



TOWN GRAY
PLANNING BOARD
AGENDA • FEBRUARY 11, 2021

Planning Board

Online Via Microsoft Teams

7:00 PM

Regular Meeting

Link Posted to graymaine.org Day of Meeting

I. MEETING COMMENCES

Roll Call

II. MINUTES APPROVAL

- a. Planning Board - Regular Meeting - January 14, 2021 7:00 PM

III. INFORMATION EXCHANGE

- a. Comprehensive Plan Implementation Discussion
- b. Hannaford Site Plan Amendment Proposal

IV. PUBLIC HEARINGS

- a. Verrill Farm Open Space Subdivision

A request by Ambrosia RE & Investment LLC for Preliminary Plan Review for a proposed 14-lot Open Space Subdivision located on a parcel currently owned by Ernest Verrill & Linda Pelletier at 194 +/- Shaker Road as shown on Tax Map 20, Lot 15-29 in the Rural Residential & Agricultural and Stream Protection (Shoreland) Zoning Districts.

- b. West Gray Road Change of Use

A request by All Things Green LLC, for an Amendment to Site Plan/Change of Use to allow for a Headquarters for a Contracting Business (landscaping) currently being utilized as a church/assembly, located at 151 W. Gray Road as shown on Tax Map 50, Lot 23-1 in a Rural, Residential & Agricultural and Limited Residential (Shoreland) Zoning District.

- c. Woodcock Road Open Space Subdivision

A request by Birch Point Properties, LLC & A.H. Grover, Inc. for Preliminary Plan Review for a proposed subdivision (Stillwater Pines) consisting of 14 open space subdivision lots on 68 +/- acres on Woodcock Drive off Yarmouth Road as shown on Tax Map 44, Lot 32-112 located in a Medium Density Zoning District.

- d. West Gray Road Child Care Expansion

A request by Chase Custom Homes & Finance, Inc for an Amendment to a previously approved Site Plan for an expansion to the existing day care center, located at 322 West Gray Road as shown on Tax Map 56, lot 17-12-in the Rural Residential & Agricultural and Resource Protection (Shoreland) Zoning Districts.

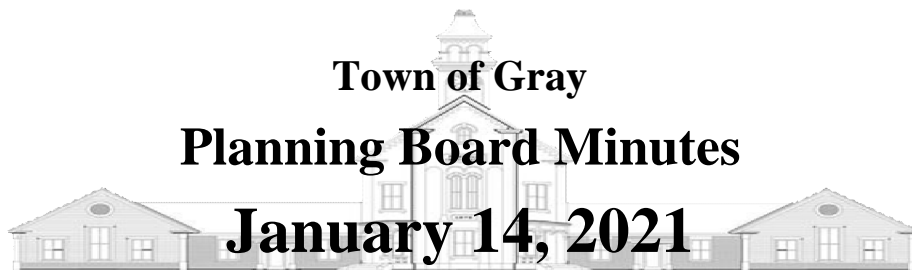
e. Village Center Pocket Park

A request by the Town of Gray for Site Plan Review for improvements to create a public pocket park to be located at 5 Yarmouth Road, Tax Map 43, Lot 405-23 in a Village Center Proper Zoning District.

V. ADJOURNMENT

TABLED ITEMS

** The Town of Gray is an equal opportunity employer and complies with all applicable equal access to public accommodations law. If you are planning to attend a Town Council or Town committee or board meeting and need assistance with a physical disability, please contact the Town Manager's office at least 48 hours in advance of the meeting to have the Town assist you. 657-3339. TTY 657-3931.*



Town of Gray
Planning Board Minutes
January 14, 2021

Regular Meeting

Henry Pennell Municipal Complex

7:00 PM

24 Main Street, Gray, ME 04039

I. MEETING COMMENCED

This meeting was held online. Charlie Abrams had technical difficulties and wasn't able to participate.

Attendee Name	Title	Status	Arrived
Dan Cobb	Vice Chair	Present	
Peter Gellerson	Board Member	Present	
Don Hutchings	Chair	Present	
Charlie Abrams	Board Member	Excused	
Joseph Caminiti	Board Member	Excused	
Catherine Caswell	Alternate	Present	
Andrew Watson	Alternate	Present	
Dan Maguire	Liaison	Present	
Kathy Tombarelli	Town Planner	Present	

Motion to appoint Catherine Caswell and Andrew Watson as voting members for this meeting.

<p>RESULT: MOVER: SECONDER: AYES:</p>	<p>APPROVED [UNANIMOUS] Peter Gellerson, Board Member Dan Cobb, Vice Chair Cobb, Gellerson, Hutchings</p>
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II. MINUTES APPROVAL

1. Planning Board Minutes - Regular Meeting – November 12, 2020

<p>RESULT: MOVER: SECONDER: AYES:</p>	<p>APPROVED AS AMENDED [UNANIMOUS] Dan Cobb, Vice Chair Peter Gellerson, Board Member Cobb, Gellerson, Hutchings, Caswell, Watson</p>
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Peter Gellerson requested a correction to a phrase on page 2, ‘if it is a utility easement or not’. Kathy Tombarelli suggested it be changed to “if there is also an existing utility easement”.

Dan Maguire, Town Council Liaison, called a Point of Order. He suggested that Board Member names be called out during the votes, so the permanent record is clear.

III. BOARD BUSINESS

a. 2021 Election of Chair & Vice-Chair

Don Hutchings asked for nominations for Vice Chair. Dan Cobb indicated he would be happy to continue in that role if the board agreed. Peter Gellerson nominated Dan Cobb for Vice Chair. Catherine Caswell moved to close the nominations for Vice Chair.

Motion to close nominations for Vice Chair and approve Dan Cobb as Vice Chair.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Catherine Caswell, Board Member
AYES:	Cobb, Gellerson, Hutchings, Caswell, Watson

Don Hutchings requested nominations for Chair. Dan Cobb nominated Don Hutchings. There were no other nominations. Dan Cobb moved to close the nominations for Chair.

Motion to close nominations for Chair and approve Don Hutchings as Chair.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Dan Cobb, Vice Chair
AYES:	Cobb, Gellerson, Hutchings, Caswell, Watson

IV. INFORMATION EXCHANGE

a. Commercial Solar Energy Project Plan Change

Kathy Tombarelli explained there was a dispute regarding the easement and ISM Solar reached out to DOT to work on an alternate plan for the utilities. She had provided letters to the Planning Board regarding this matter, including one from Attorney Natalie Burns who indicated it was a de minimis change, to which the Code Enforcement Officer also agreed it was a de minimis change.

Dan Cobb expressed concerns with the proposed change regarding seven above ground utility poles to be placed along the Maine Wildlife Parkway (26A). He stated it is a great project to which he is in favor of, but he does not agree with this change (which he does not consider to be de minimis). He does not agree that seven poles should be placed along the Parkway. He prefers they place the utilities underground or

move the location to elsewhere on the parcel. He stated he would have required these to be underground if the possibility of the utilities along the Parkway had been discussed when they reviewed this previously. He feels the aesthetics along the Parkway are important, are representative of the town, and he wants to keep that as is.

Jean Friend, representative of ISM Solar, stated that there would have to be two or three poles above ground that CMP owns, then the rest of the poles would run down along the agricultural fence.

Peter Gellerson agreed with Dan Cobb and asked that ISM Solar go back to DOT to discuss underground options. Town Council Liaison Dan Maguire commented via chat and would also like them to be underground.

Jean Friend will take these concerns back to his team and discuss the possibility to run the utilities underground. Don Hutchings asked Mr. Friend to be in contact with Kathy Tombarelli when he has more information.

V. PUBLIC HEARINGS

a. Chapter 402 Ordinance Revisions - Farmers' Market Proposed amendments to the Town of Gray Zoning Ordinance (Chapter 402) to add Farmers' Market as a new Use and the associated standards.

Kathy Tombarelli explained that the Farmer's Market was allowed to operate while this ordinance was being worked on. The goal was to have standards in place in reference to the scale of the market, differentiating between a farmer's market/flea market, and also so there would be protections for abutters. She said it has been well vetted and the first reading took place at the January 5, 2021 meeting of the Town Council.

Mr. Gellerson said it is thorough and he is in favor of it. Mr. Cobb said it is a good thing. He hopes the regulations to be put in place are the least restrictive, so it is not over regulated. He wants to make it easy while still safe and reasonable. Ms. Caswell agreed with Mr. Cobb and asked how this was developed. Dan Maguire, Town Council Liaison, explained the intent of the Town Council was to have minimum rules, not a lot of requirements. Kathy Tombarelli explained she wrote it and Farmer's Markets are to be licensed by the Code Enforcement Officer and abutters will be notified. Mr. Watson said this is a great direction for the town.

Kathy Tombarelli explained this is a public hearing for comments, no vote is necessary. It is scheduled for a second reading at an upcoming Town Council meeting. There were no public comments. Public hearing was closed by Chair Hutchings at 7:31p.m.

b. Verrill Farm Open Space Subdivision

A request by Ambrosia RE & Investment LLC for Preliminary Plan Review for a proposed 14-lot Open Space Subdivision located on a parcel currently owned by Ernest Verrill & Linda Pelletier at 194 +/- Shaker Road as shown on Tax Map 20, Lot 15-29 in the Rural Residential & Agricultural and Stream Protection (Shoreland) Zoning Districts.

JP Connolly, Sr. Project Engineer of DM Roma, representing Paul Hollis of Ambrosia Development, explained a 14-lot subdivision is proposed off Shaker Road. The project site is just under 29 acres. They are requesting two waivers, one for the hydrogeologic assessment, and one for the minimum buildable lot area for a specific lot.

Kathy Tombarelli explained that Gorrill-Palmer did not express concerns with the waiver request of the hydrogeologic assessment, so she is supportive with that. She is supportive of the waiver for buildable area with the caveat that the engineer will provide more details on those two lots prior to final sign off. She suggested it could be granted conditionally with other information to follow, including information from a review by Gorrill-Palmer.

Peter Gellerson expressed concern with applicants asking for waivers. Dan Cobb agreed. However, Mr. Cobb felt the waiver request was reasonable for this type of project. Mr. Watson said he would like more information about the study. Ms. Caswell said she was in support since Gorrill-Palmer was supportive on the first waiver. Mr. Hutchings said it did not seem like there were issues with this waiver request.

Motion to grant the request by Ambrosia RE & Investment LLC for the waiver of the Hydrogeologic Assessment form the required submittals – 401.7.4.B per Gorrill-Palmer and staff recommendations.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Dan Cobb, Vice Chair
SECONDER:	Catherine Caswell, Board Member
AYES:	Cobb, Gellerson, Hutchings, Caswell, Watson

The second waiver request was discussed. Peter Gellerson did not like it and said there would be ramifications later down the road about whether the building envelope will be functional. Kathy Tombarelli explained she had placed a proposed condition to the second waiver in her draft motion in the Planner’s Memo and that the developers would have to go back to the drawing board if significant changes need to be made to the subdivision plan. Mr. Cobb said he was in favor of the conditional approval for the reasons Ms. Tombarelli stated. He also had concerns about the open space and would like resolution.

JP Connolly said they would be ok with the conditional approval of the second waiver with DEP and Gorrill-Palmer review necessary prior to final approval.

Sandy Carder, Gray resident, commented that people from the public were present during this virtual meeting, but they did not get noticed for the discussion. She was glad there would be conditions and planned to have comments later in the public hearing.

There were no other public comments.

Motion to grant the request by Ambrosia RE & Investment LLC for the waiver of the Residential Open Space Subdivision Standards Table Minimum Buildable Land Area for each individually owned lot – 30K – Table 401.13.13.B to allow for a reduction in the buildable area with the following condition:

- 1. Lot Development Plan to be submitted for lots 11 & 12 showing a detailed layout including driveway location, house/garage, the stormwater management facilities located at the rear of the lots and grading plan to be reviewed and approved by the Town’s consulting engineer.**

APPROVED [4-1]

Dan Cobb, Vice Chair

Catherine Caswell, Board Member

Cobb, Hutchings, Caswell, Watson

Peter Gellerson

MOVER:

SECONDER:

AYES:

NAY:

The Planning Board then proceeded to consider these Discussion Items from the Planner’s Memo.

Discussion Items

1. Requested Density Bonuses

- 10% for Public Water – Staff is supportive of this density bonus since public water is not required for this site and it is being provided for 12 of the 14 lots.

A plan note will be required on the face of the SD plan noting that lots 13 & 14 will be served by private wells and sprinklers are required meeting NFPA & Gray Fire Rescue Standards.

- 5% for additional Open Space beyond what is required in Table 401.13.13.B.1 – Staff is supportive of the density bonus. The plan provides 10% beyond what is required which meets the eligibility for a 5% bonus.
- 5% for Internal Trail System – the staff is supportive of this waiver with the following caveat-due to the nature of the site, staff agrees that the open agrarian nature of the site should be respected. However, a detailed plan of the proposed trail markers, trail head, parking area, etc.
- These density bonuses can be cumulative up to the maximum gross density of the parcel. The calculation is as follows:

Gross Density: 14 lots.

Net Residential Density: after deducts wetlands/soils/steep slopes = 12 lots.

Allowed density: with 15% cumulative density bonus = 14 lots.

2. **Sufficient Water** – I have received a letter from Gray Water District indicating the ability to serve for domestic supply – more evaluation may be needed prior to final for fire suppression purposes. The two back lots will be served by private wells and will be required to be sprinkled meeting NFPA and Gray Fire Rescue standards.
3. **Landscape Plan/Buffering of Adjacent Properties** – Open Space SD requires a 30 foot no disturb perimeter buffer – a detailed landscape plan in perimeter buffer along lots 9-12. There is either no existing buffer or the buffer will be disturbed as a result of stormwater plan.
4. **Farmland** – the property is currently in Farmland. The penalty for removing it must be paid prior to any building permits being issued.
5. **Phasing of Development and timing of improvements** – The applicant proposes to Phase the development and utilize the Conditional Agreement found in 401.11.1.C which allows the developer to post performance guarantees for each Phase with a restriction of lot sales in subsequent phases until sufficient performance guarantees are received.

Which components of the subdivision will be included in Phase I? Neighborhood Playground? Trail?

6. **Road Standard (and Pedestrian Amenities)** – Applicant is proposing to exceed the required Rural Public Easement street standard by increasing the width and adding a 4' paved shoulder for pedestrian mobility – see road detail on sheets 4, 5 & 6 of plan set. Sidewalks are not required for Rural Public Easement streets or in Open Space Subdivisions (unless triggered by number of dwelling units/street standard).

The Planning Board discussed the requested density bonuses. Kathy Tombarelli stated she had a letter from the Gray Water District. Original letter stated there was enough water for drinking water but there were concerns about fire suppression. The Fire Chief reviewed the hydrants locations and found them appropriate. A subsequent letter came from GWD stating sufficient water.

Catherine Caswell said since they were not required to bring in public water, they qualify for the 10% bonus. Dan Cobb asked why it is requested if they would automatically qualify under the circumstances. Ms. Tombarelli read the ordinance regarding how the Planning Board shall approve if the project meets one or more of the criteria. Mr. Cobb then explained that if the Board finds it meets criteria, they must approve, it is not at their discretion.

The Board discussed how the public water would be serving only 12 of the 14 lots. Mr. Cobb asked JP Connolly if it would be feasible to cross the brook with public water. Mr. Connolly explained there was no underground mechanism for water and Mr. Cobb asked about running the water main along the bridge. Mr. Connolly indicated it could freeze or break. He said wells will work for the two back lots.

The Board then discussed Open Space. They discussed the proposed trail system location, design, and possible surface improvements. Mr. Cobb expressed that if they are granting an economic density bonus/benefit, they would want it to look like a real trail, not just a field path. He would want to see an investment in a trail system equal to the economic bonus. JP Connolly said they would prefer not to add a surface on order to keep the trail natural, yet it would be delineated by boulders, double rail fencing, etc. Ms. Caswell wants them to show the trail design to the Planning Board. Mr. Cobb agreed they could not

solve this tonight at this meeting and requested JP Connolly and Ambrosia come back with more substantial ideas.

Kathy Tombarelli continued with discussion items #2-6. She said the Fire Chief was in favor of the location of hydrants. She said, in reference to the landscape plan/buffering, there were some openings by lots 9 & 10 and she proposes they put additional buffering there. She inquired about phasing and if the playground and trail would be part of Phase I. JP Connolly said Phase I would include 8 lots, the playground, and the trail. Phase II will be lots 5,6,7,12,13,14 and the vehicle/pedestrian bridge.

Peter Gellerson suggested the surface coat of pavement should be held off until the second phase so it would be smooth when done.

Dan Maguire inquired about the turnaround and suggested they put a temporary turnaround in lot 5 rather than the open space/park/playground. JP Connolly said the temporary hammerhead turnaround would then provide two or three parking spaces.

Mark and Sharon Dube, residents of 190 Shaker Road and next door to the project, spoke to the Planning Board. Mrs. Dube said they fully respect their neighbor's right to sell and develop the property, however they knew Mr. Verrill and feel he would be sad to see what is happening to the property. The Dubes stated they have lived in their home since 1990, haven't had any contact from the developers, and this project affects them and their enjoyment of their home since the proposed road will be along the whole side of their property. They explained there was work going on at the property today which concerned them, which they could see easily from their property. They are concerned with losing privacy in their backyard due to the current buffering. Mrs. Dube said they would like to see a proposal without the road in the proposed spot. Mr. Dube also expressed safety concerns along Rt. 26 as it is difficult now to take a left turn out of their driveway and with the additional 20 to 30 cars coming from the proposed development in the future, it will make it more difficult and more of a safety issue than it is now.

Sandy Carder spoke and had similar feedback regarding the road, buffering, and that there should be an equal trade off for the density bonus, in reference to the trails. She had further questions about buffering along the property of the Sicinski and Wilbur properties. She also pointed out that headlights of drivers turning into the subdivision at night might cause issues for current residents. She also inquired if the stormwater will be part of Phase I.

JP Connolly and Paul Hollis responded to concerns of the Dubes and stated there is no opportunity to move the road. Mr. Hollis said he put a plan and letter of introduction in mailboxes of abutters but the Dubes stated they did not receive it. Mr. Hollis offered to meet with them about the buffering. Mr. Hollis explained they were taking out scrub/brush today at the property.

Mr. Dube explained there used to be a road which ran behind the Verrill barn over to Fairview which Mr. Verrill used to use to transport his cows. He inquired if re-opening that road would be an option, but JP Connolly said no.

Lynn Gallagher, resident of Foster Hill Road, spoke on behalf of other residents. She agreed with Dan Cobb's earlier comments about density bonuses. She would like to see the plan for the trail and asked if landscaping plans would be available to the public. She also expressed concerns about water.

She suggested a traffic study be required. She would like clarification if the trail will be just for residents, not for the public. She had concerns with stormwater issues. She also had concerns with the validity of the

project as it is registered to an out of state company. She also mentioned Mr. Hollis is involved with a subdivision in Naples which has issues/complaints.

JP Connolly explained the stormwater will be treated to meet requirements of DEP and the town. He said the trail/park and stream crossing will be a significant financial contribution by the developer to construct.

There were no more public comments.

Chair Hutchings closed the public hearing at 9:07p.m.

Dan Cobb thanked the public for their comments and suggested tabling this. He suggested the applicants come back with plans for the trail, buffering, concerns of the Dubes and other abutters. He said these issues would not be resolved during this meeting for him to feel comfortable giving preliminary approval.

JP Connolly requested that they grant preliminary approval and vote tonight. He said they can discuss trail cover before final approval. He stated he thinks his client has gone above and beyond with buffering.

Chair Hutchings agreed with Mr. Cobb that there are issues that need to be addressed and the Planning Board needs more information. He conducted a straw poll to see if board members wanted to vote or table. All board members indicated their wish to table. Mr. Cobb also indicated there are a lot of public comments to consider and if they voted tonight, he would vote no. Mr. Hollis said he would prefer they table it and get a good outcome later.

In final remarks, Kathy Tombarelli inquired if the Dubes received the notices from the town regarding the site walk and tonight’s meeting. They said they did receive those notices.

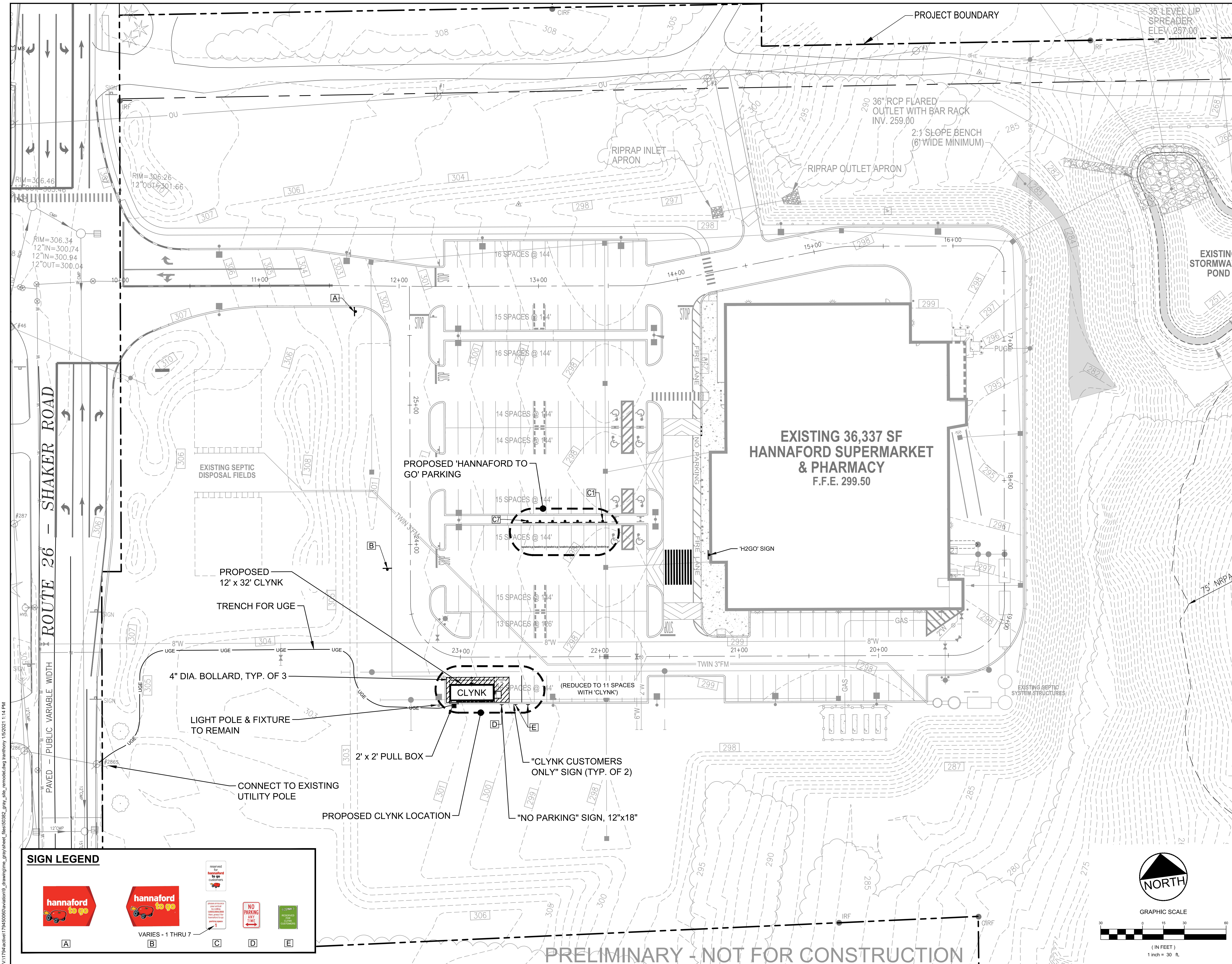
Mr. Dube also pointed out that due to COVID, there has been reduced traffic and he inquired if they had used traffic information from current or previous times. Kathy Tombarelli explained how a manual/table calculation most likely was used, not the same type of traffic study used when rebuilding roads/intersections, etc.

Motion to table the Verrill Farms Open Space Subdivision application until the next Planning Board meeting.

MOVER:	TABLED [UNANIMOUS]
SECONDER:	Dan Cobb, Vice Chair
AYES:	Peter Gellerson, Board Member Cobb, Gellerson, Hutchings, Caswell, Watson

Motion to Adjourn at 9:27 p.m.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Peter Gellerson, Board Member
SECONDER:	Dan Cobb, Vice Chair
AYES:	Cobb, Gellerson, Hutchings, Caswell, Watson



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Revision	By	Date
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5	DA	2/10/21
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File Name	LA	DDA	AMG	DEC 2020
	DWN.	CHKD.	DSGN.	DATE
50302_gray_site_remodel				

Permit-Seal

Client/Project
HANNAFORD BROS. CO. LLC

HANNAFORD SUPERMARKET
STORE REMODEL
124 SHAKER ROAD, GRAY, MAINE

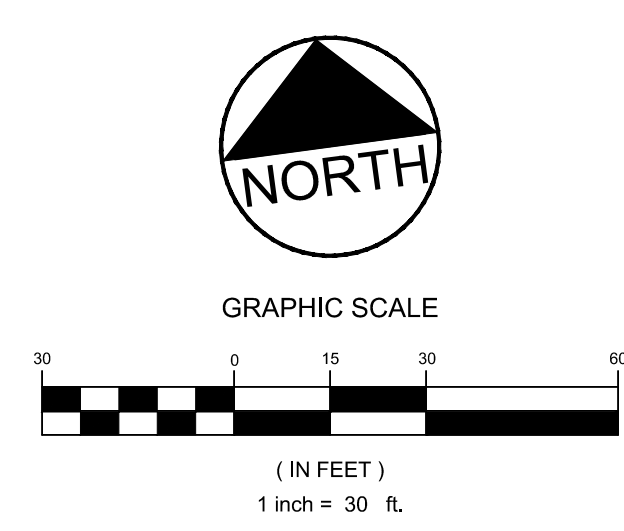
Title
OVERALL SITE PLAN

Project No. Scale
GRAY 1" = 30'

Sheet
C-1

SIGN LEGEND

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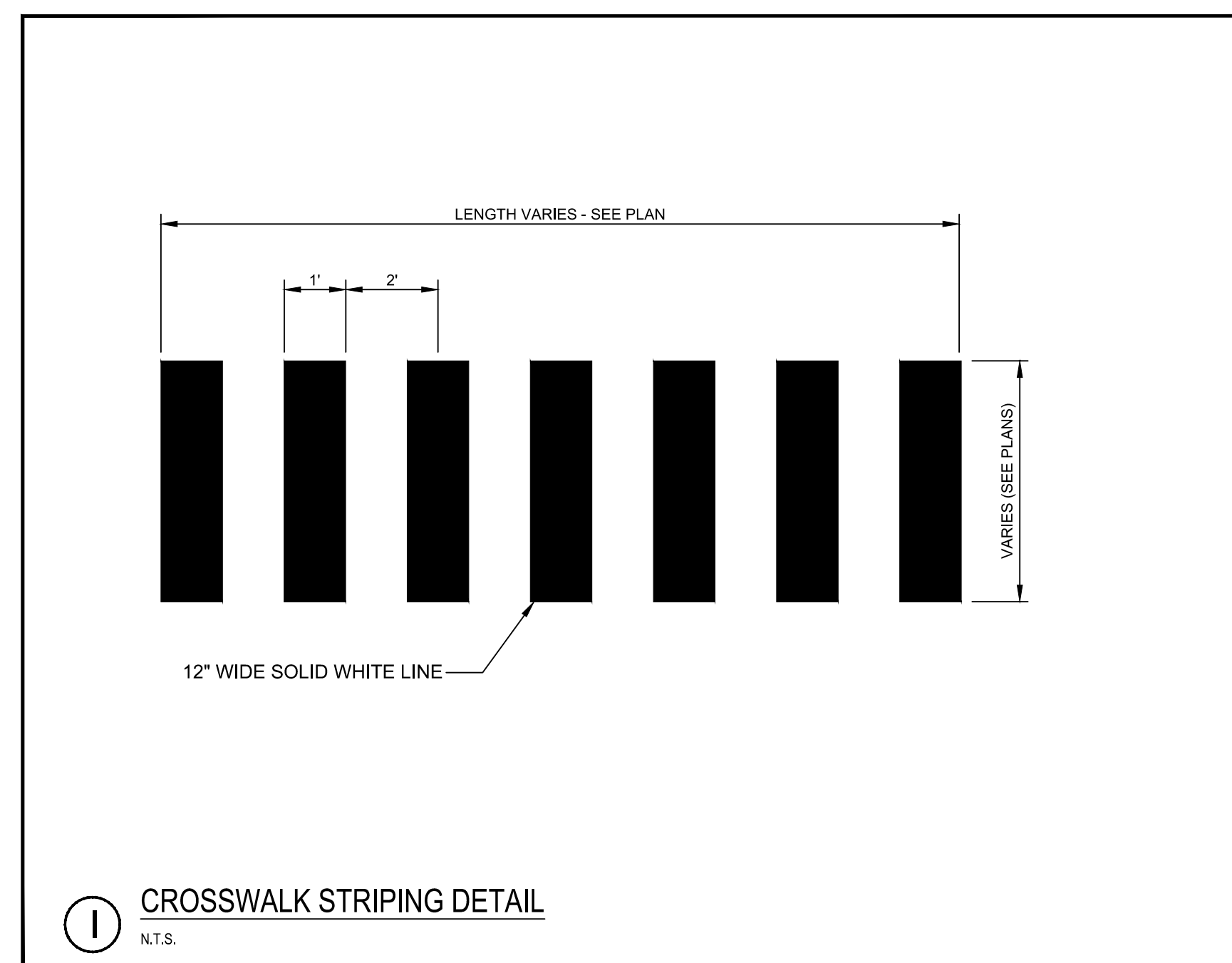
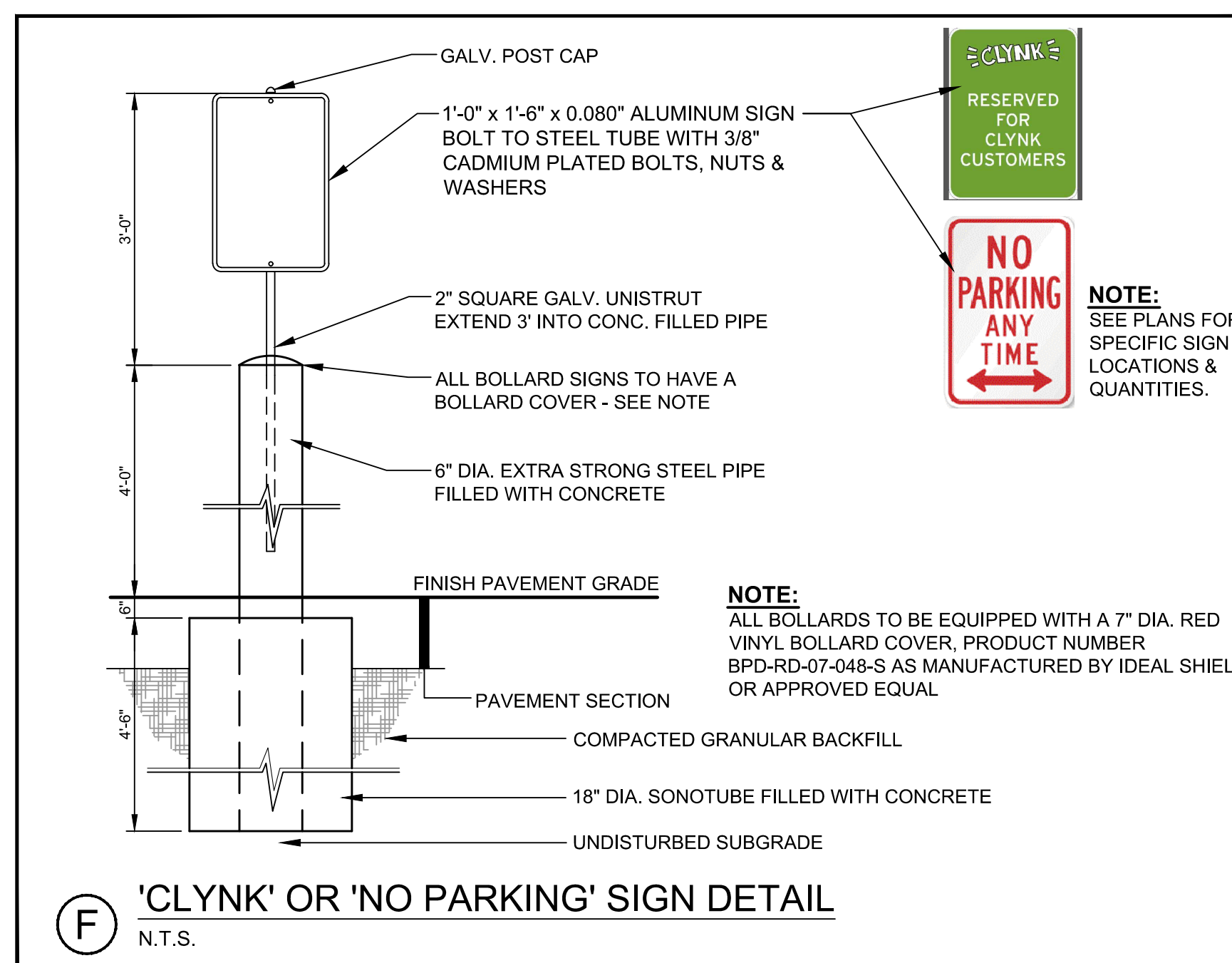
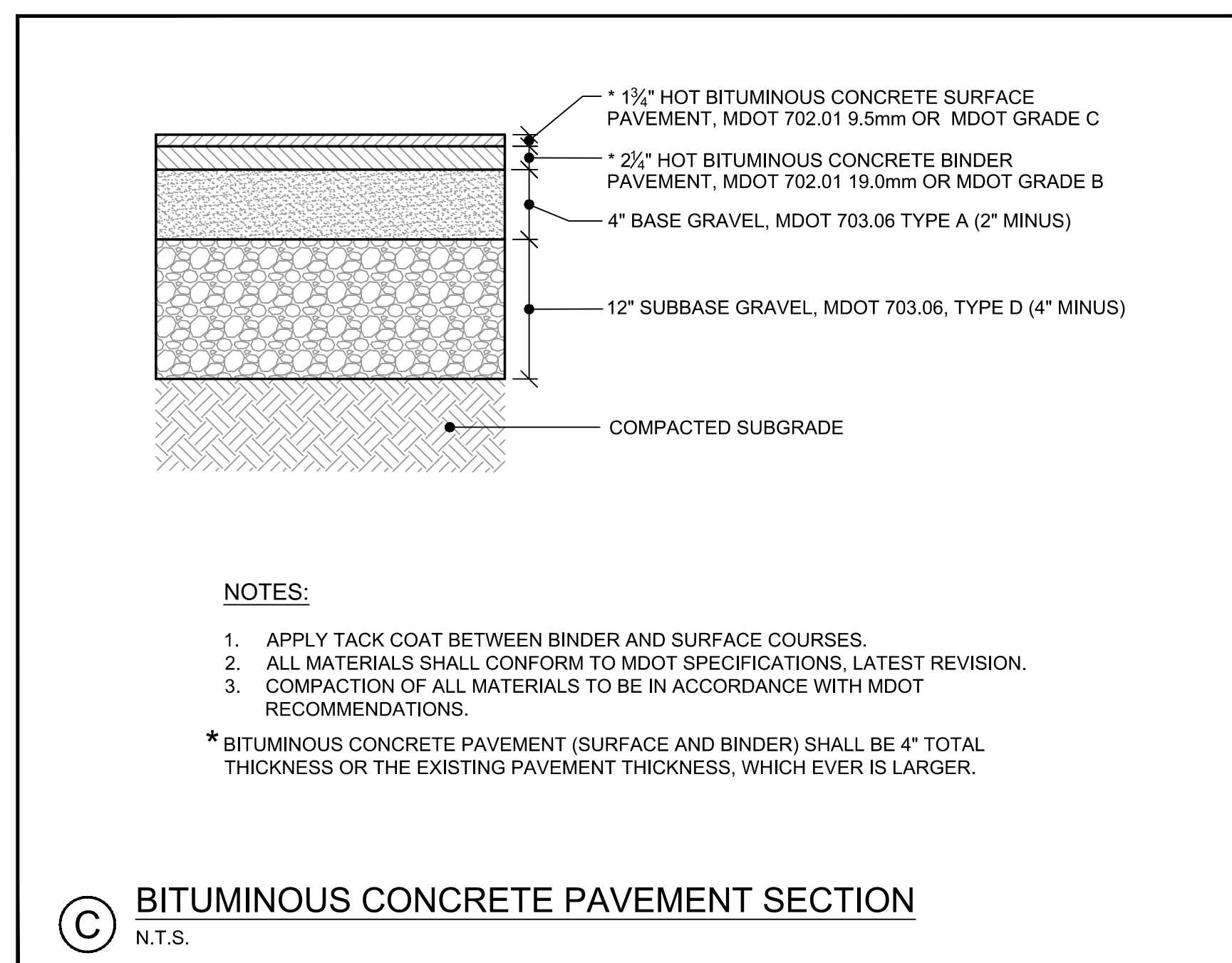
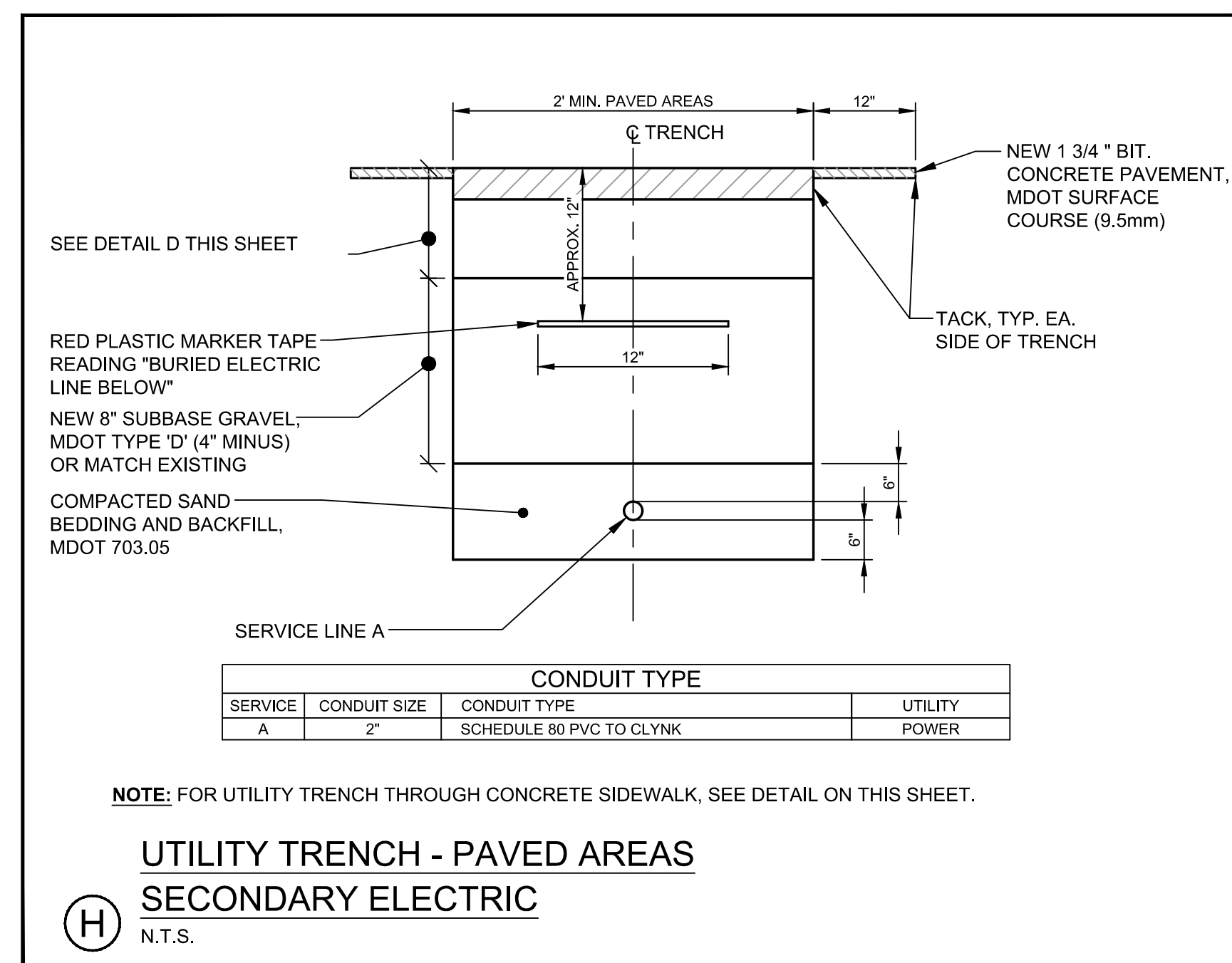
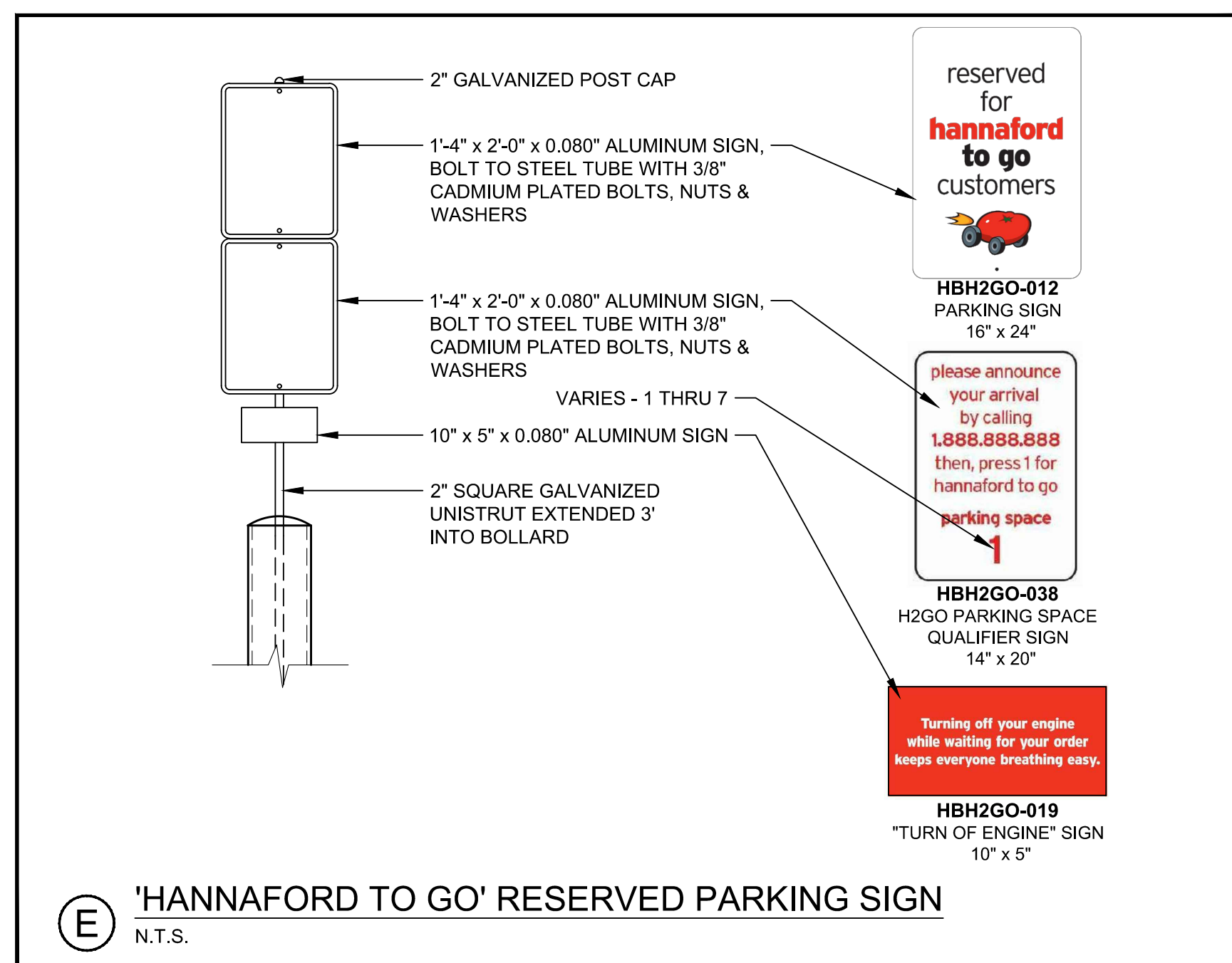
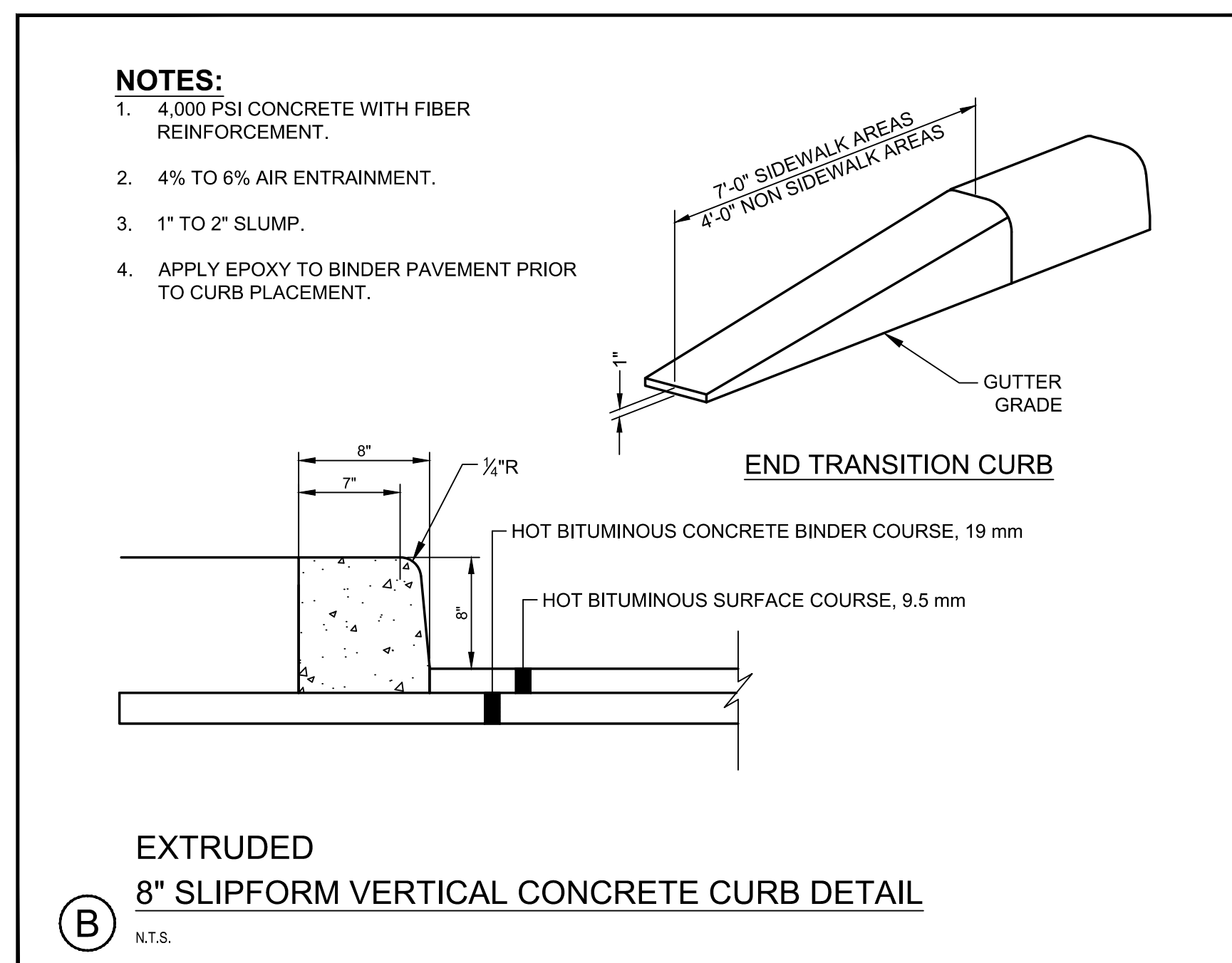
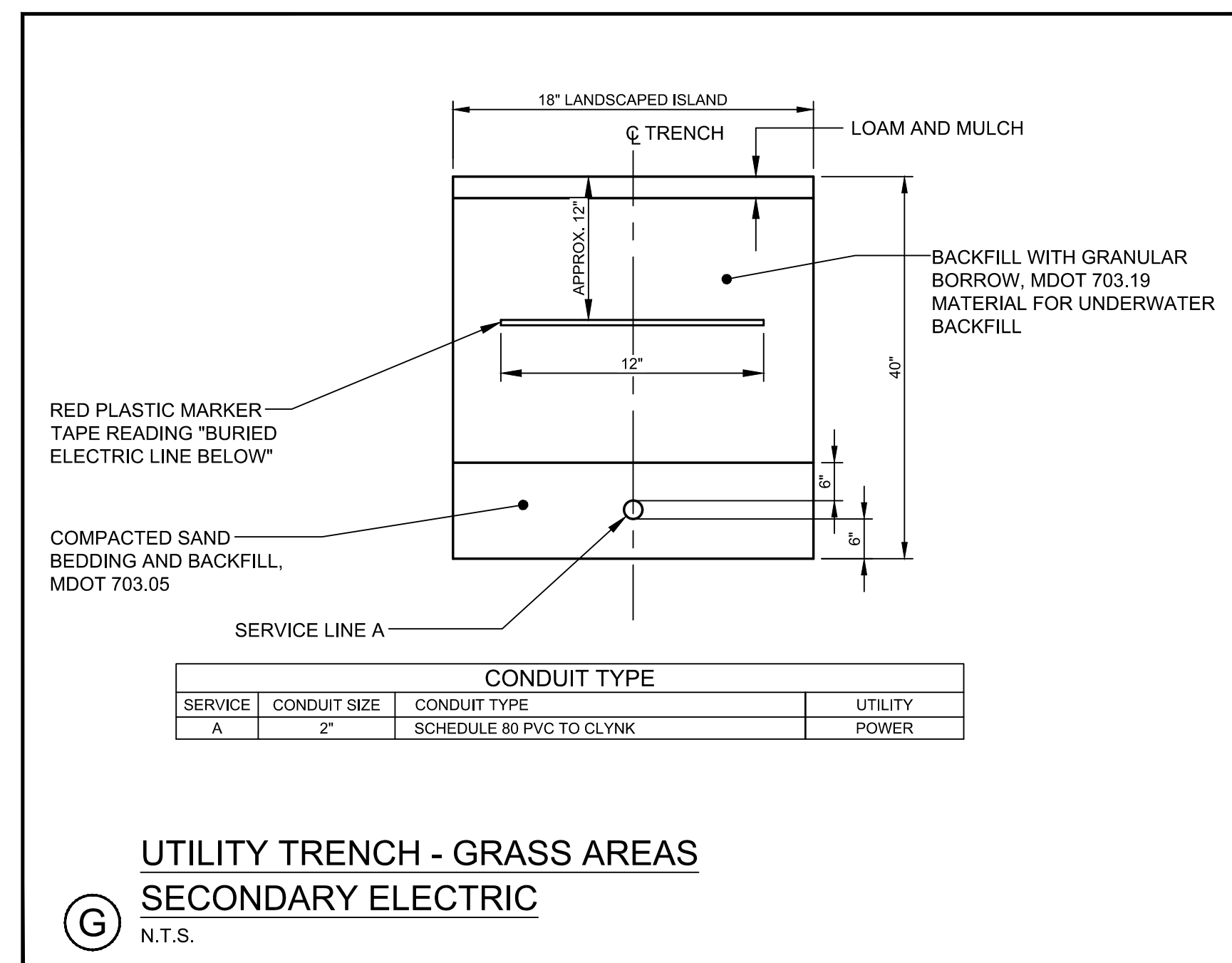
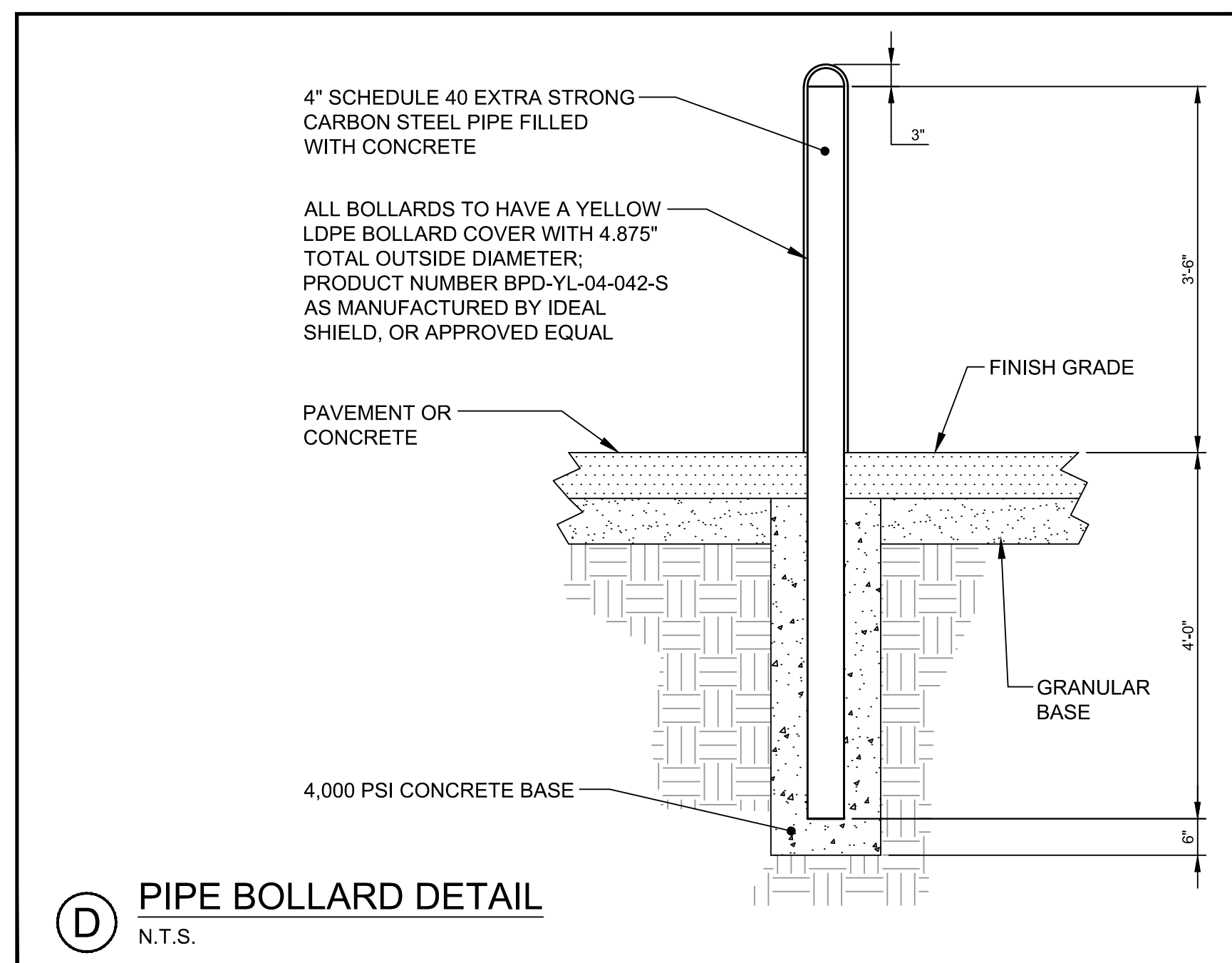
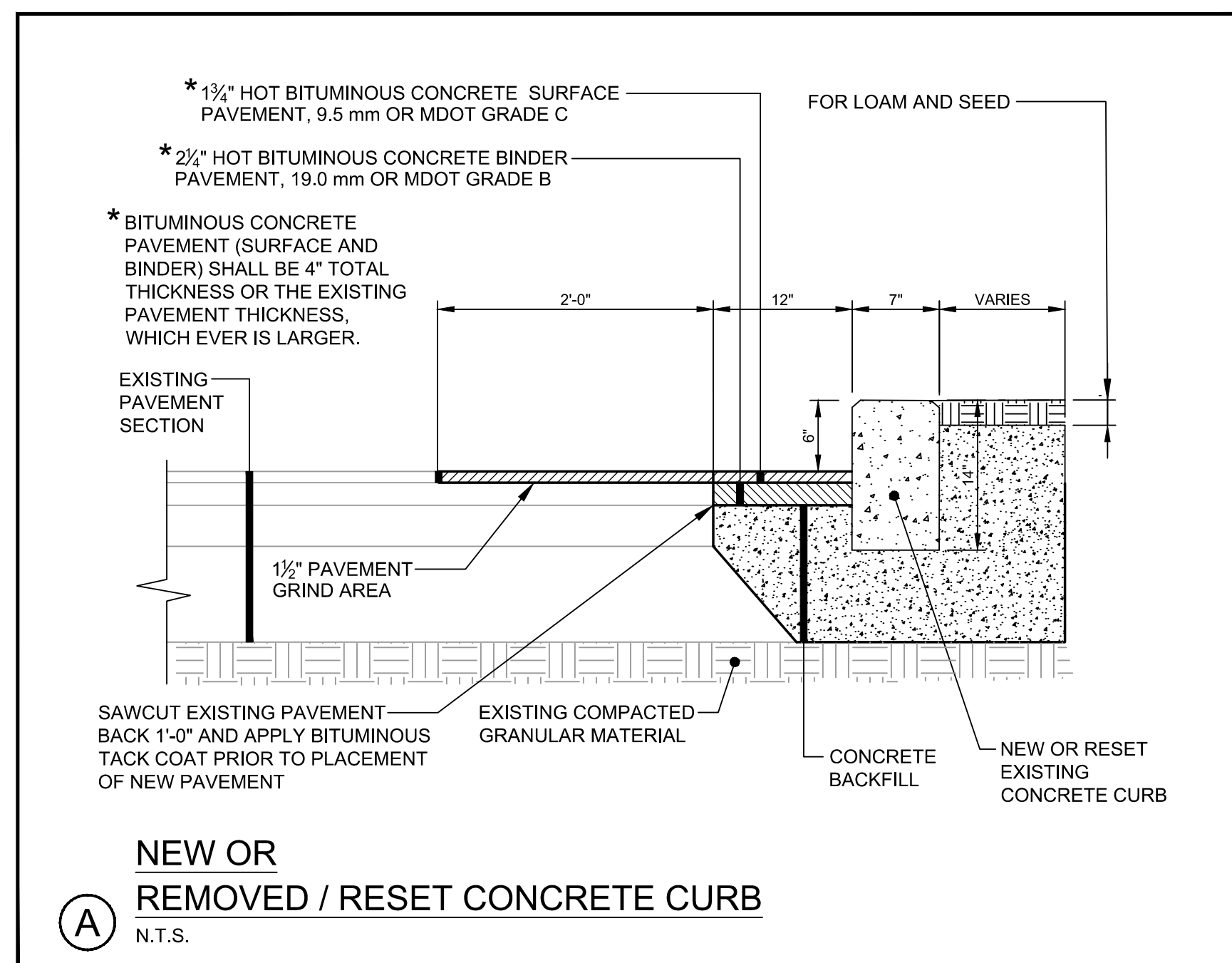
PRELIMINARY - NOT FOR CONSTRUCTION

