per acre.

When this proposed amendment went to DRC for review, it was recommended that Table 05.030.A should also be updated to include Twin Homes instead of "Two Family Dwellings". This change has been updated since DRC and included in the packet. The other two DRC comments related to clarification of the wording. These updates have also been incorporated.

POSSIBLE MOTIONS AND FINDINGS

The City Council may approve or deny the proposed amendments to the Lehi City Development Code adding twin homes as a permitted use in the R-2 zone. Any motion should include findings. Possible findings include:

1. The proposed Development Code amendment will provide the opportunity for more ownership affordable housing options.
2. The proposed Development Code amendment is/is not in conformance with the purposes, intent, and provisions of the General Plan and its various elements.
3. Additional findings based upon information presented during the public hearing.

PLANNING COMMISSION RECOMMENDATION

The Planning Commission reviewed the proposed Development Code Amendments on August 10, 2023. The minutes and motion from that meeting are as follows:

2.5) Public hearing and recommendation of Lehi City's request for review of a Development Code Amendment to Table 05.040.A and Table O5.030.A, adding twin homes as a permitted use in the R-2 zone.

Chairman Newall opened the public hearing.

Chairman Newall closed the public hearing.

Commissioners asked question and discussed the item.

Commissioner Bunker motioned to extend the meeting. Commissioner Eyre seconded.

> **Motion:** Commissioner Bunker moved to recommend approval of **Lehi City's request for review of a Development Code Amendment to Table 05.040.A and Table O5.030.A, adding twin homes as a permitted use in the R-2 zone.**; including all DRC comments and findings stated in the report; Commissioner Everett seconded.
>
> **Vote:** Commissioner Newall, yes; Commissioner Jackson, yes; Commissioner Everett, yes; Commissioner Bunker, yes; Commissioner Eyre, no. The motion passed unanimously.

Table 05.040 Table of Bulk and Intensity for Residential Zone
DRC Redline Comments

Lehi City- requests review of an amendment to Table 05.040 Table of Bulk and Intensity for Residential Zones changing the lot size requirements for attached single family in the R-2 zone.

DRC Members Present: Glade Kirkham, Garion Rowett, Kim Struthers, Gary Smith, Ross Dinsdale, James Farnsworth, Luke Seegmiller
Assigned Planner: Brittney Harris
Representatives of the Applicant Present:
Date of Plans Reviewed: 7/13/23
Time Start: 2:56pm
Time End: 3:00pm

DRC REDLINE COMMENTS:
Glade – Power: No comments, opposed
Garion – Fire: No comments
Ryan – Water/Sewer: No comments
James – Parks: No comments
Gary – Building/Inspections: No comments
Matt – Public Works: No comments
Ross – Engineering: No comments
Luke- Traffic: No comments
Kim – Planning:
1. Detached
2. No minimum lot size but must comply with the ...
3. Add twin home to the residential table of uses to go with this amendment

THIS ITEM WILL BE SCHEDULED FOR PLANNING COMMISSION ON AUGUST 10th

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

ORDINANCE NO: 57-2023

AN ORDINANCE AMENDING THE LEHI CITY DEVELOPMENT CODE, TABLE 05.040A AND TABLE 05.030A, TWIN HOMES

WHEREAS, it has become necessary to amend Table 05.040A and Table 05.030A of the Lehi City Development Code, adding twin homes as a permitted use in the R-2 zone; and

WHEREAS, this amendment seeks to encourage the development of for sale affordable housing; and

WHEREAS, following a public hearing on August 10, 2023, the Lehi City Planning Commission reviewed the proposed revisions and forwarded a positive recommendation to the City Council; and

WHEREAS, on September 19, 2023, the City Council held a duly noticed meeting to receive public comment and ascertain the facts regarding this matter, which facts and comments are found in the hearing record and which include the staff report, minutes from the Planning Commission meeting of August 10, 2023, and the positive recommendation of the Planning Commission; and,

WHEREAS, after considering the facts and comments presented to the Municipal Council, the Council finds: Table 05.040A and Table 05.030A of the Lehi City Development Code should be amended; and such action furthers the health, safety, and welfare of the citizens of Lehi.

NOW, THEREFORE, BE IT ORDAINED by the City Council of Lehi City, Utah as follows:

PART I:

Table 05.040A and Table 05.030A of the Lehi City Development Code are hereby amended.

PART II:

A. If a provision of this Ordinance 57 -2023 conflicts with a provision of a previously adopted ordinance concerning the same title, chapter, and/or section number amended herein, the provision in this Ordinance shall prevail.

B. This ordinance and its various sections, clauses and paragraphs are hereby declared to be severable. If any part, sentence, clause or phrase is adjudged to be unconstitutional or invalid, the remainder shall not be affected thereby.

C. The City Council hereby directs that the official copy of the Lehi City Code be

updated to reflect the provisions enacted by this Ordinance.

D. This Ordinance shall take effect immediately after being posted or published as required by law.

Approved and Adopted by the City Council of Lehi City this 19th day of September 2023.

ATTEST

_____	_____
Mark Johnson, Mayor	Teisha Wilson, City Recorder

TABLE 05-030-A
TABLE OF USES − AGRICULTURE AND RESIDENTIAL DISTRICTS

(Amended 10/10/00; 3/27/01; 04/09/02; 07/09/02; 11/18/03; 09/25/07; 09/09/08; 12/09/08; 04/27/10; 12/14/10; 05/22/12; 11/13/12; 02/24/15; 01/26/16; 05/24/16; 09/13/16; 01/16/18; 09/25/18; 01/22/19; 03/31/20; 01/10/23; 02/28/23)

USE	DISTRICT											
	TH-5	A-5	A-1	RA-1	R-1-22	R-1-15	R-1-12	R-1-10	R-1-8/ R-1-Flex	R-2	R-2.5	R-3
RESIDENTIAL DWELLING TYPES												
Single-Family Dwelling	P[1]	P	P	P	P	P	P	P	P	P	P	P
Twin Home										P	P	P
Two-Family Dwelling (Duplex)										P	P	P
Three-Family Dwelling										P	P	P
Four-Family Dwelling										P	P	P
Internal Accessory Dwelling Unit (see Sec. 26.030)	P[1]	P	P	P	P	P	P	P	P	P	P	P
Detached Accessory Dwelling Unit [>22,000 square foot lot; See Sec. 26.040]	P[1,4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]	P[4]
Group Homes	P[1]	P	P	P	P	P	P	P	P	P	P	P
Modular Home	P[1]	P	P	P	P	P	P	P	P	P	P	P
Multi-Family Dwellings [>4 dwelling units]										P	P	P
Townhouses/Condominiums [See Sec.37.040]										P	P	P
PUBLIC/CIVIC USES												
Accessory Parking lot, Municipal											P[3]	P[3]
Churches (places of worship)		P	P	P	P	P	P	P	P	P	P	P
Golf Courses & Country Clubs		P	P	P	P	C	C	C	C	C	C	C
Parks, Playgrounds, Open Space, Trails and Greenways	P[1]	P	P	P	P	P	P	P	P	P	P	P
Public/Civic Buildings		P	P	P	P	P	P	P	P	P	P	P
Public Schools		P	P	P	P	P	P	P	P	P	P	P
Private Schools		C	C	C	C	C	C	C	C	C	C	C

Notes:
P = Uses allowed as a Permitted Use.
C = Uses allowed as a Conditional Use. Uses not identified as either a Permitted or Conditional Use are deemed to be prohibited.
[1] Permitted to the extent that such use can occur without city culinary or pressurized irrigation water services. However, a building permit will not be issued without compliance with Table 12-060. Such compliance may require a zone change and water dedication pursuant thereto;
[2] Use conditioned upon a finding by the Planning Commission that such use is compatible with surrounding uses.
[3] Requires Site Plan approval by the Planning Commission.
[4] Detached Accessory Dwelling Units require a minimum lot size of 22,000 square feet. May require a conditional use permit based on year built.

TABLE 05-040-A
TABLE OF BULK AND INTENSITY REQUIREMENTS
AGRICULTURE AND RESIDENTIAL DISTRICTS

(Am 10/10/00; 3/27/01; 01/08/02; 03/11/03; 03/22/03; 07/08/03; 02/10/04; 12/14/04; 08/09/05; 9/12/06; 09/09/08; 10/11/11; 03/11/14; 02/24/15;02/22/22; 02/28/23)

	DISTRICT												
	TH-5	**A-5**	**A-1**	**RA-1**	**R-1-22**	**R-1-15**	**R-1-12**	**R-1-10**	**R-1-8**	**R-1-Flex**	**R-2**	**R-2.5**	**R-3**
Minimum Lot Size	5 Acres[a]	5 Acres[a]	1 Acre[a]	Single-Family Dwelling 15,000 Sq.Ft. [a] Other Allowed Uses 15,000 Sq.Ft. [a]	Single-Family Dwelling 22,000 Sq.Ft. [a] Other Allowed Uses 22,000 Sq.Ft. [a]	Single-Family Dwelling 15,000 Sq.Ft.[a] Other Allowed Uses 15,000 Sq.Ft. [a]	Single-Family Dwelling 12,000 Sq.Ft.[a] Other Allowed Uses 12,000 Sq.Ft. [a]	Single-Family Dwelling 10,000 Sq.Ft.[a] Other Allowed Uses 10,000 Sq.Ft. [a]	Single-Family Dwelling 8,000 Sq.Ft.[a] Other Allowed Uses 8,000 Sq.Ft. [a]	Single-Family Dwelling 8,000 Sq.Ft.[a] Other Allowed Uses 8,000 Sq.Ft. [a]	Detached Single-Family Dwelling or duplex 8,000 Sq.Ft.[a] Attached single family (townhomes or twin homes) No minimum lot size but must comply with the 6 DU/AC maximum. Other Allowed Uses 8,000 Sq.Ft.[a]	As per PUD approval.	Residential Mminimum lot size is based on project acreage and the 12 DU/AC dwelling units per acre maximum Other Allowed Uses 8,000 Sq.Ft.[a]
Maximum Dwelling Units Per Acre (DU/AC)	0.2[a]	0.2[a]	1[a]	2.5[a]	1.75[a]	2.5[a]	3[a]	3.5[a]	4[a]	3.5[a] for projects > 10acres; 3.25[a] for projects < 10	6[a]	9[a]	12[a]
Minimum Lot Width/Frontage	Residential Uses 250 Ft.[a,b] Other Allowed Uses 250 Ft.[a,b]	Residential Uses 250 Ft.[a,b] Other Allowed Uses 250 Ft.[a,b]	Residential Uses 100 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 100 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 100 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 100 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 90 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 80 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 80 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Residential Uses 80 Ft.[a,b] Other Allowed Uses 160 Ft.[a,b]	Single Family 75 Ft.[a,b] Multi-Family As allowed by IBC Other Allowed Uses 150 Ft.[a,b]	As per PUD approval.	Single Family 65 Ft.[a,b] Multi-Family As allowed by IBC Other Allowed Uses 80 Ft.[a,b]
Minimum Front Yard	20 Ft to dwelling; 25 Ft to garage.	20 Ft to dwelling; 25 Ft to garage.	20 Ft to dwelling; 25 Ft to garage.	20 Ft to dwelling; 25 Ft to garage.	20 Ft to dwelling; 25 Ft to garage.	20 Ft to dwelling; 25 Ft to garage.	15 Ft to dwelling; 25 Ft to garage.	15 Ft to dwelling; 25 Ft to garage.	15 Ft to dwelling; 25 Ft to garage.	15 Ft to dwelling; 25 Ft to garage.	15 Ft to dwelling; 20 Ft to garage.	As per PUD approval.	15 Ft to dwelling; 20 Ft to garage.
Minimum Rear Yard (Interior Lots)	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.[c]	30 Ft.[c]	25 Ft.[c]	25 Ft.[c]	Single Family 15 Ft. Multi-Family As allowed by IBC	As per PUD approval.	Single Family 15 Ft. Multi-Family As allowed by IBC
Minimum Rear Yard (Corner Lots)	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.	30 Ft.	15 Ft.	15 Ft.	15 Ft.	Single Family 15 Ft. Multi-Family As allowed by IBC	As per PUD approval.	Single Family 15 Ft. Multi-Family As allowed by IBC

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	DISTRICT												
	TH-5	**A-5**	**A-1**	**RA-1**	**R-1-22**	**R-1-15**	**R-1-12**	**R-1-10**	**R-1-8**	**R-1-Flex**	**R-2**	**R-2.5**	**R-3**
Minimum Side Yard	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 10 Ft. [d] Other Allowed Uses 25 Ft. Total Side Yards Not Less Than 50 Ft.	Residential Uses 8 Ft. Total Side Yards Not Less Than 20 Ft. [d] Other Allowed Uses 20 Ft. Total Side Yards Not Less Than 40 Ft.	Residential Uses 8 Ft. Total Side Yards Not Less Than 20 Ft. [d] Other Allowed Uses 20 Ft. Total Side Yards Not Less Than 40 Ft.	Residential Uses 8 Ft. and Total Side Yards Not Less Than 20 Ft. [d] Other Allowed Uses 20 Ft. and Total Side Yards Not Less Than 40 Ft.	Residential Uses 8 Ft. Total Side Yards Not Less Than 20 Ft. [d] Other Allowed Uses 20 Ft. Total Side Yards Not Less Than 40 Ft.	As per PUD approval.	Residential Uses 8 Ft. Total Side Yards Not Less Than 20 Ft. [d] Other Allowed Uses 20 Ft. Total Side Yards Not Less Than 40 Ft.
Minimum Side Yard (Corner Lot)	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft. [e]	20 Ft. [e]	20 Ft. [e]	20 Ft. [e]	20 Ft. [e]	As per PUD approval.	20 Ft. [e]
Height	Max. 35 Ft. or 2 Stories. Min 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 35 Ft. or 2 Stories. Min. 1 Story	Max. 45 Ft. or 3 Stories. Min. 1 Story
Minimum Ground Floor Area Per Residential Unit	1,000 Sq.Ft. [f]	1,500 Sq.Ft. [g]	1,500 Sq.Ft. [g]	1,000 Sq.Ft. [f]	1,500 Sq.Ft. [g]	1,000 Sq.Ft. [f]	1,000 Sq.Ft. [f]	1,000 Sq.Ft. [f]	1,000 Sq.Ft. [f]	1,000 Sq.Ft. [f]	900 Sq.Ft. (Ground Floor Not Less Than 600 Sq.Ft. With Total of 1,200 Sq.Ft. Min. For Stacked Attached Units) [f]	900 Sq.Ft. (Ground Floor Not Less Than 600 Sq.Ft. With Total of 1,200 Sq.Ft. Min. For Stacked Attached Units) [f]	900 Sq.Ft. (Ground Floor Not Less Than 600 Sq.Ft. With Total of 1,200 Sq.Ft. Min. For Stacked Attached Units) [f]
Minimum Driveway Length Front Load	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.	20 Ft.
Driveway Length Alley/Rear Load	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.	2 Ft.-4 Ft. or 20 Ft. Min.
Min. Area For PRD	N/A	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.	10 Acre min.

Notes:

[a] For subdivisions located along a master planned major roadway or master planned trail, the City Council, following review and recommendation from the DRC and Planning Commission, may allow higher density, reduced lot size, reduced frontage, or other design considerations in lieu of payment to the developer for right-of-way and/or other improvements required by the Lehi City General Plan, Master Transportation Plan and/or Lehi City Design Standards and Public Improvements Specifications Manual (concept plan required).

[b] For subdivisions that are designed with curvilinear street layouts, or coving, or that incorporate traffic calming elements in their design, the City Council, following review and recommendation from the DRC and Planning Commission, may allow reduced frontage (concept plan required).

[c] 15 ft. for remodeling projects on single family dwellings not less than 2 years old.

[d] 6 ft. minimum with total side yards not less than 18 ft. for remodeling projects on single family dwellings not less than 2 years old.

[e] 20 ft. for remodeling projects on single family dwellings not less than 2 years old.

[f] 850 Sq. Ft. on two story single family detached unit with attached 2 car garage (garage not included in calculation of 850 Sq. Ft.) Must have a minimum of 1450 Sq. Ft. total finished floor area.

[g] 1,250 Sq. Ft. on two story single family detached unit with attached 2 car garage (garage not included in calculation of 1,250 Sq. Ft.) Must have a minimum of 1,750 Sq. Ft. total finished floor area. Dwellings existing prior to December 12, 2004 are considered a conforming use.

Agenda Item No: 16

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Sherrie Benson
Submitting Department: Planning Division
Item Type: Action Item
Agenda Section: Regular Agenda

Subject:

Consideration of Gary Cooper's request for final subdivision approval of Cedar Hollow Plat M, a 7-lot single family development located at 1475 East 1800 North in the RA-1 zone.

