PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY

REGULAR MEETING AGENDA

THURSDAY, SEPTEMBER 11, 2025 - 5:30 PM

CITY HALL - COMMISSION CHAMBERS

1126 EAST STATE ROAD 434, WINTER SPRINGS, FLORIDA

CALL TO ORDER

Roll Call
Invocation
Pledge of Allegiance
Agenda Changes

AWARDS AND PRESENTATIONS

100. Not Used

INFORMATIONAL AGENDA

200. Not Used

PUBLIC INPUT

Anyone who wishes to speak during Public Input on any Agenda Item or subject matter will need to fill out a "Public Input" form. Individuals will limit their comments to three (3) minutes, and representatives of groups or homeowners' associations shall limit their comments to five (5) minutes, unless otherwise determined by the City Commission.

CONSENT AGENDA

300. Approval of the Thursday, August 7, 2025 Planning and Zoning Board/Local Planning Agency Regular Meeting Minutes.
2025 08 07 Planning and ZoningLPA Regular Meeting Minutes.pdf

PUBLIC HEARINGS AGENDA

Pursuant to F.S. § 286.0115, if the mayor or any city commissioner receives and/or sends ex parte communications regarding any application filed with the city, the mayor or any city commissioner must publicly disclose such communications before or during the hearing at which a vote is taken on the quasi-judicial matter, so that persons who have opinions contrary to those expressed in the ex parte communications are given a reasonable opportunity to refute or respond to the communications.

400. Wawa at Winter Springs Marketplace, 164 Tuskawilla Road – Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement.

Wawa Staff Report PZB 09.11.2025 FINAL.pdf
2ndModification_WinterSpringsMarketplaceDevelopmentAgreement_Wawa_09052025
Fig 1 Community Workshop Flyer.pdf
Fig 2 Community Workshop SignIn.pdf
Fig 3 Preliminary Requirments.PDF
Fig 4 Preliminary Requirements - Applicant Response.pdf
Fig 5 Revised C0.0 & C4.0 Civil Site Plan 09.02.2025.pdf
Fig 6 Wawa Civil Site Plan 08.28.2025.pdf
Fig 7 Landscape Plan 07.29.2025.pdf
Fig 8 Master Sign Plan.pdf

Fig 9 Traffic Impact Analysis Review.PDF
Fig 10 Parking Analysis.pdf
Fig 11 Elevations Building.pdf
Fig 12 Proposed Building-Canopy Renderings.pdf
Fig 13 Setback Waiver Justification.PDF
Fig 14 Monument Sign Waiv Justi.pdf
Fig 15 Streetscape Waiver Justi.pdf
Fig 16 Conditional Use Justific.PDF
Fig 17 Site Plan Review App.pdf
Fig 18 Aesthetic Review App.PDF
Fig 19 Dev Agreement App.PDF
Fig 20 Monument Sign Waiv App.pdf
Fig 21 Setback Waiver App.PDF
Fig 22 Conditional Use App.PDF
Fig 23 Drainage Report.pdf
Fig 24 Potable Water Analysis.pdf
Fig 25 Listed Wildlife Species Survey.pdf
Fig 26 Streetscape Waiver App.pdf
Fig 27 Preliminary Geotechnical Engineering Report.pdf
Fig 28 Wawa Winter Springs TIA.pdf

401. Winter Springs Marketplace Additional Parking – Site/Final Engineering and Development Agreement.

WSMP Parking Staff Report PZB 09.11.pdf
3rdModification_WinterSpringsMarketplaceDevelopmentAgreement_Wawa_09052025.
FEDP-2025-0017 - Application.pdf
FEDP-2025-0017 - CW Flyer.pdf
FEDP-2025-0017 - CW Sign-In Sheet.pdf
FEDP-2025-0017 - WSMP Add'l Parking Site Plan.pdf
FEDP-2025-0017 - Parking Study.pdf
FEDP-2025-0017 - Eco Report.pdf

REGULAR AGENDA

500. Not Used

REPORTS

PUBLIC INPUT

Anyone who wishes to speak during Public Input on any Agenda Item or subject matter will need to fill out a "Public Input" form. Individuals will limit their comments to three (3) minutes, and representatives of groups or homeowners' associations shall limit their comments to five (5) minutes, unless otherwise determined by the City Commission.

ADJOURNMENT

PUBLIC NOTICE

This is a Public Meeting, and the public is invited to attend and this Agenda is subject to change. Please be advised that one (1) or more Members of any of the City's Advisory Boards and Committees may be in attendance at this Meeting, and may participate in discussions.

Persons with disabilities needing assistance to participate in any of these proceedings should contact the City of Winter Springs at (407) 327-1800 "at least 48 hours prior to meeting, a written request by a physically handicapped person to attend the meeting, directed to the chairperson or director of such board, commission, agency, or authority" - per Section 286.26 *Florida Statutes*.

"If a person decides to appeal any decision made by the board, agency, or commission with respect to any matter considered at such meeting or hearing, he or she will need a record of the proceedings, and that, for such purpose, he or she may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based" - per Section 286.0105 Florida Statutes.

CONSENT AGENDA ITEM 300

PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AGENDA | SEPTEMBER 11, 2025 REGULAR MEETING

TITLE

Approval of the Thursday, August 7, 2025 Planning and Zoning Board/Local Planning Agency Regular Meeting Minutes.

SUMMARY

FUNDING SOURCE

RECOMMENDATION

Staff recommends approval of the Thursday, August 7, 2025 Planning and Zoning Board/Local Planning Agency Regular Meeting Minutes as presented.

PLANNING AND ZONING BOARD/ LOCAL PLANNING AGENCY

REGULAR MEETING MINUTES
AUGUST 7, 2025

CITY HALL – COMMISSION CHAMBERS
CITY OF WINTER SPRINGS, FLORIDA

UNAPPROVED

CALL TO ORDER
Assistant City Clerk Tristin Tarrant called the Thursday, August 7, 2025, Planning and Zoning Board/Local Planning Agency Regular Meeting to Order at posted 5:48 p.m., in the Commission Chambers of the Municipal Building (City Hall, 1126 East State Road 434, Winter Springs, Florida 32708.)

Roll Call:
Chairperson Kok Wan Mah, present via phone
Vice-Chairperson Michael Ferrante, absent
Board Member Louie Hilal, present
Board Member Rachel Hood, present
Board Member David Mahnken, present
Assistant City Attorney Kristin Eick, present
Assistant City Clerk Tristin Tarrant, present

Also present:
Ms. Terrilyn Rolle, Director, Community Development Department
Mr. John Rabon, Senior Planner, Community Development Department
Ms. Jenale Garnett, Senior Planner, Community Development Department
Mr. Lei Xu, Professional Engineer, Community Development Department

A moment of silence was held, followed by the Pledge of Allegiance.

A Pro Tem Chairperson Election was held to establish a chairperson for the meeting.

ASSISTANT CITY CLERK TARRANT OPENED THE FLOOR FOR NOMINATIONS FOR PRO TEM CHAIRPERSON. BOARD MEMBER MAHNKEN NOMINATED BOARD MEMBER HOOD. THE NOMINATION WAS ACCEPETED. NO OBJECTION TO THE NOMINATION WAS GIVEN. NO OTHER NOMINATIONS WERE GIVEN.

MOTION PASSED WITH UNANIMOUS CONSENT.
BOARD MEMEBR RACHEL HOOD WAS ELECTED TO BE THE PRO TEM CHAIRPERSON.

AWARDS AND PRESENTATIONS
100. Not Used

INFORMATIONAL AGENDA
200. Not Used

PUBLIC INPUT

Pro Tem Chairperson Hood opened Public Input.

Mrs. Gina Shafer, Winter Springs Village, Winter Springs addressed the Board with a request to require developers to put up protective fencing when clearing land and expressed concern for run-off and flooding in relation to the proposed daycare on the agenda.

Pro Tem Chairperson Hood closed Public Input.

CONSENT AGENDA

300) Approval of the Thursday, June 5, 2025 Planning and Zoning Board/Local Planning Agency Regular Meeting Minutes.

"I MAKE A MOTION TO APPROVE THE THURSDAY, JUNE 5TH MEETING MINUTES." MOTION BY BOARD MEMBER HILAL. SECONDED BY BOARD MEMBER MAHNKEN. DISCUSSION.

VOTE: MAH (AYE); HOOD (AYE); MAHNKEN (AYE); HILAL (AYE)
MOTION CARRIED 4-0.

PUBLIC HEARINGS AGENDA

400) The Learning Experience, SR 434/419 and Michael Blake Boulevard – Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement

Mr. Rabon opened the item, gave background and reviewed the requested waivers. Staff's recommendation was approval with four (4) proposed conditions. An overview of the site plan, landscaping and elevations was given. Discussion on spacing for deliveries and Emergency vehicles, environmental report, operation hours and lighting within the parking lot ensued. Additional questions were asked from the Board about the age range and after school activities.

Mr. Jason Mahoney, Vice President, NV5, 6200 Lee Vista Blvd Suite 400, Orlando responded for the applicant in relation to the environment report and lighting questions from the Board. It was relayed that the project in question is included on the Sea Hawk Cove parcel and applicable environment reports were submitted. Staff relayed those documents will be included in the packet for City Commission.

Additional questions were asked from the Board about the process of changing the proposed daycare to a school, if desired by the applicant, in the future. Staff responded that schools are a sperate use and an additional conditional use permit would be needed. Mr. Mahoney relayed the applicant had no intention of converting the day care into a school in the future. Brief questions regarding transportation such as a shuttle bus to the property were asked and Mr. Mahoney replied there is none planned at this time, but it would only be a van if there was any.

Pro Tem Chairperson Hood opened the Public Hearing for Item 400.

UNAPPROVED

Mrs. Gina Shafer, Winter Springs Village, Winter Springs expressed concerns regarding traffic on Michael Blake and State Road 434 if the daycare was converted into a school.
Mr. Mahoney responded to the concerns expressed and relayed that all traffic and flow conditions meet the requirements for the proposed day care.

Pro Tem Chairperson Hood closed the Public Hearing for Item 400.

"I LIKE TO MAKE A MOITION TO APPROVE THE LEARNING EXPERIENCE ON STATE ROAD 434 AND MICHAEL BLAKE BOULEVARD CONDITIONAL USE APPLICATION, SITE PLAN, FINAL ENGINEERING, AESTHETIC REVIEW, WAIVERS, DEVELOPMENT AGREEMENT AND CONIDTIONS RECOMMENDED BY STAFF." MOTION BY BOARD MEMBER HILAL. SECONDED BY BOARD MEMBER MAHNKEN. DISCUSSION.

VOTE: MAH (AYE); HOOD (AYE); MAHNKEN (AYE); HILAL (AYE)
MOTION CARRIED 4-0.

401) Wawa at Winter Springs Marketplace, SR 434 and Tuskawilla Road – Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement.

Ms. Rolle opened and introduced the city's newest senior planner to the Board, Mrs. Jenale Garnett. Mrs. Garnett presented the staff presentation that gave an overview of the project with background information, a preview of the site plan, and elevation drawings. Staff's recommendation was denial of the Conditional Use Application, Site Plan /Final Engineering, Aesthetic Review, and Development Agreement as it does not meet Goal 2: Town Center of the Comprehensive Plan. In the event the Board wanted to approval the Site Plans, Staff recommended a mixed denial and approval of the site plan and proposed waivers with contingencies as relayed within the presentation. Staff additionally offered façade aesthetics changes to better make the Town Center design.

Mr. Ryan Stahl, Equinox Development, 630 South Maitland Avenue, Suite 100, Maitland responded by providing additional background and displaying the applicant provided overall marketplace exhibit. Mr. Stahl relayed the reason behind the entrance and exit revision from Roberts Family Lane as well as the additional parking spots beside the retention pond being for associates. *Mr. Cory Stitler, Kimely Horn, 200 S Orange Ave Suite 600, Orlando* additionally addresses the Board sharing some of the challenges engineering had for the project such as with the parcel shape, amount of parking spaces, and site layout for potential customer visibility.

Discussion transitioned to outdoor seating and the number of entrances into the convenience store. *Mr. Scott Kearney, P.E. Real Estate Engineer, Wawa, 1911 US Hwy 301 North Tampa* explained the reason for the lack of outdoor seating is due to some operational and safety challenges other Wawa's in the Central Florida area have experienced but they would be willing to entertain having outdoor seating with this site due to its location. Additionally, Mr. Kearney relaying that due to the footprint size this location is a front entrance only.

Pro Tem Chairperson Hood asked for clarification on a few points within the site plan displayed and then discussion quickly transitioned to concerns about not having a traffic study approved

UNAPPROVED

by Chairperson Mah. It was recommended to the Board to table the item for a future meeting until the study can be reviewed and approved by staff. Mr. Stitler responded to the concerns raised regarding the traffic study by relaying the comments provided by the viewing consultant have been addressed and the study has been resubmitted for staff. Mr. Stitler further addressed the setbacks, communicating their intent was for the Wawa to align with the neighborhood feel and have the gas canopy in line with the Fifth-Third bank.

Staff relayed their interpretation of the Ordinance that dictates this project as the convenience store needing to be the primary focus of the site located at an arterial road intersection and the gas portion would be secondary. City Attorney Eick verified the interpretation of the ordinance stating it needs to be "a corner store or neighborhood convenience store with gas pumps". Mr. Lei Xu, the city's Professional Engineer, addressed the traffic and utility study, relaying some corrections still need to be made after his review that morning such as turning calculations and intersection analyzation, etc. Mr. Xu recommended the traffic study, and FDOT signal timing report should be approved first before the Board move forward.

Discussion ensued on alternate options then fully denying the item and the process for tabling or continuing an item was shared with the Board by City Attorney Eick. Concerns regarding walkability and not adhering to the family friendly nature of the Town Center were expressed by Pro Tem Chairperson Hood and echoed from the other members. The board expressed consensus to table the item till staff and the Board had all the information to make an appropriate decision. Further discussion ensued on the appropriate timeline, the board's intention on recommending a continuance and suggested possible changes that could be analyzed for site plan in relation to the building location atop the parcel.

Pro Tem Chairperson Hood opened the Public Hearing for Item 401.

Mrs. Gina Shafer, Winter Springs Village, Winter Springs relayed concerns she observed at the community workshop on the traffic flow within the area as well wanting to make sure the façade matched the town center aesthetic.

Mrs. Victoria Bruce, 129 Cherry Creek Circle, Winter Springs relayed confusion on why EV stations were not being considered for this project and how the setbacks exceeding the maximum distance from the road would be an issue.

Pro Tem Chairperson Hood closed the Public Hearing for Item 401.

Mr. Stahl responded to the public comment relating to the EV stations that they were not asked to consider adding them, but Equinox would be more than willing to have them added. Mr. Stahl relayed that his team has already had some conversations on appropriate locations within the parking lot.

Discussion continued on the various options the Board had regarding the item. Chairperson Mah asked for clarification from the City Attorney on the process of tabling an item. City Attorney Eick relayed that the Board would need to set a date certain for the next hearing of the item to preserve the advertisements. If requested for the item to be heard before the set date certain the public hearing item would need to be readvertised within the paper.

UNAPPROVED

Mr. Stahl requested a quick five-minute recess from the Board to converse with his team. The Board gave consensus to agree to the request for a quick recess.

Pro Tem Chairperson Hood recessed the meeting at 7:37 PM.

Pro Tem Chairperson Hood called the meeting back to order at 7:45 PM.

Brief discussion ensued to verify the Board would have a present quorum if the item was tabled to September 11th to be reheard with the additional items. The Board verified a quorum.

"I MAKE A MOVE TO CONTINUE THIS AGENDA ITEM UNTILL THE DATE CERTAIN OF SEPTEMBER 11TH AT 5:30 IN CITY COMMISSION CHAMBERS." MOTION BY CHAIRPERSON MAH. SECONDED BY BOARD MEMBER HILAL. DISCUSSION.

VOTE: MAH (AYE); HOOD (AYE); MAHNKEN (AYE); HILAL (AYE)
MOTION CARRIED 4-0.

402) Winter Springs Marketplace Additional Parking – Site/Final Engineering and Development Agreement.

Mr. Rabon opened the item and gave the staff presentation with background information, a site plan overview, and staff recommendation of approval with the three (3) listed proposed conditions. Brief discussion ensued on whether it was appropriate to move forward with this item since the other was postponed. City Attorney Eick relayed the Board could move forward with hearing the item if they wish to do so. Mr. Stitler responded that they, the applicant, would prefer following the same line as the Wawa applicant and city staff had no objection.

Pro Tem Chairperson Hood opened the Public Hearing for Item 402.
No one addressed the Board.
Pro Tem Chairperson Hood closed the Public Hearing for Item 402.

"I WOULD LIKE TO MAKE A MOTION TO POSTPONE ITEM 402 WINTER SPRINGS MARKETPLACE ADDITIONAL PARKING FINAL ENGINEERING AND DEVELOPMENT AGREEMENT TO SEPTEMBER 11TH AT 5:30 PM IN THE [CITY COMMISSION CHAMBERS]." MOTION BY BOARD MEMBER HILAL. SECONDED BY BOARD MEMBER MAHNKEN. DISCUSSION.

VOTE: MAH (AYE); HOOD (AYE); MAHNKEN (AYE); HILAL (AYE)
MOTION CARRIED 4-0.

REGULAR AGENDA
500. Not Used

REPORTS

PUBLIC INPUT
Pro Tem Chairperson Hood opened Public Input.
No one addressed the Board.
Pro Tem Chairperson Hood closed Public Input

UNAPPROVED

ADJOURNMENT

Pro Tem Chairperson Hood adjourned the Regular Meeting at 7:54 p.m.

RESPECTFULLY SUBMITTED:

_____
TRISTIN TARRANT
ASSISTANCE CITY CLERK

UNAPPROVED

NOTE: These Minutes were approved at the _____, *2025* Planning and Zoning Board/Local Planning Agency Regular Meeting.

PUBLIC HEARINGS AGENDA ITEM 400

PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AGENDA | SEPTEMBER 11, 2025 REGULAR MEETING

TITLE

Wawa at Winter Springs Marketplace, 164 Tuskawilla Road – Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement.

SUMMARY

The Community Development Department requests that the Planning & Zoning Board hold a Public Hearing to consider the Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement regarding the applicant's request to construct a convenience store and gas station in the Town Center District, T5 Transect.

FUNDING SOURCE

RECOMMENDATION

Staff recommends that the Planning & Zoning Board recommend denial of the Conditional Use Application, Site Plan /Final Engineering, and Development Agreement. The development plan does not meet Goal 2: Town Center of the Comprehensive Plan which states: which states: "The City seeks to create a Town Center based upon traditional design standards for development that will become the identifying focus of the City's downtown and contribute to an increased and diversified tax base for the City. The primary purpose of the Town Center shall be to create an economically successful, vibrant, aesthetic, compact, multimodal, diverse, mixed use (including horizontal and vertical integration of uses) neo-traditional urban environment, designed on a pedestrian scale and with a pedestrian orientation. The Town Center is to be a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center. The Town Center should be created through public and private investment and development," due to the following: The building placement is required to contain shallow setbacks or none, buildings oriented close to the street defining a street wall per Sec.20-320. Therefore, the convenient store placement is required to be oriented close to E. SR 434/Tuskawilla Road. Per Sec.20-325 the front setback is required to be

50 ft., and shall be the average of the front setback of the two developed lots abutting the lot. Therefore, the proposed convenient store setback of 182 ft. from E. SR 434 and 98 ft. from Tuskawilla Rd. exceeds the required setback and the buildings along E. SR 434 in the Winter Springs Marketplace. There is no hardship present on the subject site to meet all the relevant standards for the Town Center to continue being a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center. However, in the event the project is recommended for approval, Staff recommends that it is contingent upon, and not effective until, the related Additional Parking project Site Plan/ Final Engineering application is approved. Further, Staff requests that the Planning and Zoning Board recommend approval of the Aesthetic Review with no conditions, and the Site Plan/Final Engineering subject to the following condition: Prior to the issuance of a site work permit and start of construction, an approved Maintenance of Traffic (MOT) permit is required. With regard to Waivers, Staff requests that the Planning and Zoning Board recommend denial of Waiver I, but approval of Waiver III with no conditions and approval of Waiver II, subject to the following condition: One (1) ground monument sign to be located at the intersection of SR 434 and Tuskawilla Road.

PUBLIC HEARINGS AGENDA ITEM

PLANNING & ZONING BOARD
THURSDAY, September 11, 2025
SPECIAL MEETING

TITLE

Wawa at Winter Springs Marketplace, 164 Tuskawilla Road – Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement.

SUMMARY

The Community Development Department requests that the Planning & Zoning Board hold a Public Hearing to consider the Conditional Use Application, Site Plan/Final Engineering, Aesthetic Review, Waivers, and Development Agreement regarding the applicant's request to construct a convenience store and gas station in the Town Center District, T5 Transect.

General Information			
Applicant	Cory Stitler \ Kimley-Horn and Associates, Inc.		
Property Owner(s)	Tuskawilla Property Investors, LLC		
Location	164 Tuskawilla Road, Winter Springs, FL 32708		
Tract Size	±1.22 Acres		
Parcel ID Number	36-20-30-502-0000-0090		
Zoning Designation	Town Center District, T-5 Transect		
FLUM Designation	Town Center District		
Adjacent Land Use	North: State Road 434 East: Tuskawilla Road		South: Aldi's West: Fifth Third Bank
Height	33'4", 1 story (convenience store), 25'2" (gas canopy)		
Setbacks	Front: 25 ft, minimum, 50 ft. maximum	Rear: 15 ft. minimum	Side: 5 ft. minimum, 100 ft. maximum
Development Standards	Lot Coverage 100%		
Development Permits	Not applicable		
Development Agreement	Development Agreement | Pending		

Code Enforcement	Not applicable
City Liens	Not applicable

Background Data:

The development site consists of one lot, Resulting Trust Property Parcel #2 in accordance with the original Winter Springs Marketplace Development and Property Division Agreement, totaling 1.22 acres, having been subdivided from an 8.27 gross acre lot. The development site is located at the southwest corner of S.R. 434 and Tuskawilla Road within the Winter Springs Marketplace. The applicant is proposing a Wawa gas station/convenience store, which is permitted as a conditional use per the recent adoption of Ordinance No. 2025-09 in May of 2025. "Corner stores or neighborhood convenience store with gas pumps" is a conditional use in the Town Center District, Transect 5 (T5). The applicant is proposing a 4,736 sf convenience store and 5,903 sf gas canopy that contains 6 main pump stations with a cumulative of 12 gas dispensers. The Planning and Zoning Board (P&Z) previously held a meeting on Thursday, August 7, 2025 at 5:30 p.m. and considered this request (Agenda Item 401) and continued this agenda item to a date certain of Thursday, September 11, 2025 at 5:30 p.m. in the City Commission Chambers. Upon receipt of the Planning and Zoning Board's recommendation, the City Commission shall make a final decision on the application, to approve, approve with conditions, or deny the project within the Town Center district.

A "corner store or neighborhood convenience store with gas pumps" is permitted as a conditional use in the T5 Transect, with the following conditions:

(1) Notwithstanding Section 20-418 of the City Code regarding gasoline stations, a conditional use may be approved by the City Commission for an expanded neighborhood convenience store. The store must be between 4,000 to 5,000 square feet and primarily offer traditional convenience store items, including dairy, bakery, tobacco, beverages, grocery, health and beauty aids, newspapers and magazines, lottery sales as may be approved by the State, and confectionery. Additionally, it must feature expanded grocery products, fresh fruits and vegetables, significant fast or prepared food operations and seating, coffee bars or kiosks, and gasoline sales with no more than twelve (12) fueling positions. The store must also be located at the corner of an arterial road intersection.

Public Notice

Notices were mailed to all owners of real property adjacent to and within approximately five hundred (500) feet of the subject property and all Homeowner's Associations on file with the City of Winter Springs on August 18, 2025.

A Community Workshop was held on June 30, 2025 at 6:00 PM at The Foundry Church. There were several concerns related to pedestrian safety and placement of the convenience store building and traffic impacts raised at the Community Workshop, but no objections regarding the proposed development. Please see "Figure 1" Community Workshop Flyer and "Figure 2" Community Workshop Attendance.

As stated above, the Planning and Zoning Board (P&Z) previously held a meeting on Thursday, August 7, 2025 at 5:30 p.m. and considered this request (Agenda Item 401) and continued this agenda item to a date certain of Thursday, September 11, 2025 at 5:30 p.m. in the City Commission Chambers.

Analysis of Final Engineering Plans (Sec. 20-33.1) and Conditional Use (Sec. 20-33) Criteria:

The criteria for Final Engineering Plans are provided and analyzed below, along with all conditional use recommendations and final decisions shall be based on the following criteria to the extent applicable:

(a) Site and final engineering plans and the subdivision of land shall also be subject to the technical requirements set forth in Chapter 9 of the City Code. It is the intent of this section to apply to applications for site and final engineering plans and to any subdivision of land requiring a plat, if applicable, and does not include review and approval of a lot split application.

Please see the discussion below regarding technical requirements of Chapter 9. The Final Engineering Plans have been reviewed by the City's contract engineer, who concluded that the Plans satisfy the technical requirements provided the conditions of approval set forth below are met.

(b) Except in situations involving one (1) single-family home, the Planning and Zoning Board shall be required to review all site and final engineering plan and subdivision of land applications and make a written recommendation to the city commission. Such recommendation shall include the reasons for the Board's recommendation and show the board has considered the applicable criteria set forth in this section.

(c) Upon receipt of the planning and zoning board's recommendation, the city commission shall make a final decision on the application. If the city commission determines that the planning and zoning board has not made a recommendation on an application within a reasonable period of time, the city commission may, at its discretion, consider an application without the planning and zoning board's recommendation.

Except in situations involving one (1) single-family home, all site and final engineering plan and subdivision recommendations and final decisions shall be based on whether the site and final engineering plan and subdivision of land comply with all the technical requirements set forth in chapter 9 of the City Code and the following criteria to the extent applicable:

(1) Whether the applicant has demonstrated the conditional use/final engineering plan, including its proposed density, height, scale and intensity, hours of operation,

building and lighting design, setbacks, buffers, noise, refuse, odor, particulates, smoke, fumes and other emissions, parking and traffic-generating characteristics, number of persons anticipated using, residing or working under the conditional use, and other off-site impacts, is compatible and harmonious with adjacent land uses, and will not adversely impact land use activities in the immediate vicinity.

Analysis: Staff have found that the applicant's proposed convenience store/gas station has not demonstrated the requirements of the Code. The proposed gas station use will operate twenty-four (24) hours a day for seven (7) days a week and has sufficient landscape buffers to be aesthetically pleasing. A Traffic Impact Analysis (TIA) has been reviewed by City Staff and City consultants. Pegasus Engineering, the City's consultant reviewing the TIA, recommended the installation of an auxiliary southbound right-turn lane on Tuskawilla Road into the Marketplace due to the projected southbound right turn volume for the Tuskawilla access driveway. Rather than construct the auxiliary southbound right-turn lane on Tuskawilla Road, the applicant is proposing to increase the northern curb radius to 35 ft. as an alternative due to the site constraints. Pegasus Engineering has confirmed that they consider this to be an acceptable alternative.

Based on 693 daily trips generated, the Wawa project will be required to provide 1 mobility credit to Comply with Comprehensive Plan requirements. The applicant is providing the SR 434 and Tuskawilla Road streetscape (subject to the waiver below) and provides ample buffers and screening. Convenient bicycle and pedestrian access is achieved by the placement of two (2) bike racks that each contain five (5) bikes on the north side of the building and sidewalk ramp with handrails mounted in concrete sidewalks on Tuskawilla Road connect to interior sidewalks with crosswalk connections to store front sidewalk. Although, there is a lack of a pedestrian route to the store front from SR 434. These activities satisfy three (3) mobility credits, exceeding the required 1.

However, no changes to the site layout have been made by the applicant since the August 7th P&Z initial hearing. Accordingly, the development plan does not provide safe pedestrian access, in particular to students, and block noise, odor, and other emissions due to the convenience store proposed location not oriented close to SR 434, and the lack of a safe pedestrian travel route from SR 434 to the proposed convenience store location. The use is not compatible and harmonious with adjacent land uses as the development plan could potentially adversely impact land use activated in the immediate vicinity since the proposed layout contains a front setback of 182 ft. from SR 434 and 98 ft. from Tuskawilla Road, where 50 ft. is required per Sec.20-3254. This setback request is inconsistent with the rest of the Winter Springs Marketplace development, which has building setbacks of 60 ft.

As described further herein, the design of the project with the 182-foot proposed building setback is not consistent with the intent of the Winter Springs Town Center, as described in the City's Comprehensive Plan and Zoning Code. GOAL 2 of the Future Land Use Element of the Comprehensive Plan provides:

"The City seeks to create a Town Center based upon traditional design standards for development that will become the identifying focus of the City's downtown and contribute to an increased and diversified tax base for the City. The primary purpose of the Town Center shall be to create an economically successful, vibrant, aesthetic, compact, multimodal, diverse, mixed use (including horizontal and vertical integration of uses) **neo-traditional urban environment, designed on a pedestrian scale and with a pedestrian orientation**. The Town Center is to be a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center. The Town Center should be created through public and private investment and development." The setbacks proposed are not consistent with this Goal of creating a pedestrian-centered Town Center to recreate and gather.

In addition, Objective 2.2 and Policy 2.2.1 of the Future Land Use Element provides:

Objective 2.2: Neo-traditional. Promote and enhance the development of the Town Center by allowing a mixed use higher density/intensity neo-traditional urban pattern.

Policy 2.2.1: Neo-Traditional Characteristics. Encourage a mixed use higher density/intensity neo-traditional Town Center, utilizing, to the extent practical, the fundamentals and urban design concepts in the Town Center Master Plan:

- Urban and high density
- **Walkable community**
- **Predictability in design/flexibility in land uses.**
- **Visibly different section of S.R. 434**
- Important sites for special public places
- "Green network" of parks and preserved open spaces
- Connected network of streets and blocks
- Special public spaces of defined character
- Special sites for civic buildings
- Pedestrian sized blocks
- Non-gated developments

The setbacks proposed and placement of the corner store does not contribute to a walkable community and does not follow the development patterns of the rest of the Town Center on SR 434, with buildings close to the street to create a "visibly different section of SR 434."

At the Planning and Zoning Board meeting held on Thursday, August 7, 2025, the Board requested that the applicant consider the following items staff previously identified as deficient and make corresponding changes to the application:

1. The building placement is required to contain shallow setbacks or none, buildings oriented close to the street defining a street wall per Sec.20-320. Therefore, the convenience store placement is required to be oriented close to E. SR 434/Tuskawilla Road.

2. Per Sec.20-325 the front setback is required to be 50 ft., and shall be the average of the front setback of the two developed lots abutting the lot. Therefore, the proposed convenience store setback of 182 ft. from E. SR 434 and 98 ft. from Tuskawilla Rd. far exceeds the required setback and the buildings along E. SR 434 in the Winter Springs Marketplace.
3. Per Sec.20-325 the rear setback is required to be 15 ft., and the proposed convenience store is zero feet from the rear.
4. The proposed design and color of the proposed building and gas canopy are not consistent with the Winter Springs Marketplace; therefore, not compatible with the immediate surrounding area of the Town Center.
5. Single-tenant monument signs are required to be consistent in materials with the architecture of the proposed building per Sec.16-82(2)(e) and are discouraged in the Town Center.
6. The Traffic Impact Analysis is required to determine the impact on and adherence to the Town Center goals per the Comprehensive Plan and Land Development Code. However, as of the date of this report, the transportation review has not been addressed.
7. There is no hardship present on the subject site to meet all the relevant standards for the Town Center to continue being a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center.
8. It is not consistent with the use of a “corner store” or neighborhood convenience store to have the building placed 182 feet behind the corner.

The applicant resubmitted on August 29, 2025 with changes made only to the Aesthetic Review application. As stated above, the applicant also has committed to widen the driveway entrance to the Marketplace on Tuskawilla Road as an alternative to the right auxiliary turn lane recommended by the City’s traffic consultant, Pegasus Engineering. Otherwise, the applications remain unchanged. The site plan/final engineering plans continue to reflect that convenience store shall remain in the originally proposed location.

On second review, the required 15 ft. rear setback is being met since the convenience store is proposed to be 19 ft. from the rear property line. Additionally, the applicant proposed an adjustment to the color scheme and materials for the building and gas canopy that are consistent with the existing buildings in the Winter Springs Marketplace. Due to the proposed color scheme and material change, the proposed single-tenant monument signs are consistent in materials with the architecture of the proposed building.

Please see “Figure 3” Preliminary Requirements and “Figure 4” Applicant Response to Preliminary Requirements.

Accordingly, staff comments #1, 2, 7 and 8 remain unaddressed. Staff further notes that the applicant has submitted a written response to these comments, dated August 29, 2025, asserting that the maximum front setback is not significantly exceeded because the gas canopy provides the “street wall” feel the Code is

intending and "the gas canopy is larger than the principal building." By the applicant's own admission, the principal building on the site is the convenience store building and not the gas canopy. Section 20-1 of the City Code defines principal buildings as follows: "*Principal building*. The building or structure of chief importance or function on a parcel or lot. In general, the primary use of the lot is carried out in the principal building." As explained at the August 7th P&Z hearing, the primary use that is permitted as a conditional use in the Town Center is a "corner store or neighborhood convenience store *with* gas pumps." The gas pumps are not intended to be the primary use on the site. Accordingly, the "principal building setbacks" established in Section 20-325 of the City Code for the T5 Transect remain unmet.

(2) Whether the applicant has demonstrated the size and shape of the site, the proposed access and internal circulation, and the design enhancements to be adequate to accommodate the proposed density, scale and intensity of the conditional use requested. The site shall be of sufficient size to accommodate design amenities such as screening, buffers, landscaping, open space, off-street parking, safe and convenient automobile, bicycle, and pedestrian mobility at the site, and other similar site plan improvements needed to mitigate against potential adverse impacts of the proposed use.

Analysis: Staff have found that the applicant demonstrated the size and shape of the site, access and internal circulation, and the design enhancements to be adequate to accommodate the proposed gas station/convenience store use. The site is able to accommodate the 4,736 sf convenience store and 5,903 gas canopy, landscape buffering and screening, off-street parking, and other improvements that will mitigate any adverse impacts of the day care use. However, the proposed site development could be designed in a manner to meet Town Center standards, and be harmonious with the Winter Springs Marketplace. There is no reason that the applicant cannot comply with the Town Center setbacks and alter the proposed layout of the building and gas canopy. There is adequate space to comply with City Code standards.

A Traffic Impact Analysis (TIA) has been reviewed by the City following the August 7th P&Z hearing. The City's traffic consultant recommended the installation of an auxiliary southbound right-turn lane on Tuskawilla Road due to the projected southbound right turn volume for the Tuskawilla access driveway, which the applicant is proposing to increase the northern curb radius to 35 ft. as an alternative due to the site constraints.

(3) Whether the proposed use will have an adverse impact on the local economy, including governmental fiscal impact, employment, and property values.

Analysis: Staff have found that the proposed gas station/convenience store use will have a beneficial impact on the local economy, providing additional gas station options to local residents and workers, while also providing employment at the facility. Staff find that these impacts will improve property values by continuing to make Town Center a desirable place to live and work.

(4) Whether the proposed use will have an adverse impact on the natural environment, including air, water, and noise pollution, vegetation and wildlife, open space, noxious and desirable vegetation, and flood hazards.

Analysis: Staff have found that the proposed use will have no adverse impact on the natural environment.

(5) Whether the proposed use will have an adverse impact on historic, scenic, and cultural resources, including views and vistas, and loss or degradation of cultural and historic resources.

Analysis: Staff have found that the proposed aesthetics of the Wawa building will not have an adverse impact on views and vistas due to the proposed color scheme and materials change being harmonious with the Winter Springs Marketplace. However, the required maximum setback continues to be significantly exceeded, which does not satisfy the Comprehensive Plan policies that demand the Town Center properties be "visibly different" or distinctive on SR 434.

(6) Whether the proposed use will have an adverse impact on public services, including water, sewer, stormwater and surface water management, police, fire, parks and recreation, streets, public transportation, marina and waterways, and bicycle and pedestrian facilities.

Analysis: A Traffic Impact Analysis (TIA) has since been reviewed by the City (Figure "9"), and the City's consultant recommended the installation of an auxiliary southbound right-turn lane on Tuskawilla Road due to the projected southbound right turn volume for the Tuskawilla access driveway, which the applicant is proposing to increase the northern curb radius to 35 ft. as an alternative due to the site constraints. Based on 693 daily trips generated, the Wawa project will be required to provide 1 mobility credit to Comply with Comprehensive Plan requirements. The applicant is providing the SR 434 and Tuskawilla Road streetscape (subject to the waiver below) and provides ample buffers and screening. Convenient bicycle and pedestrian access is achieved by the placement of two (2) bike racks that each contain five (5) bikes on the north side of the building and sidewalk ramp with handrails mounted in concrete sidewalks on Tuskawilla Road connect to interior sidewalks with crosswalk connections to store front sidewalk. Although, there is a lack of a pedestrian route to the store front from SR 434. These activities satisfy three (3) mobility credits, exceeding the required 1.

However, the proposed use will have no adverse impacts on other related public services.

(7) Whether the traffic report and plan provided by the applicant details safe and efficient means of ingress and egress into and out of the neighborhood and adequately addresses the impact of projected traffic on the immediate neighborhood, traffic circulation pattern for the neighborhood, and traffic flow through immediate intersections and arterials.

Analysis: A Traffic Impact Analysis (TIA) has since been reviewed by the City, and the City's consultant recommended the installation of an auxiliary southbound right-turn lane on Tuskawilla Road due to the projected southbound right turn volume for the Tuskawilla access driveway, which the applicant is proposing to increase the northern curb radius to 35 ft. as an alternative due to the site constraints.

(8) Whether the proposed use will have an adverse impact on housing and social conditions, including variety of housing unit types and prices, and neighborhood quality.

Analysis: Staff have found that the proposed use is not anticipated to have an adverse impact on housing and social conditions, as the proposed uses includes a gas station and convenience store. However, the proper development layout could contribute to safety concerns for the current social conditions within the Town Center.

(9) Whether the proposed use avoids significant adverse odor, emission, noise, glare, and vibration impacts on adjacent and surrounding lands regarding refuse collection, service delivery, parking and loading, signs, lighting, and other sire elements.

Analysis: Staff have found that the proposed use does not avoid significant adverse impacts on the parcel and the surrounding neighborhood since the proposed location of the gas canopy is oriented close to SR 434 and the convenience store is proposed to be 182' from SR 434.

(10) Whether the applicant has provided an acceptable security plan for the proposed establishment that addresses the safety and security needs of the establishment and its users and employees and minimizes impacts on the neighborhood, if applicable.

Analysis: Staff have found that the applicant has indicated that security systems will be installed for all on-site buildings with the development. The lighting provided illustrates that on-site area will be lit after dark.

(11) Whether the applicant has provided an acceptable plan for the mass delivery of merchandise for new large footprint buildings (greater than twenty thousand (20,000) square feet) including the hours of operation for delivery trucks to come into and exit the property and surrounding neighborhood, if applicable.

Analysis: All proposed buildings are less than 20,000 SF.

(12) Whether the applicant has demonstrated that the conditional use and associated site plan have been designed to incorporate mitigative techniques and plans needed to prevent adverse impacts addressed in the criteria stated herein or to adjacent and surrounding uses and properties.

Analysis: Staff have found that the proposed gas station/convenience store use will utilize mitigative techniques including walls, landscape buffers, and more to reduce and prevent adverse impacts on adjacent and surrounding properties. However, in staff's view, these mitigative techniques are not sufficient to overcome the overall lack of compliance with Town Center Code with regard to building placement.

(13) If the proposed conditional use is a residential use, whether the elementary, middle and high schools (K—12) that will be initially assigned to the residential project by the school district at the time the city commission considers final approval of the conditional use have both sufficient capacity, are in close proximity to the project so as to make each of the assigned schools accessible and convenience (e.g., walking distance, travel time, private and public transportation, and quality of route environment) to the majority of the school population that will be drawn from the project, and promote and support the integration of future residents of the project into the existing city of Winter Springs community in a sustainable manner.

Analysis: The proposed use is not a residential use.

(14) Whether the applicant has agreed to execute a binding development agreement required by city to incorporate the terms and conditions of approval deemed necessary by the city commission including, but not limited to, any mitigative techniques and plans required by City Code.

Analysis: The applicant has agreed to and is working on a binding development agreement with the City addressing terms and conditions deemed necessary by the City Commission.

Water and Sewer: Public Works & Utilities Department Staff have confirmed that sufficient water and sewer capacity exists for this project.