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Notes

1. ALL MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH STATE OF MAINE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, LATEST REVISION AND STANDARD DETAIL SHEETS.
2. ALL STRIPING AND SIGNAGE TO BE IN ACCORDANCE WITH MUTCD STANDARDS.



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Permit-Seal		DSGN.	DATE

Client/Project
HANNAFORD BROS. CO. LLC

HANNAFORD SUPERMARKET STORE EXPANSION
124 SHAKER ROAD, GRAY, MAINE

Project No. GRAY
Scale
Sheet



THOMAS

SIGN & AWNING CO INC
4590 118TH Avenue North
Clearwater, Florida 33762

800-526-3325

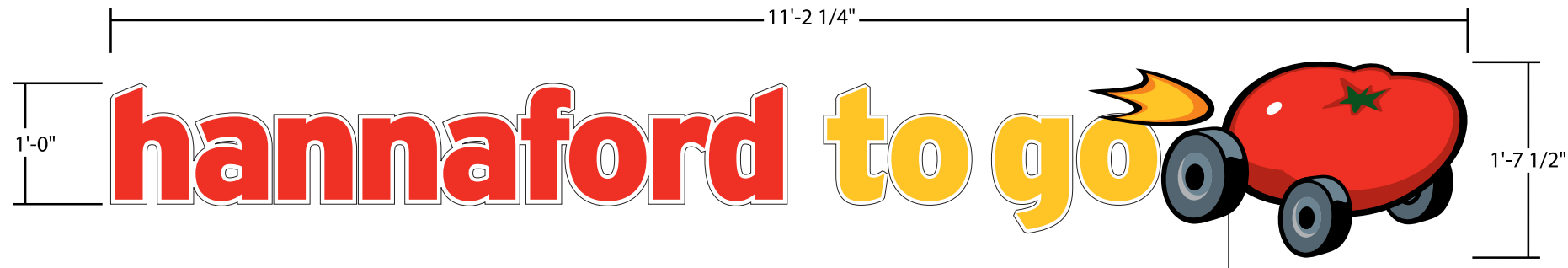
www.thomassign.com

CLIENT
HANNAFORD #8251

Design Number:
88777
Installation Address:
124 Shaker Rd - Rte 26
Gray, ME
04039
Project Identity Number:
91333

Sales Associate:	Project Team:
BB	BB
Designer:	Date:
JB	01/14/21

Project Updates:
X



PMS 485 C CMYK:0 95 100 0	CMYK:0 59 100 0	CMYK:0 0 0 36
PMS 484 C CMYK:8 92 100 33	CMYK:22 0 0 53	PMS BLACK 6 C CMYK:100 79 44 93
PMS 123 C CMYK:0 20 100 0	CMYK:22 0 0 70	CMYK:80 22 100 59

Color Reference

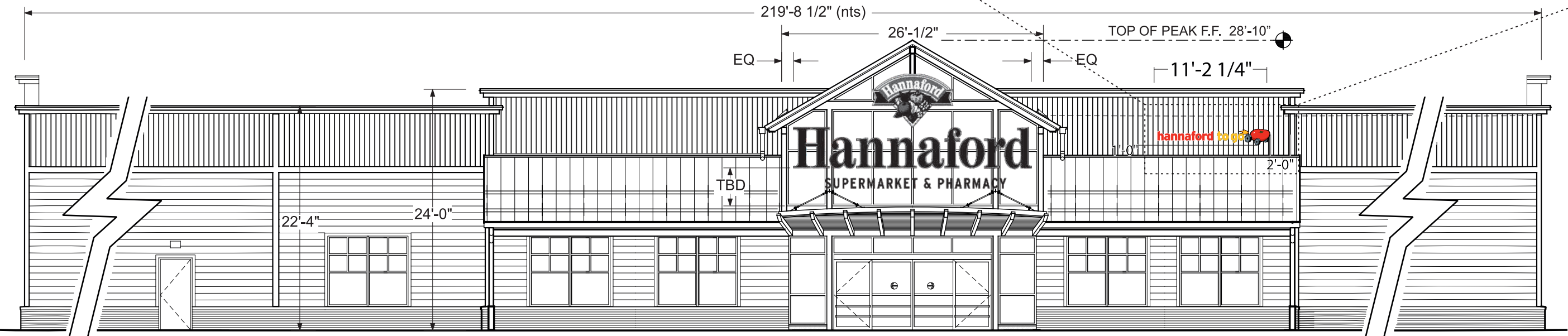
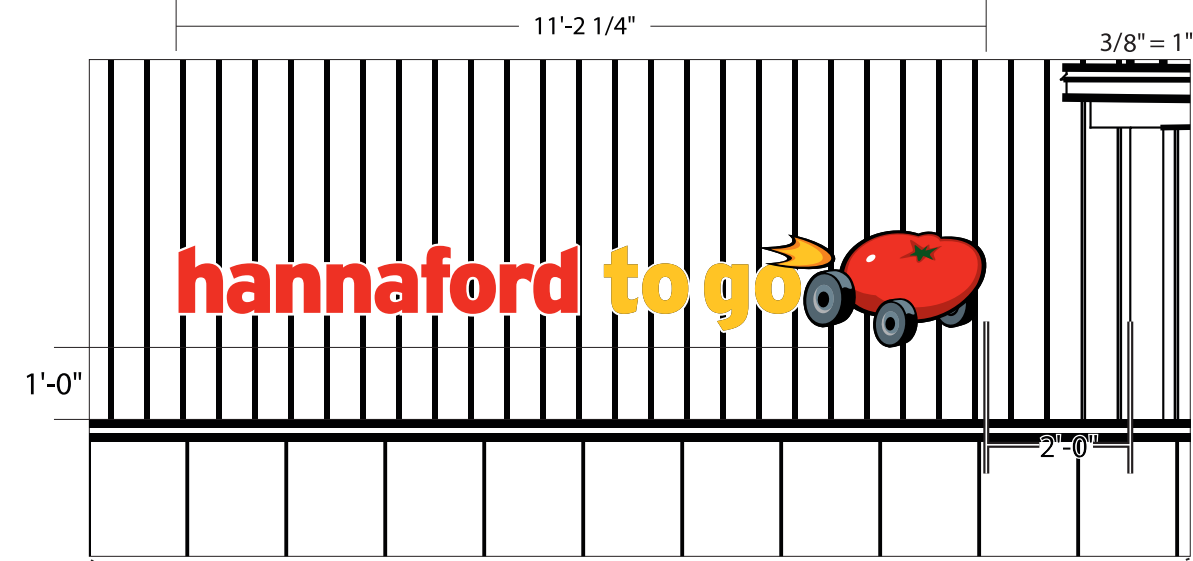
NOTE:
Black returns with
3M digital print
vinyl on faces.

SQ FT = 18.25[±]
Scale: 3/4" = 1'0"

Acrylic FCO Letters

LETTERS: 1" THICK WHITE ACRYLIC LETTERS WITH 3M VINYL FILM, WHITE BORDERS AND RETURNS
LOGO: 1" THICK WHITE ACRYLIC LOGO WITH DIGITAL GRAPHICS APPLIED TO FACE-PAINTED BLACK RETURNS
MOUNTING: MOUNT TO WALL WITH 1/2" SPACERS - PAINT SPACERS TO MATCH WALL COLOR

Front Existing Elevation SQ FT	Front Proposed Elevation SQ FT
Icon 42.66 [±]	Icon 42.66 [±]
Hannaford 94.58 [±]	Hannaford 94.58 [±]
Sub Copy 17.97 [±]	Sub Copy 17.97 [±]
Total 155.21[±]	H2GO 18.25[±]
	Total 173.46[±]



Proposed Front Elevation

Scale: 3/32" = 1'0" approx.



3MTM MCSTM Warranty

Approval:
 Approved
DATE:
 Approved as noted
DATE:
 Revise & Re-Submit
DATE:

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Page Sheet

1 1 of 2

Local: 727-573-7757
Fax: 727-573-0328 13



THOMAS

SIGN & AWNING CO INC

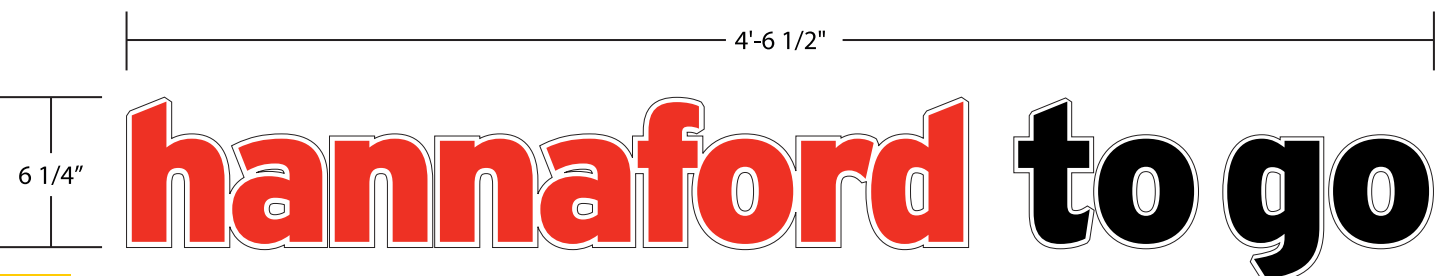
4590 118TH Avenue North
Clearwater, Florida 33762

800-526-3325










www.thomassign.com

CLIENT
HANNAFORD #8251

Design Number:
88777
Installation Address:
124 Shaker Rd - Rte 26
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Sales Associate: Project Team:
BB BB
Designer: Date:
JB 01/14/21
Project Updates:
X



Color Reference

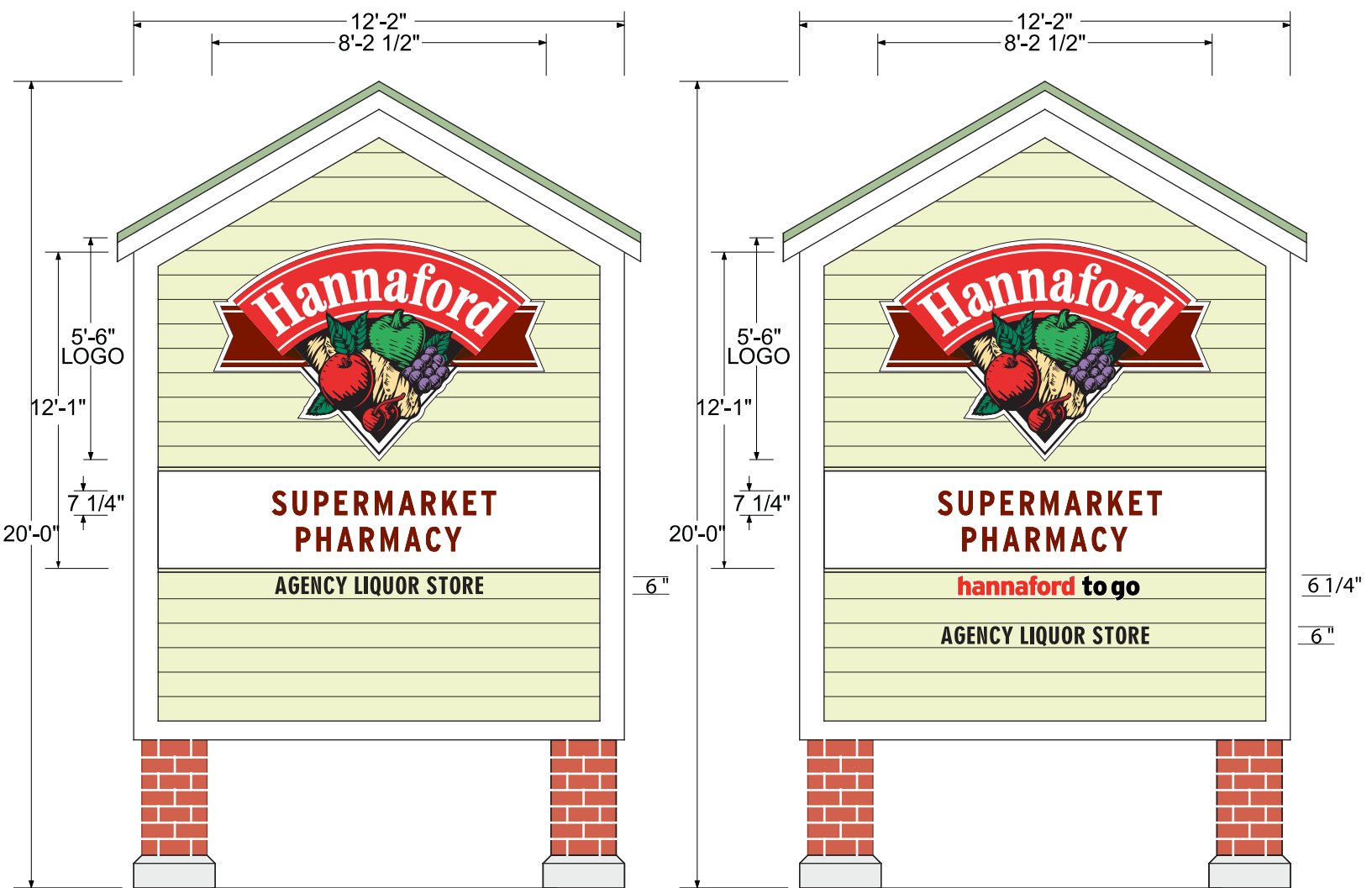
 PMS 485 C CMYK:0 95 100 0	 CMYK:0 59 100 0	 CMYK:0 0 0 36
 PMS 484 C CMYK:8 92 100 33	 CMYK:22 0 0 53	 PMS BLACK 6 C CMYK:100 79 44 93
 PMS 123 C CMYK:0 20 100 0	 CMYK:22 0 0 70	 CMYK:80 22 100 59

Aluminum FCO Letters to be Added to Existing Pylon

SQ FT = 2.365[±]

Remove Existing Agency Liquor letters, patch holes & paint patched areas, reinstall in new location. Fabricate new .125" routed aluminum flat cut out "hannaford to go" letters and stud mount flush to existing sign.

Scale: 1 1/2" = 1'0"

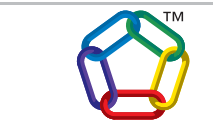


Existing Pylon Elevation

Scale: 1/4" = 1' - 0" approx.

Proposed Pylon Elevation

"Hannaford to go" only Scale: 1/4" = 1' - 0" approx.



3MTM MCSTM Warranty

Approval:

- Approved
DATE: _____
- Approved as noted
DATE: _____
- Revise & Re-Submit
DATE: _____

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Page Sheet

2 2 of 2

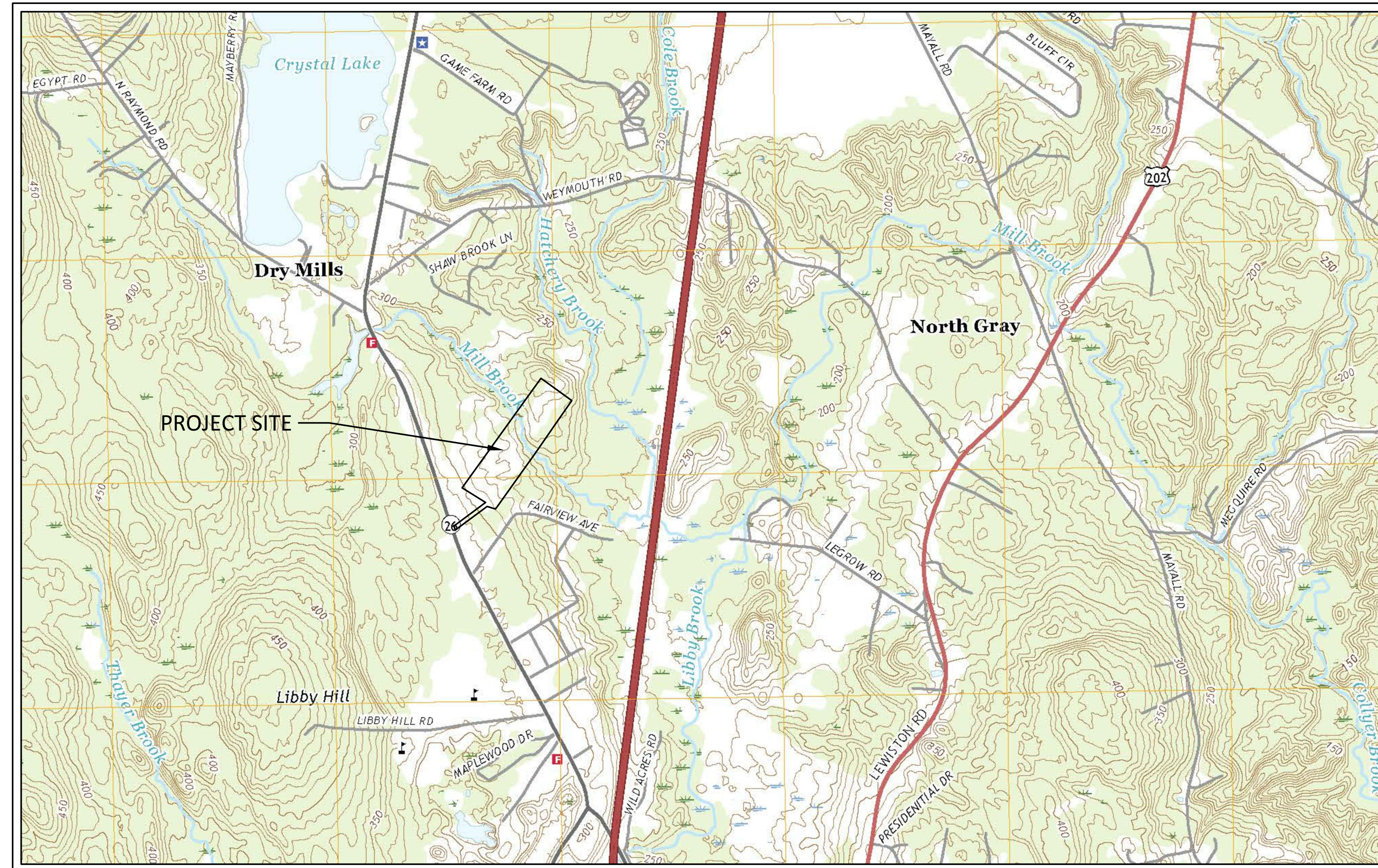
Local: 727-573-7757
Fax: 727-573-0328 14



VERRILL FARM SUBDIVISION

SHAKER ROAD
GRAY, MAINE

CONSULTANTS	
CIVIL ENGINEER	DM ROMA CONSULTING ENGINEERS
LAND SURVEYOR	WAYNE T. WOOD & COMPANY
SITE EVALUATOR & WETLAND SCIENTIST	MARK CENCI GEOLOGIC, INC.
SOIL SCIENTIST	MARK HAMPTON ASSOCIATES, INC.



PROJECT VICINITY MAP

ISSUED FOR PRELIMINARY SUBDIVISION REVIEW - NOT FOR CONSTRUCTION
DECEMBER 21, 2020

PREPARED BY:
DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310 - 0506

APPLICANT:

AMBROSIA DEVELOPMENT & INVESTMENTS
28 WEARE ROAD
SEABROOK, NH 03874

VERRILL FARM SUBDIVISION

DRAWING SHEET INDEX

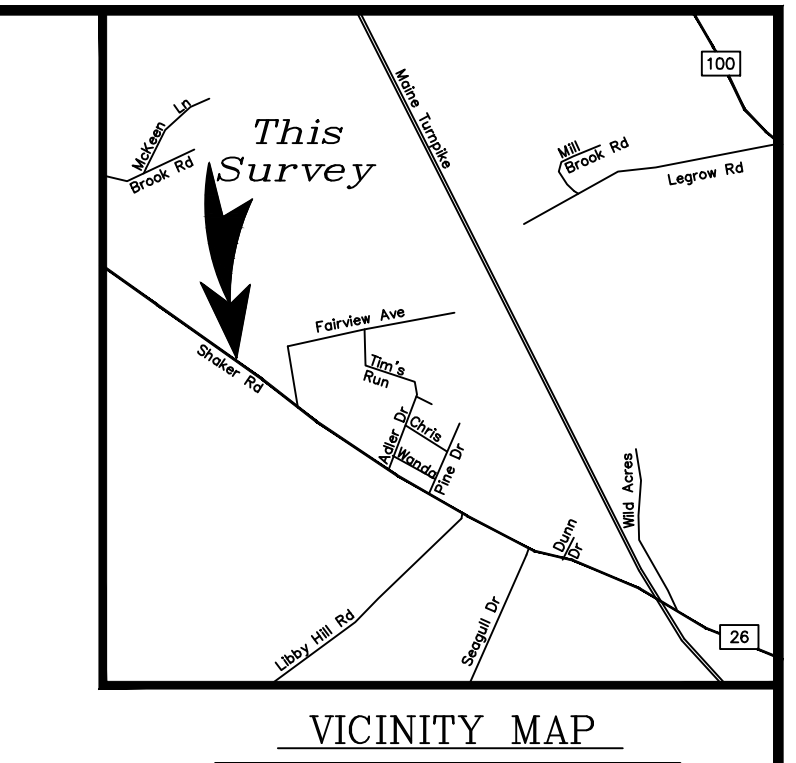
PAGE NO.	DESCRIPTION
1	TITLE SHEET
2	SUBDIVISION PLAN
3	CLASS B-HIGH INTENSITY SOIL SURVEY MAP
4	PLAN AND PROFILE: VISTA VIEW LANE
5	PLAN AND PROFILE: VISTA VIEW LANE
6	PLAN AND PROFILE: VISTA VIEW LANE
7	POND PLAN
8	POND PLAN
9	DETAILS
10	DETAILS
11	DETAILS

PLAN REFERENCES

1. "Standard Boundary Survey ~ Plan of Land on Shaker Road in Gray, Maine for Donald & Mary Verrill" dated September 1993 by Daniel T. C. LaPoint.
2. "Standard Boundary Survey and Lot Division for Stanley R. and Jean C. Wilbur ~ Legrow Road ~ Gray, Maine" dated July 1986 by John D. Palmiter, recorded in CCRD Plan Book 158 on Page 47.
3. "Standard Boundary Survey ~ Route 26 ~ Gray, Maine for Donald E. & Mary L. Verrill" undated by Survey, Inc.
4. "Standard Boundary Survey ~ Route 26 ~ Gray, Maine for Donald E. Verrill" dated November 2000 by Survey, Inc.
5. "Working Drawing ~ Plan of Land on Shaker Road ~ Gray, Maine for Ernest Verrill & Linda Pelletier" dated November 2007 by Wayne T. Wood & Co.

LEGEND

- ⊙ 5/8" Capped Rebar to be Set
- Iron Pipe or Pin Found as Noted
- ◆ Soils Test Pits
- Existing Contours (LIDAR)
- - - Building Setback Lines
- N/F Now or Formerly of
- (14,887/362) Deed Book and Page Reference
- CCRD Cumberland County Registry
- ▨ Buffers



NOTES

1. Owners of record are Linda M. Pelletier and Ernest D. Verrill by deed recorded in the Cumberland County Registry of Deeds in book 24,609 page 292.
2. All bearings are Magnetic of the year 1999 per the plan in reference 2 and calculated from angles of an actual on the ground survey.
3. Boundaries as shown on this plan were taken from referenced surveys.
4. The subject parcel is somewhat shown as Lot #15-29 on the Town of Gray Tax Map #20 and is situated in the (RRA) Rural Residential Agricultural Zone.
5. Elevation contours are from MEGIS LIDAR.
6. The wetlands shown and soils tests are from Mark Cenci Geologic.
7. The total area of this parcel is 26.58 acres
8. The total area of wetlands shown here on is 31,536 square feet.
9. The Developer shall establish a tree buffer along the Scinski and Wilbur property lines. The trees shall not exceed 8' in height and shall be of a species determined by Scinski and Wilbur.
10. This area is intended to be a temporary turn-around for Phase I and a parking area for the park for Phase II.
11. Soils information for this project was done by Mark Cenci Geologic and Mark Hampton Associates.
12. See also the engineering plans by DMRMA Consulting Engineers.

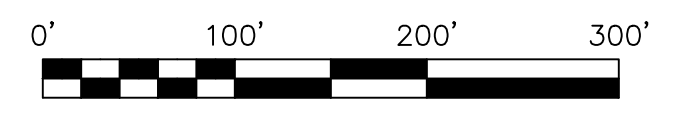
NET RESIDENTIAL ACERAGE CALCULATIONS

Total Lot Area	1,157,730 sq.ft.
Wetland Area	31,536 sq.ft.
Steep Slopes	0 sq.ft.
Somewhat Poorly Drained Soils @ 50%	63,233 sq.ft.
Roads	1,062,961 sq.ft.
Net Residential Acreage	956,665 sq.ft.
956,665 sq.ft./ 80,000 sq.ft. per lot = 11.96 lots	

Open Space	Required 35%	Actual 48.09%
Usable Open Space	Required 20%	Actual 45.37%

DENSITY BOUNSES

Allowed Lots	11.96 lots
Public Water Bonus	10% or 1.19 lots
Additional Open Space	5% or 0.60 lots
Internal Trail System	5% or 0.60 lots
Total Lots Allowed	14.35 lots



Approved by the Town of Gray Planning Board:

Signed: _____

Date: _____

State of Maine, Cumberland ss.