Suggested Action:

Attachments:

Zoning Map.pdf

Aerial Map.pdf

Cedar Hollow Plat M Final.pdf

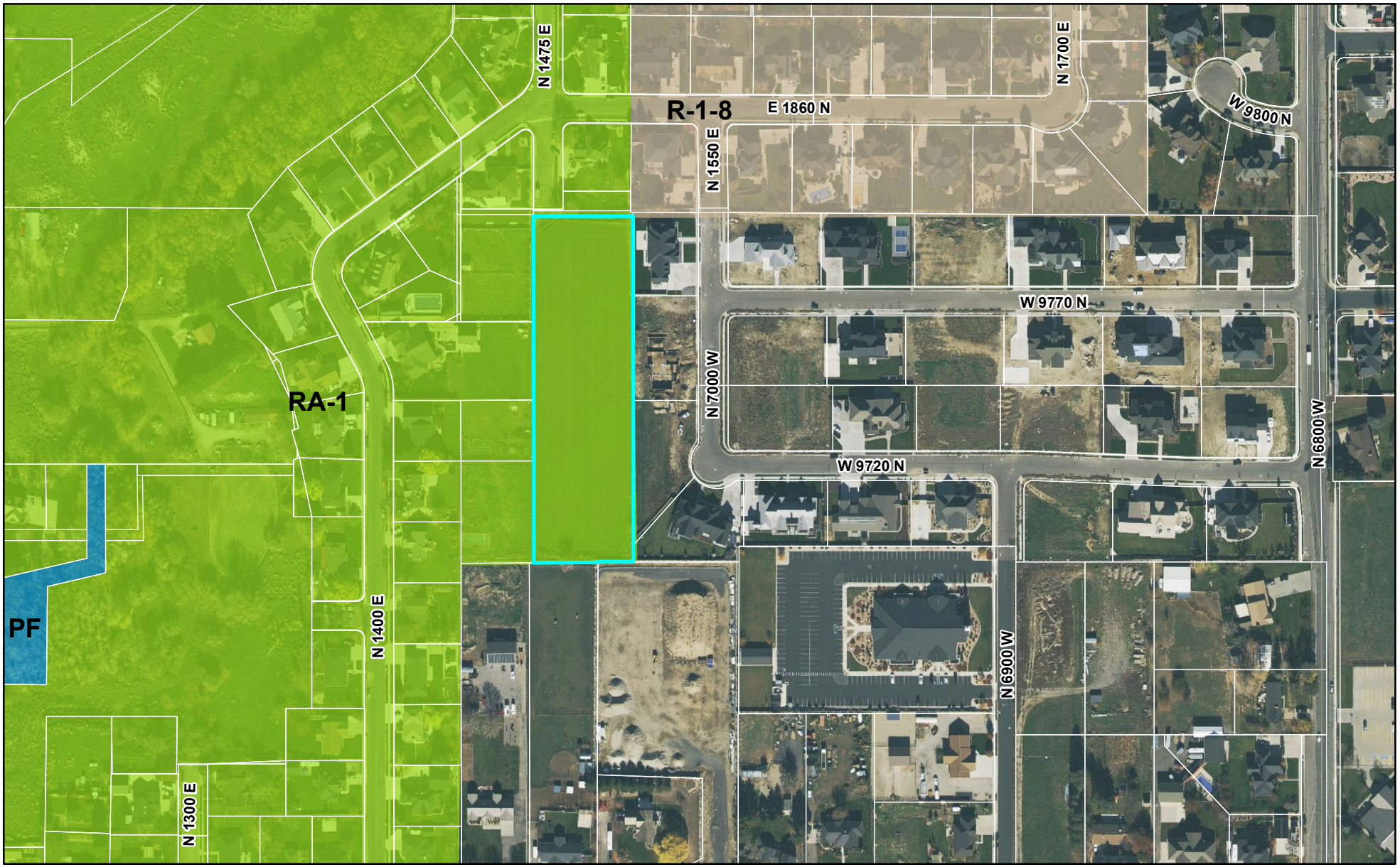
General Plan Map.pdf

CC Staff Report Cedar Hollow Plat M Final Subdivision 09.19.23.docx

Cedar Hollow Plat M Final DRC 08.30.23.docx

Cedar Hollow Plat M

Zoning

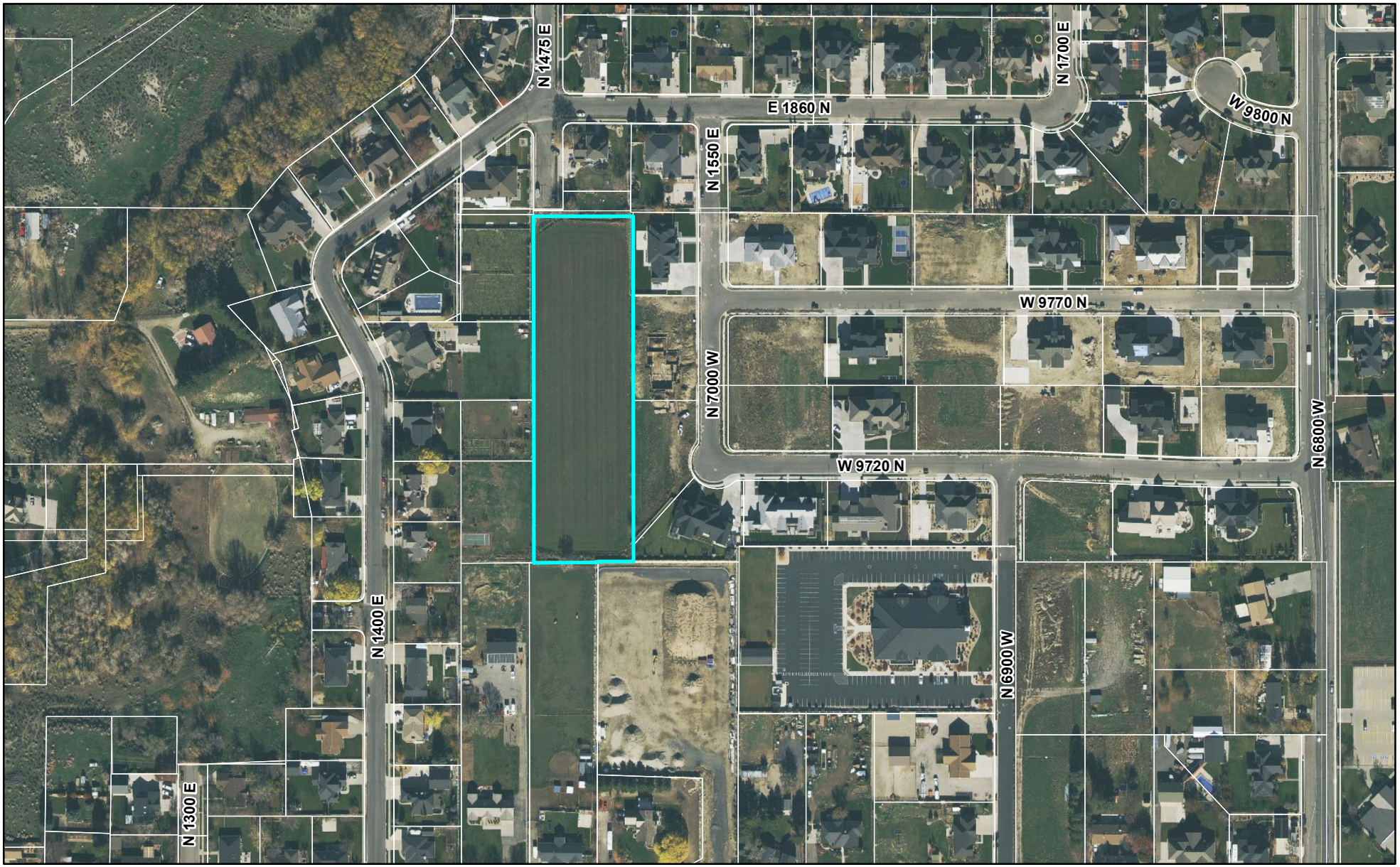


0 310 620 Feet

LEHI CITY

Cedar Hollow Plat M

Aerial



0 310 620 Feet

LEHI CITY

CEDAR HOLLOW PLAT 'M'
CONSTRUCTION PLANS

A PARCEL OF LAND LOCATED IN THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 5 SOUTH, RANGE 1 EAST, SALT LAKE BASE AND MERIDIAN,

LEHI, UTAH

prepared for:

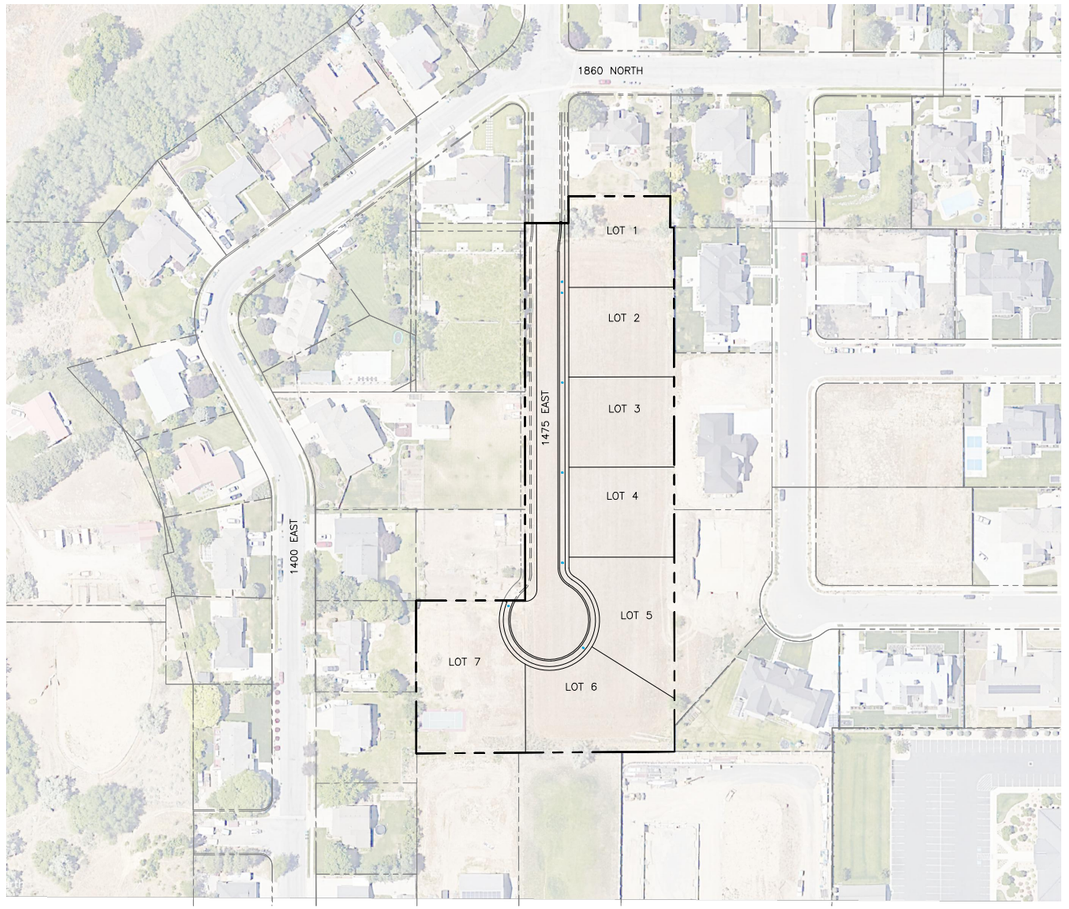
GARY COOPER
1656 N 1200 E
LEHI , UT 84043

prepared by:

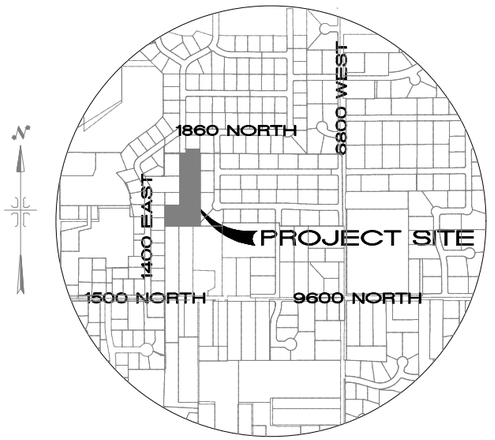
TRANE ENGINEERING
27 EAST MAIN STREET
LEHI, UT 84043
PHONE: (801) 768-4544

SHEET INDEX

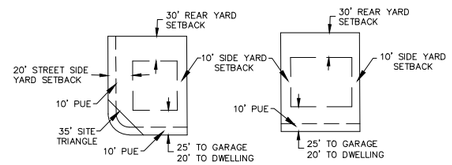
SHEET NO.	SHEET NAME
1	COVER SHEET / INDEX SHEET
2	UTILITY PLAN
3	1475 EAST & IRRIGATION PLAN & PROFILE SHEET
4	DETAIL SHEET 1
5	STORM WATER POLLUTION PREVENTION PLAN
6	BMPS
PLAT	FINAL PLAT 'M'



SITE MAP



VICINITY MAP



SETBACK AND EASEMENT DETAIL

GENERAL NOTES:

1. ALL CONSTRUCTION TO BE DONE AS PER THE LEHI CITY DESIGN STANDARDS AND PUBLIC IMPROVEMENT SPECIFICATIONS AND LEHI CITY POWER SPECIFICATIONS.
2. ALL ADA ACCESSIBLE SIDEWALK RAMPS WILL BE CONSTRUCTED IN ACCORDANCE WITH THE LEHI CITY DESIGN STANDARDS AND PUBLIC IMPROVEMENTS SPECIFICATIONS.
3. PRIOR TO CONSTRUCTION, AN EROSION AND SEDIMENTATION CONTROL PLAN WILL BE SUBMITTED TO THE PUBLIC WORKS DIRECTOR FOR APPROVAL.
4. PRIOR TO COMMENCEMENT OF ANY WORK, A PRE-CONSTRUCTION MEETING WILL BE HELD WITH THE PUBLIC WORKS DIRECTOR, CHIEF BUILDING OFFICIAL, CITY INSPECTORS, THE CONTRACTOR AND THE PROPERTY OWNER.

UTILITIES AND SERVICES

NATURAL GAS	QUESTAR GAS
ELECTRIC	LEHI POWER
TELEPHONE	QWEST COMMUNICATIONS
CABLE TELEVISION	COMCAST

REGISTERED PROFESSIONAL ENGINEER # 3622348 TONY G. TRANE STATE OF UTAH

LAND USE:	
PROJECT AREA=	3.67 ACRES
ZONING=	R-1-15
TOTAL LOTS=	7 LOTS
OVERALL DENSITY=	1.9 LOTS PER ACRE

REVISIONS					
NO.	DATE	DESCRIPTION	BY		
1				DESIGNED BY:	TGT
2				DRAWN BY:	TT
3				CHECK BY:	TGT
4				DATE:	5/11/23
				COGO FILE:	

J:\Cooper\Cedar Hollow\dwg\01 COVER.dwg

TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

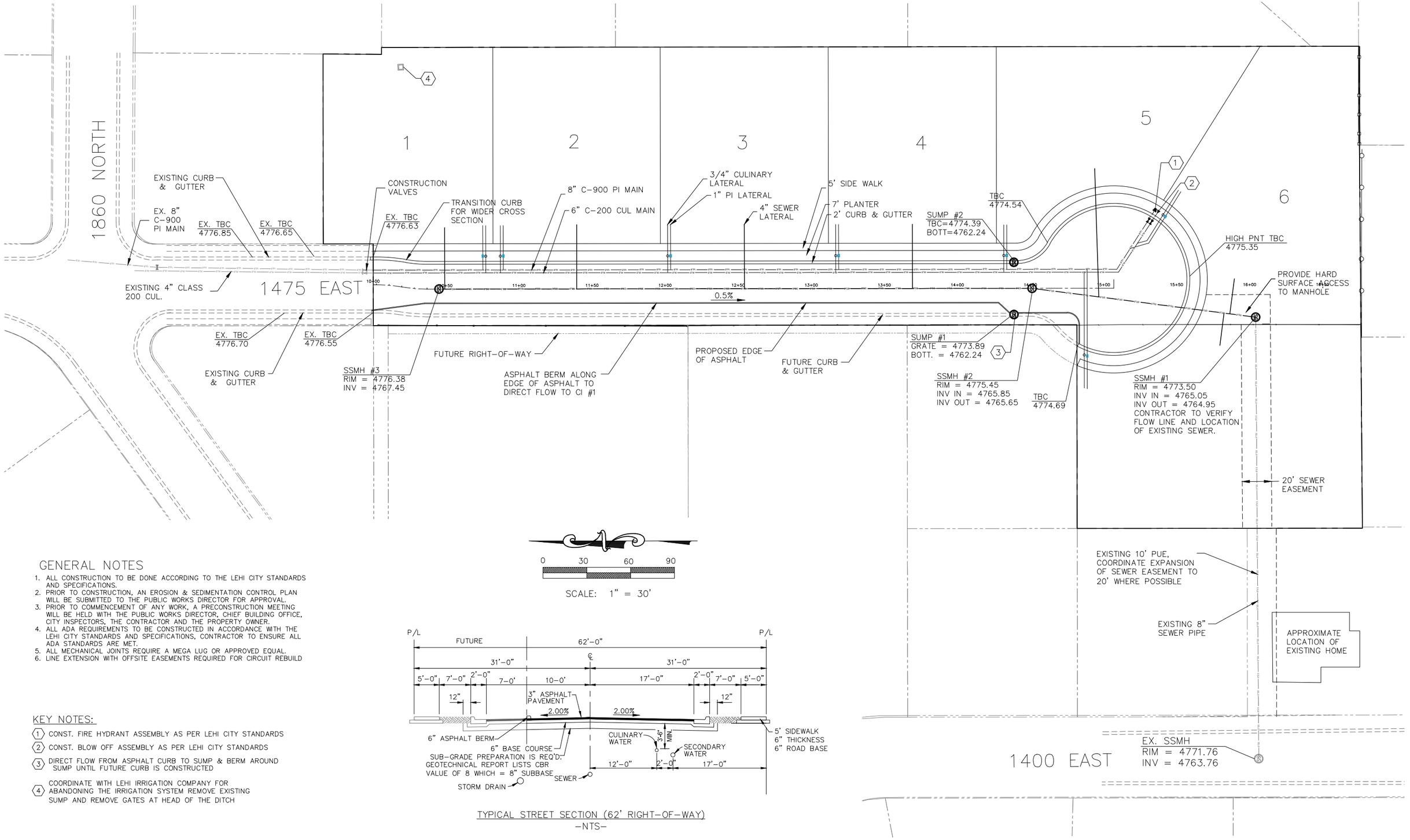
LEHI, UTAH

CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

COVER

JOB CHOLLOW

SHEET NO. 1



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SCALE: 1" = 30'