Stormwater:
Not applicable for this project as no drainage was proposed for this project. The infrastructure included for the development will tie into the existing stormwater pond. That stormwater system will be private and subject to the Declaration of Conditions, Covenants, Easements, and Restrictions as recorded in the Official Records of Seminole County (ORSC), Book 8871, Page 98, as amended by the First Amendment to the same, as recorded in ORSC, Book 8964, Page 1579. These documents govern the maintenance and cost allocations among properties in the Town Center.

Transportation:
A Traffic Impact Analysis (TIA) has since been reviewed by the City and recommended the installation of an auxiliary southbound right-turn lane on Tuskawilla Road due to the projected southbound right turn volume for the

Tuskawilla access driveway, which the applicant is proposing to increase the northern curb radius to 35 ft. as an alternative due to the site constraints.

Parking:
The Town Center does not have minimum required parking standards, however, the applicant provided documentation (Figure 10) that Wawa will offer a total of fifty (50) spaces of which ten (10) are off-site for employee parking within the Winter Springs Marketplace under a separate permit.

Aesthetic Review:

Pursuant to Section 9-603, which sets forth guidelines and minimum standards for Aesthetic Review packages, staff have utilized the criteria below in Section 9-603 to determine the following. The attached Aesthetic Review package (Figures 11, 12, and 18) includes all of the submittal requirements for aesthetic review as set forth in Section 9-600 through 9-607 and include the following: (a) a site plan; (b) elevations illustration all sides of structures facing public streets or spaces; (c) illustrations of all walls, fences, and other accessory structures and the indication of height and their associated materials; (d) elevation of proposed exterior permanent signs or other constructed elements other than habitable space, if any; (e) illustrations of materials, texture, and colors to be used on all buildings, accessory structures, exterior signs; and (f) other architectural and engineering data as may be required. The procedures for review and approval are set forth in Section 9-603.

Aesthetic Review	
1.	The plans and specifications of the proposed project indicate that the setting, landscaping, proportions, materials, colors, texture, scale, unity, balance, rhythm, contrast, and simplicity are coordinated in a harmonious manner relevant to the project, surrounding area and cultural character of the community. **Analysis:** Staff finds that subject to the approval of the physical landscaping/streetscaping within the area 22-foot area depicted within the streetscape waiver request, landscaping elements are coordinated in a harmonious manner relevant to the particular proposal, the surrounding area, and cultural character of the community. However, the proposed color scheme and materials change being harmonious with the Winter Springs Marketplace are consistent with the surrounding area and cultural character of the community.
2.	The plans for the proposed project are in harmony with any future development which has been formally approved by the city within the surrounding area. **Analysis:** Staff finds that the plans for the proposed project are not in harmony with the Town Center District Code.

3.	The plans for the proposed project are not excessively similar or dissimilar to any other building, structure or sign which is either fully constructed, permitted but not fully constructed, or included on the same permit application, and facing upon the same or intersecting street within five hundred (500) feet of the proposed site, with respect to one or more of the following features of exterior design and appearance: a. Front or side elevations; b. Size and arrangement of elevation facing the street, including reverse arrangement; or c. Other significant features of design such as, but not limited to materials, roof line, hardscape improvements, and height or design elements. **Analysis:** The plans for this project are not excessively similar or dissimilar to other projects within 500 feet of the proposed project with the proposed color scheme and materials change being harmonious with the buildings located within Winter Springs Marketplace.
4.	The plans for the proposed project are in harmony with, or significantly enhance, the established character of other buildings, structures or signs in the surrounding area with respect to architectural specifications and design features deemed significant based upon commonly accepted architectural principles of the local community. **Analysis:** As previously mentioned, the project has been reviewed under the Town Center District Code standards, ensuring conformance with the high standard of development for Town Center. The streetscape design has a waiver from the width requirements of Town Center standards that staff approved, and with the proposed color scheme and materials changes, Staff does find the exterior design and color to enhance the aesthetic impact of the project as compatible with other developments along SR 434 and Tuskawilla Road.
5.	The proposed project has incorporated significant architectural enhancements such as concrete masonry units with stucco, wrought iron, columns and piers, porches, arches, planting areas, display windows, and other distinctive design features detailing and promoting the character of the community. **Analysis:** The project significantly meets the standards, with the building's primary exterior consisting of stucco, hardie plank fiber cement lap siding, and stone veneer with the signature bright red for the Wawa's sign on the front façade of the convenience store. The rear façade facing the parking area for the Winter Springs Marketplace does not include the sign. The proposed exterior color scheme and material changes are consistent with the Town Center's character of the community since the colors are similar to the buildings within Winter Springs Marketplace.

Reports:
The Final Engineering submittal is required to include the following reports or updates of previously prepared reports for the same property.

Reports	
July 14, 2020	Drainage Report (Figure 25)
July 28, 2020	Potable Water Analysis (Figure 26)
August 4, 2020	Listed Wildlife Species Survey (Figure 27)
December 15, 2020	Preliminary Geotechnical Report (Figure 28)
December 6. 2024	Parking Analysis (Figure 10)
December 2024	Traffic Impact Analysis (Figure 29)
August 15, 2025	Traffic Impact Analysis Review (Figure 4)

Procedural History:	
May 6, 2025	Pre-Application Meeting
June 30, 2025	Community Workshop
August 7, 2025	Planning & Zoning Board | Recommendation on Conditional Use Application, Site Plan /Final Engineering, Aesthetic Review, Waivers, and Development Agreement. (Continued to date certain of September 11, 2025 at 5:30 p.m. in the City Commission Chambers)
September 11, 2025	Planning & Zoning Board | Recommendation on Conditional Use Application, Site Plan /Final Engineering, Aesthetic Review, Waivers, and Development Agreement.
October 13, 2025	City Commission | Hearing on Conditional Use Application, Site Plan/ Final Engineering, Aesthetic Review, Waivers, and Development Agreement.

Waiver Review: Pursuant to Section 20-34, Any real property owner may file a waiver application requesting a waiver(s) for their real property from any term and condition of this chapter (except from the list of permitted, conditional and prohibited uses set forth in any zoning district category). The Planning and Zoning Board shall be required to review all waiver applications and make a

written recommendation to the City Commission. Such recommendation shall include the reasons for the board's recommendation and show the board has considered the applicable waiver criteria set forth and analyzed below. Upon receipt of the Planning and Zoning board's recommendation, the city commission shall make a final decision on the application. If the city commission determines that the planning and zoning board has not made a recommendation on an application within a reasonable period, the city commission may, at its discretion, consider an application without the planning and zoning board's recommendation.

Waiver I: A waiver to allow Wawa to be located at a setback of 182' from the right-of-way of SR 434 and 98' from the right-of-way of Tuskawilla Road in lieu of the 50' maximum front setback. The required 15'minium rear setback is met since the convenience store is proposed to be 19' from the rear property line; therefore, is removed from the waiver request.

Waiver Review	
1.	The applicant clearly demonstrates that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development. **Analysis:** Staff find that the applicant has not demonstrated that the 50' setback requirement creates an impractical result in that meeting the standards would not prevent the lot to meet other requirements related to the proposed property and development.
2.	The proposed development plan is in substantial compliance with this chapter and in compliance with the comprehensive plan. **Analysis:** Staff find that the proposed setback adjustment is not compliant with the Town Center setback standards as it requires a building closer to the street and the proposed setbacks are not in compliance with the comprehensive plan.
3.	The proposed development plan will significantly enhance real property. **Analysis:** Staff find that the proposed site plan will significantly enhance the real property by providing an additional gas station option that includes a convenience store service which will enhance the value of surrounding property and provide families who live and work near Town Center.
4.	The proposed development plan serves the public health, safety, and welfare. **Analysis:** Staff find that the construction of Wawa will serve the public health, safety, and welfare of area residents.
5.	The waiver will not diminish property values in or alter the essential character of the surrounding neighborhood.

	Analysis: Staff find that the waiver will not diminish property values or the essential character of the surrounding neighborhood. The Town Center is meant to be a mixed-use of commercial and residential to serve residents and visitors. The construction of Wawa will enhance property values and the essential character by increasing convenience store/gas station options in Town Center.
6.	The waiver granted is the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under this chapter. **Analysis:** Staff find that the waiver is not the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under this chapter. The design does meet the associated requirements of the use while still meeting the intent of the ordinance.
7.	The proposed development plan is compatible and harmonious with the surrounding neighborhood. **Analysis:** Staff find that the site plan is not compatible with the with the Town Center since it exceeds the required setback and the buildings along SR 434 in the Winter Springs Marketplace.
8.	Whether the applicant has agreed to execute a binding development agreement required by the city to incorporate the terms and conditions of approval deemed necessary by the city commission including, but not limited to, any mitigative techniques and plans required by City Code. **Analysis:** The Applicant is working on and has agreed to a binding Development Agreement to incorporate terms and conditions deemed necessary by the City Commission.

Waiver II: A waiver to the requirement of the Town Center District Code, Sec. 20-327.1 to allow for two monument signs for the project. The signs will be identical, with one located at S.R. 434/Tuskawilla Road intersection and the second being located at the existing driveway of the Winter Springs Marketplace on Tuskawilla Road. The requested waiver to the requirement of the single-tenant monument signs, Sec.16-82 to allow the materials to be inconsistent with the architecture of the proposed building is being removed due to the applicant proposing to change the color scheme and materials of the building that is consistent with the proposed signs.

Waiver Review	
1.	The applicant clearly demonstrates that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development. **Analysis:** Staff finds that although not permitted by right in the Town Center District, monument signs are a reasonable standard for drivers to note the

	location of a business. However, the Winter Springs Marketplace already contains four (4) multiple tenant ground monument signs. In fact, the First Modification to the Development and Property Division Agreement for the Winter Springs Marketplace, dated January 30, 2023, which was executed at the time the Fifth-Third Bank's plan approval stated: Section 5.1 – "The waiver from Winter Springs City Code, Sec. 20-327.1(a), to allow an additional monument-style ground sign on the Trust Property shall be a multi-tenant ground sign that will serve the tenants of both the Resulting Trust Property Parcel #1 and #2. **No further monument signs will be permitted on the Trust Property's SR 434 frontage**." City staff is recommending approval of one additional monument sign to display gasoline prices in accordance with state law. Therefore, one (1) single-tenant ground sign located at the intersection of SR434 and Tuskawilla would be sufficient for the proposed development**.** Staff has proposed that the Second Modification to the Development Agreement allow only one additional monument sign for gas station pricing signage at the corner of Tuskawilla and SR 434. However, staff finds that the applicant has demonstrated the monument signs material to be consistent with the proposed building requirement.
2.	The proposed development plan is in substantial compliance with this chapter and in compliance with the comprehensive plan. **Analysis:** Staff has reviewed the proposed signs for conformance with the regulations for monument signs for single-tenant businesses under Code Sec. 16-82 (2) and other applicable requirements of Chapter 16, Signs and Advertising. Staff also find them not to be in compliance with the Comprehensive Plan.
3.	The proposed development plan will significantly enhance the real property. **Analysis:** Staff finds that the proposed monument signs will not enhance the value of the subject property, since there are four (4) existing monument signs within the Winter Springs Marketplace; therefore, detracting from the enhancement of the property.
4.	The proposed development plan serves the public health, safety, and welfare. **Analysis:** Staff finds that the plan does not service the public health, safety, and welfare. The addition of 2 monument signs could decrease traffic safety, while degrading the aesthetics of the Town Center since there are four (4) existing monument signs within the Winter Springs Marketplace. It is noted that there is already one monument sign at the driveway entrance to the Marketplace on Tuskawilla. The proposal to place an additional monument sign at the same driveway entrance will create excessive visual clutter and blight. It is possible for the applicant to work with existing tenants to modify

	the existing monument sign at the Tuskawilla driveway if deemed desirable by the applicant.
5.	The waiver will not diminish property values in or alter the essential character of the surrounding neighborhood. **Analysis:** Staff find that the waiver will not diminish property values or the essential character of the surrounding neighborhood. The Town Center is meant to be a mixed-use of commercial and residential to serve residents and visitors. The construction of Wawa will enhance property values and the essential character by increasing convenience store with a gas station option in the Town Center.
6.	The waiver granted is the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under this chapter. **Analysis:** Staff finds that the waiver will diminish property values in or alter the essential character of the surrounding neighborhood. Further, it will diminish the high-quality development existing in the Town Center, especially Winter Springs Marketplace.
7.	The proposed development plan is compatible and harmonious with the surrounding neighborhood. **Analysis:** Staff finds that the proposed monument plan is not compatible and harmonious with the surrounding neighborhood due to the request is for two (2) ground monument signs within a retail complex that contains four (4) multiple-tenant signs.
8.	Whether the applicant has agreed to execute a binding development agreement required by the city to incorporate the terms and conditions of approval deemed necessary by the city commission including, but not limited to, any mitigative techniques and plans required by City Code. **Analysis:** The Applicant is working on and has agreed to a binding Development Agreement to incorporate terms and conditions deemed necessary by the City Commission.

Waiver III: A waiver to allow variations in the streetscape width requirements for Wawa, consisting of a 12' landscape and treescape area, a 6' sidewalk, and a 4' landscape area located near the existing access driveway from the Tuskawilla Road right-of-way.

Waiver Review	
1.	The applicant clearly demonstrates that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development. **Analysis:** Staff find that the applicant clearly demonstrates that the applicable conditions create an illogical, impossible, impractical, or patently

	unreasonable result related to the Town Center streetscape requirements due to Tuskawilla Road containing an insufficient right-of-way at the southern end. Additionally, maintaining the existing dimensions would be in keeping with adjacent parcels.
2.	The proposed development plan is in substantial compliance with this chapter and in compliance with the comprehensive plan. **Analysis:** Staff find that the variations in the streetscape section widths are substantially compliant with the Code requirements and the desired goals for the Town Center as described in the Comprehensive Plan. The streetscape maintains the 27' overall width as required by the ordinance while adjusting the sections at Tuskawilla Road existing access driveway to be harmonious with the streetscapes on adjacent parcels.
3.	The proposed development plan will significantly enhance the real property. **Analysis:** Staff find that the proposed variations on the streetscape will significantly enhance the real property by enhancing the overall appearance of the streetscape. The applicant is proposing a number of canopy trees and shrubs that will improve the aesthetic value of the property.
4.	The proposed development plan serves the public health, safety, and welfare. **Analysis:** Staff find that the plan services the public health, safety, and welfare. The proposed streetscape will increase the quality of life for residents and visitors by maintaining the current path and providing a more aesthetically pleasing walkway.
5.	The waiver will not diminish property values in or alter the essential character of the surrounding neighborhood. **Analysis:** Staff find that the waiver will not diminish property values or the essential character of the surrounding neighborhood. The Town Center is meant to be a mixed-use of commercial and residential to serve residents and visitors.
6.	The waiver granted is the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under this chapter. **Analysis:** Staff find that this waiver eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable conditions by keeping the current landscape and sidewalk widths so as to be harmonious with the existing streetscape on adjacent parcels. The total required width of the streetscape as required by the Code will be unaffected.
7.	The proposed development plan is compatible and harmonious with the surrounding neighborhood.

	Analysis: Staff find that the proposed development plan is compatible and harmonious with the surrounding neighborhood. While the widths of each section as proposed are not within the Code, they are compatible with the streetscape for the adjacent parcels and the amount of both canopy trees, shrubs, and plantings will result in a harmonious landscape for the surrounding neighborhood.
8.	Whether the applicant has agreed to execute a binding development agreement required by the city to incorporate the terms and conditions of approval deemed necessary by the city commission including, but not limited to, any mitigative techniques and plans required by City Code. **Analysis:** The Applicant is working on and has agreed to a binding Development Agreement to incorporate terms and conditions deemed necessary by the City Commission.

Applicable Law, Public Policy, and Events:

Florida Statutes 163.2511-163.3246: Growth Policy; County and Municipal Planning; Land Development Regulation (Provides that land development regulations for municipal planning be consistent with the Comprehensive Plan).

Home Rule Powers

Code of Ordinances City of Winter Springs.

Section 20-1. Definitions.

Fiscal Impact:

The Fiscal Impact Report shall be reviewed and approved prior to the project being heard before the City Commission.

Development Agreement:

The Applicant is currently working with the City Attorney on the Development Agreement for the project. The Development Agreement shall be executed prior to any work on the project covered within this document.

STAFF RECOMMENDATION

Although, some of the noted items from Staff (#3, #5, and #6) have been satisfied, the noted items (#1, #2, #7, and #8), pertaining to the "fundamental and urban design concepts" and "corner store or neighborhood convenience store with gas pumps", are not being met with the applicant continuing with the originally proposed location of the convenience store and gas canopy. Therefore, Staff recommends that the Planning & Zoning Board recommend denial of the Conditional Use Application, Site Plan /Final Engineering, and Development Agreement. The development plan does not meet Goal 2: Town Center of the Comprehensive Plan as provided herein.

In the event the project is recommended for approval, Staff recommends that it is contingent upon, and not effective until, the related Additional Parking project Site Plan/ Final Engineering application is approved. Further, Staff requests that the

Planning and Zoning Board recommend approval of the Aesthetic Review with no conditions, and the Site Plan/Final Engineering subject to the following condition:

1. Prior to the issuance of a site work permit and start of construction, an approved Maintenance of Traffic (MOT) permit is required.

With regard to Waivers, Staff requests that the Planning and Zoning Board recommend denial of Waiver I, but approval of Waiver III with no conditions and approval of Waiver II, subject to the following condition:

1. One (1) ground monument sign to be located at the intersection of SR 434 and Tuskawilla Road.

Attachments:

Figure "1" – Community Workshop Flyer
Figure "2" – Community Workshop Attendance Sheet
Figure "3" – Preliminary Requirements
Figure "4" – Applicant Response to Preliminary Requirements
Figure "5" – Wawa Revised C0.0 & C4.0 Civil Site Plan 09.02.2025
Figure "6" – Wawa Civil Site Plan 08.28.2025
Figure "7"– Landscape Plan 07.29.2025
Figure "8 "– Master Sign Plan
Figure "9" – Traffic Impact Analysis Review
Figure "10" – Parking Analysis
Figure "11" – Building Elevations
Figure "12" – Proposed Building Renderings
Figure "13" – Setback Waiver Justification
Figure "14" – Ground Monument Sign Waiver Justification
Figure "15" – Streetscape Waiver Justification
Figure "16" – Conditional Use Justification
Figure "17" – Site Plan Application
Figure "18" – Aesthetic Review Application
Figure "19" – Development Agreement Application
Figure "20" – Setback Waiver Application
Figure "21" – Ground Monument Sign Waiver Application
Figure "22" – Streetscape Waiver Application
Figure "23" – Conditional Use Application
Figure "24" – Drainage Report
Figure "25" Potable Water Analysis
Figure "26" Listed Wildlife Species Survey
Figure "27" Preliminary Geotechnical Engineering Report
Figure "28" Wawa Winter Springs Traffic Impact Analysis

THIS INSTRUMENT WAS PREPARED BY
AND SHOULD BE RETURNED TO:

Anthony A. Garganese
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Garganese, Weiss, D'Agresta & Salzman, P.A.
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Orlando, FL 32802

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FOR RECORDING DEPARTMENT USE ONLY

DRAFT

SECOND MODIFICATION TO

DEVELOPMENT AND PROPERTY DIVISION AGREEMENT

Winter Springs Marketplace – Resulting Trust Property Parcel #2 - Wawa

THIS SECOND MODIFICATION TO DEVELOPMENT AND PROPERTY DIVISION AGREEMENT ("Second Modification") is made and executed this _____ day of _____, 2025, by and between the **CITY OF WINTER SPRINGS**, a Florida Municipal Corporation ("City"), whose address is 1126 East S.R. 434, Winter Springs, Florida 32708, and **TUSCAWILLA PROPERTY INVESTORS, LLC,** a Florida Limited Liability Company, whose address is 630 S Maitland Avenue, Suite 100, Maitland, Florida 32751 ("Developer").

WITNESSETH:

WHEREAS, Developer and the City have entered into and executed that certain Development and Property Division Agreement for Winter Springs Marketplace, dated March 8, 2021, and recorded in the Official Records of Seminole County at Book 9887, Pages 718-751 (the "Development Agreement") as well as that certain First Modification to the Development and Property Division Agreement for Winter Springs Marketplace, dated January 30, 2023, and recorded in the Official Records of Seminole County at Book 10397, Pages 628-643 (the "First Modification"); and

WHEREAS, the Development Agreement governs the development of both the Property and Trust Property, as legally described and defined therein, the Trust Property having been conveyed to the Developer subsequent to the execution and recordation of the Development Agreement, and the Trust Property being more particularly described in Exhibit "D" of the Development Agreement; and

WHEREAS, the Development Agreement provided that the Trust Property would be further divided into two (2) resulting Trust Property parcels, as legally described in Exhibit "E" of the Development Agreement; and

WHEREAS, the Developer now desires to construct a Wawa neighborhood convenience store with gas pumps on the Resulting Trust Property Parcel #2, particularly consisting of 1.21 acres, more or less, located southwest of the intersection of SR 434 and Tuskawilla Road, in Winter Springs, Seminole County, Florida, zoned Town Center (T5 Transect), more particularly described in Exhibit **"G"** herein; and

WHEREAS, Developer has now applied for a conditional use of a "corner store or neighborhood convenience store with gas pumps" and submitted applications for a Conditional use, Final Engineering Plans, Waivers, and Aesthetic Plan Approval in order to construct the convenience store on the Resulting Trust Property Parcel #2; and

WHEREAS, pursuant to Chapter 20 Zoning, Article II, Division 1, Section 20-29.1 of the Winter Springs City Code ("City Code"), a community workshop for the Project was held on _____; and

WHEREAS, Section 20-29(c) of the City Code requires that all site plans and waivers shall be binding on the use of the subject property and, further, that as a condition of approval by the City Commission, all development projects requiring a community workshop pursuant to Section 20-29.1 of the City Code shall be required to be memorialized in a binding development agreement; and

WHEREAS, this Second Modification shall be recorded against the Trust Property so that the terms and conditions of approval related to the Trust Property shall run with the land; and

NOW THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties mutually agree as follows:

1.0 **Recitals.** The foregoing recitals are true and correct and are hereby incorporated herein by this reference.

2.0 **Authority.** This Second Modification is entered into pursuant to the Florida Municipal Home Rule Powers Act.

3.0 **The Project Area.** The real property that is subject of this Second Modification is the Resulting Trust Property Parcel #2, legally described in **EXHIBIT "G"**, attached hereto and fully incorporated herein by this reference for convenience (the "Project Area" or "Resulting Trust Property Parcel #2" or "Resulting Trust Property #2").

4.0 **Project Description and Requirements; Phasing.** Developer has constructed Phases I and II of the Winter Springs Marketplace shopping center on the Property, as well as

supporting infrastructure, stormwater pond, parking lots, and landscaping. Phase III shall consist of a corner store or neighborhood convenience store with gas pumps and canopy with associated parking on Resulting Trust Property Parcel #2.

(Hereinafter, all project description and requirements and references to the **"Project"** shall refer to the corner store or neighborhood convenience store with gas pumps on Resulting Trust Property Parcel #2.).

The Developer shall construct the Project in a manner consistent with the approved Final Engineering/Site Plans, Aesthetic Plans, and Waivers that are on file with the City with the following file numbers and consistent with the requirements contained in this Second Modification:

File Nos:

CONU-2025-0004

FEDP-2025-0016

DVAG-2025-0010

AERV-2025-0008

WAIV-2025-0011, WAIV-2025-14, WAIV-2025-15

The overall Final Engineering/Site Plan for the neighborhood convenience store with gas pumps on Resulting Trust Property Parcel #2 is attached hereto as **EXHIBIT "H"** for convenience and incorporated herein by this reference.

The City and Developer agree that the Winter Springs Comprehensive Plan, Multimodal Transportation Element, Policy 1.11.3, requires the Developer of the Project to provide one (1) mobility credit based on the net, new average daily trip generation projected for the Project. In addition, the City and Developer agree that the Winter Springs Comprehensive Plan, Multimodal Transportation Element, Policy 1.11.6, requires new development, regardless of size, to provide operational improvements to the City's transportation system to mitigate their impacts on the system, to ensure smooth traffic flow, and to aid in the elimination of hazards, which may include contributions to the City's multimodal system. The Developer has elected to provide two (2) bike racks, totaling ten (10) spaces, on the north side of the building, and a ramp with handrails on the Tuskawilla Road sidewalk, with crosswalk connection to the store front sidewalk as a multimodal improvement to satisfy the required mobility credit in accordance with the above-referenced Policies.

5.0 Conditions of Approval. Specific conditions of approval for the above-referenced Final Engineering Plans, Aesthetic Plans and Waivers, include the following, which are also addressed in the staff report for the Final Engineering/Site Plans, Aesthetic Plans, and Waivers:

In addition, the City Commission hereby deletes in its entirety Section 5.1 of the First Modification, to allow for one (1) additional monument-style ground sign on the Resulting Trust Property Parcel #2 at the corner of SR 434 and Tuskawilla Road. No further monument signs shall be permitted on the SR 434 frontage for the Project Area.

6.0 Termination of Approval as to Resulting Trust Property #2. In the event the Developer (or the ground tenant of Resulting Trust Property Parcel #2) fails to obtain the building permit and substantially commence vertical construction of the building, which shall at minimum include building foundations, on the Resulting Trust Property Parcel #2 within two (2) years of the Effective Date of this Second Modification, then the City shall have the right to terminate and/or void the approvals set forth herein as applies to the Resulting Trust Property #2 and require the Developer to reapply to the City for such approvals as applies to the Resulting Trust Property Parcel #2. The Developer may apply to the City Commission for an extension of this deadline, which may be granted upon good cause shown.

7.0 Representations of the Parties. The City and Developer hereby each represent and warrant to the other that it has the power and authority to execute, deliver and perform the terms and provisions of this Second Modification and has taken all necessary action to authorize the execution, delivery and performance of this Second Modification. The Developer further agrees and makes the following representations and warranties to the City:

A. The Developer is lawfully seized of the Trust Property in fee simple and has full and lawful authority to execute this Second Modification and bind the Project Area property as set forth herein.

This Second Modification will, when duly executed and delivered by the City and Developer, constitute a legal, valid and binding obligation enforceable against the parties hereto. Upon recording of this Second Modification in the Public Records of Seminole County, Florida, the Second Modification shall be a binding obligation upon the Project Area property in accordance with the terms and conditions of this Agreement. Developer represents that it has voluntarily and willfully executed this Second Modification for purposes of binding himself and the Project Area property to the terms and conditions set forth in this Second Modification.

8.0 Successors and Assigns. This Second Modification shall automatically be binding upon and shall inure to the benefit of the City and Developer and their respective successors and assigns. The terms and conditions of this Second Modification similarly shall be binding upon the Project Area property, and shall run with title to the same upon being duly recorded against the Project Area property by the City.

9.0 Effective Date. This Second Modification shall become effective upon approval by the City Commission and execution of this First Modification by both parties hereto.

10.0 Recordation. Upon full execution by the Parties, this Second Modification shall be recorded upon the Resulting Trust Property #2 in the Public Records of Seminole County, Florida by the City and shall be binding upon the Resulting Trust Property #2 and all future owners thereof.

11.0 Effect of Modification. All other terms and conditions of the Development Agreement and First Modification, not in conflict with this Second Modification, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seal on the date first above written.

CITY OF WINTER SPRINGS

By: _____
Kevin McCann, Mayor

Date: _____

ATTEST:

By: _____
Christian Gowan, City Clerk

APPROVED AS TO FORM AND LEGALITY
For the use and reliance of the City of Winter Springs, Florida only.

CITY SEAL

Date: _____
By: _____
Anthony A. Garganese, City Attorney for the City of Winter Springs, Florida

STATE OF FLORIDA
COUNTY OF SEMINOLE

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by Kevin McCann, Mayor of the City of Winter Springs, Florida**,** a Florida municipal corporation, on behalf of the

DRAFT

corporation, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

Signed, sealed and delivered in the presence of the following witnesses:

_____
Signature of Witness

_____
Printed Name of Witness

_____
Signature of Witness

_____
Printed Name of Witness

TUSCAWILLA PROPERTY INVESTORS, LLC

By: _____
Ryan Stahl

Date: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by Ryan Stahl, the Manager of Tuscawilla Property Investors, LLC**,** a limited liability company, on behalf of the company, who is personally known to me or produced _____ _____ as identification.

DRAFT

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

DEVELOPER IS HEREBY ADVISED THAT SHOULD DEVELOPER FAIL TO FULLY EXECUTE, AND DELIVER TO THE CITY, THIS AGREEMENT WITHIN THIRTY (30) DAYS FROM THE DATE THAT THE CITY COMMISSION APPROVES THIS AGREEMENT, THIS AGREEMENT, AND THE DEVELOPMENT PERMIT APPROVALS REFERENCED HEREUNDER, SHALL AUTOMATICALLY BE DEEMED NULL AND VOID.

DRAFT

EXHIBIT G

RESULTING TRUST PROPERTY PARCEL #2 (PROJECT AREA)

That part of Lot 9, JOE E. JOHNSTON'S SURVEY, recorded in Deed Book 147, Page 221, Public Records of Seminole County, Florida, and also being that part of Lot 8 Block A, and that part of the unplatted part of Block B of D. R. Mitchell's Survey of the Levy Grant, according to the plat thereof as recorded in Plat Book1, Page 5, Public Records of Seminole County, Florida, and also that part of the vacated Street as set forthin Resolution recorded in Official Records Book 2972, Page 373 more particularly described as follows: Commencing at the Northeast corner of Jesup's Reserve Townhomes Replat, according to the plat thereof as recorded in Plat Book 71, Pages 86 through 93, Public Records of Seminole County, Florida; thence run S39'45'03"E along the Southwesterly right of way line of State Road No. 434 per Official Records Book2803, Page 1023, and Official Records Book 2831, Page 1024, Public Records of Seminole County, Florida, a distance of 442.36 feet for the Point of Beginning; thence continue S39'45'03"E along said South right of way line, a distance of 103.50 feet; thence run S13'15'20"E along the West right of way line of Tuskawilla Road per Official Records Book 8377, Page 27, Public Records of Seminole County, Florida, a distance of 44.85 feet; thence continue S13'18'28"W along said West right of way line, a distance of223.26 feet to a point on a non-tangent curve concave to the Northwest, having a radius of 2.00 feet; thence from a radial bearing of N76'41'29"W run Southwesterly along the arc of said curve through a central angle of 59'49'28", an arc distance of 2.09 feet, having a chord bearing of S43'13'15"W and a chord distance of 1.99 feet to a point of compound curvature of a curve concave to the North having a radius of24.33 feet; thence run Westerly along the arc of said curve through a central angle of 30'50'10", an arc distance of 13.09 feet, having a chord bearing of S88'33'05"W and a chord distance of 12.94 feet; thence run N76'01'50"W, a distance of 60.93 feet to the beginning of a curve concave to the Northeast having a radius of 20.00 feet; thence run Northwesterly along the arc of said curve through a central angle of35'56'47", an arc distance of 12.55 feet, having a chord bearing of N58'03'27"W and a chord distance of12.34 feet; thence run N40'05'03"W, a distance of 178.00 feet to the beginning of a curve concave to the Northeast having a radius of 15.00 feet; thence run Northwesterly along the arc of said curve through a central angle of 42'05'15", an arc distance of 11.02 feet, having a chord bearing of N19'02'26"W and a chord distance of 10.77 feet to a point of reverse curvature of a curve concave to the West having a radius of 130.00 feet; thence run Northerly along the arc of said curve through a central angle of 10'50'21", an arc distance of 24.59 feet, having a chord bearing of N03'24'59"W and a chord distance of 24.56 feet; thence run N49'54'57"E, a distance of 233.19 feet to the Point of Beginning.

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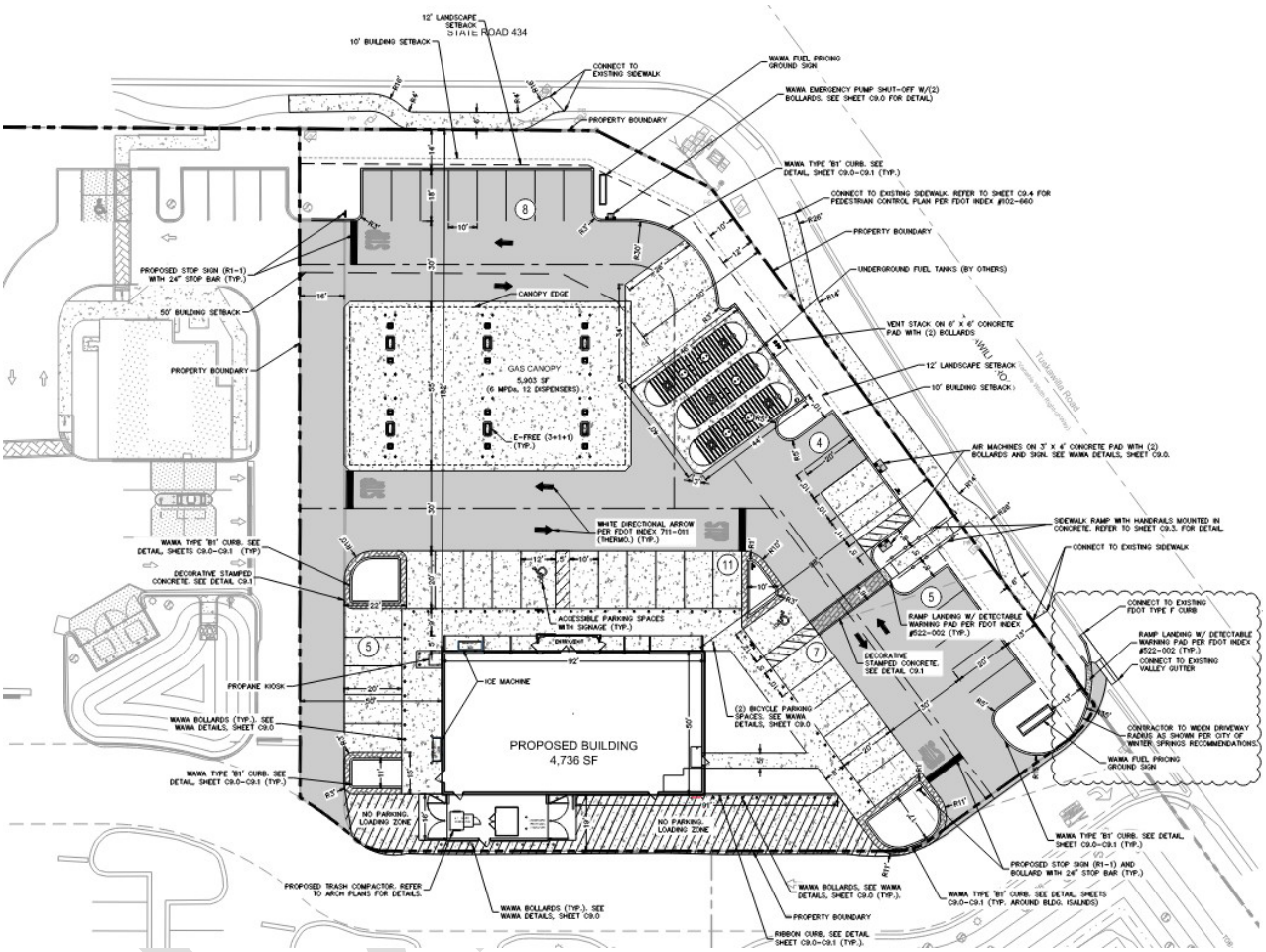
EXHIBIT H

Overall Site Plan for Resulting Trust Property Parcel #2



JOINDER AND CONSENT

For and in consideration of the mutual covenants, terms, and conditions and restrictions contained herein, together with other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, **One Florida Bank**, a Florida banking corporation, as holder of that certain Mortgage, Security Agreement, Financing statement and Assignment of Rents which is recorded in Official Records Book 10107, Page 1 of the Public Records of Seminole County, Florida, as affected by that certain Cross-Default and Cross-Collateralization Agreement recorded in Official Records Book 10108, Page 57, that certain Assignment of Rents, Leases, Profits and Contracts recorded in Official Records Book 10107, Page 20, and that certain UCC-1 Financing Statement recorded in Official Records Book 10147, Page 359; and that certain Mortgage, Security Agreement, Financing statement and Assignment of Rents which is recorded in Official Records Book 9757, Page 1364, as affected by that certain Cross-Default and Cross-Collateralization Agreement recorded in Official Records Book 10108, Page 57, that certain Assignment of Rents, Leases, Profits and Contracts recorded in Official Records Book 9757. {age 1386, and that certain UCC-1 Financing Statement recorded in Official Records Book 9757, Page 1396, all of the Public Records of Seminole County, Florida (collectively, the "Mortgage") hereby joins in and consents to the foregoing First Modification to the Development and Property Division Agreement by and between the City of Winter Springs, a Florida municipal corporation, and Tuscawilla Property Investors, LLC, a Florida limited liability company, and further acknowledges and agrees that its Mortgage shall be subordinated to such First Modification to the Development and Property Division Agreement and the obligations contained therein.

Dated this _____ day of _____, 2025.

DRAFT

Signed and sealed in the presence of:

By: _____

_____ Name: _____

Print Name: _____ Title :_____

_____

Print Name: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by _____, the _____ of _____, a _____, on behalf of the company, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

DRAFT

COMMUNITY WORKSHOP

Date: June 30, 2025 @ 6:00 P.M.

Location: The Foundry Church – Classroom 5
1491 E. State Road 434, Winter Springs, FL 32708

Community Workshop to consider Final Engineering Site Plans, Aesthetic Review and Conditional Use in order to construct a 4,736 sq. ft. gas station/convenience store in the Winter Springs Marketplace within the Town Center District on the subject site.

Project: Wawa gas station/convenient store

Location: SW corner of Tuskawilla Road and E. State Road 434
Parcel ID: 36-20-30-502-0000-0090
Acreage: ± 1.22-acre project
Zoning: Town Center District (T5)
Future Land Use: Town Center (TC)
Applicant/Presenter: Ryan Stahl, Scott Kearney, Kimley-Horn Associates

COMMUNITY WORKSHOP SIGN-IN SHEET

PROJECT NAME: Wawa gas station/convenient store

MEETING LOCATION & DATE: The Foundry Church (Classroom #5) – June 30, 2025

NAME	MAILING ADDRESS (STREET, CITY, ZIP)	E-MAIL ADDRESS
1. LOUIS ATTI	119 MCLEODS WAY WINTER SPRINGS 32708	ACCESSIBLE@MSN.COM
2. Gina + Jeff Shafer	Winter Springs Villiage	
3. Mark Caruso	1054 choke cherry Dr	mcaruso@winterspringsfl.org
4. Daina Todd	630 S. Maitland Ave, ste 100 Maitland 32751	Daina@equinox-development.com
5. Kristin Banks	630 S Maitland Ave, Ste 100 Maitland FL	kristin@equinox-development.com
6. Cory Sitler	6876 Morwick Lane, Ste 350, Orlando, FL 32827	cory.sitler@kimley-horn.com
7. Stephen Donahoe	1233 Natures Way Winter Springs FL 32708	steve@donahoe.com
8. LINDA FREESURN	1604 COUGAR CT 32708	
9. Krystal Kearney	609 Timberwilde Ct.	
10. Lalon Grago	1212 Deer Run Dr., Winter Springs, FL 32708	Lgrago@aol.com
11. Maureen Landgraf	443 Tradition Ln. WSpr.	
12. Victoria Bruce	city Hall	Vbruce@winterspringsfl.org
13. Leah Wegman	Brookshire	
14. Jennifer Garnett	City of Winter Springs	jgarnett@winterspringsfl.org
15.		
16.		
17.		
18.		
19.		
20.		

CITY OF WINTER SPRINGS, FLORIDA
COMMUNITY DEVELOPMENT DEPARTMENT

1126 EAST STATE ROAD 434
WINTER SPRINGS, FLORIDA 32708
T: (407) 327-1800 | F: (407) 324-4753
www.winterspringsfl.org

August 12, 2025

Preliminary Requirements

The Planning and Zoning Board (P&Z) meeting held on Thursday, August 7, 2025 at 5:30 p.m. heard Agenda Item 401 and rendered the decision to continue this agenda item to a date certain of Thursday, September 11, 2025 at 5:30 p.m. in the City Commission Chambers. Per the Planning and Zoning Board decision, the following items referenced in the Staff Report are required to be addressed, and submitted via the Civic Access Portal, prior to the scheduled meeting by or before close of business on Friday, August 29, 2025:

1. The building placement is required to contain shallow setbacks or none, buildings oriented close to the street defining a street wall per Sec.20-320. Therefore, the convenient store placement is required to be oriented close to E. SR 434/Tuskawilla Road.

2. Per Sec.20-325 the front setback is required to be 50 ft., and shall be the average of the front setback of the two developed lots abutting the lot. Therefore, the proposed convenient store setback of 182 ft. from E. SR 434 and 98 ft. from Tuskawilla Rd. far exceeds the required setback and the buildings along E. SR 434 in the Winter Springs Marketplace.