REGISTRY OF DEEDS

Received: _____ 20____

at ____h ____m ____M and recorded in

Plan Book: _____ Page: _____

Attest: _____ Register

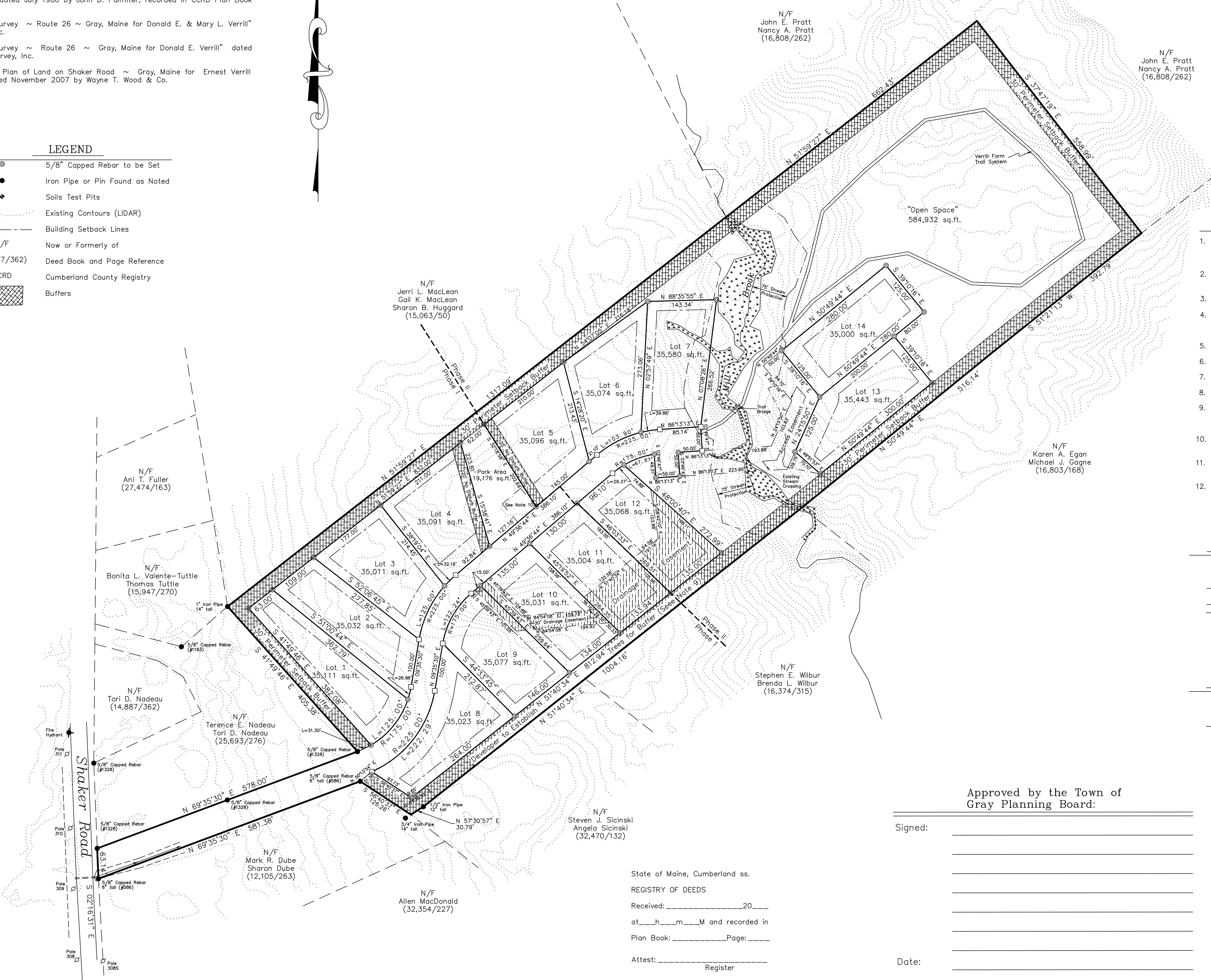


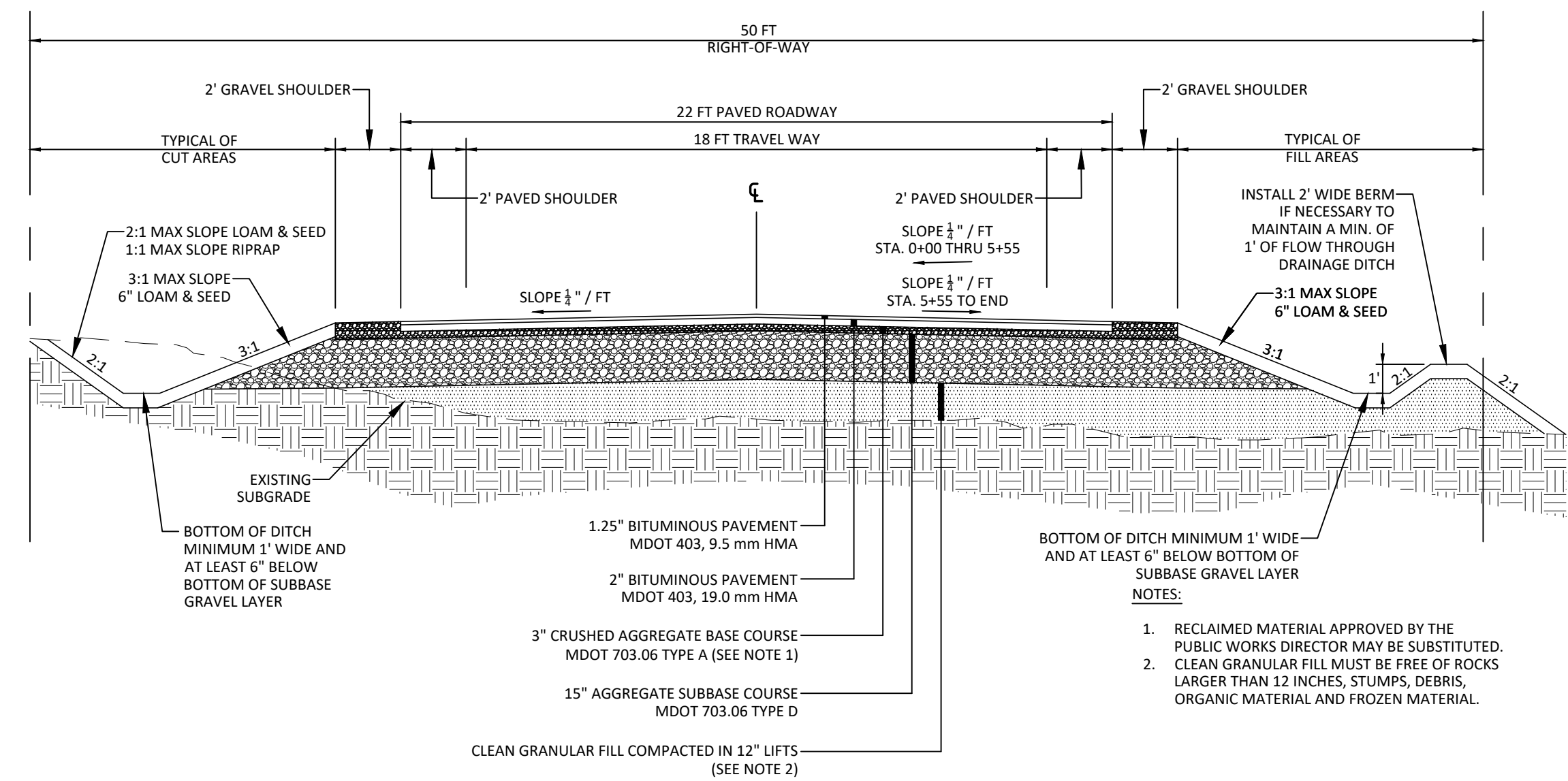
Preliminary Plan

"Verrill Farm"
Open Space Subdivision
On
Shaker Road
In
Gray, Maine
For
Ambrosia Development & Investments, LLC
28 Weare Rd., Seabrook, NH 03874

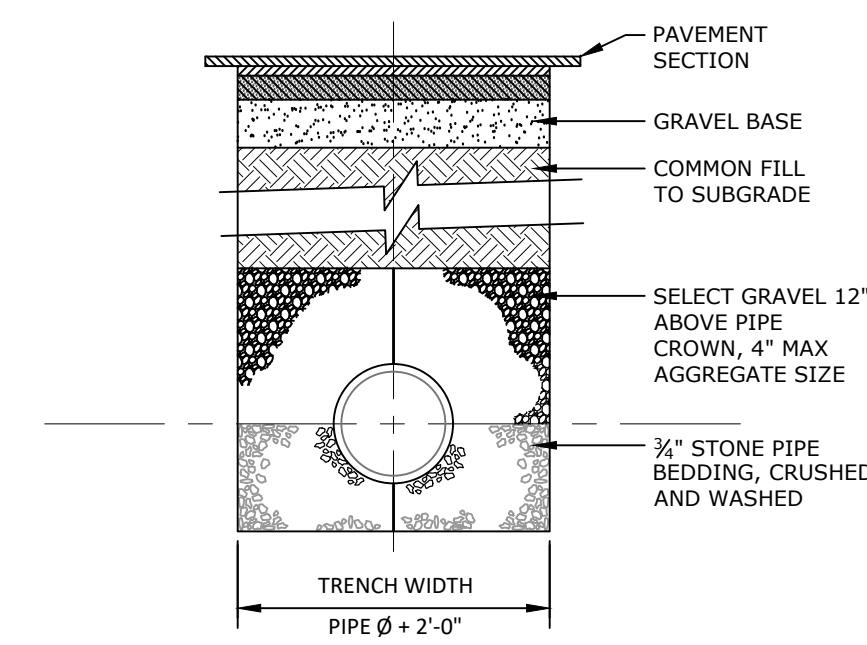
WAYNE T. WOOD & CO.

Gray, Maine 04039 (207)657-3330
Drawn By: K/LW/WTW Date
Scale: 1" = 100' December 2020
Checked By: WTW Job No.
Field Crew: n/a 220096

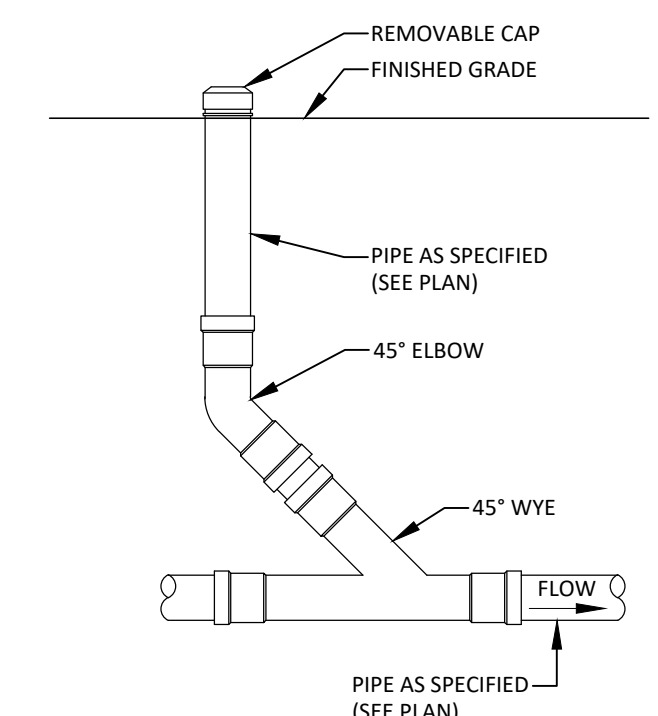




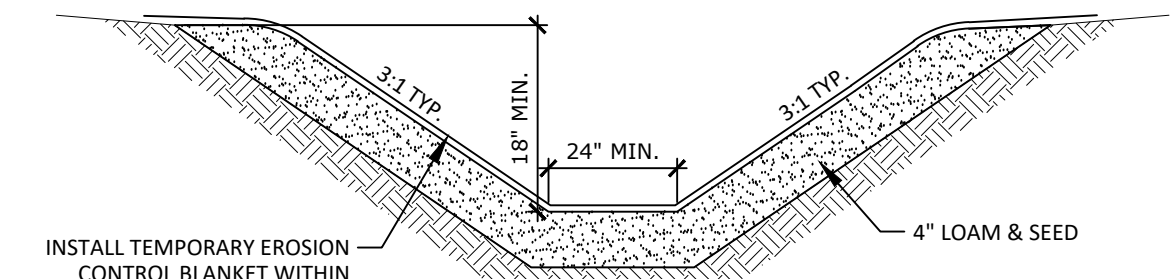
TYPICAL ROADWAY SECTION
NOT TO SCALE



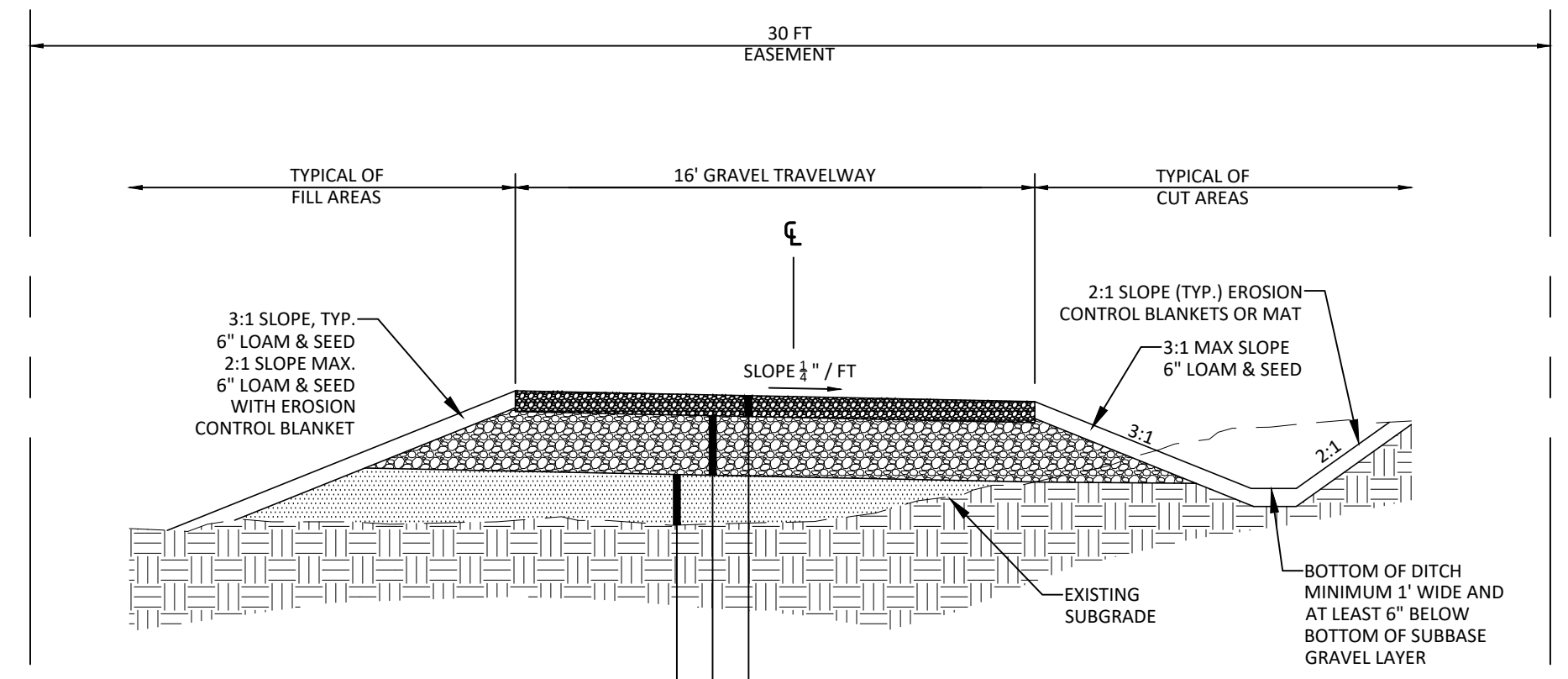
TYPICAL TRENCH SECTION
NOT TO SCALE



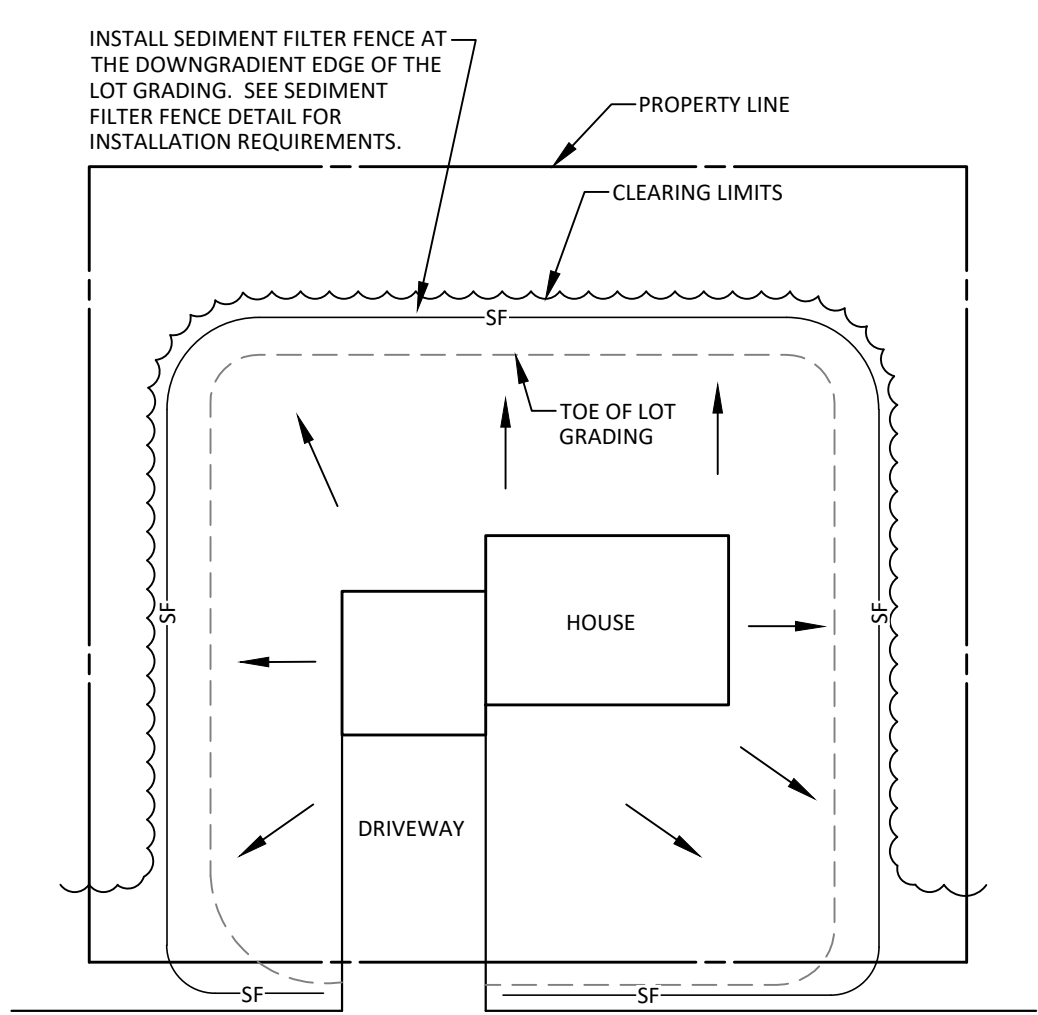
UNDERDRAIN CLEANOUT DETAIL
NOT TO SCALE



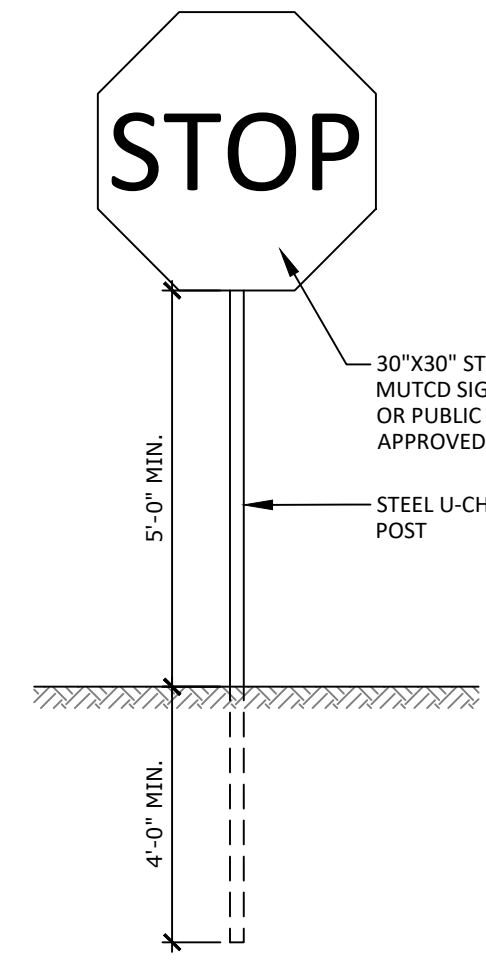
DRAINAGE SWALE
NOT TO SCALE



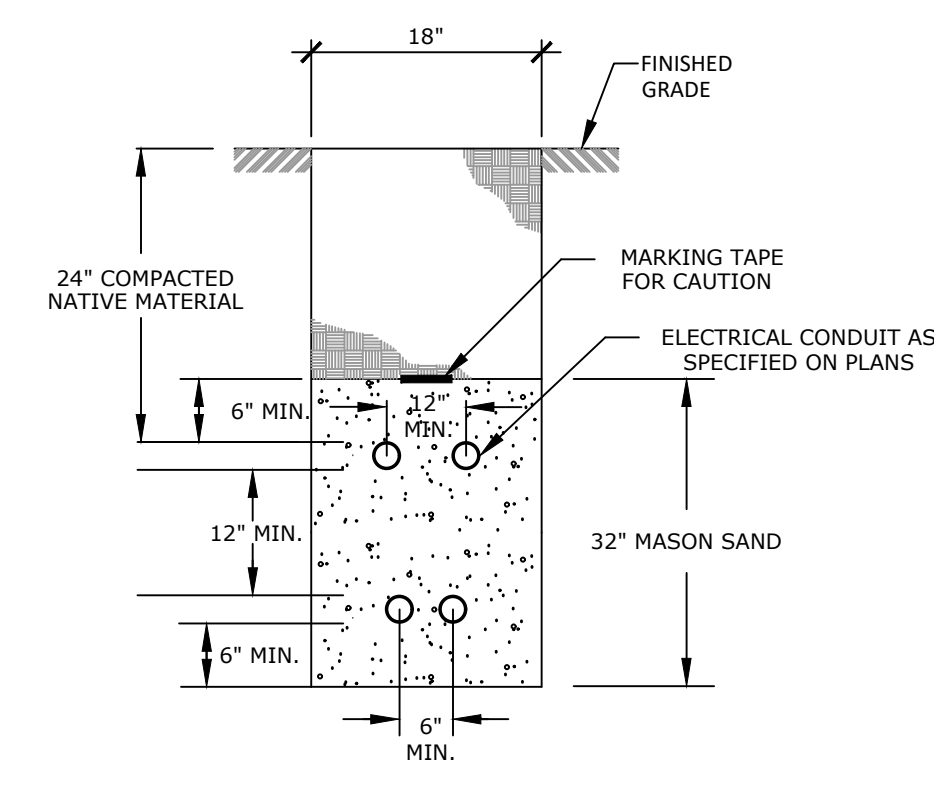
TYPICAL BACKLOT DRIVEWAY SECTION
NOT TO SCALE



TYPICAL HOUSE LOT EROSION CONTROL DETAIL
NOT TO SCALE

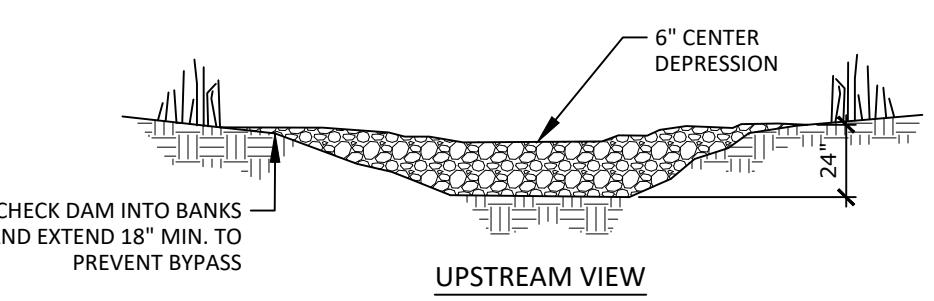


STOP SIGN INSTALLATION
NOT TO SCALE

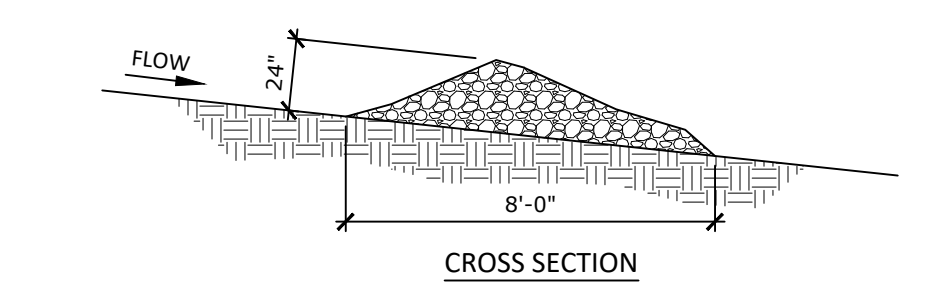


UTILITY TRENCH DETAIL
NOT TO SCALE

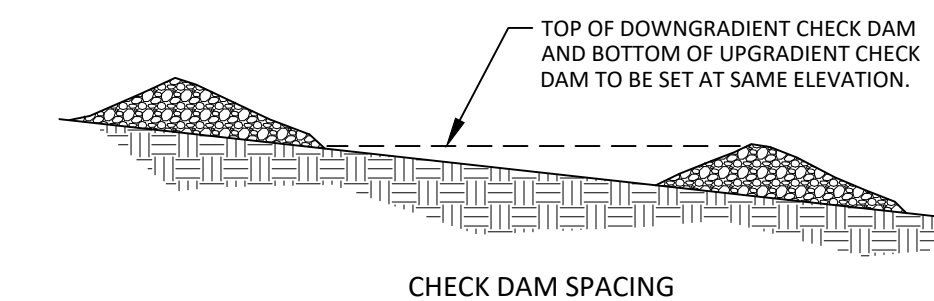
- NOTES:
1. ALL CONDUITS SHALL BE 4" DIA. PVC SCH 40 EXCEPT FOR ROAD CROSSINGS SHALL BE PVC SCH 80
 2. INSTALLATION SHOULD NOT ALLOW THE INTER-TWINGING OF CABLES.
 3. BEDDING AND BACKFILL SHALL BE FREE OF ROOTS, STUMPS AND OTHER DEBRIS.
 4. COMMUNICATION CABLE AND POWER CABLE SHALL HAVE NO LESS THAN 12 INCHES OF RADIAL SEPARATION.



UPSTREAM VIEW



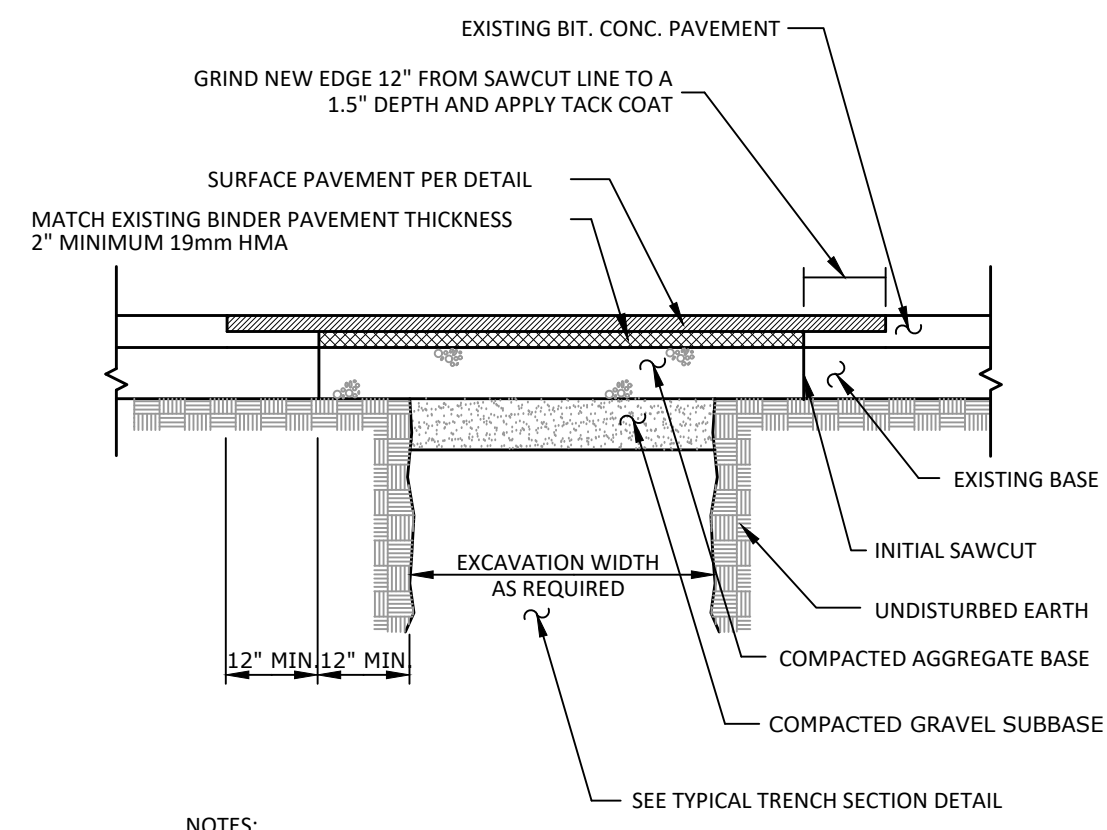
CROSS SECTION



CHECK DAM SPACING

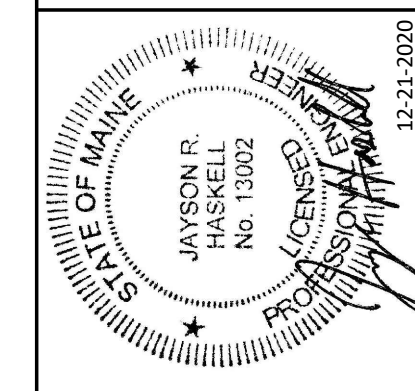
- NOTES:
1. CHECK DAMS SHOULD BE INSTALLED BEFORE RUNOFF IS DIRECTED TO THE SWALE.
 2. THE AREA AROUND THE CHECK DAM SHOULD BE FREE OF DEBRIS.
 3. A STONE CHECK DAM SHOULD BE COMPRISED OF WELL-GRADED CRUSHED ROCK WITH A MAXIMUM SIZE OF 6" AND A MINIMUM STONE SIZE OF 1".
 4. THE MAXIMUM HEIGHT OF A CHECK DAM SHOULD BE 2' WITH A 6" DEPRESSION AT ITS CENTER FOR OVERFLOW. THE EDGES OF THE DAM SHOULD BE KEVED INTO THE EMBANKMENTS TO PREVENT SIDE EROSION.
 5. MECHANICAL PLACEMENT FOLLOWED BY HAND PLACEMENT WILL BE NECESSARY TO ACHIEVE A TIGHT MASS WITHIN THE CHANNEL AND TO ENSURE THAT THE CENTER OF THE DAM IS LOWER THAN THE EDGES.
 6. ANY EROSION DOWNGRADIENT OR AROUND THE EDGES OF STONE CHECK DAMS SHOULD BE CORRECTED IMMEDIATELY.
 7. THE CHECK DAMS MAY BE REMOVED WHEN THE SWALE IS STABILIZED WITH VEGETATION (90% COVERAGE).

STONE CHECK DAM
NOT TO SCALE



- NOTES:
1. SEE TYPICAL ROAD SECTION FOR REQUIRED DEPTHS OF AGGREGATE AND PAVEMENT COURSES

PAVEMENT REPAIR DETAIL
NOT TO SCALE

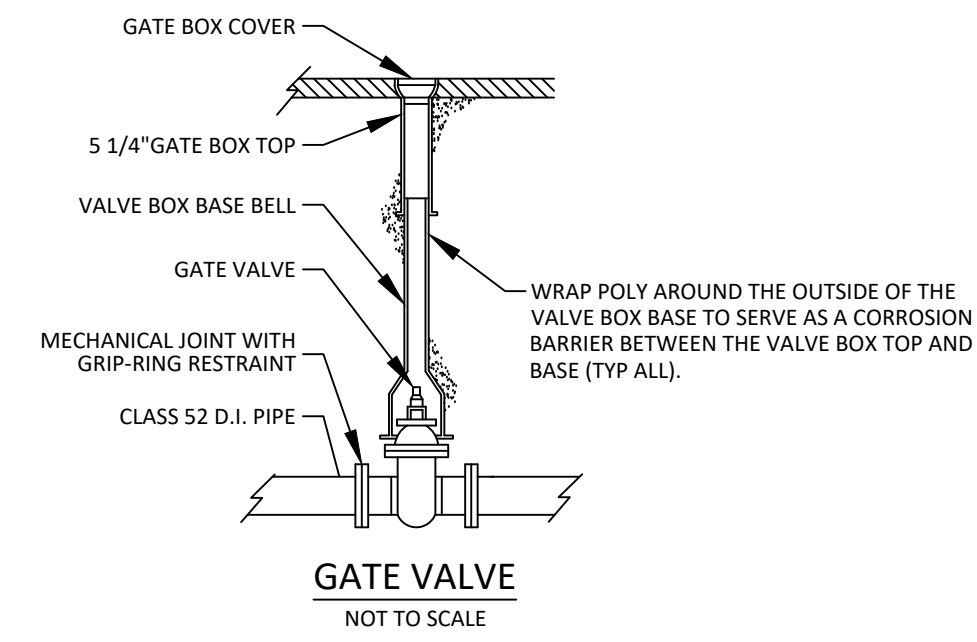
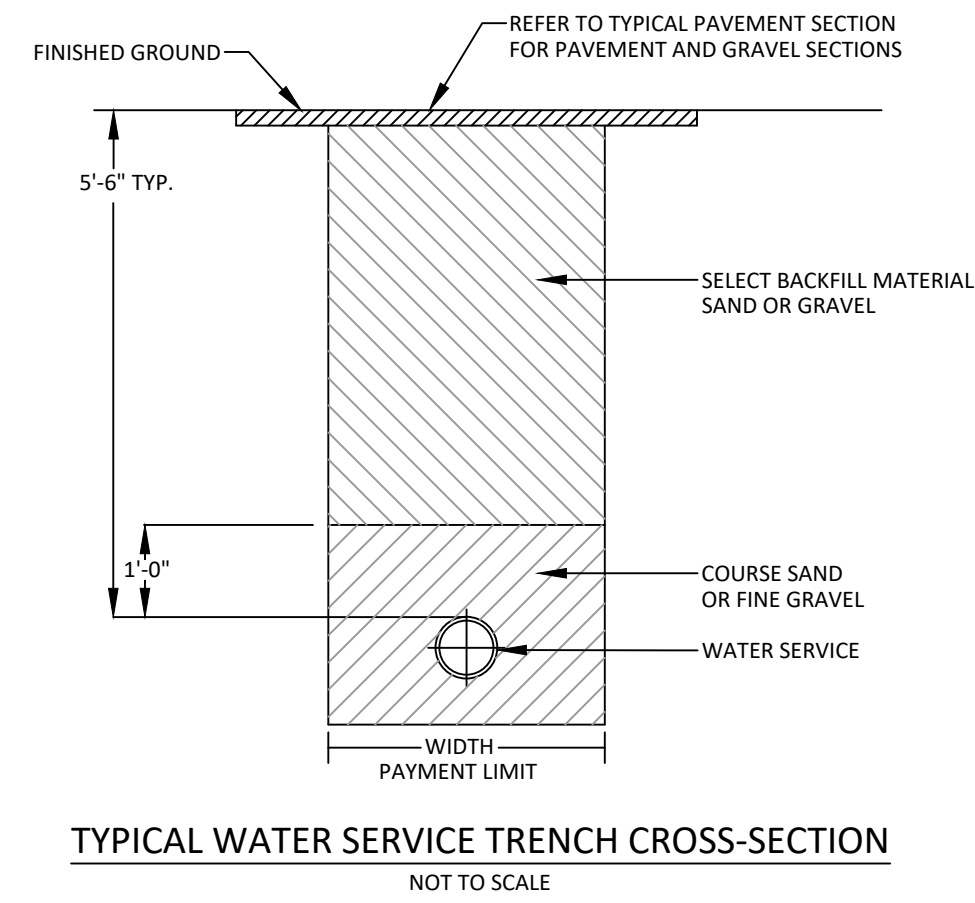
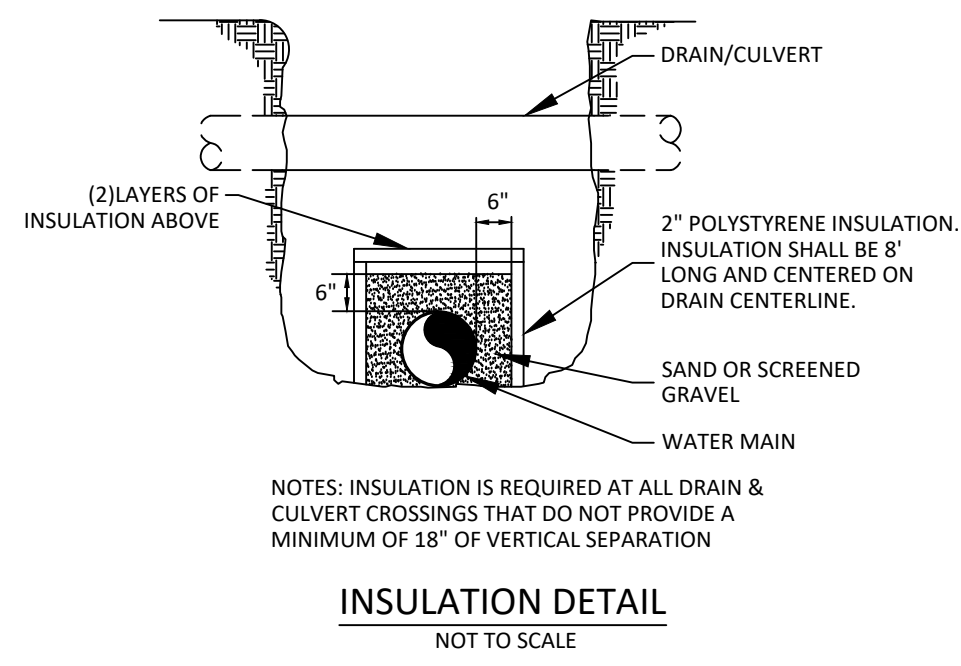


DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04062
(207) 310-0506

REV	DATE	DESCRIPTION
A	12-21-20	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW

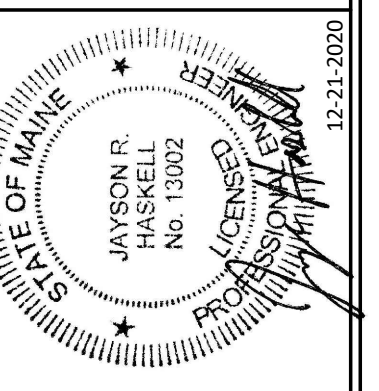
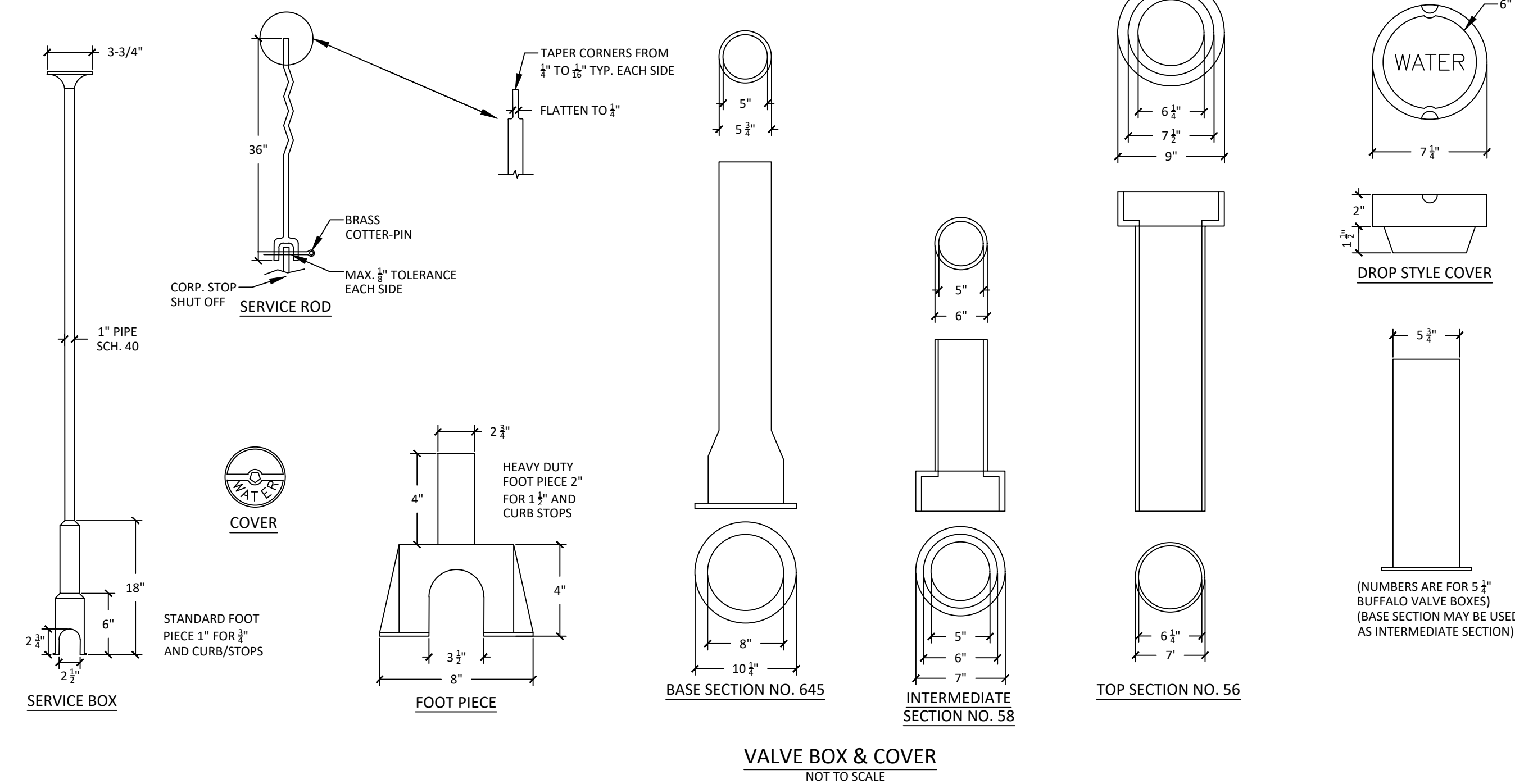
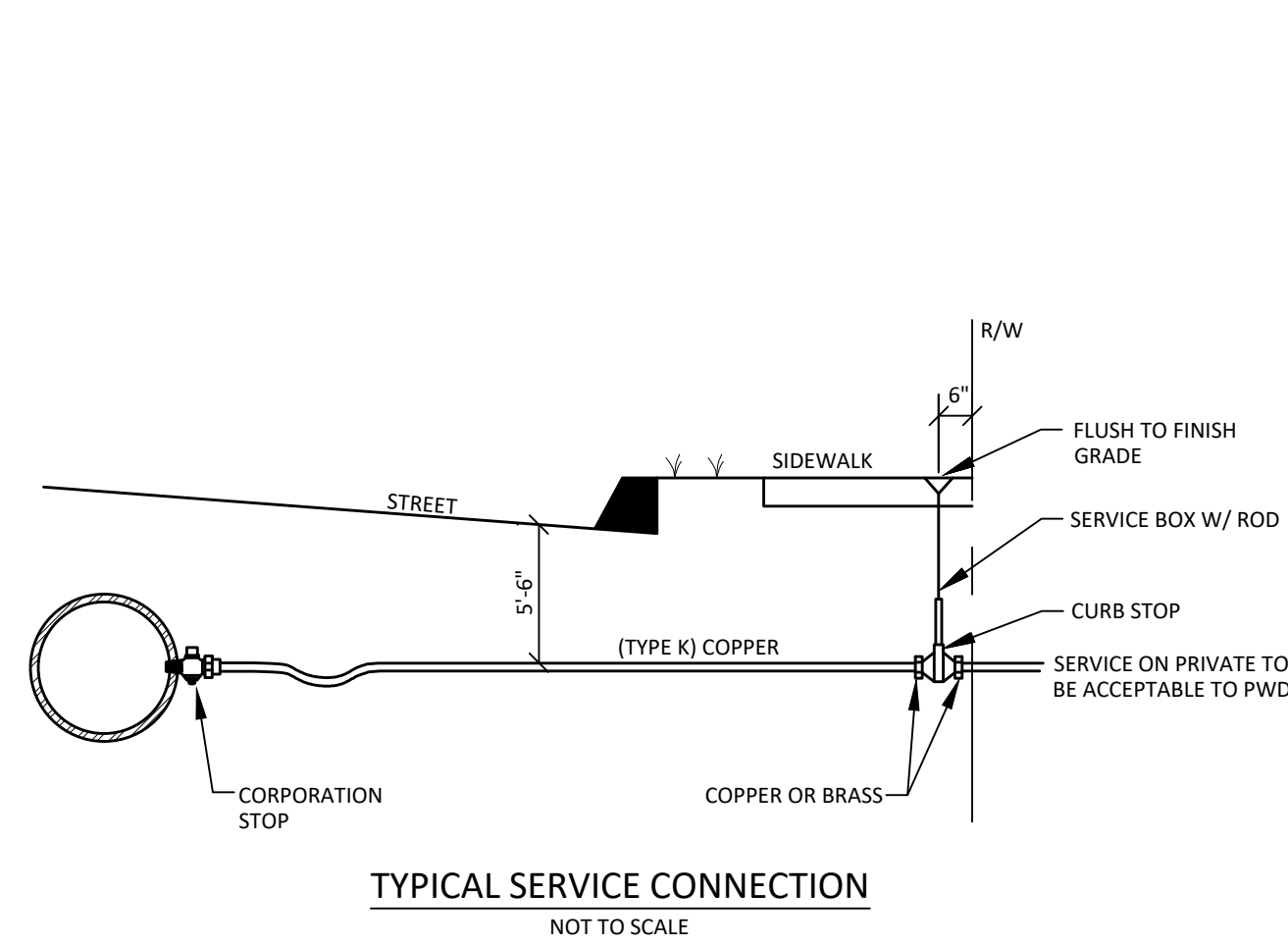
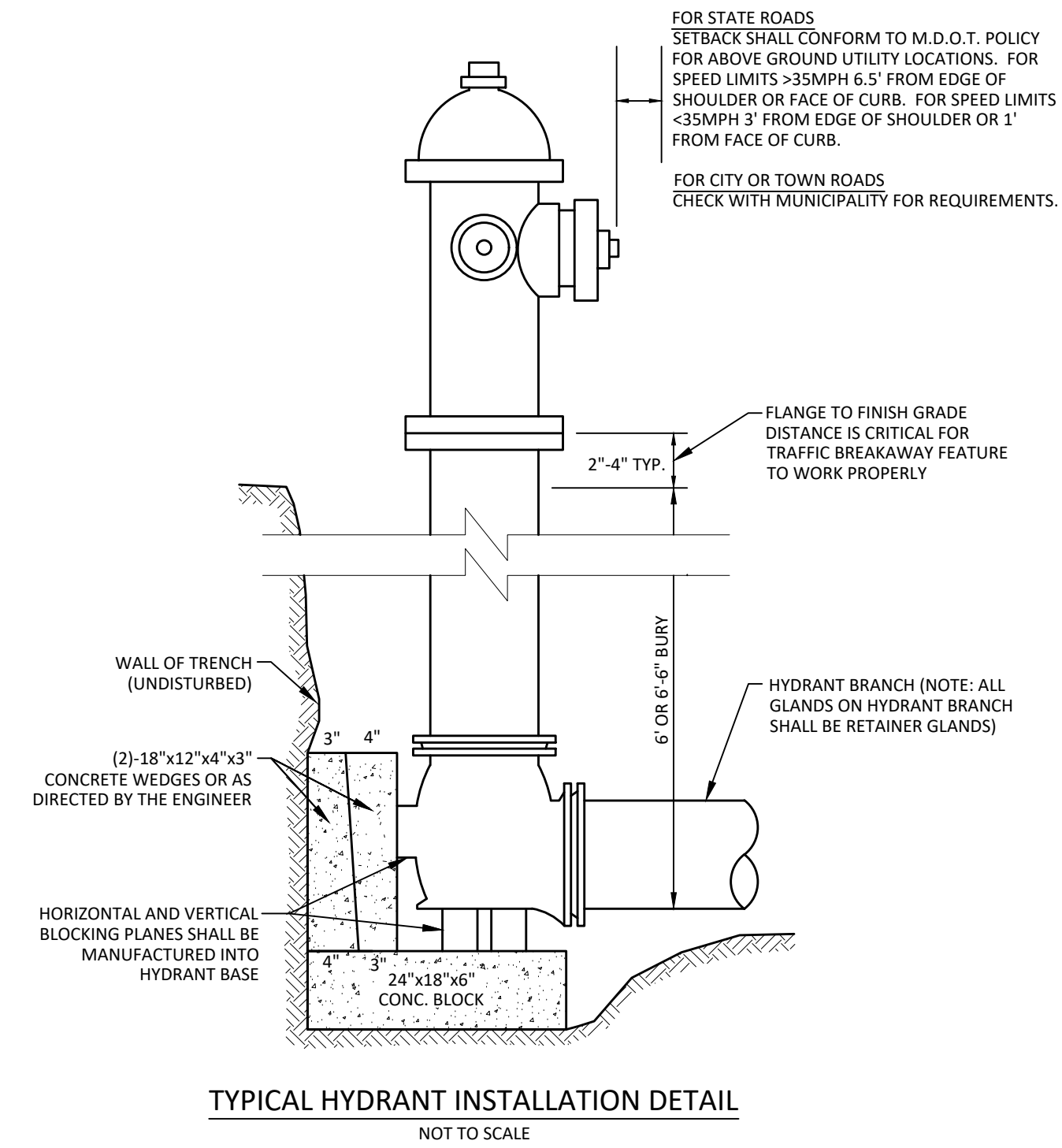
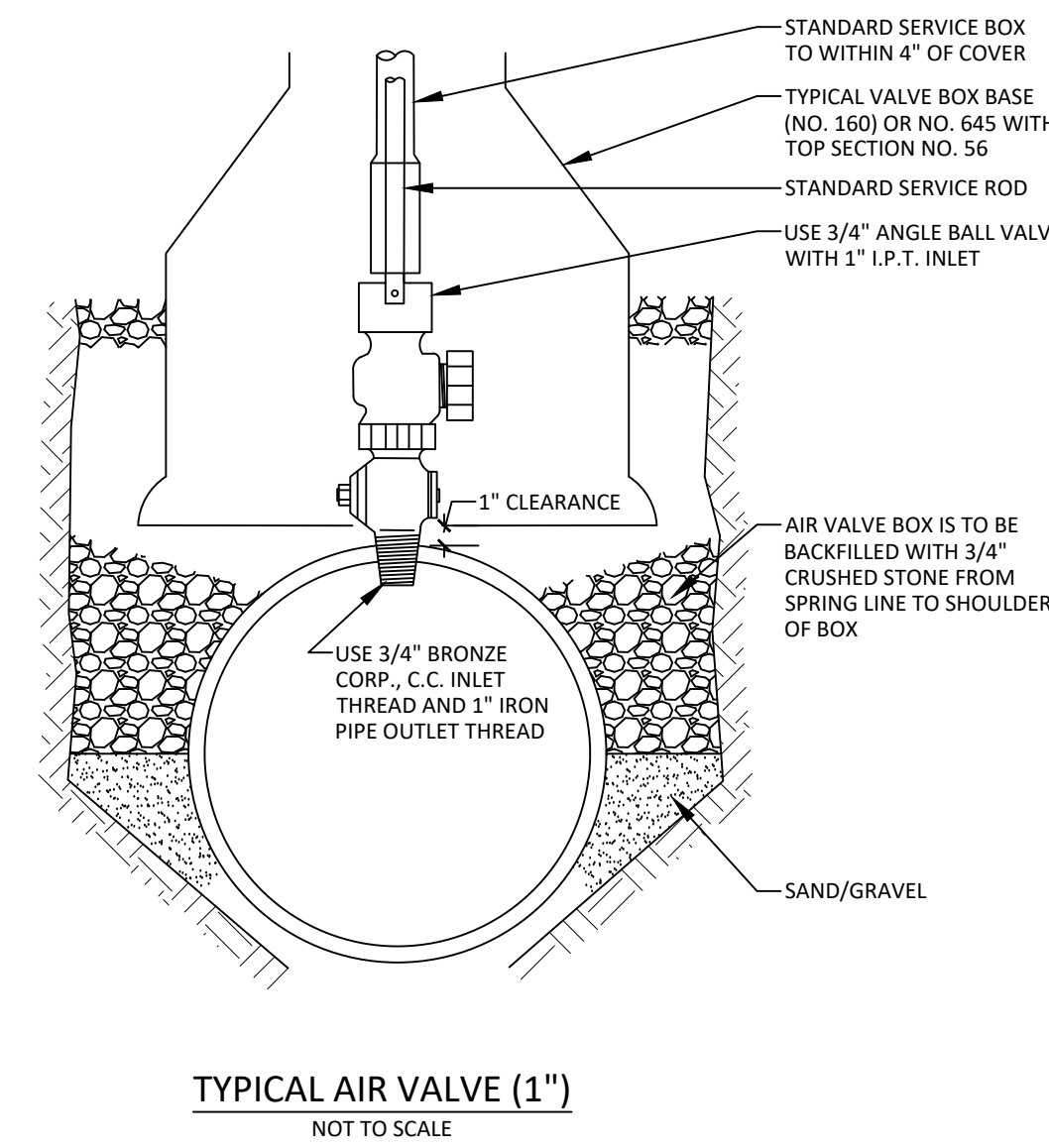
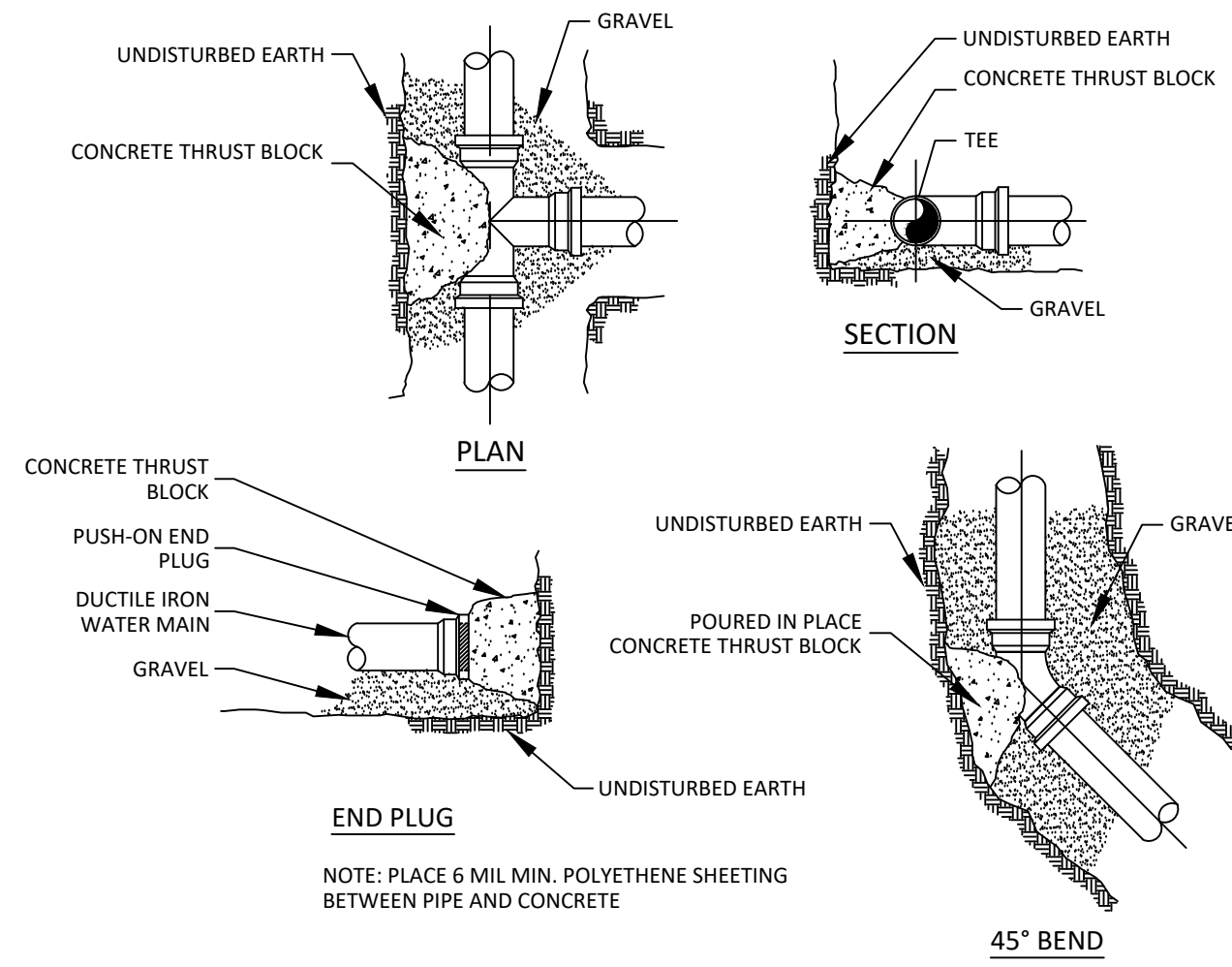
DETAILS
VERRILL FARM SUBDIVISION
VISTA VIEW LANE & SHAWER ROAD
GRAY, MAINE
FOR: **AMBROSIA DEVELOPMENT & INVESTMENTS**
78 WEBER ROAD
SEABROOK, NH 03874