GENERAL NOTES

1. ALL CONSTRUCTION TO BE DONE ACCORDING TO THE LEHI CITY STANDARDS AND SPECIFICATIONS.
2. PRIOR TO CONSTRUCTION, AN EROSION & SEDIMENTATION CONTROL PLAN WILL BE SUBMITTED TO THE PUBLIC WORKS DIRECTOR FOR APPROVAL.
3. PRIOR TO COMMENCEMENT OF ANY WORK, A PRECONSTRUCTION MEETING WILL BE HELD WITH THE PUBLIC WORKS DIRECTOR, CHIEF BUILDING OFFICE, CITY INSPECTORS, THE CONTRACTOR AND THE PROPERTY OWNER.
4. ALL ADA REQUIREMENTS TO BE CONSTRUCTED IN ACCORDANCE WITH THE LEHI CITY STANDARDS AND SPECIFICATIONS, CONTRACTOR TO ENSURE ALL ADA STANDARDS ARE MET.
5. ALL MECHANICAL JOINTS REQUIRE A MEGA LUG OR APPROVED EQUAL.
6. LINE EXTENSION WITH OFFSITE EASEMENTS REQUIRED FOR CIRCUIT REBUILD

KEY NOTES:

(1) CONST. FIRE HYDRANT ASSEMBLY AS PER LEHI CITY STANDARDS

(2) CONST. BLOW OFF ASSEMBLY AS PER LEHI CITY STANDARDS

(3) DIRECT FLOW FROM ASPHALT CURB TO SUMP & BERM AROUND SUMP UNTIL FUTURE CURB IS CONSTRUCTED

(4) COORDINATE WITH LEHI IRRIGATION COMPANY FOR ABANDONING THE IRRIGATION SYSTEM REMOVE EXISTING SUMP AND REMOVE GATES AT HEAD OF THE DITCH

TYPICAL STREET SECTION (62' RIGHT-OF-WAY)
-NTS-

REVISIONS					
NO.	DATE	DESCRIPTION	BY		
1				DESIGNED BY:	TGT
2				DRAWN BY:	TT
3				CHECK BY:	TGT
4				DATE:	5/11/23
				COGO FILE:	

J:\COOPER\6 LOT\dwg\02 Utility_Grading.dwg

TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

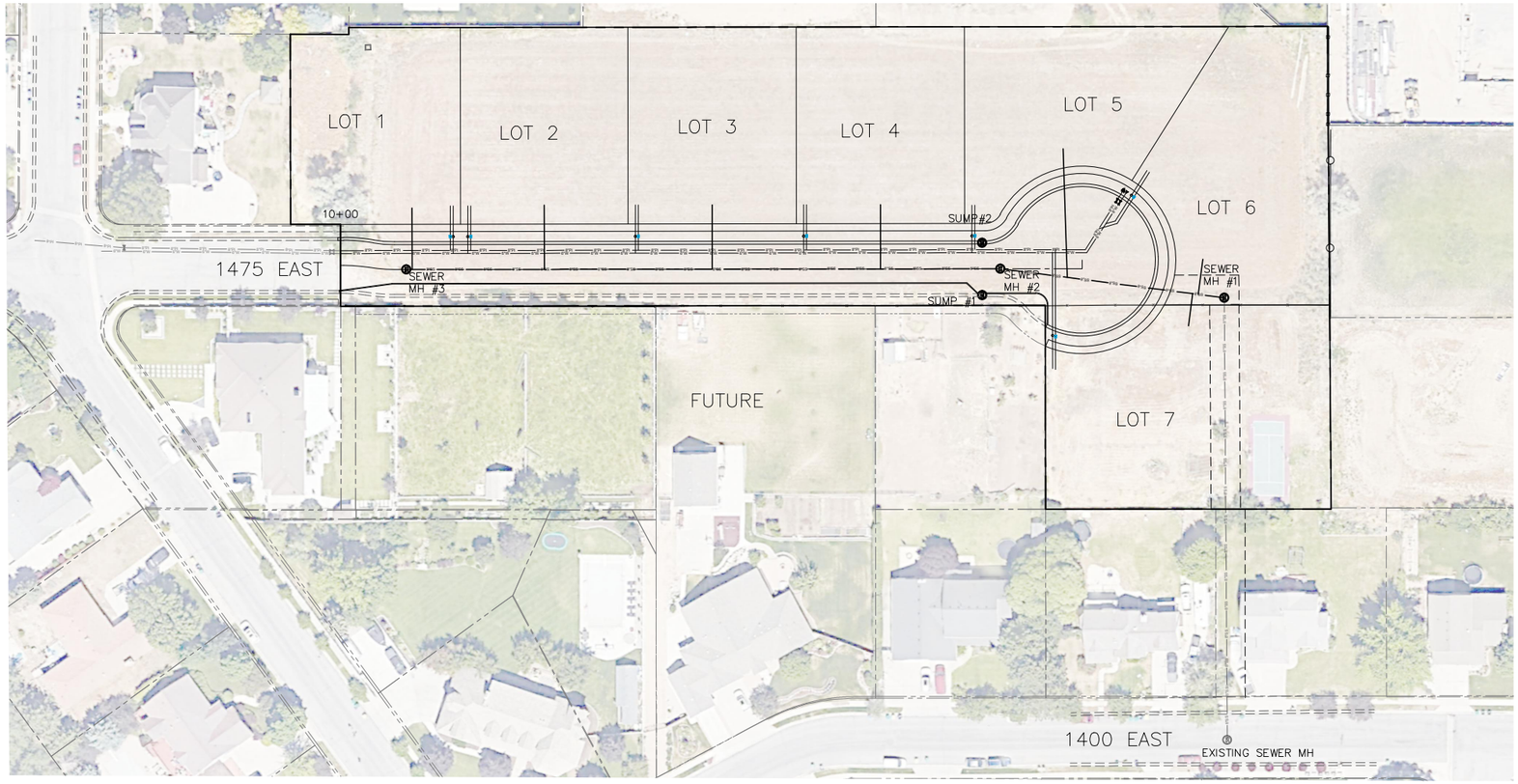
LEHI, UTAH

CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

UTILITY AND GRADING

JOB CHOLLOW

SHEET NO. 2

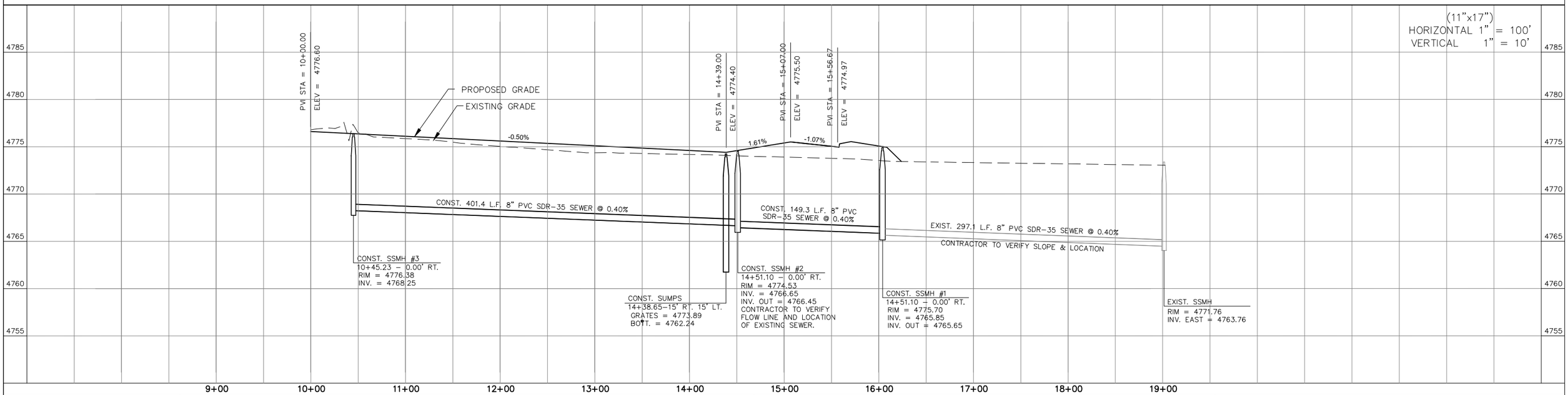


0 50 100 150

(24"x36")
SCALE: 1" = 50'
(11"x17")
SCALE: 1" = 100'

(24"x36")
HORIZONTAL 1" = 50'
VERTICAL 1" = 5'

(11"x17")
HORIZONTAL 1" = 100'
VERTICAL 1" = 10'



REVISIONS					
NO.	DATE	DESCRIPTION	BY		
1				DESIGNED BY:	TGT
2				DRAWN BY:	TT
3				CHECK BY:	TGT
4				DATE:	05/11/23
				COGO FILE:	

J:\COOPER\CEDAR HOLLOW\dwg\03 PP 1475 EAST.dwg

TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

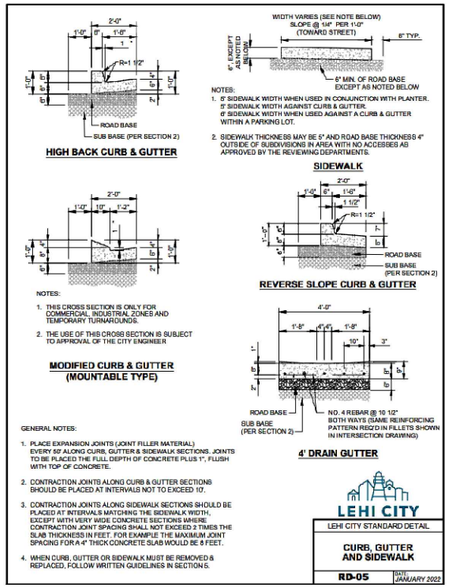
LEHI, UTAH

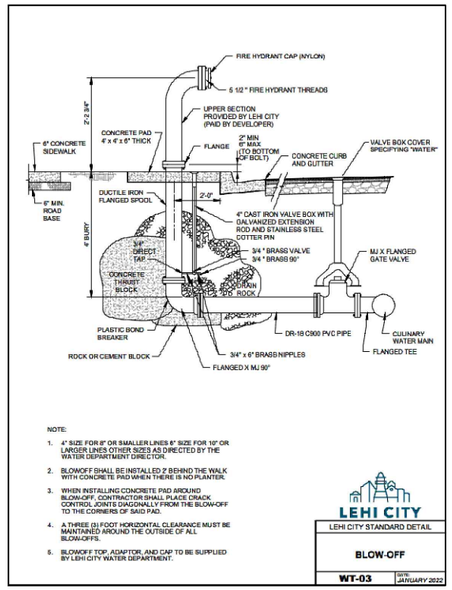
CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

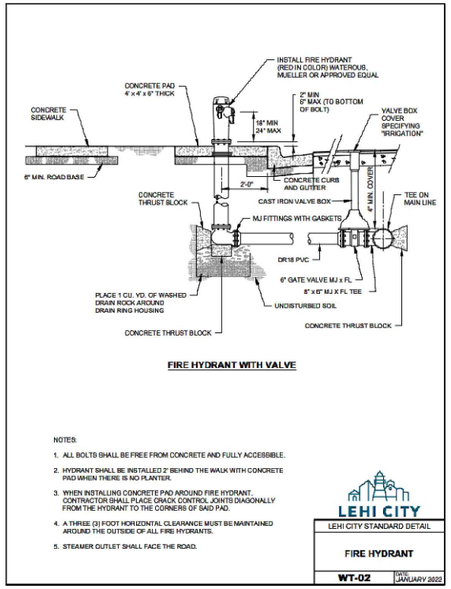
1475 EAST PLAN & PROFILE

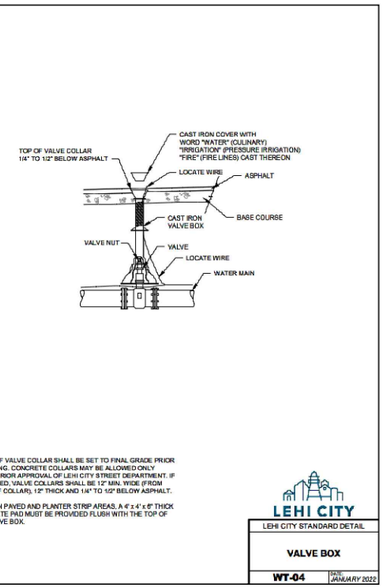
JOB CHOLLOW

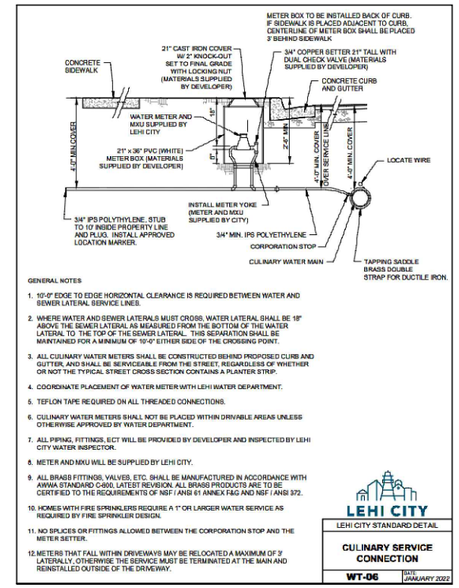
SHEET NO. 3

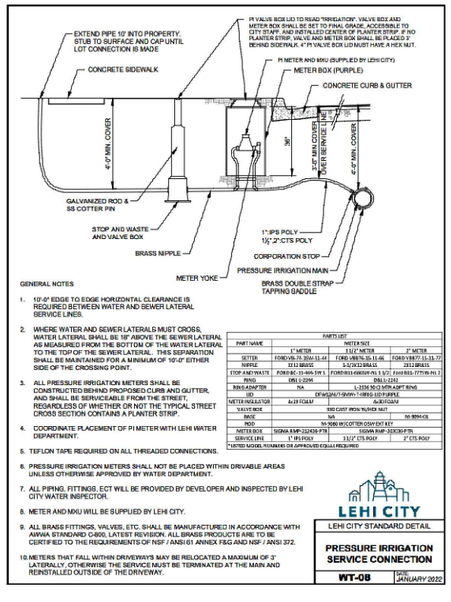


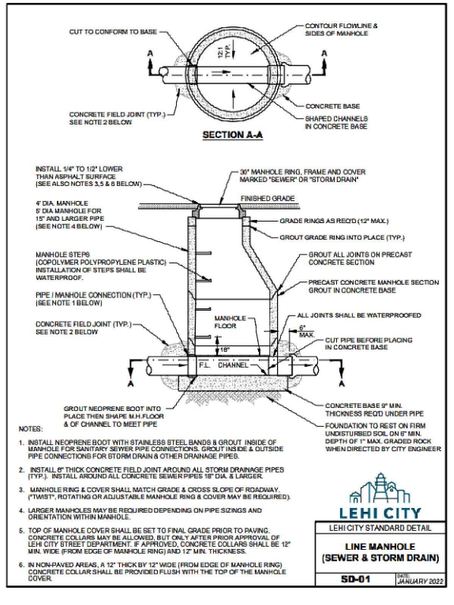


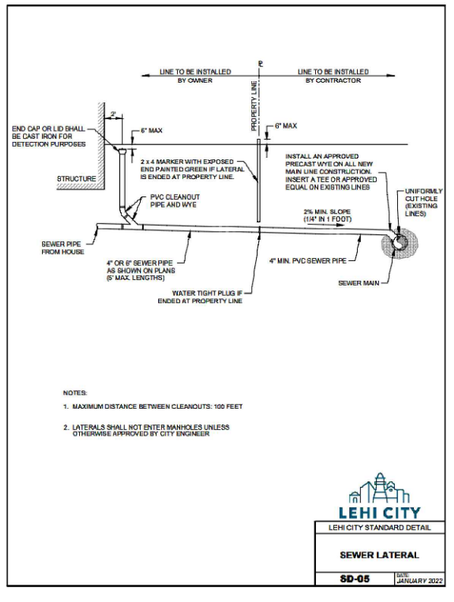


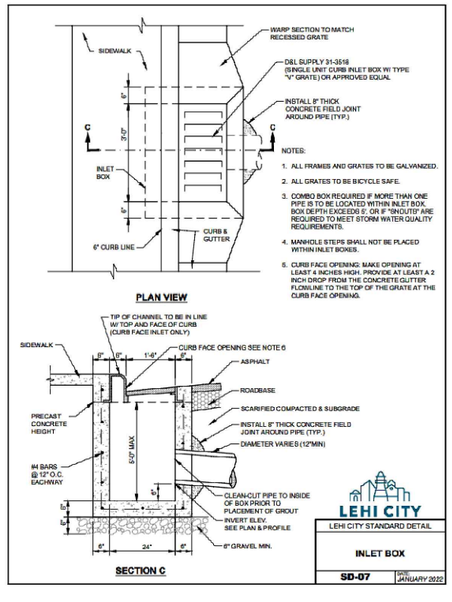


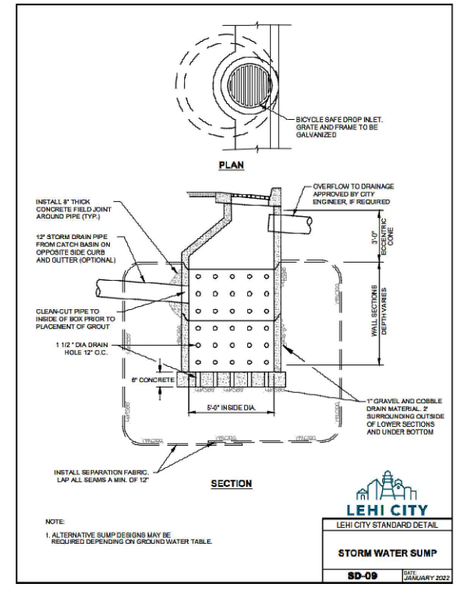












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3				CHECK BY:	TGT
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TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

LEHI, UTAH

CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

DETAIL SHEET

JOB CHOLLOW

SHEET NO. 4

0 40 80 120

(24"x36")
SCALE: 1" = 40'
(11"x17")
SCALE: 1" = 80'

KEYED NOTES

1. INSTALL PROTECTION ACCORDING TO LEHI CITY STANDARDS
2. INSTALL CONTRACTOR ENTRANCE SIGN ACCORDING TO LEHI CITY STANDARDS
3. TRAP ROCK TO BE INSTALLED AS PER CITY STANDARDS TO AID IN THE REMOVAL OF MUD AND SEDIMENT FROM TIRES AT THE ENTRANCE OF THE EXCAVATION AREA

STORM WATER MANAGEMENT PLAN

1. ALL CONSTRUCTION TO BE DONE ACCORDING TO THE 2016 LEHI CITY STANDARDS AND SPECIFICATIONS
2. THE CONTRACTOR IS TO FOLLOW THE BMP DETAILS AS OUTLINED AND ACCORDING TO LEHI CITY STANDARDS.
3. CONTRACTOR SHALL TAKE REASONABLE EFFORT TO LIMIT MUD AND SEDIMENT CARRIED ONTO CITY STREETS FROM THE CONSTRUCTION SITE AND REMOVE ANY PRIOR TO THE CLOSE OF EACH WORK DAY.
4. CONTRACTOR TO COORDINATE CONSTRUCTION FENCING.