3. Per Sec.20-325 the rear setback is required to be 15 ft., and the proposed convenient store is zero feet from the rear.

4. The proposed design and color of the proposed building and gas canopy are not consistent with the Winter Springs Marketplace; therefore, not compatible with the immediate surrounding area of the Town Center.

5. Single-tenant monument signs are required to be consistent in materials with the architecture of the proposed building per Sec.16-82(2)(e) and are discouraged in the Town Center.

6. The Traffic Impact Analysis is required to determine the impact on and adherence to the Town Center goals per the Comprehensive Plan and Land Development Code. However, as of the date of this report, the transportation review has not been addressed.

7. There is no hardship present on the subject site to meet all the relevant standards for the Town Center to continue being a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center.

8. It is not consistent with the use of a “corner store” or neighborhood convenience store to have the building placed 182 feet behind the corner.

*Completion of the review for Traffic Impact Analysis and Utilities

August 29, 2025

Jenale Garnett
Project Manager
City of Winter Springs
1126 E State Road 434
Winter Springs, FL 32708

Re: **Wawa at Winter Springs Marketplace**
Application Number: FEDP-2025-0016

To Whom It May Concern:

We are in receipt of the P&Z Board comments dated August 12, 2025 and the additional utility comments received August 28, 2025, regarding the above referenced project and offer the following in response:

Planning Comments

1. The building placement is required to contain shallow setbacks or none, buildings oriented close to the street defining a street wall per Sec.20-320. Therefore, the convenient store placement is required to be oriented close to E. SR 434/Tuskawilla Road.

   Response: As discussed with staff on August 27, 2025, the site layout of the project is crucial for the success of the development and is necessary for the operations of Wawa. Additionally, we feel that the canopy provides the "street wall" feel the code is intending for as it is set back 62' from the property boundary and is a larger footprint than the principal building.

2. Per Sec.20-325 the front setback is required to be 50 ft., and shall be the average of the front setback of the two developed lots abutting the lot. Therefore, the proposed convenient store setback of 182 ft. from E. SR 434 and 98 ft. from Tuskawilla Rd. far exceeds the required setback and the buildings along E. SR 434 in the Winter Springs Marketplace.

   Response: Please see the previous comment response.

3. Per Sec.20-325 the rear setback is required to be 15 ft., and the proposed convenient store is zero feet from the rear.

   Response: As discussed with staff on August 27, 2025, this waiver is no longer required as the principal building is setback ~19' from the rear property line and meets the rear setback requirement.

4. The proposed design and color of the proposed building and gas canopy are not consistent with the Winter Springs Marketplace; therefore, not compatible with the immediate surrounding area of the Town Center.

   Response: Please refer to the revised Architectural building elevations consistent with those presented in the meeting with staff on August 27, 2025. These color schemes match the existing Aldi in the Marketplace and will help provide a more consistent look and feel for the development.

5. Single-tenant monument signs are required to be consistent in materials with the architecture of the proposed building per Sec.16-82(2)(e) and are discouraged in the Town Center.

   Response: As discussed with staff on August 27, 2025, the current signage design was designed consistent with the other signage within the Marketplace. With the revisions to the colors and materials for the building, the signage will now match the building façade.

6. The Traffic Impact Analysis is required to determine the impact on and adherence to the Town Center goals per the Comprehensive Plan and Land Development Code. However, as of the date of this report, the transportation review has not been addressed.

   Response: As discussed with staff on August 27, 2025, the transportation review has been completed and the reviewing consultant has provided a recommendation for a right turn lane at the existing driveway entrance on Tuskawilla Rd. Site constraints were discussed with staff including impacts to existing Duke infrastructure and encroachments into an existing Duke easement that prevent the right turn lane from being feasible. As an alternative, the northern curb radius into the property can be increased to allow for an easier turning movement for incoming traffic.

7. There is no hardship present on the subject site to meet all the relevant standards for the Town Center to continue being a place where people can reside in a mix of single and multiple family dwellings, work, gather to shop, relax, recreate, be entertained, attend community events, and enjoy the natural beauty of lands located in the Town Center.

   Response: We feel that the proposed use is a complimentary use for the overall Marketplace and will complete a "one-stop shop" development for the community to utilize. Accommodations for pedestrian traffic have been made to the extent practicable given the necessary layout of the project.

8. It is not consistent with the use of a "corner store" or neighborhood convenience store to have the building placed 182 feet behind the corner.

   Response: We believe the intent of the code referenced was specific to the parcel being located at an intersection rather than specific to the principal building location.

Utility Comments

1. Two dimensions are shown: 11 feet and (7+5) = 12 feet. Please indicate that the open cut width is 12 feet. Repeat comment: Provide MOT notes for traffic movement and safety during open cut operations.

   Response: The open cut width is 12', the conflicting dimensions have been removed from the Demolition Plan (C3.0). As discussed with staff on August 29, 2025, an additional MOT note has been added to the Demolition Plan instructing the contract to obtain an MOT permit from the City of Winter Springs prior to commencing construction.

2. Existing gate valve shown, label both gate valves within Detail 1 on Sheet C6.0.

   Response: Additional leader has been added to existing gate valve.

3. Repeat comment: Provide restraint joint table for PVC pipe.

   Response: As discussed with staff on August 29, 2025, restrained joints are not required for the scope of this project. As indicated in the restrained joint table detail, restrained joints are only required for 4" lines and above. Additionally, the portion of 8" PVC that will be extended to the project does not have any bends and does not require a restrained joint.

4. Repeat comment: Provide design information for size of proposed grease trap.

   Response: Grease trap calculations are included with the building permit application submittal as they are sized by the MEP. Revised preliminary grease trap calcs have been included for a standard Wawa in Central Florida showing the proposed grease trap is of adequate size. Final calculations will be provided during building permit review.

5. The irrigation plan indicates a water meter on the southeast side of the building. Neither the irrigation plan nor the utility plan describes or details how the irrigation system will be serviced. **Comment Revision**: Could not be verified – Irrigation Plans were not provided.

   Response: As discussed with staff on August 29, 2025, irrigation plans were uploaded to the portal with the previous submittal on 7/28/2025 that show the intended irrigation connection to the existing irrigation line along the southern edge of the property.

6. Verify that the FDEP water main to sanitary sewer separation requirements are met – 10 feet preferred. 6 feet minimum if vertical separation is obtained.

   Response: As discussed with staff on August 29, 2025, the separation requirements noted by FDEP are specifically for public potable water mains, not private services.

If you have any further questions, please do not hesitate to contact our office, or email me at cory.sitler@kimley-horn.com.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Cory Sitler

Cory Sitler P.E.
Project Manager

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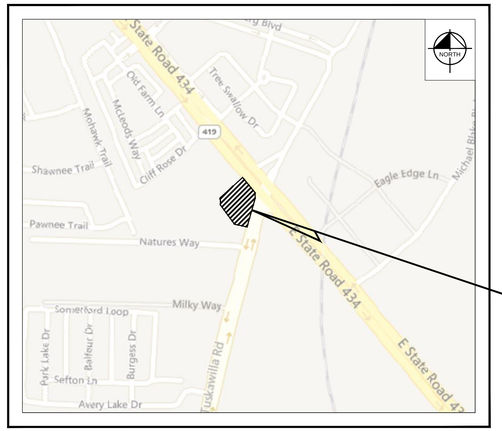


SITE

LOCATION MAP
N.T.S.

CONSTRUCTION PLANS

FOR

Wawa

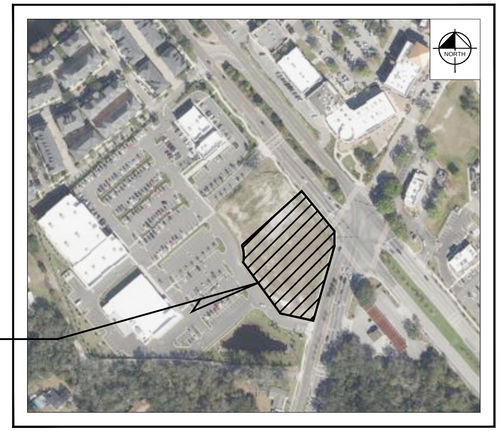
AUGUST 2025

CITY OF WINTER SPRINGS, FL

PROPERTY INFO:
164 TUSKAWILLA ROAD
WINTER SPRINGS, FL 32708

PARCEL ID. 36-20-30-502-0000-0090

Wawa Store # TBD



SITE

AERIAL PHOTOGRAPH
N.T.S.

LEGAL DESCRIPTION:

THAT PART OF LOT 9, JOE E. JOHNSTON'S SURVEY, RECORDED IN DEED BOOK 147, PAGE 221, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, AND ALSO BEING THAT PART OF LOT 8 BLOCK A, AND THAT PART OF THE UNPLATTED PART OF BLOCK B OF D. R. MITCHELL'S SURVEY OF THE LEVY GRANT, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 1, PAGE 5, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, AND ALSO THAT PART OF THE VACATED STREET AS SET FORTH IN RESOLUTION RECORDED IN OFFICIAL RECORDS BOOK 2972, PAGE 373 MORE PARTICULARLY DESCRIBED AS FOLLOWS:

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WAWA, INC. SITE DATA	
BUILDING TYPE	U45 M
CANOPY TYPE	SLOPED
CANOPY CONFIGURATION	STACKED
NUMBER OF MPDs (TYPE)	6 (3+1), 4 (3+1+1)
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NUMBER OF HANDICAP SPACES	2
NUMBER OF TRUCK/OVERSIZED SPACES:	0
SQ.FT. OF ASPHALT ON-SITE (TO BE SEAL COATED)	20,386 SF
SQ.FT. OF LAWN AREA (TO BE MOWED)	6,633 SF
SQ.FT. OF MULCH AREAS	TBD

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DEVELOPMENT TEAM

OWNER/DEVELOPER
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630 S. MAITLAND AVE., SUITE 100
MAITLAND, FL 32751
CONTACT: RYAN STAHL
PHONE: (407) 628-0077
EMAIL: RSTAHL@EQUINOX-DEVELOPMENT.COM

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PREPARED BY
Kimley»Horn

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Phone: (407) 898-1511
WWW.KIMLEY-HORN.COM CA 00000696

Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	GENERAL NOTES
C1.1	GENERAL NOTES
C2.0	SWPPP NOTES
C2.1	EROSION CONTROL DETAILS
C3.0	EXISTING CONDITIONS AND DEMOLITION PLAN
C4.0	SITE PLAN
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C9.4	GENERAL CONSTRUCTION DETAILS
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L1.00	LANDSCAPE PLAN
L1.50	LANDSCAPE DETAILS
L1.51	LANDSCAPE SPECIFICATIONS
L2.00	IRRIGATION PLAN
L2.50	IRRIGATION DETAILS
L2.51	IRRIGATION NOTES

WINTER SPRINGS WAWA
K-H PROJECT# 249473000
08/28/25

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	08/28/25	AGL
2	REVISED PER CITY COMMENTS	07/18/25	MHB

Always call 811 two full business days before you dig to have underground utilities located and marked.
Sunshine811.com

CORY N. SITLER LICENSE No. 89984 STATE OF FLORIDA PROFESSIONAL ENGINEER

SHEET NUMBER
C0.0

Drawing name: K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C0.0 COVER SHEET.dwg COVER SHEET Sep 02, 2025 2:15pm by Arlene.LaRocque
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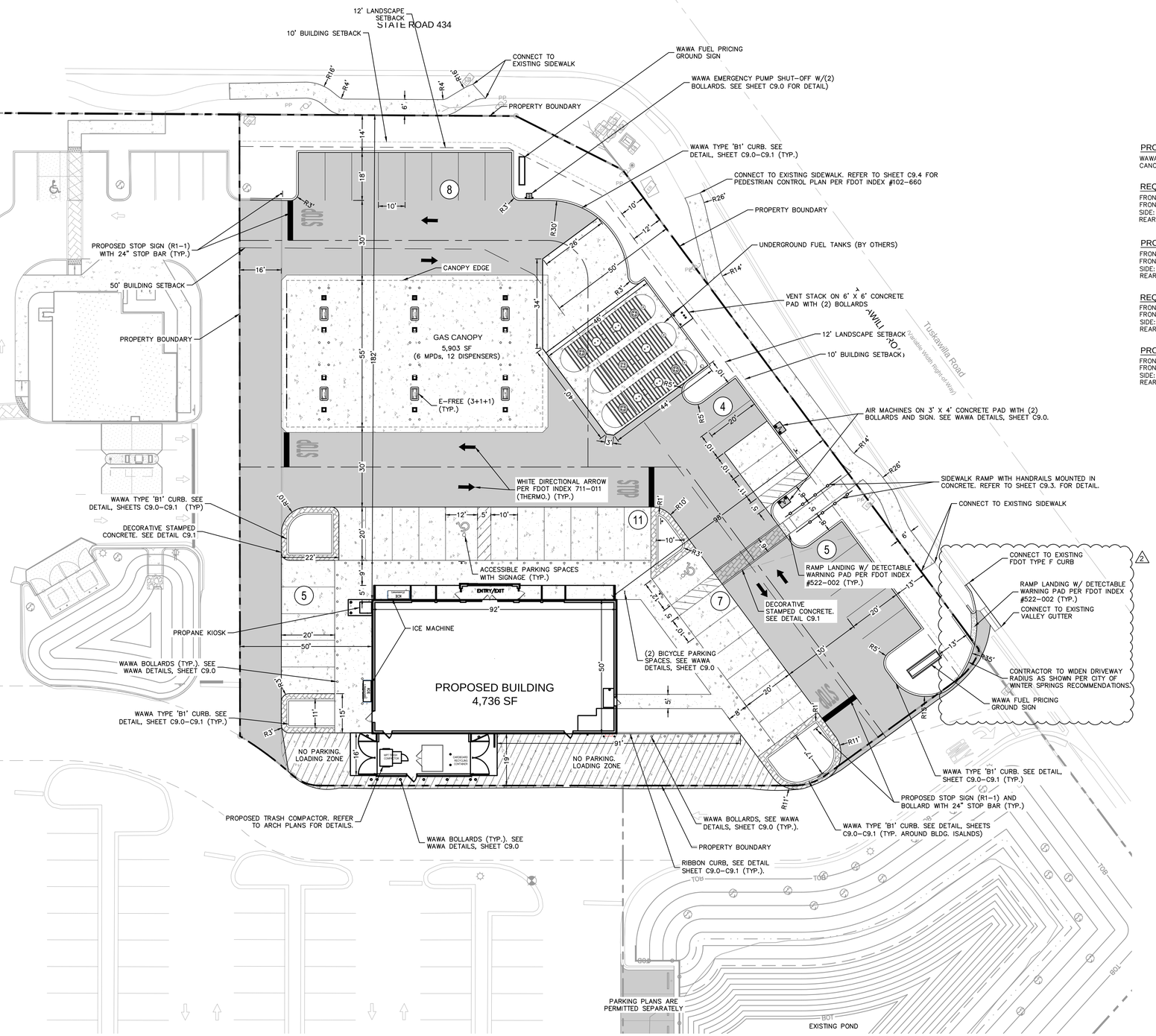

LEGEND

- PROPERTY LINE
- (11) PARKING SPACE COUNT
- PROPOSED CONCRETE, SEE SHEET C9.1 FOR DETAILS
- PROPOSED STAMPED CONCRETE, SEE SHEET C9.0 FOR DETAILS
- STANDARD DUTY ASPHALT, SEE SHEET C9.1 FOR DETAILS

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

PROVIDED BUILDING HEIGHTS

WAWA:	33 FT
CANOPY:	25 FT

REQUIRED BUILDING SETBACKS

FRONT (TUSKAWILLA RD):	25 FT MIN TO 50 FT MAX
FRONT (S.R. 434):	25 FT MIN TO 50 FT MAX
SIDE:	5 FT MIN TO 100 FT MAX
REAR:	15 FT MIN

PROVIDED BUILDING SETBACKS

FRONT (TUSKAWILLA RD):	50 FT
FRONT (S.R. 434):	50 FT
SIDE:	0 FT
REAR:	0 FT

REQUIRED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
FRONT (S.R. 434):	12 FT
SIDE:	10 FT
REAR:	10 FT

PROVIDED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
FRONT (S.R. 434):	12 FT
SIDE:	0 FT
REAR:	0 FT

OVERALL SITE DATA:

PROJECT AREA:	52,833 SQ. FT (1.21 AC)
ZONING:	T-5 URBAN CENTER ZONE
PARCEL ID:	36-20-30-502-0000-0090
FUTURE LAND USE:	COMMERCIAL
PROPOSED USE:	COMMERCIAL
MINIMUM BUILDING HEIGHT:	2-STORIES
MAXIMUM BUILDING HEIGHT:	5-STORIES

ABUTTING PARCEL DATA:

ADJACENT PARCEL ID:	ZONING	FUTURE LAND USE
36-20-30-502-0000-0080	T-5 URBAN CENTER ZONE	COMMERCIAL
01-21-30-5VK-0000-0040	T-5 URBAN CENTER ZONE	COMMERCIAL
01-21-30-5VK-0C00-0000	T-5 URBAN CENTER ZONE	COMMERCIAL

BUILDING COVERAGE:

PROPOSED FLOOR AREA:	
WAWA:	4,736 SF
TOTAL FLOOR AREA:	4,736 SF
F.A.R. (4,736 SF/52,833 SF)	0.20
MAXIMUM ALLOWABLE F.A.R.	1.0 MAXIMUM

OVERALL IMPERVIOUS CALCULATIONS

MAXIMUM IMP. AREA (PER DRAINAGE CALCS):	1.02 AC
BUILDING AREA:	0.24 AC (9.0%)
PAVEMENT AREA:	0.78 AC (50.8%)
TOTAL IMPERVIOUS AREA:	1.02 AC (84.3%)
TOTAL OPEN SPACE:	0.19 AC (15.7%)

REQUIRED PARKING:

FROM PARKING STUDY:	
WAWA PARKING:	50 SPACES
TOTAL PARKING SPACES REQUIRED:	50 SPACES

PROVIDED PARKING:

REGULAR SPACES (10'X20'):	38 SPACES
ADA SPACES (ALL VAN ACCESSIBLE):	2 SPACES
OFF-SITE EMPLOYEE PARKING: (UNDER SEPARATE PERMIT)	10 SPACES
TOTAL PARKING SPACES PROVIDED:	50 SPACES

REQUIRED BICYCLE PARKING:

FROM TRAFFIC IMPACT ANALYSIS: 1 SPACE PER 5,000 SF OR 2 SPACES MIN.	2 SPACES
TOTAL PARKING SPACES REQUIRED:	2 SPACES

PROVIDED BICYCLE PARKING:

WAWA – GAS STATION/CONVENIENCE STORE	2 SPACES
TOTAL BICYCLE PARKING SPACES:	2 SPACES

LANDSCAPING

ALL LANDSCAPING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE

SITE SIGNAGE

PERMANENT SITE SIGNAGE WILL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE.

REGULATORY SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH MUTCD (2009 ED.) AND FDOT DESIGN STANDARDS (LATEST ED.)

STORMWATER MANAGEMENT

STORMWATER RUNOFF FOR THE PROPOSED ONSITE IMPROVEMENTS WILL BE MANAGED THROUGH THE EXISTING WET DETENTION, DRY DETENTION, AND EXFILTRATION STORMWATER MANAGEMENT SYSTEM WHICH HAS BEEN DESIGNED TO MEET THE CITY OF WINTER SPRINGS CODE AND THE REQUIREMENTS OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD).

100-YEAR FLOOD PLAIN

THE PROPERTY IS LOCATED OUTSIDE THE FLOODPLAIN WITHIN "ZONE X" – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN – PER FEMA FIRM, MAP NUMBER 12117C0160F, REVISED ON SEPTEMBER 28, 2007.

PHASING

ALL SITE WORK AND INFRASTRUCTURE WILL BE COMPLETED IN ONE (1) PHASE

GENERAL NOTES:

1. HANDICAP ACCESSIBLE PARKING SPACES AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE (2012 ED.).
2. HANDICAP ACCESSIBLE PARKING SPACES PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH FDOT INDEX #711-001, SHEET 12 (LATEST ED.).
3. ALL LANDSCAPE ISLANDS CURB RADII ARE 5-FT UNLESS OTHERWISE NOTED.
4. TYPICAL AT ALL INTERNAL ON SITE INTERSECTIONS (PRIVATE), UNLESS OTHERWISE NOTED: PROVIDE 24" WHITE STOP BAR WITH 24" STOP SIGN
5. PEDESTRIAN CIRCULATION – SIDEWALKS, SIDEWALK CROSSINGS, RAMPINGS (PEDESTRIAN ACCESS SHALL CONNECTION EACH OF THE BUILDINGS TO ONE ANOTHER AN SHALL CONNECT TO THE RIGHT-OF-WA UTILIZING ALTERNATIVE PAVEMENT THROUGHOUT – PAINT/THERMOPLASTIC IS NOT ACCEPTABLE). PEDESTRIAN CROSSWALKS SHALL BE OF CONTRASTING MATERIALS OR TEXTURED OR STAMPED CONCRETE OR ASPHALT TO GIVE THE APPEARANCE OF CONTRASTING MATERIALS. PLEASE REFER TO SHEET C9.0 FOR DETAILS.

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn

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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER
CORY N. SMITH
STATE OF FLORIDA
No. 97...
PROFESSIONAL ENGINEER
DATE

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

SITE PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C4.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:SITE PLAN September 02, 2025 02:15:19pm K:\od_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C4.0 SITE PLAN.dwg
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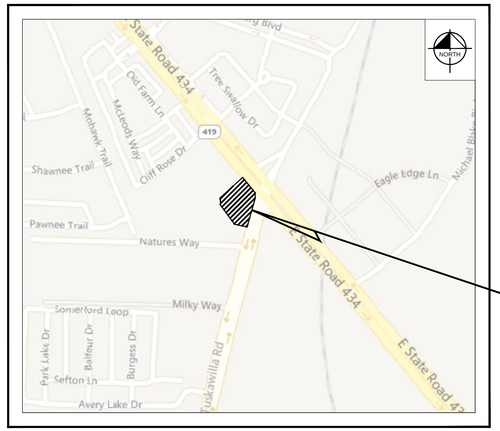


SITE

LOCATION MAP
N.T.S.

CONSTRUCTION PLANS

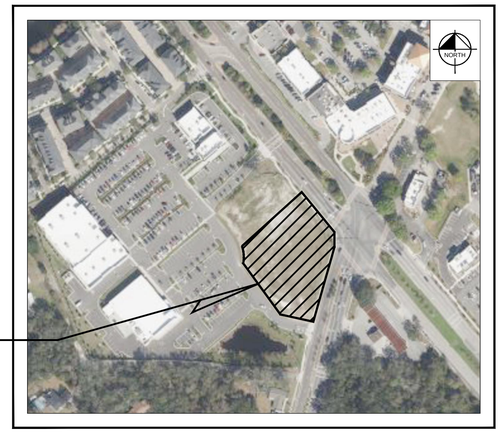
FOR

Wawa

AUGUST 2025

CITY OF WINTER SPRINGS, FL

PROPERTY INFO:
XXX
ORLANDO, FL 32708
PARCEL ID. 36-20-30-502-0000-0090



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AERIAL PHOTOGRAPH
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Wawa Store # XXX

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C9.3	GENERAL CONSTRUCTION DETAILS
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C10.0	UTILITY DETAILS
C10.1	UTILITY DETAILS
C10.2	UTILITY DETAILS
L1.00	LANDSCAPE PLAN
L1.50	LANDSCAPE DETAILS
L1.51	LANDSCAPE SPECIFICATIONS
L2.00	IRRIGATION PLAN
L2.50	IRRIGATION DETAILS
L2.51	IRRIGATION NOTES

WINTER SPRINGS WAWA
K-H PROJECT# 249473000
08/28/25

Cory N. Sitler, P.E., State of Florida, Professional Engineer, License No. 89984

This item has been digitally signed and sealed by Cory N. Sitler, P.E. on the date indicated here.

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Digitally signed by Cory N Sitler
DN: CN=Cory N. Sitler, serialNumber=A01410D000000181FD306CF80006C186, OU=KIMLEY-HORN AND ASSOCIATES, C=US
Date: 2025.08.29 11:15:36-04'00'

CORY N. SITLER LICENSE No. 89984 STATE OF FLORIDA PROFESSIONAL ENGINEER

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1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

SHEET NUMBER
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Drawing name: K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C0.0 COVER SHEET.dwg COVER SHEET Aug 29, 2025 9:21am by Arlene.LaRocque
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Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:GENERAL NOTES August 29, 2025 09:21:45am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C1.0 GENERAL NOTES.dwg
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GENERAL

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, SUCH AS DEWATERING PERMITS, RIGHT OF WAY PERMIT(S), EXCAVATION/FILL PERMIT(S), FIRE PROTECTION PERMIT(S), OR UNDERGROUND UTILITY PERMIT(S), PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA OF APPLICABLE AGENCIES, SCHEDULING OF INSPECTIONS, AND OBTAINING REQUIRED INSPECTIONS FROM AGENCY.
2. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE EXISTING UTILITY INFORMATION SHOWN IS BASED ON THE TOPOGRAPHIC SURVEY PROVIDED BY IRELAND & ASSOCIATES AND SURVEYING, INC. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS AREA PRIOR TO CONSTRUCTION WORK. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OF THE SURVEY. SHOULD A DISCREPANCY ARISE BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, WHICH WOULD APPRECIABLY AFFECT THE EXECUTION OF THESE PLANS, THE CONTRACTOR SHALL HALT CONSTRUCTION AND NOTIFY THE OWNER, ENGINEER, AND APPLICABLE GOVERNING AGENCY IMMEDIATELY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING (HORIZONTALLY AND VERTICALLY) ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES (DURING STANDARD BUSINESS HOURS) TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISTRIBUTION SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANY (DURING STANDARD BUSINESS HOURS) DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE–CALL OF FLORIDA) BY CALLING 800–432–4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.
4. ALL DISTURBED AREAS (ON–SITE AND/OR OFF–SITE) NOT DESIGNED OR NOTED TO BE LANDSCAPED OR SODDED, SHALL BE MULCHED AND SEEDED.
5. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES, OR GRADING SECTIONS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION OR REMOVAL IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUB–CONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.
6. ALL WORK AND MATERIALS FURNISHED SHALL BE IN CONFORMITY WITH THE LINES, GRADES, GRADING SECTIONS, CROSS SECTIONS, DIMENSIONS, MATERIAL REQUIREMENTS, AND TESTING REQUIREMENTS THAT ARE SPECIFIED IN THE CONTRACT PLANS OR SPECIFICATIONS.
7. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION, AS APPLICABLE AT THE TIME ALL PERMITS HAVE BEEN OBTAINED.
8. ALL UNDERGROUND UTILITIES MUST BE IN–PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.
9. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.
10. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR REVIEW.

    SHOP DRAWINGS OF ALL DRAINAGE STRUCTURES, MATERIALS, AND COMPONENTS TO BE INSTALLED WITHIN CITY OF WINTER SPRINGS PUBLIC RIGHTS–OF–WAY, SHALL BE SUBMITTED TO THE CITY OF WINTER SPRINGS FOR REVIEW AND APPROVAL. UPON ENGINEER OR RECORD'S COMPLETION OF REVIEW AND APPROVAL OF SHOP DRAWINGS FOR WORK WITHIN THE CITY OF WINTER SPRINGS'S JURISDICTION THE ENGINEER OF RECORD SHALL COORDINATE SHOP DRAWING SUBMITTALS TO THE CITY OF WINTER SPRINGS FOR THEIR REVIEW AND APPROVAL.
11. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.
12. THE CONTRACTOR SHALL RESTORE OFF–SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.
13. THE CONTRACTOR SHALL COMPLY WITH THE LEGAL LOAD RESTRICTIONS IN HAULING OF MATERIALS IN PUBLIC ROADS BEYOND THE LIMITS OF WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR THE DAMAGE WHICH MAY RESULT FROM THE MOVING OF MATERIAL AND EQUIPMENT.
14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA.
15. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
16. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE THE LATEST EDITION OF F.D.O.T. "DESIGN STANDARD PLANS FOR ROAD CONSTRUCTION" (ED. 2025–26) FOR DETAILS AND SPECIFICATIONS OF ALL CURB AND GUTTERS CALLED FOR IN THESE PLANS WITHIN PUBLIC RIGHTS OF WAY.
17. WHERE ASPHALT PAVING MEETS CONCRETE PAVING SUCH AS AT CONCRETE CURBING, THE ASPHALT SHOULD BE FINISHED $\frac{1}{4}$" TO $\frac{1}{2}$" ABOVE THE CONCRETE SURFACE TO ALLOW FOR FURTHER TRAFFIC COMPACTION OF THE ASPHALT.
18. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE SOIL AND/OR PAVEMENT TESTING WITH THE GEOTECHNICAL ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE GEOTECHNICAL SOILS REPORT. UPON COMPLETION OF WORK, THE GEOTECHNICAL ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
19. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN OUT MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
20. ALL CONCRETE SIDEWALKS SHALL BE CONSTRUCTED PER FDOT DESIGN INDEX (ED. 2025/2026) #522–001. (1)
21. SITEWORK SHALL COMPLY WITH 2023 FLORIDA BUILDING CODE AND FLORIDA ACCESSIBILITY CODE.
22. ANY EXISTING WELLS (I.E. ARTESIAN, IRRIGATION, DRINKING, ETC.) DISCOVERED ON–SITE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL APPLICABLE JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED AND SHALL COPY THE CITY OF WINTER SPRINGS ON ANY WELL ABANDONMENT PERMITS.
23. . ANY WELL DISCOVERED DURING EARTHWORK OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES, OWNER, AND OWNER'S ENGINEER WITHIN 24 HOURS AFTER DISCOVERY IS MADE.

TREES AND VEGETATION

1. THE CONTRACTOR IS TO MINIMIZE THE REMOVAL OF VEGETATION TO THE GREATEST EXTENT PRACTICAL. NO TREES SHALL BE REMOVED OR DAMAGED WITHOUT OWNER'S APPROVAL. TREES IN CLOSE PROXIMITY TO CONSTRUCTION SHALL BE PROTECTED BY ORANGE FENCING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS AND RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
3. REFER TO LANDSCAPE PLANS FOR DETAILS REGARDING TREE REMOVAL AND TREE PRESERVATION.

PAVEMENT MARKING AND SIGNAGE

1. THE INSTALLATION, SHAPE, AND SIZE OF ALL SIGNS AND THEIR LETTERING SHALL COMPLY WITH THE LATEST EDITIONS OF THE U.S. DEPARTMENT OF TRANSPORTATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, ED. 2023" (MUTCD), AND THE F.D.O.T. "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ED. 2024", AND THE F.D.O.T. "DESIGN STANDARDS, ED. 2025/2026". WHERE CONFLICTS EXIST BETWEEN THE PLANS AND THE ABOVE MENTIONED SPECIFICATIONS, THE MORE STRINGENT CRITERIA SHALL PREVAIL.
2. STOP BARS AND STOP SIGNS ARE TO BE PROVIDED AT ALL INTERNAL, ONSITE INTERSECTIONS, WITH THE EXCEPTION OF SIGNALIZED INTERSECTIONS (UNLESS OTHERWISE NOTED). (1)
3. ALL PAVEMENT MARKINGS SHALL COMPLY WITH F.D.O.T. STANDARD INDEX #711–001 (ED. 2025/2026).

STORM DRAINAGE SYSTEM

1. THE LATEST EDITION OF F.D.O.T. "DESIGN STANDARDS" (ED. 2025/2026) IS REFERRED TO FOR THE STRUCTURAL DESIGN OF DRAINAGE STRUCTURES SPECIFIED IN THESE PLANS, AS REFERENCED BY STANDARD INDEX. ALL SPECIALTY DRAINAGE STRUCTURES REQUIRE SEPARATE STRUCTURAL DESIGN, WHICH IS NOT INCLUDED IN THESE PLANS. STATION OFFSETS ARE TO THE CENTERLINE OF THE STRUCTURE TOP (I.E. DITCH BOTTOM INLET OR CURB INLET TOP), AS OPPOSED TO THE STRUCTURE BASE. (1)
2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C–76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.
3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS. LENGTHS OF PIPE SHOWN WHICH TERMINATE WITH MITERED END OR FLARED END SECTIONS ARE MEASURED TO THE DOWNSTREAM INVERT OF THE MITERED END OR FLARED END SECTION.
4. ALL DRAINAGE STRUCTURE GRATES AND COVERS, EITHER EXISTING OR PROPOSED SHALL BE TRAFFIC RATED FOR H–20 LOADINGS.
5. CONSTRUCTION OF THE STORM WATER MANAGEMENT SYSTEM MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
6. STORM WATER PIPES, STRUCTURES, MINIMUM COVER, AND INSTALLATION PROCEDURES TO BE IN ACCORDANCE WITH F.D.O.T. AND THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS.
7. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE. (1)
8. ALL DRAINAGE PIPES SHALL BE FILTER FABRIC WRAPPED PER FDOT STANDARD DESIGN INDEX (ED. 2025/2026) #430–001.
9. THE CONTRACTOR SHALL MAINTAIN AND PROTECT THE STORMWATER COLLECTION SYSTEM (INLETS, PIPES) FROM EXCESSIVE MUD, SILT, DIRT, DEBRIS, TRASH, ETC. UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE INSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL CLEAN AND FLUSH STORM PIPES AND INLETS OF ALL EXCESSIVE SILT, DEBRIS, ETC. THE CITY OF WINTER SPRINGS SHALL BE NOTIFIED OF THE FINAL INSPECTION OF THE STORMWATER SYSTEM SHOULD A REPRESENTATIVE WANT TO ATTEND.

SAFETY

1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATIONS ARE LONGER THAN DAYTIME OPERATIONS.

FDOT

(1)

1. ALL CONSTRUCTION METHODS AND MATERIALS SHALL COMPLY WITH THE LATEST EDITIONS OF THE DESIGN STANDARDS, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE UTILITY ACCOMMODATION MANUAL (UAM).
2. ALL R/W DISTURBED BY THIS WORK SHALL BE RESTORED TO ITS ORIGINAL CONDITION OR BETTER AND IN ACCORDANCE WITH APPLICABLE FDOT SPECIFICATIONS. ALL DISTURBED AREAS MUST BE SODDED, MATCHING EXISTING GRASS TYPE.
3. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR/SUBCONTRACTOR AT HIS SOLE EXPENSE AND ANY DELAY INCURRED SHALL NOT BE CAUSE FOR AN EXTENSION IN THE TIME OF THE CONTRACT.
4. ALL PROPOSED SURFACES SHALL BE GRADED TO DRAIN POSITIVELY TO ASSURE NO LOW POINTS HAVE BEEN CREATED, NO FLOODING TO ADJACENT PROPERTIES WILL OCCUR, SMOOTH SURFACES ARE MAINTAINED, AND NO STEEP OR UNUSUAL SLOPES ARE CREATED.

DEMOLITION

1. CONTRACTOR SHALL SUBMIT DEMOLITION SCHEDULE TO OWNER PRIOR TO PROCEEDING WITH DEMOLITION ACTIVITIES.
2. EXTENT OF SITE CLEARING IS SHOWN ON DRAWINGS.
3. CONTRACTOR SHALL CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
4. CONTRACTOR SHALL PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "EXISTING TO REMAIN".
5. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
6. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF–SITE IN A LEGAL MANNER.
7. CONTRACTOR SHALL DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED".
8. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.

DEWATERING NOTES

1. DURING THE EXCAVATION OF THE STORMWATER FACILITIES, AND IF GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL CONSTRUCT A SEDIMENT BASIN TO PROVIDE A DISCHARGE POINT FOR DEWATERING. THE SEDIMENT BASIN CAN BE IN THE PROPOSED EXCAVATION AREA OF A POND OR IT CAN BE A BERMED AREA ABOVE GROUND. ALL DEWATERING MUST BE HELD IN THE SEDIMENT AREA UNTIL THE WATER IS CLEAN SUCH THAT THERE WOULD BE NO TURBID DISCHARGE. AFTER THE WATER IN THE SEDIMENT BASIN IS CLEAN, THE WATER MAY BE RELEASED INTO THE ON–SITE POND PROVIDED THERE IS NO ADVERSE IMPACT TO THE EXISTING WATER QUALITY.
2. UNDER NO CIRCUMSTANCES WILL THE DISCHARGE FROM THE ON–SITE DEWATERING BE DIRECTLY DISCHARGED OFFSITE.
3. IF CONTRACTOR ENCOUNTERS SILTY/CLAY SAND, WHICH CAUSES THE WATER TO BECOME TURBID, HE/SHE SHALL TREAT THE SEDIMENT BASIN WITH CHEMICAL ADDITIVE SUCH AS ALUM IN ORDER TO PROMOTE THE COAGULATION OF THE PARTICLES WHICH ALLOW THE TO SETTLE AND THE WATER TO BECOME LESS TURBID. IF TURBID WATER ENCOUNTERED DURING EXCAVATION OF THE PONDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY TO DETERMINE THE COURSE OF ACTION THAT IS APPROPRIATE TO ELIMINATE THE TURBIDITY AND ALLOW DISCHARGE THAT MEETS WATER QUALITY STANDARDS.
4. THE CONTRACTOR SHALL SEQUENCE THE EXCAVATION OF THE STORMWATER PONDS SUCH THAT A SEDIMENT BASIN WILL BE AVAILABLE AT ALL TIMES. THE SEDIMENT BASIN CAN BE RELOCATED AS NECESSARY SUBJECT TO THE WATER WITHIN THE SEDIMENT BASIN BEING NON–TURBID AND ACCEPTABLE FOR DISCHARGE OFF–SITE.

EARTHWORK / GRADING / DEMUCKING PROCEDURES

1. A GEOTECHNICAL ENGINEERING INVESTIGATION REPORT HAS BEEN PREPARED, OF WHICH COPIES ARE AVAILABLE THROUGH THE OWNER OR THEIR SOIL TESTING COMPANY. A GEOTECHNICAL ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PROVIDE ON–SITE INSPECTIONS DURING EXCAVATION/FILL OPERATIONS AND TESTING OF THE COMPACTED FILL SO THAT PROPER DOCUMENTATION OF THE REQUIRED COMPACTING CRITERIA CAN BE PROVIDED. THE CITY OF WINTER SPRINGS SHALL BE COPIED ON ALL INSPECTION REPORTS.
2. CONTRACTOR TO FOLLOW THE GUIDANCE OF THE REFERENCED GEOTECHNICAL ENGINEERING INVESTIGATION REPORT OR INDICATE WHETHER ON–SITE GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF DEMUCKING AND/OR REMOVAL OF UNSUITABLE FILL.
3. ALL EXISTING DEBRIS (ABOVE OR BELOW GROUND), CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF–SITE BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS IN A LEGAL MANNER.
4. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.
5. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE OWNER OR THEIR SOILS TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
7. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.
8. THE CONTRACTOR SHALL INSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR PLACEMENT OF ALL HEADWALL/ENDWALL FOOTINGS, RETAINING WALL FOOTINGS, AND IN GENERAL, ANY FOOTING SUPPORT DESCRIBED ON THESE PLANS. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SUFFICIENT SOILS TESTING HAS BEEN PERFORMED PRIOR TO FINAL INSTALLATION OF IMPROVEMENTS.
9. ANY UNSUITABLE ORGANIC SOIL SHALL BE EXCAVATED TO A MINIMUM MARGIN OF 6 FEET BEYOND ITS PERIPHERY EXCAVATED TO EXPOSE THE UNDERLYING NON–ORGANIC FINE SAND.
10. IF DETERMINED NECESSARY, DEWATERING DURING EXCAVATING/BACKFILLING OPERATIONS MAY BE ACCOMPLISHED BY DITCHING AND THE USE OF SUMP PUMPS AND/OR OTHER METHODS (WELL POINTS), AS NECESSARY. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FOR DEWATERING ACTIVITIES THAT MAY BE REQUIRED.
11. UPON APPROVAL OF THE GEOTECHNICAL ENGINEER, THE EXCAVATED AREAS MAY BE BACKFILLED WITH CLEAN FINE SAND FREE OF UNSUITABLE OR DELETERIOUS MATERIAL. HOWEVER, THE FILL SHOULD NOT BE PLACED IN MORE THAN 6 INCHES OF STANDING WATER. ONCE THE FILL IS AT LEAST 2 FEET ABOVE THE DEWATERED LEVEL, BACKFILLING MAY PROCEED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
12. SEDIMENT CONTROL MEASURES SHOULD BE EMPLOYED DURING THE CONSTRUCTION PROCESS TO KEEP THE POND FROM RECEIVING SIGNIFICANT AMOUNTS OF STORMWATER RUNOFF FROM THE SURROUNDING CONSTRUCTION SITE. THIS RUNOFF IS LIKELY TO CONTAIN SUSPENDED FINE–GRAINED SOIL PARTICLES THAT CAN IMPEDE THE INFILTRATION CAPACITY OF THE PONDS IF ALLOWED TO SETTLE OUT ON THE POND BOTTOMS. IF DEWATERING EFFLUENT OR STORMWATER RUNOFF FROM THE ACTIVE CONSTRUCTION SITE IS DISCHARGED TO THE POND, CONTRACTOR SHALL SCRAPE AND REMOVE FINE–GRAINED SEDIMENTS THAT HAVE ACCUMULATED ON THE POND BOTTOM, AND REPLACE WITH SUITABLE SOIL TO THE PLAN SPECIFIED GRADE ELEVATIONS. REQUIRED DEPTH OF SCRAPE AND REMOVAL SHALL BE DETERMINED BY GEOTECHNICAL ENGINEER.