20053
JOB NUMBER:
AS NOTED
SCALE:
12-21-2020
DATE:
SHEET 10 OF 11
D-2



FITTINGS	CONCRETE THRUST BLOCK SIZE REQUIREMENTS		
	SQ. FT. OF BEARING ON UNDISTURBED SOIL		
PIPE SIZE	90° BENDS	45° BENDS	TEES AND PLUGS
6"	4.0	2.0	3.0
8"	8.0	4.0	6.0
12"	15	9	12
16"	26	14	19
20"	40	22	28

BASED ON SOIL BEARING PRESSURE OF 2000PSF AND 100PSI LINE PRESSURE. COMPACT COURSE TO FINE SANDS AND CLAYS REQUIRE ENGINEERED BLOCKS. ENGINEERED BLOCKS WILL TYPICALLY REQUIRE REINFORCING STEEL OF #5 AT 12".



DM ROMA
CONSULTING ENGINEERS
P.O. BOX 1116
WINDHAM, ME 04092
(207) 310-0506

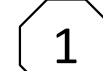






REV.	DATE	BY	DESCRIPTION
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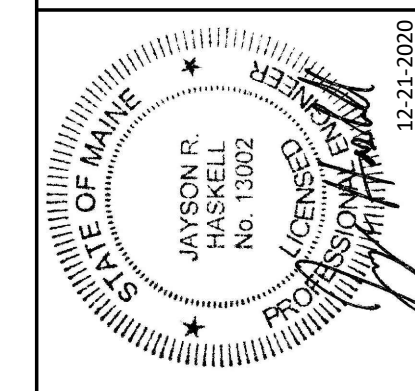
DETAILS
VERRILL FARM SUBDIVISION
VISTA VIEW LANE & SHAWER ROAD
GRAY, MAINE
FOR:
AMBROSIA DEVELOPMENT & INVESTMENTS
78 WEBER ROAD
SEABROOK, NH 03874

20053
JOB NUMBER:
AS NOTED
SCALE:
12-21-2020
DATE:
SHEET 11 OF 11
D-3



WATERSHED MAP LEGEND

-  WATERSHED NO.
-  REACH/STUDY POINT
-  POND
-  WATERSHED BOUNDARY
-  TIME OF CONCENTRATION
-  REACH PATH
-  SOIL BOUNDARY



DM ROMA
 CONSULTING ENGINEERS
 P.O. BOX 1116
 WINDHAM, ME 04062
 (207) 310-0506

REV	DATE	BY	DESCRIPTION
A	12-21-20	JRC	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW

WATERSHED MAP: PRE-DEVELOPMENT
 VERRILL FARM SUBDIVISION
 VISTA VIEW LANE & SHAKER ROAD
 GRAY, MAINE
 FOR: AMBROSIA DEVELOPMENT & INVESTMENTS
 78 WEBER ROAD
 SEABROOK, NH 03874

20053
 JOB NUMBER:
 1" = 100'
 SCALE:
 12-21-2020
 DATE:
 SHEET 1 OF 2
 WS-1



WATERSHED MAP LEGEND

- WATERSHED NO.
- REACH/STUDY POINT
- POND
- WATERSHED BOUNDARY
- TIME OF CONCENTRATION
- REACH PATH
- SOIL BOUNDARY

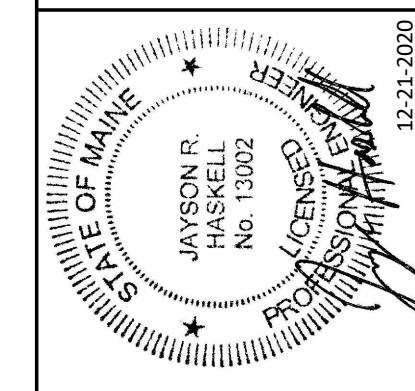
Stormwater Treatment Table

	Total Watershed Area (SF)	New Road Impervious Area (SF)	Assumed Lot Impervious Area (SF)	New Landscaped Area (SF)	Existing/Offsite Impervious Area (SF)*	Existing/Offsite Landscaping Area (SF)*	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated (SF)	New Landscaped Area Treated (SF)	Treatment Device
WS-1	501,875	0	0	0	65,753	88,162	347,960	No	0	0	None
WS-10	81,502	0	3,500	29,594	89	102	47,495	Drripedge	1,750	0	Drripedge Only
WS-20	371,549	21,539	10,500	96,924	32,059	55,438	155,090	Yes	32,039	96,924	Wet Pond 1
WS-21	144,268	8,917	10,500	117,741	0	0	7,110	Yes	19,417	117,741	Wet Pond 1
WS-22	482,613	8,135	10,500	84,484	25,224	61,186	293,083	Yes	18,635	84,484	Wet Pond 2
WS-23	49,842	5,754	3,500	40,589	0	0	0	Yes	9,254	40,589	Wet Pond 2
WS-24	386,191	1,240	3,500	55,088	944	8,195	317,224	Drripedge	1,750	0	None
WS-25	72,590	2,124	7,000	44,847	0	0	18,619	Yes	9,124	44,847	FB1
WS-30	257,515	0	0	0	0	0	257,515	No	0	0	None
Total		47,710	49,000	469,266					91,969	384,584	

* The project is not taking credit for the Existing / Offsite impervious and landscaped areas, but are included in the BMP sizing calculations for each treatment device.
 ** Development associated with wetland & stream road crossings are exempt from the Chapter 500 General Standards. Approximately 3,286 s.f. of impervious surface and 4,592 s.f. of landscaped area has been removed from WS-24, which is associated with the stream crossing for the back lot (Lots 13 & 14).

New Impervious Area = 96,710
 New Impervious Area Requiring Treatment (95%) = 91,874
 Provided New Impervious Treatment = 91,969
 95% New Impervious Area Treated

New Developed Area = 565,976
 New Developed Area Requiring Treatment (80%) = 452,781
 New Developed Area Treated = 476,554
 84% New Developed Area Treated



DM ROMA
 CONSULTING ENGINEERS
 P.O. BOX 1116
 WINDHAM, ME 04062
 (207) 310-0506

REV	DATE	BY	DESCRIPTION
A	12-21-20	JRC	ISSUED FOR PRELIMINARY SUBDIVISION REVIEW

WATERSHED MAP: POST-DEVELOPMENT
 VERRILL FARM SUBDIVISION
 VISTA VIEW LANE & SHAWER ROAD
 GRAY, MAINE
 FOR: AMBROSIA DEVELOPMENT & INVESTMENTS
 28 WEAVER ROAD
 SEABROOK, NH 03874

20053
 JOB NUMBER:
 1" = 100'
 SCALE:
 12-21-2020
 DATE:
 SHEET 2 OF 2
 WS-2

STORMWATER MANAGEMENT REPORT

**VERRILL FARM RESIDENTIAL OPEN SPACE SUBDIVISION
SHAKER ROAD
GRAY, MAINE**

A. Narrative

Ambrosia Development & Investments, the applicant, is proposing to develop a 26.5-acre parcel off of Skaker Road in Gray, Maine. The project site is identified as Lot 15-29 on the Town of Gray Assessor's Map 20 and is located in the Rural Residential and Agriculture (RRA) zoning district. The site currently contains a vacant land that has been historically utilized as an agricultural field, and is bisected by Mill Brook.

The proposed development has been designed to the Town of Town of Gray Residential Open Space subdivision standards including 14 single family residential lots served by an approximately 1,600 linear foot paved road off of Shaker Road. The lots will be served by public water (12 of 14 lots) and private wells (2 lots), with all lots being served by private on-site septic systems and underground electrical services.

In general, the property drains southeasterly to Mill Brook ultimately discharging to the Royal River.

B. Alterations to Land Cover

Ambrosia Development & Investments, intends to construct the roadway, public utility and stormwater infrastructure and sell residential lots with homes. The applicant will be responsible for creating approximately 96,710 square feet (2.22± acres) of impervious surface consisting of the proposed roadway, houses and driveways and approximately 469,266 square feet (10.77± acres) of landscaped area totaling approximately 565,976 square feet (12.99± acres) of total developed area.

The Town of Gray's Subdivision Ordinance indicates that the project's stormwater design will be required to meet the Basic, General and Flooding Standards of the Chapter 500 Stormwater Management rules.

The site is moderately sloped (5-9%) with steeper slopes closer to Mill Brook. Soils on the property were determined utilizing the Medium Intensity Soil Maps for Cumberland County, Maine published by the Natural Resources Conservation Service. The soils boundaries and hydrologic soils group (HSG) designations are indicated on the Post Development Watershed Map within the design plan set and a Soils Map has been included as Attachment 1 of this report.

C. Methodology and Modeling Assumptions

The proposed stormwater management system has been designed utilizing Best Management Practices to maintain existing drainage patterns while providing stormwater quality improvement measures. The goal

of the storm drainage system design is to remove potential stormwater pollutants from runoff generated by the development while providing attenuation of the peak rates of runoff leaving the site. The method utilized to predict the surface water runoff rates in this analysis is a computer program entitled HydroCAD, which is based on the same methods that were originally developed by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, and utilized in the TR-20 modeling program. Peak rates of runoff are forecasted based upon land use, hydrologic soil conditions, vegetative cover, contributing watershed area, time of concentration, rainfall data, storage volumes of detention basins and the hydraulic capacity of structures. The computer model predicts the amount of runoff as a function of time, with the ability to include the attenuation effect due to dams, lakes, large wetlands, floodplains and constructed stormwater management basins. The input data for rainfalls with statistical recurrence frequencies of 2-, 10- and 25 years was obtained from the Northeast Regional Climate Center's extreme precipitation tables for the project site. A highlighted extreme precipitation table is included in Attachment 1 illustrating the rainfall for the modeled storm events.

D. Basic Standards

The project is required by the MDEP and the Town to provide permanent and temporary Erosion Control Best Management Practices. These methods are incorporated into the project design and outlined in detail in the plan set.

E. General Standard

The Town of Gray requires the entire project to meet the General Standards outlined in the MDEP Chapter 500 to provide water quality treatment for no less than 95% of the new road and lot impervious surface and 80% of the total developed area associated with the project.

To provide the required stormwater treatment for the subdivision, two (2) wet ponds, one (1) underdrained filter basin, and roofline dripedges around each house will be constructed as part of the development. As a result of the proposed stormwater infrastructure, the project provides water quality treatment for 95% of the new impervious surfaces and 84% of the new developed areas. General Standard Calculations can be found on the Watershed Maps and enclosed as Attachment 3 in this report.

The BMPs have been designed based on the MDEP guidelines and to provide adequate flooding storage during the larger storm events. These sizing calculations have been included in Attachment 4 of this report. To demonstrate that the design of the wet ponds and the underdrained filter basin have the required 1 foot of freeboard between the emergency spillway and the top of berm during the 25-year storm event assuming failure of the other discharge devices, the HydroCAD output has been provided in Attachment 4 of this report. Additionally, within Attachment 4, are the hydrograph tables for the proposed ponds demonstrating that the outlet controls the release of runoff to drain the channel protection volume between 24 and 48 hours.

F. Flooding Standard

The Town of Gray requires the project to detain, retain or result in the infiltration of stormwater from the 24-hour storms of the 2-year, 10-year and 25-year frequencies such that the peak flows of

stormwater from the project site do not exceed the peak flows of stormwater prior to undertaking the project.

The project’s stormwater design incorporates the integration of two wet ponds and one underdrained soil filter to maintain these peak stormwater flows to pre-developed project conditions. The proposed BMPs are intended to collect the tributary runoff and gradually discharge the stormwater over a 24- to 48-hour period.

The proposed project design has been modeled to evaluate and analyze the stormwater runoff characteristics of the site prior to construction of the project and upon completion of all proposed construction activities.

The first study point, study point 1 (SP-1) is located along the southerly limits of the property, where stormwater generated from both off-site and on-site tributary areas is discharged from the site then continues to drain overland in a southeasterly direction to Mill Brook and ultimately into the Royal River. The sub basin watersheds draining to SP-1 are associated with the westerly portion of the project site as well as offsite area west of Shaker Road that is conveyed under Shaker Road in an existing 15” road culvert. Sub-basin watershed area for SP1 is made up of both proposed onsite development and offsite areas, and consists of developed land, undeveloped woodland and undeveloped meadow areas.

Study point 2 (SP-2) also located along the southerly limits of the property further east than SP-1, where stormwater discharged from the site, is intercepted and conveyed in Mill Brook and ultimately into the Royal River. The sub basin watersheds draining to SP-2 are associated with the central portion of the project site and consists of both off-site and on-site existing and proposed residential development, undeveloped meadow, and woodland.

Study point 3 (SP-2) is located along the southerly property limits further east of SP-2 where stormwater discharged from the site is conveyed overland and into an un-named tributary of Mill Brook. Discharge from SP-3 continues to drain overland in a southeasterly direction to the un-named tributary then into Mill Brook and ultimately into the Royal River. The sub basin watershed associated with SP-3 is associated with the eastern most portion of the project site as well as offsite areas, and consists of undeveloped meadow, and woodland.

The following table summarizes the analysis:

Study Point	2-Year (cfs)		10-Year (cfs)		25-Year (cfs)	
	Pre	Post	Pre	Post	Pre	Post
SP1	4.29	4.01	8.31	7.45	10.04	7.90
SP2	11.41	4.76	26.02	17.03	38.89	31.67
SP3	2.50	2.50	6.06	6.06	9.21	9.21

As illustrated in the table on the previous page, in general the proposed project’s design including the integration of the proposed BMPs, specifically the two proposed wet ponds and the proposed underdrained soil filter basins, maintains or reduces the peak rates of runoff at all study points.

The watershed maps showing pre-development and post-development drainage patterns are included in the plan set and the computations performed with the HydroCAD software program are included as Attachment 5 of this report.

G. Maintenance of common facilities or property

The applicant will be responsible for the maintenance of the stormwater facilities until a homeowner’s association is established and an Inspection, Maintenance and Housekeeping Plan for the project has been created and has been included in Attachment 6 of this report.

Prepared by:

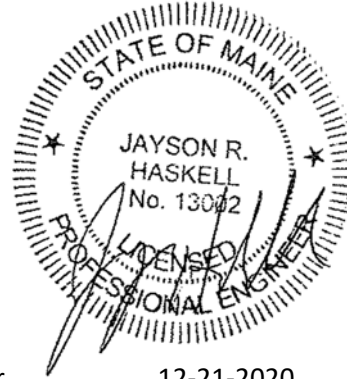
DM ROMA CONSULTING ENGINEERS



J.P. Connolly
Senior Project Engineer



Jayson R. Haskell P.E.
Southern Maine Regional Manager

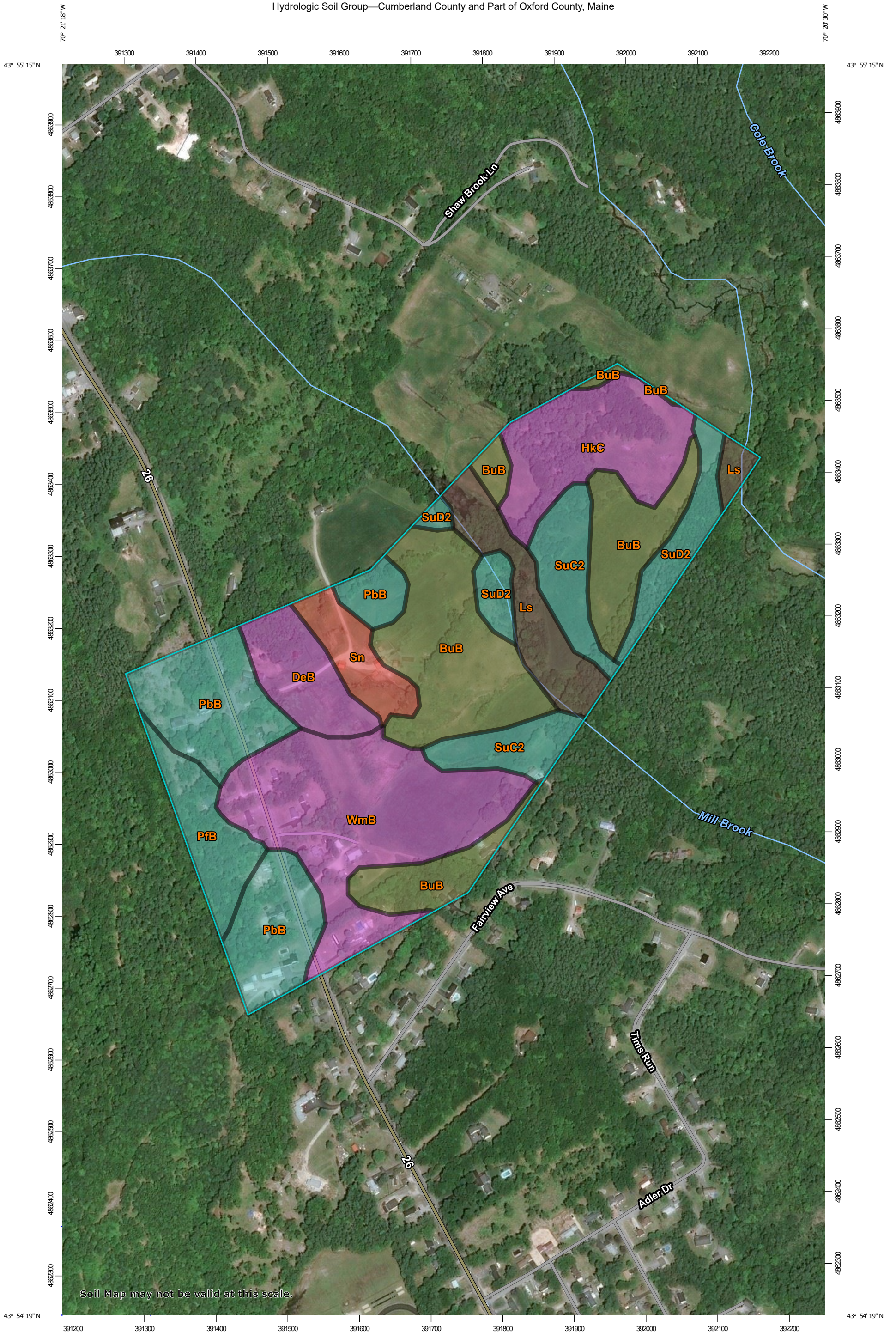


12-21-2020

ATTACHMENT 1

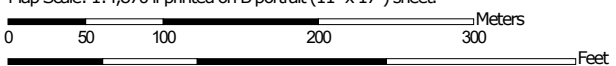
MEDIUM INTENSITY SOILS MAP & EXTREME PRECIPITATION TABLE

Hydrologic Soil Group—Cumberland County and Part of Oxford County, Maine



Soil Map may not be valid at this scale.


Map Scale: 1:4,870 if printed on B portrait (11" x 17") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

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 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Cumberland County and Part of Oxford County, Maine
 Survey Area Data: Version 17, Jun 5, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 7, 2019—Jul 2, 2019

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BuB	Lamoine silt loam, 3 to 8 percent slopes	C/D	20.5	22.7%
DeB	Deerfield loamy fine sand, 3 to 8 percent slopes	A	4.6	5.1%
HkC	Hermon sandy loam, 8 to 20 percent slopes, extremely stony	A	9.1	10.0%
Ls	Limerick-Saco silt loams	B/D	6.0	6.7%
PbB	Paxton fine sandy loam, 3 to 8 percent slopes	C	13.9	15.3%
PfB	Paxton very stony fine sandy loam, 3 to 8 percent slopes	C	4.3	4.7%
Sn	Scantic silt loam, 0 to 3 percent slopes	D	3.3	3.6%
SuC2	Suffield silt loam, 8 to 15 percent slopes, eroded	C	6.8	7.5%
SuD2	Suffield silt loam, 15 to 25 percent slopes, eroded	C	4.9	5.5%
WmB	Windsor loamy sand, 0 to 8 percent slopes	A	17.1	18.9%
Totals for Area of Interest			90.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	Yes
State	Maine
Location	
Longitude	70.352 degrees West
Latitude	43.911 degrees North
Elevation	0 feet
Date/Time	Mon, 21 Dec 2020 08:11:30 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.25	0.38	0.48	0.63	0.78	0.99	1yr	0.67	0.97	1.16	1.50	1.95	2.55	2.90	1yr	2.26	2.78	3.24	3.92	4.48	1yr
2yr	0.32	0.49	0.60	0.80	1.00	1.27	2yr	0.87	1.19	1.48	1.89	2.41	3.09	3.46	2yr	2.74	3.33	3.85	4.58	5.24	2yr
5yr	0.38	0.59	0.73	0.98	1.26	1.61	5yr	1.09	1.49	1.88	2.39	3.04	3.86	4.35	5yr	3.42	4.18	4.82	5.68	6.41	5yr
10yr	0.43	0.67	0.85	1.15	1.50	1.93	10yr	1.29	1.75	2.26	2.87	3.63	4.57	5.16	10yr	4.05	4.97	5.72	6.68	7.48	10yr
25yr	0.51	0.81	1.03	1.42	1.88	2.44	25yr	1.63	2.19	2.87	3.64	4.58	5.72	6.49	25yr	5.07	6.24	7.17	8.29	9.18	25yr
50yr	0.57	0.92	1.18	1.66	2.25	2.94	50yr	1.94	2.59	3.46	4.38	5.48	6.79	7.72	50yr	6.01	7.42	8.52	9.77	10.71	50yr
100yr	0.66	1.08	1.39	1.96	2.68	3.52	100yr	2.31	3.06	4.14	5.23	6.52	8.05	9.18	100yr	7.12	8.83	10.13	11.51	12.51	100yr
200yr	0.76	1.24	1.61	2.31	3.20	4.23	200yr	2.76	3.62	4.97	6.28	7.79	9.55	10.92	200yr	8.45	10.50	12.04	13.56	14.61	200yr
500yr	0.92	1.52	1.98	2.88	4.05	5.38	500yr	3.49	4.54	6.33	7.97	9.84	11.97	13.75	500yr	10.60	13.22	15.14	16.85	17.96	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.23	0.36	0.44	0.59	0.72	0.87	1yr	0.62	0.85	1.03	1.36	1.79	2.30	2.60	1yr	2.03	2.50	3.04	3.60	4.19	1yr
2yr	0.30	0.47	0.58	0.78	0.96	1.18	2yr	0.83	1.15	1.37	1.86	2.40	2.99	3.36	2yr	2.64	3.23	3.73	4.46	5.09	2yr
5yr	0.34	0.52	0.65	0.89	1.13	1.39	5yr	0.98	1.36	1.61	2.16	2.84	3.57	4.01	5yr	3.16	3.86	4.46	5.25	5.98	5yr
10yr	0.37	0.57	0.71	0.99	1.27	1.58	10yr	1.10	1.54	1.81	2.42	3.21	4.05	4.59	10yr	3.59	4.41	5.08	5.91	6.72	10yr
25yr	0.42	0.64	0.79	1.13	1.49	1.86	25yr	1.29	1.82	2.13	2.86	3.69	4.78	5.47	25yr	4.23	5.26	6.04	6.89	7.84	25yr
50yr	0.45	0.69	0.86	1.24	1.67	2.09	50yr	1.44	2.05	2.40	3.26	4.18	5.41	6.24	50yr	4.79	6.00	6.89	7.70	8.78	50yr
100yr	0.50	0.75	0.94	1.36	1.86	2.37	100yr	1.61	2.32	2.70	3.49	4.73	6.11	7.10	100yr	5.41	6.83	7.83	8.60	9.81	100yr
200yr	0.54	0.81	1.02	1.48	2.07	2.63	200yr	1.78	2.57	3.06	3.90	5.35	6.87	8.07	200yr	6.08	7.76	8.89	9.58	10.92	200yr
500yr	0.60	0.90	1.16	1.68	2.39	3.08	500yr	2.06	3.01	3.58	4.50	6.29	8.03	9.55	500yr	7.11	9.19	10.50	11.02	12.53	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.27	0.42	0.52	0.70	0.86	1.09	1yr	0.74	1.06	1.25	1.72	2.22	2.75	3.11	1yr	2.44	2.99	3.48	4.19	4.74	1yr
2yr	0.33	0.51	0.63	0.85	1.05	1.27	2yr	0.91	1.24	1.47	2.01	2.59	3.21	3.60	2yr	2.84	3.46	3.98	4.75	5.40	2yr
5yr	0.41	0.64	0.79	1.08	1.38	1.66	5yr	1.19	1.62	1.92	2.60	3.39	4.16	4.70	5yr	3.68	4.52	5.20	6.09	6.84	5yr
10yr	0.49	0.76	0.94	1.31	1.70	2.03	10yr	1.46	1.98	2.35	3.18	4.19	5.09	5.79	10yr	4.51	5.57	6.39	7.37	8.20	10yr
25yr	0.64	0.97	1.20	1.72	2.26	2.67	25yr	1.95	2.61	3.07	4.10	5.42	6.65	7.60	25yr	5.89	7.31	8.38	9.53	10.45	25yr
50yr	0.77	1.17	1.45	2.09	2.81	3.28	50yr	2.43	3.21	3.77	5.06	6.73	8.16	9.36	50yr	7.22	9.00	10.30	11.57	12.56	50yr
100yr	0.93	1.41	1.76	2.55	3.50	4.04	100yr	3.02	3.95	4.62	6.19	8.37	10.01	11.54	100yr	8.86	11.09	12.69	14.09	15.13	100yr
200yr	1.13	1.70	2.15	3.11	4.34	4.87	200yr	3.74	4.76	5.67	7.58	10.43	12.30	14.23	200yr	10.89	13.68	15.63	17.16	18.24	200yr
500yr	1.47	2.18	2.81	4.08	5.80	6.44	500yr	5.01	6.29	7.43	9.92	13.98	16.18	18.80	500yr	14.32	18.08	20.62	22.33	23.43	500yr



ATTACHMENT 2

TEST PIT LOGS



VERRILL FARMS, SHAKER ROAD, GRAY 9-4-20

Observation Hole # <u>TP-1</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring					Observation Hole # <u>TP-2</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring				
" Depth of organic horizon above mineral soil					" Depth of organic horizon above mineral soil				
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
	0 SANDY		DARK			0 FINE SAND		DARK	
	6 LOAM	FRIABLE	BROWN			6 SANDY LOAM	FRIABLE	BROWN	
	12 LOAM		YELLOW			12 VERY FINE SAND		GRAY	FEW
	18 SILT LOAM	FIRM	GRAY	FEW		18 FINE SANDY LOAM	FIRM		
	24					24 TD			
	30					30 SILT			
	36					36 LOAM			
	42								
	48					48			
Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
7	C		16		8	D		10	

Observation Hole # <u>TP-3</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring					Observation Hole # <u>TP-4</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring				
" Depth of organic horizon above mineral soil					" Depth of organic horizon above mineral soil				
Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
	0 FINE		DARK BROWN			0 FINE SAND		DARK BROWN	
	6 SANDY LOAM	FRIABLE	YELLOW BROWN			6 SANDY LOAM		BROWN	
	12 VERY FINE SAND	FIRM	GRAY	FEW		12 FINE SAND	LOOSE	YELLOW BROWN	
	18 SILT LOAM					18 SAND		LIGHT GRAY BROWN	
	24					24			
	30					30			
	36					36			
	42					42			
	48					48			
Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
8	D		14		7	C		36	

Mark Cenci 262 9-23-20
Site Evaluator Signature SE# Date

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www.markcenci.com



VERRILL FARMS, SHAKER ROAD, GRAY 9-4-20

<p>Observation Hole # <u>TP5</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td></td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>FINE SANDY/LOAM</td><td>FRIABLE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>LIGHT BROWN</td><td></td></tr> <tr><td>18</td><td></td><td></td><td></td><td>FEW</td></tr> <tr><td>24</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile</td> <td style="width: 15%;">Classification Condition</td> <td style="width: 15%;">Slope Percent</td> <td style="width: 15%;">Limiting Factor Depth</td> <td style="width: 40%;"> <input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> <tr> <td></td> <td style="text-align: center;">C</td> <td></td> <td style="text-align: center;">16</td> <td></td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0			DARK BROWN		6	FINE SANDY/LOAM	FRIABLE	BROWN		12			LIGHT BROWN		18				FEW	24	SILT LOAM	FIRM	GRAY BROWN		30					36					42					48					Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth		C		16		<p>Observation Hole # <u>TP6</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td></td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>FINE SANDY/LOAM</td><td>FRIABLE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>YELLOW BROWN</td><td></td></tr> <tr><td>18</td><td></td><td></td><td></td><td></td></tr> <tr><td>24</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td>FEW</td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile</td> <td style="width: 15%;">Classification Condition</td> <td style="width: 15%;">Slope Percent</td> <td style="width: 15%;">Limiting Factor Depth</td> <td style="width: 40%;"> <input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> <tr> <td></td> <td style="text-align: center;">C</td> <td></td> <td style="text-align: center;">16</td> <td></td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0			DARK BROWN		6	FINE SANDY/LOAM	FRIABLE	BROWN		12			YELLOW BROWN		18					24	SILT LOAM	FIRM	GRAY BROWN	FEW	30					36					42					48					Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth		C		16	
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Mark Cenci 262 9-23-20
 Site Evaluator Signature SE # Date

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VERRILL FARMS, SHAKER ROAD, GRAY 9-4-20

<p>Observation Hole # <u>TP-9</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 20%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 15%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td></td><td>DARK</td><td></td></tr> <tr><td>6</td><td>SANDY LOAM</td><td>FRIABLE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>YELLOW</td><td></td></tr> <tr><td>18</td><td>FINE SAND</td><td>LOOSE</td><td>BROWN</td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td>GRAY</td><td>NONE</td></tr> <tr><td>36</td><td></td><td></td><td>BROWN</td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 12.5%;">Soil Profile <u>5</u></td> <td style="width: 12.5%;">Classification Condition <u>B</u></td> <td style="width: 12.5%;">Slope Percent</td> <td style="width: 12.5%;">Limiting Factor Depth <u>—</u></td> <td style="width: 12.5%;"><input type="checkbox"/> Groundwater</td> <td style="width: 12.5%;"><input type="checkbox"/> Restrictive Layer</td> <td style="width: 12.5%;"><input type="checkbox"/> Bedrock</td> <td style="width: 12.5%;"><input type="checkbox"/> Pit Depth</td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	FINE		DARK		6	SANDY LOAM	FRIABLE	BROWN		12			YELLOW		18	FINE SAND	LOOSE	BROWN		24					30			GRAY	NONE	36			BROWN		42					48					Soil Profile <u>5</u>	Classification Condition <u>B</u>	Slope Percent	Limiting Factor Depth <u>—</u>	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Restrictive Layer	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Pit Depth	<p>Observation Hole # <u>TP-10</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 20%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 15%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td></td><td>DARK</td><td></td></tr> <tr><td>6</td><td>SANDY LOAM</td><td>FRIABLE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>YELLOW</td><td></td></tr> <tr><td>18</td><td>FINE SAND</td><td>LOOSE</td><td>BROWN</td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY</td><td>FEW</td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 12.5%;">Soil Profile <u>7</u></td> <td style="width: 12.5%;">Classification Condition <u>C</u></td> <td style="width: 12.5%;">Slope Percent</td> <td style="width: 12.5%;">Limiting Factor Depth <u>30</u></td> <td style="width: 12.5%;"><input type="checkbox"/> Groundwater</td> <td style="width: 12.5%;"><input type="checkbox"/> Restrictive Layer</td> <td style="width: 12.5%;"><input type="checkbox"/> Bedrock</td> <td style="width: 12.5%;"><input type="checkbox"/> Pit Depth</td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	FINE		DARK		6	SANDY LOAM	FRIABLE	BROWN		12			YELLOW		18	FINE SAND	LOOSE	BROWN		24					30					36	SILT LOAM	FIRM	GRAY	FEW	42					48					Soil Profile <u>7</u>	Classification Condition <u>C</u>	Slope Percent	Limiting Factor Depth <u>30</u>	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Restrictive Layer	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Pit Depth
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<p>Observation Hole # <u>TP-11</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 20%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 15%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td></td><td>DARK</td><td></td></tr> <tr><td>6</td><td>SANDY LOAM</td><td>FRIABLE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>OLIVE BROWN</td><td>COMMON</td></tr> <tr><td>18</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 12.5%;">Soil Profile <u>8</u></td> <td style="width: 12.5%;">Classification Condition <u>D</u></td> <td style="width: 12.5%;">Slope Percent</td> <td style="width: 12.5%;">Limiting Factor Depth <u>10</u></td> <td style="width: 12.5%;"><input type="checkbox"/> Groundwater</td> <td style="width: 12.5%;"><input type="checkbox"/> Restrictive Layer</td> <td style="width: 12.5%;"><input type="checkbox"/> Bedrock</td> <td style="width: 12.5%;"><input type="checkbox"/> Pit Depth</td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	FINE		DARK		6	SANDY LOAM	FRIABLE	BROWN		12			OLIVE BROWN	COMMON	18	SILT LOAM	FIRM	GRAY BROWN		24					30					36					42					48					Soil Profile <u>8</u>	Classification Condition <u>D</u>	Slope Percent	Limiting Factor Depth <u>10</u>	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Restrictive Layer	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Pit Depth	<p>Observation Hole # <u>TP-12</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 20%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 15%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>SILT</td><td>SOME</td><td>DK.</td><td></td></tr> <tr><td>6</td><td>LOAM</td><td>VERY FIRM</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td></td><td></td><td></td></tr> <tr><td>18</td><td>SAND</td><td>LOOSE</td><td>YELLOW</td><td></td></tr> <tr><td>24</td><td></td><td></td><td>BROWN</td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td>SANDY LOAM</td><td>FIRM</td><td>GRAY</td><td>COMMON</td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 12.5%;">Soil Profile <u>7</u></td> <td style="width: 12.5%;">Classification Condition <u>C</u></td> <td style="width: 12.5%;">Slope Percent</td> <td style="width: 12.5%;">Limiting Factor Depth <u>40</u></td> <td style="width: 12.5%;"><input type="checkbox"/> Groundwater</td> <td style="width: 12.5%;"><input type="checkbox"/> Restrictive Layer</td> <td style="width: 12.5%;"><input type="checkbox"/> Bedrock</td> <td style="width: 12.5%;"><input type="checkbox"/> Pit Depth</td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	SILT	SOME	DK.		6	LOAM	VERY FIRM	BROWN		12					18	SAND	LOOSE	YELLOW		24			BROWN		30					36					42	SANDY LOAM	FIRM	GRAY	COMMON	48					Soil Profile <u>7</u>	Classification Condition <u>C</u>	Slope Percent	Limiting Factor Depth <u>40</u>	<input type="checkbox"/> Groundwater	<input type="checkbox"/> Restrictive Layer	<input type="checkbox"/> Bedrock	<input type="checkbox"/> Pit Depth
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<p>Observation Hole # <u>TP-13</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td></td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>FINE</td><td></td><td></td><td></td></tr> <tr><td>12</td><td>SANDY FINE</td><td>FRAGILE</td><td>LIGHT BROWN</td><td></td></tr> <tr><td>18</td><td>LOAM</td><td></td><td></td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY</td><td>FEW</td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile: <u>8</u></td> <td style="width: 15%;">Classification: <u>C</u></td> <td style="width: 15%;">Slope: _____ Percent</td> <td style="width: 15%;">Limiting Factor: <u>30</u> Depth</td> <td style="width: 40%;"> <input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0			DARK BROWN		6	FINE				12	SANDY FINE	FRAGILE	LIGHT BROWN		18	LOAM				24					30	SILT LOAM	FIRM	GRAY	FEW	36					42					48					Soil Profile: <u>8</u>	Classification: <u>C</u>	Slope: _____ Percent	Limiting Factor: <u>30</u> Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	<p>Observation Hole # <u>TP-14</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td></td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>FINE SANDY</td><td>FRAGILE</td><td>YELLOW BROWN</td><td></td></tr> <tr><td>12</td><td>LOAM</td><td></td><td></td><td></td></tr> <tr><td>18</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile: <u>8</u></td> <td style="width: 15%;">Classification: <u>C</u></td> <td style="width: 15%;">Slope: _____ Percent</td> <td style="width: 15%;">Limiting Factor: _____ Depth</td> <td style="width: 40%;"> <input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0			DARK BROWN		6	FINE SANDY	FRAGILE	YELLOW BROWN		12	LOAM				18	SILT LOAM	FIRM	GRAY BROWN		24					30					36					42					48					Soil Profile: <u>8</u>	Classification: <u>C</u>	Slope: _____ Percent	Limiting Factor: _____ Depth	<input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
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<p>Observation Hole # <u>TP-15</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>SANDY LOAM</td><td>FRAGILE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td>FEW</td></tr> <tr><td>18</td><td></td><td></td><td></td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile: <u>8</u></td> <td style="width: 15%;">Classification: <u>D</u></td> <td style="width: 15%;">Slope: _____ Percent</td> <td style="width: 15%;">Limiting Factor: <u>9</u> Depth</td> <td style="width: 40%;"> <input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	FINE		DARK BROWN		6	SANDY LOAM	FRAGILE	BROWN		12	SILT LOAM	FIRM	GRAY BROWN	FEW	18					24					30					36					42					48					Soil Profile: <u>8</u>	Classification: <u>D</u>	Slope: _____ Percent	Limiting Factor: <u>9</u> Depth	<input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	<p>Observation Hole # <u>TP-16</u> <input type="checkbox"/> Test Pit <input type="checkbox"/> Boring</p> <p>_____ " Depth of organic horizon above mineral soil</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">Depth below mineral soil surface (inches)</th> <th style="width: 15%;">Texture</th> <th style="width: 15%;">Consistency</th> <th style="width: 15%;">Color</th> <th style="width: 10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td></td><td>DARK BROWN</td><td></td></tr> <tr><td>6</td><td>SANDY LOAM</td><td>FRAGILE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td>SILT LOAM</td><td>FIRM</td><td>GRAY BROWN</td><td>FEW</td></tr> <tr><td>18</td><td></td><td></td><td></td><td></td></tr> <tr><td>24</td><td></td><td></td><td></td><td></td></tr> <tr><td>30</td><td></td><td></td><td></td><td></td></tr> <tr><td>36</td><td></td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width: 15%;">Soil Profile: <u>8</u></td> <td style="width: 15%;">Classification: <u>D</u></td> <td style="width: 15%;">Slope: _____ Percent</td> <td style="width: 15%;">Limiting Factor: <u>9</u> Depth</td> <td style="width: 40%;"> <input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> </table>	Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling	0	FINE		DARK BROWN		6	SANDY LOAM	FRAGILE	BROWN		12	SILT LOAM	FIRM	GRAY BROWN	FEW	18					24					30					36					42					48					Soil Profile: <u>8</u>	Classification: <u>D</u>	Slope: _____ Percent	Limiting Factor: <u>9</u> Depth	<input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
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Observation Hole # <u>TP-17</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring					Observation Hole # <u>TP-18</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring				
" Depth of organic horizon above mineral soil					" Depth of organic horizon above mineral soil				
Texture	Consistency	Color	Mottling		Texture	Consistency	Color	Mottling	
0	FINE		DARK		0	FINE		DARK	
6	SANDY FRIABLE		BROWN		6	SANDY FRIABLE		BROWN	
12	LOAM		LIGHT BROWN		12	LOAM		YELLOW BROWN	
18				FEW	18	SILT	FIRM	GRAY	
24	SILT LOAM	FIRM	GRAY BROWN		24	LOAM			
30					30				
36					36				
42					42				
48					48				
Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
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Observation Hole # <u>TP-19</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring					Observation Hole # <u>TP-20</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring				
" Depth of organic horizon above mineral soil					" Depth of organic horizon above mineral soil				
Texture	Consistency	Color	Mottling		Texture	Consistency	Color	Mottling	
0	FINE		DARK		0	FINE		DARK	
6	SANDY FRIABLE		BROWN		6	SANDY FRIABLE		BROWN	
12	LOAM		YELLOW BROWN		12	LOAM			
18	FINE	LOOSE	GRAY		18	FINE		YELLOW BROWN	
24	SAND		BROWN		24	SAND	LOOSE		
30				FEW	30				
36	FINE SANDY LOAM	FIRM	GRAY		36			GRAY	
42	TILL				42				ABOVE
48					48				
Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	Soil Profile	Classification Condition	Slope Percent	Limiting Factor Depth	<input checked="" type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth
7	C		27		5	B		-	