INLET PROTECTION

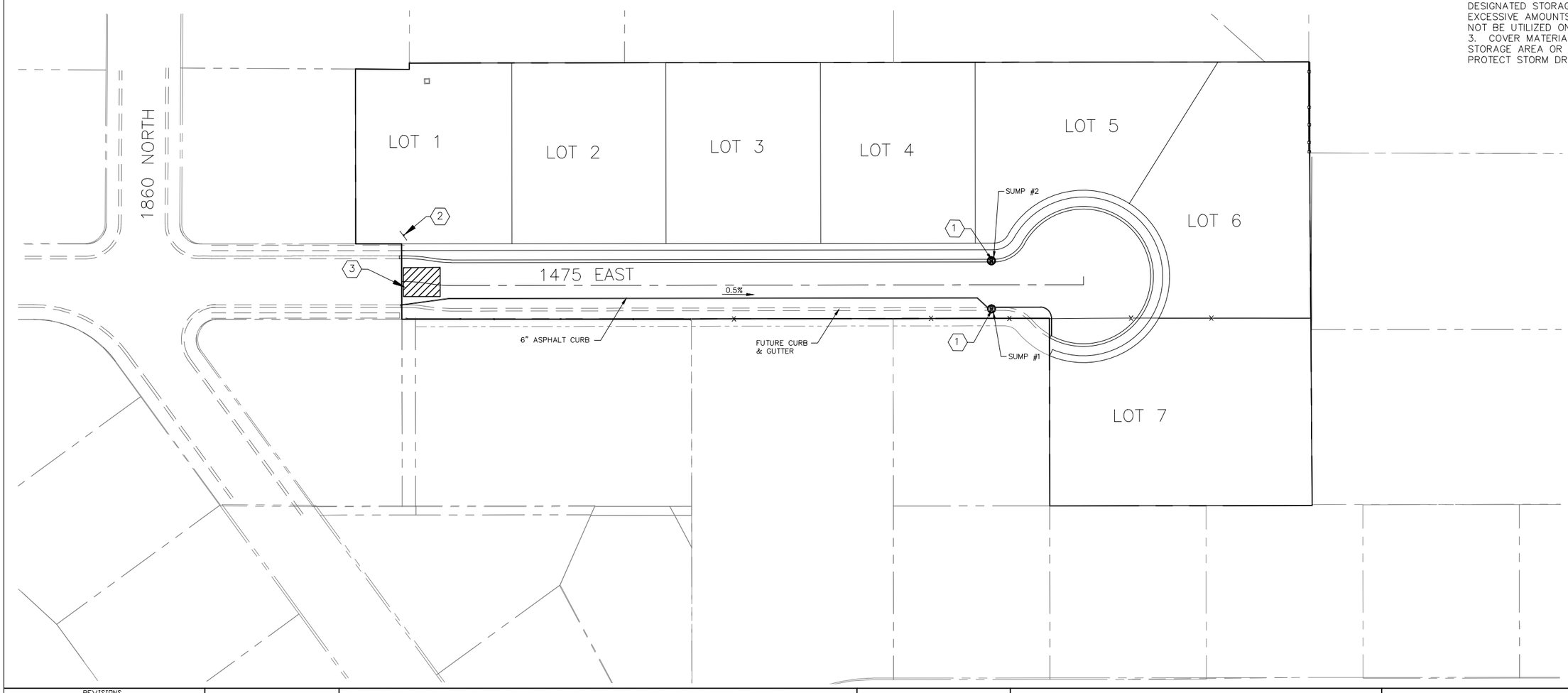
1. INSTALL SILT FENCE OR STRAW BALE SEDIMENT BARRIER OR EQUIVILANT MEASURE AROUND STORM DRAIN INLETS.
2. INSPECT INLET PROTECTION AFTER STORM EVENT.
3. UPON COMPLETION OF CURB AND GUTTER, PROTECT INLETS WITH FILTER FABRIC AND COURSE GRAVEL OR EQUIVALENT MEASURE.

CONSTRUCTION ENTRANCE

1. CONSTRUCTION ENTRANCE TO BE INSTALLED WITH CRUSHED STONE AT A LOCATION WHERE TRUCKS LEAVE THE SITE TO A PAVED SURFACE.
2. PROVIDE BERMING AT WASH AREA AS NEEDED TO PREVENT SOIL LADEN WASH WATER FROM ENTERING THE STORM WATER FACILITIES.
3. GRAVEL AREA TO BE OF SUFFICIENT SIZE TO ACCOMMODATE THE TRAFFIC.

STORAGE AREA

1. CONTROL STORAGE OF ONSITE MATERIALS TO A DESIGNATED AREA WITH NO DRAINAGE OR WATERWAYS NEARBY.
2. ENSURE ALL ONSITE PERSONNEL UTILIZE DESIGNATED STORAGE AREA. DO NOT STORE EXCESSIVE AMOUNTS OF MATERIALS THAT WILL NOT BE UTILIZED ON SITE.
3. COVER MATERIALS WHEN OUTSIDE THE STORAGE AREA OR WHEN NOT IN USE AND PROTECT STORM DRAIN SYSTEM WHEN IN USE.



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TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

LEHI, UTAH

CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

SWPPP

JOB CHOLLOW

SHEET NO. 5

BMP: Contaminated or Erodible Surface Areas — CESA



Objectives
- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Prevent or reduce the discharge of pollutants to storm water from contaminated or erodible surface areas by leaving as much vegetation on-site as possible, minimizing soil exposure time, stabilizing exposed soils, and preventing storm water runon and runoff.

Application:
This BMP addresses soils which are not so contaminated as to exceed criteria but the soil is eroding and carrying pollutants off in the storm water.

Installation/Application Criteria:
Contaminated or erodible surface areas can be controlled by:
Preservation of natural vegetation, re-vegetation, chemical stabilization, removal of contaminated soils or geosynthetics.

Limitations:
Disadvantages of preserving natural vegetation or re-vegetating include:
- Requires substantial planning to preserve and maintain the existing vegetation.
- May not be cost-effective with high land costs.
- Lack of rainfall and/or poor soils may limit the success of re-vegetated areas.

Disadvantages of chemical stabilization include:
- Creation of impervious surfaces.
- May cause harmful effects on water quality.
- Is usually more expensive than vegetative cover.

Maintenance:
Maintenance should be minimal, except possibly if irrigation of vegetation is necessary.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

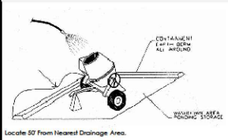
Targeted Pollutants
- ■ Sediment
- ■ Nutrients
- ■ Toxic Materials
- ☒ Oil & Grease
- ■ Floatable Materials
- ■ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☒ O&M Costs
- ☐ Maintenance
- ☐ Training

■ High ☒ Medium ☐ Low

BMP: Concrete Waste Management — CWM



Locate 50 From Nearest Drainage Area.

Objectives
- ☐ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

Applications:
This technique is applicable to all types of sites.

Installation/Application Criteria:
- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off-site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area. (See Earth Berm Barrier information sheet.)
- Train employees and subcontractors in proper concrete waste management.

Limitations:
- Off-site washout of concrete wastes may not always be possible.

Maintenance:
- Inspect subcontractors to ensure that concrete wastes are being properly managed.
- If using a temporary pit, dispose hardened concrete on a regular basis.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

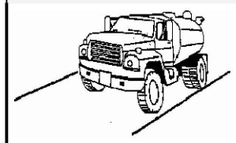
Targeted Pollutants
- ☐ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☒ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ☐ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

■ High ☒ Medium ☐ Low

BMP: Dust Controls — DC



Objectives
- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Dust control measures are used to stabilize soil from wind erosion, and reduce dust by construction activities.

Application:
Dust control is useful in any process area, loading and unloading area, material handling areas, and transfer areas where dust is generated. Street sweeping is limited to areas that are paved.

Installation/Application Criteria:
- Mechanical dust collection systems are designed according to the size of dust particles and the amount of air to be processed. Manufacturers' recommendations should be followed for installation (as well as the design of the equipment).
- Two kinds of street sweepers are common: brush and vacuum. Vacuum sweepers are more efficient and work best when the area is dry.
- Mechanical equipment should be operated according to the manufacturers' recommendations and should be inspected regularly.

Limitations:
- Is generally more expensive than manual systems.
- May be impossible to maintain by plant personnel (the more elaborate equipment).
- Is labor and equipment intensive and may not be effective for all pollutants (street sweepers).

Maintenance:
If water sprayers are used, dust-contaminated waters should be collected and taken for treatment. Areas will probably need to be resprayed to keep dust from spreading.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
- ■ Sediment
- ☐ Nutrients
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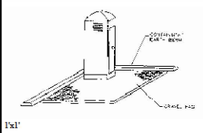
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

■ High ☒ Medium ☐ Low

BMP: Portable Toilets — PT



1'x1'

Objectives
- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Temporary on-site sanitary facilities for construction personnel.

Application:
All sites with no permanent sanitary facilities or where permanent facility is too far from activities.

Installation/Application Criteria:
- Locate portable toilets in convenient locations throughout the site.
- Prepare level, gravel surface and provide clear access to the toilets for servicing and for on-site personnel.
- Construct earth berm perimeter (See Earth Berm Barrier Information Sheet), control for spill/protection leak.

Limitations:
No limitations.

Maintenance:
- Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection.
- Regular waste collection should be arranged with licensed service.
- All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
- ☐ Sediment
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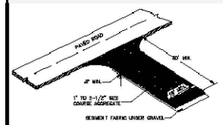
- ☐ Toxic Materials
- ☐ Oil & Grease
- ☐ Floatable Materials
- ■ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

■ High ☒ Medium ☐ Low

BMP: Stabilized Construction Entrance — SCE



Objectives
- ☒ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
A stabilized pad of crushed stone located where construction traffic enters or leaves the site from or to paved surface.

Applications:
At any point of ingress or egress at a construction site where adjacent traveled way is paved. Generally applies to sites over 2 acres unless special conditions exist.

Installation/Application Criteria:
- Clear and grub area and grade to provide maximum slope of 2%.
- Compact subgrade and place filter fabric if desired (recommended for entrances to remain for more than 3 months.
- Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8 inches.

Limitations:
- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

Maintenance:
- Inspect daily for loss of gravel or sediment buildup.
- Inspect adjacent roadway for sediment deposit and clean by sweeping or shoveling.
- Repair entrance and replace gravel as required to maintain control in good working condition.
- Expand stabilized area as required to accommodate traffic and prevent erosion at driveways.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
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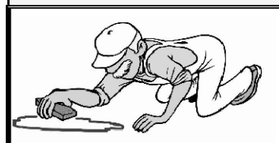
- ☐ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ■ Capital Costs
- ☒ O&M Costs
- ☒ Maintenance
- ☐ Training

■ High ☒ Medium ☐ Low

BMP: Spill Clean-Up — SCU



Objectives
- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

Application:
All sites

General:
- Store controlled materials within a storage area.
- Educate personnel on prevention and clean-up techniques.
- Designate an Emergency Coordinator responsible for employing preventative practices and for providing spill response.
- Maintain a supply of clean-up equipment on-site and post a list of local response agencies with phone numbers.

Methods:
- Clean-up spills/leaks immediately and remediate cause.
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL.
- Use rags or absorbent material for clean-up. Excavate contaminated soils. Dispose of clean-up material and soil as hazardous waste.
- Document all spills with date, location, substance, volume, actions taken and other pertinent data.
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
- ☐ Sediment
- ☐ Nutrients
- ■ Toxic Materials
- ☒ Oil & Grease
- ☐ Floatable Materials
- ☐ Other Waste

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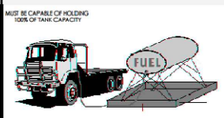
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☒ O&M Costs
- ☐ Maintenance
- ■ Training

■ High ☒ Medium ☐ Low

BMP: Vehicle And Equipment Fueling — VEF



Objectives
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- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

Installation/Application:
- Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills. Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks. Place a stockpile of spill cleanup materials where it will be readily accessible. Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks (40 CF Sub. J). Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time. Train employees and subcontractors in proper fueling and cleanup procedures.

Limitations:
Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance.

Maintenance:
- Keep ample supplies of spill cleanup materials on-site.
- Inspect fueling areas and storage tanks on a regular schedule.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
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- ☐ Floatable Materials
- ☐ Other Waste

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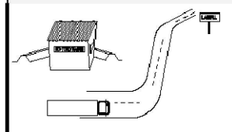
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☒ Training

■ High ☒ Medium ☐ Low

BMP: Waste Disposal — WD



Objectives
- ☒ Housekeeping Practices
- ☒ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☐ Control Site Perimeter
- ☐ Control Internal Erosion

Description:
Controlled storage and disposal of solid waste generated by construction activities.

Application:
All construction sites.

Installation:
- Designate one or several waste collection areas with easy access for construction vehicles and personnel. Ensure no waterways or storm drainage inlets are located near the waste collection areas.
- Construct compacted earthen berm (See Earth Berm Barrier Information Sheet), or similar perimeter containment around collection area for impoundment in the case of spills and to trap any windblown trash.
- Use water tight containers with covers to remain closed when not in use. Provide separate containers for different waste types where appropriate and label clearly.
- Ensure all on site personnel are aware of and utilize designated waste collection area properly and for intended use only (e.g. all toxic, hazardous, or recyclable materials shall be properly disposed of separately from general construction waste).
- Arrange for periodic pickup, transfer and disposal of collected waste at an authorized disposal location. Include regular Porto-potty service in waste management activities.

Limitations:
- On-site personnel are responsible for correct disposal of waste.

Maintenance:
- Discuss waste management procedures at progress meetings.
- Collect site trash daily and deposit in covered containers at designated collection areas.
- Check containers for leakage or inadequate covers and replace as needed.
- Randomly check disposed materials for any unauthorized waste (e.g. toxic materials).
- During daily site inspections check that waste is not being incorrectly disposed of on-site (e.g. burial, burning, surface discharge, discharge to storm drain).

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
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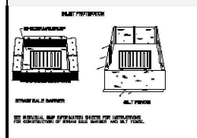
- ☐ Oil & Grease
- ☐ Floatable Materials
- ■ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ■ Capital Costs
- ■ O&M Costs
- ☒ Maintenance
- ■ Training

■ High ☒ Medium ☐ Low

BMP: Inlet Protection - Silt Fence or Straw Bale — IP



Objectives
- ☐ Housekeeping Practices
- ☐ Contain Waste
- ☐ Minimize Disturbed Areas
- ☐ Stabilize Disturbed Areas
- ☐ Protect Slopes/Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

Description:
Sediment barrier erected around storm drain inlet.

Application:
Construct at storm drainage inlets located downgradient of areas to be disturbed by construction (for inlets in paved areas see other information sheets for inlet protection).

Installation/Application Criteria:
- Provide upgradient sediment controls, such as silt fence during construction of inlet.
- When construction of inlet is complete, erect straw bale barrier or silt fence surrounding perimeter of inlet. Follow instructions and guidelines on individual BMP information sheets for straw bale barrier and silt fence construction.

Limitations:
- Recommended maximum contributing drainage area of one acre.
- Limited to inlets located in open unpaved areas.
- Requires shallow slopes adjacent to inlet.

Maintenance:
- Inspect inlet protection following storm event and at a minimum of once monthly.
- Remove accumulated sediment when it reaches 4-inches in depth.
- Repair or realign barrier/fence as needed.
- Look for bypassing or undercutting and recompact soil around barrier/fence as required.

LEHI — PIONEERING UTAH'S FUTURE
ADAPTED FROM SALT LAKE COUNTY BMP FACT SHEET

Targeted Pollutants
- ■ Sediment
- ☐ Nutrients
- ☐ Toxic Materials
- ☐ Oil & Grease
- ■ Floatable Materials
- ☐ Other Waste

■ High Impact
☒ Medium Impact
☐ Low or Unknown Impact

Implementation Requirements
- ☒ Capital Costs
- ☐ O&M Costs
- ☒ Maintenance
- ☐ Training

■ High ☒ Medium ☐ Low

Attention Contractors

All mud and or debris tracked onto any streets shall be the responsibility of that person as per Lehi City Drainage Ordinance 13.40.