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LICENSED PROFESSIONAL
CORY N. SITLER
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE:

KHA PROJECT	DATE	SCALE	DESIGNED BY	DRAWN BY	CHECKED BY
149170026	08/28/25	AS SHOWN	CNS	MMB	ADL

GENERAL NOTES

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C1.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:GENERAL NOTES (2) August 29, 2025 09:21:47am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C1.0 GENERAL NOTES.dwg
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F.D.O.T. RIGHT-OF-WAY WORK GENERAL NOTES

1. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
2. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES EXTEND INTO THE STABILIZED PORTION OF THE ROADBED AND EXTREME CAUTION WILL BE NECESSARY IN STABILIZATION OPERATIONS AT THESE LOCATIONS.
3. ALL DRAINAGE PIPES SHALL BE STEEL REINFORCED CONCRETE PIPE, CLASS III, UNLESS OTHERWISE NOTED.
4. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR, WITHOUT DELAY, BY TELEPHONE.
5. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH, UNLESS OTHERWISE SHOWN ON PLANS.
6. THE CONTRACTOR SHALL REMOVE ANY ORGANIC AND PLASTIC MATERIAL ENCOUNTERED IN THE FIELD IN ACCORDANCE WITH FDOT 2025/2026 STANDARD PLANS INDEX 120–002. COST OF REMOVAL OF ORGANIC AND PLASTIC MATERIAL AND BACKFILL OF SUITABLE MATERIAL IN ACCORDANCE WITH FDOT 2025/2026 STANDARD PLANS INDEX 120–001 SHALL BE INCLUDED IN THE COST OF REGULAR EXCAVATION.
7. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.
8. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
9. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE–CALL OF FLORIDA) BY CALLING 800–432–4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.
10. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND SURVEYS BUT IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATIONS OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND PROTECT EXISTING UTILITY FACILITIES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WITH UTILITY OWNERS.
11. ALL MAINTENANCE OF TRAFFIC (MOT) ITEMS REQUIRED IN ACCORDANCE WITH FDOT 2025/2026 STANDARD PLANS INDEX '102–' SERIES INDICES SHALL BE FURNISHED, INSTALLED, AND MAINTAINED TO PROPERLY MAINTAIN TRAFFIC AND ADDRESS DROP OFF CRITERIA IN THE WORK ZONE.
12. NO LANES CLOSED BETWEEN THE HOURS OF 6:00 AM TO 8:00 PM.
13. THE EXISTING POSTED SPEED LIMIT ON SR–434 WILL REMAIN DURING ALL PHASES OF CONSTRUCTION.
14. ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED BY THE CONTRACTOR PER INDEX 600 AND WHEN THE CONFLICT NO LONGER EXISTS THE SIGNS SHALL BE RESTORED TO THEIR ORIGINAL POSITION. COST SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC.
15. IF ONLY FDOT 2025/2026 STANDARD PLANS INDEX (SUCH AS #'S. 102–600, 102–611, 102–612, 102–613, 102–616, 102–660, ETC.) WILL BE USED, THEN THE CONTRACTOR WILL NOT BE REQUIRED TO PROVIDE SIGNED AND SEALED MAINTENANCE OF TRAFFIC (M.O.T.) PLANS. IF THE CONTRACTOR REQUIRES M.O.T. PLANS OTHER THAN THE 2025/2026 STANDARD PLANS INDICES, THEN THE CONTRACTOR WILL HAVE TO SUBMIT SIGNED AND SEALED PLANS TO FDOT FOR REVIEW AND APPROVAL.
16. MAINTENANCE OF TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH FDOT 2025/2026 STANDARD PLANS INDEX, 2023 FDOT DESIGN MANUAL (FDM), THE STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2024) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) (ED. 2009 AND 2012 SUPPLEMENT) AS A MINIMUM.
17. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION A MINIMUM OF TWO (2) BUSINESS DAYS PRIOR TO CLOSING ANY LANES OR BEGINNING ANY CONSTRUCTION WITHIN THE FDOT RIGHT–OF–WAY.
18. TEST RESULTS OF ANY TESTS TAKEN FOR OR DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE FDOT UPON REQUEST.
19. IF THE DEPARTMENT DETERMINES THAT AS–BUILT CONDITIONS VARY SIGNIFICANTLY FROM APPROVED PLANS, THE PERMITTEE OR THE PERMITTEE'S CONTRACTOR SHALL PROVIDE AS–BUILT PLANS, ALONG WITH A RECORD DRAWINGS REPORT BY PERMITTEE'S PROFESSIONAL ENGINEER, FORM 850–040–19, WITHIN 30 DAYS OF COMPLETING CONSTRUCTION.
20. ALL DISTURBED AREAS WITHIN FDOT RIGHT–OF–WAY MUST BE SODDED ONLY WITH COMMON BERMUDA SOD.
21. CONTRACTORS CERTIFICATE OF LIABILITY INSURANCE MUST BE ISSUED PRIOR TO STARTING CONSTRUCTION IN FDOT RIGHT–OF–WAY.
22. MAINTENANCE OF TRAFFIC:
    a. FOR WORK WITHIN FDOT RIGHT–OF–WAY, THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRAFFIC CONTROL PLAN PREPARED UNDER THE DIRECTION OF, AND SIGNED AND SEALED BY, A LICENSED FLORIDA PROFESSIONAL ENGINEER WHO IS EXPERIENCED IN PREPARING TRAFFIC CONTROL PLANS AND WHO IS CERTIFIED PER FDOT PROCEDURE, TOPIC NO. 625–010–010.
    b. FOR WORK WITHIN FDOT RIGHT–OF–WAY, THE FDOT REQUIRES DOCUMENTATION FOR SUCCESSFUL COMPLETION OF AN APPROVED WORK ZONE TRAFFIC CONTROL TRAINING COURSE FOR THE AGENCY, UTILITY, OR CONTRACTOR EMPLOYEE(S) DESIGNING, INSTALLING, AND/OR MAINTAINING THE APPROVED MAINTENANCE OF TRAFFIC PLAN IN ACCORDANCE WITH DEPARTMENT PROCEDURE, TOPIC NO. 625–010–010.
    c. ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR THE FOLLOWING FACILITIES SHALL BE DESIGNED AND INSTALLED TO MEET THE EXISTING POSTED SPEEDS AS STATED FOR ALL TRAFFIC CONTROL PHASES: SR–434 – 50 MPH
23. ALL WORK PERFORMED WITHIN FDOT RIGHT–OF–WAY SHALL BE IN ACCORDANCE WITH FDOT 2020 STANDARD PLANS INDEX, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2024) ND THE UTILITY ACCOMMODATION MANUAL (ED. 2017).
24. IT WILL BE THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY CONSTRUCTION OF THE PROJECT.
25. ALL SIDEWALK CLOSURES SHALL ABIDE TO THE STANDARD PROCEDURES PER FDOT 2025/2026 RD PLANS INDEX 102–660.
26. ALL CONCRETE SIDEWALKS SHALL BE CONSTRUCTED PER FDOT 2025/2026 STANDARD PLANS INDEX 522–001 & 522–002.
27. ALL ROADWAY SIGNAGE AND/OR SIGNAGE COLUMS/POSTS LOCATED WITHIN RIGHT–OF–WAY IMPACTED BY PROPOSED IMPROVEMENTS SHALL BE ADJUSTED AND/OR RE–INSTALLED IN ACCORDANCE WITH 2025/2026 STANDARD PLANS INDEX AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2024).
28. A COPY OF THE FDOT PERMIT FOR WORK WITHIN THE SR 434 ROW SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS.

PAVING, GRADING AND DRAINAGE

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS, ETC.) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OF RECORD OR THE OWNERS ENGINEERS. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS AND PER THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.
4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED.
5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.
6. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE 2025/2026 EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.
8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.
9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER POURED)
10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #711–001.
11. THE CONTRACTOR WILL STABILIZE BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.
12. THE CONTRACTOR SHALL RESTORE OFF–SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.
13. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES.
14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A REGISTERED LAND SURVEYOR AT CONTRACTORS EXPENSE.
15. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.
16. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND JURISDICTIONAL PERMITTING AGENCIES.
17. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN–OUTS, MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.

PAVING/GRADING TESTING AND INSPECTION

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE SOILS REPORT. UPON COMPLETION OF WORK THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN–PLACE MATERIALS AS REQUIRED BY THESE PLANS AND GEOTECHNICAL REPORT, THE VARIOUS AGENCIES AND PERMIT CONDITIONS. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THESE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.
3. A COPY OF ALL TESTING REPORTS SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS.

POTABLE WATER SYSTEM

1. POTABLE WATER SERVICE SHALL BE PROVIDED BY THE CITY OF WINTER SPRINGS. THE WATER DISTRIBUTION SYSTEM SHOWN ON THESE PLANS SHALL BE INSTALLED AND CONSTRUCTED PER THE CITY OF WINTER SPRINGS STANDARDS & SPECIFICATIONS. ONSITE WATER DISTRIBUTION SYSTEM SHALL BE PRIVATELY OWNED AND MAINTAINED AFTER COMPLETION OF CONSTRUCTION, CERTIFICATION, AND CLEARANCE BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP).

POTABLE WATER TESTING AND INSPECTION

1. ALL COMPONENTS OF THE WATER SYSTEM, INCLUDING FITTINGS, HYDRANTS, CONNECTIONS, AND VALVES SHALL BE PRESSURE TESTED AND ACCEPTED BY THE OWNER'S ENGINEER OR UTILITY INSPECTOR. PRESSURE TESTS TO BE IN ACCORDANCE WITH F.D.E.P. SPECIFICATIONS AND THE CITY OF WINTER SPRINGS CONTRACTOR TO NOTIFY THE OWNER'S ENGINEER AND APPLICABLE AGENCY INSPECTORS TWO (2) FULL BUSINESS DAYS IN ADVANCE OF PERFORMING TESTS.
2. CONTRACTOR TO PERFORM CHLORINATION AND BACTERIOLOGICAL SAMPLING, AND OBTAIN CLEARANCE OF DOMESTIC AND FIRE LINE WATER SYSTEM(S). COPIES OF ALL BACTERIOLOGICAL TEST RESULTS ARE TO BE SUBMITTED TO THE OWNER'S ENGINEER FOR CERTIFICATION PURPOSES.
3. ALL WATER MAINS SHALL BE PRESSURE TESTED IN ACCORDANCE WITH AWWA MANUAL M23, CONCERNING HYDROSTATIC TESTING OF PVC PIPING. ALL PUBLIC UTILITIES HYDROSTATIC TESTING TO BE WITNESSED BY THE CITY OF WINTER SPRINGS INSPECTOR.
4. THE CITY OF WINTER SPRINGS SHALL BE NOTIFIED ABOUT THE TESTING SO THAT THEY MAY WITNESS. COPIES OF ALL TESTING REPORTS SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS. A COPY OF THE FDEP CLEARANCE CERTIFICATE SHALL ALSO BE FURNISHED TO THE CITY OF WINTER SPRINGS.

SANITARY SYSTEM

1. SANITARY WASTEWATER SERVICE SHALL BE PROVIDED BY THE CITY OF WINTER SPRINGS. THE WASTEWATER COLLECTION SYSTEM SHOWN ON THESE PLANS SHALL BE INSTALLED BY THE CONTRACTOR, AND CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS. ONSITE WASTEWATER COLLECTION SYSTEM SHALL BE PRIVATELY OWNED AND MAINTAINED AFTER COMPLETION OF CONSTRUCTION, CERTIFICATION, AND CLEARANCE BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP).

SANITARY TESTING AND INSPECTION

1. ALL GRAVITY SEWER PIPING SHALL BE SUBJECT TO A VISUAL INSPECTION BY THE OWNER'S ENGINEER AND APPLICABLE MUNICIPALITY/AGENCY INSPECTOR. THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS IN ADVANCE TO SCHEDULE INSPECTION(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR COSTS ASSOCIATED WITH A CLOSED CIRCUIT TELEVISED INSPECTION (CCTV) OF THE PROPOSED GRAVITY SEWER LINE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE COPIES OF THE CCTV INSPECTION TAPE TO THE ENGINEER, THE OWNER, AND THE APPLICABLE MUNICIPALITY/AGENCY.
2. THE CONTRACTOR SHALL PERFORM AN INFILTRATION/EXFILTRATON TEST ON ALL GRAVITY SEWERS IN ACCORDANCE WITH THE REGULATORY AGENCY HAVING JURISDICTION. SAID TESTS ARE TO BE CERTIFIED BY THE ENGINEER OF RECORD AND SUBMITTED TO THE REGULATORY AGENCY FOR APPROVAL. THE SCHEDULING, COORDINATION AND NOTIFICATION OF ALL PARTIES IS THE CONTRACTOR'S RESPONSIBILITY.
3. LEAKAGE TESTS ARE SPECIFIED REQUIRING THAT:
    A. THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM.
    B. EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET
    C. AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C–828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F–1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES.
4. CONTRACTOR TO PERFORM APPROPRIATE DEFLECTION TESTS FOR ALL FLEXIBLE PIPE. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL–PIPE SYSTEM. TESTING REQUIREMENTS SPECIFY:
    A. NO PIPE SHALL EXCEED A DEFLECTION OF 5%.
    B. USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATION, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURED.
    C. PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES.
5. CONTRACTOR TO INSPECT & TEST MANHOLE FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE. AIR TESTING, IF SPECIFIED FOR CONCRETE SEWER MANHOLES, SHALL CONFORM TO THE TEST PROCEDURES DESCRIBED IN ASTM C–1244.
6. THE CITY OF WINTER SPRINGS SHALL BE NOTIFIED ABOUT THE TESTING SO THAT THEY MAY WITNESS. COPIES OF ALL TESTING REPORTS SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS. A COPY OF THE FDEP CLEARANCE CERTIFICATE SHALL ALSO BE FURNISHED TO THE CITY OF WINTER SPRINGS.

CONTRACTOR'S AS-BUILT

1. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS–BUILT" INFORMATION, CERTIFIED BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA. AT A MINIMUM, THIS "AS–BUILT" INFORMATION SHALL INCLUDE: TOP OF PIPE/INVERT ELEVATIONS AND HORIZONTAL LOCATIONS OF ALL WATER, SANITARY SEWER, AND RECLAIM WATER UTILITIES INSTALLED (AS APPLICABLE); PAVEMENT GRADE BREAK LOCATIONS AND SUFFICIENT ELEVATIONS OF FINISHED GRADE SURFACES WHICH ALLOW THE ENGINEER TO DETERMINE COMPLIANCE WITH THE PROPOSED DESIGN; TOP, GRATE, & INVERT ELEVATIONS OF THE STORMWATER COLLECTION SYSTEM, INCLUDING THE POND GRADES (TOP, BANK, BOTTOM), POND CONTROL STRUCTURE, & SWALES; ANY IMPROVEMENTS WITHIN FDOT OR COUNTY RIGHT–OF–WAYS.
2. THE DIGITAL "AS–BUILT" FILE, PROVIDED IN AUTOCAD FORMAT, SHALL ALSO BE PROVIDED IN THE FLORIDA STATE PLANE COORDINATE SYSTEM. NO ENGINEER'S CERTIFICATIONS OF COMPLETION OR REQUESTS FOR FINAL ACCEPTANCE WILL BE SUBMITTED UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.
3. SURVEYOR AS–BUILT SHALL CONTAIN COMPLETED ASSET TABLE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS UTILITY STANDARDS AND SPECIFICATIONS.

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn

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LICENSED PROFESSIONAL
CORY N. SITLER
LICENSE 89984
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE: 08/28/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

GENERAL NOTES

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C1.1

STORMWATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

PROJECT NAME AND LOCATION
WINTER SPRINGS MARKETPLACE
TAX PARCEL: 36-20-30-502-0000-0090
CITY OF WINTER SPRINGS, FL

*SEE COVER SHEET FOR LOCATION MAP

DEVELOPER NAME AND ADDRESS

TUSKAWILLA PROPERTY INVESTORS, LLC
630 SOUTH MAITLAND AVE., SUITE 100
MAITLAND, FL 32751
CONTACT: RYAN STAHL
PHONE: (407) 628-0277
EMAIL: RSTAHL@EQUINOX-DEVELOPMENT.COM

PROJECT DESCRIPTION

THIS PROJECT IS TO DEVELOP A WAWA GAS STATION/ CONVENIENCE STORE AS PART OF WINTER SPRINGS MARKET PLACE COMMERCIAL PROPERTY. SITE IS LOCATED AT SOUTHWEST CORNER OF INTERSECTION OF TUSKAWILLA RD AND SR-434 IN WINTER SPRINGS, SEMINOLE COUNTY, FL.

PROJECT AREA: 1.21 ACRES
CONTRIBUTING DRAINAGE AREA: 1.22 ACRES

CONTROL STRUCTURE :

CS-A

LONGITUDE : 81°15'47.15"W LATITUDE: 28°41'44.62"N

CS-B

LONGITUDE : 81°15'46.94"W LATITUDE: 28°41'44.98"N

CS-C

LONGITUDE : 81°15'49.30"W LATITUDE: 28°41'46.20"N

ULTIMATE RECEIVING WATERS: LAKE JESSUP via MASTER SYSTEM

ACTIVITIES THAT REQUIRE EROSION CONTROL

SITE CLEARING AND GRUBBING; PROVIDING A STABILIZED CONSTRUCTION ENTRANCE, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; EXCAVATION FOR THE RETENTION POND; SITE GRADING; INSTALLATION OF STORM WATER, SANITARY SEWER, AND WATER STRUCTURES; CURB, ROADWAYS, AND PARKING FACILITIES.

*SEE PLANS FOR THE LOCATION OF TEMPORARY SEDIMENT BARRIERS AND OTHER EROSION CONTROL METHODS.

SOIL PARAMETERS

SOIL TYPES:

SERIES NAME	HYDROLOGIC GROUP
PAOLA–ST. LUCIE SANDS, 0 TO 5 PERCENT SLOPES	A
TAVARES–MILLHOPPER FINE SANDS, 0 TO 5 PERCENT SLOPES	A

SEQUENCE OF MAJOR ACTIVITIES

THE ORDER OF CONSTRUCTION IS AS FOLLOWS:

1. PROVIDE STABILIZED CONSTRUCTION ENTRANCE
2. INSTALL SILT FENCES AND OTHER EROSION CONTROL METHODS
3. CLEAR AND GRUB FOR SEDIMENT BASIN AND EARTH DIKE
4. CONSTRUCT EARTH DIKE AND SEDIMENT BASIN
5. FINISH CLEARING AND GRUBBING
6. REMOVE AND STORE TOPSOIL
7. PROVIDE INITIAL GRADING AS REQUIRED
8. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE
9. INSTALL UTILITIES, STORM SEWER, CURB AND GUTTER
10. INSTALL BASE TO ROAD AND PARKING AREA
11. FINISH GRADING ENTIRE SITE
12. CONSTRUCT FINAL PAVING
13. REMOVE ACCUMULATED SEDIMENT
14. REMOVE ANY ITEMS THAT ARE NOT REQUIRED

TIMING OF CONTROL MEASURES

THE INSTALLATION OF SILT FENCE (AND OTHER EROSION CONTROL MEASURES), A STABILIZED ENTRANCE AND SEDIMENT BASIN SHALL OCCUR PRIOR TO CLEARING AND GRUBBING ACTIVITY. AFTER CONSTRUCTION IS COMPLETE, THE ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE AREAS SHALL BE REGRADED AND PERMANENTLY STABILIZED AS SHOWN ON THE PLANS.

EROSION AND SEDIMENT CONTROLS

BEST MANAGEMENT PRACTICES SHALL BE USED FOR THIS PROJECT TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN-OFF. THE LOCATION AND DETAILS OF EROSION CONTROL METHODS ARE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING THESE CONTROL METHODS AS SHOWN ON THE PLANS OR AS REQUIRED. HE/SHE SHALL ALSO PROVIDE THE REQUIRED EROSION PROTECTION AS REQUIRED BY LOCAL, STATE AND FEDERAL LAW.

STORM WATER MANAGEMENT

STORM WATER COLLECTION SHALL BE MANAGED BY A EXISTING WET AND DRY MASTER STORMWATER MANAGEMENT SYSTEM. THE POND SYSTEM WAS PREVIOUSLY DESIGNED TO MEET OR EXCEED ALL THE REQUIREMENTS OF ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND CITY OF WINTER SPRINGS, FL.

STABILIZATION PRACTICES:

TEMPORARY STABILIZATION - TOPSOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE, SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THE TEMPORARY SEED REQUIRED CAN BE FOUND IN TABLE 1.65 A OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, WHERE SOILS ARE ACIDIC 2 TONS OF PULVERIZED AGRICULTURAL LIMESTONE SHOULD BE ADDED PER ACRE AND 450 POUNDS OF 10-20-20 FERTILIZER SHALL BE APPLIED TO EACH ACRE. AFTER SEEDING, EACH AREA SHALL BE IMMEDIATELY MULCHED WITH STRAW OR EQUIVALENT EQUAL. AREAS OF THE SITE WHICH ARE TO BE PAVED SHALL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILE AND STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE APPROPRIATE PERMANENT SEED MIX CAN BE FOUND IN TABLES 1.66A, 1.66B AND 1.66C OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, 2 TONS/ACRE OF FINELY GROUND AGRICULTURAL LIMESTONE AND THE PROPER FERTILIZER BASED ON THE TYPE OF SEEDING SHALL BE APPLIED TO EACH ACRE TO PROVIDE PLANT NUTRIENTS. AFTER SEEDING, EACH AREA SHALL BE MULCHED IMMEDIATELY. ALL RETENTION/DETENTION BASINS SHALL BE SODDED AT LEAST TO THE NORMAL WATER LINE. ALL EXPOSED AREAS WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE SOLID SODDED, OTHER AREAS WITH SLOPES STEEPER THAN 4:1 SHALL BE SODDED.

STRUCTURAL PRACTICES:

EARTH DIKE - IF REQUIRED, AN EARTH DIKE SHALL BE CONSTRUCTED ALONG THE SITE PERIMETER. A PORTION OF THE DIKE SHALL DIVERT RUN-ON AROUND THE CONSTRUCTION SITE. THE REMAINING PORTION OF THE DIKE SHALL COLLECT RUNOFF FROM THE DISTURBED AREA AND DIRECT THE RUNOFF TO THE SEDIMENT BASIN.

SEDIMENT BASIN - A SEDIMENT BASIN SHALL BE CONSTRUCTED IN THE COMMON DRAINAGE AREA FOR THE SITE. ALL SEDIMENT COLLECTED IN THE BASIN MUST BE REMOVED FROM THE BASIN UPON COMPLETION OF CONSTRUCTION. SEDIMENT FROM THE BASIN MAY BE USED AS FILL ON THE SITE IF IT IS SUITABLE SOIL.

WASTE DISPOSAL

WASTE MATERIALS - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER WITH A SECURE LID IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITIES TO HAVE THE DUMPSTER EMPTIED AT LEAST TWICE A WEEK AND THE WASTE TAKEN TO AN APPROPRIATE LANDFILL. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE SUPERINTENDENT SHALL ORGANIZE TRAINING FOR THE EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH WASTE MATERIALS. THE SUPERINTENDENT SHALL BE RESPONSIBLE FOR POSTING AND ENFORCING WASTE MATERIAL PROCEDURES.

HAZARDOUS WASTE - HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS OR AS DIRECTED BY THE MANUFACTURER. THE SUPERINTENDENT SHALL ORGANIZE THE PROPER TRAINING FOR EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH HAZARDOUS WASTE MATERIALS. THESE PROCEDURES SHALL BE POSTED ON THE SITE. THE PERSON WHO MANAGES THE SITE SHALL BE RESPONSIBLE FOR ENFORCING THE PROCEDURES.

SANITARY WASTE - SANITARY WASTE SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITY FOR COLLECTION OF THE SANITARY WASTE AT LEAST THREE TIMES A WEEK TO PREVENT SPILLAGE ONTO THE SITE.

OFF-SITE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE SEDIMENT TRACKING OFFSITE. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT, OR OTHER MATERIALS TRACKED OR SPILLED ONTO EXISTING PUBLIC ROADS AND FACILITIES, DUE TO CONSTRUCTION. ALL TRUCKS HAULING MATERIALS OFFSITE SHALL BE COVERED WITH A TARPAULIN.

DUST & DEBRIS CONTROL
THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL WITHIN THE CONSTRUCTION LIMITS AS WELL AS ALONG HAUL ROUTES AND ROADWAYS USED BY THE EQUIPMENT AND VEHICLES. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE DUST IS NOT TRANSPORTED BEYOND THE LIMITS OF CONSTRUCTION IN POPULATED AREAS. THE CONTRACTOR MAY CONTROL DUST FOR EMBANKMENTS OR OTHER CLEARED OR UNSURFACED AREAS BY APPLYING WATER. INSTALL MULCH, SEED, SOD, OR TEMPORARY PAVING AS EARLY AS PRACTICAL. CONTROL DUST DURING STORAGE AND HANDLING OF DUSTY MATERIALS BY WETTING, COVERING, OR OTHER MEANS AS APPROVED BY THE ENGINEER.
DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE PROJECT SITE.

ITEMS REQUIRING POLLUTION PREVENTION

THE FOLLOWING ITEMS ARE EXPECTED TO BE PRESENT ON THE PROJECT SITE:

-ASPHALT
-CONCRETE
-FERTILIZERS
-METAL PIECES
-PETROLEUM BASED PRODUCTS
-TAR
-CLEANING SUPPLIES
-DETERGENTS
-MASONARY BLOCK/BRICKS
-PAINT
-WOOD

THE FOLLOWING ARE NON-STORM WATER SOURCES THAT WILL BE ENCOUNTERED AT THE SITE AND SHOULD BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE:

-UNCONTAMINATED GROUNDWATER EXPOSED DURING EXCAVATION
-WATER FROM WATER LINE FLUSHING
-PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).

SPILL PREVENTION AND CONTROL

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

-SUPERINTENDENT SHALL INSPECT PROJECT AREA DAILY FOR PROPER STORAGE, USE, AND DISPOSAL OF CONSTRUCTION MATERIALS.

-STORE ONLY ENOUGH MATERIAL ON SITE FOR PROJECT COMPLETION.

-ALL SUBSTANCES SHOULD BE USED BEFORE DISPOSAL OF CONTAINER.

-ALL CONSTRUCTION MATERIALS STORED SHALL BE ORGANIZED AND IN THE PROPER CONTAINER AND IF POSSIBLE, STORED UNDER A ROOF OR PROTECTIVE COVER.

-PRODUCTS SHALL NOT BE MIXED UNLESS DIRECTED BY THE MANUFACTURER.

-ALL PRODUCTS SHALL BE USED AND DISPOSED OF ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

HAZARDOUS PRODUCTS

-MATERIALS SHOULD BE KEPT IN ORIGINAL CONTAINER WITH LABELS UNLESS THE ORIGINAL CONTAINERS CANNOT BE RESEALED. IF ORIGINAL CONTAINERS CANNOT BE USED, LABELS AND PRODUCT INFORMATION SHALL BE SAVED.

-PROPER DISPOSAL PRACTICES SHALL ALWAYS BE FOLLOWED IN ACCORDANCE WITH MANUFACTURER AND LOCAL/STATE REGULATIONS.

PRODUCT SPECIFIC PRACTICES

-PETROLEUM PRODUCTS MUST BE STORED IN PROPER CONTAINERS AND CLEARLY LABELED. VEHICLES CONTAINING PETROLEUM PRODUCTS SHALL BE PERIODICALLY INSPECTED FOR LEAKS. PRECAUTIONS SHALL BE TAKEN TO AVOID LEAKAGE OF PETROLEUM PRODUCTS ON SITE.

-THE MINIMUM AMOUNT OF FERTILIZER SHALL BE USED AND MIXED INTO THE SOIL IN ORDER TO LIMIT EXPOSURE TO STORM WATER. FERTILIZERS SHALL BE STORED IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

-PAINT CONTAINERS SHALL BE SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT MUST BE DISPOSED OF IN AN APPROVED MANNER.

-CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

-SPILL CLEANUP INFORMATION SHALL BE POSTED ON SITE TO INFORM EMPLOYEES ABOUT CLEANUP PROCEDURES AND RESOURCES.

-THE FOLLOWING CLEAN-UP EQUIPMENT MUST BE KEPT ON-SITE NEAR THE MATERIAL STORAGE AREA: GLOVES, MOPS, RAGS, BROOMS, DUST PANS, SAND, SAWDUST, LIQUID ABSORBER, GOGGLES, AND TRASH CONTAINERS.

-ALL SPILLS SHALL BE CLEANED UP AS SOON AS POSSIBLE.

-WHEN CLEANING A SPILL, THE AREA SHOULD BE WELL VENTILATED AND THE EMPLOYEE SHALL WEAR PROPER PROTECTIVE COVERING TO PREVENT INJURY.

-TOXIC SPILLS MUST BE REPORTED TO THE PROPER AUTHORITY REGARDLESS OF THE SIZE OF THE SPILL.

-AFTER A SPILL, THE PREVENTION PLAN SHALL BE REVIEWED AND CHANGED TO PREVENT FURTHER SIMILAR SPILLS FROM OCCURRING. THE CAUSE OF THE SPILL, MEASURES TO PREVENT IT, AND HOW TO CLEAN THE SPILL UP SHALL BE RECORDED.

-THE SUPERINTENDENT SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR AND IS RESPONSIBLE FOR THE DAY TO DAY SITE OPERATIONS. THE SUPERINTENDENT ALSO OVERSEES THE SPILL PREVENTION PLAN AND SHALL BE RESPONSIBLE FOR EDUCATING THE EMPLOYEES ABOUT SPILL PREVENTION AND CLEANUP PROCEDURES.

MAINTENANCE AND INSPECTION PRACTICES

THE FOLLOWING ARE MAINTENANCE AND INSPECTION PRACTICES THAT SHALL BE COMPLETED BY THE CONTRACTOR:

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE CHECKED DAILY AND AFTER EACH 0.5 INCH OR GREATER RAINFALL BY THE SUPERINTENDENT OR SOMEONE UNDER HIS/HER DIRECT SUPERVISION.

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE KEPT IN GOOD CONDITION. REPAIRS MUST BE MADE WITHIN 24 HOURS OF REPORT.

-THE SILT FENCE SHALL BE INSPECTED PERIODICALLY FOR HEIGHT OF SEDIMENT AND CONDITION OF FENCE.

-THE SILT FENCE SHALL BE CLEARED OF SEDIMENT WHEN SEDIMENT MEASURES ONE-THIRD THE HEIGHT OF THE FENCE.

-THE SEDIMENT BASINS/DITCHES SHALL BE CHECKED MONTHLY FOR DEPTH OF SEDIMENT. THEY SHALL BE CLEANED WHEN SEDIMENT REACHES 10% OF TOTAL CAPACITY AND AFTER CONSTRUCTION IS COMPLETE.

-DIVERSION DIKES SHALL BE INSPECTED MONTHLY. ANY BREACHES SHALL BE PROMPTLY REPAIRED.

-ALL SEEDING SHALL BE CHECKED FOR PROPER GROWTH AND UNIFORMITY. UNSTABALIZED AREAS SHALL BE RE-SODDED.

-A MAINTENANCE REPORT SHALL BE COMPLETED DAILY AFTER EACH INSPECTION OF THE SEDIMENT AND EROSION CONTROL METHODS. THE REPORTS SHALL BE FILED IN AN ORGANIZED MANNER AND RETAINED ON-SITE DURING CONSTRUCTION. AFTER CONSTRUCTION IS COMPLETED, THE REPORTS SHALL BE SAVED FOR AT LEAST THREE YEARS. THE REPORTS SHALL BE AVAILABLE FOR ANY AGENCY THAT HAS JURISDICTION OVER EROSION CONTROL.

-THE SUPERINTENDENT SHALL ORGANIZE THE TRAINING FOR INSPECTION PROCEDURES AND PROPER EROSION CONTROL METHODS FOR EMPLOYEES THAT COMPLETE INSPECTIONS AND REPORTS.

ADDITIONAL CONTRACTOR RESPONSIBILITIES

-C.O.R. IS REQUIRED TO SUBMIT A SWPPP TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO MOBILIZING TO THE SITE AND INSTALLING ANY BMPS.

-C.O.R. IS REQUIRED TO COMPLY WITH THE REGULATIONS OF THE CITY, WATER MANAGEMENT DISTRICT, AND FDEP IN MANAGING STORMWATER RUNOFF FROM CONSTRUCTION SITES.

-C.O.R. IS REQUIRED TO SUBMIT AND OBTAIN A NOTICE OF INTENT FROM FDEP FOR THIS PROJECT.

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: ____________________________________ DATE:_________________

CORY SITLER
FLORIDA REGISTRATION NUMBER: 89984
PROFESSIONAL ENGINEER

CONTRACTOR'S CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FORM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

SIGNATURE AND DATE	NAME AND TITLE, COMPANY / ADDRESS AND TELEPHONE NUMBER	RESPONSIBILITY

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn
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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL
CORY N. SITLER
LICENSE No. 89984
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE: 08/28/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

SWPPP NOTES

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C2.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:SWPPP NOTES August 29, 2025 09:21:57am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C2.0 SWPPP NOTES.dwg
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Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:EROSION CONTROL DETAILS August 29, 2025 09:22:02am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C2.0 SWPPP NOTES.dwg
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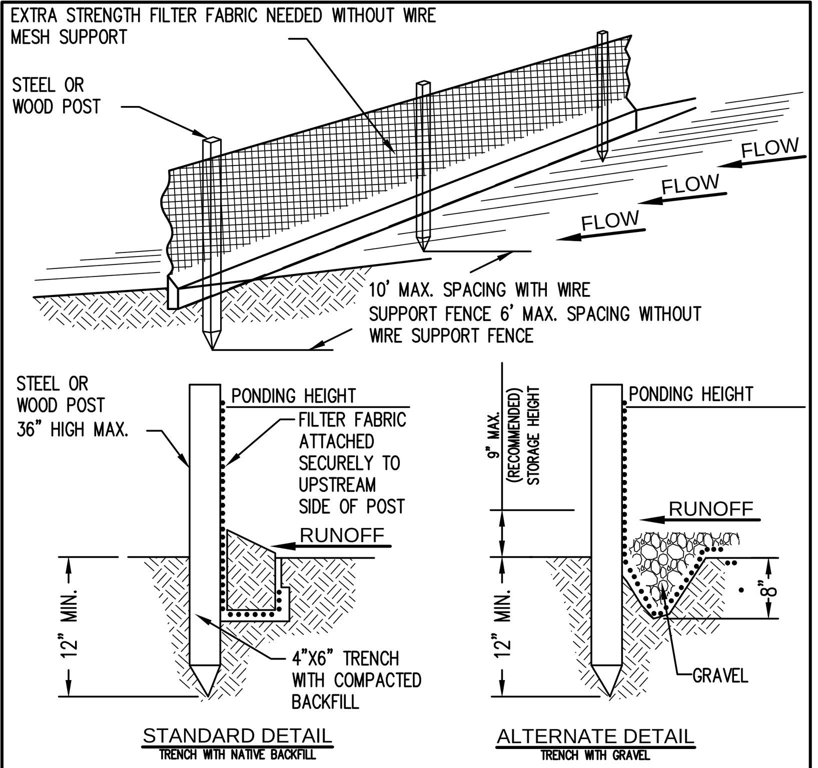
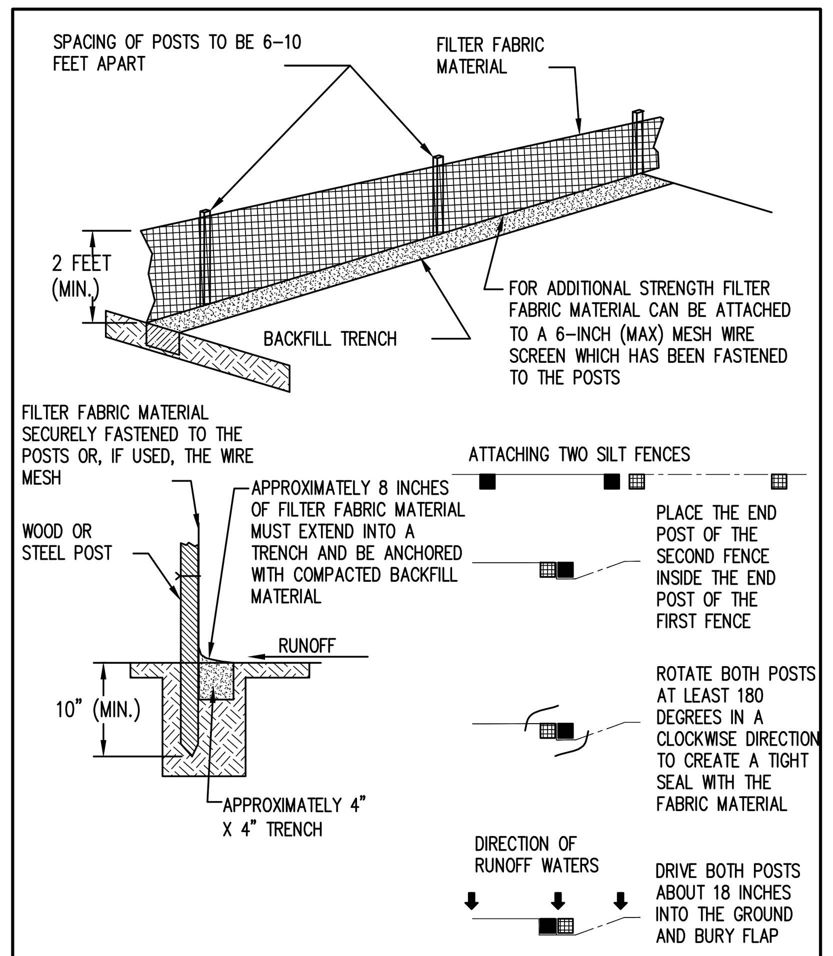
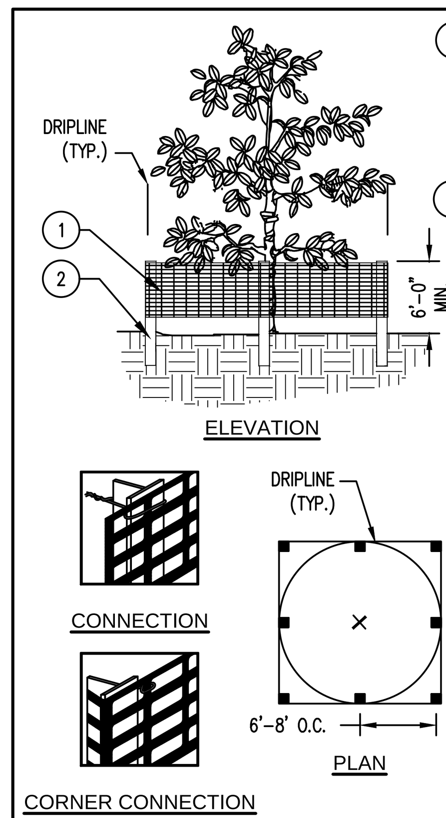


NOTE:
1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
1. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
2. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAIL



SILT FENCE INSTALLATION DETAIL

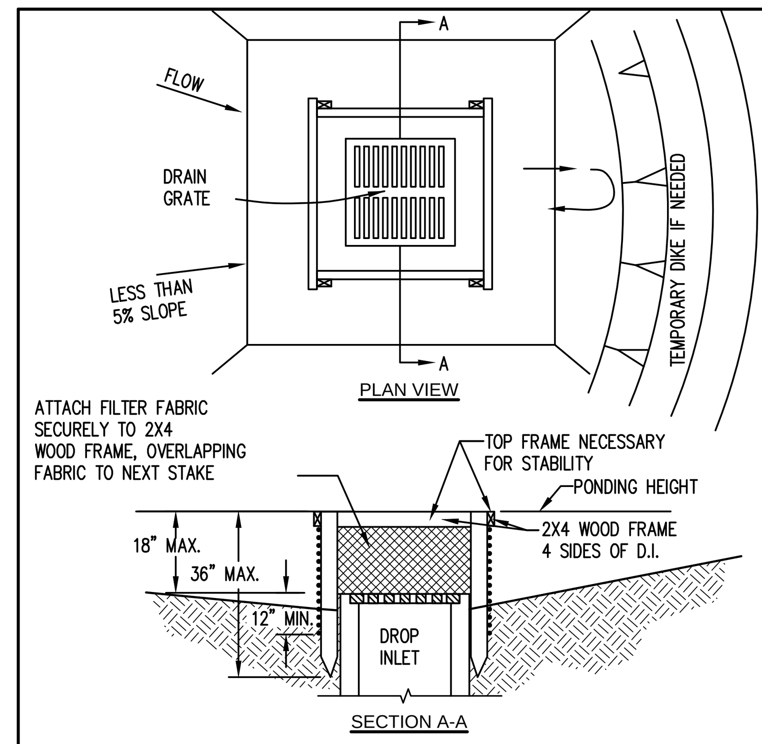


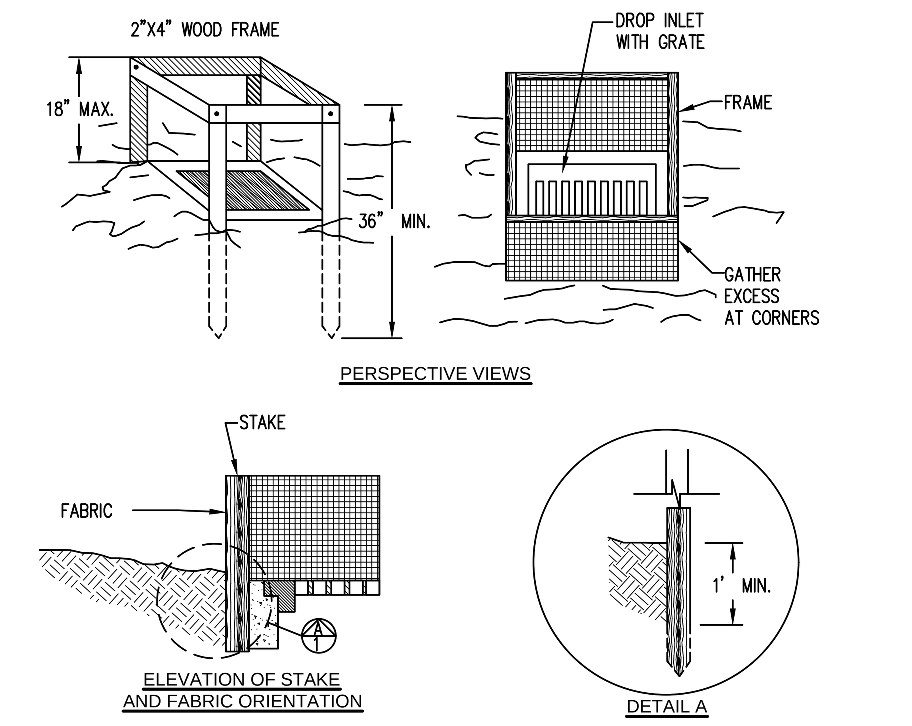
1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:
A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.
B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.
C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).
D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

TREE BARRICADE

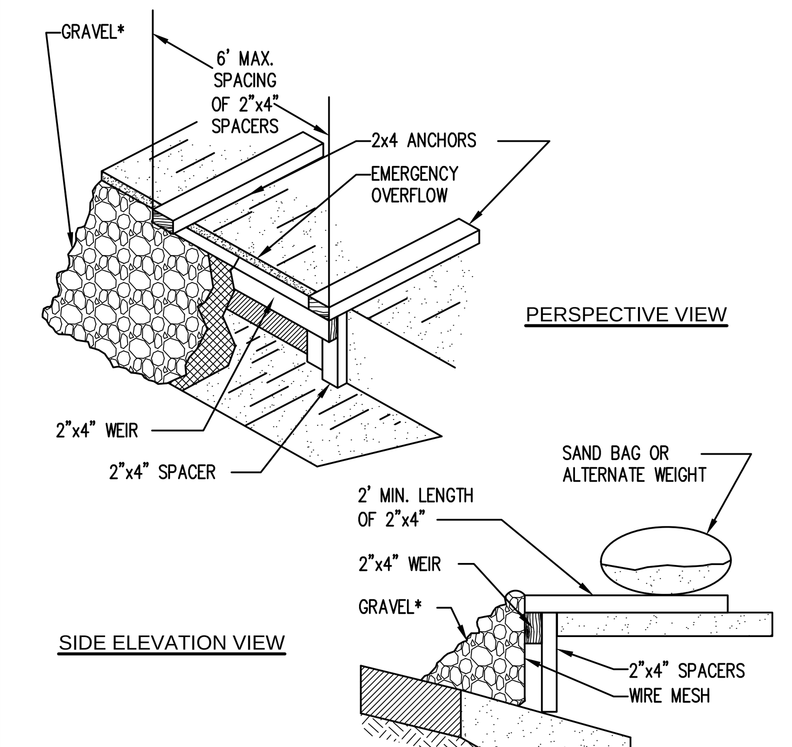




NOTES:
1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%)
2. USE 2X4 WOOD OR EQUIVALENT METAL STAKES, (3' MIN. LENGTH)
3. INSTALL 2X4 WOOD TOP FRAME TO INSURE STABILITY.
4. THE TOP OF THE FRAME (PONDING HEIGHT) MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNOFF FROM BY PASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

SPECIFIC APPLICATION:
THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (SLOPE NO GREATER THAN 5%) WHERE THE INLET SHEET OR OVERLAND FLOWS (NOT EXCEEDING 1 C.F.S.) ARE TYPICAL. THE METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS, SUCH AS IN STREET OR HIGHWAY MEDIANS.