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Date



VERRILL FARMS, SHAKER ROAD, GRAY 9-4-20

Observation Hole # <u>TP 21</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring " Depth of organic horizon above mineral soil _____ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Texture</th> <th style="width:15%;">Consistency</th> <th style="width:15%;">Color</th> <th style="width:10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td></td><td>DARK</td><td></td></tr> <tr><td>6</td><td>FINE</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td>SANDY / FRABLE LOAM</td><td>YELLOW BROWN</td><td></td></tr> <tr><td>18</td><td></td><td>BROWN</td><td></td></tr> <tr><td>24</td><td></td><td>GRAY BROWN</td><td></td></tr> <tr><td>30</td><td></td><td></td><td>FEW</td></tr> <tr><td>36</td><td>FIRM</td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width:15%;">Soil Profile</td> <td style="width:15%;">Classification</td> <td style="width:10%;">Slope</td> <td style="width:10%;">Limiting Factor</td> <td style="width:50%;"> <input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> <tr> <td>3(7)</td> <td>C</td> <td></td> <td>28</td> <td></td> </tr> <tr> <td></td> <td>Condition</td> <td>Percent</td> <td>Depth</td> <td></td> </tr> </table>	Texture	Consistency	Color	Mottling	0		DARK		6	FINE	BROWN		12	SANDY / FRABLE LOAM	YELLOW BROWN		18		BROWN		24		GRAY BROWN		30			FEW	36	FIRM			42				48				Soil Profile	Classification	Slope	Limiting Factor	<input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	3(7)	C		28			Condition	Percent	Depth		Observation Hole # <u>TP 22</u> <input checked="" type="checkbox"/> Test Pit <input type="checkbox"/> Boring " Depth of organic horizon above mineral soil _____ <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:10%;">Texture</th> <th style="width:15%;">Consistency</th> <th style="width:15%;">Color</th> <th style="width:10%;">Mottling</th> </tr> </thead> <tbody> <tr><td>0</td><td>FINE</td><td>DARK</td><td></td></tr> <tr><td>6</td><td>SANDY / FRABLE LOAM</td><td>BROWN</td><td></td></tr> <tr><td>12</td><td></td><td>YELLOW BROWN</td><td></td></tr> <tr><td>18</td><td>FINE</td><td>BROWN</td><td></td></tr> <tr><td>24</td><td>SAND</td><td>GRAY</td><td></td></tr> <tr><td>30</td><td></td><td></td><td>NODS</td></tr> <tr><td>36</td><td></td><td></td><td></td></tr> <tr><td>42</td><td></td><td></td><td></td></tr> <tr><td>48</td><td></td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width:100%; border-collapse: collapse; margin-top: 5px;"> <tr> <td style="width:15%;">Soil Profile</td> <td style="width:15%;">Classification</td> <td style="width:10%;">Slope</td> <td style="width:10%;">Limiting Factor</td> <td style="width:50%;"> <input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth </td> </tr> <tr> <td>5</td> <td>B</td> <td></td> <td>-</td> <td></td> </tr> <tr> <td></td> <td>Condition</td> <td>Percent</td> <td>Depth</td> <td></td> </tr> </table>	Texture	Consistency	Color	Mottling	0	FINE	DARK		6	SANDY / FRABLE LOAM	BROWN		12		YELLOW BROWN		18	FINE	BROWN		24	SAND	GRAY		30			NODS	36				42				48				Soil Profile	Classification	Slope	Limiting Factor	<input type="checkbox"/> Groundwater <input type="checkbox"/> Restrictive Layer <input type="checkbox"/> Bedrock <input type="checkbox"/> Pit Depth	5	B		-			Condition	Percent	Depth	
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Mark Cenci 262 9-23-20
 Site Evaluator Signature SE # Date

ATTACHMENT 3

STORMWATER TREATMENT CALCULATIONS

Stormwater Treatment Table

	Total Watershed Area (SF)	New Road Impervious Area (SF)	Assumed Lot Impervious Area (SF)	New Landscaped Area (SF)	Existing/Offsite Impervious Area (SF)*	Existing/Offsite Landscaping Area (SF)*	Existing Undeveloped Area (SF)	Treatment Provided	New Impervious Area Treated (SF)	New Landscaped Area Treated (SF)	Treatment Device
WS-1	501,875	0	0	0	65,753	88,162	347,960	No	0	0	None
WS-10	81,502	0	3,500	29,594	809	102	47,496	Dripedge	1,750	0	Dripedge Only
WS-20	371,549	21,539	10,500	96,924	32,059	55,438	155,090	Yes	32,039	96,924	Wet Pond 1
WS-21	144,268	8,917	10,500	117,741	0	0	7,110	Yes	19,417	117,741	Wet Pond 1
WS-22	482,613	8,135	10,500	84,484	25,224	61,186	293,083	Yes	18,635	84,484	Wet Pond 2
WS-23	49,842	5,754	3,500	40,589	0	0	0	Yes	9,254	40,589	Wet Pond 2
WS-24	386,191	1,240	3,500	55,088	944	8,195	317,224	Dripedge	1,750	0	None
WS-25	72,590	2,124	7,000	44,847	0	0	18,619	Yes	9,124	44,847	FB1
WS-30	257,515	0	0	0	0	0	257,515	No	0	0	None
Total		47,710	49,000	469,266					91,969	384,584	

* The project is not taking credit for the Existing / Offsite impervious and landscaped areas, but are included in the BMP sizing calculations for each treatment device.

** Development associated with wetland & stream road crossings are exempt from the Chapter 500 General Standards. Approximately 3,286± s.f. of impervious surface and 4,592± s.f of landscaped area has been removed from WS-24, which is associated with the stream crossing for the back lot (Lots 13 & 14).

New Impervious Area = 96,710
 New Impervious Area Requiring Treatment (95%) = 91,874
 Provided New Impervious Treatment= 91,969
 95% New Impervious Area Treated

New Developed Area = 565,976
 New Developed Area Requiring Treatment (80%)= 452,781
 New Developed Area Treated= 476,554
 84% New Developed Area Treated

ATTACHMENT 4

BMP SIZING CALCULATIONS

Wet Pond WP-1 Calculations

Permanent Pool Volume (PPV) Calculation			
Tributary Impervious Area=	83,515 sf	(WS-20 & WS-21 Impervious Area)	
Tributary Landscaped Area=	270,102 sf	(WS-20 & WS-21 Landscaped Area)	
PPV = 2.00"xImpervious Area + 0.80"xLandscaped Area			
PPV (Required)=	31,926 cf		
PPV Sizing			
Stage Storage Volume			
Elevation	Area (sf)	Storage (cf)	
254.5	3,421	0	
260	9,231	33,952	
Permanent Pool Elevation=		260	
Provided PPV=		33,952 cf > Required	
Mean Depth Calculation			
Mean Depth @ 1' Below Permanent Pool			
Mean Depth= Storage Volume / Surface Area > 3.0			
	259	25,326 cf	
		8,034 sf	
Mean Depth=	3.15	>3'	

Channel Protection Volume (CPV) Calculation			
CPV (Required) = 1.0"xImpervious Area + 0.4"xLandscaped Area			
CPV (Required) =	15,963 cf		
Stage Storage Volume			
Elevation	Area (sf)	Storage (cf)	
260	9,231	0	
261	13,193	11,431	
262	14,593	25,319	
263	16,098	40,658	
Outlet of Pond Set @		261.34	
Provided CPV=		15,997 cf > Required	

Gravel Bench Calculations	
Bench Length (Required) = 3' for every 1,000 cf of Provided CPV	
Bench Length (Required) =	48.0 lf
Bench Length (Provided):	50.0 lf > Required

Sediment Forebay Sizing	
Tributary Pavement Requiring Sanding:	30,456 sf
Required Sediment Forebay Volume :	
10 storms/year x sanded area (acres) x 500lbs/acre-storm / 90 lbs/cf	
Sediment Volume (Required)	38.8 cf
Sediment Volume (Provided):	105.0 cf > Required

Wet Pond WP-2 Calculations

Permanent Pool Volume (PPV) Calculation			
Tributary Impervious Area=	53,113 sf	(WS-22 & WS-23 Impervious Area)	
Tributary Landscaped Area=	186,259 sf	(WS-22 & WS-23 Landscaped Area)	
PPV = 2.00"xImpervious Area + 0.80"xLandscaped Area			
PPV (Required)=	21,269 cf		
PPV Sizing			
Stage Storage Volume			
Elevation	Area (sf)	Storage (cf)	
254.5	2,386	0	
260	7,704	26,897	
Permanent Pool Elevation=	260		
Provided PPV=	26,897 cf > Required		
Mean Depth Calculation			
Mean Depth @ 1' Below Permanent Pool			
Mean Depth= Storage Volume / Surface Area > 3.0			
	259	19,887 cf	
		6,616 sf	
Mean Depth=	3.01 >3'		

Channel Protection Volume (CPV) Calculation			
CPV (Required) = 1.0"xImpervious Area + 0.4"xLandscaped Area			
CPV (Required) =	10,635 cf		
Stage Storage Volume			
Elevation	Area (sf)	Storage (cf)	
260	7,704	0	
260.8	11,048	7,461	
262	12,648	21,668	
263	14,043	35,007	
Outlet of Pond Set @	261.34		
Provided CPV=	13,616 cf > Required		

Gravel Bench Calculations	
Bench Length (Required) = 3' for every 1,000 cf of Provided CPV	
Bench Length (Required) =	40.8 lf
Bench Length (Provided):	50.0 lf > Required

Sediment Forebay Sizing	
Tributary Pavement Requiring Sanding	13,889 sf
Required Sediment Forebay Volume :	
10 storms/year x sanded area (acres) x 500lbs/acre-storm / 90 lbs/cf	
Sediment Volume (Required)	17.7 cf
Sediment Volume (Provided):	188.0 cf > Required

WET POND DRAWDOWN TIME

20053-POST

Type III 24-hr WQ EVENT Rainfall=2.68"

Prepared by {enter your company name here}

Printed 12/21/2020

HydroCAD® 10.00-26 s/n 09237 © 2020 HydroCAD Software Solutions LLC

Hydrograph for Pond WP: Wet Pond

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	260.00	0.00	0.00	0.00
1.00	0.00	0	260.00	0.00	0.00	0.00
2.00	0.00	0	260.00	0.00	0.00	0.00
3.00	0.01	19	260.00	0.00	0.00	0.00
4.00	0.03	54	260.00	0.02	0.00	0.02
5.00	0.05	86	260.01	0.04	0.00	0.04
6.00	0.07	112	260.01	0.06	0.00	0.06
7.00	0.10	140	260.01	0.09	0.00	0.09
8.00	0.14	180	260.01	0.13	0.00	0.13
9.00	0.21	232	260.01	0.19	0.00	0.19
10.00	0.31	305	260.02	0.29	0.00	0.29
11.00	0.47	437	260.03	0.37	0.00	0.37
12.00	2.09	2,005	260.12	0.37	0.00	0.37
13.00	2.90	20,062	261.02	0.44	0.00	0.44
14.00	1.16	24,467	261.21	0.45	0.00	0.45
15.00	0.84	26,351	261.29	0.45	0.00	0.45
16.00	0.63	27,371	261.33	0.46	0.00	0.46
17.00	0.48	27,595	261.34	0.49	0.00	0.49
18.00	0.38	27,436	261.34	0.46	0.00	0.46
19.00	0.32	27,020	261.32	0.45	0.00	0.45
20.00	0.29	26,470	261.30	0.45	0.00	0.45
21.00	0.26	25,824	261.27	0.45	0.00	0.45
22.00	0.24	25,101	261.24	0.45	0.00	0.45
23.00	0.22	24,305	261.21	0.45	0.00	0.45
24.00	0.19	23,433	261.17	0.44	0.00	0.44
25.00	0.01	22,172	261.11	0.44	0.00	0.44
26.00	0.00	20,602	261.05	0.44	0.00	0.44
27.00	0.00	19,036	260.98	0.43	0.00	0.43
28.00	0.00	17,487	260.91	0.43	0.00	0.43
29.00	0.00	15,954	260.83	0.42	0.00	0.42
30.00	0.00	14,438	260.76	0.42	0.00	0.42
31.00	0.00	12,940	260.69	0.41	0.00	0.41
32.00	0.00	11,459	260.62	0.41	0.00	0.41
33.00	0.00	9,996	260.55	0.40	0.00	0.40
34.00	0.00	8,551	260.47	0.40	0.00	0.40
35.00	0.00	7,125	260.40	0.39	0.00	0.39
36.00	0.00	5,718	260.32	0.39	0.00	0.39
37.00	0.00	4,330	260.25	0.38	0.00	0.38
38.00	0.00	2,962	260.17	0.38	0.00	0.38
39.00	0.00	1,615	260.09	0.37	0.00	0.37
40.00	0.00	298	260.02	0.28	0.00	0.28
41.00	0.00	41	260.00	0.01	0.00	0.01
42.00	0.00	16	260.00	0.00	0.00	0.00
43.00	0.00	8	260.00	0.00	0.00	0.00
44.00	0.00	5	260.00	0.00	0.00	0.00
45.00	0.00	3	260.00	0.00	0.00	0.00
46.00	0.00	2	260.00	0.00	0.00	0.00
47.00	0.00	2	260.00	0.00	0.00	0.00
48.00	0.00	1	260.00	0.00	0.00	0.00

**POND PEAK @ HOUR 17
POND EMPTY @ HOUR 41
DRAWDOWN TIME = 24 HRS**

WET POND BASIN BERM DESIGN ~ SPILLWAY OUTLET ONLY CALCULATION

20053-POST

Type III 24-hr 25-Year Rainfall=5.72"

Prepared by {enter your company name here}

Printed 12/21/2020

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Page 1

Summary for Pond WP: Wet Pond

Inflow Area = 1,044,466 sf, 9.96% Impervious, Inflow Depth = 1.80" for 25-Year event
 Inflow = 26.22 cfs @ 12.39 hrs, Volume= 156,904 cf
 Outflow = 21.66 cfs @ 12.58 hrs, Volume= 127,932 cf, Atten= 17%, Lag= 11.6 min
 Primary = 21.66 cfs @ 12.58 hrs, Volume= 127,932 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

WET POND PROPOSED BERM
 EL. = 263.0
 FREEBOARD = 0.94'=1'+/-

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 262.06' @ 12.58 hrs Surf.Area= 28,651 sf Storage= 46,620 cf

Plug-Flow detention time= 150.3 min calculated for 127,932 cf (82% of inflow)
 Center-of-Mass det. time= 71.6 min (901.6 - 830.0)

Volume	Invert	Avail.Storage	Storage Description			
#1	260.00'	74,980 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
260.00	16,935	778.1	0	0	16,935	
262.00	28,459	1,082.3	44,898	44,898	62,009	
263.00	31,734	1,100.8	30,082	74,980	65,403	

Device	Routing	Invert	Outlet Devices
#1	Primary	261.40'	15.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	257.40'	18.0" Round Culvert X 0.00 L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 257.40' / 250.00' S= 0.0638 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#3	Device 2	257.50'	3.0" Vert. Orifice/Grate - 3" C= 0.600
#4	Device 3	260.00'	50.0' long x 4.0' breadth Gravel Bench- Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#5	Device 2	261.34'	Neenah R4345 Beehive Grate Light Duty-req. structure Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600

Primary OutFlow Max=21.60 cfs @ 12.58 hrs HW=262.06' TW=0.00' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 21.60 cfs @ 2.18 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=260.00' TW=0.00' (Dynamic Tailwater)
 ↑2=**Culvert** (Controls 0.00 cfs)
 ↑3=**Orifice/Grate - 3"** (Passes 0.00 cfs of 0.36 cfs potential flow)
 ↑4=**Gravel Bench- Broad-Crested Rectangular Weir** (Controls 0.00 cfs)
 ↑5=**Neenah R4345 Beehive Grate Light Duty-req. structure** (Controls 0.00 cfs)

Underdrained Filter Basin Sizing Calculations

Filter Basin FB-1

Tributary Impervious Area= 9,124 sf (WS-25 Impervious Area)
Tributary Landscaped Area= 44,847 sf (WS-25 Landscape Area)

Water Quality Volume (WQV) Calculation

WQV (Required) = 1.0"xImpervious Area + 0.4"xLandsaped Area

WQV (Required) = 2,255 cf

Stage Storage Volume

Elevation	Area (sf)	Storage (cf)
246	2,992	0
248	4,446	7,390
250	6,128	17,919

Outlet Elevation = 247.50
Storage Volume Provided= **5,266 cf > Required**

Filter Bottom Calculation

Filter Area (Required) = 5%xImpervious Area + 2%xLandsaped Area

Filter Area Required = 1,353 sf
Filter Area Provided = 2,992 sf > Required

FILTER BASIN DRAWDOWN TIME

20053-POST

Type III 24-hr WQ EVENT fb Rainfall=3.68"

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Hydrograph for Pond FB1: Underdrained soil filter

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
0.00	0.00	0	246.00	0.00	0.00	0.00
1.00	0.00	0	246.00	0.00	0.00	0.00
2.00	0.00	0	246.00	0.00	0.00	0.00
3.00	0.00	0	246.00	0.00	0.00	0.00
4.00	0.00	0	246.00	0.00	0.00	0.00
5.00	0.01	0	246.00	0.01	0.00	0.01
6.00	0.01	0	246.00	0.01	0.00	0.01
7.00	0.01	0	246.00	0.01	0.00	0.01
8.00	0.02	0	246.00	0.02	0.00	0.02
9.00	0.02	0	246.00	0.02	0.00	0.02
10.00	0.03	0	246.00	0.03	0.00	0.03
11.00	0.06	0	246.00	0.06	0.00	0.06
12.00	0.55	368	246.12	0.06	0.00	0.06
13.00	0.40	3,854	247.14	0.07	0.00	0.07
14.00	0.21	4,561	247.32	0.08	0.00	0.08
15.00	0.16	4,945	247.42	0.08	0.00	0.08
16.00	0.12	5,171	247.48	0.08	0.00	0.08
17.00	0.09	5,263	247.50	0.08	0.00	0.08
18.00	0.07	5,279	247.50	0.08	0.00	0.08
19.00	0.06	5,238	247.49	0.08	0.00	0.08
20.00	0.06	5,173	247.48	0.08	0.00	0.08
21.00	0.05	5,089	247.46	0.08	0.00	0.08
22.00	0.05	4,990	247.43	0.08	0.00	0.08
23.00	0.04	4,876	247.40	0.08	0.00	0.08
24.00	0.04	4,746	247.37	0.08	0.00	0.08
25.00	0.00	4,516	247.31	0.08	0.00	0.08
26.00	0.00	4,246	247.24	0.07	0.00	0.07
27.00	0.00	3,979	247.17	0.07	0.00	0.07
28.00	0.00	3,714	247.10	0.07	0.00	0.07
29.00	0.00	3,451	247.03	0.07	0.00	0.07
30.00	0.00	3,191	246.96	0.07	0.00	0.07
31.00	0.00	2,934	246.89	0.07	0.00	0.07
32.00	0.00	2,679	246.82	0.07	0.00	0.07
33.00	0.00	2,427	246.75	0.07	0.00	0.07
34.00	0.00	2,177	246.68	0.07	0.00	0.07
35.00	0.00	1,930	246.60	0.07	0.00	0.07
36.00	0.00	1,686	246.53	0.07	0.00	0.07
37.00	0.00	1,444	246.46	0.07	0.00	0.07
38.00	0.00	1,206	246.39	0.07	0.00	0.07
39.00	0.00	970	246.31	0.07	0.00	0.07
40.00	0.00	737	246.24	0.06	0.00	0.06
41.00	0.00	507	246.17	0.06	0.00	0.06
42.00	0.00	280	246.09	0.06	0.00	0.06
43.00	0.00	56	246.02	0.06	0.00	0.06
44.00	0.00	0	246.00	0.00	0.00	0.00
45.00	0.00	0	246.00	0.00	0.00	0.00
46.00	0.00	0	246.00	0.00	0.00	0.00
47.00	0.00	0	246.00	0.00	0.00	0.00
48.00	0.00	0	246.00	0.00	0.00	0.00

POND PEAK @ HOUR 18
POND EMPTY @ HOUR 44
DRAWDOWN TIME = 26 HRS

FILTER BASIN BERM DESIGN ~ SPILLWAY OUTLET ONLY CALCULATION

20053-POST

Type III 24-hr 25-Year Rainfall=5.72"

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Page 1

Summary for Pond FB1: Underdrained soil filter

Inflow Area = 72,590 sf, 9.64% Impervious, Inflow Depth = 2.99" for 25-Year event
 Inflow = 3.76 cfs @ 12.28 hrs, Volume= 18,102 cf
 Outflow = 1.93 cfs @ 12.63 hrs, Volume= 10,712 cf, Atten= 49%, Lag= 20.9 min
 Primary = 1.93 cfs @ 12.63 hrs, Volume= 10,712 cf
 Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

**FILTER BASIN
 PROPOSED BERM
 EL. = 249.20
 FREEBOARD = 1.02'**

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 248.18' @ 12.63 hrs Surf.Area= 4,585 sf Storage= 8,193 cf

Plug-Flow detention time= 218.4 min calculated for 10,701 cf (59% of inflow)
 Center-of-Mass det. time= 105.0 min (935.6 - 830.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	246.00'	17,919 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
246.00	2,992	223.7	0	0	2,992	
248.00	4,446	261.4	7,390	7,390	4,526	
250.00	6,128	299.1	10,529	17,919	6,299	

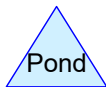
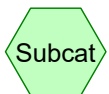
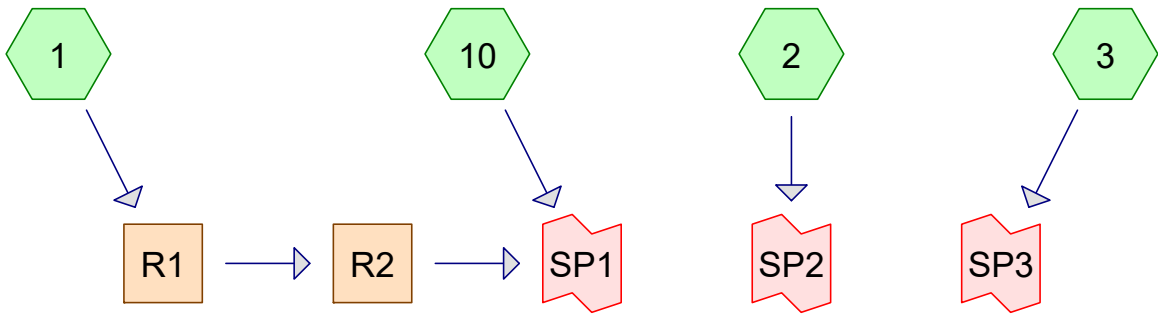
Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	10.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	243.30'	1.2" Vert. 1-1/4" Drill Hole X 0.00 C= 0.600
#3	Device 2	243.73'	4.0" Round Culvert L= 80.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 243.73' / 243.30' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	246.00'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 240.00'
#5	Device 3	247.50'	4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.91 cfs @ 12.63 hrs HW=248.18' TW=0.00' (Dynamic Tailwater)
 ↳ **1=Broad-Crested Rectangular Weir** (Weir Controls 1.91 cfs @ 1.08 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=0.00' (Dynamic Tailwater)
 ↳ **2=1-1/4" Drill Hole** (Controls 0.00 cfs)
 ↳ **3=Culvert** (Passes 0.00 cfs of 0.31 cfs potential flow)
 ↳ **4=Exfiltration** (Passes 0.00 cfs of 0.17 cfs potential flow)
 ↳ **5=Orifice/Grate** (Controls 0.00 cfs)

ATTACHMENT 5

HYDROCAD CALCULATIONS



Routing Diagram for 20053-Pre
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20053-Pre

Type III 24-hr 2-Year Rainfall=3.09"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=0.99"
Flow Length=749' Tc=79.2 min CN=WQ Runoff=3.94 cfs 0.947 af

Subcatchment 2: Runoff Area=1,362,400 sf 1.76% Impervious Runoff Depth=0.57"
Flow Length=1,351' Tc=24.7 min CN=WQ Runoff=11.41 cfs 1.479 af

Subcatchment 3: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=0.74"
Flow Length=829' Tc=32.4 min CN=WQ Runoff=2.50 cfs 0.365 af

Subcatchment 10: Runoff Area=226,146 sf 2.72% Impervious Runoff Depth=0.46"
Flow Length=775' Tc=30.1 min CN=WQ Runoff=1.44 cfs 0.197 af

Reach R1: Avg. Flow Depth=0.67' Max Vel=5.94 fps Inflow=3.94 cfs 0.947 af
15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=3.94 cfs 0.947 af

Reach R2: Avg. Flow Depth=0.26' Max Vel=2.45 fps Inflow=3.94 cfs 0.947 af
n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=3.88 cfs 0.947 af

Link SP1: Inflow=4.29 cfs 1.144 af
Primary=4.29 cfs 1.144 af

Link SP2: Inflow=11.41 cfs 1.479 af
Primary=11.41 cfs 1.479 af

Link SP3: Inflow=2.50 cfs 0.365 af
Primary=2.50 cfs 0.365 af

20053-Pre

Type III 24-hr 2-Year Rainfall=3.09"

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Summary for Subcatchment 1:

Runoff = 3.94 cfs @ 13.11 hrs, Volume= 0.947 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
* 29,261	96	Ex. Gravel surface
* 0	96	Prop. Gravel surface
* 36,492	98	Ex. paved roads/driveways
* 0	98	Proposed lot impervious allocation
* 0	98	Proposed paved roads/driveways
* 26,739	39	Ex. lawn >75% Grass cover, Good, HSG A
* 61,404	74	Ex. lawn >75% Grass cover, Good, HSG C
0	30	Meadow, non-grazed, HSG A
0	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
15,837	30	Woods, Good, HSG A
332,142	70	Woods, Good, HSG C
501,875		Weighted Average
465,383		92.73% Pervious Area
36,492		7.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
71.3	150	0.0023	0.04		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
4.6	268	0.0373	0.97		Shallow Concentrated Flow, Seg B to C Woodland Kv= 5.0 fps
1.6	77	0.0259	0.80		Shallow Concentrated Flow, Seg C to D Woodland Kv= 5.0 fps
0.2	28	0.0178	2.15		Shallow Concentrated Flow, Seg D to E Unpaved Kv= 16.1 fps
0.3	55	0.0273	3.35		Shallow Concentrated Flow, Seg E to F Paved Kv= 20.3 fps
1.2	171	0.0220	2.39		Shallow Concentrated Flow, Seg F to G Unpaved Kv= 16.1 fps
79.2	749	Total			

Summary for Subcatchment 2:

Runoff = 11.41 cfs @ 12.38 hrs, Volume= 1.479 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

20053-Pre

Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
*	11,612	96 Ex. Gravel surface
*	2,202	96 Prop. Gravel surface
*	5,197	98 Ex. roofs
*	18,781	98 Ex. paved roads/driveways
*	0	98 Proposed lot impervious allocation
*	0	98 Proposed paved roads/driveways
*	64,188	39 >75% Grass cover, Good, HSG A
*	22,526	74 >75% Grass cover, Good, HSG C
	18,441	80 >75% Grass cover, Good, HSG D
	315,987	30 Meadow, non-grazed, HSG A
	39,957	58 Meadow, non-grazed, HSG B
	569,596	71 Meadow, non-grazed, HSG C
	38,806	78 Meadow, non-grazed, HSG D
	120,301	30 Woods, Good, HSG A
	7,665	55 Woods, Good, HSG B
	122,883	70 Woods, Good, HSG C
	4,258	77 Woods, Good, HSG D
<hr/>		
1,362,400		Weighted Average
1,338,422		98.24% Pervious Area
23,978		1.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	62	0.0052	0.72		Sheet Flow, Seg A to B Smooth surfaces n= 0.011 P2= 3.13"
4.4	40	0.0631	0.15		Sheet Flow, Seg B to C Grass: Dense n= 0.240 P2= 3.13"
14.3	53	0.0637	0.06		Sheet Flow, Seg C to D Woods: Dense underbrush n= 0.800 P2= 3.13"
1.6	96	0.0418	1.02		Shallow Concentrated Flow, Seg D to E Woodland Kv= 5.0 fps
0.5	179	0.0447	6.57	494.81	Channel Flow, Seg E to F Area= 75.3 sf Perim= 151.5' r= 0.50' n= 0.030 Earth, grassed & winding
0.6	210	0.0383	6.08	458.02	Channel Flow, Seg F to G Area= 75.3 sf Perim= 151.5' r= 0.50' n= 0.030 Earth, grassed & winding
0.8	273	0.0331	5.60	338.63	Channel Flow, Seg G to H Area= 60.5 sf Perim= 123.6' r= 0.49' n= 0.030 Earth, grassed & winding
0.5	283	0.0848	9.01	209.92	Channel Flow, Seg I to J Area= 23.3 sf Perim= 47.2' r= 0.49' n= 0.030 Earth, grassed & winding
0.6	155	0.0194	4.24	111.20	Channel Flow, Seg J to K Area= 26.2 sf Perim= 54.3' r= 0.48' n= 0.030 Earth, grassed & winding
<hr/>					
24.7	1,351	Total			

20053-Pre

Type III 24-hr 2-Year Rainfall=3.09"

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Summary for Subcatchment 3:

Runoff = 2.50 cfs @ 12.51 hrs, Volume= 0.365 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
*	0	96 Ex. Gravel surface
*	0	96 Prop. Gravel surface
*	0	98 Ex. roofs
*	0	98 Ex. paved roads/driveways
*	0	98 Proposed lot impervious allocation
*	0	98 Proposed paved roads/driveways
*	0	39 >75% Grass cover, Good, HSG A
*	0	74 >75% Grass cover, Good, HSG C
	0	61 >75% Grass cover, Good, HSG B
	3,941	30 Meadow, non-grazed, HSG A
	160,294	71 Meadow, non-grazed, HSG C
	0	78 Meadow, non-grazed, HSG D
	14,065	30 Woods, Good, HSG A
	0	55 Woods, Good, HSG B
	79,215	70 Woods, Good, HSG C
257,515		Weighted Average
257,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	95	0.0632	0.12		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
16.5	94	0.0371	0.10		Sheet Flow, Seg B to C Grass: Bermuda n= 0.410 P2= 3.13"
0.9	65	0.0612	1.24		Shallow Concentrated Flow, Seg C to D Woodland Kv= 5.0 fps
0.4	81	0.0198	3.77	127.59	Channel Flow, Seg D to E Area= 33.8 sf Perim= 67.3' r= 0.50' n= 0.035 Earth, dense weeds
0.8	247	0.0324	5.45	576.76	Channel Flow, Seg E to F Area= 105.8 sf Perim= 221.3' r= 0.48' n= 0.030 Earth, grassed & winding
0.6	247	0.0530	6.88	558.59	Channel Flow, Seg F to G Area= 81.2 sf Perim= 173.3' r= 0.47' n= 0.030 Earth, grassed & winding
32.4	829	Total			

Summary for Subcatchment 10:

Runoff = 1.44 cfs @ 12.44 hrs, Volume= 0.197 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

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Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
* 8,123	96	Ex. Gravel surface
* 1,129	98	Roofs
* 5,025	98	Ex. paved roads/driveways
128,882	39	>75% Grass cover, Good, HSG A
49,920	74	>75% Grass cover, Good, HSG C
12,251	30	Woods, Good, HSG A
20,816	70	Woods, Good, HSG C
226,146		Weighted Average
219,992		97.28% Pervious Area
6,154		2.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	150	0.0343	0.10		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
4.2	260	0.0423	1.03		Shallow Concentrated Flow, Seg A to B Woodland Kv= 5.0 fps
1.7	365	0.0520	3.67		Shallow Concentrated Flow, Seg C to D Unpaved Kv= 16.1 fps
30.1	775	Total			

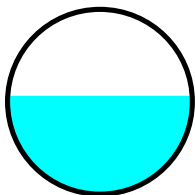
Summary for Reach R1:

Inflow Area = 11.521 ac, 7.27% Impervious, Inflow Depth = 0.99" for 2-Year event
 Inflow = 3.94 cfs @ 13.11 hrs, Volume= 0.947 af
 Outflow = 3.94 cfs @ 13.11 hrs, Volume= 0.947 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.94 fps, Min. Travel Time= 0.1 min
 Avg. Velocity= 2.46 fps, Avg. Travel Time= 0.3 min

Peak Storage= 27 cf @ 13.11 hrs
 Average Depth at Peak Storage= 0.67'
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.10 cfs

15.0" Round Pipe
 n= 0.013 Corrugated PE, smooth interior
 Length= 41.4' Slope= 0.0121 '/
 Inlet Invert= 312.20', Outlet Invert= 311.70'



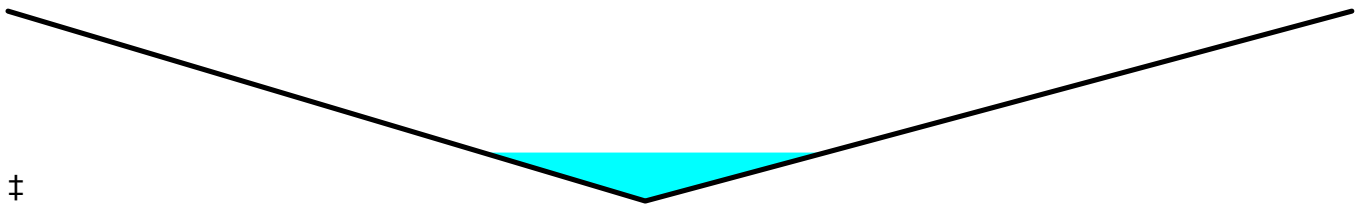
Summary for Reach R2:

Inflow Area = 11.521 ac, 7.27% Impervious, Inflow Depth = 0.99" for 2-Year event
 Inflow = 3.94 cfs @ 13.11 hrs, Volume= 0.947 af
 Outflow = 3.88 cfs @ 13.21 hrs, Volume= 0.947 af, Atten= 2%, Lag= 6.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.45 fps, Min. Travel Time= 7.2 min
 Avg. Velocity = 1.03 fps, Avg. Travel Time= 17.1 min

Peak Storage= 1,673 cf @ 13.21 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.00' Flow Area= 24.3 sf, Capacity= 147.42 cfs

Custom cross-section, Length= 1,055.3' Slope= 0.0380 '/'
 Constant n= 0.030 Earth, grassed & winding
 Inlet Invert= 311.10', Outlet Invert= 271.00'



Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	300.00	0.00
23.00	299.00	1.00
48.50	300.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.00	24.3	48.5	25,591	147.42

Summary for Link SP1:

Inflow Area = 16.713 ac, 5.86% Impervious, Inflow Depth = 0.82" for 2-Year event
 Inflow = 4.29 cfs @ 13.16 hrs, Volume= 1.144 af
 Primary = 4.29 cfs @ 13.16 hrs, Volume= 1.144 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 31.276 ac, 1.76% Impervious, Inflow Depth = 0.57" for 2-Year event
 Inflow = 11.41 cfs @ 12.38 hrs, Volume= 1.479 af
 Primary = 11.41 cfs @ 12.38 hrs, Volume= 1.479 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 5.912 ac, 0.00% Impervious, Inflow Depth = 0.74" for 2-Year event
Inflow = 2.50 cfs @ 12.51 hrs, Volume= 0.365 af
Primary = 2.50 cfs @ 12.51 hrs, Volume= 0.365 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=1.95"
Flow Length=749' Tc=79.2 min CN=WQ Runoff=8.26 cfs 1.872 af

Subcatchment 2: Runoff Area=1,362,400 sf 1.76% Impervious Runoff Depth=1.20"
Flow Length=1,351' Tc=24.7 min CN=WQ Runoff=26.02 cfs 3.138 af

Subcatchment 3: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=1.65"
Flow Length=829' Tc=32.4 min CN=WQ Runoff=6.06 cfs 0.812 af

Subcatchment 10: Runoff Area=226,146 sf 2.72% Impervious Runoff Depth=0.94"
Flow Length=775' Tc=30.1 min CN=WQ Runoff=2.87 cfs 0.407 af

Reach R1: Avg. Flow Depth=1.25' Max Vel=6.59 fps Inflow=8.26 cfs 1.872 af
15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=7.46 cfs 1.872 af

Reach R2: Avg. Flow Depth=0.32' Max Vel=2.85 fps Inflow=7.46 cfs 1.872 af
n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=7.10 cfs 1.872 af

Link SP1: Inflow=8.31 cfs 2.279 af
Primary=8.31 cfs 2.279 af

Link SP2: Inflow=26.02 cfs 3.138 af
Primary=26.02 cfs 3.138 af

Link SP3: Inflow=6.06 cfs 0.812 af
Primary=6.06 cfs 0.812 af

20053-Pre

Type III 24-hr 25-Year Rainfall=5.72"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=2.80"
Flow Length=749' Tc=79.2 min CN=WQ Runoff=12.03 cfs 2.686 af

Subcatchment 2: Runoff Area=1,362,400 sf 1.76% Impervious Runoff Depth=1.79"
Flow Length=1,351' Tc=24.7 min CN=WQ Runoff=38.89 cfs 4.662 af

Subcatchment 3: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=2.46"
Flow Length=829' Tc=32.4 min CN=WQ Runoff=9.21 cfs 1.214 af

Subcatchment 10: Runoff Area=226,146 sf 2.72% Impervious Runoff Depth=1.44"
Flow Length=775' Tc=30.1 min CN=WQ Runoff=4.18 cfs 0.623 af

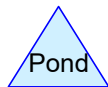
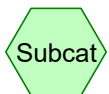
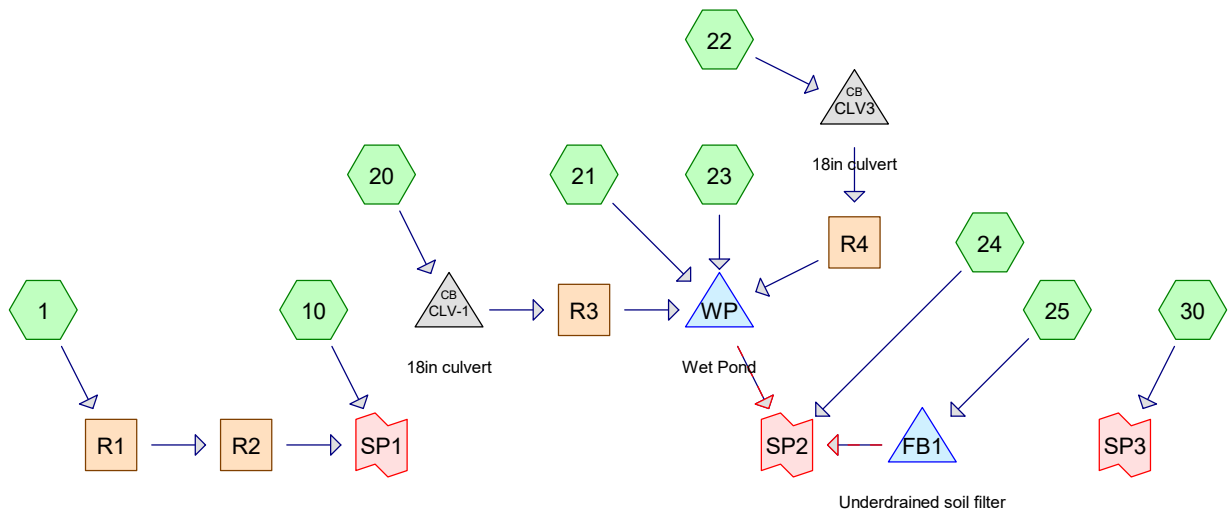
Reach R1: Avg. Flow Depth=1.25' Max Vel=6.59 fps Inflow=12.03 cfs 2.686 af
15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=7.10 cfs 2.686 af

Reach R2: Avg. Flow Depth=0.32' Max Vel=2.85 fps Inflow=7.10 cfs 2.686 af
n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=7.10 cfs 2.686 af

Link SP1: Inflow=10.04 cfs 3.309 af
Primary=10.04 cfs 3.309 af

Link SP2: Inflow=38.89 cfs 4.662 af
Primary=38.89 cfs 4.662 af

Link SP3: Inflow=9.21 cfs 1.214 af
Primary=9.21 cfs 1.214 af



Routing Diagram for 20053-POST
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20053-POST

Type III 24-hr 2-Year Rainfall=3.09"

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=0.99"
 Flow Length=749' Tc=79.2 min CN=WQ Runoff=3.94 cfs 41,242 cf