Fines are a Class C Misdemeanor and the project will be shut down until resolved

CONTRACTOR SIGN DETAIL

REVISIONS					
NO.	DATE	DESCRIPTION	BY		
1				DESIGNED BY:	TGT
2				DRAWN BY:	TT
3				CHECK BY:	TGT
4				DATE:	05/11/23
				CDGD FILE:	

J:\COOPER\CEDAR HOLLOW\DWG\06 BMPS.dwg

TRANE ENGINEERING, P.C.
CONSULTING ENGINEERS AND LAND SURVEYORS
27 EAST MAIN LEHI, UTAH 84043 (801) 768-4544

LEHI, UTAH

CEDAR HOLLOW PLAT M
A RESIDENTIAL SUBDIVISION

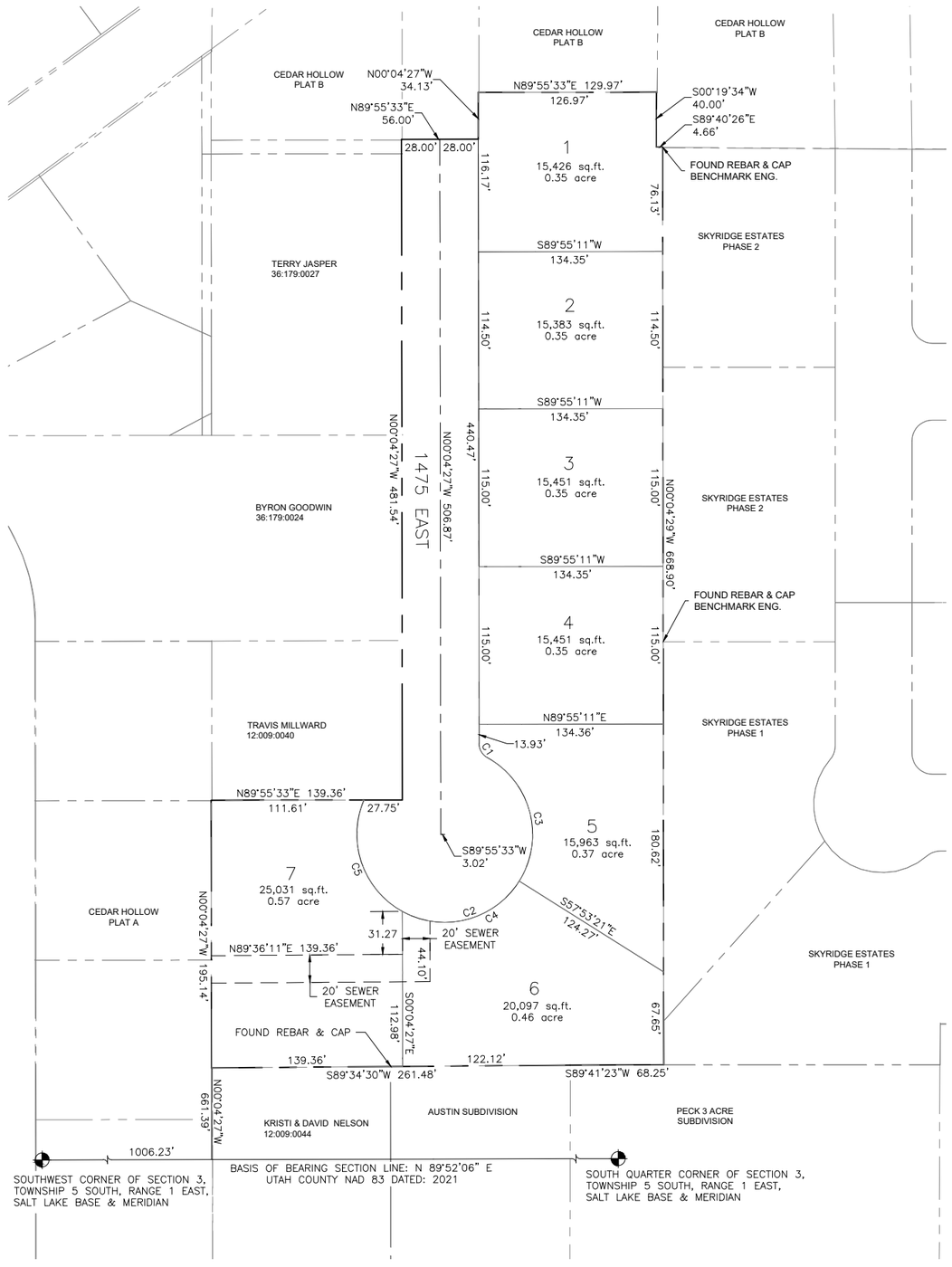
BMPS

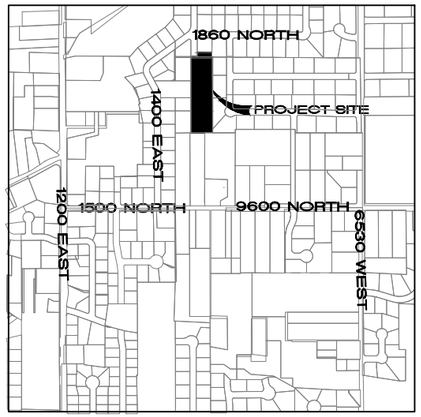
JOB CHOLLOW

SHEET NO. 6

CEDAR HOLLOW PLAT M

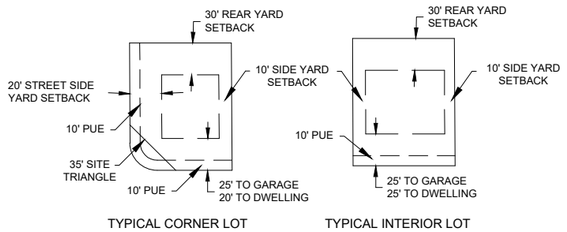
LOCATED IN THE SOUTHWEST QUARTER OF SECTION 3,
TOWNSHIP 5 SOUTH, RANGE 1 EAST, SALT LAKE BASE
AND MERIDIAN; LEHI CITY, UTAH COUNTY, UTAH





VICINITY MAP

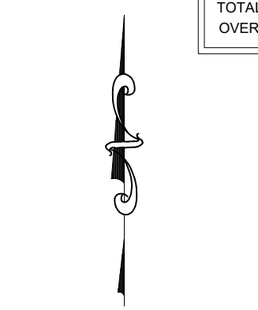
Curve Table					
Curve #	Length	Radius	Delta	Chord	Chord Bearing
C1	12.75	12.00	60°53'11"	12.16	S30°31'03"E
C2	295.11	64.00	264°11'39"	94.98	N71°08'11"E
C3	103.96	64.00	93°04'17"	92.90	N14°25'30"W
C4	96.97	64.00	86°48'39"	87.96	N75°30'59"E
C5	94.18	64.00	84°18'43"	85.91	S18°55'20"E



TYPICAL CORNER LOT TYPICAL INTERIOR LOT

SETBACK AND EASEMENT DETAIL

LAND USE:	
PROJECT AREA=	3.67 ACRES
ZONING=	R-1-15
TOTAL LOTS=	7 LOTS
OVERALL DENSITY=	1.9 LOTS PER ACRE



0 50 100 150

SCALE: 1" = 50'

DEVELOPER:
GARY COOPER
1656 N 1200 E
LEHI, UT 84043

PREPARED BY:
TRANE ENGINEERING
27 EAST MAIN STREET
LEHI, UT 84043
PHONE (801) 768-4544

SURVEYOR'S CERTIFICATE

I, TRAVIS TRANE, do hereby certify that I am a Professional Land Surveyor, and that I hold License No. 5152741, as prescribed under the laws of the State of Utah. I further certify that by authority of the owners, I have made a survey of the tract of land shown on this plat and described heron, and have subdivided said tract of land into lots and streets, together with easements, hereafter to be known as CEDAR HOLLOW PLAT M and that the same has been correctly surveyed and monumented on the ground as shown on this plat.

BOUNDARY DESCRIPTION

Beginning at a point on the East line of Cedar Hollow Plat "A" which is North 89°52'06" East 1006.23 feet along the section line and North 00°04'27" West 661.39 feet from the Southwest Corner of Section 3, Township 5 South, Range 1 East Salt Lake Base and Meridian; thence North 00°04'27" West 195.14 feet along the East line of Cedar Hollow Plat "A"; thence North 89°55'33" East 139.36 feet; thence North 00°04'27" West 481.54 feet; thence along Cedar Hollow Plat "B" the following five courses 1) North 89°55'33" East 56.00 feet 2) North 00°04'27" West 34.13 feet 3) North 89°55'33" East 129.97 feet 4) South 00°19'34" West 40.00 feet 5) South 89°40'26" East 4.66 feet; thence South 00°04'29" East 668.90 feet along the West lines of Skyridge Estates Phases 1 and 2; thence South 89°41'23" West 68.25 feet along Peck 3 Acre Subdivision; thence South 89°34'30" West 261.48 feet along Austin Subdivision and the extension thereof to the point of beginning.

Parcel contains 3.67 acres

Basis of Bearing: the line between the Southwest Corner and the South Quarter Corner of Section 3, Township 5 South, Range 1 East, Salt Lake Base and Meridian which bears North 89°52'06" East.

_____ DATE

_____ SURVEYOR

OWNER'S DEDICATION

Know all men by these presents that the undersigned are the owners of the above described tract of land, and hereby cause the same to be divided into lots, parcels and streets, together with easements as set forth to be hereafter known as CEDAR HOLLOW PLAT M and do hereby dedicate for the perpetual use of the public all roads and other areas shown on this plat as intended for public use. The undersigned owners also hereby convey to any and all public utility companies a perpetual, non-exclusive easement over the public utility easements shown on this plat, the same to be used for the installation, maintenance and operation of utility lines and facilities.

IN WITNESS HEREOF WE HAVE HEREUNTO SET OUR HANDS THIS_____ DAY OF_____, A.D. 20____

_____ _____

_____ _____

ACKNOWLEDGEMENT

STATE OF UTAH)
: S.S.
COUNTY OF UTAH)

ON THE _____ DAY OF _____, A.D. 20____ PERSONALLY APPEARED BEFORE ME THE SIGNERS OF THE FOREGOING DEDICATION WHO DULY ACKNOWLEDGE TO ME THAT THEY DID EXECUTE THE SAME.

NOTARY _____ _____ NOTARY PUBLIC SIGNATURE

COMMISSION # _____

MY COMMISSION EXPIRES _____

A NOTARY PUBLIC COMMISSIONED IN UTAH

ACCEPTANCE BY LEGISLATIVE BODY

THE CITY OF LEHI, COUNTY OF UTAH, APPROVES THIS SUBDIVISION SUBJECT TO THE CONDITIONS AND RESTRICTION STATED HEREON AND HEREBY ACCEPTS THE DEDICATION OF ALL STREETS, EASEMENTS, AND OTHER PARCELS OF LAND INTENDED FOR PUBLIC PURPOSE OF THE PERPETUAL USE OF THE PUBLIC THIS _____ DAY OF _____, A.D. 20____

MAYOR: _____ ATTEST: _____
CLERK-RECORDER (SEE SEAL BELOW)

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, 20____, BY THE LEHI CITY PLANNING COMMISSION

_____ DIRECTOR-SECRETARY

_____ CHAIR, PLANNING COMMISSION

CEDAR HOLLOW PLAT M

LOCATED IN THE SOUTHWEST QUARTER OF SECTION 3,
TOWNSHIP 5 SOUTH, RANGE 1 EAST, SALT LAKE BASE
AND MERIDIAN; LEHI CITY, UTAH COUNTY, UTAH

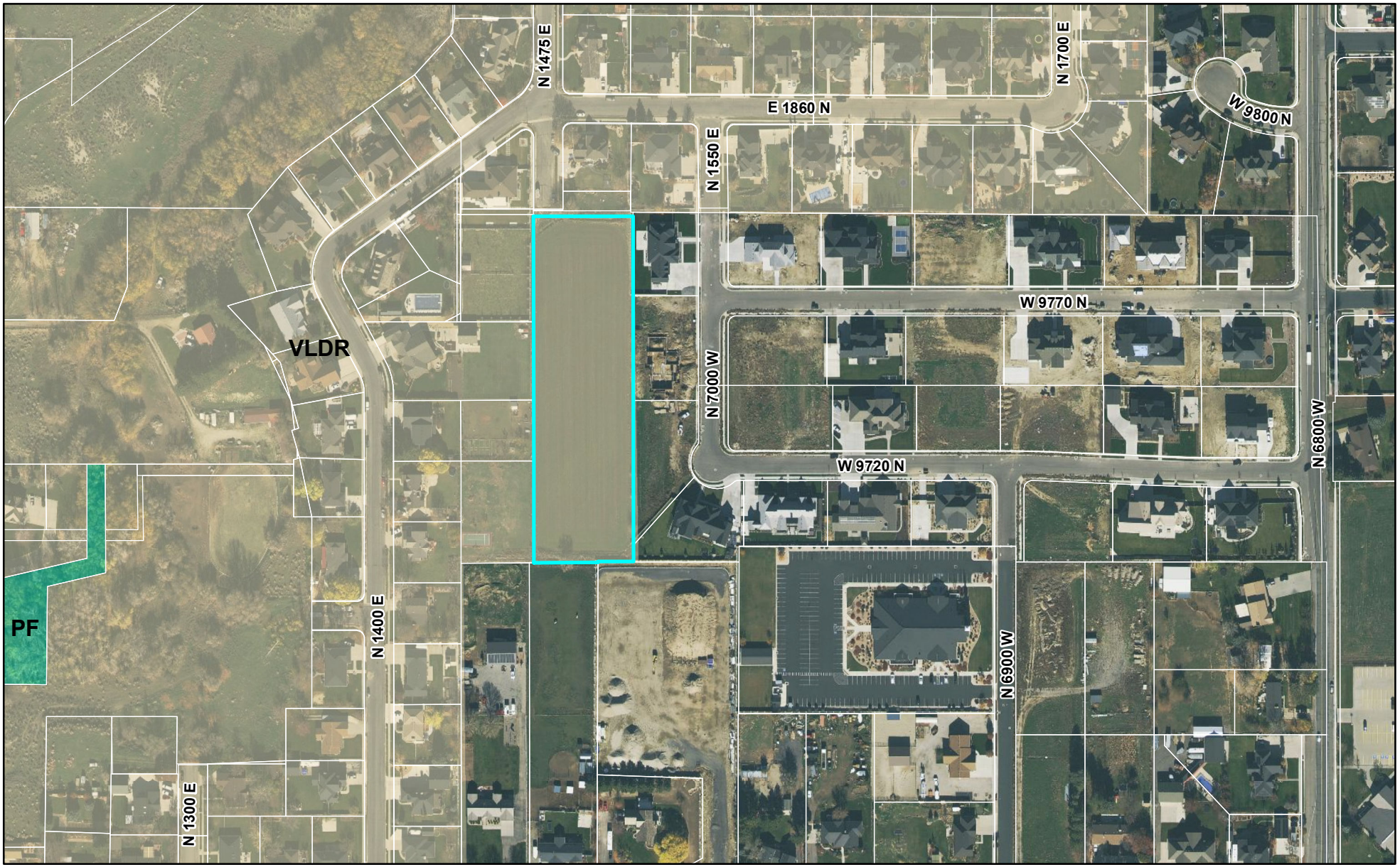
A RESIDENTIAL SUBDIVISION

SCALE: 1"= 50 FEET

SURVEYOR SEAL	CITY ENGINEER SEAL	CLERK-RECORDER SEAL	COUNTY RECORDER

Cedar Hollow Plat M

General Plan



0 310 620 Feet

LEHI CITY

CEDAR HOLLOW PLAT M FINAL SUBDIVISION

CITY COUNCIL REPORT

Applicant	Gary Cooper		
Meeting Date	September 19, 2023		
Requested Action/Purpose	Approval of a final subdivision		
Location	Approximately 1475 East 1800 North		
Existing Land Use	Very Low Density Residential (VLDR)		
Existing Zoning	RA-1		
General Plan Land Use Designation	Undeveloped		
Number of Lots/Units	7 Lots		
Adjacent Zoning and Land Use	*North*	RA-1	Single Family Homes
	South	Highland	Single Family Homes
	East	Highland	Single Family Homes
	West	RA-1	Single Family Homes
Date of DRC Review	August 30, 2023		
Assigned Planner	Brittney Harris		

REQUIRED ACTION

City Council	Final approval

APPLICABLE DEVELOPMENT CODE REGULATIONS

Section 11.180. Effective Period of Final Subdivision Plat Approval.
The approval of a final subdivision plat shall be effective for a period of two (2) years from the date the final plat is approved and signed by the City Council, at the end of which time such final subdivision plat shall have been recorded in the office of the Utah County Recorder.

Section 37.040. Connectivity Standards.
Cul-de-sac Length Standards. Maximum cul-de-sac lengths allowed shall be required based on the project density as identified on the following table of maximum cul-de-sac lengths:

Density	Cul-de-sac Length
0-2.5 DU/AC	400 ft.
2.6+ DU/AC	250 ft.

Design Standards Section 2.05. Fencing and Landscaping Standards for Arterial and/ or other Streets as Applicable.
It is strongly encouraged in the case of a subdivision with double frontage lots that up to six (6) feet of additional property is dedicated as right-of-way for additional park strip width. Considerations for right-of-way can be found in the Development Code. If this option is used, the park strip area shall have a five (5) 2 - 9 foot planter strip from back of curb to the sidewalk, a five (5) foot sidewalk, and the additional property between the sidewalk and fence shall be a planter strip. The planter strip areas in this option shall be landscaped according to the standards of this section.