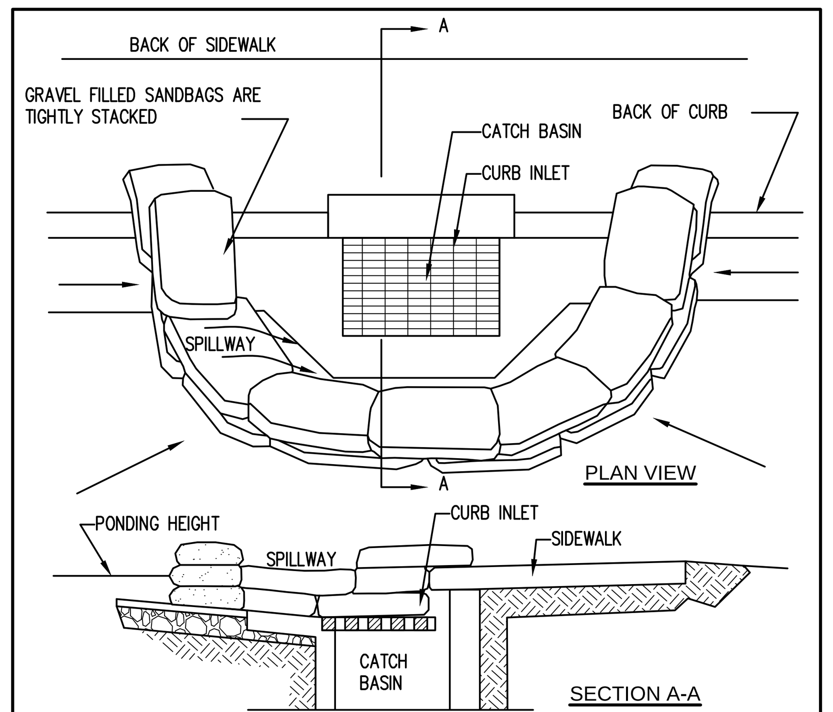
FILTER FABRIC DROP INLET SEDIMENT BARRIER



SPECIFIC APPLICATION
THIS METHOD OF INLET PROTECTION US APPLICABLE TO CURB INLETS WHERE A STURDY, COMPACT INSTALLATION IS DESIRED. EMERGENCY OVERFLOW CAPABILITIES ARE MINIMAL, SO EXPECT SIGNIFICANT PONDING WITH THIS MEASURE.

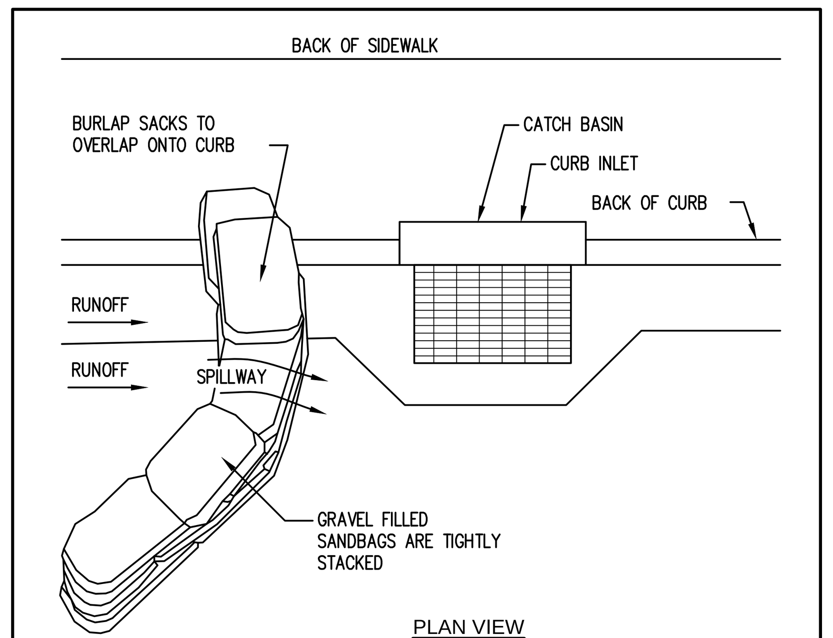
* GRAVEL SHALL BE ASTM #3, #357, OR #5 COARSE AGGREGATE.

GRAVEL CURB INLET SEDIMENT FILTER WITH OVERFLOW WEIR



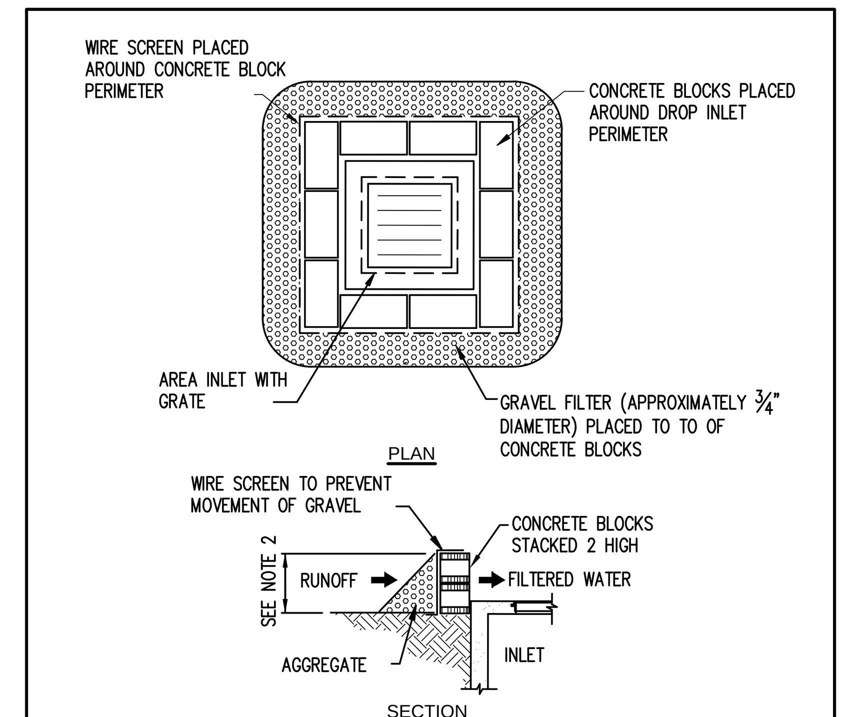
NOTES:
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS, OF EITHER BURLAP OR WOVEN GEOTEXTILE FABRIC, ARE FILLED WITH GRAVEL, LAYERED AND PACKED TIGHTLY.
3. LEAVE ONE SANDBAG GAP IN THE TOP ROW TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB INLET SEDIMENT BARRIER



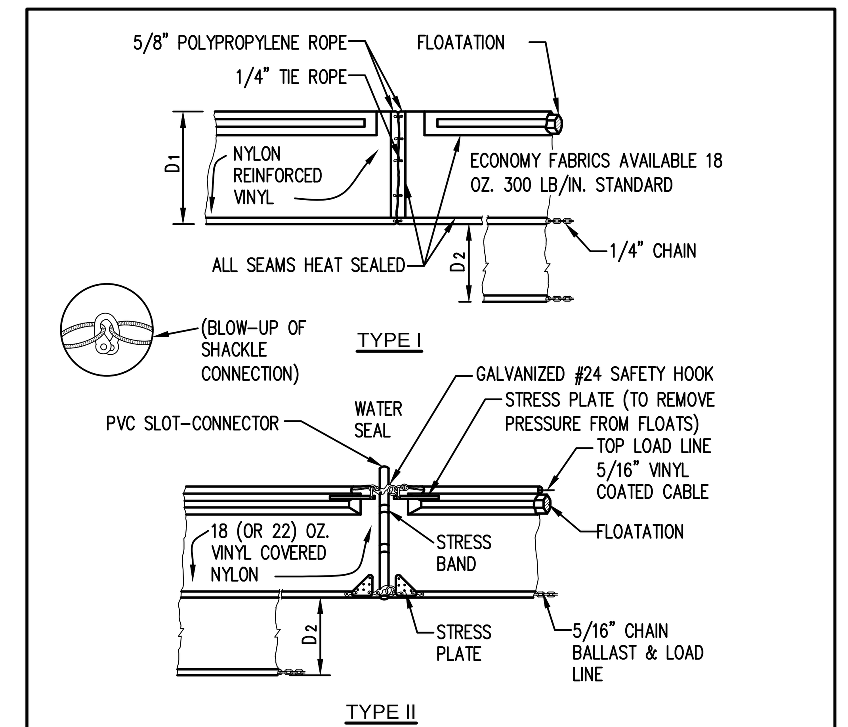
NOTES:
1. PLACE CURB TYPE SEDIMENT BARRIERS ON GENTLY SLOPING STREET SEGMENTS, WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE FROM RUNOFF.
2. SANDBAGS OF EITHER BURLAP OR WOVEN 'GEOTEXTILE' FABRIC, ARE FILLED WITH GRAVEL LAYERED AND PACKED TIGHTLY.
3. LEAVE A ONE SANDBAG GAP IN THE TOP ROW TO PROVIDE A SPILLWAY FOR OVERFLOW.
4. INSPECT BARRIERS AND REMOVE SEDIMENT AFTER EACH STORM EVENT. SEDIMENT AND GRAVEL MUST BE REMOVED FROM THE TRAVELED WAY IMMEDIATELY.

CURB AND GUTTER SEDIMENT BARRIER



1. PLACE CONCRETE BLOCKS IN A SINGLE ROW AROUND PERIMETER OF INLET ON THEIR SIDES, WITH ENDS OF ADJACENT BLOCKS ABUTTING.
2. HEIGHT OF BARRIER VARIES. USE STACKS OF 4–INCH, 8–INCH, OR 12" BLOCKS. MIN. HEIGHT OF BARRIER 12" AND MAX. HEIGHT OF 24"
3. PLACE HARDWARE CLOTH/WIRE MESH W/ MAX. 1/2" OPENINGS OVER VERTICAL FACE OF CONCRETE BLOCKS.
4. THE AGGREGATE SHALL BE ANY NON–ERODIBLE MATERIAL SUCH AS LOOSE ROCK, BROKEN CONCRETE THAT WILL SLOW THE FLOW OF THE WATER AND ALLOW IT TO FILTER THROUGH AND OVER THE MATERIAL BEFORE ENTERING THE INLET.

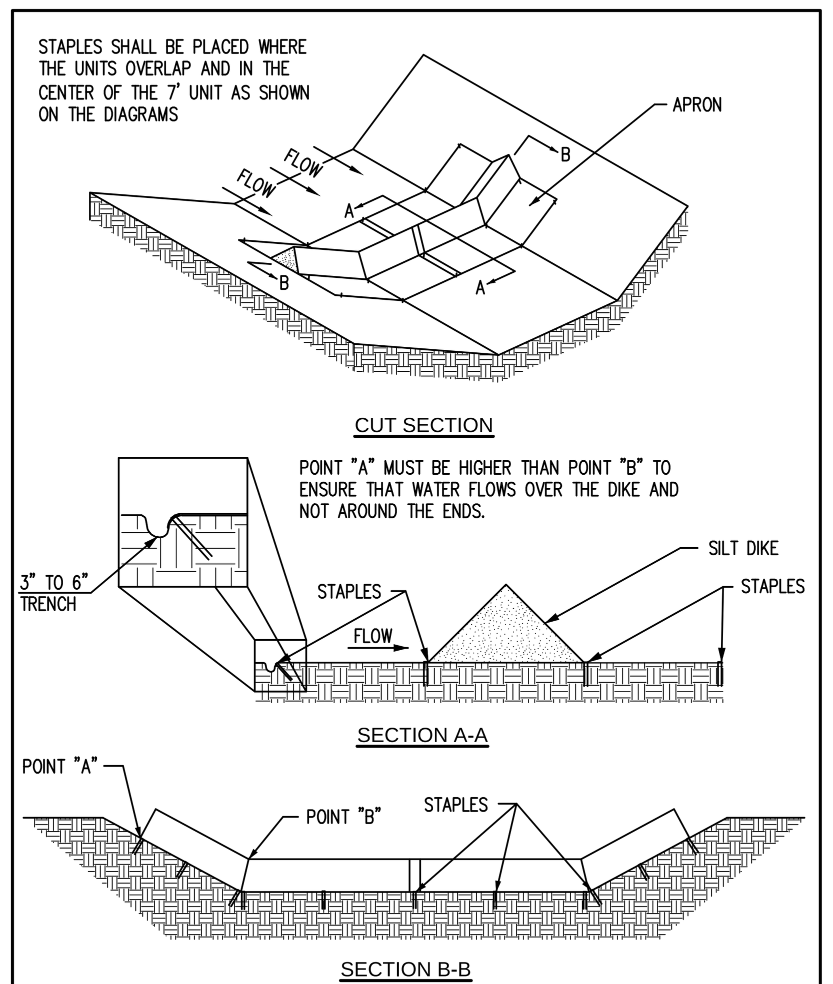
BLOCK AND AGGREGATE INLET SEDIMENT DEVISE



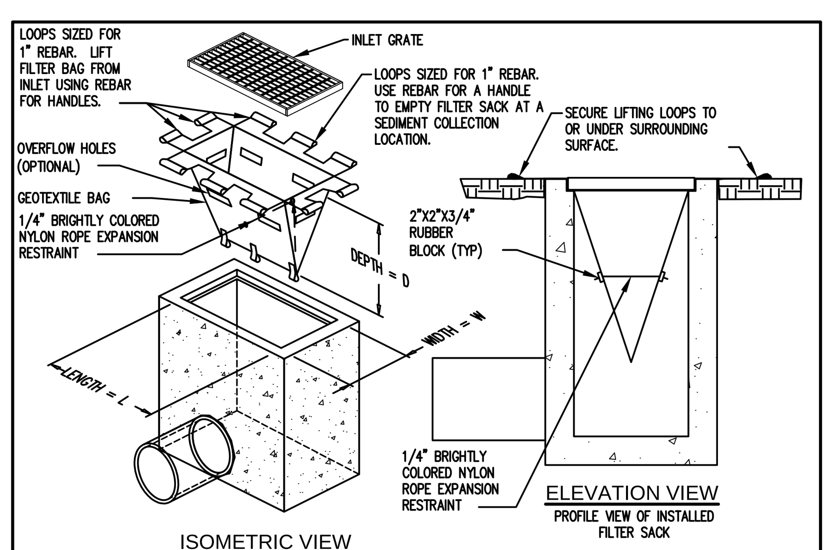
D_1 = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS).
D_2 = 5' STD. (ADDITIONAL PANEL FOR DEPTHS 5'). CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE:
COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

FLOATING TURBIDITY BARRIERS



TEMPORARY CHECK DAM



1. EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE WILL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

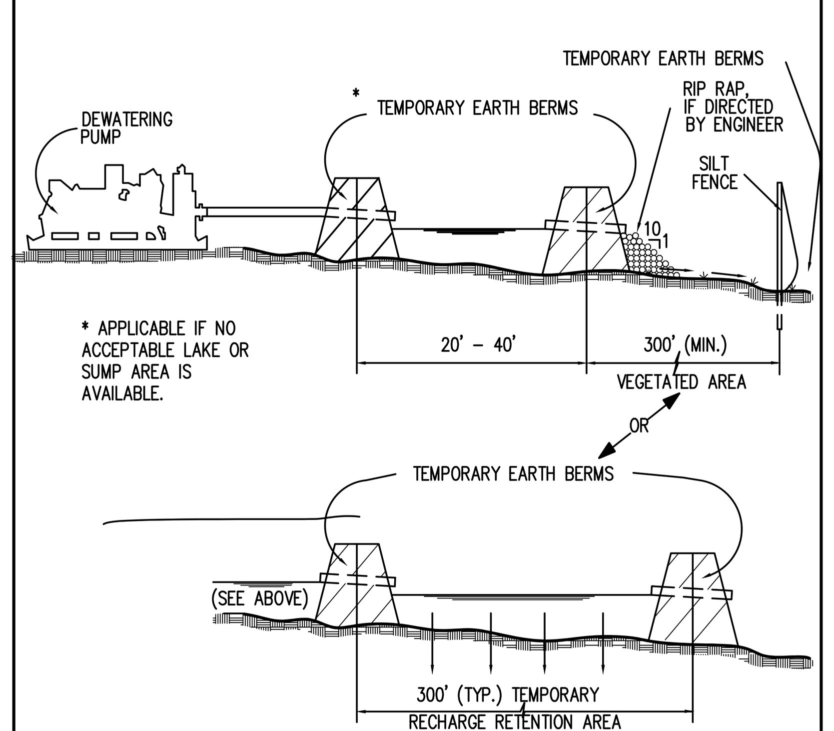
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC -1

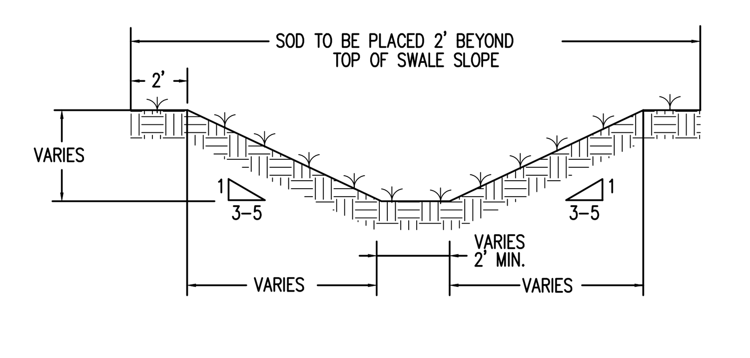
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE

PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC -1

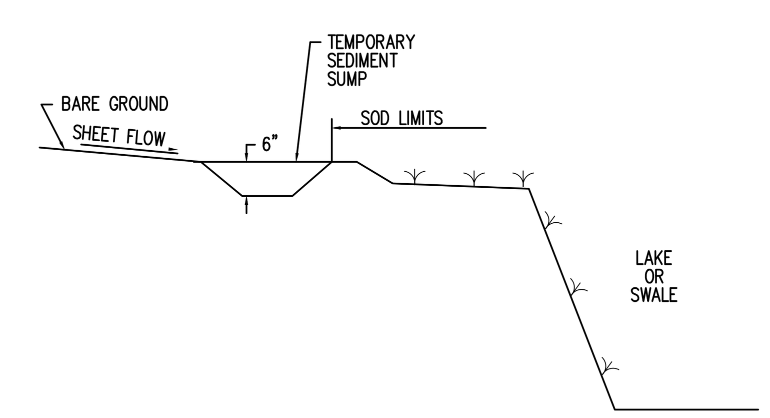
FILTER SACKS (GRATED INLETS)
DO NOT USE ON ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



TYPICAL DEWATERING DISCHARGE PLAN



TYPICAL SWALE SECTION



TEMPORARY SEDIMENT SUMP

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn

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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL
CORY N. SITLER
LICENSE
STATE OF FLORIDA
PROFESSIONAL ENGINEER
CORY SITLER
FL LICENSE NUMBER 89984
DATE: 08/28/25

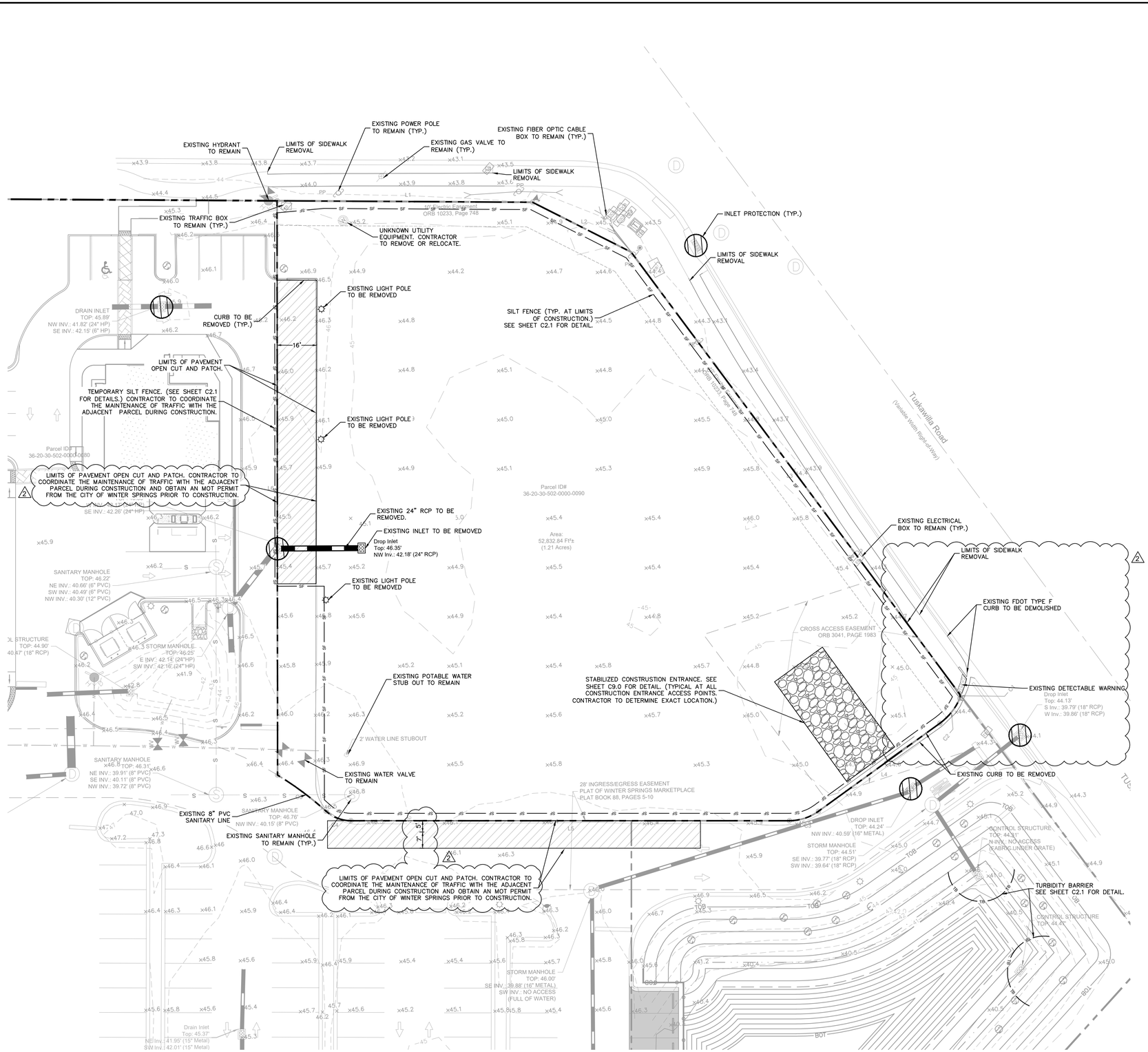
KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

EROSION CONTROL DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C2.1



GRAPHIC SCALE IN FEET
0 10 20 40

SIDEWALK NOTES:

1. ALL SIDEWALK CLOSURES SHALL BE IN ACCORDANCE WITH FDOT DESIGN INDEX #102-600. (PROVIDE TEMPORARY ASPHALT SIDEWALKS AS NEEDED)

DATUM/BENCHMARK NOTE:

1. VERTICAL INFORMATION BASE ON SEMINOLE COUNTY BENCHMARK DESIGNATION "813-16-01" ELEVATION = 36.446 NAVD 88.

EXISTING UTILITY NOTE:

1. THERE MAY BE ON-SITE UNDERGROUND UTILITIES (INCLUDING BUT NOT LIMITED TO IRRIGATION, SANITARY SEWER, POTABLE WATER LINES, NATURAL GAS LINES, ELECTRIC, TELEPHONE AND CABLE LINES) THAT WERE NOT LOCATED OR IDENTIFIED BY THE PROJECT SURVEYOR. PRIOR TO CONSTRUCTION START, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ON-SITE UTILITIES AND RIGHT-OF-WAY UTILITIES.
2. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE-CALL OF FLORIDA) BY CALLING 800-432-4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.

DEMOLITION NOTES:

1. SEE ADDITIONAL NOTES, SHEET C1.0.
2. ANY EXISTING WELLS (I.E. ARTESIAN, IRRIGATION, DRINKING, ETC.) DISCOVERED ON-SITE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL APPLICABLE JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED. ANY WELL DISCOVERED DURING EARTHWORK OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES, OWNER, AND OWNER'S ENGINEER WITHIN 24 HOURS AFTER DISCOVERY IS MADE. C.O.R. SHALL PROVIDE A COPY OF ANY WELL ABANDONMENT PERMITS TO THE CITY.

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS, FLORIDA, LLC. DATED NOV. 15, 2018.

EROSION CONTROL NOTE:

1. REFER TO SWPPP SHEETS C2.0 FOR ADDITIONAL NOTES & DETAILS.
2. INSTALL AND MAINTAIN SILT FENCE PER FDOT.
3. PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT ALL CONSTRUCTION ACCESS POINTS.
4. UTILIZE PERFORATED SOCK DRAIN (OR EQUIVALENT) IN FRONT OF EXISTING/PROPOSED CURB INLETS ADJACENT TO CONSTRUCTION ACTIVITIES, ALONG ALL ROADWAYS.
5. INSTALL AND MAINTAIN FILTER FABRIC UNDER GRATES OF ALL EXISTING/PROPOSED INLETS.
6. PROVIDE TREE PROTECTION BARRIERS AROUND ALL EXISTING TREES LOCATED ON-SITE WHICH ARE DESIGNATED TO BE PRESERVED. REFER TO LANDSCAPE PLANS FOR TREES TO REMAIN AND TREE PROTECTION DETAILS/NOTES.

LEGEND

- PROPERTY BOUNDARY
- TB — TB — TURBIDITY BARRIER
- SF — SF — PROPOSED TYPE III SILT FENCE
- AREA TO BE DEMOLISHED
- SOIL TRACKING PREVENTION
- INLET PROTECTION

Always call 811 two full business days before you dig to have underground utilities located and marked.

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No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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PHONE: (407) 539-4440
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LICENSED PROFESSIONAL ENGINEER CORY O. SMELTZER STATE OF FLORIDA No. 87555 PROFESSIONAL ENGINEER 08/28/25

KHA PROJECT 149170026		DESIGNED BY	CNS
DATE	08/28/25	DRAWN BY	MMB
SCALE	AS SHOWN	CHECKED BY	ADL

EXISTING CONDITIONS AND DEMOLITION PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER C3.0

Plotted By:LaiRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:EXISTING CONDITIONS AND DEMOLITION PLAN August 29, 2025 10:44:08am K:\orl_civil\149170026-winter springs wawa\CADD\CONSTPlanSheets-Wawa\C3.0 EXISTING CONDITIONS.dwg
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Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:SITE PLAN August 29, 2025 09:22:39am K:\orl_corl\149170026-winter springs wawa\CADD\CONST\PlanSheets-Wawa\C4.0 SITE PLAN.dwg
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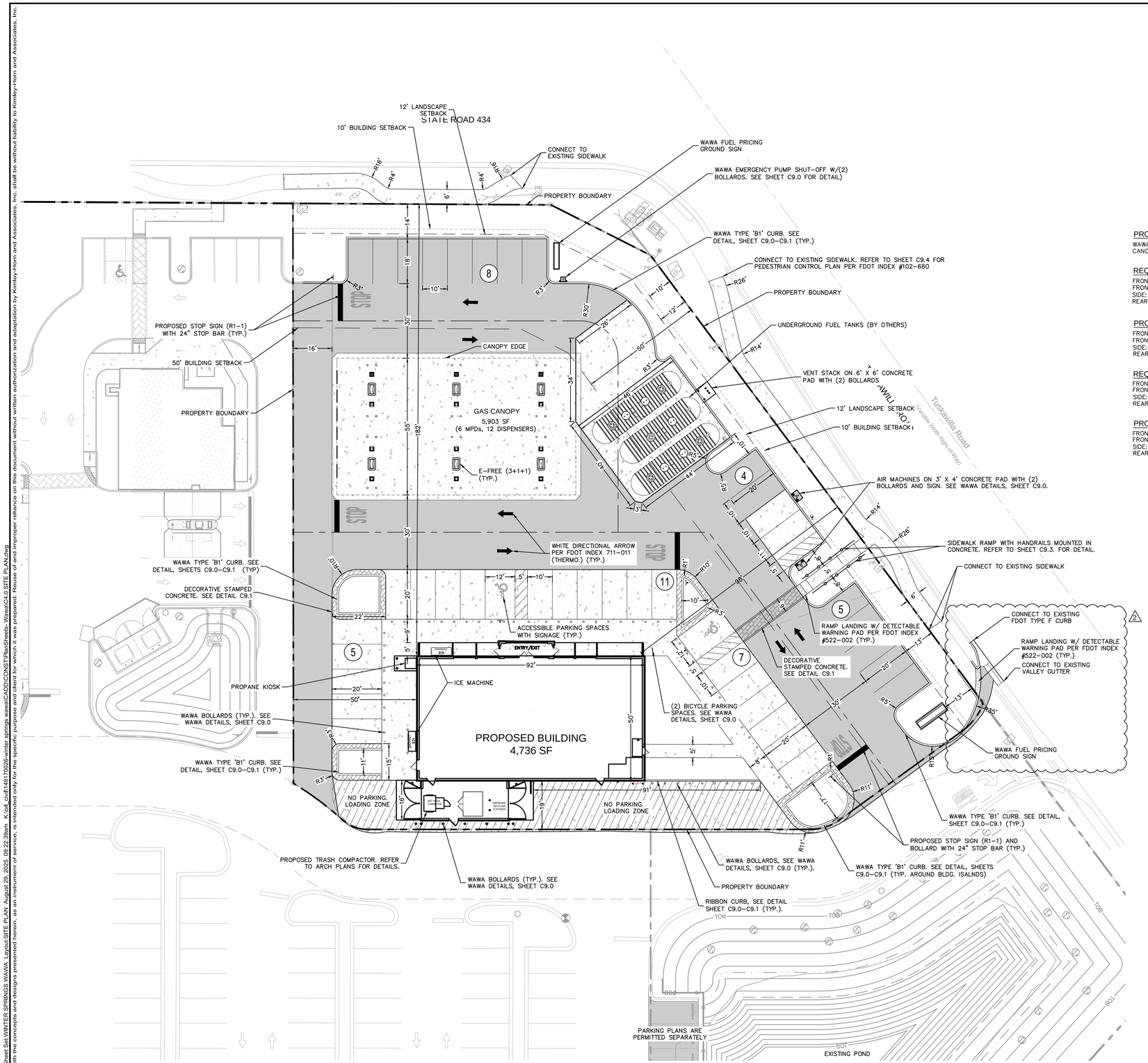

LEGEND

- PROPERTY LINE
- (11) PARKING SPACE COUNT
- PROPOSED CONCRETE, SEE SHEET C9.1 FOR DETAILS
- PROPOSED STAMPED CONCRETE, SEE SHEET C9.0 FOR DETAILS
- STANDARD DUTY ASPHALT, SEE SHEET C9.1 FOR DETAILS

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

PROVIDED BUILDING HEIGHTS

WAWA:	33 FT
CANOPY:	25 FT

REQUIRED BUILDING SETBACKS

FRONT (TUSKAWILLA RD):	25 FT MIN TO 50 FT MAX
FRONT (S.R. 434):	25 FT MIN TO 50 FT MAX
SIDE:	5 FT MIN TO 100 FT MAX
REAR:	15 FT MIN

PROVIDED BUILDING SETBACKS

FRONT (TUSKAWILLA RD):	50 FT
FRONT (S.R. 434):	50 FT
SIDE:	0 FT
REAR:	0 FT

REQUIRED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
FRONT (S.R. 434):	12 FT
SIDE:	10 FT
REAR:	10 FT

PROVIDED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
FRONT (S.R. 434):	12 FT
SIDE:	0 FT
REAR:	0 FT

OVERALL SITE DATA:

PROJECT AREA:	52,833 SQ. FT (1.21 AC)
ZONING:	T-5 URBAN CENTER ZONE
PARCEL ID:	36-20-30-502-0000-0090
FUTURE LAND USE:	COMMERCIAL
PROPOSED USE:	COMMERCIAL
MINIMUM BUILDING HEIGHT:	2-STORIES
MAXIMUM BUILDING HEIGHT:	5-STORIES

ABUTTING PARCEL DATA:

ADJACENT PARCEL ID:	ZONING	FUTURE LAND USE
36-20-30-502-0000-0080	T-5 URBAN CENTER ZONE	COMMERCIAL
01-21-30-5VK-0000-0040	T-5 URBAN CENTER ZONE	COMMERCIAL
01-21-30-5VK-0C00-0000	T-5 URBAN CENTER ZONE	COMMERCIAL

BUILDING COVERAGE:

PROPOSED FLOOR AREA:	
WAWA:	4,736 SF
TOTAL FLOOR AREA:	4,736 SF
F.A.R. (4,736 SF/52,833 SF)	0.20
MAXIMUM ALLOWABLE F.A.R.	1.0 MAXIMUM

OVERALL IMPERVIOUS CALCULATIONS

MAXIMUM IMP. AREA (PER DRAINAGE CALCS):	1.02 AC
BUILDING AREA:	0.24 AC (9.0%)
PAVEMENT AREA:	0.78 AC (50.8%)
TOTAL IMPERVIOUS AREA:	1.02 AC (84.3%)
TOTAL OPEN SPACE:	0.19 AC (15.7%)

REQUIRED PARKING:

FROM PARKING STUDY:	
WAWA PARKING:	50 SPACES
TOTAL PARKING SPACES REQUIRED:	50 SPACES

PROVIDED PARKING:

REGULAR SPACES (10'X20'):	38 SPACES
ADA SPACES (ALL VAN ACCESSIBLE):	2 SPACES
OFF-SITE EMPLOYEE PARKING: (UNDER SEPARATE PERMIT)	10 SPACES
TOTAL PARKING SPACES PROVIDED:	50 SPACES

REQUIRED BICYCLE PARKING:

FROM TRAFFIC IMPACT ANALYSIS:	
1 SPACE PER 5,000 SF OR 2 SPACES MIN.	2 SPACES
TOTAL PARKING SPACES REQUIRED:	2 SPACES

PROVIDED BICYCLE PARKING:

WAWA – GAS STATION/CONVENIENCE STORE	2 SPACES
TOTAL BICYCLE PARKING SPACES:	2 SPACES

LANDSCAPING

ALL LANDSCAPING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE

SITE SIGNAGE

PERMANENT SITE SIGNAGE WILL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE.

REGULATORY SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH MUTCD (2009 ED.) AND FDOT DESIGN STANDARDS (LATEST ED.)

STORMWATER MANAGEMENT

STORMWATER RUNOFF FOR THE PROPOSED ONSITE IMPROVEMENTS WILL BE MANAGED THROUGH THE EXISTING WET DETENTION, DRY DETENTION, AND EXFILTRATION STORMWATER MANAGEMENT SYSTEM WHICH HAS BEEN DESIGNED TO MEET THE CITY OF WINTER SPRINGS CODE AND THE REQUIREMENTS OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD).

100-YEAR FLOOD PLAIN

THE PROPERTY IS LOCATED OUTSIDE THE FLOODPLAIN WITHIN "ZONE X" – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN – PER FEMA FIRM, MAP NUMBER 12117C0160F, REVISED ON SEPTEMBER 28, 2007.