Subcatchment 10: Runoff Area=81,502 sf 4.87% Impervious Runoff Depth=0.43"
 Flow Length=775' Tc=30.1 min CN=WQ Runoff=0.47 cfs 2,900 cf

Subcatchment 20: Runoff Area=371,549 sf 13.07% Impervious Runoff Depth=0.57"
 Flow Length=1,488' Tc=33.5 min CN=WQ Runoff=2.78 cfs 17,626 cf

Subcatchment 21: Runoff Area=144,268 sf 12.50% Impervious Runoff Depth=0.80"
 Flow Length=493' Tc=30.3 min CN=WQ Runoff=1.60 cfs 9,644 cf

Subcatchment 22: Runoff Area=478,806 sf 6.17% Impervious Runoff Depth=0.69"
 Flow Length=1,276' Tc=25.5 min CN=WQ Runoff=5.01 cfs 27,605 cf

Subcatchment 23: Runoff Area=49,843 sf 15.82% Impervious Runoff Depth=1.31"
 Flow Length=376' Tc=19.2 min CN=WQ Runoff=1.11 cfs 5,446 cf

Subcatchment 24: Runoff Area=386,191 sf 1.41% Impervious Runoff Depth=0.73"
 Flow Length=1,107' Tc=20.3 min CN=WQ Runoff=4.30 cfs 23,334 cf

Subcatchment 25: Runoff Area=72,590 sf 9.64% Impervious Runoff Depth=1.06"
 Flow Length=420' Tc=20.3 min CN=WQ Runoff=1.23 cfs 6,403 cf

Subcatchment 30: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=0.74"
 Flow Length=829' Tc=32.4 min CN=WQ Runoff=2.50 cfs 15,905 cf

Reach R1: Avg. Flow Depth=0.67' Max Vel=5.94 fps Inflow=3.94 cfs 41,242 cf
 15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=3.94 cfs 41,242 cf

Reach R2: Avg. Flow Depth=0.26' Max Vel=2.45 fps Inflow=3.94 cfs 41,242 cf
 n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=3.88 cfs 41,242 cf

Reach R3: Avg. Flow Depth=0.33' Max Vel=2.83 fps Inflow=2.78 cfs 17,626 cf
 n=0.030 L=320.3' S=0.0219 '/ Capacity=124.26 cfs Outflow=2.77 cfs 17,626 cf

Reach R4: Avg. Flow Depth=1.09' Max Vel=0.86 fps Inflow=5.01 cfs 27,605 cf
 n=0.030 L=110.0' S=0.0005 '/ Capacity=19.63 cfs Outflow=4.98 cfs 27,605 cf

Pond CLV-1: 18in culvert Peak Elev=272.19' Inflow=2.78 cfs 17,626 cf
 18.0" Round Culvert n=0.013 L=45.0' S=0.0289 '/ Outflow=2.78 cfs 17,626 cf

Pond CLV3: 18in culvert Peak Elev=263.41' Inflow=5.01 cfs 27,605 cf
 18.0" Round Culvert n=0.013 L=53.0' S=0.0047 '/ Outflow=5.01 cfs 27,605 cf

Pond FB1: Underdrained soil filter Peak Elev=247.03' Storage=3,447 cf Inflow=1.23 cfs 6,403 cf
 Primary=0.00 cfs 0 cf Secondary=0.07 cfs 6,407 cf Outflow=0.07 cfs 6,407 cf

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Pond WP: Wet Pond

Peak Elev=261.43' Storage=29,754 cf Inflow=10.19 cfs 60,320 cf
Primary=0.22 cfs 896 cf Secondary=1.29 cfs 59,422 cf Outflow=1.51 cfs 60,319 cf

Link SP1:

Inflow=4.01 cfs 44,142 cf
Primary=4.01 cfs 44,142 cf

Link SP2:

Inflow=4.76 cfs 90,059 cf
Primary=4.76 cfs 90,059 cf

Link SP3:

Inflow=2.50 cfs 15,905 cf
Primary=2.50 cfs 15,905 cf

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Summary for Subcatchment 1:

Runoff = 3.94 cfs @ 13.11 hrs, Volume= 41,242 cf, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
* 29,261	96	Ex. Gravel surface
* 0	96	Prop. Gravel surface
* 36,492	98	Ex. paved roads/driveways
* 0	98	Proposed lot impervious allocation
* 0	98	Proposed paved roads/driveways
* 26,739	39	Ex. lawn >75% Grass cover, Good, HSG A
* 61,404	74	Ex. lawn >75% Grass cover, Good, HSG C
0	30	Meadow, non-grazed, HSG A
0	39	>75% Grass cover, Good, HSG A
0	74	>75% Grass cover, Good, HSG C
15,837	30	Woods, Good, HSG A
332,142	70	Woods, Good, HSG C
501,875		Weighted Average
465,383		92.73% Pervious Area
36,492		7.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
71.3	150	0.0023	0.04		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
4.6	268	0.0373	0.97		Shallow Concentrated Flow, Seg B to C Woodland Kv= 5.0 fps
1.6	77	0.0259	0.80		Shallow Concentrated Flow, Seg C to D Woodland Kv= 5.0 fps
0.2	28	0.0178	2.15		Shallow Concentrated Flow, Seg D to E Unpaved Kv= 16.1 fps
0.3	55	0.0273	3.35		Shallow Concentrated Flow, Seg E to F Paved Kv= 20.3 fps
1.2	171	0.0220	2.39		Shallow Concentrated Flow, Seg F to G Unpaved Kv= 16.1 fps
79.2	749	Total			

Summary for Subcatchment 10:

Runoff = 0.47 cfs @ 12.44 hrs, Volume= 2,900 cf, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

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Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
*	331	96 Ex. Gravel surface
*	1,218	96 Prop. Gravel surface
*	466	98 Ex. paved roads/driveways
*	3,500	98 Proposed lot impervious allocation
*	0	98 Proposed paved roads/driveways
*	102	74 Ex. lawn >75% Grass cover, Good, HSG C
	12,318	30 Meadow, non-grazed, HSG A
	32,255	39 >75% Grass cover, Good, HSG A
	6,563	74 >75% Grass cover, Good, HSG C
	7,832	30 Woods, Good, HSG A
	16,917	70 Woods, Good, HSG C
	81,502	Weighted Average
	77,536	95.13% Pervious Area
	3,966	4.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.2	150	0.0343	0.10		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
4.2	260	0.0423	1.03		Shallow Concentrated Flow, Seg A to B Woodland Kv= 5.0 fps
1.7	365	0.0520	3.67		Shallow Concentrated Flow, Seg C to D Unpaved Kv= 16.1 fps
30.1	775	Total			

Summary for Subcatchment 20:

Runoff = 2.78 cfs @ 12.45 hrs, Volume= 17,626 cf, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
*	12,236	96 Ex. Gravel surface
*	2,102	96 Prop. Gravel surface
*	9,167	98 Ex. roofs
*	10,656	98 Ex. paved roads/driveways
*	10,500	98 Proposed lot impervious allocation
*	18,220	98 Proposed paved roads/driveways
*	139,913	39 >75% Grass cover, Good, HSG A
*	12,463	74 >75% Grass cover, Good, HSG C
	75,873	30 Meadow, non-grazed, HSG A
	18,460	71 Meadow, non-grazed, HSG C
	51,658	30 Woods, Good, HSG A
	10,301	70 Woods, Good, HSG C
	371,549	Weighted Average
	323,006	86.93% Pervious Area
	48,543	13.07% Impervious Area

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Type III 24-hr 2-Year Rainfall=3.09"

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Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.7	150	0.0117	0.10		Sheet Flow, Seg A to B Grass: Dense n= 0.240 P2= 3.13"
0.2	32	0.0186	2.20		Shallow Concentrated Flow, Seg B to C Unpaved Kv= 16.1 fps
6.8	174	0.0007	0.43		Shallow Concentrated Flow, Seg C to D Unpaved Kv= 16.1 fps
0.5	94	0.0053	3.29	55.90	Trap/Vee/Rect Channel Flow, Seg D to E Bot.W=3.00' D=1.00' Z= 20.0 & 8.0 '/' Top.W=31.00' n= 0.022 Earth, clean & straight
1.3	1,038	0.0394	13.30	438.92	Trap/Vee/Rect Channel Flow, Seg E to F Bot.W=2.00' D=3.00' Z= 3.0 '/' Top.W=20.00' n= 0.030 Earth, grassed & winding
33.5	1,488	Total			

Summary for Subcatchment 21:

Runoff = 1.60 cfs @ 12.43 hrs, Volume= 9,644 cf, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
* 0	96	Ex. Gravel surface
* 1,389	96	Prop. Gravel surface
* 0	98	Ex. roofs
* 0	98	Ex. paved roads/driveways
* 10,500	98	Proposed lot impervious allocation
* 7,528	98	Proposed paved roads/driveways
* 59,915	39	>75% Grass cover, Good, HSG A
* 59,768	74	>75% Grass cover, Good, HSG C
1,713	30	Meadow, non-grazed, HSG A
3,455	71	Meadow, non-grazed, HSG C
0	30	Woods, Good, HSG A
0	70	Woods, Good, HSG C
144,268		Weighted Average
126,240		87.50% Pervious Area
18,028		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	132	0.0057	0.07		Sheet Flow, Seg A to B Grass: Dense n= 0.240 P2= 3.13"
0.5	361	0.0541	12.22	195.50	Trap/Vee/Rect Channel Flow, Seg B to C Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030 Earth, grassed & winding
30.3	493	Total			

Summary for Subcatchment 22:

Runoff = 5.01 cfs @ 12.37 hrs, Volume= 27,605 cf, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
* 11,612	96	Ex. Gravel surface
* 2,202	96	Prop. Gravel surface
* 5,197	98	Ex. roofs
* 8,414	98	Ex. paved roads/driveways
* 10,500	98	Proposed lot impervious allocation
* 5,428	98	Proposed paved roads/driveways
* 30,452	39	>75% Grass cover, Good, HSG A
* 94,980	74	>75% Grass cover, Good, HSG C
18,441	80	>75% Grass cover, Good, HSG D
133,324	30	Meadow, non-grazed, HSG A
22,340	71	Meadow, non-grazed, HSG C
38,806	78	Meadow, non-grazed, HSG D
60,130	30	Woods, Good, HSG A
32,722	70	Woods, Good, HSG C
4,258	77	Woods, Good, HSG D
478,806		Weighted Average
449,267		93.83% Pervious Area
29,539		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	62	0.0052	0.72		Sheet Flow, Seg A to B Smooth surfaces n= 0.011 P2= 3.13"
16.6	132	0.0683	0.13		Sheet Flow, Seg B to C Woods: Light underbrush n= 0.400 P2= 3.13"
2.7	234	0.0427	1.45		Shallow Concentrated Flow, Seg C to D Short Grass Pasture Kv= 7.0 fps
0.6	209	0.0383	6.08	458.02	Channel Flow, Seg D to E Area= 75.3 sf Perim= 151.5' r= 0.50' n= 0.030 Earth, grassed & winding
0.6	209	0.0383	6.02	364.26	Channel Flow, Seg E to F Area= 60.5 sf Perim= 123.6' r= 0.49' n= 0.030 Earth, grassed & winding
3.3	258	0.0357	1.32		Shallow Concentrated Flow, Seg F to G Short Grass Pasture Kv= 7.0 fps
0.3	172	0.0204	9.57	315.83	Trap/Vee/Rect Channel Flow, Seg G to H Bot.W=2.00' D=3.00' Z= 3.0 ' /' Top.W=20.00' n= 0.030 Earth, grassed & winding
25.5	1,276	Total			

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Type III 24-hr 2-Year Rainfall=3.09"

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Summary for Subcatchment 23:

Runoff = 1.11 cfs @ 12.27 hrs, Volume= 5,446 cf, Depth= 1.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

Area (sf)	CN	Description
* 0	96	Ex. Gravel surface
* 1,367	96	Prop. Gravel surface
* 0	98	Ex. roofs
* 0	98	Ex. paved roads/driveways
* 3,500	98	Proposed lot impervious allocation
* 4,387	98	Proposed paved roads/driveways
* 0	39	>75% Grass cover, Good, HSG A
* 40,589	74	>75% Grass cover, Good, HSG C
0	30	Meadow, non-grazed, HSG A
0	71	Meadow, non-grazed, HSG C
0	30	Woods, Good, HSG A
0	70	Woods, Good, HSG C
49,843		Weighted Average
41,956		84.18% Pervious Area
7,887		15.82% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.9	144	0.0210	0.13		Sheet Flow, Seg A to B Grass: Dense n= 0.240 P2= 3.13"
0.2	122	0.0347	12.48	411.91	Trap/Vee/Rect Channel Flow, Seg B to C Bot.W=2.00' D=3.00' Z= 3.0 '/' Top.W=20.00' n= 0.030 Earth, grassed & winding
0.1	110	0.0659	13.49	215.77	Trap/Vee/Rect Channel Flow, Seg C to D Bot.W=2.00' D=2.00' Z= 3.0 '/' Top.W=14.00' n= 0.030
19.2	376	Total			

Summary for Subcatchment 24:

Runoff = 4.30 cfs @ 12.31 hrs, Volume= 23,334 cf, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

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Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
*	0	96 Ex. Gravel surface
*	3,531	96 Prop. Gravel surface
*	944	98 Ex. roofs
*	0	98 Ex. paved roads/driveways
*	3,500	98 Proposed lot impervious allocation
*	995	98 Proposed paved roads/driveways
*	0	39 >75% Grass cover, Good, HSG A
*	56,068	74 >75% Grass cover, Good, HSG C
	3,929	61 >75% Grass cover, Good, HSG B
	16,876	58 Meadow, non-grazed, HSG B
	78,178	71 Meadow, non-grazed, HSG C
	38,806	78 Meadow, non-grazed, HSG D
	16,672	30 Woods, Good, HSG A
	78,904	55 Woods, Good, HSG B
	87,788	70 Woods, Good, HSG C
<hr/>		
386,191		Weighted Average
380,752		98.59% Pervious Area
5,439		1.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.9	150	0.0600	0.19		Sheet Flow, Seg A to B Grass: Dense n= 0.240 P2= 3.13"
2.6	219	0.0411	1.42		Shallow Concentrated Flow, Seg B to C Short Grass Pasture Kv= 7.0 fps
2.4	127	0.0314	0.89		Shallow Concentrated Flow, Seg C to D Woodland Kv= 5.0 fps
0.4	204	0.0883	7.69	251.50	Channel Flow, Seg D to E Area= 32.7 sf Perim= 68.7' r= 0.48' n= 0.035 Earth, dense weeds
2.0	407	0.0172	3.34	87.05	Channel Flow, Seg E to F Area= 26.1 sf Perim= 56.3' r= 0.46' n= 0.035 Earth, dense weeds
<hr/>					
20.3	1,107	Total			

Summary for Subcatchment 25:

Runoff = 1.23 cfs @ 12.30 hrs, Volume= 6,403 cf, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

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Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
*	0	96 Ex. Gravel surface
*	2,124	96 Prop. Gravel surface
*	0	98 Ex. roofs
*	0	98 Ex. paved roads/driveways
*	7,000	98 Proposed lot impervious allocation
*	0	98 Proposed paved roads/driveways
	12,507	61 >75% Grass cover, Good, HSG B
*	32,340	74 >75% Grass cover, Good, HSG C
	277	58 Meadow, non-grazed, HSG B
	18,342	71 Meadow, non-grazed, HSG C
	0	30 Woods, Good, HSG A
	0	70 Woods, Good, HSG C
72,590		Weighted Average
65,590		90.36% Pervious Area
7,000		9.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.6	150	0.0210	0.13		Sheet Flow, Seg A to B Grass: Dense n= 0.240 P2= 3.13"
0.6	123	0.0488	3.56		Shallow Concentrated Flow, Seg B to C Unpaved Kv= 16.1 fps
0.1	147	0.1017	16.75	268.05	Trap/Vee/Rect Channel Flow, Seg C to D Bot.W=2.00' D=2.00' Z= 3.0 ' /' Top.W=14.00' n= 0.030
20.3	420	Total			

Summary for Subcatchment 30:

Runoff = 2.50 cfs @ 12.51 hrs, Volume= 15,905 cf, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.09"

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Area (sf)	CN	Description
*	0	96 Ex. Gravel surface
*	0	96 Prop. Gravel surface
*	0	98 Ex. roofs
*	0	98 Ex. paved roads/driveways
*	0	98 Proposed lot impervious allocation
*	0	98 Proposed paved roads/driveways
*	0	39 >75% Grass cover, Good, HSG A
*	0	74 >75% Grass cover, Good, HSG C
	0	61 >75% Grass cover, Good, HSG B
	3,941	30 Meadow, non-grazed, HSG A
	160,294	71 Meadow, non-grazed, HSG C
	0	78 Meadow, non-grazed, HSG D
	14,065	30 Woods, Good, HSG A
	0	55 Woods, Good, HSG B
	79,215	70 Woods, Good, HSG C
257,515		Weighted Average
257,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	95	0.0632	0.12		Sheet Flow, Seg A to B Woods: Light underbrush n= 0.400 P2= 3.13"
16.5	94	0.0371	0.10		Sheet Flow, Seg B to C Grass: Bermuda n= 0.410 P2= 3.13"
0.9	65	0.0612	1.24		Shallow Concentrated Flow, Seg C to D Woodland Kv= 5.0 fps
0.4	81	0.0198	3.77	127.59	Channel Flow, Seg D to E Area= 33.8 sf Perim= 67.3' r= 0.50' n= 0.035 Earth, dense weeds
0.8	247	0.0324	5.45	576.76	Channel Flow, Seg E to F Area= 105.8 sf Perim= 221.3' r= 0.48' n= 0.030 Earth, grassed & winding
0.6	247	0.0530	6.88	558.59	Channel Flow, Seg F to G Area= 81.2 sf Perim= 173.3' r= 0.47' n= 0.030 Earth, grassed & winding
32.4	829	Total			

Summary for Reach R1:

Inflow Area = 501,875 sf, 7.27% Impervious, Inflow Depth = 0.99" for 2-Year event
 Inflow = 3.94 cfs @ 13.11 hrs, Volume= 41,242 cf
 Outflow = 3.94 cfs @ 13.11 hrs, Volume= 41,242 cf, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Max. Velocity= 5.94 fps, Min. Travel Time= 0.1 min
 Avg. Velocity = 2.46 fps, Avg. Travel Time= 0.3 min

Peak Storage= 27 cf @ 13.11 hrs
 Average Depth at Peak Storage= 0.67'
 Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 7.10 cfs

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Type III 24-hr 2-Year Rainfall=3.09"

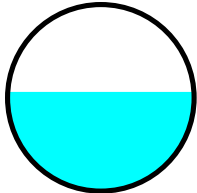
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15.0" Round Pipe
 n= 0.013 Corrugated PE, smooth interior
 Length= 41.4' Slope= 0.0121 '/'
 Inlet Invert= 312.20', Outlet Invert= 311.70'



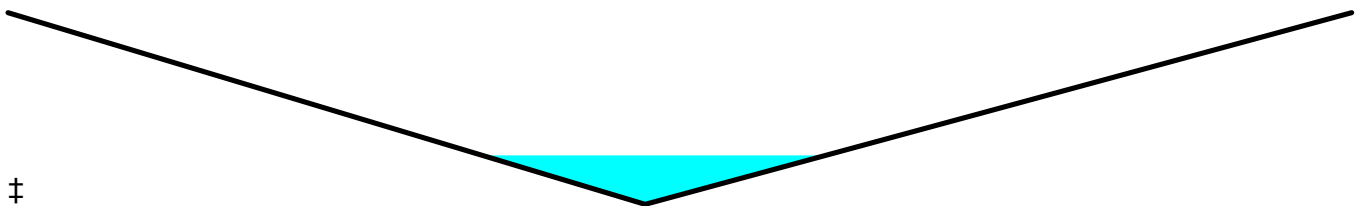
Summary for Reach R2:

Inflow Area = 501,875 sf, 7.27% Impervious, Inflow Depth = 0.99" for 2-Year event
 Inflow = 3.94 cfs @ 13.11 hrs, Volume= 41,242 cf
 Outflow = 3.88 cfs @ 13.21 hrs, Volume= 41,242 cf, Atten= 2%, Lag= 6.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Max. Velocity= 2.45 fps, Min. Travel Time= 7.2 min
 Avg. Velocity = 1.03 fps, Avg. Travel Time= 17.1 min

Peak Storage= 1,673 cf @ 13.21 hrs
 Average Depth at Peak Storage= 0.26'
 Bank-Full Depth= 1.00' Flow Area= 24.3 sf, Capacity= 147.42 cfs

Custom cross-section, Length= 1,055.3' Slope= 0.0380 '/'
 Constant n= 0.030 Earth, grassed & winding
 Inlet Invert= 311.10', Outlet Invert= 271.00'



‡

Offset (feet)	Elevation (feet)	Chan.Depth (feet)
0.00	300.00	0.00
23.00	299.00	1.00
48.50	300.00	0.00

Depth (feet)	End Area (sq-ft)	Perim. (feet)	Storage (cubic-feet)	Discharge (cfs)
0.00	0.0	0.0	0	0.00
1.00	24.3	48.5	25,591	147.42

Summary for Reach R3:

Inflow Area = 371,549 sf, 13.07% Impervious, Inflow Depth = 0.57" for 2-Year event
Inflow = 2.78 cfs @ 12.45 hrs, Volume= 17,626 cf
Outflow = 2.77 cfs @ 12.48 hrs, Volume= 17,626 cf, Atten= 0%, Lag= 1.3 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.83 fps, Min. Travel Time= 1.9 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 5.4 min

Peak Storage= 313 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.33'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 124.26 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 ' Top Width= 14.00'
Length= 320.3' Slope= 0.0219 '
Inlet Invert= 270.00', Outlet Invert= 263.00'



Summary for Reach R4:

Inflow Area = 478,806 sf, 6.17% Impervious, Inflow Depth = 0.69" for 2-Year event
Inflow = 5.01 cfs @ 12.37 hrs, Volume= 27,605 cf
Outflow = 4.98 cfs @ 12.40 hrs, Volume= 27,605 cf, Atten= 1%, Lag= 1.7 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.86 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 0.30 fps, Avg. Travel Time= 6.1 min

Peak Storage= 633 cf @ 12.40 hrs
Average Depth at Peak Storage= 1.09'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 19.63 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 ' Top Width= 14.00'
Length= 110.0' Slope= 0.0005 '
Inlet Invert= 261.75', Outlet Invert= 261.69'



Summary for Pond CLV-1: 18in culvert

Inflow Area = 371,549 sf, 13.07% Impervious, Inflow Depth = 0.57" for 2-Year event
 Inflow = 2.78 cfs @ 12.45 hrs, Volume= 17,626 cf
 Outflow = 2.78 cfs @ 12.45 hrs, Volume= 17,626 cf, Atten= 0%, Lag= 0.0 min
 Primary = 2.78 cfs @ 12.45 hrs, Volume= 17,626 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 272.19' @ 12.45 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	271.30'	18.0" Round Culvert L= 45.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 271.30' / 270.00' S= 0.0289 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.77 cfs @ 12.45 hrs HW=272.19' TW=270.33' (Dynamic Tailwater)
 ↑1=Culvert (Inlet Controls 2.77 cfs @ 2.54 fps)

Summary for Pond CLV3: 18in culvert

Inflow Area = 478,806 sf, 6.17% Impervious, Inflow Depth = 0.69" for 2-Year event
 Inflow = 5.01 cfs @ 12.37 hrs, Volume= 27,605 cf
 Outflow = 5.01 cfs @ 12.37 hrs, Volume= 27,605 cf, Atten= 0%, Lag= 0.0 min
 Primary = 5.01 cfs @ 12.37 hrs, Volume= 27,605 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 263.41' @ 12.40 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	262.00'	18.0" Round Culvert L= 53.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 262.00' / 261.75' S= 0.0047 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf

Primary OutFlow Max=4.87 cfs @ 12.37 hrs HW=263.40' TW=262.84' (Dynamic Tailwater)
 ↑1=Culvert (Outlet Controls 4.87 cfs @ 3.69 fps)

Summary for Pond FB1: Underdrained soil filter

Inflow Area = 72,590 sf, 9.64% Impervious, Inflow Depth = 1.06" for 2-Year event
 Inflow = 1.23 cfs @ 12.30 hrs, Volume= 6,403 cf
 Outflow = 0.07 cfs @ 16.79 hrs, Volume= 6,407 cf, Atten= 94%, Lag= 269.2 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
 Secondary = 0.07 cfs @ 16.79 hrs, Volume= 6,407 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 247.03' @ 16.79 hrs Surf.Area= 3,706 sf Storage= 3,447 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 488.0 min (1,336.8 - 848.9)

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Volume	Invert	Avail.Storage	Storage Description
#1	246.00'	17,919 cf	Custom Stage Data (Irregular) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
246.00	2,992	223.7	0	0	2,992
248.00	4,446	261.4	7,390	7,390	4,526
250.00	6,128	299.1	10,529	17,919	6,299

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	10.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	243.30'	1.2" Vert. 1-1/4" Drill Hole C= 0.600
#3	Device 2	243.73'	4.0" Round Culvert L= 80.8' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 243.73' / 243.30' S= 0.0053 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.09 sf
#4	Device 3	246.00'	2.410 in/hr Exfiltration over Surface area Conductivity to Groundwater Elevation = 240.00'
#5	Device 3	247.50'	4.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=246.00' TW=0.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Secondary OutFlow Max=0.07 cfs @ 16.79 hrs HW=247.03' TW=0.00' (Dynamic Tailwater)

↑2=**1-1/4" Drill Hole** (Orifice Controls 0.07 cfs @ 9.24 fps)

↑3=**Culvert** (Passes 0.07 cfs of 0.37 cfs potential flow)

↑4=**Exfiltration** (Passes 0.07 cfs of 0.24 cfs potential flow)

↑5=**Orifice/Grate** (Controls 0.00 cfs)

Summary for Pond WP: Wet Pond

Inflow Area = 1,044,466 sf, 9.96% Impervious, Inflow Depth = 0.69" for 2-Year event
 Inflow = 10.19 cfs @ 12.41 hrs, Volume= 60,320 cf
 Outflow = 1.51 cfs @ 13.87 hrs, Volume= 60,319 cf, Atten= 85%, Lag= 87.8 min
 Primary = 0.22 cfs @ 13.87 hrs, Volume= 896 cf
 Secondary = 1.29 cfs @ 13.87 hrs, Volume= 59,422 cf

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
 Peak Elev= 261.43' @ 13.87 hrs Surf.Area= 24,882 sf Storage= 29,754 cf

Plug-Flow detention time= 527.1 min calculated for 60,256 cf (100% of inflow)
 Center-of-Mass det. time= 527.7 min (1,360.7 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	260.00'	74,980 cf	Custom Stage Data (Irregular) Listed below (Recalc)

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Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
260.00	16,935	778.1	0	0	16,935
262.00	28,459	1,082.3	44,898	44,898	62,009
263.00	31,734	1,100.8	30,082	74,980	65,403

Device	Routing	Invert	Outlet Devices
#1	Primary	261.40'	15.0' long x 12.0' breadth Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#2	Secondary	257.40'	18.0" Round Culvert L= 116.0' CPP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 257.40' / 250.00' S= 0.0638 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 1.77 sf
#3	Device 2	257.50'	3.0" Vert. Orifice/Grate - 3" C= 0.600
#4	Device 3	260.00'	50.0' long x 4.0' breadth Gravel Bench- Broad-Crested Rectangular Weir Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.38 2.54 2.69 2.68 2.67 2.67 2.65 2.66 2.66 2.68 2.72 2.73 2.76 2.79 2.88 3.07 3.32
#5	Device 2	261.34'	Neenah R4345 Beehive Grate Light Duty-req. structure Head (feet) 0.00 0.10 0.15 0.20 0.25 0.30 0.35 0.40 0.50 0.60 0.70 0.80 0.90 1.00 Disch. (cfs) 0.000 0.900 1.600 2.500 3.500 4.000 4.600 5.300 6.800 7.500 8.100 8.600 9.100 9.600

Primary OutFlow Max=0.22 cfs @ 13.87 hrs HW=261.43' TW=0.00' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.22 cfs @ 0.46 fps)

Secondary OutFlow Max=1.29 cfs @ 13.87 hrs HW=261.43' TW=0.00' (Dynamic Tailwater)

↑2=**Culvert** (Passes 1.29 cfs of 15.41 cfs potential flow)

↑3=**Orifice/Grate - 3"** (Orifice Controls 0.46 cfs @ 9.39 fps)

↑4=**Gravel Bench- Broad-Crested Rectangular Weir** (Passes 0.46 cfs of 227.12 cfs potential flow)

↑5=**Neenah R4345 Beehive Grate Light Duty-req. structure** (Custom Controls 0.83 cfs)

Summary for Link SP1:

Inflow Area = 583,377 sf, 6.94% Impervious, Inflow Depth = 0.91" for 2-Year event
 Inflow = 4.01 cfs @ 13.20 hrs, Volume= 44,142 cf
 Primary = 4.01 cfs @ 13.20 hrs, Volume= 44,142 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP2:

Inflow Area = 1,503,247 sf, 7.75% Impervious, Inflow Depth = 0.72" for 2-Year event
 Inflow = 4.76 cfs @ 12.32 hrs, Volume= 90,059 cf
 Primary = 4.76 cfs @ 12.32 hrs, Volume= 90,059 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Summary for Link SP3:

Inflow Area = 257,515 sf, 0.00% Impervious, Inflow Depth = 0.74" for 2-Year event
Inflow = 2.50 cfs @ 12.51 hrs, Volume= 15,905 cf
Primary = 2.50 cfs @ 12.51 hrs, Volume= 15,905 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=1.95"
 Flow Length=749' Tc=79.2 min CN=WQ Runoff=8.26 cfs 81,533 cf

Subcatchment 10: Runoff Area=81,502 sf 4.87% Impervious Runoff Depth=0.86"
 Flow Length=775' Tc=30.1 min CN=WQ Runoff=0.95 cfs 5,845 cf

Subcatchment 20: Runoff Area=371,549 sf 13.07% Impervious Runoff Depth=0.98"
 Flow Length=1,488' Tc=33.5 min CN=WQ Runoff=4.56 cfs 30,204 cf

Subcatchment 21: Runoff Area=144,268 sf 12.50% Impervious Runoff Depth=1.51"
 Flow Length=493' Tc=30.3 min CN=WQ Runoff=3.03 cfs 18,204 cf

Subcatchment 22: Runoff Area=478,806 sf 6.17% Impervious Runoff Depth=1.30"
 Flow Length=1,276' Tc=25.5 min CN=WQ Runoff=9.73 cfs 52,068 cf

Subcatchment 23: Runoff Area=49,843 sf 15.82% Impervious Runoff Depth=2.45"
 Flow Length=376' Tc=19.2 min CN=WQ Runoff=2.15 cfs 10,170 cf

Subcatchment 24: Runoff Area=386,191 sf 1.41% Impervious Runoff Depth=1.60"
 Flow Length=1,107' Tc=20.3 min CN=WQ Runoff=10.42 cfs 51,339 cf

Subcatchment 25: Runoff Area=72,590 sf 9.64% Impervious Runoff Depth=2.09"
 Flow Length=420' Tc=20.3 min CN=WQ Runoff=2.58 cfs 12,650 cf

Subcatchment 30: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=1.65"
 Flow Length=829' Tc=32.4 min CN=WQ Runoff=6.06 cfs 35,384 cf

Reach R1: Avg. Flow Depth=1.25' Max Vel=6.59 fps Inflow=8.26 cfs 81,533 cf
 15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=7.46 cfs 81,533 cf

Reach R2: Avg. Flow Depth=0.32' Max Vel=2.85 fps Inflow=7.46 cfs 81,533 cf
 n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=7.10 cfs 81,533 cf

Reach R3: Avg. Flow Depth=0.43' Max Vel=3.26 fps Inflow=4.56 cfs 30,204 cf
 n=0.030 L=320.3' S=0.0219 '/ Capacity=124.26 cfs Outflow=4.55 cfs 30,204 cf

Reach R4: Avg. Flow Depth=1.47' Max Vel=1.02 fps Inflow=9.73 cfs 52,068 cf
 n=0.030 L=110.0' S=0.0005 '/ Capacity=19.63 cfs Outflow=9.68 cfs 52,068 cf

Pond CLV-1: 18in culvert Peak Elev=272.52' Inflow=4.56 cfs 30,204 cf
 18.0" Round Culvert n=0.013 L=45.0' S=0.0289 '/ Outflow=4.56 cfs 30,204 cf

Pond CLV3: 18in culvert Peak Elev=265.29' Inflow=9.73 cfs 52,068 cf
 18.0" Round Culvert n=0.013 L=53.0' S=0.0047 '/ Outflow=9.73 cfs 52,068 cf

Pond FB1: Underdrained soil filter Peak Elev=248.03' Storage=7,528 cf Inflow=2.58 cfs 12,650 cf
 Primary=0.14 cfs 1,095 cf Secondary=0.08 cfs 10,707 cf Outflow=0.22 cfs 11,801 cf

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Pond WP: Wet Pond

Peak Elev=261.71' Storage=36,837 cf Inflow=18.87 cfs 110,646 cf
Primary=6.63 cfs 21,164 cf Secondary=5.32 cfs 89,479 cf Outflow=11.94 cfs 110,643 cf

Link SP1:

Inflow=7.45 cfs 87,378 cf
Primary=7.45 cfs 87,378 cf

Link SP2:

Inflow=17.03 cfs 173,783 cf
Primary=17.03 cfs 173,783 cf

Link SP3:

Inflow=6.06 cfs 35,384 cf
Primary=6.06 cfs 35,384 cf

20053-POST

Type III 24-hr 25-Year Rainfall=5.72"

Prepared by {enter your company name here}

Printed 12/21/2020

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Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
 Runoff by SCS TR-20 method, UH=SCS, Weighted-Q
 Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: Runoff Area=501,875 sf 7.27% Impervious Runoff Depth=2.80"
 Flow Length=749' Tc=79.2 min CN=WQ Runoff=12.03 cfs 116,994 cf

Subcatchment 10: Runoff Area=81,502 sf 4.87% Impervious Runoff Depth=1.30"
 Flow Length=775' Tc=30.1 min CN=WQ Runoff=1.38 cfs 8,839 cf

Subcatchment 20: Runoff Area=371,549 sf 13.07% Impervious Runoff Depth=1.38"
 Flow Length=1,488' Tc=33.5 min CN=WQ Runoff=6.11 cfs 42,626 cf

Subcatchment 21: Runoff Area=144,268 sf 12.50% Impervious Runoff Depth=2.18"
 Flow Length=493' Tc=30.3 min CN=WQ Runoff=4.27 cfs 26,157 cf

Subcatchment 22: Runoff Area=478,806 sf 6.17% Impervious Runoff Depth=1.85"
 Flow Length=1,276' Tc=25.5 min CN=WQ Runoff=13.72 cfs 73,939 cf

Subcatchment 23: Runoff Area=49,843 sf 15.82% Impervious Runoff Depth=3.41"
 Flow Length=376' Tc=19.2 min CN=WQ Runoff=3.02 cfs 14,182 cf

Subcatchment 24: Runoff Area=386,191 sf 1.41% Impervious Runoff Depth=2.39"
 Flow Length=1,107' Tc=20.3 min CN=WQ Runoff=16.01 cfs 76,758 cf

Subcatchment 25: Runoff Area=72,590 sf 9.64% Impervious Runoff Depth=2.99"
 Flow Length=420' Tc=20.3 min CN=WQ Runoff=3.76 cfs 18,102 cf

Subcatchment 30: Runoff Area=257,515 sf 0.00% Impervious Runoff Depth=2.46"
 Flow Length=829' Tc=32.4 min CN=WQ Runoff=9.21 cfs 52,861 cf

Reach R1: Avg. Flow Depth=1.25' Max Vel=6.59 fps Inflow=12.03 cfs 116,994 cf
 15.0" Round Pipe n=0.013 L=41.4' S=0.0121 '/ Capacity=7.10 cfs Outflow=7.10 cfs 116,994 cf

Reach R2: Avg. Flow Depth=0.32' Max Vel=2.85 fps Inflow=7.10 cfs 116,994 cf
 n=0.030 L=1,055.3' S=0.0380 '/ Capacity=147.42 cfs Outflow=7.10 cfs 116,994 cf

Reach R3: Avg. Flow Depth=0.49' Max Vel=3.54 fps Inflow=6.11 cfs 42,626 cf
 n=0.030 L=320.3' S=0.0219 '/ Capacity=124.26 cfs Outflow=6.10 cfs 42,626 cf

Reach R4: Avg. Flow Depth=1.71' Max Vel=1.12 fps Inflow=13.72 cfs 73,939 cf
 n=0.030 L=110.0' S=0.0005 '/ Capacity=19.63 cfs Outflow=13.68 cfs 73,939 cf

Pond CLV-1: 18in culvert Peak Elev=272.88' Inflow=6.11 cfs 42,626 cf
 18.0" Round Culvert n=0.013 L=45.0' S=0.0289 '/ Outflow=6.11 cfs 42,626 cf

Pond CLV3: 18in culvert Peak Elev=267.60' Inflow=13.72 cfs 73,939 cf
 18.0" Round Culvert n=0.013 L=53.0' S=0.0047 '/ Outflow=13.72 cfs 73,939 cf

Pond FB1: Underdrained soil filter Peak Elev=248.13' Storage=7,978 cf Inflow=3.76 cfs 18,102 cf
 Primary=1.21 cfs 6,071 cf Secondary=0.08 cfs 10,985 cf Outflow=1.30 cfs 17,056 cf

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Pond WP: Wet Pond

Peak Elev=261.89' Storage=41,740 cf Inflow=26.22 cfs 156,904 cf
Primary=13.56 cfs 45,251 cf Secondary=7.62 cfs 111,650 cf Outflow=21.18 cfs 156,901 cf

Link SP1:

Inflow=7.90 cfs 125,833 cf
Primary=7.90 cfs 125,833 cf

Link SP2:

Inflow=31.67 cfs 250,714 cf
Primary=31.67 cfs 250,714 cf

Link SP3:

Inflow=9.21 cfs 52,861 cf
Primary=9.21 cfs 52,861 cf

ATTACHMENT 6

INSPECTION, MAINTENANCE & HOUSEKEEPING PLAN



INSPECTION, MAINTENANCE, AND HOUSEKEEPING PLAN
(Prepared by Jayson Haskell, PE #13002)

VERRILL FARM SUBDIVISION
VISTA VIEW LANE (OFF SHAKER ROAD)
GRAY, MAINE

Responsible Party

Owner: Ambrosia Development & Investments
28 Weare Road
Seabrook, New Hampshire 03874

The owner/applicant is responsible for the maintenance of all stormwater management structures and related site components and the keeping of a maintenance log book with service records until a homeowner's association is established. Once the association is established, maintenance will be the responsibility of the homeowners. Records of all inspections and maintenance work performed must be kept on file with the owner and retained for a minimum of five years. The maintenance log will be made available to the Town and Maine Department of Environmental Protection (MDEP) upon request. At a minimum, the maintenance of stormwater management systems will be performed on the prescribed schedule.

The procedures outlined in this plan are provided as a general overview of the anticipated practices to be utilized on this site. In some instances, additional measures may be required due to unexpected conditions. *The Maine Erosion and Sedimentation Control BMP and Stormwater Management for Maine: Best Management Practices* Manuals published by the MDEP should be referenced for additional information.

During Construction

- 1. Inspection and Corrective Action:** It is the contractor's responsibility to comply with the inspection and maintenance procedures outlined in this section. Inspection shall occur on all disturbed and impervious areas, erosion control measures, material storage areas that are exposed to precipitation, and locations where vehicles enter or exit the site. These areas shall be inspected at least once a week as well as 24 hours before and after a storm event generating more than 0.5 inch of rainfall over a 24-hour period and prior to completing permanent stabilization measures. A person with knowledge of erosion and stormwater control, including the standards and conditions in the permit, shall conduct the inspections.
- 2. Maintenance:** Erosion controls shall be maintained in effective operating condition until areas are permanently stabilized. If best management practices (BMPs) need to be

repaired, the repair work should be initiated upon discovery of the problem but no later than the end of the next workday. If BMPs need to be maintained or modified, additional BMPs are necessary, or other corrective action is needed, implementation must be completed within seven calendar days and prior to any rainfall event.

3. **Construction vehicles and equipment:** Construction vehicles and equipment shall not be driven or stored within the stormwater basins. To ensure the basins function as designed perpetually, prohibiting vehicles and equipment from these areas will limit the risk of inhibiting the function of the basins due to compaction.
4. **Snow Storage:** The proposed underdrained filter basin and wet ponds shall not be utilized for snow storage. Snow storage areas shall be located away from the basins, and in areas that will direct snow melt runoff into one of the basins on site.
5. **Documentation:** A report summarizing the inspections and any corrective action taken must be maintained on site. The log must include the name(s) and qualifications of the person making the inspections; the date(s) of the inspections; and the major observations about the operation and maintenance of erosion and sedimentation controls, materials storage areas, and vehicle access points to the parcel. Major observations must include BMPs that need maintenance, BMPs that failed to operate as designed or proved inadequate for a particular location, and location(s) where additional BMPs are needed. For each BMP requiring maintenance, BMP needing replacement, and location needing additional BMPs, note in the log the corrective action taken and when it was taken. The log must be made accessible to MDEP and Town staff, and a copy must be provided upon request. The owner shall retain a copy of the log for a period of at least three years from the completion of permanent stabilization.

Housekeeping

1. **Spill prevention:** Controls must be used to prevent pollutants from construction and waste materials on site to enter stormwater, which includes storage practices to minimize exposure of the materials to stormwater. The site contractor or operator must develop, and implement as necessary, appropriate spill prevention, containment, and response planning measures.
2. **Groundwater protection:** During construction, liquid petroleum products and other hazardous materials with the potential to contaminate groundwater may not be stored or handled in areas of the site draining to an infiltration area. An "infiltration area" is any area of the site that by design or as a result of soils, topography and other relevant factors accumulates runoff that infiltrates into the soil. Dikes, berms, sumps, and other forms of secondary containment that prevent discharge to groundwater may be used to isolate portions of the site for the purposes of storage and handling of these materials. Any project proposing infiltration of stormwater must provide adequate pre-treatment of stormwater prior to discharge of stormwater to the infiltration area, or provide for

treatment within the infiltration area, in order to prevent the accumulation of fines, reduction in infiltration rate, and consequent flooding and destabilization.

- 3. Fugitive sediment and dust:** Actions must be taken to ensure that activities do not result in noticeable erosion of soils or fugitive dust emissions during or after construction. Oil may not be used for dust control, but other water additives may be considered as needed. A stabilized construction entrance (SCE) should be included to minimize tracking of mud and sediment. If off-site tracking occurs, public roads should be swept immediately and no less than once a week and prior to significant storm events. Operations during dry months, that experience fugitive dust problems, should wet down unpaved access roads once a week or more frequently as needed with a water additive to suppress fugitive sediment and dust.
- 4. Debris and other materials:** Minimize the exposure of construction debris, building and landscaping materials, trash, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials to precipitation and stormwater runoff. These materials must be prevented from becoming a pollutant source.
- 5. Excavation de-watering:** Excavation de-watering is the removal of water from trenches, foundations, coffer dams, ponds, and other areas within the construction area that retain water after excavation. In most cases the collected water is heavily silted and hinders correct and safe construction practices. The collected water removed from the ponded area, either through gravity or pumping, must be spread through natural wooded buffers or removed to areas that are specifically designed to collect the maximum amount of sediment possible, like a cofferdam sedimentation basin. Avoid allowing the water to flow over disturbed areas of the site. Equivalent measures may be taken if approved by the Department.
- 6. Authorized Non-stormwater discharges:** Identify and prevent contamination by non-stormwater discharges. Where allowed non-stormwater discharges exist, they must be identified and steps should be taken to ensure the implementation of appropriate pollution prevention measures for the non-stormwater component(s) of the discharge. Authorized non-stormwater discharges are:
 - (a) Discharges from firefighting activity;
 - (b) Fire hydrant flushings;
 - (c) Vehicle washwater if detergents are not used and washing is limited to the exterior of vehicles (engine, undercarriage and transmission washing is prohibited);
 - (d) Dust control runoff in accordance with permit conditions and Appendix (C)(3);
 - (e) Routine external building washdown, not including surface paint removal, that does not involve detergents;
 - (f) Pavement washwater (where spills/leaks of toxic or hazardous materials have not occurred, unless all spilled material had been removed) if detergents are not used;
 - (g) Uncontaminated air conditioning or compressor condensate;
 - (h) Uncontaminated groundwater or spring water;
 - (i) Foundation or footer drain-water where flows are not contaminated;

- (j) Uncontaminated excavation dewatering (see requirements in Appendix C(5));
- (k) Potable water sources including waterline flushings; and
- (l) Landscape irrigation.