Design Standards Section 2.07. Lot Requirements.

Double frontage lots shall be prohibited except where unusual topography makes it impossible to meet this requirement or where it is necessary to back lots on a nonaccess street.

PROPERTY HISTORY

May 24, 1978 Property came into the City as part of the Cooper Addition

August 8, 2023 City Council approved the Cedar Hollow Plat M Preliminary Subdivision

REPORT ANALYSIS

The applicant requests approval of the Cedar Hollow Plat M subdivision including 7 single family lots located at 1475 East 1800 North. The property is zoned RA-1 which allows for a minimum lots size of 15,000 square feet and 100 feet of frontage. All the lots in this subdivision meet that requirement.

The City Council reviewed and approved the preliminary subdivision in August. That discussion included the longer cul-de-sac length and the double fronting lots. The City Council approved it with both of these considerations. This final plat matches what was approved with the preliminary plat.

The DRC reviewed the final subdivision and had 10 redline comments including:

1. An additional fire hydrant will need to be installed on 1475 East.
2. Provide either a letter from owners to the south stating they do not want an agricultural fence or provide an agricultural fence.
3. Can change 1475 East to 32' asphalt width

Please consider including all DRC comments in your motion.

POSSIBLE MOTIONS AND FINDINGS

The City Council may move to approve or approve with modifications the proposed final subdivision. Any motion should include findings. Possible findings include:

1. The proposed subdivision does/does not meet the requirements of the Lehi City Development regarding subdivision approvals.
2. The proposed subdivision exceptions should/should not be allowed based on existing development, bordering Highland, safety access concerns, and any other reasons determined during the meeting.
3. The proposed subdivision layout is/ is not the best layout for this lot surrounded by existing development.
4. Other findings based upon information presented at the public hearing.
5.

Cedar Hollow Plat M
DRC Redline Comments

Gary Cooper- requests final subdivision review of Cedar Hollow Plat M, a 7-lot residential development located at 1475 East 1800 North.

DRC Members Present: Glade Kirkham, Garion Rowett, Ryan Allred, Shelbey Brewer, Kim Struthers, Gary Smith, Ross Dinsdale, James Farnsworth
Assigned Planner: Brittney
Representatives of the Applicant Present: Tony Trane
Date of Plans Reviewed: 8/22/23
Time Start: 2:25 PM
Time End: 2:42 PM

DRC REDLINE COMMENTS:
Glade – Power:
1. Line extension required. Off-site easements will be required for circuit re-build. See improvements plan by Active Power. Approval from Power Dept. is contingent upon off-site easements.

Garion – Fire:
2. An additional fire hydrant will need to be installed on 1475 East.

Ryan – Water/Sewer: No comments.
James – Parks:
3. Provide either a letter from owners to the south stating they do not want an agricultural fence or provide an agricultural fence.

Gary – Building/Inspections:
4. A soil report is needed
5. Add note to the plat, all property corners to be marked with rebar and cap. Brass pin to be set on top of curb.

Shelbey – Public Works: No comments.
Ross – Engineering:
6. Can change 1475 East to 32' asphalt width
7. Show potential overflow or retention area on Lot 7.
8. Change PUE to say Public Utility and Roadway Construction Easement (PUE and RCE).

Kim – Planning:
9. Include in tabulation the right of way acreage
10. Coordinate with Brittney on assigning addresses

PRIOR TO SCHEDULING A PRECONSTRUCTION MEETING:
1. Provide an engineer's cost estimate for the cost of all improvements to Lehi City Engineering. (Stefanie Daggs- Sdaggs@lehi-ut.gov or 385-201-2523)
2. 10% Warranty Escrow Bond or Letter of Credit and Public/Private Improvement Agreement for all public and private improvements must be in place (from a financial institution with a branch in Utah).
3. Pay all necessary inspection fees and any up-front supply costs required by the City for power supplies, water system supplies, public signs (stop signs, address signs, etc.) and any other associated costs so that the City can order all necessary supplies for the development.
4. UIC Injection well permit will be completed by the city.
5. Include surveyor's and engineer's stamps and signatures on the construction drawings.
6. Show lot addresses on the final plat (must coordinate with Planning Division).
7. New property line adjacent to existing roads and any new trails must be staked and reviewed by the City.
8. Provide a recordable easement document for all necessary off-site easements (temp. turnarounds, utilities, power, etc).
9. Submit Storm Water Pollution Prevention Plan (SWPPP) through ComplianceGo.com for review by Lehi Public Works (Contact Shelbey Brewer at sbrewer@lehi-ut.gov).
10. Schedule a SWPPP inspection through Daniel Hadlock at (801) 836-3523 or Greg Soper at (385) 415-4073). This should be the last item completed prior to scheduling a preconstruction meeting.

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

11. Obtain PLSS (Public Land Survey System) clearance letter from the Utah County Surveyor Office. If there are PLSS monuments located on or adjacent to property a monument excavation permit may be required.
    Per Utah Code 17-23-14 and 17-23-15. Contact info. Email surveyor@utahcounty.gov Address 2855 South State Street, Provo, UT 84606 (801) 851-8671 or (801) 851-8669.
12. Address any comments or conditions from City Council approval.
13. Plans need to be signed by Community Development Director and Public Works Director before precon can be scheduled

PRIOR TO RECORDING OF PLAT:

1. Provide a Mylar of the final plat for recording with the owners notarized signature(s).
2. Include surveyor's and engineer's stamps and signatures on the plat.
3. Submit a title report to be reviewed by Lehi City Attorney.
4. Developer shall provide a letter with an exhibit of the property covered from their title company guaranteeing that the property taxes including rollback/greenbelt taxes have been paid of open space or right of way is being dedicated.
5. Provide a signed easement verification sheet (for proposed public utility easements on the plat).
6. Provide a recorded copy of required boundary line agreement(s).
7. Provide a signed original copy of the CC&Rs to record with the plat (to be reviewed by City Attorney).
8. Warranty deed/title insurance (open space, detention, City park property, City trails, some road dedication). Title insurance policies on each to be obtained through Marnae at Vanguard Title 801-610-1670
9. All City utilities/infrastructure has been accepted and signed off by all Lehi City Inspectors.

DRC GENERAL COMMENTS:

1. On the power, developer will install conduit; Lehi City Power will install all other required power infrastructure shown on the plans and charge the developer for the costs. These costs are separate from power impact fees that are paid with the building permit.
2. Developer is responsible to purchase, move or remove any existing RMP facilities.
3. Developer is responsible to furnish adequate rights of way or easements for construction of off-site power line extensions.
4. Once approved by the Planning Commission or City Council (whichever is applicable) plans may be submitted for check-off. Check-off plans consist of one 24x36 set of plans submitted to the Planning Department. When changes need to be made to a check-off set, revise the affected sheets only. Each new submittal will require a revision date on each new sheet.
5. Prior to the pre-construction meeting, Lehi City Staff will make copies of plans for the meeting from the check-off set and the developer will pay fees for the copies.
6. All signage will require a separate review and approval process
7. All required private improvements (except private landscaping) shall be completed prior to the certificate of occupancy being granted.
8. The approval of a development shall be effective for a period of two (2) years from the date the development is approved by the Planning Commission or City Council, whichever is applicable.
9. Approved vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided to within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either a twenty (20) foot minimum width temporary or permanent road, capable of supporting vehicle loading under all weather conditions. Vehicle access shall be kept clear of all fencing, barricades, dumpsters, vehicles, construction materials and debris and maintained until permanent fire apparatus access roads are available.

THIS ITEM WILL BE SCHEDULED FOR CITY COUNCIL ON SEPTEMBER 19TH.

Note: This list of corrections and deficiencies should not be considered as an all-inclusive or final list. The items listed need to be corrected and resolved and a new set of information submitted for review by the DRC. Further corrections and deficiencies may still be noted as the DRC further reviews the resubmitted information.

Agenda Item No: 17

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-63 approving a cooperative agreement between UDOT and Lehi City for the preservation and establishment of a traffic signal and access control plan along US-89.

Suggested Action:

Attachments:

Res 2023-63.docx

US-89 Coop Agreement Lehi draft 3-13-23.pdf

LEHI CITY

RESOLUTION NO. 2023-63

A RESOLUTION OF THE LEHI CITY COUNCIL APPROVING A COOPERATIVE AGREEMENT BETWEEN UDOT AND LEHI CITY FOR THE PRESERVATION AND ESTABLISHMENT OF A TRAFFIC SIGNAL AND ACCESS CONTROL PLAN ALONG US-89

WHEREAS, UDOT and Lehi City desire to facilitate the traffic flow along US-89 from Main Street/Eastgate Drive to 2100 North by establishing a traffic signal and access control plan;

WHEREAS, on September 19, 2023, the City Council held a duly noticed public meeting to ascertain the facts regarding this matter, which facts and comments are found in the meeting record; and

WHEREAS, after considering the facts and comments presented to the City Council, the Council finds: (i) that it should approve the Cooperative Agreement with UDOT; and (ii) such action furthers the health, safety and welfare of the citizens of Lehi.

NOW, THEREFORE, be it resolved by the City Council of Lehi City, Utah, as follows:

1. The Cooperative Agreement attached hereto as Exhibit "A" is hereby approved and the Mayor is authorized to execute the agreement and take all other such action as is necessary to make it effective.

2. This resolution shall take effect immediately.

Approved and Adopted by the City Council of Lehi City, Utah this 19th day of September, 2023.

LEHI CITY

_____

Mark Johnson, Mayor

ATTEST

_____

Teisha Wilson, City Recorder

Exhibit “A”

CORRIDOR PRESERVATION
US-89 from Main Street/Eastgate Drive to 2100 North
LEHI CITY
Federal ID No. 876000240

COOPERATIVE AGREEMENT

THIS COOPERATIVE AGREEMENT, made and entered into this _____ day of _____, 2023, by and between the **UTAH DEPARTMENT OF TRANSPORTATION**, hereinafter referred to as "**UDOT**" and **LEHI CITY**, a municipal corporation in the State of Utah, hereinafter referred to as the "**CITY**".

WITNESSETH:

WHEREAS, the parties hereto desire to preserve a corridor and establish a traffic signal and access control plan along US-89 from Main Street/Eastgate Drive to 2100 North within the **CITY** limits, to facilitate traffic flow, to be in accordance with the **CITY's** current transportation master plan and to be in accordance with **UDOT's** current Access Management standards and practices; and

WHEREAS, this Agreement is now written to define current and future traffic signal locations and define access management conditions within the **CITY** limits; and

WHEREAS, this Agreement is made to set out the terms and conditions whereby future traffic signals may be installed; and

NOW THEREFORE, it is agreed by and between the parties as follows:

1. The following are identified as existing and proposed traffic signal installations along the segment of US-89 as defined above.

    - Main Street/Eastgate Drive Existing
    - 850 East Existing
    - 100 East Existing
    - 300 West Existing
    - 500 West Existing
    - 1500 North Existing
    - 1800 North Proposed
    - 2100 North Existing

2. Intersections not listed above are not anticipated to be considered for signalization in the future. However, an intersection may be considered for signalization following a traffic signal warrant study and, if warranted, with approval of **UDOT** and the **CITY**. A warranted intersection with spacing to adjacent proposed or existing traffic signals which is less than what is specified and defined in the applicable Access Management category does not guarantee approval for signalization.

3. It is understood that it may be necessary to restrict certain types of traffic movements at any intersection or access in order to maintain proper traffic flow and improve safety throughout the corridor as agreed upon by the parties hereto.

4. The current Access Management category is "5" from Main Street/Eastgate Drive to just east of 400 East, and "6" from just east of 400 East to 2100 North. Category 5 includes minimum traffic signal spacing of 2,640 feet, minimum street spacing of 660 feet, and minimum access spacing of 350 feet. Category 6 includes minimum traffic signal spacing of 1,320 feet, minimum street spacing of 350 feet, and minimum access spacing of 200 feet. It is obvious there are existing traffic signals, streets, and accesses closer than the minimum distances specified above. These locations are "grandfathered in" based on previous review and approval by the **CITY** and **UDOT**.

5. Both parties will strive to maintain traffic signal, street, and access spacing according to the current Access Management Standards. Reasonable exceptions may be reviewed by both agencies and variances may be granted if approved by both agencies.

6. This segment of US-89 is currently designated as Regular Right-of-Way and is unchanged by this Agreement.

7. The parties hereto shall consider the concepts contained herein during the development of any master plans in this area and work towards the common goal of this Agreement.

8. In the event there are changes in the concepts or provisions covered by this Agreement, a modification to this Agreement approved in writing by all parties hereto is required to place them into effect.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

ATTEST:	**LEHI CITY,** a municipal corporation in the State of Utah
By: _____	By: _____
Title: _____	Title: _____
Date: _____	Date: _____
(IMPRESS SEAL)	

CORRIDOR PRESERVATION
US-89 from Main Street/Eastgate Drive to 2100 North
LEHI CITY
Federal ID No. 876000240

****

RECOMMENDED FOR APPROVAL: UTAH DEPARTMENT OF TRANSPORTATION

By:_____
Region Three Traffic Operations Engineer

Date: _____

By: _____
Region Three Director

Date: _____

APPROVED AS TO FORM:

This Form Agreement has been previously approved as to form by the office of Legal Counsel for the Utah Department of Transportation.

COMPTROLLER OFFICE

By: _____
Contract Administrator

Date: _____

Agenda Item No: 18

City Council Agenda Item Report

Meeting Date: September 19, 2023
Submitted By: Teisha WIlson
Submitting Department:
Item Type: Resolution
Agenda Section: Regular Agenda

Subject:
Consideration of Resolution #2023-64 approving an amendment to the cooperative agreement between UDOT, Saratoga Springs, and Lehi City for the preservation and establishment of a corridor along SR-145.

Suggested Action:

Attachments:

Res 2023-64.docx

SR-145 from SR-68 to I-15 Amendment #2 9-13-23.pdf

LEHI CITY

RESOLUTION NO. 2023-64

A RESOLUTION OF THE LEHI CITY COUNCIL APPROVING AMENDING THE COOPERATIVE AGREEMENT BETWEEN UDOT, SARATIGA SPRINGS AND LEHI CITY FOR THE PRESERVATION AND ESTABLISHMENT OF A CORRIDOR ALONG SR-145

WHEREAS, UDOT, Saratoga Springs and Lehi City entered into a Cooperative Agreement on May 12, 2009 to establish and preserve a corridor along SR-145 Pioneer Crossing and now desire to amend that agreement;

WHEREAS, on September 19, 2023, the City Council held a duly noticed public meeting to ascertain the facts regarding this matter, which facts and comments are found in the meeting record; and

WHEREAS, after considering the facts and comments presented to the City Council, the Council finds: (i) that it should approve the Cooperative Agreement Amendment #2 with UDOT and Saratoga Springs; and (ii) such action furthers the health, safety and welfare of the citizens of Lehi.

NOW, THEREFORE, be it resolved by the City Council of Lehi City, Utah, as follows:

1. The Cooperative Agreement attached hereto as Exhibit "A" is hereby approved and the Mayor is authorized to execute the agreement and take all other such action as is necessary to make it effective.

2. This resolution shall take effect immediately.

Approved and Adopted by the City Council of Lehi City, Utah this 19th day of September, 2023.

LEHI CITY

_____

Mark Johnson, Mayor

ATTEST

_____

Teisha Wilson, City Recorder

Exhibit “A”

CORRIDOR PRESERVATION
SR-145 Pioneer Crossing from SR-68 to Interstate 15
CITY OF SARATOGA SPRINGS
Federal ID No. 870575087
LEHI CITY
Federal ID No. 876000240

COOPERATIVE AGREEMENT AMENDMENT #2

This **AMENDMENT #2**, made and entered into this _____ day of _____, 2023, by and between the **UTAH DEPARTMENT OF TRANSPORTATION**, hereinafter referred to as "**UDOT,**" the **CITY OF SARATOGA SPRINGS**, and **LEHI CITY**, municipal corporations in the State of Utah, hereinafter referred to as the "**LOCAL AGENCIES.**"

WITNESSETH:

WHEREAS, UDOT, Utah County, the City of Saratoga Springs, Lehi City, and American Fork City entered into Cooperative Agreement #098907 on 12 May 2009 to establish and preserve a corridor along SR-145 Pioneer Crossing; and

WHEREAS, UDOT and American Fork City entered into Cooperative Agreement Amendment #1 (#108546) on 25 January 2010 to change the eastern limit of Agreement #098907 from US-89 to I-15, and to modify language regarding access to existing properties on both sides of Main Street west of I-15; and

WHEREAS, the **LOCAL AGENCIES** have agreed to eliminate one of the proposed future traffic signal locations listed in Agreement #098907, the location being approximately 3400 West in Lehi. The **LOCAL AGENCIES** have agreed to add a different location in place of 3400 West in Lehi to the list of proposed future traffic signal locations, the location being approximately 800 East in Saratoga Springs or approximately 2900 West in Lehi. The **LOCAL AGENCIES** agree that the development of the property north of SR-145 Pioneer Crossing along 2900 West (Lehi)/800 East (Saratoga Springs) will include at least a two-lane road that extends to the Lehi City limits; and

WHEREAS, a conceptual drawing of where this new intersection is proposed to be located (shown as a white line) is included herein as Exhibit A; and

WHEREAS, the intersection of 300 East in Lehi is planned to be modified to prohibit northbound and southbound left turn movements, which greatly reduces the opportunity for this intersection to be signalized in the future. This, along with signalization of intersections on the list of existing and proposed future traffic signal locations since the execution of Agreement #098907, has created the need to upgrade the list; and

WHEREAS, these changes do not materially affect American Fork City or Utah County.