PHASING

ALL SITE WORK AND INFRASTRUCTURE WILL BE COMPLETED IN ONE (1) PHASE

GENERAL NOTES:

1. HANDICAP ACCESSIBLE PARKING SPACES AND SIGNAGE SHALL BE IN ACCORDANCE WITH THE FLORIDA ACCESSIBILITY CODE (2012 ED.).
2. HANDICAP ACCESSIBLE PARKING SPACES PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH FDOT INDEX #711-001, SHEET 12 (LATEST ED.).
3. ALL LANDSCAPE ISLANDS CURB RADII ARE 5-FT UNLESS OTHERWISE NOTED.
4. TYPICAL AT ALL INTERNAL ON SITE INTERSECTIONS (PRIVATE), UNLESS OTHERWISE NOTED: PROVIDE 24" WHITE STOP BAR WITH 24" STOP SIGN
5. PEDESTRIAN CIRCULATION – SIDEWALKS, SIDEWALK CROSSINGS, RAMPINGS (PEDESTRIAN ACCESS SHALL CONNECTION EACH OF THE BUILDINGS TO ONE ANOTHER AN SHALL CONNECT TO THE RIGHT-OF-WA UTILIZING ALTERNATIVE PAVEMENT THROUGHOUT – PAINT/THERMOPLASTIC IS NOT ACCEPTABLE). PEDESTRIAN CROSSWALKS SHALL BE OF CONTRASTING MATERIALS OR TEXTURED OR STAMPED CONCRETE OR ASPHALT TO GIVE THE APPEARANCE OF CONTRASTING MATERIALS. PLEASE REFER TO SHEET C9.0 FOR DETAILS.

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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LICENSED LANDSCAPE ARCHITECT CORY N. SITTLER STATE OF FLORIDA REGISTERED LANDSCAPE ARCHITECT 6667 08/28/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

SITE PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C4.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:C5.0 PAVING AND GRADING PLAN August 29, 2025 09:22:58am K:\orl_civil\149170026-winter springs wawa\CADD\CONSTR\PlanSheets- Wawa\C5.0 PAVING AND GRADING.dwg
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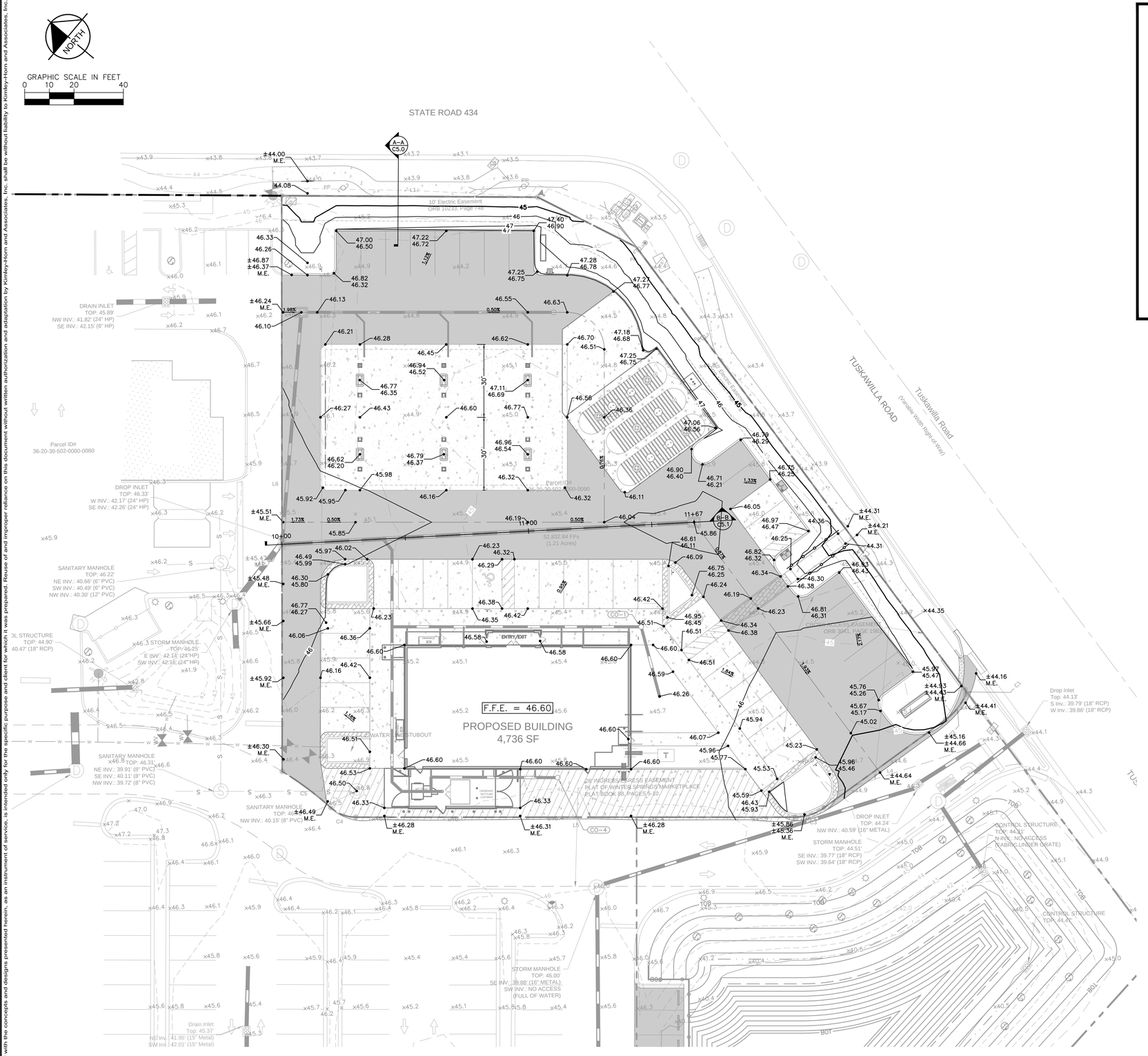

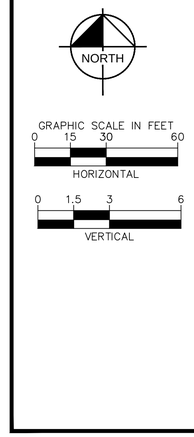

SECTION A-A
N.T.S.

PAVING, GRADING AND DRAINAGE NOTES:

1. REFER TO POD SHEET C5.1 FOR ADDITIONAL STORM STRUCTURE INFORMATION.
2. FOR EROSION CONTROL NOTES AND DETAILS, REFER TO GENERAL NOTES SHEETS C1.0 AND SWPPP SHEETS C2.0 –C2.1.
3. ALL PEDESTRIAN SIDEWALKS, PATHWAYS, AND CROSSWALKS SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 1:48 CROSS SLOPE (2.0%), MAX. 1:20 RUNNING SLOPE (5.0%).
4. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 2.0% CROSS

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS DATED NOVEMBER 15, 2018.

DATUM/BENCHMARK:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR ADDITIONAL DETAILS AND BENCHMARKS.

LEGEND

×44.00	EXISTING SPOT ELEVATION
93.50	PROPOSED ELEVATION
94.00 / 93.50	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
±94.00 M.E	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
44	EXISTING CONTOUR
44	PROPOSED CONTOUR
	PROPOSED STORM PIPE
	PROPOSED STORM INLET
D	PROPOSED STORM MANHOLE
	EXISTING STORM PIPE
	EXISTING GRATE INLET
1.00%	PROPOSED DIRECTION OF SURFACE WATER RUNOFF
	PROPOSED YARD DRAIN
	PROPOSED CONCRETE PAVEMENT SEE SECTION, SHEET C9.1
	PROPOSED STANDARD DUTY ASPHALT PAVEMENT SEE SECTION, SHEET C9.1

Always call 811 two full business days before you dig to have underground utilities located and marked.

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No.	REVISIONS	DATE	BY
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2	REVISED PER CITY COMMENTS	08/28/25	ADL

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER
CORY N. STELLER
LICENSE NUMBER 84662
STATE OF FLORIDA
CORY STELLER
PROFESSIONAL ENGINEER

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

PAVING AND GRADING PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C5.0

Plotted By:LaRocque, Allene Sheet Set:WINTER SPRINGS WAWA Layout:C5.1 DRAINAGE PLAN August 29, 2025 09:23:11am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C5.0 PAVING AND GRADING.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

STATE ROAD 434

TUSKAWILLA ROAD

Tuskawilla Road
(Variable Width Right-of-Way)

10' Electric Easement
ORB 10233, Page 748

20' INGRESS/EGRESS EASEMENT
PLAT BOOK 85, PAGES 5-10

20' Electric Easement
ORB 5041, PAGE 1901

20' INGRESS/EGRESS EASEMENT
PLAT OF WINTER SPRINGS MARKETPLACE
PLAT BOOK 85, PAGES 5-10

Parcel ID#
36-20-30-502-0000-0080

Parcel ID#
36-20-30-502-0000-0090

52,832.84 Ft²±
(1.21 Acres)

PROPOSED BUILDING
4,736 SF

DRAIN INLET
TOP: 45.89'
NW INV.: 41.82' (24" HP)
SE INV.: 42.15' (6" HP)

DROP INLET
TOP: 46.33'
W INV.: 42.17' (24" HP)
SE INV.: 42.26' (24" HP)

SANITARY MANHOLE
TOP: 46.22'
NE INV.: 40.66' (6" PVC)
SW INV.: 40.49' (6" PVC)
NW INV.: 40.30' (12" PVC)

JL STRUCTURE
TOP: 44.90'
40.47' (18" RCP)

SANITARY MANHOLE
TOP: 46.31'
NE INV.: 39.91' (8" PVC)
SE INV.: 40.11' (8" PVC)
NW INV.: 39.72' (8" PVC)

SANITARY MANHOLE
TOP: 46.76'
NW INV.: 40.15' (8" PVC)

STORM MANHOLE
TOP: 46.00'
SE INV.: 39.86' (16" METAL)
SW INV.: NO ACCESS
(FULL OF WATER)

Drain Inlet
Top: 45.37'
NE Inv.: 41.95' (15" Metal)
SW Inv.: 42.01' (15" Metal)

DROP INLET
TOP: 44.24'
NW INV.: 40.59' (16" METAL)

STORM MANHOLE
TOP: 44.51'
SE INV.: 39.77' (18" RCP)
SW INV.: 39.64' (18" RCP)

CONTROL STRUCTURE
TOP: 44.31'
N INV.: NO ACCESS
(FABRIC UNDER GRATE)

CONTROL STRUCTURE
TOP: 44.40'

Drop Inlet
Top: 44.13'
S Inv.: 39.79' (18" RCP)
W Inv.: 39.86' (18" RCP)

EXISTING POND

WATER METER/STUBOUT

A–A
C5.0

B–B
C5.1

D–1

D–2

YD–1

YD–2

CO–1

CO–3

CO–4

12" HP STORM PP
@ 0.30% MIN (TYP)

6" HDPE
@ 0.62% MIN (TYP)

6" HDPE @ 0.62% MIN (TYP)

6" HDPE
@ 0.62% MIN (TYP)

CONNECT TO ROOF DOWNSPOUTS (TYP.)
REFER TO ARCHITECTURAL PLANS TO
COORDINATE DOWNSPOUT LOCATION.

94 LF OF 15" HP STORM PP @ 0.20%

CONNECT TO EXISTING
DRAINAGE STRUCTURE AT
INV: 42.26
INV: 42.26

167 LF OF
18" HP STORM PP @ 0.15%

SEE PROFILE DETAIL
(THIS SHEET)

31 LF OF
12" HP STORM PP @ 1.00%

6" HDPE @ 1.00% MIN (TYP)

CONNECT TO ROOF DOWNSPOUTS
(TYP.) REFER TO ARCHITECTURAL
PLANS TO COORDINATE DOWNSPOUT
LOCATION.

101 LF OF
12" HDPE @ 1.00%

29 LF OF
12" HDPE @ 1.00%

63 LF OF
12" HDPE @ 1.00%

6" HDPE @ 1.00% MIN (TYP)

6 LF OF 12" HDPE @ 1.00%

12" HDPE
@ -1.00% MIN (TYP)

5 LF OF 12" HDPE @ 1.00%

ENTRY/EXIT

10+00

11+00

11+67

45.86

46.10

46.26

45

46

47

42

L1

L2

L4

L5

L6

C1

C2

C4

C5

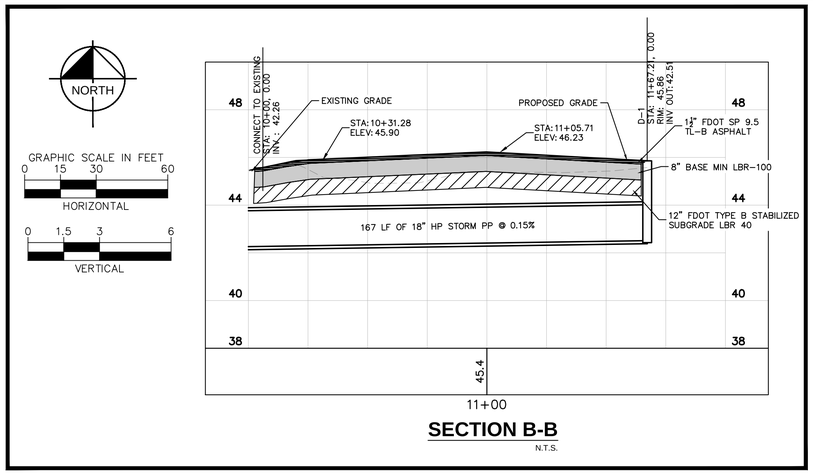
TOB

BOT

S

T

D



SECTION B-B

N.T.S.

STORM STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
CO–1	TRAFFIC–RATED CLEAN OUT TOP: 46.51 SW. INV: 43.70 (12" HDPE) NW. INV: 43.70 (12" HDPE)
CO–3	TRAFFIC–RATED CLEAN OUT TOP: 46.61 NW. INV: 42.76 (12" HP STORM PP)
CO–4	TRAFFIC–RATED CLEAN OUT TOP: 46.55 NW. INV: 44.06 (12" HDPE)
D–1	TYPE "F" INLET PER FDOT INDEX #425–053 TOP: 45.86 NW. INV: 42.51 (18" HP STORM PP)
D–2	TYPE "F" INLET PER FDOT INDEX #425–053 TOP: 46.10 SE. INV: 42.45 (12" HP STORM PP) SW. INV: 42.45 (15" HP STORM PP)
YD–1	YARD DRAIN TOP: 46.26 NE. INV: 43.99 (12" HDPE)
YD–2	YARD DRAIN TOP: 46.44 NW. INV: 43.54 (12" HDPE)

PAVING, GRADING AND DRAINAGE NOTES:

1. ALL STORM SEWER PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS.
2. ALL DRAINAGE PIPES SHALL BE FILTER FABRIC WRAPPED PER FDOT INDEX #430–001.
3. FOR EROSION CONTROL NOTES AND DETAILS, REFER TO GENERAL NOTES SHEETS C1.0 AND SWPPP SHEETS C2.0 –C2.1.
4. CONNECT ALL ROOF DOWNPOUTS TO 6–INCH HDPE LATERALS. CONNECT LATERALS TO 12–INCH HDPE TRUNK LINES EXTENDING TO STRUCTURES WITH MIN. 1.0% SLOPE, MIN. 16" COVER. REFER TO WAWA STANDARD DETAIL SHEET C9.2

GEOTECH NOTE:

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DATUM/BENCHMARK:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR ADDITIONAL DETAILS AND BENCHMARKS.

LEGEND

×44.00	EXISTING SPOT ELEVATION
93.50	PROPOSED ELEVATION
94.00 93.50	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
±94.00 M.E	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
44	EXISTING CONTOUR
44	PROPOSED CONTOUR
	PROPOSED STORM PIPE
	PROPOSED STORM INLET
	PROPOSED STORM MANHOLE
	EXISTING STORM PIPE
	EXISTING GRATE INLET
1.00%	PROPOSED DIRECTION OF SURFACE WATER RUNOFF
	PROPOSED YD
	PROPOSED CONCRETE PAVEMENT SEE SECTION, SHEET C9.1
	PROPOSED STANDARD DUTY ASPHALT PAVEMENT SEE SECTION, SHEET C9.1

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn

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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER
CORY N. STELLER
STATE OF FLORIDA
No. 93995
PROFESSIONAL ENGINEER

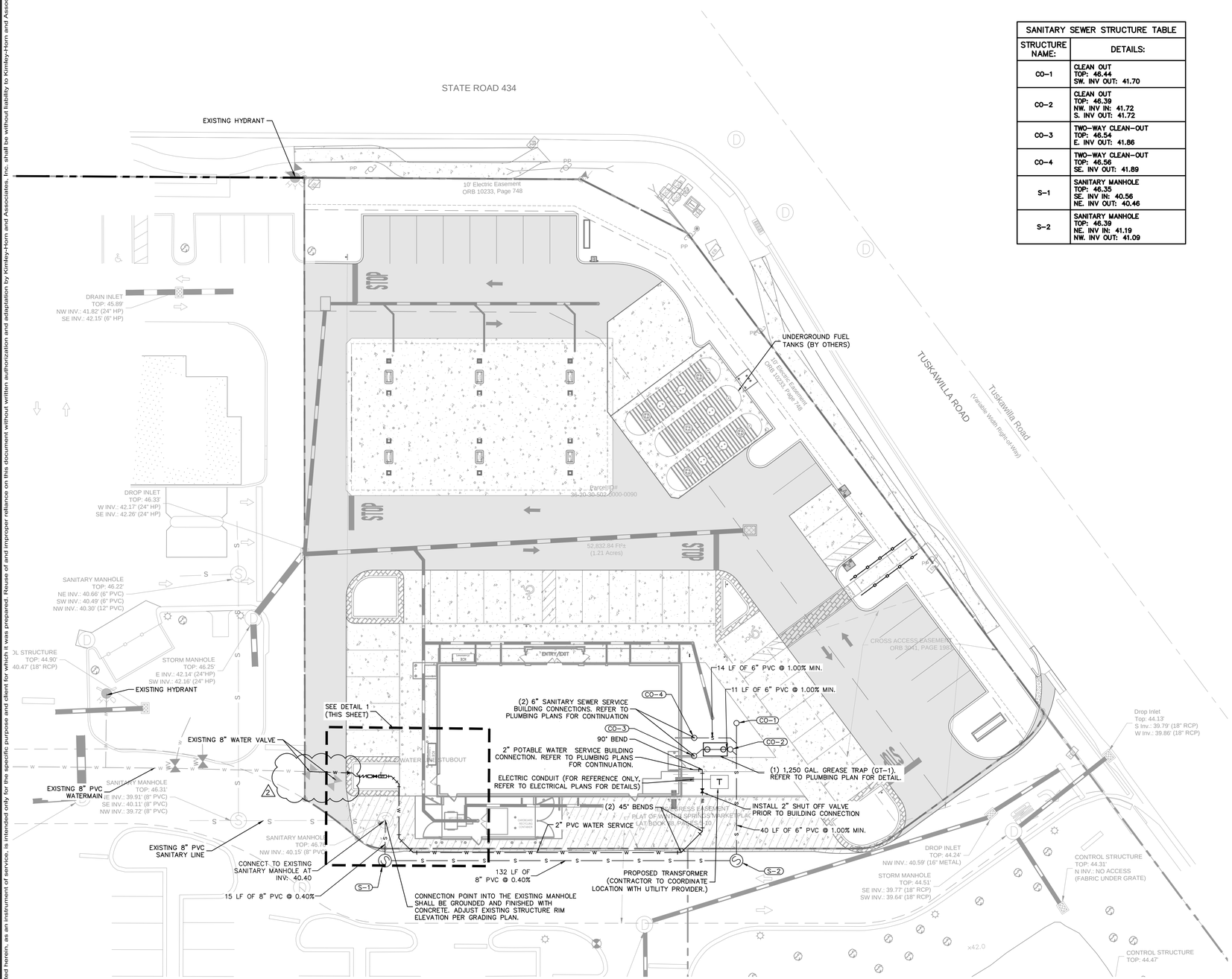
KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

DRAINAGE PLAN

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C5.1



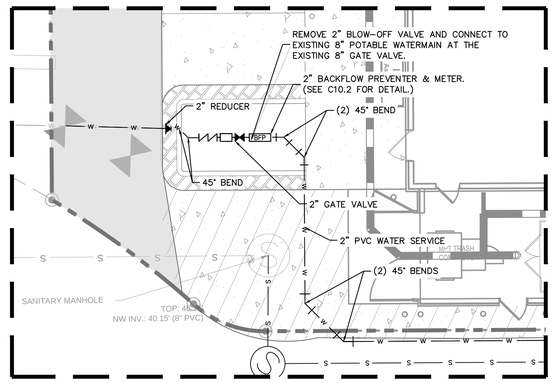
SANITARY SEWER STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
CO-1	CLEAN OUT TOP: 46.44 SW. INV OUT: 41.70
CO-2	CLEAN OUT TOP: 46.39 NW. INV IN: 41.72 S. INV OUT: 41.72
CO-3	TWO-WAY CLEAN-OUT TOP: 46.54 E. INV OUT: 41.86
CO-4	TWO-WAY CLEAN-OUT TOP: 46.56 SE. INV OUT: 41.89
S-1	SANITARY MANHOLE TOP: 46.35 SE. INV IN: 40.56 NE. INV OUT: 40.46
S-2	SANITARY MANHOLE TOP: 46.39 NE. INV IN: 41.19 NW. INV OUT: 41.09

LEGEND

- EXISTING STORM PIPE
- EXISTING WATER MAIN
- EXISTING SANITARY MAIN
- PROPOSED WATER LINE
- PROPOSED FIRE LINE
- PROPOSED FIRE HYDRANT
- PROPOSED SANITARY LINE
- PROPOSED SANITARY MANHOLE
- PROPOSED STORM PIPE
- PROPOSED STORM INLET
- PROPOSED STORM MANHOLE
- PROPOSED 10-FT UTILITY

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40



DETAIL 1
SCALE= 1"=10'

EXISTING UTILITIES:

1. PRIOR TO CONSTRUCTION START, CONTRACTOR SHALL FIELD VERIFY THE LOCATION, SIZE, AND INVERTS OF ALL EXISTING UTILITIES SERVICING THE PROPOSED BUILDING, INCLUDING UTILITY STUB-OUT LOCATIONS, SIZES AND INVERTS. CONTRACTOR SHALL CONTACT ENGINEER WITH ANY DISCREPANCIES.

POTABLE WATER UTILITY NOTES:

1. ALL POTABLE WATER UTILITIES SHALL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS UTILITIES ENGINEERING MANUAL. CONTRACTOR SHALL BE RESPONSIBLE TO BE FAMILIAR WITH THESE STANDARDS AND SPECIFICATIONS.
2. REFER TO THE CITY OF WINTER SPRINGS UTILITY STANDARD DETAILS, SHEETS C10.0 – C10.2.

GENERAL UTILITY NOTES:

1. REFER TO GENERAL CONSTRUCTION NOTES SHEET C1.0 TO C1.1.
2. CONTRACTOR TO COORDINATE PROPOSED TRANSFORMER LOCATION AND ELECTRIC SERVICE LINES WITH POWER COMPANY AND OWNER. TRANSFORMER & ELECTRICAL SERVICE LINE SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED & PERMITTED BY OTHERS.
3. CONTRACTOR TO COORDINATE TELECOMMUNICATION SERVICE LINES WITH SERVICE PROVIDER AND OWNER. DESIGNED & PERMITTED BY OTHERS.
4. PRIOR TO CONSTRUCTION START, THE CONTRACTOR SHALL BE RESPONSIBLE TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH CITY OF WINTER SPRINGS.

SANITARY WASTEWATER UTILITY NOTES:

1. ALL SANITARY WASTEWATER UTILITIES SHALL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS UTILITIES ENGINEERING MANUAL. CONTRACTOR SHALL BE RESPONSIBLE TO BE FAMILIAR WITH THESE STANDARDS AND SPECIFICATIONS.
2. REFER TO THE CITY OF WINTER SPRINGS UTILITY STANDARD DETAILS, SHEETS C10.0 – C10.2.
3. GREASE TRAPS ARE SHOWN FOR REFERENCE ONLY. GREASE TRAPS ARE TO BE PERMITTED AS PART OF THE BUILDING PERMIT. SIZING CALCULATIONS WILL BE REQUIRED AS PART OF THE BUILDING PERMIT SUBMITTAL/REVIEW PROCESS.
4. ALL CLEAN-OUTS WITHIN THE PAVEMENT SHALL BE H-20 TRAFFIC BEARING.

FIRE PROTECTION SERVICE NOTES:

1. ALL UNDERGROUND MAINS SERVING FIRE HYDRANTS OR FIRE PROTECTION SPRINKLER SYSTEMS ON PRIVATE PROPERTY MUST BE PERMITTED PRIOR TO INSTALLATION. THE DRAWING SHALL INDICATE THAT ALL UNDERGROUND FIRE MAINS WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24: "STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES" (LATEST ED.). [F.A.C. 69A-60.005(2)]
2. ALL FIRE SERVICE MAIN LOCATED DOWNSTREAM OF THE FIRE POINT OF SERVICE (POS) SHALL BE INSTALLED BY A QUALIFIED AND LICENSED CONTRACTOR. CONSTRUCTION AND MATERIALS SHALL COMPLY WITH APPLICABLE FIRE CODE. CONTRACTOR TO VERIFY REQUIREMENTS WITH SEMINOLE COUNTY PRIOR TO SHOP DRAWING REVIEW.
3. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED NOT MORE THAN 100 FT FROM THE NEAREST FIRE HYDRANT. [NFPA 14: 6.3.5.4]
4. PROVIDE SIGNAGE FOR ALL PROPOSED FIRE DEPARTMENT CONNECTIONS (F.D.C.) INDICATING ITS LOCATION AND THE BUILDING IT SERVICES.
5. FIRE DEPARTMENT ACCESS ROADS PROVIDED AT THE START OF A PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. (NFPA 1, 16.1.4).
6. A SECOND ENTRANCE/EXIT MIGHT BE REQUIRED PER AHJ IF THE RESPONSE TIME FOR EMERGENCY IS EXCEEDED PER NFPA 1, SECTION 18.2.3.3 MULTIPLE ACCESS ROADS.
7. A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ACCUMULATES. THIS APPLIES TO BOTH COMMERCIAL AND RESIDENTIAL DEVELOPMENTS. (NFPA 1, 16.5.3.1).
8. WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO CONSTRUCTION WORK. (NFPA 1, 16.4.3.1.3).
9. FIRE FLOW TESTING SHALL BE PERFORMED IN ACCORDANCE WITH NFPA 291, RECOMMENDED PRACTICE FOR FIRE FLOW TESTING.
10. A 36 IN. CLEAR SPACE SHALL BE MAINTAINED AROUND THE CIRCUMFERENCE OF FIRE HYDRANTS AND A CLEAR SPACE OF NOT LESS THAN 60 IN. (1524 MM) SHALL BE PROVIDED IN FRONT OF EACH HYDRANT CONNECTION HAVING A DIAMETER GREATER THAN 21/2 IN. NFPA 1, 18.5.7.
11. HYDRANT SHALL BE MARKED WITH A BLUE REFLECTOR THAT IS PLACED 6" IN THE ROADWAY IN ACCORDANCE WITH NFPA 1, CHAPTER 18.5.10.
12. ACCESS TO GATED SUBDIVISIONS OR DEVELOPMENTS SHALL PROVIDE FIRE DEPARTMENT ACCESS THROUGH AN APPROVED SOS AND SEMINOLE COUNTY KNOX KEY SWITCH. NFPA 1, 18.2.2.2.

POTABLE WATER DEMANDS

Building Type	Number of Units	GPD/Unit	ADF		MDF		PHF	
			GPD	GPM	GPD	GPM	GPD	GPM
Gas Station /Store	4,736 SF	0.1	474	0.33	947	0.66	1,421	0.99
TOTAL			**474**	**0.33**	**947**	**0.66**	**1,421**	**0.99**

WASTEWATER DEMANDS

Building	Number of Units	GPD/Unit	ADF		MDF		PHF	
			GPD	GPM	GPD	GPM	GPD	GPM
Gas Station /Store	4,736 SF	0.1	474	0.33	947	0.66	1,894	1.32
TOTAL			**474**	**0.33**	**947**	**0.66**	**1,894**	**1.32**

Always call 811 two full business days before you dig to have underground utilities located and marked.

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No.	REVISIONS	DATE	BY
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2	REVISED PER CITY COMMENTS	08/28/25	ADL

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED FLORIDA PROFESSIONAL ENGINEER
CORY N. SITTLER
STATE OF FLORIDA
No. 73331
PROFESSIONAL ENGINEER
DATE:

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

UTILITY PLAN

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C6.0

Plotted By:LaRocque, Allena Sheet Set:WINTER SPRINGS WAWA Layout:C6.0 UTILITY PLAN August 29, 2025 09:23:21am K:\orl-civil\149170026-winter springs wawa\CADD\CONST\PlanSheets Wawa\C6.0 UTILITY PLAN.dwg
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GRAPHIC SCALE IN FEET
0 10 20 40

Fire Truck (CWS)

	feet
Width	: 8.00
Track	: 6.91
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
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LICENSED PROFESSIONAL ENGINEER
CORY N. SITLER
LICENSE NUMBER 73183
STATE OF FLORIDA
DATE: 08/28/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

FIRE TRUCK ROUTING PLAN

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C7.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:FIRE TRUCK ROUTING PLAN August 29, 2025 08:23:33am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets Wawa\C7.0 TRUCK ROUTING PLAN.dwg
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Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:WB-67 TRUCK ROUTING PLAN August 29, 2025 09:23:38am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C7.0 TRUCK ROUTING PLAN.dwg
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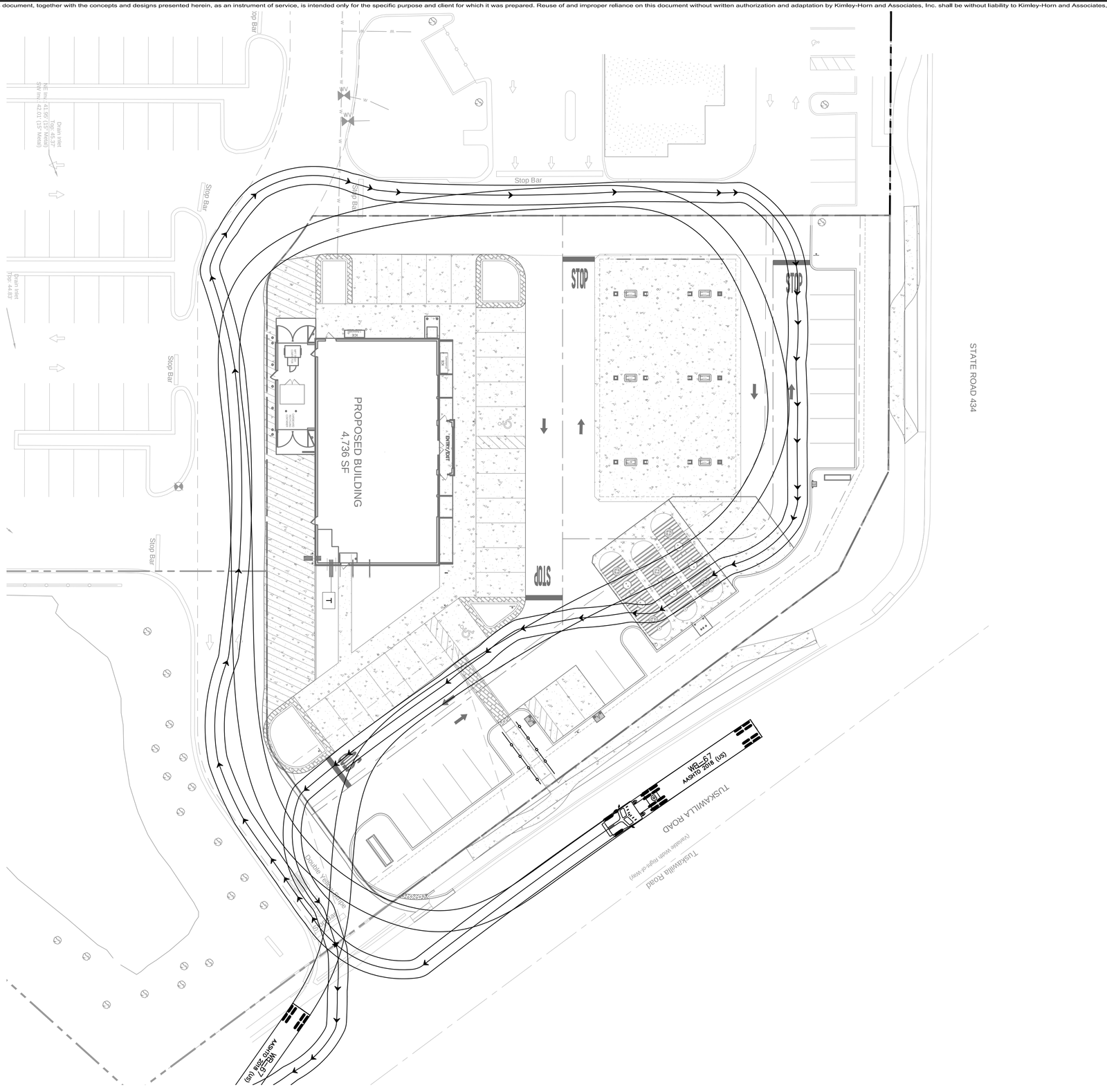

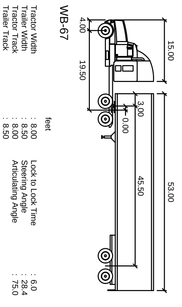

	feet
Tractor Width	8.00
Trailer Width	8.00
Tractor Track	8.00
Trailer Track	8.00
Lock-to-Lock Time	6.0
Steering Angle	28.4
Articulating Angle	75.0

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

SHEET NUMBER		
C7.1	WINTER SPRINGS WAWA CITY OF WINTER SPRINGS FL	WB-67 TRUCK ROUTING PLAN

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

LICENSED PROFESSIONAL ENGINEER
CORY N. SITLER
LICENSE NUMBER
STATE OF FLORIDA
DATE:

Kimley»Horn
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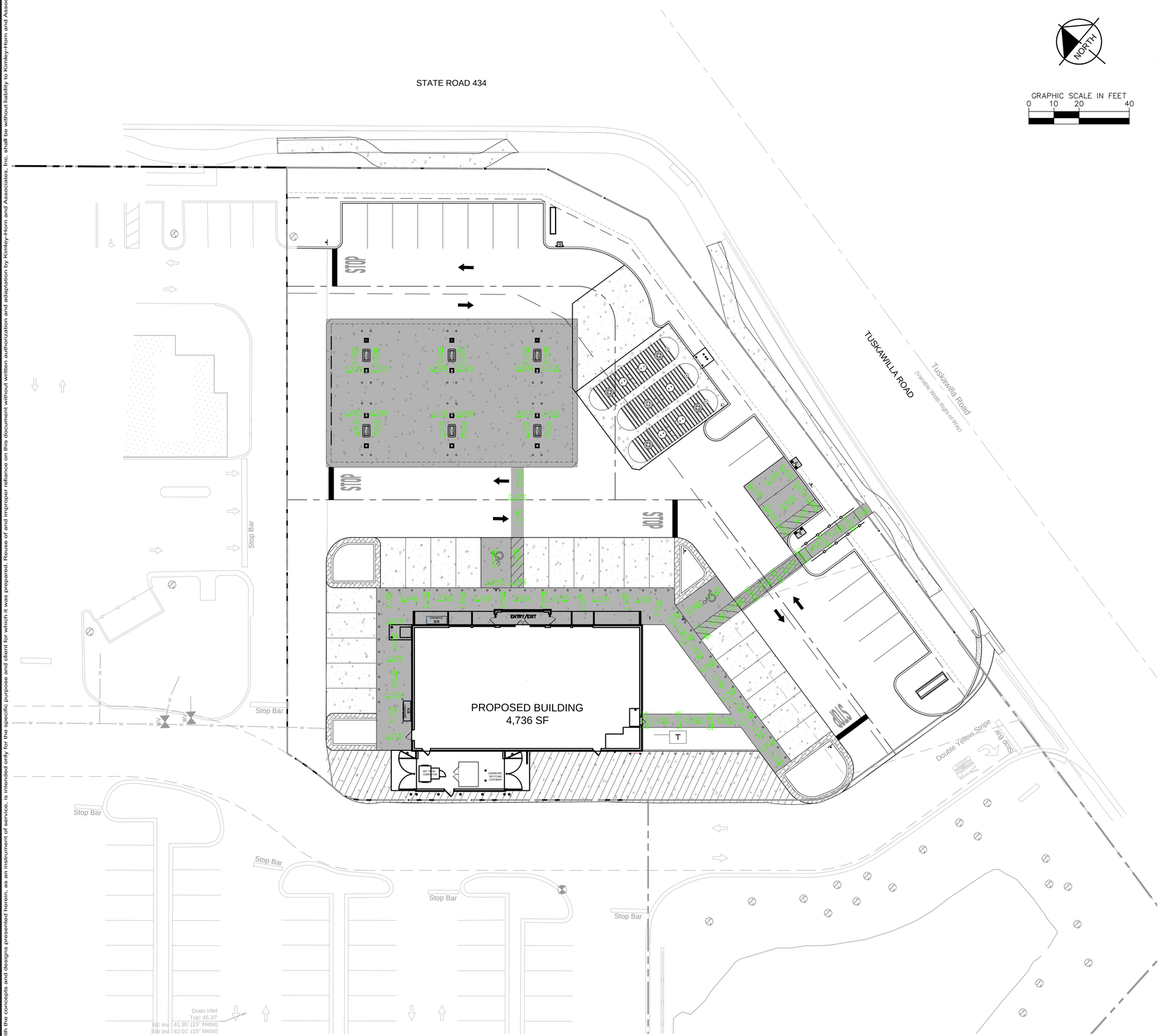

FOR SITE ACCESSIBILITY PLAN

REVISED JULY 28, 2016

SITE LEGEND

ACCESSIBLE AREAS
SEE REQUIREMENTS BELOW

PROJECT BOUNDARY

CW — CROSSWALK TO MEET ADA SPECIFICATIONS AND FDOT INDEX 304 AND 17348. MAX CROSS SLOPE 2%. SEE REQUIREMENTS BELOW.

SWR — RAMPS TO MEET ADA SPECIFICATIONS, FDOT INDEX 304 & FLORIDA ACCESSIBILITY CODE 4.1.2 (1). SEE REQUIREMENTS BELOW.

ACCESSIBILITY REQUIREMENTS

1. GENERAL: ALL PEDESTRIANS USE AREAS (INCLUDING SIDEWALK AROUND BUILDING) TO MEET AMERICANS WITH DISABILITIES ACT AND FLORIDA ACCESSIBILITY CODE SPECIFICATIONS.
2. ACCESSIBLE ROUTES. AS REQUIRED BELOW, SHOULD MEET THE FOLLOWING:
   a. MAXIMUM DESIGN CROSS SLOPE: 1:48 (2.08%)
   b. MAXIMUM DESIGN LONGITUDINAL SLOPE: 1:20 (5%)
   c. MINIMUM WIDTH: 36"
   d. RAMP MAXIMUM RISE (NO RAIL): 6"
   e. RAMP MAXIMUM SLOPE: 1:12
3. EMERGENCY EXITS: MINIMUM 60% OF EMERGENCY EXITS TO HAVE AN ACCESSIBLE ROUTE, AS DEFINED ABOVE, AWAY FROM BUILDING.
4. HANDICAP PARKING & LOADING:

   TOTAL NUMBER OF SPACES: 50 SPACES
   REQUIRED HANDICAP SPACES: 2 SPACES
   PROVIDED HANDICAP SPACES: 2 SPACES

   a. MINIMUM REQUIRED NUMBER OF SPACES PER FLORIDA ACCESSIBILITY CODE & AMERICANS WITH DISABILITY ACT
   b. MAXIMUM DESIGN CROSS SLOPE: 1:48 (2.08%)
5. GAS PUMPS: AN ACCESSIBLE ROUTE, AS DEFINED ABOVE, IS REQUIRED FROM THE MAIN ENTRANCE TO THE NEAREST FUELING POSITION.
6. EMERGENCY STOPS: AN ACCESSIBLE ROUTE, AS DEFINED ABOVE, IS REQUIRED FROM THE BUILDING AND CANOPY TO THE NEAREST EMERGENCY STOP.
7. PEDESTRIAN CONNECTIONS TO PUBLIC TO BE AN ACCESSIBLE ROUTE, AS DEFINED ABOVE.
8. HANDICAP OUTDOOR DINING TABLE:
   a. WHEELCHAIR DINING POSITION MAXIMUM DESIGN CROSS SLOPE: 1:48 (2.08%)
   b. ACCESSIBLE ROUTES, AS DEFINED ABOVE, ARE REQUIRED FROM THE HANDICAP SPACE AND THE MAIN ENTRANCE TO THE WHEELCHAIR DINING POSITION
9. AIR PUMP:
   a. 16'X20' ACCESSIBLE AREA REQUIRED ADJACENT TO AIR PUMP
   b. ACCESSIBLE AREA MAXIMUM DESIGN CROSS SLOPE: 1:48 (2.08%)
   c. AIR PUMP SHOULD BE WITHIN 10" OF AN ACCESSIBLE ROUTE, AS DEFINED ABOVE.
   d. AIR PUMP MAXIMUM HEIGHT RELATIVE TO ACCESSIBLE ROUTE: 48"
10. DRIVEWAY CONNECTIONS ACROSS SIDEWALKS:
    a. RAMPS TO MEET REQUIREMENTS, AS DESCRIBED ABOVE UNDER ACCESSIBLE ROUTES.
    b. CROSSWALKS ACROSS DRIVEWAYS TO BE AN ACCESSIBLE ROUTE AS DESCRIBED ABOVE.