- 7. Unauthorized non-stormwater discharges:** Approval from the Town does not authorize a discharge that is mixed with a source of non-stormwater, other than those discharges in compliance with Section 6 above. Specifically, the Town’s approval does not authorize discharges of the following:
- (a) Wastewater from the washout or cleanout of concrete, stucco, paint, form release oils, curing compounds or other construction materials;
 - (b) Fuels, oils or other pollutants used in vehicle and equipment operation and maintenance;
 - (c) Soaps, solvents, or detergents used in vehicle and equipment washing; and
 - (d) Toxic or hazardous substances from a spill or other release.

Post Construction

- 1. Inspection and Corrective Action:** All stormwater measure, must be maintained by the owner in effective operating condition. A qualified third-party inspector hired by the owner shall at least annually inspect the stormwater management facilities. This person should have knowledge of erosion and stormwater control including the standards and conditions of the site’s approvals. The inspector shall be certified through the MDEP to inspect the stormwater infrastructure. The following areas, facilities, and measures must be inspected, and identified deficiencies must be corrected. Areas, facilities, and measures other than those listed below may also require inspection on a specific site.
- A. Vegetated Areas:** Inspect vegetated areas, particularly slopes and embankments, early in the growing season or after heavy rains to identify active or potential erosion problems. Replant bare areas or areas with sparse growth. Where rill is evident, armor the area with an appropriate lining or divert the erosive flows to on-site areas able to withstand the concentrated flows.
 - B. Ditches, Swales, and Open Channels:** Inspect ditches, swales, and other open channels in the spring, late fall, and after heavy rains to remove any obstructions to flow, remove accumulated sediments and debris, control vegetative growth that could obstruct flow, and repair any erosion of the ditch lining. Vegetated ditches must be mowed at least annually or otherwise maintained to control the growth of woody vegetation and maintain flow capacity. Repair any slumping side slopes as soon as practicable. The channel must receive adequate routine maintenance to maintain capacity and prevent or correct any erosion of the channel's bottom or side slopes.
 - C. Storm Drains:** Inspect storm drains in the spring, late fall, and after heavy rains to remove any obstructions to flow; remove accumulated sediments and debris at the inlet, at the outlet, and within the conduit; and to repair any erosion damage at the storm drain’s outlet.

- D. Roofline Drip edges:** The drip edges should be inspected semi-annually and following major storm events for the first year and every six months thereafter. The reservoir crushed stone should drain within 24 to 48 hours following a major storm event. If ponding exceeds 48 hours, the stone reservoir course shall be removed and the filter bed be rototilled to reestablish the soil's filtration capacity. If water ponds in the reservoir course for more than 72 hours, the top several inches of the filter shall be replaced with fresh material. Inspect for debris and sediment build up at surface and remove as needed. The drip edges are part of the stormwater management plan and cannot be paved over or altered in anyway.
- E. Outlet Control Structures:** Inspect and, if required, clean out structure at least once a year, preferably in early spring. Clean out must include the removal and legal disposal of any accumulated sediments and debris at the bottom of the structure and inlet grate.
- F. Wet Pond:** Inspect gravel trench outlet after every major storm in the first few months to ensure proper function. Thereafter the gravel trench should be inspected at least once every six months. The wet pond should drain within 12 to 24 hours of the end of the storm event. If water does not drain through the gravel trench within 72 hours, the top several inches of the gravel must be replaced with fresh material. The removed sediment shall be disposed of in an acceptable manner. Wet Ponds should also be inspected annually for erosion, destabilization of side slopes, embankment settling and other signs of structural failure. Dredging should occur to remove sediment once the accumulated volume loss reaches 15% or approximately every 15-20 years.
- G. Underdrained Filter Basin:** The filter basins are not intended to function as snow storage areas. Inspector to verify that winter plowing operations are not dumping or pushing snow into the basins. The basins shall also not be used for vehicle or heavy equipment storage. Basin should be inspected after several major storm events (0.5 inches rainfall over 24 hours) to determine drawdown time during the first year. Basins to be inspected every six months thereafter with at least one inspection after a major storm event.

The basin should drain dry within 24 to 48 hours following a one-inch storm. If ponding exceeds 48 hours, the top of the filter bed must be rototilled to reestablish the soil's filtration capacity. If water ponds on the surface of the bed for more than 72 hours, the top several inches of the filter shall be replaced with fresh material. Inspect for debris and sediment build up in the forebay and basin and remove as needed. Mowing of the basin can only occur semi-annually to a height of no less than 6 inches utilizing a hand-held string trimmer or push-mower. Any bare areas or erosion rills shall be repaired with new filter media or sandy loam then seeded and

mulched. The basin should also be inspected annually for destabilization of side slopes, embankment settling and other signs of structural failure.

- H. Emergency Spillway:** Spillways should be inspected semi-annually and following major storm events for the first year and every six months thereafter to remove any obstructions to flow. Any woody vegetation growing through riprap lining must be removed. Replace riprap on areas where any underlying filter fabric is showing through the stone or where stones have been dislodged.
- I. Regular Maintenance:** Clear accumulations of winter sand along roadway and parking areas once a year, preferably in the spring. Accumulations on pavement may be removed by pavement sweeping. Accumulations of sand along pavement shoulders may be removed by grading excess sand to the pavement edge and removing it manually or by a front-end loader.
- J. Documentation:** Keep a log (report) summarizing inspections, maintenance, and any corrective actions taken. The log must include the date on which each inspection or maintenance task was performed, a description of the inspection findings or maintenance completed, and the name of the inspector or maintenance personnel performing the task. If a maintenance task requires the clean-out of any sediments or debris, indicate where the sediment and debris was disposed after removal. The log must be made accessible to Town and MDEP staff upon request. The permittee shall retain a copy of the log for a period of at least five years from the completion of permanent stabilization. Attached is a sample log.

Re-certification

Submit a certification of the following to the MDEP within three months of the expiration of each five-year interval from the date of issuance of the permit.

- (a) **Identification and repair of erosion problems.** All areas of the project site have been inspected for areas of erosion, and appropriate steps have been taken to permanently stabilize these areas.
- (b) **Inspection and repair of stormwater control system.** All aspects of the stormwater control system have been inspected for damage, wear, and malfunction, and appropriate steps have been taken to repair or replace the system, or portions of the system.
- (c) **Maintenance.** The erosion and stormwater maintenance plan for the site is being implemented as written, or modifications to the plan have been submitted to and approved by the Department, and the maintenance log is being maintained.

Municipalities with separate storm sewer systems regulated under the Maine Pollutant Discharge Elimination System (MPDES) Program may report on all regulated systems under

their control as part of their required annual reporting in lieu of separate certification of each system. Municipalities not regulated by the MPDES Program, but that are responsible for maintenance of permitted stormwater systems, may report on multiple stormwater systems in one report.

Duration of Maintenance

Perform maintenance as described.

INSPECTION AND MAINTENANCE LOG – GENERAL INSPECTION

VERRILL FARM SUBDIVISION VISTA VIEW LANE (OFF SHAKER ROAD) GRAY, MAINE

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town and MDEP upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Vegetated Areas	Inspect slopes and embankments early in Spring.			
Storm Drains	Inspect semiannually and after major rainfall.			
	Repair erosion at inlet or outlet of pipe.			
	Repair displaced riprap.			
	Clean accumulated sediment in culverts when >20% full.			
Roofline Dripedges	Check after each rainfall event to ensure that the stone reservoir drains within 24-48 hours.			
	Replace top several inches of filter if reservoir does not drain within 72 hours.			
	Inspect and remove sediment or debris build up on the surface of the stone			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			
Regular Maintenance	Clear accumulation of winter sand in paved areas annually.			

INSPECTION AND MAINTENANCE LOG – WET POND

VERRILL FARM SUBDIVISION VISTA VIEW LANE (OFF SHAKER ROAD) GRAY, MAINE

The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town and MDEP upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Wet Pond	Check after each rainfall event to ensure that pond drains within 12-24 hours.			
	Replace top several inches of gravel in trench if pond does not drain within 72 hours.			
	Inspect annually for erosion or sediment accumulation and repair as necessary.			
Outlet Control Structure	Inspect to ensure that structure is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			
Emergency Spillway	Inspect and remove obstructions as necessary.			
	Remove woody vegetation.			
	Replace riprap as necessary.			

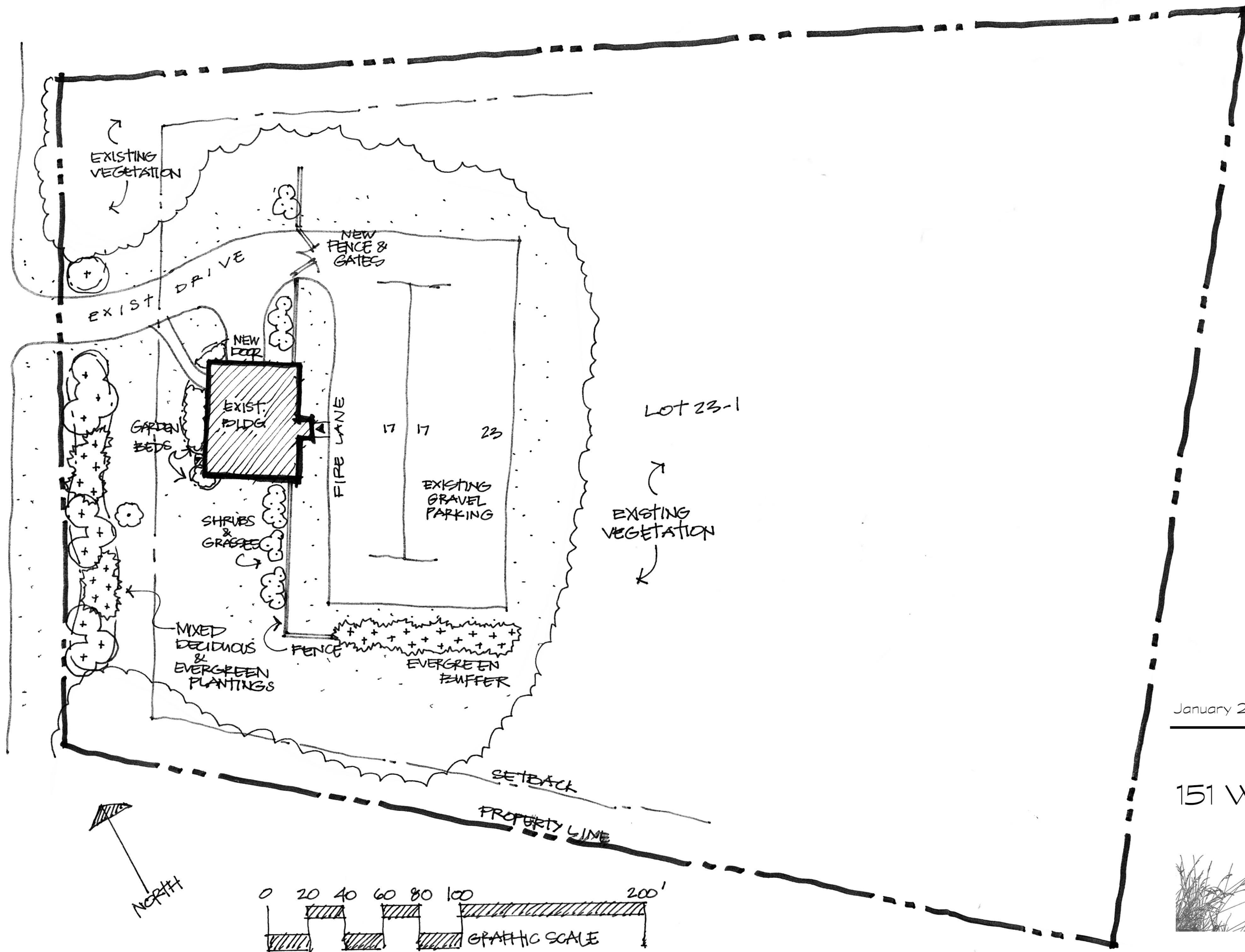
INSPECTION AND MAINTENANCE LOG – UNDERDRAINED FILTER BASIN

VERRILL FARM SUBDIVISION VISTA VIEW LANE (OFF SHAKER ROAD) GRAY, MAINE

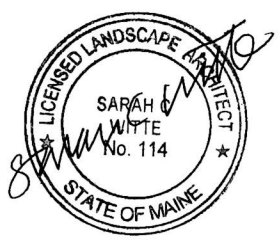
The following stormwater management and erosion control items shall be inspected and maintained as prescribed in the Maintenance Plan with recommended frequencies as identified below. The owner is responsible for keeping this maintenance log on file for a minimum of five years and shall provide a copy to the Town and MDEP upon request. Inspections are to be performed by a qualified third-party inspector and all corrective actions shall be performed by personnel familiar with stormwater management systems and erosion controls.

Maintenance Item	Maintenance Event	Date Performed	Responsible Personnel	Comments
Underdrained Filter Basin	Check after each rainfall event to ensure that pond drains within 24-48 hours.			
	Replace top several inches of filter if pond does not drain within 72 hours.			
	Mow grass no more than twice a year to no less than 6 inches in height.			
	Inspect semi-annually for erosion or sediment accumulation and repair as necessary.			
	Inspector to verify basin not utilized for snow storage			
	Inspector to verify basin not utilized for vehicle or heavy equipment storage.			
Outlet Control Structure	Inspect to ensure that structure is properly draining.			
	Remove accumulated sediment semiannually.			
	Inspect grates/inlets and remove debris as needed.			
Emergency Spillway	Inspect and remove obstructions as necessary.			
	Remove woody vegetation.			
	Replace riprap as necessary.			

WEST GRAY ROAD



LOT 23-1



January 20 2021

Site Plan
 151 West Gray Road
 Gray, Maine

Sarah Witte, Landscape Architect
 16 Cumberland Street,
 Yarmouth Maine 04096 • 207.415.2973
 ME Lic. # 114 • sarahwittelA@gmail.com



**PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION
TOWN OF GRAY MAINE**

PROPERTY TO BE DEVELOPED

Property Location/Address	151 Gray Rd. Gray ME.	Property Map/Lot	050-23-001.
Zoning District	RRA - Rural Resident	Lot Acreage	5.98
Owner Name	MICAELA GRECO	Tax Sheet	5,528
Owner Address	4 CARRIAGE HILL	Owner Phone	207-615-7633

APPLICANT

Name (IF different than owner)		Contact Phone Number	MICHAEL STERRIS
Mailing Address		Alternate Phone Number	207-615-7347
Mailing City/State/Zip		Fax Number	
Email Address	mgreco207@gmail.com		

AGENT/CONSULTANT

Name		Contact Phone Number	
Mailing Address		Alternate Phone Number	
Mailing City/State/Zip		Fax Number	
Email Address			

PROJECT

The undersigned requests that the Town of Gray Planning Board consider the following application for:

<input type="checkbox"/> Subdivision Sketch Plan Review Preliminary Plan Review (Major) Final Plan Review (Major) Minor <input checked="" type="checkbox"/> Site Plan Review Pre-Application Conference Minor Major <input type="checkbox"/> Shoreland Zoning Permit	<input type="checkbox"/> Other (specify) Conditional Use Amendment Extension Workshop Contract Zone Request <input checked="" type="checkbox"/> Change of Use
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Project Description / Comments:

ZONING
CHANGE OF USE

Applicant Signature	Date 1-13-21
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SITE PLAN REVIEW CHECKLIST TOWN OF GRAY MAINE

For Office Use Only
Date Received: _____
Received by: _____

APPLICANT/PROJECT

Name	MICAELA GRECO	Date	1-13-20
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This checklist has been prepared to assist applicants in developing their applications. It should be used as a guide in assembling the information necessary for a complete application. The checklist, however, does not substitute for the requirements of Article 10 of the Zoning Ordinance. The Planning Board will also use the checklist to ensure your application is complete. Indicate if the information has been submitted or if a waiver is requested. If you feel that information is not applicable to your project, please indicate in the second column. The perimeter survey, subdivision plan and engineering plans may be contained on the same drawing. Detailed engineering drawings such as road profiles, drainage swales and erosion/sedimentation plans, however, may best be presented on a separate sheet or sheets. **This checklist does not address the standards that the site plan must meet.**

SITE PLAN REVIEW SUBMISSION REQUIREMENTS

	Submitted by Applicant	Not Applicable	Applicant Request to be Waived	Reviewed by Planner/Engineer	Waived by Planning Board
402.10.10.A SITE INVENTORY PLAN					
A.1 Owner name(s), address(es), phone number(s)	X				
A.2 Consultant name(s) & address(es)		X			
A.3 Evidence of right, title, or interest in property					
A.4 Fourteen (14) copies of accurate scale inventory plan showing:		X			
a. The name of the development, north arrow, date and scale.					
b. The boundaries of the parcel and existing zoning.	X				
c. The relationship of the site to the surrounding area .		X			
d. The topography of the site at an appropriate contour interval depending on the nature of the use and character of the site.		X			
e. The major natural features of the site and within five hundred (500) feet of the site, including wetlands, streams, ponds, floodplains, groundwater aquifers, significant wildlife habitats and fisheries or other important natural features (if none, so state).	X				
f. Existing buildings, structures, or other improvements on the site (if none, so state).	X				
g. Existing restrictions or easements on the site (if none, so state).		X			
h. The location and size of existing utilities or improvements servicing the site (if none, so state).		X			
i. Mapping of all wetlands and/or potential vernal pools on site regardless of size.		X			
j. A Class B high intensity soil survey if any portion of the site is located in a resource protection district or has wetlands covering more than ten (10%) percent of the site.		X			
k. A Class D medium intensity soil survey if vernal pools and/or significant wetlands are not present.		X			

402.10.10.B SITE ANALYSIS PLAN

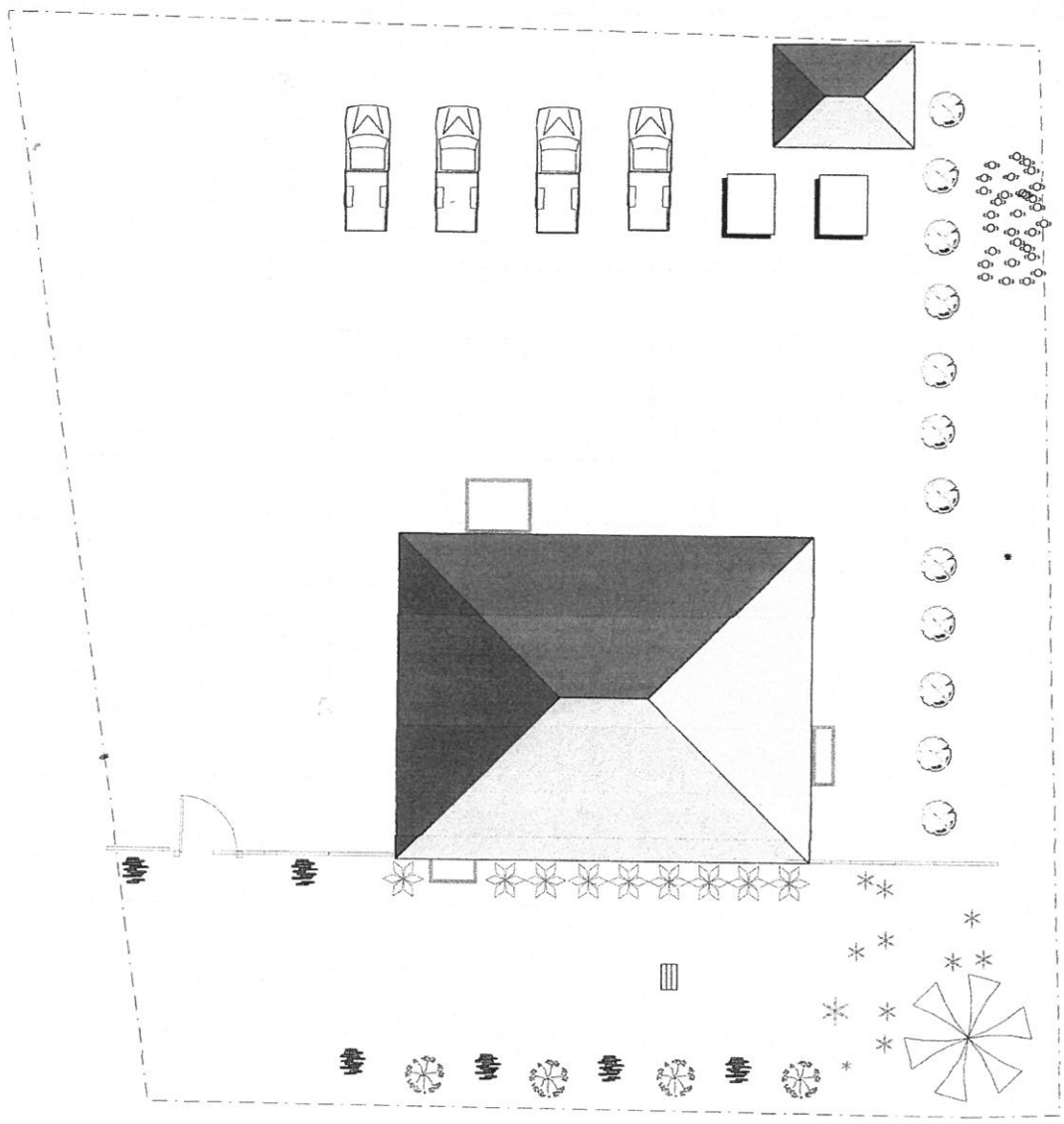
B.1 Fourteen (14) copies of a site analysis plan identifying:									
a. Portions of the site that are unsuitable for development or use;									X
b. Portions of the site that are unsuitable for on- site sewage disposal;									X
c. Areas of the site that have environmental limitations that must be addressed in the development plan;									X
d. Areas that may be subject to off-site conflicts or concerns; and which areas are well suited to the proposed use.									X
B.2 Fourteen (14) copies of site description narrative									X
B.3 Submission requirement waiver requests, if any									X

402.10.10.C APPLICATION SUBMISSION REQUIREMENTS

C.1 Signed/Executed Application									X
C.2 Evidence of payment of the application fee and technical review escrow.									X
C.3 Fourteen (14) copies of written materials and maps/drawings									X
C.4 Report/Maps/Drawings: General Information									X
a. Owner contact information									X
b. Setback, yard, and buffer locations									X
c. Abutter contact information									X
d. Map: general site location									X
e. Contiguous property boundaries									X
f. Map/Lot Number									X
g. Deed/proof of ownership/interest in property									X
h. Plan preparer name, registration #, seal									X
i. Evidence of technical & financial means									X
C.5 Reports/Maps/Drawings: Existing Conditions									
a. Zoning Classification									X
b. Property lines bearings & length									X
c. Location of utilities (water, sewer, electric, etc.)									X
d. Street name(s), location(s), width(s)									X
e. Building location(s), dimensions, and photo(s)									X
f. Driveway location(s), dimensions									X
g. Location of intersecting roads/driveways									X
h. Location of important or unique natural site features									X
i. Direction of surface water drainage									X
j. Sign location(s), front view(s), dimensions									X
k. Easement location, dimensions, documents									X

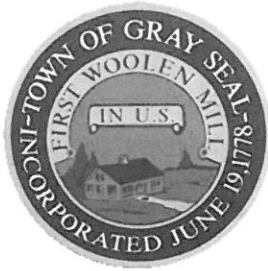
I. Fire hydrant or fire protection water supply location		X			
C.6 Reports/Maps/Drawings: Proposed Development		X			
a. Water/Sewage estimated demands/provisions		X			
b. Direction of proposed surface water drainage		X			
c. Solid waste disposal provisions		X			
d. Driveway/parking plans/provisions	X				
e. Proposed landscaping & buffering	X				
f. Proposed building/building expansion plans		X			
g. Proposed sign plans	X				
h. Proposed exterior lighting		X			
i. Location of utilities & fire protection systems		X			
j. General description of proposed use/activity	X				
k. Traffic estimates		X			
l. Stormwater, erosion & sedimentation control, and water quality management provisions		X			
C.7 Reports/Maps/Drawings: Site Plan	X				
402.10.10.D ADDITIONAL REQUIREMENTS FOR MAJOR DEVELOPMENTS					
D.1 Proposed development narrative	X				
D.2 Grading plan		X			
D.3 Stormwater drainage & erosion control program		X			
D.4 Groundwater impact analysis		X			
D.5 Plan preparer name/registration number/seal		X			
D.6 Utility plan		X			
D.7 Planting schedule	X				
D.8 Traffic impact analysis		X			
D.9 Gray Water District statement of supply adequacy		X			
D.10 Estimated cost of development/proof of financial capacity		X			
402.10.10.E WAIVER OF SUBMISSION REQUIREMENTS [WRITE IN WAIVER REQUESTS]					
		X			
		X			
		X			
		X			
		X			

- FLOWER, GRASS
- ✦ PORCUPINE GRASS
- FLOWER, PERENNIAL
- * DAYLILY, STELLA
- SHRUB, DECIDUOUS
- ✦ HYDRANGEA, ANNABELLE
- SHRUB, EVERGREEN BROADLEAF
- ✦ RHODODENDREN
- SHRUB, EVERGREEN CONIFER
- ✦ ARBORVITAE, DARK AMERICAN
- TREE, DECIDUOUS
- ✦ CRABAPPLE, PRAIRIE FIRE



Revision #:	Scale:	Landscape Plan: 001	Landscape Design by: atg207
Date: 1/6/2021	1" = 30'	151 Gray Rd, Gray Maine	All Things Green

Town of Gray



Re: Land Use Determination
151 West Gray Road
Map 50 Lot 23-1

Kathy,

Upon reading the narrative from All Things Green LLC on the proposed use for 151 West Gray Road Map 50 Lot 23-1 It is the conclusion of the Code Office the proposed use meets the definition of headquarters for a contracting business and will be subject to a conditional use approval by the planning board.

Best Regards,

A handwritten signature in black ink, appearing to read "Scott Dvorak".

Scott Dvorak
Lead Code Enforcement Officer
Town of Gray



DOUBLE TREE
by Hilton
Portland Maine

363 Maine Mall Road, South Portland Maine 04106 207-775-6161

January 5, 2021

In early 2016 we decided that our landscaping at the hotel along with Starbucks and Chipotle restaurant needed major improvement. We were looking for a company that could give us the professional appearance that we needed along with the attention to detail on a weekly basis to insure our guests would have a pleasant first impression.

After reviewing a number of landscaping companies I selected All Things Green. We began our relationship in the spring of 2016. A major factor for my decision was the expertise, vision and passion of Micaela Greco and her team. Over the past four years she and her team have done an outstanding job not only in designing our landscape package but in the weekly and yearly maintenance to insure the professional appearance that we require.

Without a doubt having All Things Green on our team was one of the best decision I have made we it came to selecting a vendor for the property.

Michael Towle
General Manager

Michael Banks

RE/MAX By The Bay

To Whom It May Concern,

It is with much enthusiasm that I recommend Micaela, Mike and All Things Green. I have been working closely with them since 2017 on a number of projects from weekly maintenance to various large scale and complex installations. I have found them to be extremely knowledgeable, dependable, and professional. In my line of work, I interact and work with a number of property maintenance companies and I consider Micaela, Mike and their team to be the best. I have recommended them to a number of clients and found that their experiences with ATG have mirrored mine.

Please let me know if you have any specific questions.

Thank you,

Michael Banks

To whom it may concern:

All Things Green, LLC has served as the gardener for my family for over three years. She has cared for our 30 acre property which contains flower and vegetable gardens, fruit trees and shrubs, a picking garden, and greenhouse.

What I've most appreciated about working with ATG is their vision and creativity. They transformed the flower and container gardens around our home and guesthouse bringing a sensitivity to composition, a lack of pretense and a welcoming and relaxed ease to the property.

All Things Green clearly loves designing and improving the beauty of landscapes. In addition to tending to the outdoor gardens and grounds, the talented team from All Things Green bring color, texture and scent into our home with rotating house plants and elegant flower arrangements. It is a delight to experience.

Their All Things Green crew have a wonderful dedication, reliability and work ethic. Under Micaela and Michaels direction, their knowledge about plant materials, sourcing, soil preparation and maintenance continue to help our lawn and gardens thrive. Throughout the expanse of the property, their skills and experience can be seen in the coherent and lively landscapes.

Micaela and Michael is lovely to work with as they communicate clearly and care not only about the land but for the people who work alongside them.

I highly recommend the All Things Green team.

Sincerely,

N. Maeve Rockefeller



Portland Water District

FROM SEBAGO LAKE TO CASCO BAY

January 4, 2021

To Whom it may Concern:

Micaela Greco of All Things Green, has provided landscape services for the Portland Water District's Sebago Lake Ecology Center since 2010. Upon hiring Micaela our demonstration areas were in disrepair. Since we started working with her our demonstration gardens have been transformed into attractive showpieces that radiate four season color. We have concentrated on theme gardens to give homeowners a wide range of choices. Micaela has installed retaining beds, hillside beds, Native theme gardens, rain gardens and ornamental gardens. She has also given us a wide range of Spring bulbs that enhance our gardens and meadows. Our goal is to encourage lake front homeowners to plant everything from groundcovers to trees, while keeping in mind the native landscape. Micaela's knowledge of plants and her creativity have helped us immensely as we have endeavored to make our gardens inspire landowners. Micaela communicates well with us through all the stages of our projects including budget and design planning, installation, and continued maintenance. Micaela loves what she does and works very hard at it. She is a pleasure to work with and always dependable.

Best Regards,

Brie A. Holme

Brie A Holme
Water Resource Specialist
(207) 774-5961 ext.3305
bholme@pwd.org

Kirsten L. Ness

Kirsten Ness
Water Resource Specialist
(207) 774-5961 ext.3336
kness@pwd.org

225 DOUGLASS STREET P.O. BOX 3553 PORTLAND, MAINE 04104-3553
PHONE: 207.774.5961 FAX: 207.761.8307 WEB: WWW.PWD.ORG



Out of the office Re: Statement from Katana Corporation

Tara Bergeron <Tara@mainereflections.com>
To: Micaela Greco <mgreco207@gmail.com>

Wed, Jan 6, 2021 at 9:44 AM

Hi Micaela!

Nice to hear from you, hope things have been going well for you guys during all this!

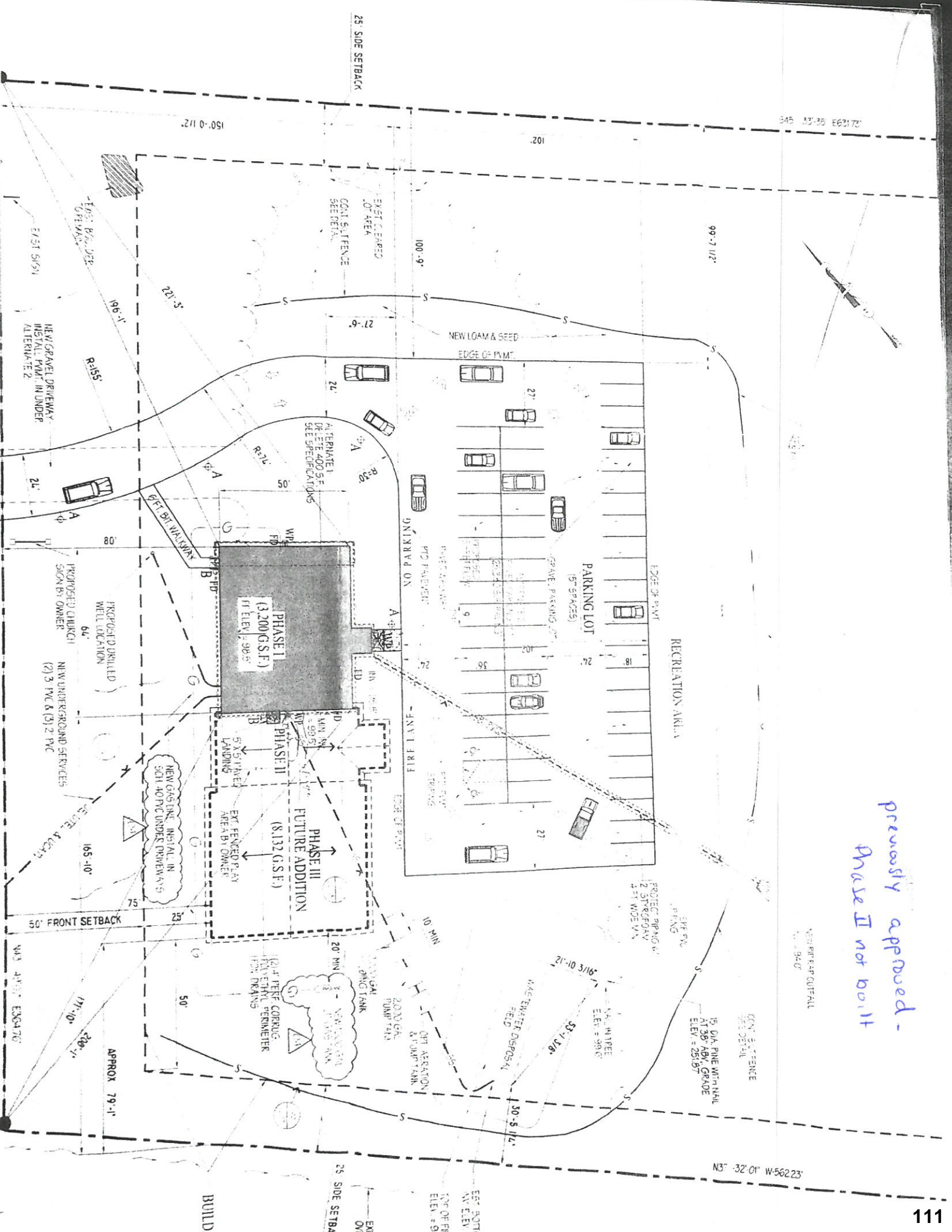
I'd be happy to.....

All Things Green was a tenant of Katana Corporation at our South Portland location for quite some time. Their designated area, along with their shop/office space was always kept up well and was left well when they moved. They were pleasant to have and moved around the grounds along with many other businesses very well and with consideration to our building, parking lot and limited space areas.

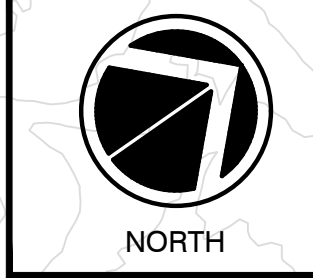
Hope this works! :)

Tara Bergeron
Business Manager





*previously approved -
Phase II not built*



ZONING SUMMARY

CURRENT USE: UNDEVELOPED LAND
PROPOSED USE: SINGLE FAMILY DWELLING (DETACHED)
ZONE - MD MEDIUM DENSITY DISTRICT (WITH PUBLIC WATER)

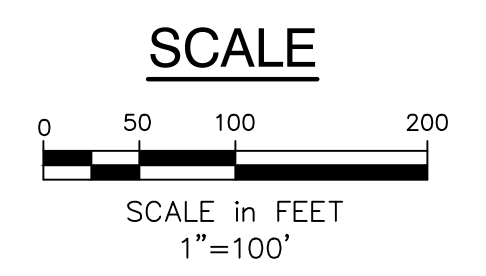
APPLICABLE SPACE AND BULK REGULATIONS	MINIMUM	PROVIDED
LOT AREA	40,000 S.F.	> 40,000 S.F.
STREET FRONTAGE	150'	> 150'
CUL-DE-SAC FRONTAGE	N/A	N/A
LOT WIDTH	150'	> 150'
PRINCIPAL STRUCTURE:		
FRONT SETBACK	35 FT.	35 FT.
SIDE SETBACK	15 FT.	15 FT.
REAR SETBACK	15 FT.	15 FT.
ACCESSORY STRUCTURE:		
FRONT SETBACK	35 FT.	35 FT.
SIDE SETBACK	15 FT.	15 FT.
REAR SETBACK	15 FT.	15 FT.
MAXIMUM		
BUILDING COVERAGE	20%	<20%
BUILDING HEIGHT	35 FT.	35 FT.
ACCESSORY STRUCTURE HEIGHT	35 FT.	35 FT.

NOTES:

- AREA RETAINED FOR FUTURE PHASES CANNOT BE SOLD OR DEVELOPED WITHOUT A SITE LOCATION OF DEVELOPMENT PERMIT FROM THE MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

LEGEND

EXISTING	DESCRIPTION	PROPOSED
---	BOUNDARY LINE/R.O.W.	---
---	ABUTTER LINE/R.O.W.	---
---	SETBACK	---
---	EASEMENT	---
⊙	IRON PIPE/ROD	---



OWNER OF RECORD
ALLEN HAMILTON (ADD BOOK AND PAGE)

REV	DATE	DESCRIPTION	REVISIONS

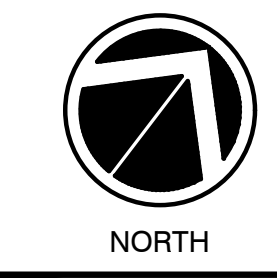
STILLWATER PINES SUBDIVISION
WOODCOCK DRIVE, MAINE 04261

OVERALL SITE PLAN

ALLEN HAMILTON & BEN GROVER
170 SHAKER ROAD
GRAY, MAINE 04039

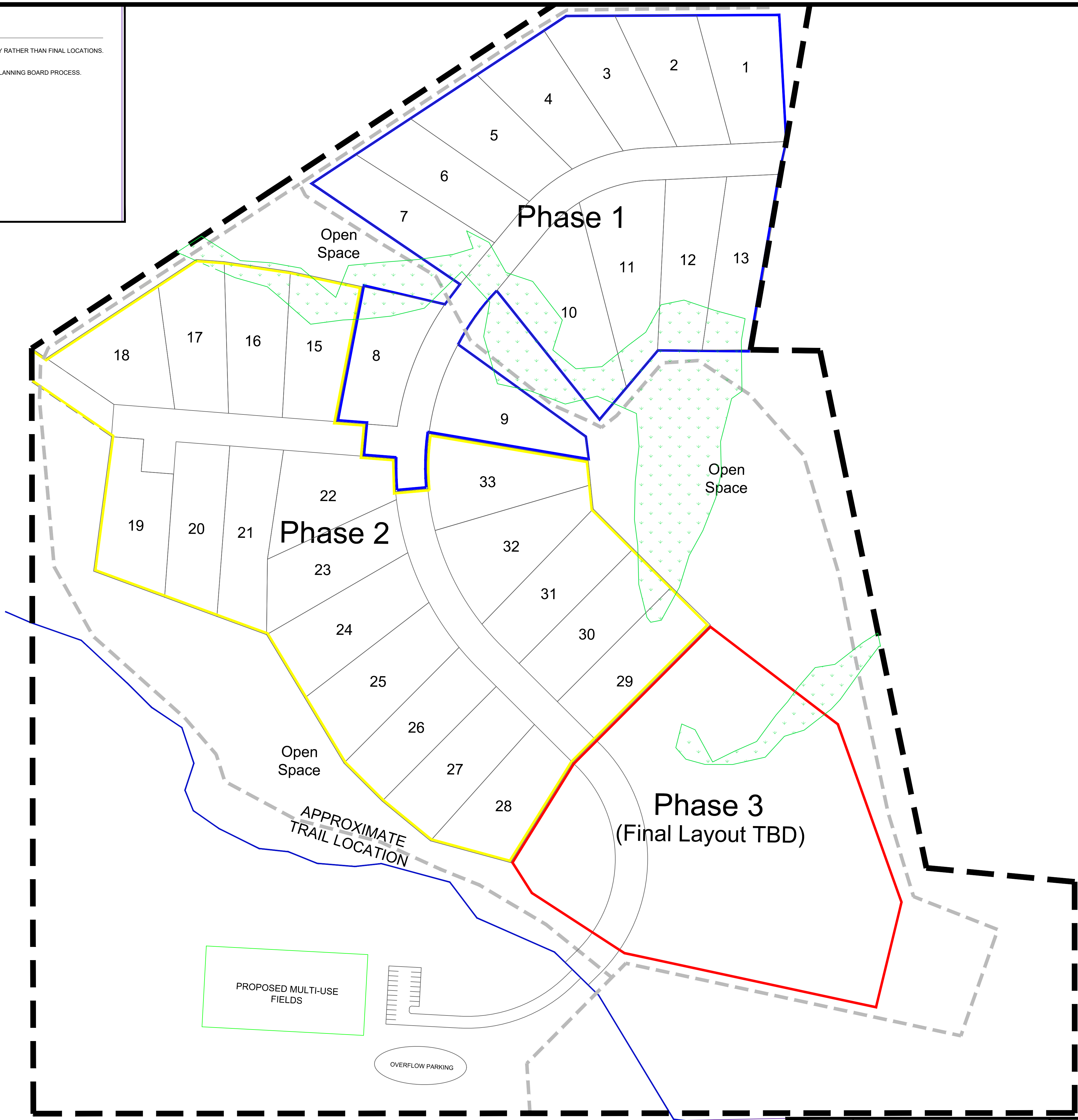
Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN: CEB	DATE: SEPTEMBER 2020
DESIGNED: CEB	SCALE: 1" = 100'
CHECKED: CEB	JOB NO. 20-012
FILE NAME:	
SHEET: C-101	

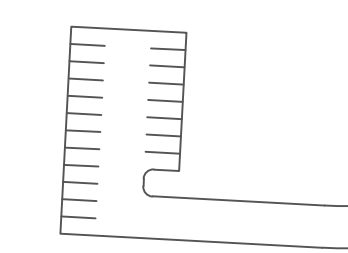


GENERAL NOTES:

- 1. PROPOSED TRAILS ARE INTENDED TO DEMONSTRATE CONNECTIVITY RATHER THAN FINAL LOCATIONS.
- 2. ALL OPEN SPACE WILL BE DEEDED TO THE TOWN.
- 3. STREAM CROSSING AND BALLFIELD LOCATION ARE CONCEPTUAL.
- 4. LOT LINES AND FINAL PHASING ARE SUBJECT TO CHANGE DURING PLANNING BOARD PROCESS.