NOW THEREFORE, it is agreed by and between the parties as follows:

CORRIDOR PRESERVATION
SR-145 Pioneer Crossing from SR-68 to Interstate 15
CITY OF SARATOGA SPRINGS
Federal ID No. 870575087
LEHI CITY
Federal ID No. 876000240

1. The following intersections are now identified as existing and proposed traffic signal installations along SR-145 Pioneer Crossing. Saratoga Springs is abbreviated as SS:

• SR-68 (Saratoga Springs)	Existing
• Riverside Drive (Saratoga Springs)	Existing
• 800 East (Saratoga Springs)/2900 West (Lehi)	Proposed
• Saratoga Road (Saratoga Springs)/2300 West (Lehi)	Existing
• 1700 West (Lehi)	Existing
• 1100 West (Lehi)	Existing
• 500 West (Lehi)	Existing
• Center Street (Lehi)	Existing
• Vineyard Connector connection (Lehi)	Proposed
• 850 East/Mill Pond Road (Lehi)	Existing

2. All other items contained in Agreement #098907 and Amendment #1 which are unaffected by this **AMENDMENT** remain unchanged.

3. The recitals stated above are hereby incorporated into this agreement by reference.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers as of the day and year first above written.

ATTEST:

By: _____

Title: _____

Date: _____

(IMPRESS SEAL)

CITY OF SARATOGA SPRINGS, a municipal corporation in the State of Utah

By: _____
Mark J. Christensen

Title: _____

Date: _____

CORRIDOR PRESERVATION
SR-145 Pioneer Crossing from SR-68 to Interstate 15
CITY OF SARATOGA SPRINGS
Federal ID No. 870575087
LEHI CITY
Federal ID No. 876000240

ATTEST:

By: _____

Title: _____

Date: _____

(IMPRESS SEAL)

LEHI CITY, a municipal corporation in the State of Utah

By: _____
Jason Walker

Title: _____

Date: _____

****

RECOMMENDED FOR APPROVAL: UTAH DEPARTMENT OF TRANSPORTATION

By:_____
Region Three Traffic Operations Engineer

Date: _____

By: _____
Region Three Director

Date: _____

APPROVED AS TO FORM:

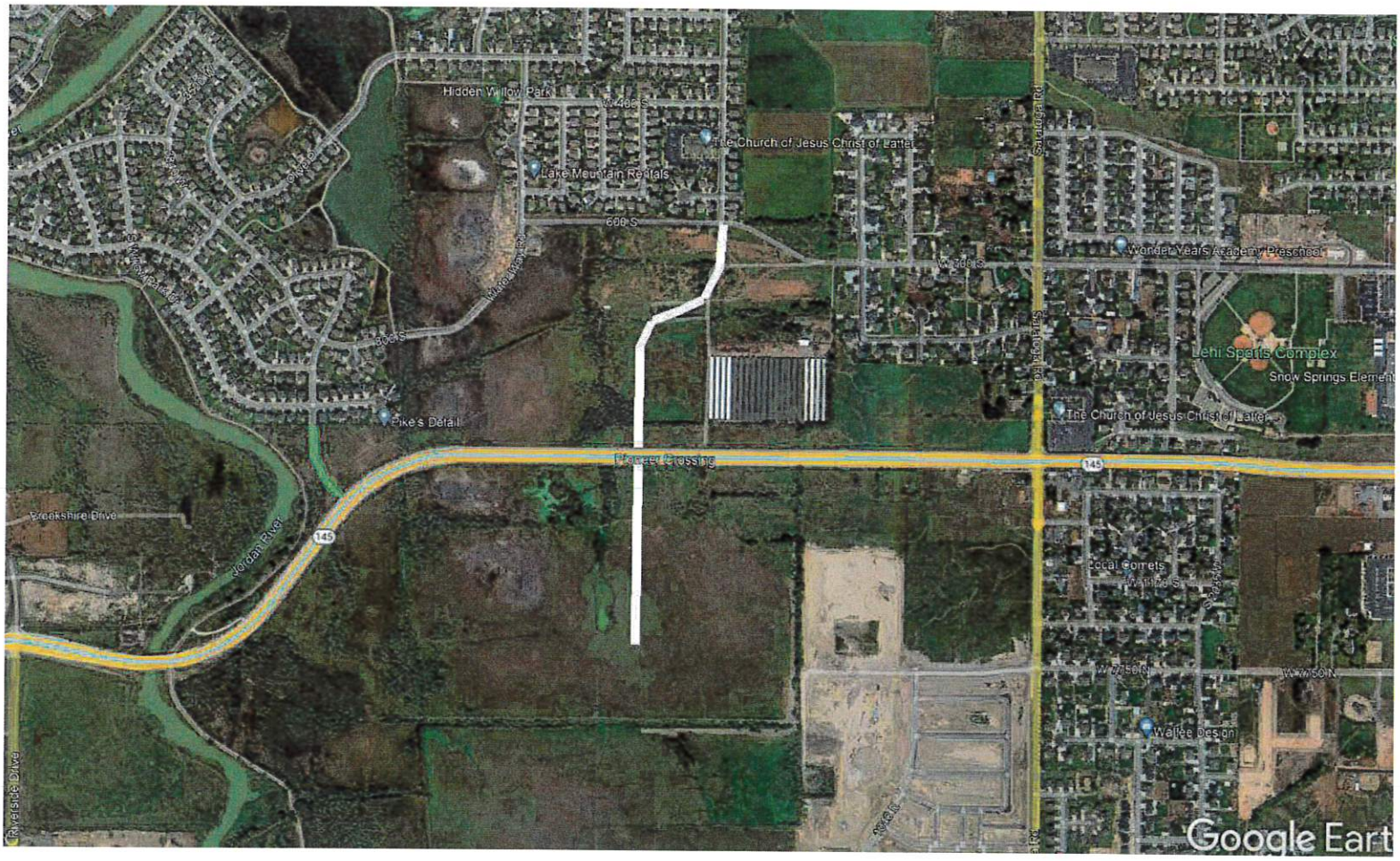
This Form Agreement has been previously approved as to form by the office of Legal Counsel for the Utah Department of Transportation.

COMPTROLLER OFFICE

By: _____
Contract Administrator

Date: _____

Exhibit A


Hidden Willow Park
The Church of Jesus Christ of Latter
Lake Mountain Rentals
600 S
Wonder Years Academy Preschool
Lehi Sports Complex
Snow Springs Element
Pike's Detail
The Church of Jesus Christ of Latter
Prayer Crossing
145
Brookshire Drive
Jordan River
Riverside Drive
Google Eart

Utah Association of REALTORS®

COMMERCIAL REAL ESTATE PURCHASE CONTRACT

EQUAL HOUSING OPPORTUNITY

This is a legally binding contract. It has been prepared by the Utah Association of REALTORS® for the use of its members only, in their transactions with clients and customers. Parties to this Commercial Real Estate Contract ("Contract") may agree, in writing, to alter or delete provisions of this Contract. Seek advice from your attorney or tax advisor before entering into a binding contract.

EARNEST MONEY RECEIPT

On this 08/22/2023 ("Offer Reference Date") Mark Johnson ("Buyer") offers to purchase from Faye Torgerson ("Seller") the *Property* described below and hereby delivers to the Brokerage or Title/Escrow Company, as *Earnest Money*, the amount of $25,000 in the form of ACH Transfer which, upon Acceptance of this offer by all parties (as defined in Section 23), shall be deposited in accordance with state law.

Brokerage or Title/Escrow Company _____ Address _____

Received by: _____ on _____

(Signature above acknowledges receipt of Earnest Money) (Date)

OFFER TO PURCHASE

1. PROPERTY (General Description): 4,353 Square Foot Commercial Property

Address 55 West Main Street City Lehi

County UT State of Utah, ZIP 84043

County Tax I.D. # 01:027:0009 (the *"Property"*)

For a legal description **(Check Applicable Box):** ☐ **SEE ADDENDUM #** _____ ☐ **COMMITMENT FOR TITLE INSURANCE** as provided in Section 7(b).

1.1 INCLUDED ITEMS: Unless excluded herein, this sale includes all fixtures presently attached to the *Property*. The following personal property shall also be included in this sale and conveyed under separate *Bill of Sale* with warranties as to title:

_____

1.2 Excluded Items. These items are excluded from this sale:

_____

2. PURCHASE PRICE The Purchase Price for the *Property* is $900,000

The Purchase Price will be paid as follows:

$25,000.00 **(a) *Earnest Money Deposit.***

$_____ **(b) New Loan.** Buyer will apply for one or more of the following loans: ☐ **Conventional** ☐ **SBA** ☐ **Other** (specify) _____ Buyer shall have the right to approve the terms and conditions of the new loan as provided in *Section 8 (f)*.

$_____ **(c) Loan Assumption Addendum** (see attached *Assumption Addendum* if applicable)

$_____ **(d) Seller Financing** (see attached *Seller Financing Addendum* if applicable)

$_____ **(e) Other (specify)** _____

$875,000 **(f) Balance of Purchase Price in Cash at Settlement**

$900,000 **PURCHASE PRICE. Total of lines (a) through (f)**

3. SETTLEMENT AND CLOSING. Settlement shall take place on the Settlement Deadline referenced in *Section 24(c)*, or on a date upon which Buyer and Seller agree in writing. "Settlement" shall occur only when **all** of the following have been completed: (a) Buyer and Seller have signed and delivered to each other or to the escrow/closing office all documents required by this Contract, by the lender, by written escrow instructions or by applicable law; (b) any monies required to be paid by Buyer under these documents (except for the proceeds of any new loan) have been delivered by Buyer to Seller or to the escrow/closing office in the form of collected or cleared funds; and (c) any monies required to be paid by Seller under these documents have been delivered by Seller to Buyer or to the escrow/closing office in the form of collected or cleared funds. Seller and Buyer shall each

 Buyer's Initials [ ] Date 8/23/23 Seller's Initials [BT] Date 8/23/2023

pay one-half (½) of the fee charged by the escrow/closing office for its services in the settlement/closing process. Taxes and assessments for the current year, rents, and interest on assumed obligations shall be prorated at Settlement as set forth in this Section. Tenant deposits (including, but not limited to, security deposits and prepaid rents) shall be paid or credited by Seller to Buyer at Settlement. Prorations set forth in this Section shall be made as of the Settlement Deadline date referenced in *Section 24(c)*, unless otherwise agreed to in writing by the parties. Such writing could include the settlement statement. For purposes of this Contract, "Closing" means that: (i) Settlement has been completed; (ii) the proceeds of any new loan have been delivered by the lender to Seller or to the escrow/closing office; and (iii) the applicable Closing documents have been recorded in the office of the county recorder.

4. POSSESSION. Seller shall deliver physical possession to Buyer within: ☑ 6 **HOURS AFTER CLOSING;** ☐ _____ **DAYS AFTER CLOSING;** ☐ **OTHER (SPECIFY)** _____
Any rental of the *Property* prior to or after Closing, between Buyer and Seller, shall be by separate written agreement.

5. CONFIRMATION OF BROKERAGE FEES & AGENCY DISCLOSURE. Buyer and Seller acknowledge prior receipt of written agency disclosure provided by their respective Buyer's Agent or Seller's Agent that has disclosed the agency relationships that are confirmed below. Buyer and Seller further acknowledge that Brokerage Fees due as a result of this transaction are being paid based upon the terms of a separate written agreement. At the signing of this Contract:

Seller's Agent, Spencer Croshaw represents ☑ **Seller** ☐ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Seller's Brokerage, Colliers represents ☐ **Seller** ☐ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Buyer's Agent, W Marlin Eldred represents ☐ **Seller** ☑ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**
Buyer's Brokerage, Equity Solid Real Estate represents ☐ **Seller** ☑ **Buyer** ☐ **both Buyer and Seller as a Limited Agent;**

6. TITLE TO PROPERTY & TITLE INSURANCE.
(a) Seller represents that Seller has fee simple title to the Property and will convey good and marketable title to Buyer at Closing by: ☐ **GENERAL WARRANTY DEED** ☑ **SPECIAL WARRANTY DEED**, free of financial encumbrances except as provided under *Section 10.1.*
(b) At Settlement, Seller agrees to pay for a standard-coverage owner's policy of title insurance insuring Buyer in the amount of the Purchase Price. The title policy shall conform with Seller's obligations under *Section 10.1* and with the *Commitment for Title Insurance* as agreed to by Buyer under *Section 8.*
(c) ☐ **BUYER ELECTS TO OBTAIN A FULL-COVERAGE EXTENDED ALTA POLICY OF TITLE INSURANCE.** The cost of this coverage (including the ALTA survey), above that of the standard-coverage Owner's policy, shall be paid for at Settlement by: ☐ **BUYER** ☐ **SELLER** ☐ **OTHER** _____.

7. SELLER DISCLOSURES. No later than the Seller Disclosure Deadline referenced in *Section 24(a)*, Seller shall provide to Buyer the following documents which are collectively referred to as the "Seller Disclosures":
(a) a Seller property condition disclosure for the *Property*, signed and dated by Seller;
(b) a *Commitment for Title Insurance* on the *Property*;
(c) a copy of all leases and rental agreements now in effect with regard to the *Property* together with a current rent roll;
(d) operating statements of the Property for its last 2 full fiscal years of operation plus the current fiscal year through July 1, 2023 certified by the Seller or by an independent auditor;
(e) copies in Seller's possession, if any, of any studies and/or reports which have previously been done on the *Property*, including without limitation, environmental reports, soils studies, site plans and surveys;
(f) written notice of any claims and/or conditions known to Seller relating to environmental problems and building or zoning code violations; and
(g) Other (specify) Current Tenant Lease Agreements, past 5 years maintenance records

8. BUYER'S RIGHT TO CANCEL BASED ON BUYER'S DUE DILIGENCE. Buyer's obligation to purchase under this Contract (**check applicable boxes**):
(a) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of the content of all the *Seller Disclosures* referenced in *Section 7*;
(b) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of a physical condition inspection of the *Property*;
(c) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of a survey of the *Property* by a licensed surveyor ("Survey");
(d) ☐ **IS** ☑ **IS NOT** conditioned upon Buyer's approval of applicable federal, state and local governmental laws, ordinances and regulations affecting the *Property*; and any applicable deed restrictions and/or CC&R's (covenants, conditions and restrictions) affecting the *Property*;

 Buyer's Initials [illegible] Date _____ Seller's Initials DS BT Date 8/23/2023

(e) ☑ IS ☐ IS NOT conditioned upon the *Property* appraising for not less than the Purchase Price.
(f) ☐ IS ☑ IS NOT conditioned upon Buyer's approval of the terms and conditions of any mortgage financing referenced in *Section 2*.
(g) ☐ IS ☐ IS NOT conditioned upon Buyer's approval of the following tests and evaluations of the *Property*: (specify)

_____

If any of the items *8(a) through 8(g)* are checked in the affirmative, then *Sections 8.1, 8.2, 8.3 and 8.4* apply; otherwise, they do not apply. The items checked in the affirmative above are collectively referred to as "Buyer's Due Diligence." Unless otherwise provided in this Contract, the Buyer's Due Diligence shall be paid for by Buyer and shall be conducted by individuals or entities of Buyer's choice. Buyer shall conduct Buyer's Due Diligence in such manner as not to unreasonably disrupt the activities and business of Seller, and shall indemnify Seller and hold Seller harmless from and against any and all liability, claim, or damages which arise from, is caused by, or is in any manner connected with Buyer's Due Diligence, including without limitation, claims for payment for inspection services, claims for mechanics liens, and physical damage to the Property. Seller agrees to cooperate with Buyer's Due Diligence and with a site inspection under *Section 11*.

8.1 Due Diligence Deadline. No later than the Due Diligence Deadline referenced in *Section 24(b)* Buyer shall: (a) complete all of Buyer's Due Diligence; and (b) determine if the results of the Buyer's Due Diligence are acceptable to Buyer.

8.2 Right to Cancel or Object. If Buyer, in Buyer's sole discretion, determines that the results of the Buyer's Due Diligence are unacceptable, Buyer may, no later than the Due Diligence Deadline, either: (a) cancel this Contract by providing written notice to Seller, whereupon the Earnest Money Deposit shall be released to Buyer; or (b) provide Seller with written notice of objections.

8.3 Failure to Respond. If by the expiration of the Due Diligence Deadline, Buyer does not: (a) cancel this Contract as provided in *Section 8.2*; or (b) deliver a written objection to Seller regarding the Buyer's Due Diligence, the results of the Buyer's Due Diligence shall be deemed approved by Buyer; and the contingencies referenced in *Sections 8(a) through 8(g)*, including but not limited to, any financing contingency, shall be deemed waived by Buyer.

8.4 Response by Seller. If Buyer provides written objections to Seller, Buyer and Seller shall have 5 **CALENDAR DAYS** after Seller's receipt of Buyer's objections (the "Response Period") in which to agree in writing upon the manner of resolving Buyer's objections. Except as provided in *Section 10*, Seller may, but shall not be required to, resolve Buyer's objections. If Buyer and Seller have not agreed in writing upon the manner of resolving Buyer's objections, Buyer may cancel this Contract by providing written notice to Seller no later than **THREE CALENDAR DAYS** after expiration of the *Response Period*; whereupon the *Earnest Money Deposit* shall be released to Buyer. If this Contract is not canceled by Buyer under this *Section 8.4*, Buyer's objections shall be deemed waived by Buyer. This waiver shall not affect those items warranted in *Section 10*.