AS-BUILT CHECKLIST

- INITIAL ITEMS THAT MEET REQUIREMENTS. CONTRACTOR TO COMPLETE AND PROVIDE TO ENGINEER MINIMUM OF 20 DAYS PRIOR TO C.O.
- TO BE COMPLETED BY CONTRACTOR & PROVIDED TO ENGINEER PRIOR TO ENGINEER'S REVIEW.
- NOTE ISSUES, DEFICIENCIES, ETC ADJACENT TO INITIAL BOXES.

	CONTRACTOR	ENGINEER
1. GENERAL	☐	☐
2. ACCESSIBLE ROUTES		
a. MAXIMUM DESIGN CROSS SLOPE	☐	☐
b. MAXIMUM DESIGN LONGITUDINAL SLOPE	☐	☐
c. MINIMUM WIDTH	☐	☐
d. RAMP MAXIMUM RISE (NO RAIL)	☐	☐
e. RAMP MAXIMUM SLOPE	☐	☐
3. EMERGENCY EXITS	☐	☐
4. HANDICAP PARKING & LOADING		
a. MINIMUM REQUIRED NUMBER OF SPACES	☐	☐
b. MAXIMUM DESIGN CROSS SLOPE	☐	☐
5. GAS PUMPS	☐	☐
6. EMERGENCY STOPS	☐	☐
7. PEDESTRIAN CONNECTIONS TO PUBLIC	☐	☐
8. HANDICAP OUTDOOR DINING TABLE		
a. WHEELCHAIR DINING POSITION MAXIMUM DESIGN CROSS SLOPE	☐	☐
b. ACCESSIBLE ROUTES	☐	☐
9. AIR PUMP	☐	☐
a. 16'X20' ACCESSIBLE AREA	☐	☐
b. ACCESSIBLE AREA MAXIMUM DESIGN CROSS SLOPE	☐	☐
c. AIR PUMP SHOULD BE WITHIN 10" OF AN ACCESSIBLE ROUTE	☐	NOT REVIEWED BY KIMLEY-HORN
d. AIR PUMP MAXIMUM HEIGHT RELATIVE TO ACCESSIBLE ROUTE	☐	NOT REVIEWED BY KIMLEY-HORN
10. DRIVEWAY CONNECTIONS ACROSS SIDEWALKS		
a. RAMPS TO MEET REQUIREMENTS	☐	☐
b. CROSSWALKS ACROSS DRIVEWAYS	☐	☐

CONTRACTOR CERTIFICATION:

I CERTIFY THAT THE ITEMS INITIALED ABOVE HAVE BEEN VERIFIED TO MEET THE REQUIREMENTS SPECIFIED ABOVE.

COMPANY NAME: _____

NAME OF SIGNATOR: _____

TITLE: _____

SIGNATURE: _____

DATE: _____

ENGINEER REVIEW:

DESIGN:

THE ACCESSIBLE AREAS SHOWN ON THIS PLAN WERE DESIGNED TO MEET THE ACCESSIBILITY REQUIREMENTS SPECIFIED ABOVE.

AS BUILT:

BASED LIMITED SITE OBSERVATIONS AND REVIEW OF THE AS-BUILT SURVEY PROVIDED BY _____, DATED _____, IT IS OUR OPINION THAT THE ITEMS _____ INITIALED ABOVE MEET THE REQUIREMENTS SPECIFIED ABOVE.

COMPANY NAME: _____

NAME OF SIGNATOR: _____

TITLE: _____

LICENSE NUMBER: _____

SIGNATURE, SEAL, DATE:

THIS IS TO CERTIFY TO THE BEST OF OUR KNOWLEDGE AND BELIEF, BASED ON LIMITED SITE OBSERVATIONS AND REVIEW OF AS-BUILTS PROVIDED BY CONTRACTOR (AT CONSTRUCTION INC.), IN ACCORDANCE WITH OUR AGREEMENT AS TO THE EXTENT OF OUR SPECIFIED SERVICES IN THIS REGARD, THAT THE ADA ACCESSIBILITY REQUIREMENTS, AS IDENTIFIED ON THE APPROVED PLANS AND SPECIFICATIONS FOR WAWA AT SR44 & MISSION – BID SET SHEET C6.2, IS SUBSTANTIALLY IN ACCORDANCE WITH THE PERMITTED CONSTRUCTION DOCUMENTS AND ADA ACCESSIBILITY REQUIREMENTS, AND THIS CERTIFICATION DOES NOT RELIEVE ANY PARTY OF THEIR CONTRACTUAL OR OTHER RESPONSIBILITIES.

NOTES:

1. SITE PLAN: SEE SITE PLAN FOR AIR PUMP LOCATION, DIMENSIONS, ETC.
2. GRADING PLAN: SEE GRADING PLAN FOR GRADING DESIGN.
3. SITE DETAILS: SEE SITE DETAILS SHEET FOR ACCESSIBILITY AND OTHER DETAILS.
4. ARCHITECTURAL PLANS: ARCHITECTURAL PLAN REFERENCES ARE FOR INFORMATIONAL PURPOSES ONLY. REFER TO ARCHITECTURAL PLANS FOR ACTUAL LOCATIONS AND SPECIFICATIONS.

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER — CORY N. SPITLER — STATE OF FLORIDA — No. 73922 — PROFESSIONAL ENGINEER — DATE:

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

ACCESSIBILITY PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C8.0

Plotted By:LaRocque, Athena Sheet Set:WINTER SPRINGS WAWA Layout:ACCESSIBILITY PLAN August 29, 2025 09:23:50am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C8.0 ACCESSIBILITY PLAN.dwg
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WAWA SIGNAGE/STRIPING DETAILS

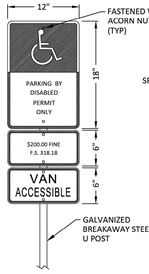
REV. JUNE 7,2022

NOTE: SIGNS SHALL MEET THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

AIR PARKING SIGN

NTS

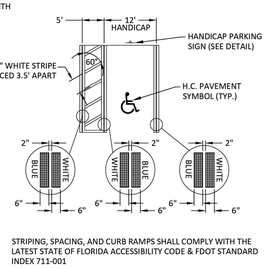
NOTES:
1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD.
2. TOP PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND & BORDER. CONTRACTOR SHALL VERIFY FINE AMOUNT & ORD. NO.
5. ONE (1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLATION HEIGHT OF SIGN SHALL BE 60" ABOVE THE FINISHED GRADE TO THE BOTTOM OF THE SIGN. ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
7. SIGN POST TO BE GALVANIZED BREAKAWAY STEEL U POST.
8. SIGN TO BE FASTENED TO POST WITH ACORN NUT.



HANDICAP PARKING SIGN

NTS

SIGNAGE AND STRIPING NOTES:
1. ALL STANDARD PARKING STRIPES ARE TO BE 4" YELLOW
2. ARROWS SHOWN IN DRIVE AISLES ARE FOR INFORMATION ONLY AND SHALL NOT BE PAINTED.



STRIPING, SPACING, AND CURB RAMPS SHALL COMPLY WITH THE LATEST STATE OF FLORIDA ACCESSIBILITY CODE & FDOT STANDARD INDEX 711-001

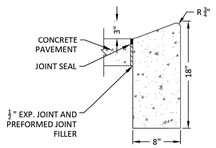
NOTE: ALL SIGNS TO USE ACORN BOLTS.

HANDICAP STRIPING DETAIL

NTS

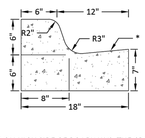
WAWA CURB DETAILS

REV. JUNE 19, 2017



WAWA TYPE B1 CURB

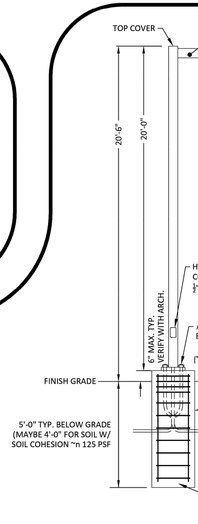
NTS



*NOTE:
WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

WAWA TYPE F1 CURB

NTS



PREMIUM POLES:
IF PROJECT SITE LOCATED WITHIN THE FOLLOWING FLORIDA COUNTIES, THEN THE PREMIUM 0.188 MILL LIGHT POLE WILL BE REQUIRED:
SARASOTA
CHARLOTTE
LEE
COLLIER
MONROE
DADE
BROWARD
PALM BEACH
MARTIN
ST. LUCIE
BREVARD

NOTE: PROVIDE 6" IDEALSHIELD (WHITE) BOLLARD @ SITE LIGHT @ PARKING SPACED AS DIRECTED BY WAWA PROJECT ENGINEER.

NOTE: THIS DETAIL IS NOT CERTIFIED. FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR TO PROVIDE SHOP DRAWINGS CERTIFIED BY STRUCTURAL ENGINEER.

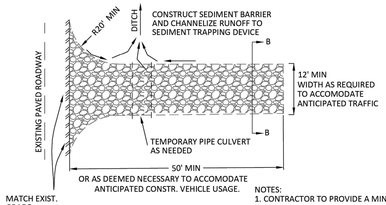
PLACEMENT: POLE SHALL BE PLACED AT PARKING STRIPE AT HEAD OF SPACE.

LIGHT POLE WITH STANDARD ANCHORING DETAIL

NTS

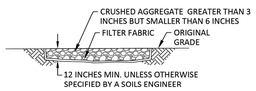
EROSION CONTROL DETAILS

REV. JULY 28, 2016



PLAN VIEW

NOTES:
1. CONTRACTOR TO PROVIDE A MINIMUM OF 1 STABILIZED ENTRANCE.
2. ALL OTHER STATE AND LOCAL JURISDICTION TO BE CONTRACTED AND ADHERED TO.



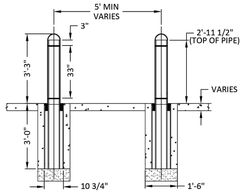
SECTION VIEW

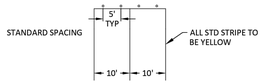
STABILIZED CONSTRUCTION ENTRANCE / EXIT (TYPE 1)

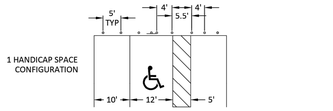
NTS

WAWA GENERAL DETAILS

REV. OCTOBER 9, 2023



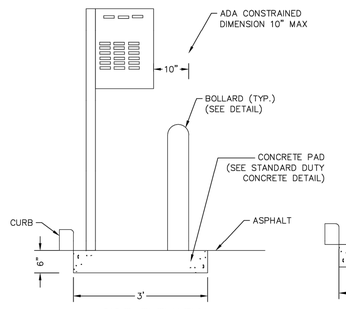




NOTE: ALL DIMENSIONS MEASURED TO CENTER OF BOLLARD. BOLLARD SPACING IS 5' UNLESS OTHERWISE NOTED.

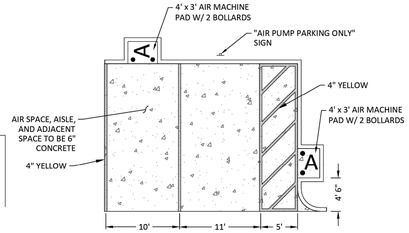
BOLLARD SPACING/DIMENSION DETAIL

NTS



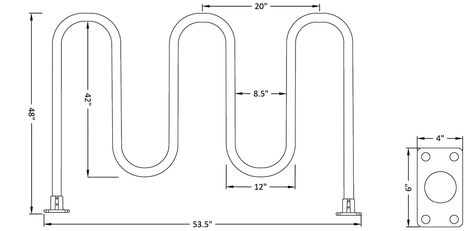
DESIGNER NOTE: AIR PUMP TO BE PLACED INLINE OF SIGHT TO BUILDING.

AIR PUMP STANDARD DETAIL



AIR PARKING SPACE DETAIL

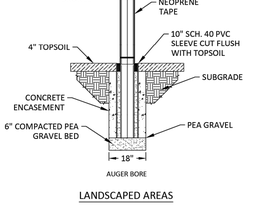
NTS



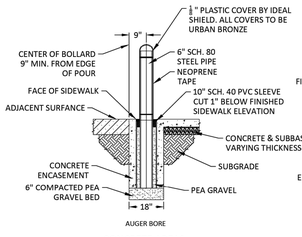
MADE OF ROLLED ALUMINUM:	1 1/2" SCHEDULE 40 ALUMINUM WITH 1 7/8" O.D.
STANDARD LENGTHS:	60" SECTION FITS UP TO 5 BIKES
STANDARD HEIGHT:	46"
INSTALLATION OPTIONS:	SURFACE MOUNT
FINISHING OPTIONS:	STANDARD CLEAR ANODIZED
MANUFACTURED BY:	IDEAL SHIELD 2525 CLARK ST DETROIT, MI 48209 PHONE: 1-866-825-8659

STANDARD BICYCLE RACK DETAIL

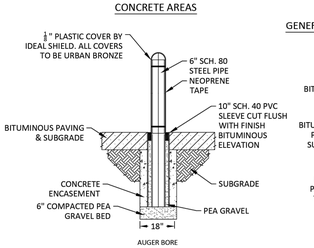
NTS



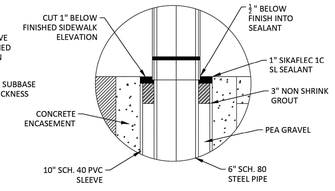
LANDSCAPED AREAS



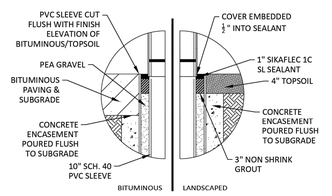
CONCRETE AREAS



BITUMINOUS AREAS



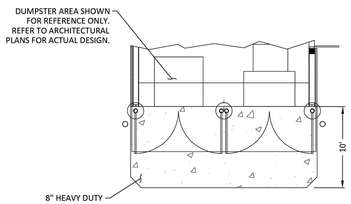
GENERAL DETAILS AND CAULK/GROUT DETAIL FOR CONCRETE AREAS



CAULK/GROUT DETAIL FOR LANDSCAPED & BITUMINOUS AREAS

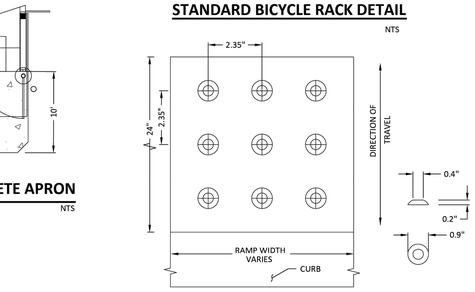
BOLLARD DETAIL

NTS



REMOTE DUMPSTER CONCRETE APRON

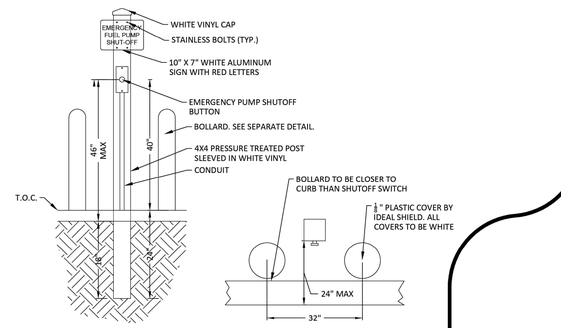
NTS



NOTE: SIDEWALK RAMPS TO MEET ADA, FDOT DESIGN STANDARDS, AND LOCAL SPECIFICATIONS.

ADA DETECTABLE CURB WARNING DETAIL

ADA DOME TOOL DESIGN - STAMPCRETE INTERNATIONAL. NTS



FRONT ELEVATION

PLAN VIEW

EMERGENCY PUMP SHUTOFF DETAIL

NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

Kimley»Horn
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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER — CORY S. MITCHELL — STATE OF FLORIDA — No. 73922 — PROFESSIONAL ENGINEER — DATE:

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

WAWA STANDARD DETAILS

WINTER SPRINGS WAWA

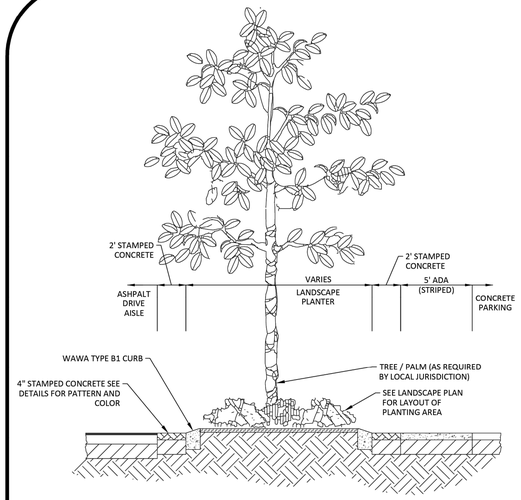
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C9.0

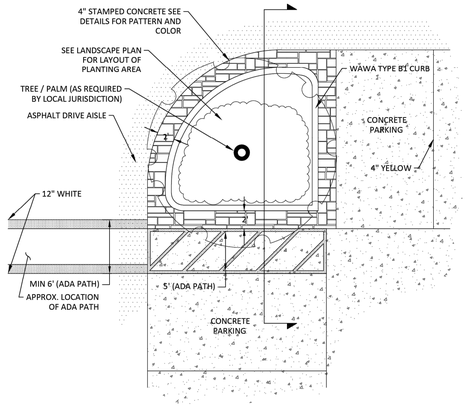
Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:C9.0 WAWA DETAILS August 29, 2025 09:24:08am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets Wawa\C9.0 DETAILS.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

WAWA PLANTER DETAILS

REV. JULY 28, 2016



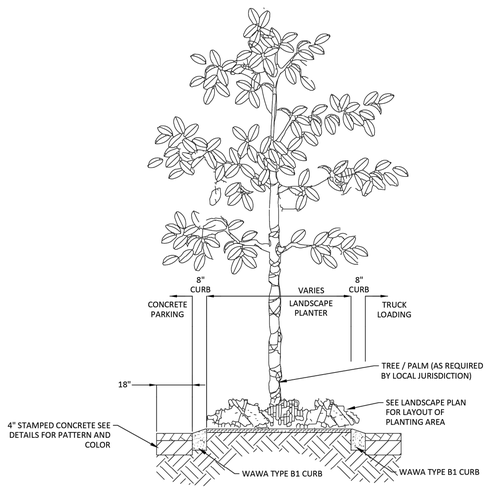
SECTION



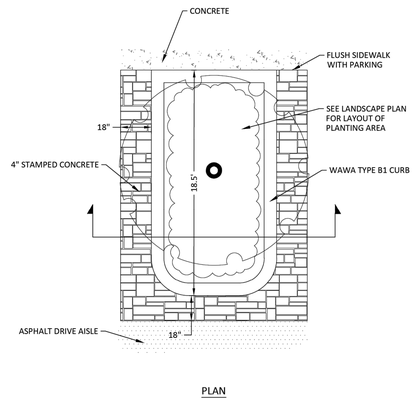
PLAN

CORNER ISLAND LANDSCAPE DETAIL

NTS



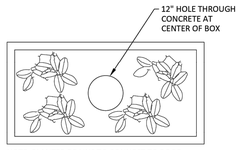
SECTION



PLAN

PARKING ISLAND LANDSCAPE DETAIL

NTS



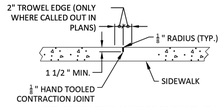
NOTE: PLANTER DRAINS TO CONNECT TO ROOF DRAIN MANIFOLD. SEE DETAIL.

PLANTER BOX DRAINAGE DETAIL

NTS

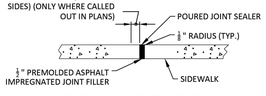
WAWA PAVEMENT DETAILS

REV. JUNE 7,2022



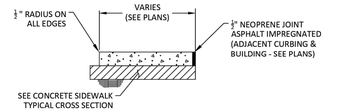
NOTE: CONTRACTION JOINTS TO BE SPACED AT A WIDTH OF WALKWAY OR A MAX. OF 10'.

CONTRACTION JOINTS



NOTE: EXPANSION JOINTS TO BE SPACED AT A MAX. OF 30'.

EXPANSION JOINTS

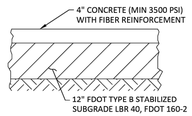


NOTE: TO BE CONSTRUCTED PER FDOT INDEX 522-001 & FDOT SPECIFICATIONS (SECTION 350)

SIDEWALK

SIDEWALK DETAILS

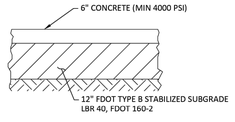
NTS



NOTE: TO BE CONSTRUCTED PER WAWA & FDOT SPECIFICATIONS (SECTION 350) AND GEOTECHNICAL ENGINEERING REPORT

CONCRETE SIDEWALK TYPICAL CROSS SECTION

NTS

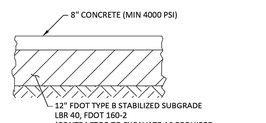


NOTE: TO BE CONSTRUCTED PER WAWA & FDOT SPECIFICATIONS (SECTION 350) AND GEOTECHNICAL ENGINEERING REPORT

STANDARD DUTY CONCRETE PAVEMENT TYPICAL CROSS SECTION

PARKING AT BUILDING & AIR PUMP

NTS

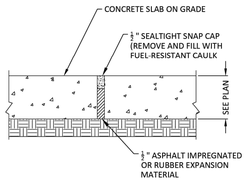


NOTE: TO BE CONSTRUCTED PER WAWA & FDOT SPECIFICATIONS (SECTION 350) AND GEOTECHNICAL ENGINEERING REPORT

HEAVY DUTY CONCRETE PAVEMENT TYPICAL CROSS SECTION

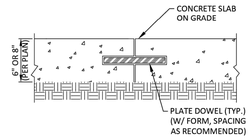
CANOPY AREA, LOADING ZONE & TANK FIELD AREA REMOTE DUMPSTER APRON

NTS

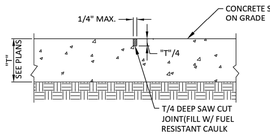


ISOLATION JOINT DETAIL

AT STRUCTURES SUCH AS GAS ISLANDS, BUILDING CANOPY COLUMNS, BOLLARDS ETC.



CONSTRUCTION JOINT DETAIL

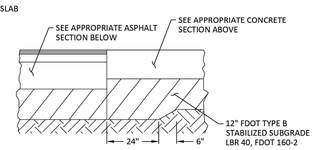


CONTROL JOINT DETAIL

NOTE: SEE ARCHITECT SPECIFICATIONS FOR COMPLETE CONCRETE DETAILS.

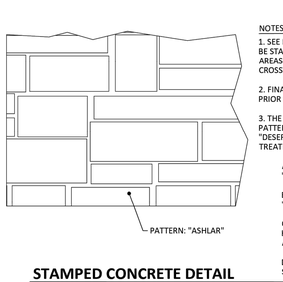
CONCRETE JOINT DETAILS

NTS



ASPHALT TO CONCRETE TRANSITION DETAIL

NTS



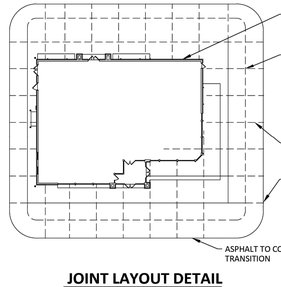
NOTES:

1. SEE PAVEMENT SECTION FOR PAVEMENT DETAILS TO BE STANDARD DUTY CONCRETE IN NON-VEHICULAR AREAS. TO MEET CONCRETE CROSSWALK DETAIL FOR CROSSWALKS IF APPLICABLE.
2. FINAL COLOR TO BE COORDINATED WITH WAWA PRIOR TO INSTALLATION.
3. THE STAMPED CONCRETE FIELD IS "ASHLAR" PATTERN. USE INCRETE COLOR-INTEGRATED CONCRETE "DESERT TAN" WITH THE FOLLOWING STEP-BY-STEP TREATMENT:
   - A. 100% BROADCAST DRY SHAKE HARDENER "DESERT TAN", FOLLOWED BY:
   - B. 30%-35% BROADCAST DRY SHAKE HARDENER "COCOA", THEN HARD TROWEL.
   - C. USE RELEASE POWDER "PEACH" IN MOLD. KEEP SOME OF THE COLOR IN GROUT JOINTS AND HIGHLIGHTS.
   - D. USE PENETRATING, NON-GLOSSY SEALER SUCH AS CLEAR SEAL BY INCRETE SYSTEMS

PATTERN: "ASHLAR"

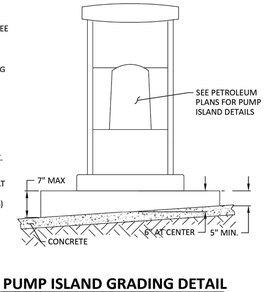
STAMPED CONCRETE DETAIL

NTS



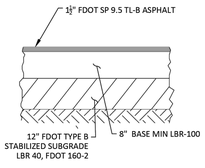
JOINT LAYOUT DETAIL

NTS



PUMP ISLAND GRADING DETAIL

NTS

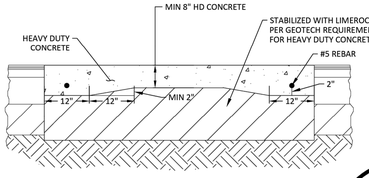


BASE:
1. FDOT SHELL ROCK, BANK RUN SHELL, LIMEROCK, CRUSHED CONCRETE OR CEMENT COQUINA BASE. LBR-100
2. BASE TO MEET LOCAL, FDOT, GEOTECHNICAL REPORT & WAWA SPECIFICATIONS

NOTES
1. TO BE CONSTRUCTED PER FDOT SPECIFICATIONS (SECTIONS 330, 200, & 160), GEOTECHNICAL ENGINEERING REPORT, AND WAWA SPECIFICATIONS.
2. INTENDED FOR SANDY AND GRAVEL SUB-GRADES CAPABLE OF ACHIEVING A LBR OF 10 OR GREATER (SN OF 2.60). A SUB-GRADE WITH LESS THAN 9 LBR WILL REQUIRE A SPECIFIC SUB-BASE AND PAVEMENT DESIGN.

STANDARD DUTY ASPHALT PAVEMENT TYPICAL CROSS SECTION

NTS



STAMPING OPTION TO BE DETERMINED BY CIVIL ENGINEER & WAWA

- ☑ NOT STAMPED/ COLORIZED (PREFERRED)
- ☐ STAMPED, SEE DETAIL FOR PATTERN & COLOR

CONCRETE CROSSWALK DETAIL

NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED STATE OF FLORIDA CORY SHIELDS LICENSE NUMBER 93170 PROFESSIONAL ENGINEER — DATE: 08/28/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

WAWA STANDARD DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER C9.1

Plotted By:LaRocque, Allene Sheet Set:WINTER SPRINGS WAWA Layout:C9.1 WAWA DETAILS August 29, 2025 09:24:17am K:\od_civil\149170026-winter springs wawa\CAD\CONSTPlanSheets- Wawa\C9.0 DETAILS.dwg
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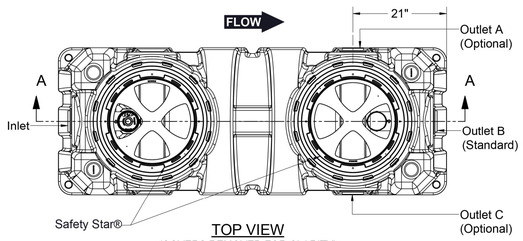
WAWA UTILITY DETAILS

REV. MAY 12, 2023

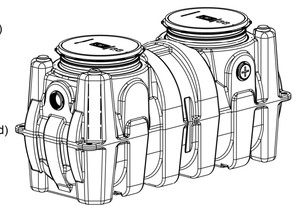
SPECIFICATIONS

Notes:

1. 4" FPT inlet/outlet with 4" plain end adapters, single inlet and triple outlet.
2. Unit weight - w/ cast iron covers: 376 lbs. (For wet weight add 2,310 lbs.)
3. Maximum operating temperature: 150° F continuous
4. Capacities - Liquid: 277 gal.;
   Grease: 1,895 lbs. (260 gal.) @100GPM
   Grease: 1,196 lbs. (164 gal.) @200GPM
   Solids: 69 gal.
5. This unit does not require flow control for 100 GPM applications. Built-in flow control is provided for 200 GPM applications. For series installations, only install flow control on the first unit in the series if necessary.
6. For gravity drainage applications only.
7. Do not use for pressure applications.
8. Cover placement allows full access to tank for proper maintenance.
9. Vent not required unless per local code.
10. Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping.
11. Integral air relief / Anti-siphon / Sampling access.
12. Adjustable cover adapters provide up to 4" of additional height.
13. Designed for below-grade, above-grade, indoor or outdoor installations.
14. Safety Star®, access restrictor built into each cover adapter, prevents accidental entry to tanks (450 lb rating).



TOP VIEW
(COVERS REMOVED FOR CLARITY)



ISOMETRIC VIEW

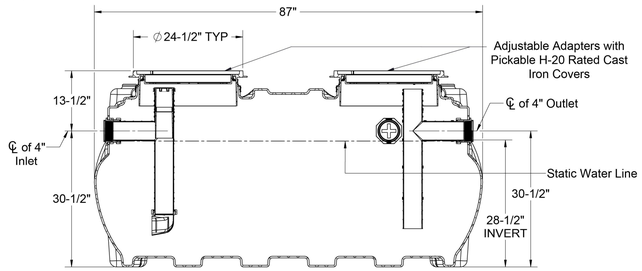
ENGINEER SPECIFICATION GUIDE

Schier Great Basin™ grease interceptor model # GB-250 shall be lifetime guaranteed and made in USA of seamless, rotationally-molded polyethylene with minimum 3/8" uniform wall thickness. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapters, Safety Star® access restrictor built into each cover adapter, built-in flow control (for 200 GPM only) and three outlet options. Interceptor shall be certified to ASME A112.14.3 (Type D for 100 GPM, type C for 200 GPM) and CSA B481.1. Interceptor flow rate shall be 100 GPM or 200 GPM. Interceptor grease capacity shall be 1,895 lbs. @ 100 GPM or 1,196 lbs. @ 200 GPM. Cover shall provide water/gas-tight seal and have minimum 16,000 lbs. load capacity.

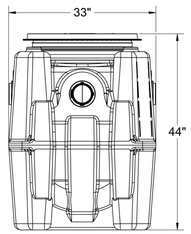
CERTIFIED PERFORMANCE

Great Basin™ hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME #A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.

Type D certification does not require a flow control



SECTION A-A



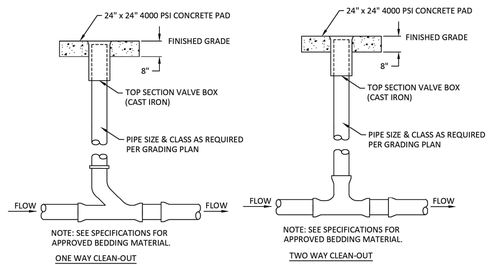
END VIEW

SPECIFICATION SHEET

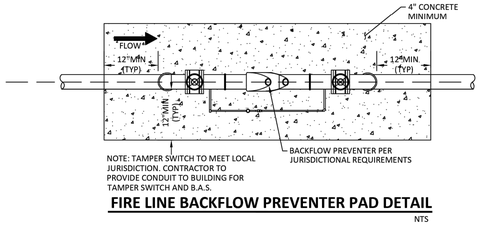
MODEL NUMBER: GB-250	**PART NUMBER:** 4055-007-02			
	DESCRIPTION: GB-250 GREASE INTERCEPTOR 100 GPM / 200 GPM, 4" INLET/OUTLET, H-20 RATED CAST IRON COVERS			
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF **SCHIER PRODUCTS**. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF **SCHIER PRODUCTS** IS PROHIBITED.	**DWG BY:** C.SINCLAIR	**DATE:** 5/4/2022	**REV:** -	**ECO:** -

SCHIER
6455 Woodland Dr
Shawnee, KS 66218
Tel: 913-951-3300
Fax: 913-951-3399
schierproducts.com

GREASE TRAP DETAIL
NTS



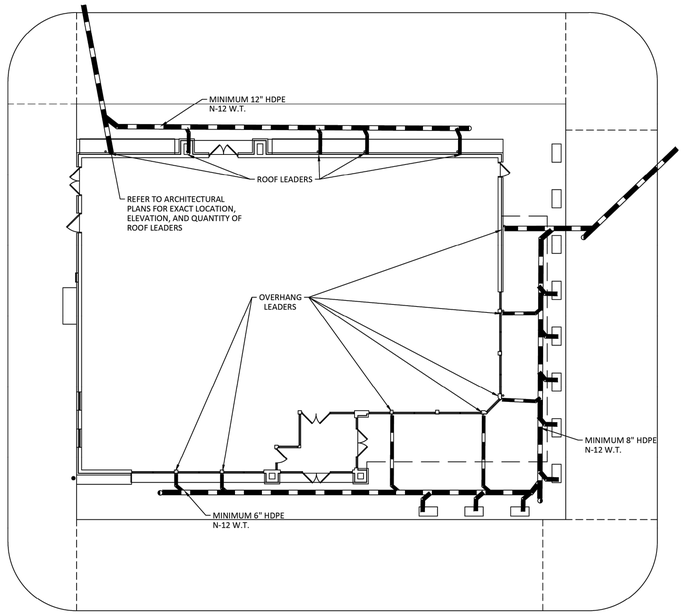
CLEAN OUT DETAIL
NTS



FIRE LINE BACKFLOW PREVENTER PAD DETAIL
NTS

WAWA DRAINAGE DETAILS

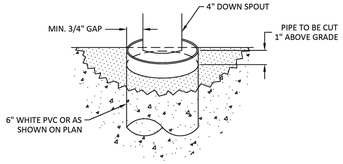
REV. MAY 15, 2019



NOTES:

1. ENGINEER TO SPECIFY ACTUAL PIPE SIZE PER HYDRAULIC CALCULATIONS.
2. SITE CONTRACTOR TO BUILD LINES TO INDIVIDUAL WYE FITTINGS.
3. PLANTER DRAINS ARE TO CONNECT TO MANIFOLD.

ROOF DRAIN MANIFOLD DETAIL
NTS



ROOF DRAIN CONNECTION DETAIL
NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL ENGINEER — CORY N. SITTLER — LICENSE NO. 73844 — STATE OF FLORIDA — DATE

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

WAWA STANDARD DETAILS

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C9.2

Always call 811 two full business days before you dig to have underground utilities located and marked.
Sunshine811.com

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:C9.2 WAWA DETAILS August 29, 2025 09:24:27am K:\orl-civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C9.0 DETAILS.dwg
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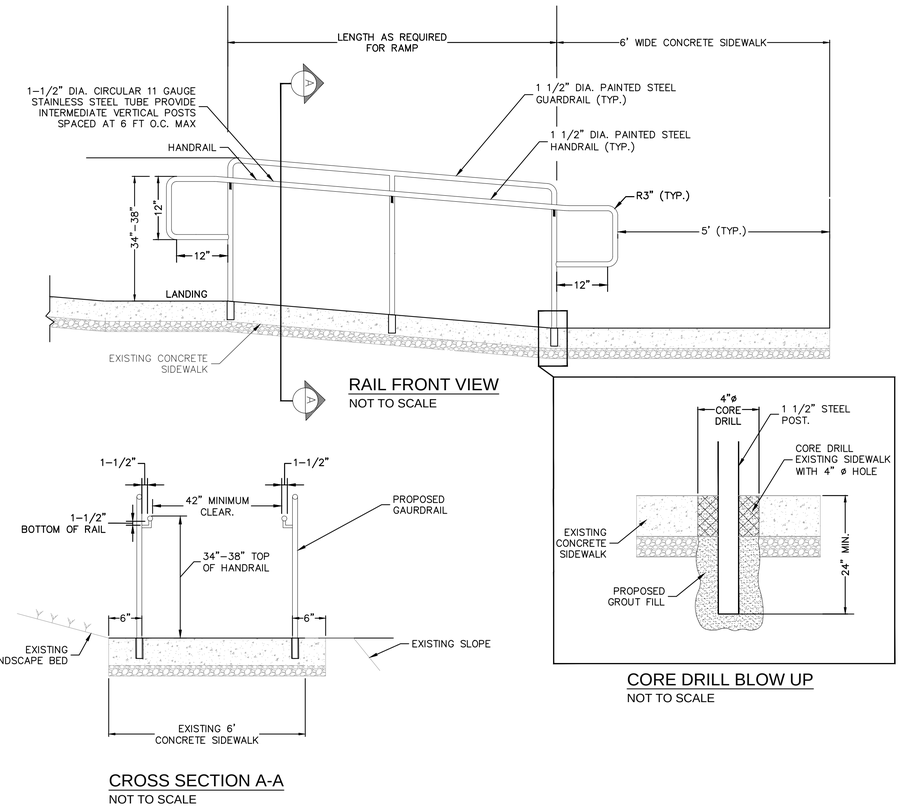
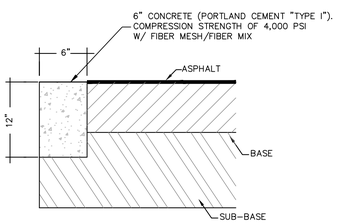


RAIL FRONT VIEW
NOT TO SCALE

CORE DRILL BLOW UP
NOT TO SCALE

CROSS SECTION A-A
NOT TO SCALE

NOTES:
1. EXTEND HANDRAIL 12" BEYOND RAMP LIMITS; TYPICAL EACH END
2. RAILING TO BE DESIGNED TO MEET IBC 1607.8.1 FOR LOADING.
3. ALL PEDESTRIAN SIDEWALK, PATHWAYS, AND CROSSWALKS SHALL BE CONSTRUCTED TO COMPLY WITH A.D.A. SPECIFICATIONS AND NOT EXCEED MAX. 2.0% CROSS SLOPE (1:48), MAX. 5% RUNNING SLOPE (1:20) WITHOUT RAILS. ANY SLOPE EXCEEDING 5% WILL REQUIRED RAILS AS SHOWN ABOVE.



RIBBON CURB DETAIL
N.T.S.

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No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
2	REVISED PER CITY COMMENTS	08/28/25	ADL

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED FLORIDA PROFESSIONAL CORY N. SITLER 73161 STATE OF FLORIDA REGISTERED PROFESSIONAL ENGINEER
DATE: 08/28/25

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

GENERAL CONSTRUCTION DETAILS

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS
FL

SHEET NUMBER
C9.3

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:C9.3 GENERAL DETAILS August 29, 2025 09:24:32am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C9.0 DETAILS.dwg
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Taper

NOTES:

1. *L = Taper Length*
   B = Buffer Length
   X = Work Zone Sign Distance
   See Index 102-600 for "L", "B", "X", channelizing device spacing values.