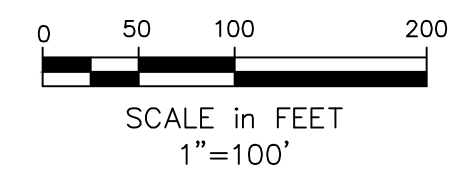


PROPOSED MULTI-USE FIELDS



OVERFLOW PARKING

SCALE



REV	DATE	DESCRIPTION	REVISIONS

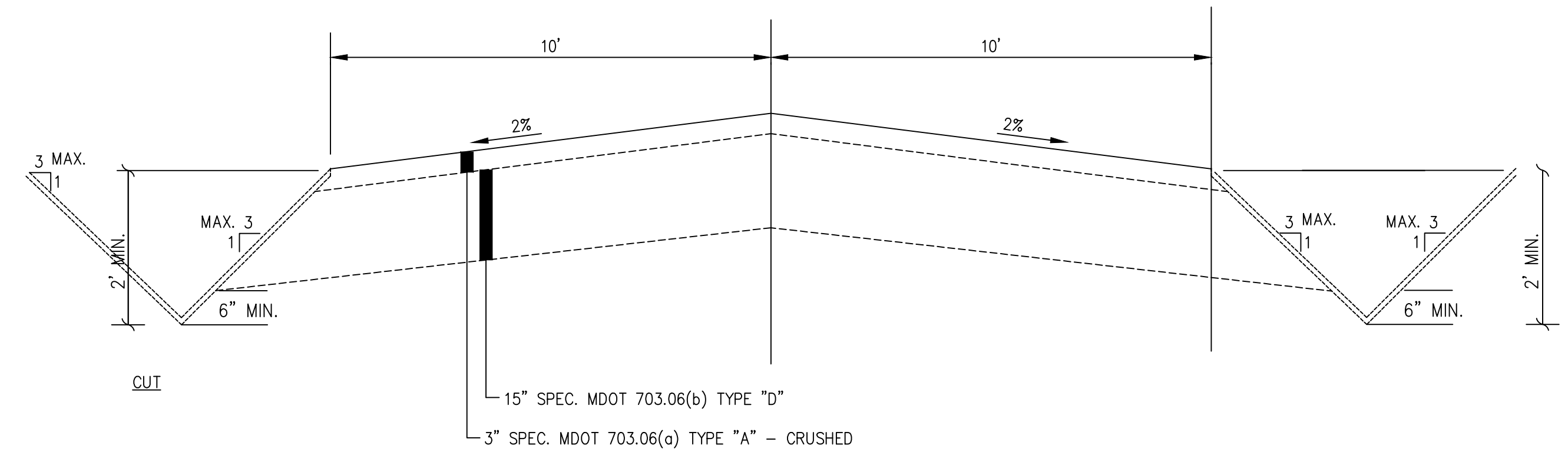
STILLWATER PINES SUBDIVISION
WOODCOCK DRIVE, MAINE 04261
CZA
CONCEPT
ALLEN HAMILTON & BEN GROVER
170 SHAKER ROAD
GRAY, MAINE 04039

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

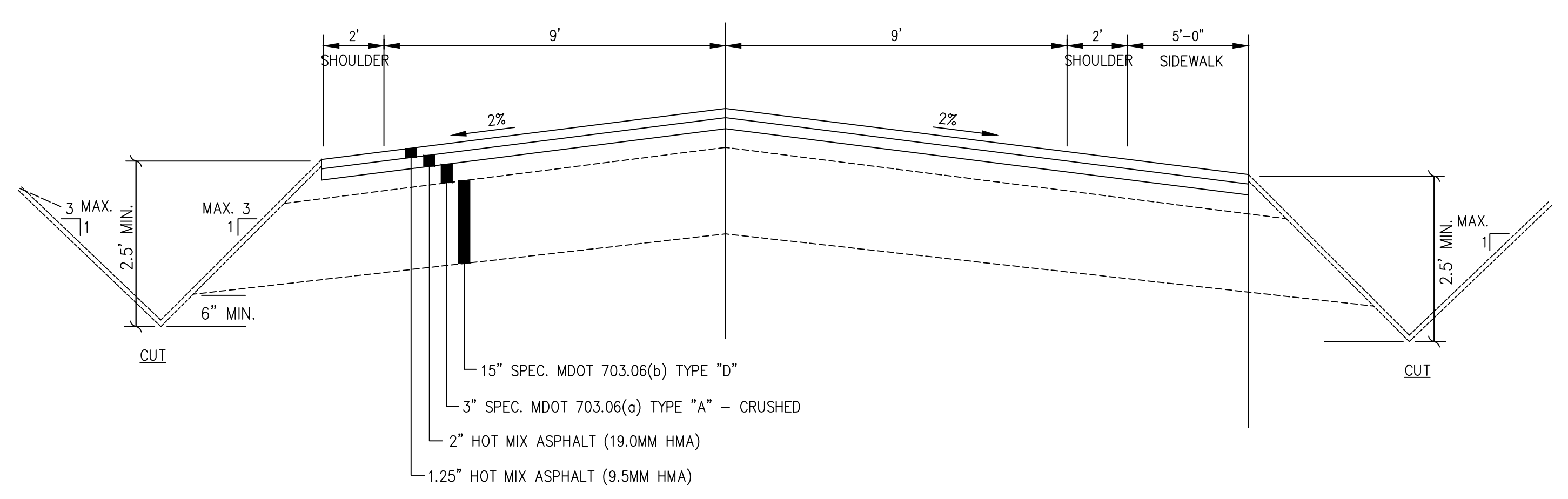
DRAWN: MPV/CEB	DATE:
DESIGNED: CEB/MPV	SCALE: 1"=100'
CHECKED: JAV/CEB	JOB NO. 20-012
FILE NAME:	
SHEET: SK-1	

NET RESIDENTIAL DENSITY CALCULATIONS

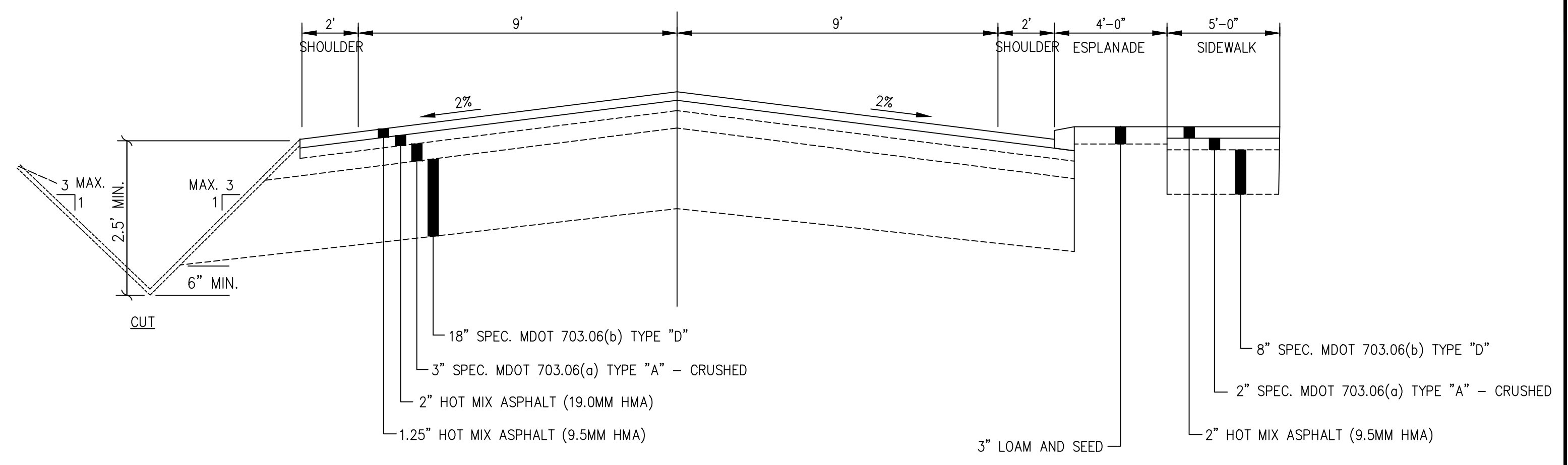
Total Area	67.8	Acres
Unbuildable Land	7.03	Acres
ROW	2.93	Acres
Wetlands	4.10	Acres
Steep Slopes		
Net Residential Area	60.82	Acres
Minimum Lot Area	0.92	Acres
Number of Units	66	
Density Bonuses		
Trail Network	5%	
5 Acres of Mature Growth	5%	
Public Access to Open Space	10%	
Public Water	10%	
Density Bonus	20	
Maximum Number of Units	86	



(A) GRAVEL ROAD
N.T.S.



(B) EXISTING WOODCOCK DRIVE IMPROVEMENT
N.T.S.



(C) WOODCOCK DRIVE EXTENSION
N.T.S.

C. TABLE 401.13.16-2

ITEM	Sub-collector Streets	Village Public Street	Rural Public Street	Rural Public Easement Street	Minor Rural Street
A. Minimum width right of way ¹	60 ft	60 ft	50 ft	50 ft ⁵	50 ft
B. Minimum grade	.5 percent ²	.5 percent ²	1 percent	1 percent	1 percent
C. Maximum grade	8 percent	8 percent	10 percent	10 percent ³	10 percent ³
D. Maximum grade within 75 ft of intersection	3 percent	3 percent	3 percent	3 percent	3 percent
E. Width of shoulders on each side	4 ft (paved)	4 ft (paved)	4 ft (paved)	2 ft (gravel)	2 ft (gravel)
F. Minimum travel way width	22 ft	20 ft	20 ft	18 ft	16 ft
G. Aggregate sub-base course gravel	15 inches	15 inches	15 inches	15 inches	15 inches
H. Aggregate upper base crushed gravel	3 inches	3 inches	3 inches	3 inches	3 inches
I. Bituminous paving	3-1/4 inches	3-1/4 inches	3-1/4 inches	3-1/4 inches	
J. Sidewalks (one side min.):					
Minimum width	5 ft	5 ft			
Aggregate sub-base course gravel	8 inches	8 inches			
Aggregate upper base crushed gravel	2 inches	2 inches			
Bituminous paving	2 inches	2 inches			
K. Minimum curb radii:					
90 degree intersections	40 ft	25 ft	25 ft	15 ft	15 ft
Less than 90 degrees	40 ft	30 ft	30 ft	20 ft	20 ft
L. Minimum dwelling units	51	4	26	11	2
M. Maximum dwelling units	100 ⁴	50	50	25	10

REV	DATE	DESCRIPTION
REVISIONS		

STILLWATER PINES SUBDIVISION
WOODCOCK DRIVE, MAINE 04261
ROAD SECTION
SCHEMATIC
ALLEN HAMILTON & BEN GROVER
170 SHAKER ROAD
GRAY, MAINE 04039

Atlantic Resource Consultants
541 US Route One
Freeport, ME 04032
Tel: 207.869.9050

DRAWN: MPV DATE: JANUARY 2021
DESIGNED: CEB/MPV SCALE: N.T.S.
CHECKED: JAV/CEB JOB NO. 20-012
FILE NAME:
SHEET: SK-1

GENERAL NOTES:

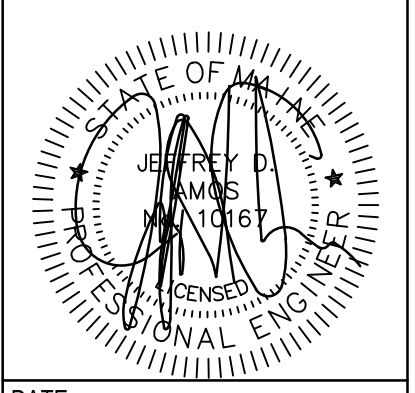
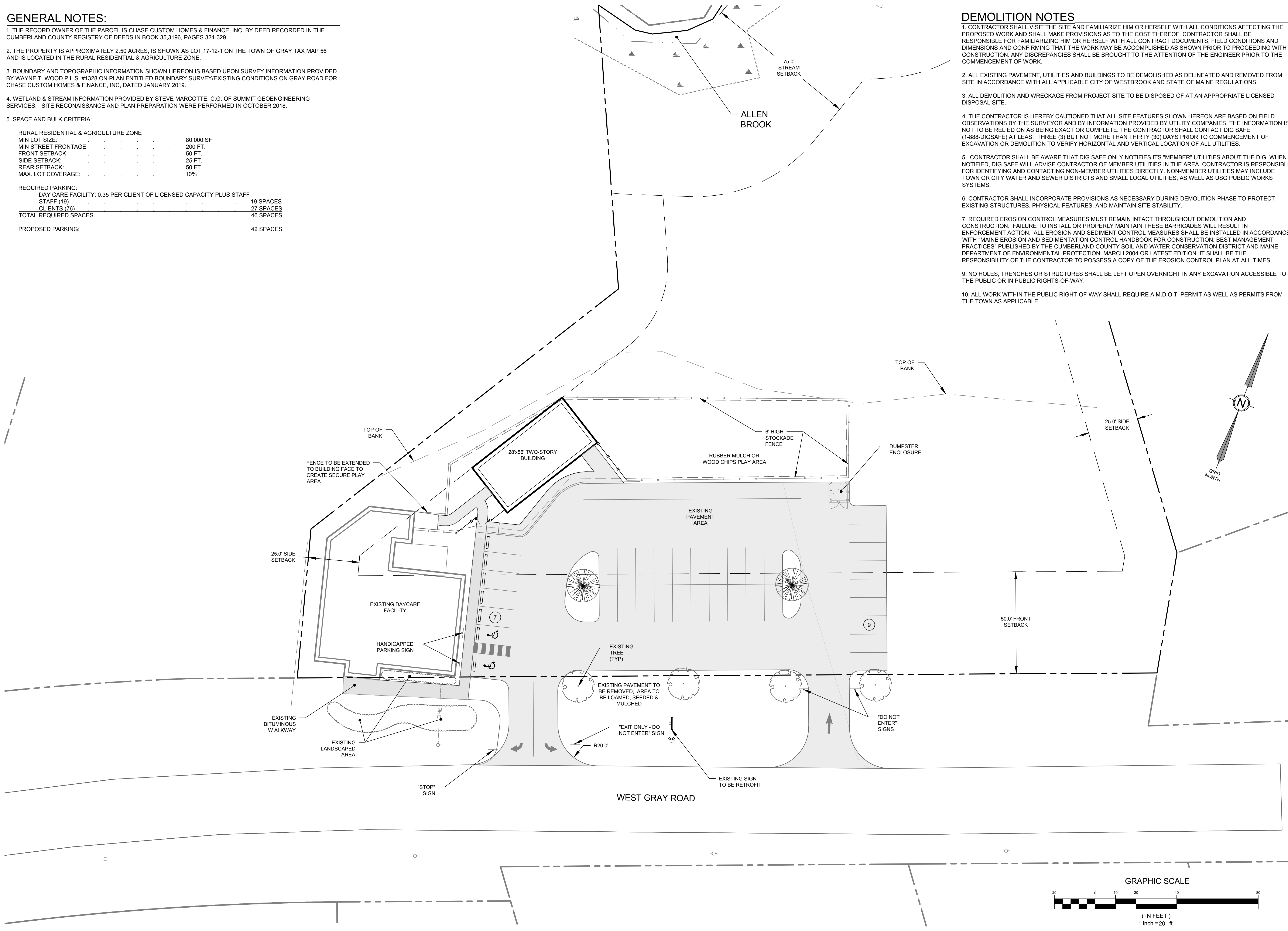
1. THE RECORD OWNER OF THE PARCEL IS CHASE CUSTOM HOMES & FINANCE, INC. BY DEED RECORDED IN THE CUMBERLAND COUNTY REGISTRY OF DEEDS IN BOOK 35,3196, PAGES 324-329.
2. THE PROPERTY IS APPROXIMATELY 2.50 ACRES, IS SHOWN AS LOT 17-12-1 ON THE TOWN OF GRAY TAX MAP 56 AND IS LOCATED IN THE RURAL RESIDENTIAL & AGRICULTURE ZONE.
3. BOUNDARY AND TOPOGRAPHIC INFORMATION SHOWN HEREON IS BASED UPON SURVEY INFORMATION PROVIDED BY WAYNE T. WOOD P.L.S. #1328 ON PLAN ENTITLED BOUNDARY SURVEY/EXISTING CONDITIONS ON GRAY ROAD FOR CHASE CUSTOM HOMES & FINANCE, INC. DATED JANUARY 2019.
4. WETLAND & STREAM INFORMATION PROVIDED BY STEVE MARCOTTE, C.G. OF SUMMIT GEOENGINEERING SERVICES. SITE RECONNAISSANCE AND PLAN PREPARATION WERE PERFORMED IN OCTOBER 2018.
5. SPACE AND BULK CRITERIA:

RURAL RESIDENTIAL & AGRICULTURE ZONE	
MIN LOT SIZE:	80,000 SF
MIN STREET FRONTAGE:	200 FT.
FRONT SETBACK:	50 FT.
SIDE SETBACK:	25 FT.
REAR SETBACK:	50 FT.
MAX. LOT COVERAGE:	10%

REQUIRED PARKING:	
DAY CARE FACILITY: 0.35 PER CLIENT OF LICENSED CAPACITY PLUS STAFF	
STAFF (19)	19 SPACES
CLIENTS (76)	27 SPACES
TOTAL REQUIRED SPACES	46 SPACES
PROPOSED PARKING:	42 SPACES

DEMOLITION NOTES

1. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
2. ALL EXISTING PAVEMENT, UTILITIES AND BUILDINGS TO BE DEMOLISHED AS DELINEATED AND REMOVED FROM SITE IN ACCORDANCE WITH ALL APPLICABLE CITY OF WESTBROOK AND STATE OF MAINE REGULATIONS.
3. ALL DEMOLITION AND WRECKAGE FROM PROJECT SITE TO BE DISPOSED OF AT AN APPROPRIATE LICENSED DISPOSAL SITE.
4. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
5. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.
6. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY DURING DEMOLITION PHASE TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY.
7. REQUIRED EROSION CONTROL MEASURES MUST REMAIN INTACT THROUGHOUT DEMOLITION AND CONSTRUCTION. FAILURE TO INSTALL OR PROPERLY MAINTAIN THESE BARRICADES WILL RESULT IN ENFORCEMENT ACTION. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2004 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
9. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
10. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE TOWN AS APPLICABLE.



DATE:	
P.E.:	
APP'D BY:	
REVISIONS:	
NO.	DATE

565 CONGRESS STREET
SUITE 201
PORTLAND, ME 04102

41 CAMPUS DRIVE
SUITE 101
NEW GLOUCESTER, ME 04260

OFFICE: (207) 926-5111 FAX: (207) 221-1317
www.terradynconsultants.com

TERRADYN CONSULTANTS, LLC

Civil Engineering | Land Planning | Stormwater Design | Environmental Permitting

PERMIT DRAWING
NOT FOR CONSTRUCTION

PROJECT: THE PLAYHOUSE DAYCARE CENTER EXPANSION
322 WEST GRAY ROAD, GRAY, MAINE

SHEET TITLE: SITE & LANDSCAPING PLAN

CLIENT: CHASE CUSTOM HOMES & FINANCE
290 BRIDGTON ROAD
WESTBROOK, MAINE 04092

DATE:	12/29/2020
SCALE:	1"=20'
DESIGNED:	JDA
JOB NO:	2082
FILE:	2082 B.DWG
SHEET	C-1.0



Pineland

Cumberland Hall
41 Campus Drive, Suite 101
New Gloucester, ME 04260

Portland

565 Congress Street, Suite 201
Portland, ME 04101

January 20, 2021

Project #2082

Kathy Tombarelli, Town Planner
Town of Gray Planning Department
Henry Pennell Municipal Complex
24 Main Street
Gray, ME 04039

**Amended Site Plan Review
Playhouse Day Care Center
306 West Gray Road**

Dear Kathy:

Terradyn Consultants, LLC, on Behalf of Chase Custom Homes & Finance, is pleased to submit an amended Site Plan Application for the Playhouse Day Care Center. The development parcel is approximately 2.5 acres and is shown as lot #17-12-1 on the Town of Gray Tax Map #56. The property is located within the Rural Residential & Agriculture (RRA) Zone. The current site plan was approved by the Town of Gray Planning Board in 2019.

The applicant plans to construct a new 1,568 SF (28'x56'), two-story building so that they may expand their before and after school care program and provide additional space for their existing operation. They plan to expand their operation by 39 additional children. The existing daycare is at capacity and is comfortably staffed by 14 employees. The applicant plans to add three additional teachers. The previous site plan was approved with the assumption that it may have as many as 19 employees. That assumption is still conservative.

A new raised sidewalk will be constructed in front of the building. The sidewalk will act as the formal drop off area for the before & afterschool kids. A catch basin will be added to the parking lot in front of the sidewalk to allow for proper drainage. Stormwater runoff from the new building will drain into a roof drain filter strip that will be located along the edge of the building. The filter strip's underdrain will outlet to the new catch basin. The catch basin will flow to a new level spreader that will be used to keep water in sheet flow as it enters the woods. The playground will be expanded to both make up for the area lost to building construction and to allow space for additional children.

Traffic & Parking Capacity:

The applicant believes that they have sufficient parking area to handle the expansion. The applicant claims that the parking lot is almost always nearly empty. Many of their patrons carpool

or bring multiple children from the same household. The applicant observed the parking lot during operation and found the following:

- On the evening of February 3rd, between 4 pm until the close of business at 6 pm, there were a total of 46 cars in two hours.
- On the morning of February 4th, between the open of business at 6 am to 9 am, there were a total of 34 cars in three hours.



A picture of the Playhouse Daycare Center at 7:30 am on February 5, 2021

The attached plans show an area that could be used for a potential overflow parking area if it's deemed necessary after construction of the new building. To be clear, we don't believe that any additional parking is necessary but we wanted to show the board that more parking could easily be added to the site if needed. The potential overflow parking area would increase the capacity of the parking lot by 18 spaces. We discussed this issue with Town staff and they were supportive of the idea to wait and see if more parking is warranted ,however unlikely, and suggested that the Code Enforcement Officer could potentially be used to make the determination after the expansion was in operation.

Waiver Request

The project has been designed to meet the review standards of the Town of Gray Site Plan We hereby request a waiver from Section 401.10.11.B.8 of the Town of Gray Land Use Ordinance. That section dictates how many parking spaces are required. The calculation shows that 57 parking spaces are required based upon the number of employees & children. We currently propose 42 total spaces. The applicant believes that the existing parking lot is sufficient to handle the proposed expansion but is willing to construct more parking area if deemed necessary by the Town Code Enforcement Officer.

Attachments

The following items are attached:

- Amendment to Site Plan Fee (\$350)
- Abutter Notification Fee & Legal Ad Fee (\$236)
- Planning Board Application
- Building Elevations

Closure

We are hopeful that this application can be placed on the agenda for the February 11, 2021 Planning Board Meeting. Thank you for your consideration and please contact me if you have any questions as you review the enclosed plans and information.

Sincerely,
TERRADYN CONSULTANTS, LLC



Jeff Amos, P.E.



PLANNING BOARD/STAFF REVIEW COMMITTEE APPLICATION TOWN OF GRAY MAINE

PROPERTY TO BE DEVELOPED

Property Location/Address	Property Map/Lot
Zoning District	Lot Acreage
Owner Name	Tax Sheet
Owner Address	Owner Phone

APPLICANT

Name (IF different than owner)	Contact Phone Number
Mailing Address	Alternate Phone Number
Mailing City/State/Zip	Fax Number
Email Address	

AGENT/CONSULTANT

Name	Contact Phone Number
Mailing Address	Alternate Phone Number
Mailing City/State/Zip	Fax Number
Email Address	

PROJECT

The undersigned requests that the Town of Gray Planning Board consider the following application for:

- | | |
|--|--|
| <input type="checkbox"/> Subdivision
<input type="checkbox"/> Sketch Plan Review
<input type="checkbox"/> Preliminary Plan Review (Major)
<input type="checkbox"/> Final Plan Review (Major)
<input type="checkbox"/> Minor

<input type="checkbox"/> Site Plan Review
<input type="checkbox"/> Pre-Application Conference
<input type="checkbox"/> Minor
<input type="checkbox"/> Major

<input type="checkbox"/> Shoreland Zoning Permit | <input type="checkbox"/> Other (specify)
<input type="checkbox"/> Conditional Use
<input type="checkbox"/> Amendment
<input type="checkbox"/> Extension
<input type="checkbox"/> Workshop
<input type="checkbox"/> Contract Zone Request |
|--|--|

Project Description / Comments:

Applicant Signature

Date

1/20/2021



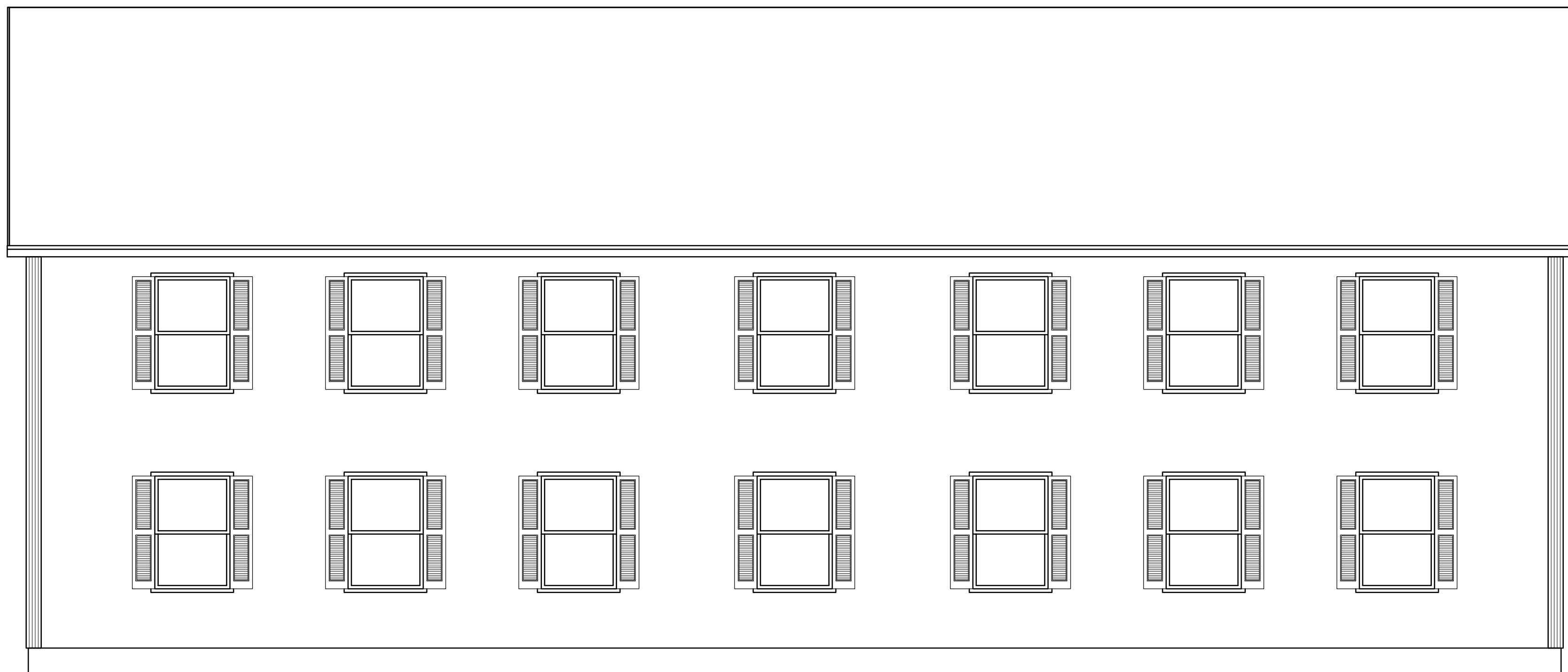
FRONT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS, AND OR LOCAL CODES.



RIGHT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS, AND OR LOCAL CODES.



REAR ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS, AND OR LOCAL CODES.



LEFT ELEVATION
1/4" = 1'-0"

CONSTRUCTION NOTE:
CONTRACTOR IS TO VERIFY GRADE AND ALL DIMENSIONS IN FIELD BEFORE CONSTRUCTION. DESIGN SHOWN MAY DIFFER FROM ACTUAL FINISHED CONSTRUCTION. FINAL MATERIALS, WINDOW/DOOR LOCATIONS AND SIZES, TO BE DETERMINED PER OWNER/CONT. SITE CONDITIONS, AND OR LOCAL CODES.



Daycare Building
Preliminary Elevations
Gray, ME

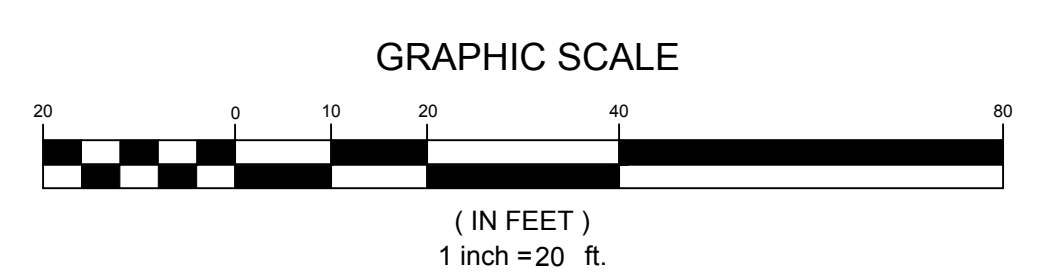
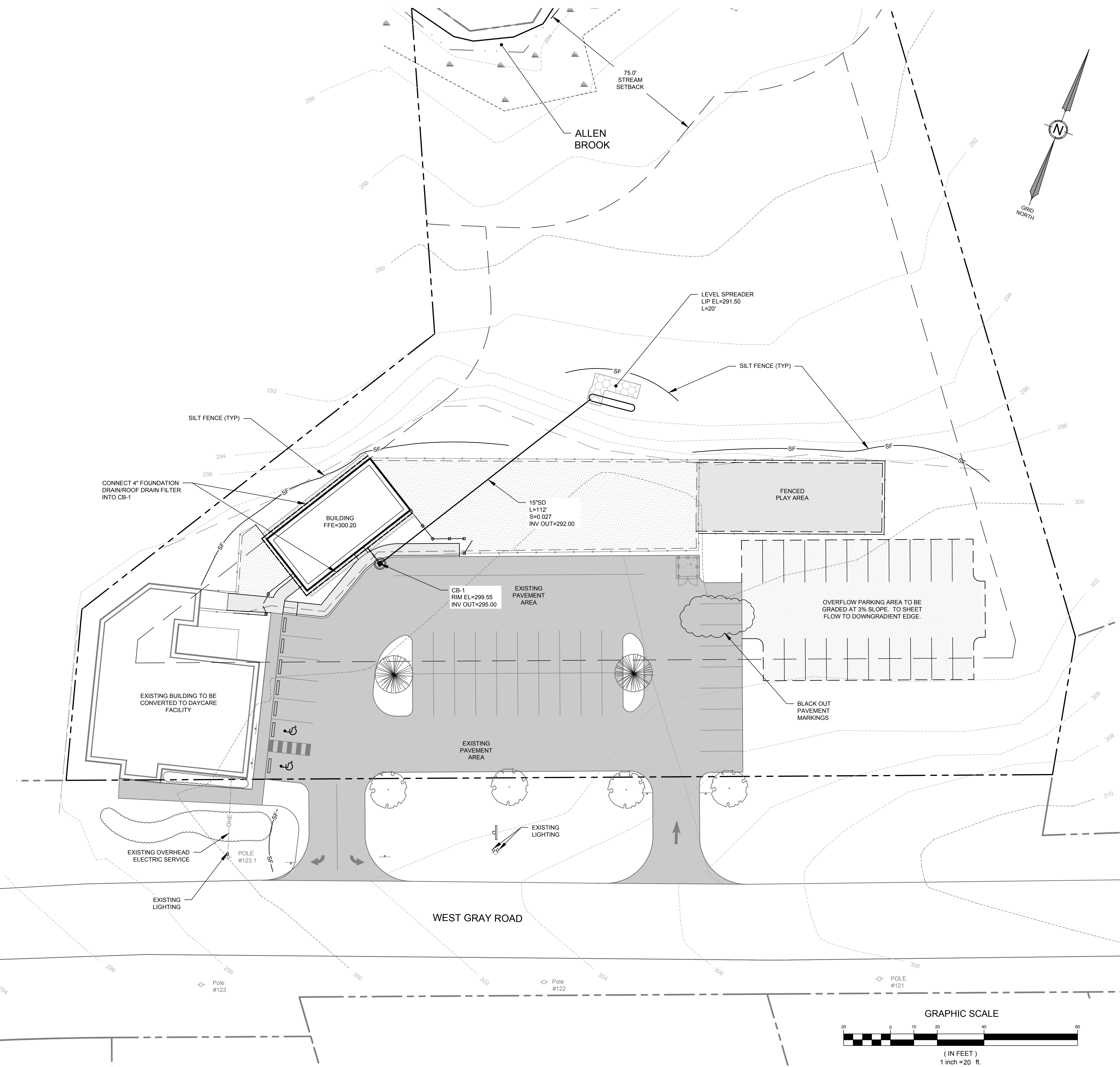
DESIGNS ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. IF USED FOR CONSTRUCTION, THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR LOCAL CODE COMPLIANCE. ALL DRAWINGS, PLANS, AND SPECIFICATIONS ARE PROVIDED TO THE CLIENT WITH COMMON BUILDING PRACTICES AND LOCAL CODES. NONE OF THE EMPLOYERS OF DRAFTING & DESIGN ME LLC ARE REGISTERED PROFESSIONAL ENGINEERS OR ARCHITECTS. IF DIMENSIONS AND SPECIFICATIONS ARE NOT VERIFIED BY CLIENT AND/OR OWNER BEFORE COMMENCEMENT OF CONSTRUCTION, DRAFTING & DESIGN ME LLC WILL BE HELD HARMLESS FROM ANY LIABILITY. CHANGES AND/OR REVISIONS MADE TO PLAN BY CLIENT AND/OR CONTRACTOR.

Revisions:	
02/03/21	REVISED PLANS
02/03/21	REVISED PLANS

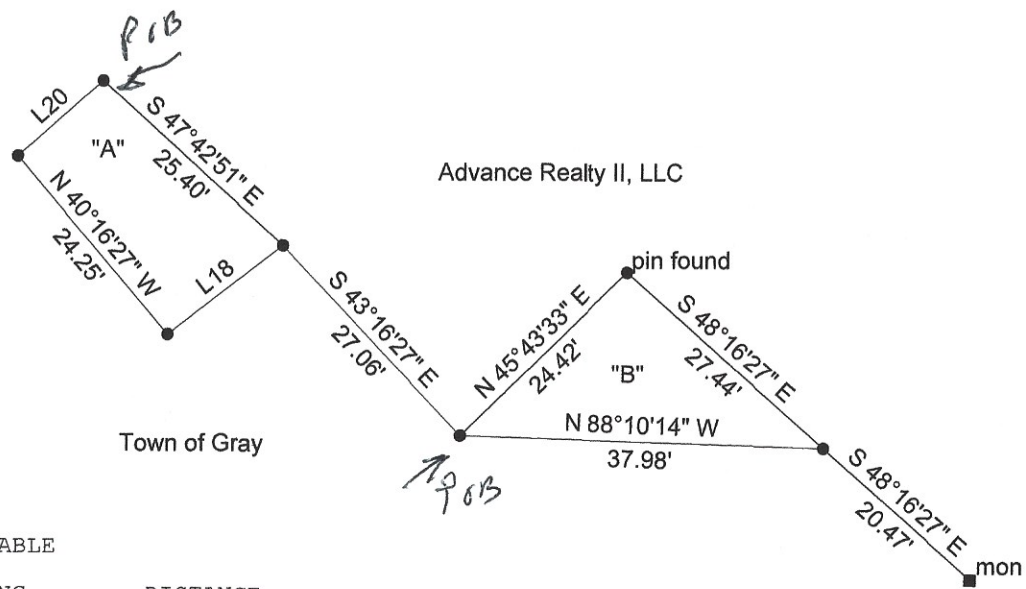
Date :02/03/2021
Scale : 1/4"=1'-0"
Drawn By: JTM
Project: CL012821
Sheet Number:

CONSTRUCTION NOTES

1. ALL WORK SHALL CONFORM TO THE APPLICABLE CODES AND ORDINANCES.
2. CONTRACTOR SHALL VISIT THE SITE AND FAMILIARIZE HIM OR HERSELF WITH ALL CONDITIONS AFFECTING THE PROPOSED WORK AND SHALL MAKE PROVISIONS AS TO THE COST THEREOF. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIM OR HERSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS AND CONFIRMING THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
3. CONTRACTOR SHALL NOTIFY ENGINEER OF ALL PRODUCTS OR ITEMS NOTED AS "EXISTING" WHICH ARE NOT FOUND IN THE FIELD.
4. INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND OWNER'S REQUIREMENTS UNLESS SPECIFICALLY OTHERWISE INDICATED OR WHERE LOCAL CODES OR REGULATIONS TAKE PRECEDENCE.
5. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE ENGINEER.
6. CONTRACTOR SHALL CLEAN AND REMOVE DEBRIS AND SEDIMENT DEPOSITED ON PUBLIC STREETS, SIDEWALKS, ADJACENT AREAS, OR OTHER PUBLIC WAYS DUE TO CONSTRUCTION.
7. CONTRACTOR SHALL INCORPORATE PROVISIONS AS NECESSARY IN CONSTRUCTION TO PROTECT EXISTING STRUCTURES, PHYSICAL FEATURES, AND MAINTAIN SITE STABILITY DURING CONSTRUCTION. CONTRACTOR SHALL RESTORE ALL AREAS TO ORIGINAL CONDITION AND AS DIRECTED BY DESIGN DRAWINGS.
8. SITE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.
9. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH "MAINE EROSION AND SEDIMENTATION CONTROL HANDBOOK FOR CONSTRUCTION: BEST MANAGEMENT PRACTICES" PUBLISHED BY THE CUMBERLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT AND MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION, MARCH 2004 OR LATEST EDITION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO POSSESS A COPY OF THE EROSION CONTROL PLAN AT ALL TIMES.
10. THE CONTRACTOR IS HEREBY CAUTIONED THAT ALL SITE FEATURES SHOWN HEREON ARE BASED ON FIELD OBSERVATIONS BY THE SURVEYOR AND BY INFORMATION PROVIDED BY UTILITY COMPANIES. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR SHALL CONTACT DIG SAFE (1-888-DIGSAFE) AT LEAST THREE (3) BUT NOT MORE THAN THIRTY (30) DAYS PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION TO VERIFY HORIZONTAL AND VERTICAL LOCATION OF ALL UTILITIES.
11. CONTRACTOR SHALL BE AWARE THAT DIG SAFE ONLY NOTIFIES ITS "MEMBER" UTILITIES ABOUT THE DIG. WHEN NOTIFIED, DIG SAFE WILL ADVISE CONTRACTOR OF MEMBER UTILITIES IN THE AREA. CONTRACTOR IS RESPONSIBLE FOR IDENTIFYING AND CONTACTING NON-MEMBER UTILITIES DIRECTLY. NON-MEMBER UTILITIES MAY INCLUDE TOWN OR CITY WATER AND SEWER DISTRICTS AND SMALL LOCAL UTILITIES, AS WELL AS USG PUBLIC WORKS SYSTEMS.
12. CONTRACTORS SHALL BE RESPONSIBLE FOR COMPLIANCE WITH THE REQUIREMENTS OF 23 MRSA 3360-A. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE APPROPRIATE UTILITIES TO OBTAIN AUTHORIZATION PRIOR TO RELOCATION OF ANY EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS. IF A UTILITY CONFLICT ARISES, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER, THE MUNICIPALITY AND APPROPRIATE UTILITY COMPANY PRIOR TO PROCEEDING WITH ANY RELOCATION.
13. ALL PAVEMENT MARKINGS AND DIRECTIONAL SIGNAGE SHOWN ON THE PLAN SHALL CONFORM TO THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS.
14. ALL PAVEMENT JOINTS SHALL BE SAWCUT PRIOR TO PAVING TO PROVIDE A DURABLE AND UNIFORM JOINT.
15. NO HOLES, TRENCHES OR STRUCTURES SHALL BE LEFT OPEN OVERNIGHT IN ANY EXCAVATION ACCESSIBLE TO THE PUBLIC OR IN PUBLIC RIGHTS-OF-WAY.
16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL REQUIRE A M.D.O.T. PERMIT AS WELL AS PERMITS FROM THE TOWN AS APPLICABLE.
17. THE PROPOSED LIMITS OF CLEARING SHOWN HEREON ARE APPROXIMATE BASED UPON THE PROPOSED LIMITS OF SITE GRADING. THE APPLICANT RESERVES THE RIGHT TO PERFORM NORMAL FOREST MANAGEMENT ACTIVITIES OUTSIDE OF THE CLEARING LIMIT AS SHOWN. TREE REMOVAL OUTSIDE OF THE LIMITS OF CLEARING MAY BE NECESSARY TO REMOVE DEAD OR DYING TREES OR TREE LIMBS. THIS REMOVAL IS DUE TO POTENTIAL SAFETY HAZARDS AND TO PROMOTE PROPER FOREST GROWTH.
18. IMMEDIATELY UPON COMPLETION OF CUTS/FILLS, THE CONTRACTOR SHALL STABILIZE DISTURBED AREAS IN ACCORDANCE WITH EROSION CONTROL NOTES AND AS SPECIFIED ON PLANS.
19. THE CONTRACTOR SHALL BE FULLY AND SOLELY RESPONSIBLE FOR THE REMOVAL, REPLACEMENT AND RECTIFICATION OF ALL DAMAGED AND DEFECTIVE MATERIAL AND WORKMANSHIP IN CONNECTION WITH THE CONTRACT WORK. THE CONTRACTOR SHALL REPLACE OR REPAIR AS DIRECTED BY THE OWNER ALL SUCH DAMAGED OR DEFECTIVE MATERIALS WHICH APPEAR WITHIN A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
20. ALL WORK PERFORMED BY THE GENERAL CONTRACTOR AND/OR TRADE SUBCONTRACTOR SHALL CONFORM TO THE REQUIREMENTS OF LOCAL, STATE OR FEDERAL LAWS, AS WELL AS ANY OTHER GOVERNING REQUIREMENTS, WHETHER OR NOT SPECIFIED ON THE DRAWINGS.
21. WHERE THE TERMS "APPROVED EQUAL", "OTHER APPROVED", "EQUAL TO", "ACCEPTABLE" OR OTHER GENERAL QUALIFYING TERMS ARE USED IN THESE NOTES, IT SHALL BE UNDERSTOOD THAT REFERENCE IS MADE TO THE RULING AND JUDGMENT OF TERRADYN CONSULTANTS, LLC.
22. THE GENERAL CONTRACTOR SHALL PROVIDE ALL NECESSARY PROTECTION FOR THE WORK UNTIL TURNED OVER TO THE OWNER.
23. THE GENERAL CONTRACTOR SHALL MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DRAWINGS ON SITE DURING ALL PHASES OF CONSTRUCTION FOR USE OF ALL TRADES.
24. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR ANY CHANGES AND DEVIATION OF APPROVED PLANS NOT AUTHORIZED BY THE ARCHITECT/ENGINEER AND/OR CLIENT/OWNER.
25. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN. ANY MODIFICATION TO SUIT FIELD DIMENSION AND CONDITION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ANY WORK.
26. BEFORE THE FINAL ACCEPTANCE OF THE PROJECT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MATERIALS, REPAIR OR REPLACE PRIVATE OR PUBLIC PROPERTY WHICH MAY HAVE BEEN DAMAGED OR DESTROYED DURING CONSTRUCTION, CLEAN THE AREAS WITHIN AND ADJACENT TO THE PROJECT WHICH HAVE BEEN OBSTRUCTED BY HIS/HER OPERATIONS, AND LEAVE THE PROJECT AREA NEAT AND PRESENTABLE.



DATE: 2/4/2020	
P.E.: JEFFREY D. AMOS	
APP'D BY	REVISIONS
NO.	DATE
565 CONGRESS STREET SUITE 201 PORTLAND, ME 04102 41 CAMPUS DRIVE SUITE 101 NEW GLOUCESTER, ME 04260	
OFFICE: (207) 926-5111 FAX: (207) 221-1317 www.terradynconsultants.com	
Civil Engineering Land Planning Stormwater Design Environmental Permitting	
PERMIT DRAWING NOT FOR CONSTRUCTION	
PROJECT: THE PLAYHOUSE DAYCARE CENTER EXPANSION 322 WEST GRAY ROAD, GRAY, MAINE	SHEET TITLE: GRADING & EROSION CONTROL PLAN
CLIENT: CHASE CUSTOM HOMES & FINANCE 290 BRIDGTON ROAD WESTBROOK, MAINE 04092	DATE: 2/4/2020 SCALE: 1"=20' DESIGNED: JDA JOB NO.: 2082 FILE: SHEET
C-2.0	

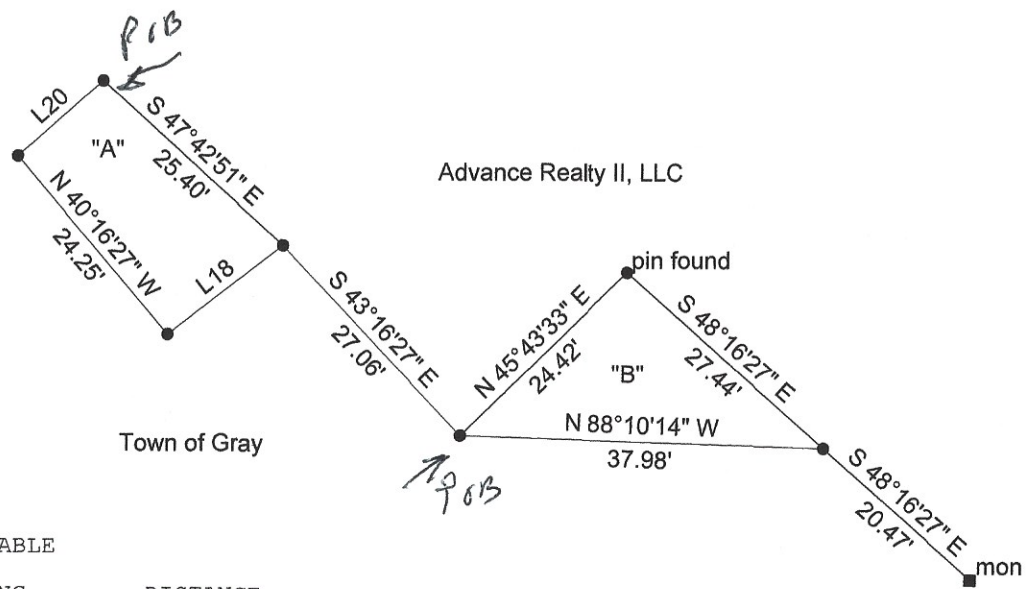


Units = U.S. Survey Feet

LINE TABLE

LINE	BEARING	DISTANCE
L4	S 43°16'27" E	27.06'
L5	N 45°43'33" E	24.42'
L17	S 47°42'51" E	25.40'
L18	S 52°13'33" W	15.18'
L19	N 40°16'27" W	24.25'
L20	N 48°25'00" E	11.88'
L38	S 48°16'27" E	27.44'
L79	S 48°16'27" E	20.47'

Exchange of parcels Town of Gray/AR II		
Rt # 115 Yarmouth Road		
Gray Cumberland Co ME		
DATE: 10/21/2020	SCALE: 1" = 20'	DRAWN BY: ee



Units = U.S. Survey Feet

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