9. ADDITIONAL TERMS. There ☑ **ARE** ☐ **ARE NOT** addenda to this Contract containing additional terms. If there are, the terms of the following addenda are incorporated into this Contract by this reference: ☑ **Addendum No.** 1
☐ **Seller Financing Addendum** ☐ **Assumption Addendum** ☑ **Lead-Based Paint Disclosure & Acknowledgement**
☐ **Other (specify):** _____

10. SELLER'S WARRANTIES & REPRESENTATIONS.

10.1 Condition of Title. Buyer agrees to accept title to the *Property* subject to the contents of the *Commitment for Title Insurance* as agreed to by Buyer under *Section 8*. Buyer also agrees to take the *Property* subject to existing leases affecting the *Property* and not expiring prior to Closing. Buyer agrees to be responsible for taxes, assessments, association fees and dues, utilities, and other services provided to the *Property* after Closing. Except for any loan(s) specifically assumed by Buyer under *Section 2*, Seller will cause to be paid off by Closing all mortgages, trust deeds, judgments, mechanic's liens, tax liens and warrants. Seller will cause all assessments to be paid current by Closing.

10.2 Condition of Property. Seller warrants that **ON THE DATE SELLER DELIVERS PHYSICAL POSSESSION TO BUYER**, the *Property* and improvements will be broom-clean and free of debris and personal belongings, and in the same general condition as they were on the date of *Acceptance*.

10.3 Other Seller Warranties. Seller further warrants that, to the best of Seller's knowledge, each of the following statements is true: (a) the consummation of the transactions contemplated by this Contract will not constitute a default or result in the breach of any term or provision of any contract or agreement to which Seller is a party so as to adversely affect the consummation of such transactions; (b) there is no action, suit, legal proceeding or other proceeding pending or threatened against Seller and/or the *Property* which may adversely affect the transactions contemplated by this Contract, in any court or before any arbitrator of any kind or before or by any governmental body which may adversely affect the transactions contemplated by this Contract; (c) all work which will be performed in, on or about the *Property* or materials furnished thereto which might in any circumstances give rise to a mechanic's or materialman's lien, will be paid and all necessary waivers of rights to a mechanic's or materialman's lien for such work will be obtained; (d) Seller has not received any written notice indicating that the *Property* is in violation of any Federal, State or local Environmental Law; (e) there are no Hazardous Substances on, under, or about the *Property*, nor has Seller undertaken, permitted, authorized or suffered, and will not undertake, permit, authorize or suffer the presence, use, manufacture, handling, generation, storage, treatment, discharge, release, burial or disposal on, under or about the *Property*, of any Hazadous Substances, or the transportation to or from the *Property*, of any Hazardous Substances. As used herein, "Hazardous Substance" shall mean any substance, material or matter that may give rise to liability under any Federal, State, or local Environmental Laws; and (f) Seller is not a "foreign person" as that term is defined in Section 1445 of the U.S. Internal

 Buyer's Initials [illegible] Date 8/23/23 Seller's Initials BT Date 8/23/2023

Revenue Code of 1986, as amended. (In that regard, Seller shall deposit into Escrow, at or prior to Closing, an affidavit in such form as may be required by the U.S. Internal Revenue Service, setting forth Seller's full name, address and taxpayer identification number and stating under penalty of perjury that Seller is not a "foreign person" as so defined).

11. FINAL PRE-CLOSING INSPECTION. Before Settlement, Buyer may, upon reasonable notice and at a reasonable time, conduct a final pre-closing inspection of the *Property* to determine **only** that the *Property* is "as represented," meaning that the items referenced in *Sections 1.1, 8.4 and 10.2 and 10.3* ("the items") are respectively present, repaired/changed as agreed, and in the warranted condition. If the items are not as represented, Seller will, prior to Settlement, replace, correct or repair the items or, with the consent of Buyer (and Lender if applicable), escrow an amount at Settlement to provide for the same. The failure to conduct a final pre-closing inspection or to claim that an item is not as represented, shall not constitute a waiver by Buyer of the right to receive, on the date of possession, the items as represented.

12. CHANGES DURING TRANSACTION. Seller agrees that from the date of Acceptance until the date of Closing, Seller shall not, without the prior written consent of Buyer: (a) make any changes in any existing leases; (b) enter into any new leases; (c) make any substantial alterations or improvements to the *Property*; or (d) incur any further financial encumbrances against the *Property*.

13. AUTHORITY OF SIGNERS. If Buyer or Seller is a corporation, partnership, trust, estate, limited liability company or other entity, the person executing this Contract on its behalf warrants his or her authority to do so and to bind Buyer and Seller. Seller further warrants that the execution and delivery of this Contract by Seller have been duly and validly authorized, and all requisite action has been taken to make this Contract binding upon Seller.

14. COMPLETE CONTRACT/ASSIGNMENT. This Contract together with its addenda, any attached exhibits, and Seller Disclosures, constitutes the entire Contract between the parties and supersedes and replaces any and all prior negotiations, representations, warranties, understandings or contracts between the parties. This Contract cannot be changed except by written agreement of the parties. This Contract ☐ **SHALL** ☑ **SHALL NOT** be assignable by Buyer. Except as so restricted, this Contract shall inure to the benefit of and be binding upon the heirs, personal representatives, successors and assigns of the parties.

15. MEDIATION. Any dispute relating to this Contract that arise prior to or after Closing:
☑ **SHALL**
☐ **MAY AT THE OPTION OF THE PARTIES**
first be submitted to mediation. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute informally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The parties will jointly appoint an acceptable mediator and will share equally in the cost of such mediation. The mediation, unless otherwise agreed, shall terminate in the event the entire dispute is not resolved **THIRTY (30) CALENDAR DAYS** from the date written notice requesting mediation is sent by one party to the other(s). If mediation fails, the other procedures and remedies available under this Contract shall apply. Nothing in this *Section 15* shall prohibit any party from seeking emergency equitable relief pending mediation.

16. DEFAULT. If Buyer defaults, Seller may elect either to retain the Earnest Money Deposit as liquidated damages, or to return it and sue Buyer to specifically enforce this Contract or pursue other remedies available at law. If Seller defaults, in addition to return of the Earnest Money Deposit, Buyer may elect either to accept from Seller a sum equal to the Earnest Money Deposit as liquidated damages, or may sue Seller to specifically enforce this Contract or pursue other remedies available at law.

17. ATTORNEY FEES AND COSTS. In the event of litigation or binding arbitration to enforce this Contract, the prevailing party shall be entitled to costs and reasonable attorney fees. However, attorney fees shall not be awarded for participation in mediation under *Section 15*.

18. NOTICES. Except as provided in *Section 23*, all notices required under this Contract must be: (a) in writing; (b) signed by the party giving notice; and (c) received by the other party or the other party's agent no later than the applicable date referenced in this Contract.

19. ABROGATION. Except for the provisions of *Sections 8.4, 10.1, 10.3, 15 and 17* and any other express warranties made in this Contract, the provisions of this Contract shall not apply after Closing.

20. RISK OF LOSS. All risk of loss to the *Property*, including physical damage or destruction to the *Property* or its improvements due to any cause except ordinary wear and tear and loss caused by a taking in eminent domain, shall be borne by Seller until Closing.

21. TIME IS OF THE ESSENCE. Time is of the essence regarding the dates set forth in this Contract. Extensions must be agreed to in writing by all parties. Unless otherwise explicitly stated in this Contract: (a) performance under each Section of this Contract

 Buyer's Initials [ ] Date 8/23/23 Seller's Initials [BT] (DS) Date 8/23/2023

which references a date shall absolutely be required by 5:00 PM Mountain Time on the stated date; and (b) the term "days" shall mean calendar days and shall be counted beginning on the day following the event which triggers the timing requirement (i.e., Acceptance, etc.). If the performance date falls on a Saturday, Sunday, State or Federal legal holiday, performance shall be required on the next business day. Performance dates and times referenced herein shall not be binding upon title companies, lenders, appraisers and others not parties to this Contract, except as otherwise agreed to in writing by such non-party.

22. FAX TRANSMISSION AND COUNTERPARTS. Facsimile (fax) transmission of a signed copy of this Contract, any addenda and counteroffers, and the retransmission of any signed fax shall be the same as delivery of an original. This Contract and any addenda and counteroffers may be executed in counterparts.

23. ACCEPTANCE. "Acceptance" occurs when Seller or Buyer, responding to an offer or counteroffer of the other: (a) signs the offer or counteroffer where noted to indicate acceptance; and (b) communicates to the other party or to the other party's agent that the offer or counteroffer has been signed as required.

24. CONTRACT DEADLINES. Buyer and Seller agree that the following deadlines shall apply to this Contract:

(a) Seller Disclosure Deadline	09/01/2023	(Date)
(b) Due Diligence Deadline	09/14/2023	(Date)
(c) Settlement Deadline	09/29/2023	(Date)

Buyer's Initials [ ] Date 8/23/23 Seller's Initials DS [BT] Date 8/23/2023

25. OFFER AND TIME FOR ACCEPTANCE. Buyer offers to purchase the *Property* on the above terms and conditions. If Seller does not accept this offer by: 5:00pm Mountain Time on 08/25/2023 (Date), this offer shall lapse; and the Brokerage or Title/Escrow Company shall return the *Earnest Money Deposit* to Buyer.

(Buyer's Signature)	(Title, if any)	(Date)	(Buyer's Signature)	(Title, if any)	(Date)
Mark Johnson	Mayor	8/23/23			

(Buyers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)
Mark Johnson	153 N 100 E Lehi, 84043-1852		8017198234	
(Buyers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

☐ **ACCEPTANCE OF OFFER TO PURCHASE:** Seller Accepts the foregoing offer on the terms and conditions specified above.

☒ **COUNTEROFFER:** Seller presents for Buyer's Acceptance the terms of Buyer's offer subject to the exceptions or modifications as specified in the attached ADDENDUM NO. 2

DocuSigned by:

(Seller's Signature)	(Date)	(Time)	(Seller's Signature)	(Date)	(Time)
Ben Torgerson SCE09803A352465...	8/23/2023				

(Sellers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)
Faye Torgerson	1526 W. Gordan Creek Rd, Price, UT 84501		801-702-4689	
(Sellers' Names) **(PLEASE PRINT)**	(Address)	(Zip Code)	(Phone)	(Fax)

☐ **REJECTION:** Seller Rejects the foregoing offer.

(Seller's Signature)	(Date)	(Time)	(Seller's Signature)	(Date)	(Time)

****

DOCUMENT RECEIPT

State law requires Broker to furnish Buyer and Seller with copies of this Contract bearing all signatures. (Fill in applicable section below.)

A. I acknowledge receipt of a final copy of the foregoing Contract bearing all signatures:

(Buyer's Signature)	(Date)	(Buyer's Signature)	(Date)

(Seller's Signature)	(Date)	(Seller's Signature)	(Date)

B. I personally caused a final copy of the foregoing Contract bearing all signatures to be ☐ **faxed** ☐ **mailed** ☐ **hand delivered** on _____, postage prepaid, to the ☐ **Seller** ☐ **Buyer.**

Sent/Delivered by (specify) _____

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UAR FORM 3

Buyer's Initials MJ Date 8/23/23 Seller's Initials DS BT Date 8/23/2023

DocuSign Envelope ID: 1FA41E4A-DA7E-446D-9880-F02D3E925378

ADDENDUM NO. 1
TO
REAL ESTATE PURCHASE CONTRACT

THIS IS AN [☑] ADDENDUM [☐] COUNTEROFFER to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of 08/22/2023, including all prior addenda and counteroffers, between Mark Johnson as Buyer, and Faye Torgerson as Seller, regarding the Property located at 55 West Main Street, Lehi, UT 84043. The following terms are hereby incorporated as part of the REPC:

Buyer will pay for an appraisal of the property through a licensed appraiser. Buyer will pay appraised value or $900,000 offer price whichever is the lesser amount. Seller shall have the option to obtain or provide an appraisal from a licensed appraiser within 30 days before or after of the offer date. If the two appraisals are different the appraisals will be added together and divided by 2 to come up with a blended appraisal. The blended appraisal or $900,000 offer price whichever is lower will become the settlement price or purchase price.

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other terms of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. [☒] **Seller** [☐] **Buyer** shall have until 5:00 [☐] **AM** [☒] **PM** Mountain Time on 8/25/2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

M Johnson 8/22/23 11:17 AM	
[☒] Buyer [☐] Seller Signature (Date) (Time)	[☐] Buyer [☐] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[☐] **ACCEPTANCE:** ☐ **Seller** ☐ **Buyer** hereby accepts the terms of this ADDENDUM.

[☒] **COUNTEROFFER:** [☒] **Seller** [☐] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. 2.

DocuSigned by: Ben Torgerson 5CE09863A552465... 8/23/2023	
(Signature) (Date) (Time)	(Signature) (Date) (Time)

☐ **REJECTION:** ☐ **Seller** ☐ **Buyer** rejects the foregoing ADDENDUM.

(Signature) (Date) (Time)	(Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL, EFFECTIVE JANUARY 1, 2020. IT REPLACES AND SUPERSEDES ALL PREVIOUSLY APPROVED VERSIONS OF THIS FORM.

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ADDENDUM NO. 2

TO

REAL ESTATE PURCHASE CONTRACT

THIS IS AN [ ] **ADDENDUM** [x] **COUNTEROFFER** to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of August 22, 2023 including all prior addenda and counteroffers, between Mark Johnson as Buyer, and Faye Torgerson as Seller, regarding the Property located at 55 West Main Street Lehi, Utah. The following terms are hereby incorporated as part of the REPC.

1. Purchase price shall be $950,000.00
2. Terms of addendum 1 shall not apply. Buyer has the right to order an appraisal but the value provided by the appraisal shall not impact the purchase price.
3. Seller Disclosure Deadline shall be 10 days following contract acceptance.
4. Due Diligence Deadline shall be 30 days following contract acceptance.
5. Settlement Deadline shall be 45 days following contract acceptance.
6. Seller is BT Rentals LLC

BUYER AND SELLER AGREE THAT THE CONTRACT DEADLINES REFERENCED IN SECTION 24 OF THE REPC (CHECK APPLICABLE BOX): [ ] REMAIN UNCHANGED [x] ARE CHANGED AS FOLLOWS: See Above

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other items of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. [ ] **Seller** [x] **Buyer** shall have until 5 : 00 [ ] **AM** [x] **PM** Mountain time on August 28, 2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

DocuSigned by:
Ben Torgerson 8/23/2023
5CE09863A552465...

[ ] Buyer [x] Seller Signature (Date) (Time) [ ] Buyer [ ] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[ ] **ACCEPTANCE**: [ ] **Seller** [ ] **Buyer** hereby accepts the terms of this ADDENDUM

[✓] **COUNTEROFFER:** [ ] **Seller** [✓] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. 3

M Johnson 8/30/23 3:53pm

(Signature) (Date) (Time) (Signature) (Date) (Time)

[ ] **REJECTION**: [ ] **Seller** [ ] **Buyer** rejects the foregoing ADDENDUM

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DocuSign Envelope ID: 1FA41E4A-DA7E-446D-9880-F02D3E925378

(Signature) (Date) (Time) (Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL.

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ADDENDUM NO. 3
TO
REAL ESTATE PURCHASE CONTRACT

THIS IS AN [ ] ADDENDUM [☑] COUNTEROFFER to that REAL ESTATE PURCHASE CONTRACT (the "REPC") with an Offer Reference Date of 08/22/2023, including all prior addenda and counteroffers, between Lehi City Corporation as Buyer, and BT Rentals LLC as Seller, regarding the Property located at 55 West Main Street, Lehi, UT 84043. The following terms are hereby incorporated as part of the REPC:

1. Purchase price shall be $910,000.
2. Terms of addendum 1 shall not apply. Buyer has right to order an appraisal but the value provided shall not impact the purchase price.
3. Buyer Agent shall/will not collect commission on sale/purchase of the property.
4. Seller Disclosure Deadline shall be 10 days following contract acceptance.
5. Due Diligence Deadline shall be 30 days following contract acceptance.
6. Settlement Deadline shall be 45 days following contract acceptance.
7. Extend Addendum 2 Acceptance/Counter Offer/Rejection to no later than Aug 30th, 2023 at 5:00pm.

To the extent the terms of this ADDENDUM modify or conflict with any provisions of the REPC, including all prior addenda and counteroffers, these terms shall control. All other terms of the REPC, including all prior addenda and counteroffers, not modified by this ADDENDUM shall remain the same. **[☑] Seller [ ] Buyer** shall have until 5:00 **[ ] AM [☑] PM** Mountain Time on 09/04/2023 (Date), to accept the terms of this ADDENDUM in accordance with the provisions of Section 23 of the REPC. Unless so accepted, the offer as set forth in this ADDENDUM shall lapse.

[☑] Buyer [ ] Seller Signature (Date) (Time)	[ ] Buyer [ ] Seller Signature (Date) (Time)

ACCEPTANCE/COUNTEROFFER/REJECTION

CHECK ONE:

[☒] ACCEPTANCE: [☒] **Seller** [ ] **Buyer** hereby accepts the terms of this ADDENDUM.

[ ] COUNTEROFFER: [ ] **Seller** [ ] **Buyer** presents as a counteroffer the terms of attached ADDENDUM NO. ____.

DocuSigned by: Ben Torgerson 5CE09863A552465... 8/30/2023 (Signature) (Date) (Time)	(Signature) (Date) (Time)

[ ] REJECTION: [ ] **Seller** [ ] **Buyer** rejects the foregoing ADDENDUM.

(Signature) (Date) (Time)	(Signature) (Date) (Time)

THIS FORM APPROVED BY THE UTAH REAL ESTATE COMMISSION AND THE OFFICE OF THE UTAH ATTORNEY GENERAL, EFFECTIVE JANUARY 1, 2020. IT REPLACES AND SUPERSEDES ALL PREVIOUSLY APPROVED VERSIONS OF THIS FORM.