2. *Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4'. Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.*

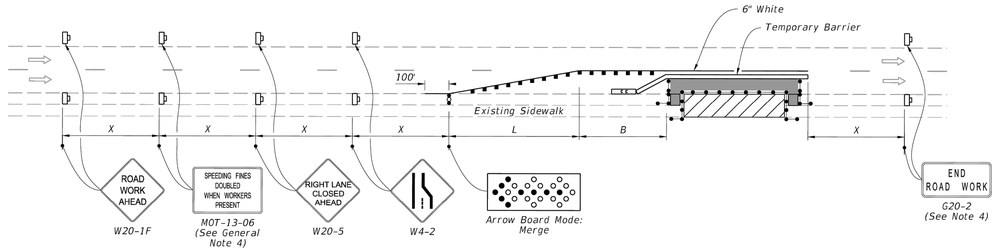
3. *When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.*

4. *The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work operation will be in place for 24 hours or less.*

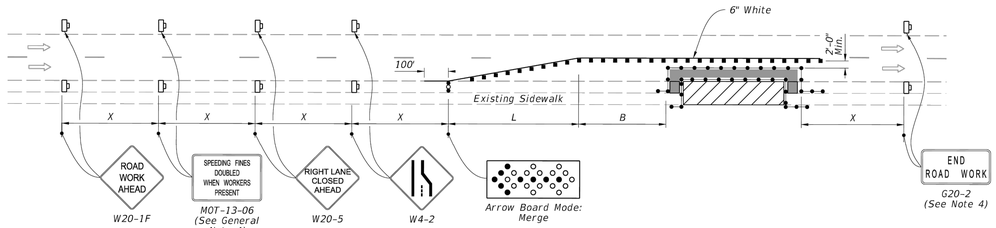
5. *Pedestrian Diversion Option 2 may only be used when called for in the Plans or as approved by an Engineer.*

SYMBOLS:

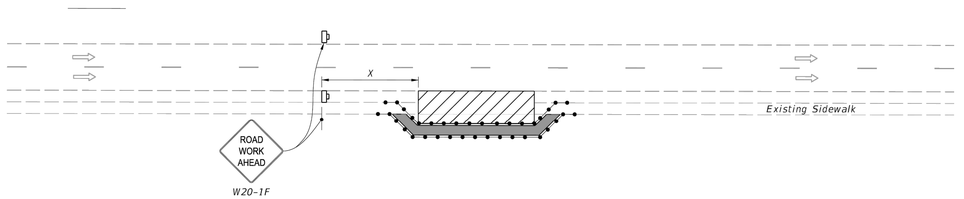
- *Work Area*
- *Temporary Pedestrian Way*
- *Channelizing Device (See Index 102-600)*
- *Pedestrian Longitudinal Channelizing Device (LCD)*
- *Work Zone Sign*
- *Arrow Board*
- *Crash Cushion*
- *Lane Identification and Direction of Traffic*



PEDESTRIAN DIVERSION - OPTION 1
(Temporary Barrier Shown, Low Profile Barrier Similar)



PEDESTRIAN DIVERSION - OPTION 2
(Work Zone Speed 35 mph or Less)



PEDESTRIAN SPECIAL DETOUR

LAST REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	SIDEWALK CLOSURE	INDEX	SHEET
11/01/21	REVISION			102-660	2 of 2

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB
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LICENSED FLORIDA PROFESSIONAL ENGINEER
CORY N. SITLER
STATE OF FLORIDA
CORY SITLER
PROFESSIONAL ENGINEER
DATE:

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

GENERAL CONSTRUCTION DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER C9.4

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Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:C9.4 GENERAL DETAILS August 29, 2025 09:24:39am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets Wawa\C9.0 DETAILS.dwg
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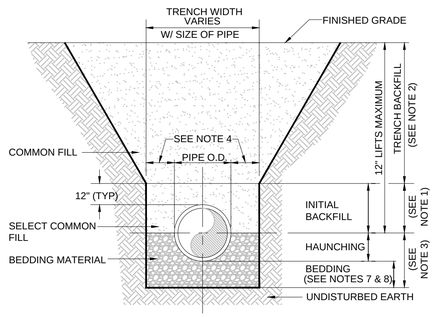
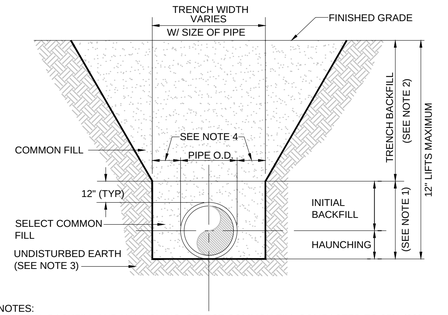
2/21/2023 10:19:10 AM

BEDDING AND TRENCHING - TYPE A



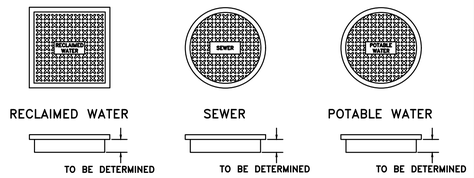
NOTES:
1. INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
8. DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION.
9. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN CITY OF WINTER SPRINGS RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

BEDDING AND TRENCHING - TYPE B

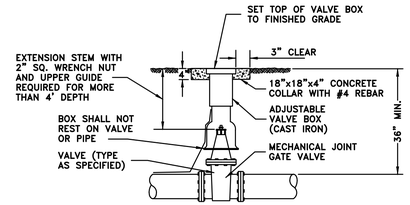


NOTES:
1. INITIAL BACKFILL AND HAUNCHING: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
3. PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY UTILITIES.
4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE FLOW.
7. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN CITY OF WINTER SPRINGS RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.

VALVE, VALVE BOX AND COVER



TYPICAL VALVE BOX COVER DETAILS

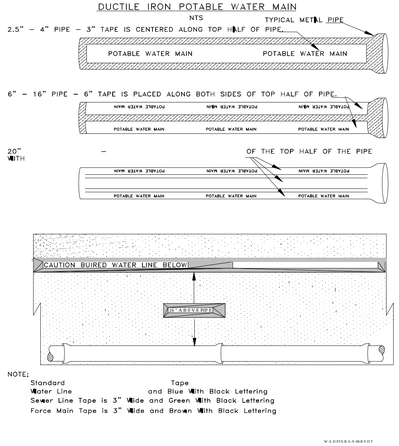


TYPICAL VALVE AND VALVE BOX DETAIL

WSW001 12-07-93

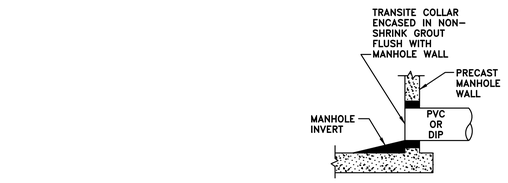
DUCTILE IRON POTABLE WATER MAIN

NTS

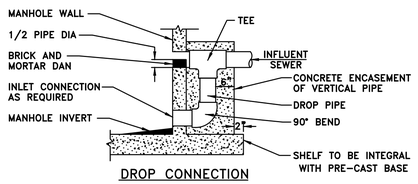


NOTE:
Standard Water Line Tape and Blue With Block Lettering
Sewer Line Tape is 3" Wide and Green With Block Lettering
Force Main Tape is 3" Wide and Brown With Black Lettering

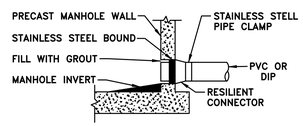
PIPE IDENTIFICATION AND WARNING TAPE



FORCEMAIN CONNECTION



DROP CONNECTION

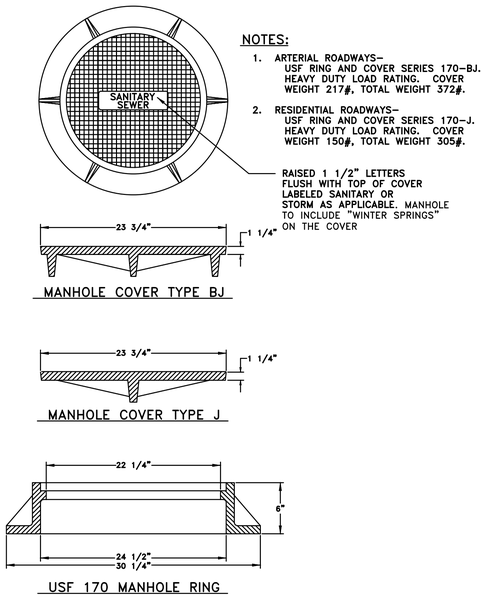


TYPICAL CONNECTION

NOTES:
1. PENETRATION TO EXISTING MANHOLES SHALL BE CORE BORED
2. OUTSIDE DROP CONNECTION SHALL BE REQUIRED WHENEVER AN INFLUENT SEWER IS LOCATED TWO FEET OR MORE ABOVE THE MAIN INVERT CHANNEL

TYPICAL MANHOLE CONNECTIONS

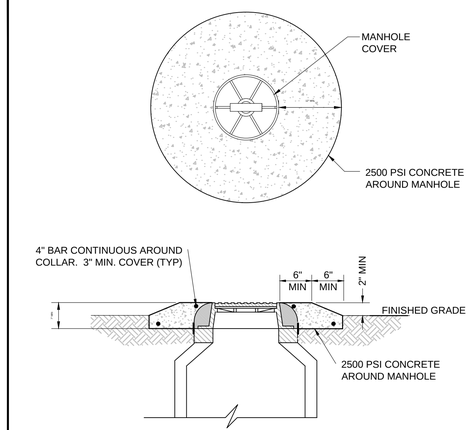
NOTES:
1. ARTERIAL ROADWAYS– USF RING AND COVER SERIES 170–BJ. HEAVY DUTY LOAD RATING. COVER WEIGHT 217#, TOTAL WEIGHT 372#.
2. RESIDENTIAL ROADWAYS– USF RING AND COVER SERIES 170–J. HEAVY DUTY LOAD RATING. COVER WEIGHT 150#, TOTAL WEIGHT 305#.



MANHOLE FRAME & COVER

W.S. Detail 6-9-00

MANHOLE IN GRASS AREA



NOTES:
1. CLEARANCE OF 30" FREE FROM OBSTRUCTIONS IN ALL DIRECTIONS.
2. AREAS SUPPORTING CONCRETE COLLAR OR SLAB SHALL BE PROPERLY COMPACTED.
3. TOP OF MANHOLE SHALL BE 2" ABOVE FINISHED GRADE, CROWN OF ADJACENT ROADWAY, OR 100 YEAR FLOOD ELEVATION, WHICHEVER IS GREATER.

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2	REVISED PER CITY COMMENTS	08/28/25	ADL

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LICENSED PROFESSIONAL ENGINEER GARY N. SITLER STATE OF FLORIDA COPYRIGHTED PROFESSIONAL ENGINEER 23990 07/18/25

KHA PROJECT 149170026
DATE 08/28/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADL

UTILITY DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER C10.0

Plotted By:LaRocque, Arlene Sheet Set:WINTER SPRINGS WAWA Layout:UTILITY DETAILS August 29, 2025 09:24:51am K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C10.0 UTILITY DETAILS.dwg
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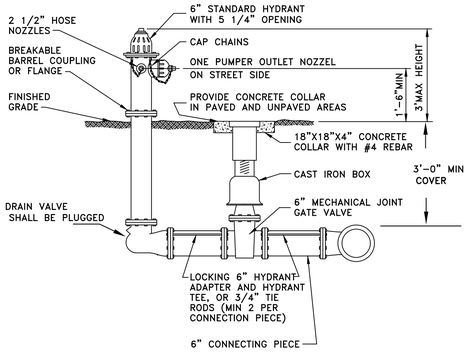
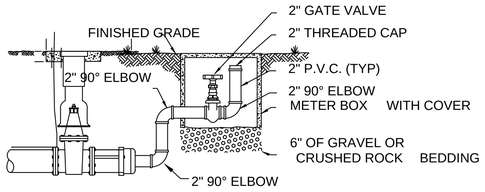


NOTES:

1. THE HYDRANTS ACCEPTABLE TO THE CITY OF WINTER SPRINGS SHALL BE EITHER THE CLOW # 42 MEDALION AMERICAN DARLING B84B, OR THE MUELLER A-423.
2. THE BARREL SHALL BE PAINTED YELLOW AND TOP WHITE
3. GRIP RING OR MEGA LUG RESTRAINTS MAY USED IN PLACE OF ALL THREAD RODS

FIRE HYDRANT ASSEMBLY



NOTE:
ALL PIPE AND FITTINGS MUST BE SCHEDULE 40 P.V.C.

BLOWOFF VALVE

W.S. DETAIL 6-9-00 DT

*MINIMUM LENGTH OF RESTRAINED PIPE TO BE INSTALLED ON EACH SIDE OF FITTING							
FITTINGS	PIPE DIAMETER (INCHES)						
	4	6	8	10	12	16	24
90° BEND	25	36	46	55	64	N/A	N/A
45° BEND	10	15	19	23	26	N/A	N/A
22 ½° BEND	5	8	9	11	13	N/A	N/A
11 ¼° BEND	3	4	5	6	8	N/A	N/A
PLUG OR BRANCH OF TEE	40	57	75	91	106	N/A	N/A
DEAD ENDS	42	59	77	93	108	N/A	N/A

* TO BE FILLED IN BY DESIGN ENGINEER

*MINIMUM LENGTH OF RESTRAINED PIPE TO BE INSTALLED ON LARGE SIDE OF REDUCER						
	LARGER MAIN (INCHES)	REDUCED PIPE DIAMETER (INCHES)				
		4	6	8	10	12
REDUCER	8	56	33	N/A	N/A	N/A
	10	76	57	32	N/A	N/A
	12	94	79	58	32	N/A

* TO BE FILLED IN BY DESIGN ENGINEER

NOTES:

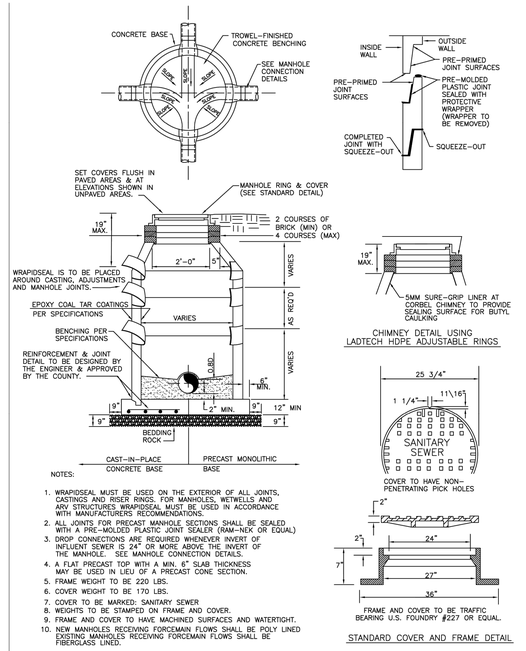
1. INSTALL FULL LENGTH JOINTS WITH TOTAL NUMBER OF JOINTS EQUAL TO OR GREATER THAN SHOWN IN THE TABLE AND FOR THE TOTAL EQUIVALENT LENGTH REQUIRED.
2. WHERE TWO OR MORE FITTINGS ARE TOGETHER USE FITTINGS WHICH YIELD THE GREATEST NUMBER OF RESTRAINED JOINTS.
3. CONTRACTOR SHALL SUBMIT FOR REVIEW AND COMMENT, DRAWINGS FOR RESTRAINED JOINT SYSTEM. ENGINEER APPROVED SHOP DRAWINGS TO BE SUBMITTED TO THE COUNTY.
4. RESTRAINING SEWER AND WATER MAIN SCHEDULES SHALL BE COMPLETED BY THE ENGINEER BASED ON ALL DESIGN CONSIDERATIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

TYPE OF PIPE:	DIP
WORKING PRESSURE:	150 PSI
SOIL DESIGNATION:	SM (SAND SILT)
DEPTH OF COVER:	4-FT
LAYING CONDITION:	TYPE 3
FACTOR OF SAFETY:	1.5

5. FOR HDPE, PVC OR PIPE ENCASED IN POLYETHELYNE, INCREASE THE GIVEN VALUE BY A FACTOR OR 1.25.

RESTRAINED JOINT TABLE

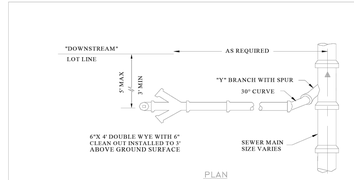
SEM. CO. MAY 2013
110



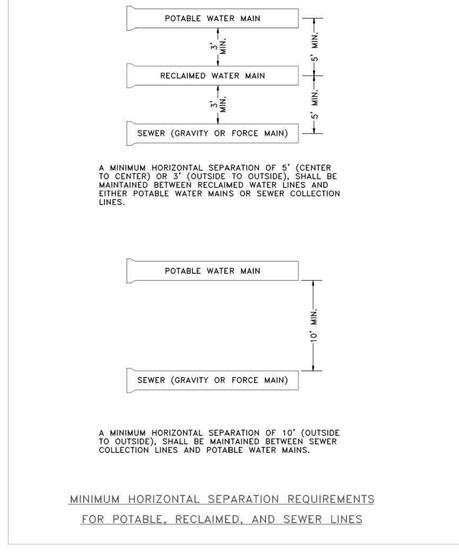
STANDARD COVER AND FRAME DETAIL

PRECAST ECCENTRIC CONCRETE MANHOLE

SEM. CO. OCT 2012
309



SEWER LATERAL DETAIL



MINIMUM HORIZONTAL SEPARATION REQUIREMENTS FOR POTABLE, RECLAIMED, AND SEWER LINES

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LICENSED PROFESSIONAL ENGINEER CORY N. STILLEY STATE OF FLORIDA 86026 PROFESSIONAL ENGINEER

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

UTILITY DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C10.1

Plotted By: LaRocque, Arlene Sheet Set: WINTER SPRINGS WAWA Layout: C9.1 UTILITY DETAILS August 29, 2025 09:24:54am K:\orl_civil\149170026-winter springs wawa\CAD\CONST\PlanSheets- Wawa\C10.0 UTILITY DETAILS.dwg
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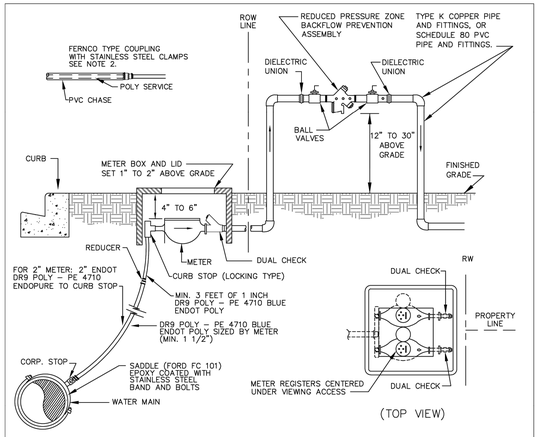
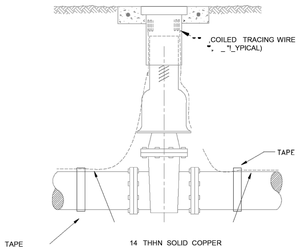


NOTES:

1. A POSITIVE DIELECTRIC CONNECTION SHALL BE MADE BETWEEN ALL GALVANIZED AND BRASS COMPONENTS.
2. METER SHALL BE INSTALLED BETWEEN SIDEWALK AND CURB WHERE APPLICABLE, OR AT PROPERTY LINE AND IN NO CASE SHALL IT BE INSTALLED IN SIDEWALK OR OTHER PAVED AREAS.
3. FOR COMMERCIAL INSTALLATION, BACKFLOW PREVENTION ASSEMBLIES (BFP) AND PIPING SHALL BE PAINTED WITH A PRIMER SUITED TO BASE MATERIALS AND SHALL BE FINISHED WITH TWO COATS EXTERIOR ENAM (COLOR OPTIONAL).
4. ON NEW INSTALLATIONS, THE BFP SHALL BE TESTED IN ACCORDANCE WITH CITY OF WINTER SPRINGS WATER SPRINGS REQUIREMENTS BEFORE THE METER INSTALLATION CAN BE APPROVED FOR USE.
5. FOR ROADWAY CROSSINGS, ALL POLYETHYLENE SERVICE LINES SHALL BE INSTALLED IN A SCHEDULE 40 PVC SLEEVE. THE SLEEVE SHALL HAVE A NOMINAL DIAMETER OF A MINIMUM OF 1 INCH LARGER THAN TH SERVICE LINE DIAMETER, BUT NOT EXCEEDING 4 INCH NOMINAL DIAMETER. THE SLEEVE SHALL EXTEND A MINIMUM OF 12 INCHES BEYOND THE OUTSIDE EDGE OF THE ROADWAY PAVEMENT AND/OR CURBING. TH DEPTH OF COVER OVER THE CASING SHALL BE A MINIMUM OF 24 INCHES BELOW THE BASE COURSE OR 36 INCHES OF TOTAL COVER, WHICHEVER IS GREATER. THE ANNULAR SPACE SHALL BE SEALED WITH A CASING SEALER. A FERNCO TYPE COUPLING WITH STAINLESS STEEL CLAMPS SHALL BE INSTALLED AT THE CASING ENDS.
6. MAINTENANCE OF THE BFP, PIPING AND APPURTENANCES DOWNSTREAM OF THE METER SHALL BE THE RESPONSIBILITY OF THE OWNER.
7. ON SINGLE FAMILY RESIDENTIAL IRRIGATION SYSTEMS, THE BFP MAY BE INSTALLED ANYWHERE BETWEEN THE IRRIGATION METER AND THE HOUSE, BUT NOT FARTHER THAN 50 FEET FROM THE METER AND SHALL BE UPSTREAM OF ANY OUTLET AND SHALL MEET ALL OTHER INSTALLATION REQUIREMENTS.
8. THE BFP SHALL NOT BE INSTALLED IN THE RIGHT OF WAY.

COMMERCIAL 3/4", 1", 1 1/2" & 2" WATER METER, DUAL CHECK BACKFLOW AND REDUCED PRESSURE BACKFLOW PREVENTER WHEN USING POTABLE OR RECLAIMED WATER FOR IRRIGATION

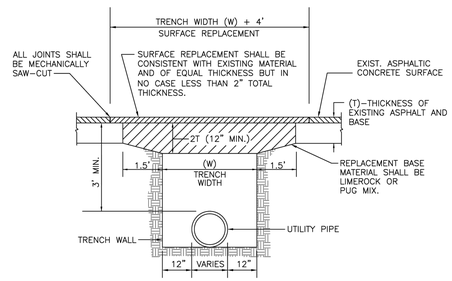
SEM.CO OCT 2012
207



TRACING WIRE GENERAL NOTES:

1. PIPE LINE TRACING WIRE IS TO BE INSTALLED ON ALL POTABLE WATER RECLAIMED WATER AND SEWER FORCE MAINS.
2. SYSTEMS-TRACING WIRE SHALL ALLOW TRACABILITY OF ALL PIPE BRANCHES INCLUDING THOSE FOR HYDRANTS. TRACING WIRE SHALL BE INSTALLED OVER THE ENTIRE LENGTH OF THE MAIN AND SECURED TO THE MAIN EVERY 5 FEET WITH ADHESIVE TAPE. WIRE SHALL EXTEND A MINIMUM OF 12" ABOVE GRADE AT EACH INTERVAL AND SHALL BE COILED AND PLACED IN A VALVE BOX FOR EASY ACCESSIBILITY.
3. ON DEAD END MAINS THE TRACING WIRE SHALL BE PLACED IN A PROPERLY IDENTIFIED PVC VALVE BOX AT THE END OF THE RUN.

TRACING WIRE CONNECTION

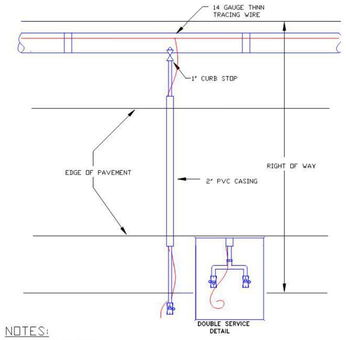


NOTES:

1. BACKFILL SHALL BE PLACED IN 6" LAYERS FROM BENEATH THE HAUNCHES OF THE PIPE TO THE BASE AND COMPACTED TO 98% DENSITY PER AASHTO T-180 MODIFIED PROCTER.
2. BASE MATERIALS SHALL BE PLACED IN TWO OR THREE LAYERS ROLLED AND TAMPED TO ABOVE SPECIFIED DENSITY.

STANDARD ROADWAY OPEN CUT DETAIL

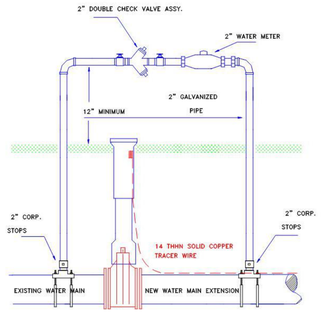
SEM. CO. OCT 2012
106



NOTES:

1. METER BOX INSTALLED BY THE CITY OF WINTER SPRINGS
2. DOUBLE SERVICE LINES SHALL BE 1" PE TUBING
3. ALL LINES UNDER PAVEMENT SHALL BE ENCASED IN 2" PVC PIPE

POTABLE WATER SERVICE
OPPOSITE SIDE OF MAIN



TEMPORARY BYPASS

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LICENSED PROFESSIONAL ENGINEER — CORY N. SITTLER — STATE OF FLORIDA — 73826 — PROFESSIONAL ENGINEER — DATE

KHA PROJECT	149170026
DATE	08/28/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

UTILITY DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C10.2

Plotted By: LaRocque, Arlene Sheet Set: WINTER SPRINGS WAWA Layout: C8.3 UTILITY DETAILS August 29, 2025 09:24:08am K:\orl_corh\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\C10.0 UTILITY DETAILS.dwg
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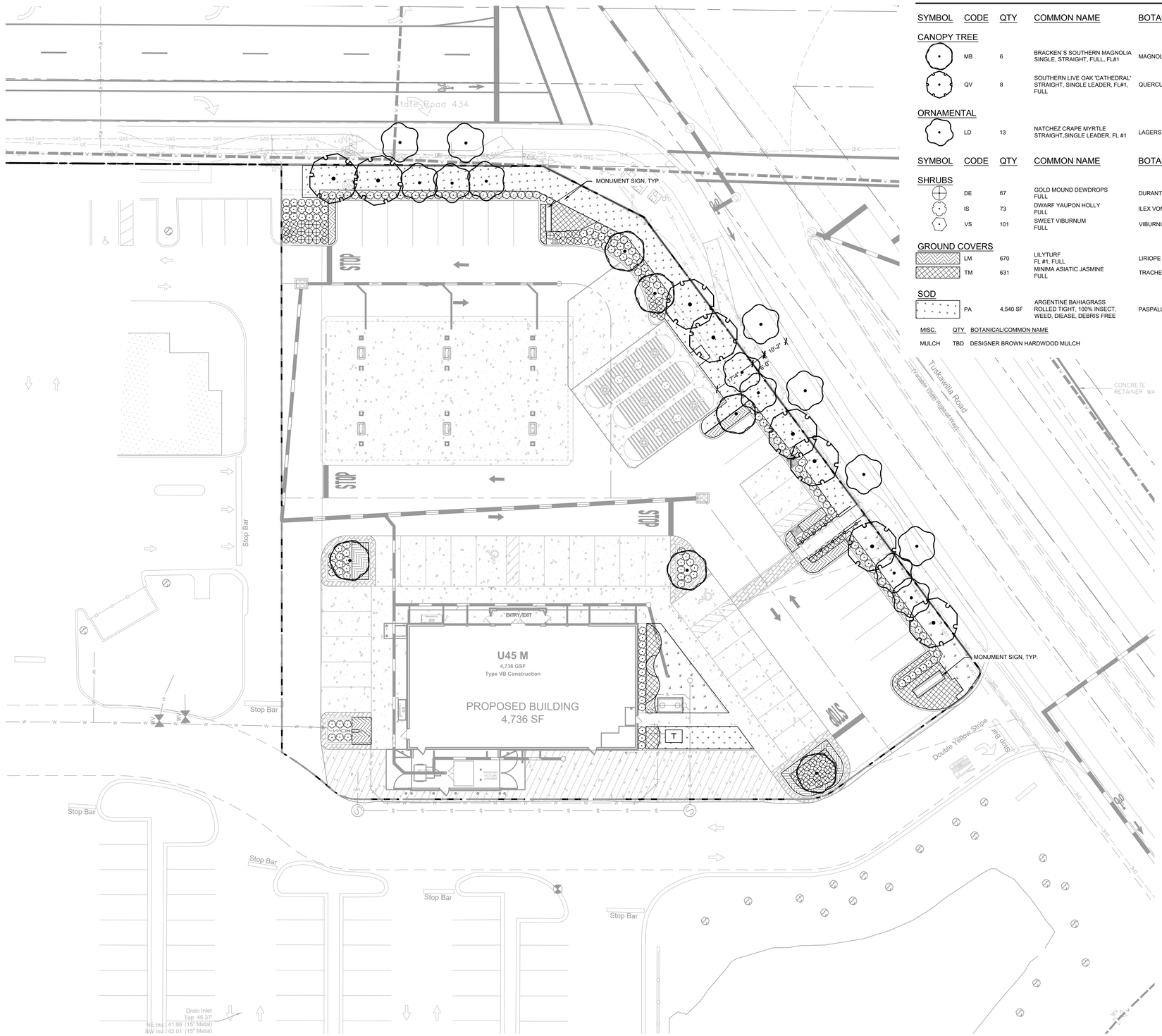

PLANT SCHEDULE

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE
CANOPY TREE							
	MB	6	BRACKEN'S SOUTHERN MAGNOLIA SINGLE, STRAIGHT, FULL, FL#1	MAGNOLIA GRANDIFLORA `BRACKENS BROWN BEAUTY`	FG	3" CAL MIN	10` HT., 4` SPR.
	QV	8	SOUTHERN LIVE OAK 'CATHEDRAL' STRAIGHT, SINGLE LEADER, FL#1, FULL	QUERCUS VIRGINIANA 'CATHEDRAL'	FG	4" CAL MIN	12` HT., 4` SPR.
ORNAMENTAL							
	LD	13	NATCHEZ CRAPE MYRTLE STRAIGHT,SINGLE LEADER, FL #1	LAGERSTROEMIA INDICA `NATCHEZ`	FG	2" CAL MIN	10` HT MIN

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	SPACING
SHRUBS							
	DE	67	GOLD MOUND DEWDROPS FULL	DURANTA ERECTA 'GOLD MOUND'	3 GAL	36" FULL	36" OC
	IS	73	DWARF YAUPON HOLLY FULL	ILEX VOMITORIA `STOKES DWARF	3 GAL	24" FULL	36" OC
	VS	101	SWEET VIBURNUM FULL	VIBURNUM ODORATISSIMUM	3 GAL	30" FULL	36" OC
GROUND COVERS							
	LM	670	LILYTURF FL #1, FULL	LIRIOPE MUSCARI	1 GAL	12" FULL	12" OC
	TM	631	MINIMA ASIATIC JASMINE FULL	TRACHELOSPERMUM ASIATICUM 'MINIMA'	1 GAL	12" FULL	12" OC
SOD							
	PA	4,540 SF	ARGENTINE BAHIAGRASS ROLLED TIGHT, 100% INSECT, WEED, DIEASE, DEBRIS FREE	PASPALUM NOTATUM 'ARGENTINE'	SOD	-	-

MISC.	QTY	BOTANICAL/COMMON NAME
MULCH	TBD	DESIGNER BROWN HARDWOOD MULCH

SPECIFICATIONS

3" DEPTH MINIMUM, SHREDDED, FREE OF WEEDS/INVASIVE PLANT MATERIAL

LANDSCAPE NOTES:

1. ALL LANDSCAPE MATERIAL TO BE FLORIDA GRADE #1 OR BETTER QUALITY
2. ALL LANDSCAPED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
3. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
4. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL PLANTING AREAS SHALL BE COMPLETELY MULCHED AS SPECIFIED.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES ADJACENT TO THE WORK AREA 2) TO PROTECT ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAINTAIN HEALTHY PLANT CONDITIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR THE WARRANTY PERIOD.
11. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
12. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR WARRANTY PERIOD. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
13. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
14. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES, AND SHALL BE FLORIDA NO. 1 OR BETTER AS GIVEN IN "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE.
15. ALL INVASIVE / EXOTIC SPECIES AND PROHIBITED TREE SPECIES SHALL BE REMOVED FROM SITE, INCLUDING ROOT BALLS TO THE EXTENT POSSIBLE WITH NO DAMAGE TO ADJACENT EXISTING TREES.
16. ALL LANDSCAPE AREAS WILL BE PROVIDED WITH PERMANENT AUTOMATIC IRRIGATION SYSTEM.
17. TREE SUPPORT MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS "ESTABLISHED" (AS APPROVED BY THE LANDSCAPE ARCHITECT).
18. ALL PLANT SPECIFICATIONS IN THE PLANT SCHEDULE SHALL BE CONSIDERED THE MINIMUM ALLOWABLE SPECIFICATIONS. CONTRACTOR SHALL PROCURE PLANT MATERIALS AND UPSIZE AS NECESSARY TO MEET THE MOST STRINGENT SPECIFICATION.
19. ALL PLANTED LANDSCAPE AREAS TO HAVE 3" DEEP DESIGNER BROWN HARDWOOD MULCH TO FULLY COVER DRIP IRRIGATION & AMENDED SOILS. REPAIR AS NEEDED DURING CONSTRUCTION. SUBMIT ALTERNATIVE MULCH SPECIFICATION FOR LANDSCAPE ARCHITECT APPROVAL.

GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

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6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANCO 1A6667292 STATE OF FLORIDA
DATE: 07/18/25

KHA PROJECT	149170026
DATE	07/18/25
SCALE	AS SHOWN
DESIGNED BY	GNS
DRAWN BY	NMB
CHECKED BY	ATDS

LANDSCAPE PLAN

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.00

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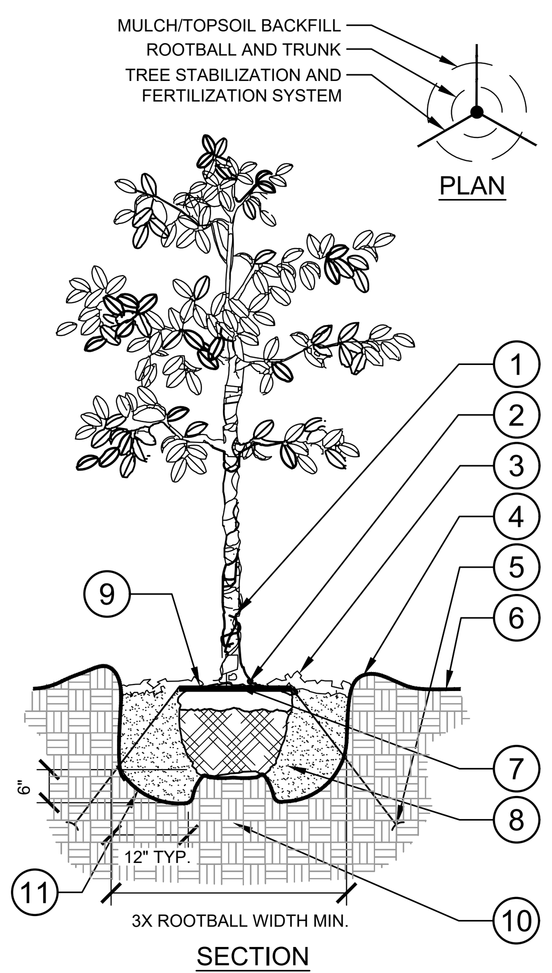
Plotted By:Kazami, Mary Sheet Set:WINTER SPRINGS WAWA Layout:LANDSCAPE PLAN July 28, 2025 09:41:38pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\L1.00 LANDSCAPE PLAN.dwg



1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3" MINIMUM MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
4. 4" HIGH BERM, FIRMLY COMPACTED.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. TOP OF ROOTBALL SHALL BE 1" ABOVE FINISHED GRADE. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

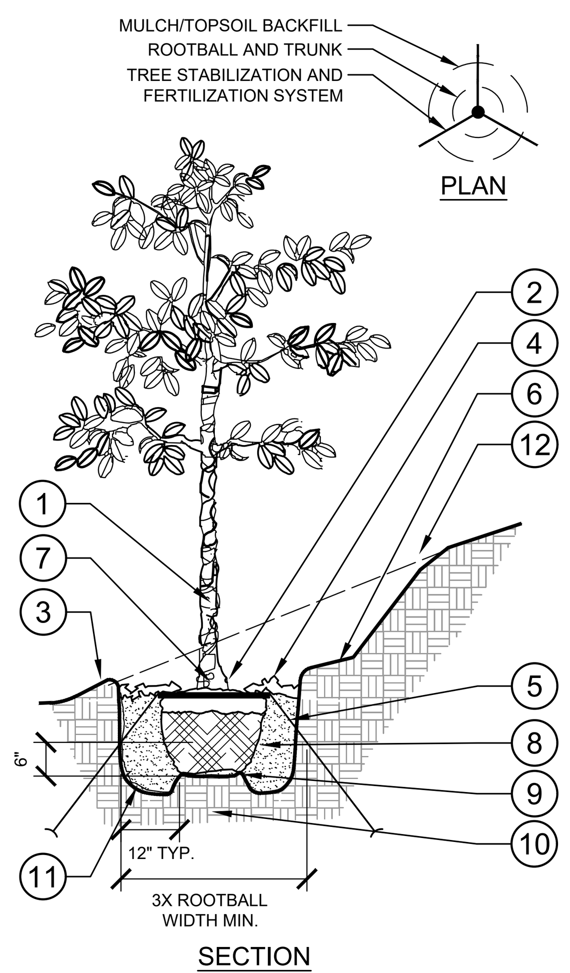
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

1 TREE PLANTING
L1.50 SECTION / PLAN — NTS



1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3. 4" HIGH BERM, FIRMLY COMPACTED.
4. 3" MINIMUM OF HARDWOOD BARK MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.
12. CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

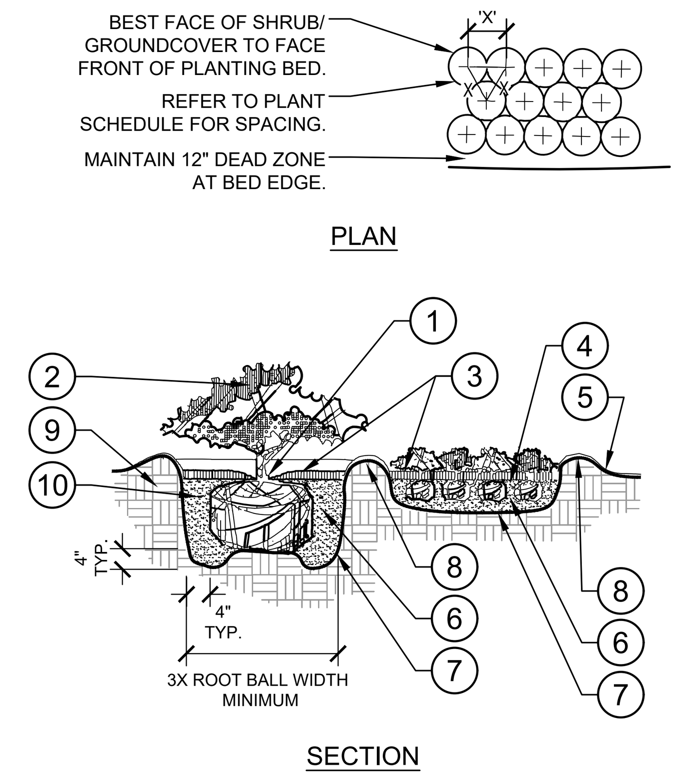
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

2 TREE PLANTING ON A SLOPE
L1.50 SECTION / PLAN — NTS



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MULCH LAYER AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY OF PLANTING PIT SIDES AND BOTTOM.
8. 4" HIGH BERM FIRMLY COMPACTED.
9. UNDISTURBED NATIVE SOIL.
10. FERTILIZER TABLETS (MAX 3" DEEP)

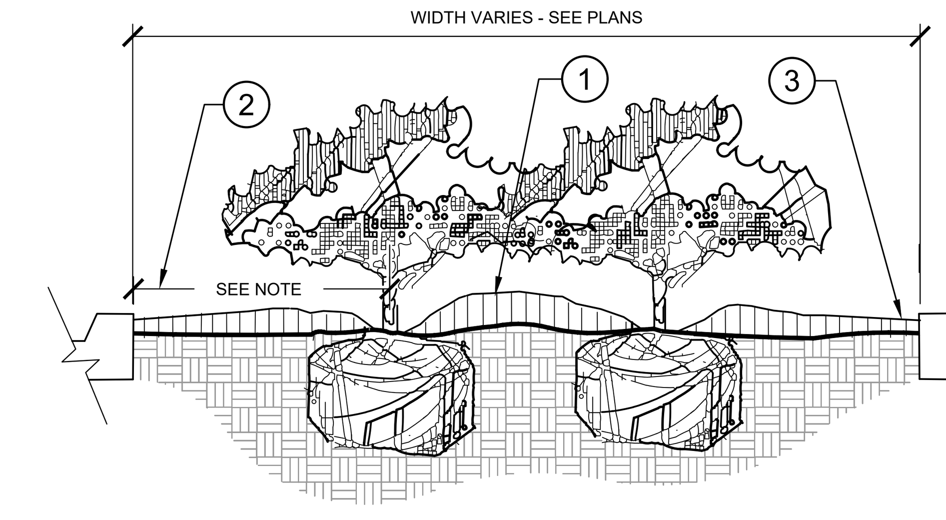
NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

3 SHRUB/GROUNDCOVER PLANTING
L1.50 SECTION / PLAN — NTS



1. CROWN ISLANDS @ 5:1 SLOPES (OR AS SPECIFIED ON THE LANDSCAPE PLANS).
2. CLEAR ZONE: 36" MIN. FROM BACK OF CURB TO CENTER OF NEAREST SHRUB. CLEAR ZONE SHALL CONTAIN 3" CONTINUOUS MULCH OR TURF, SEE PLANS.
3. 2" MIN VERTICAL CLEARANCE, TOP OF CURB TO TOP OF MULCH.

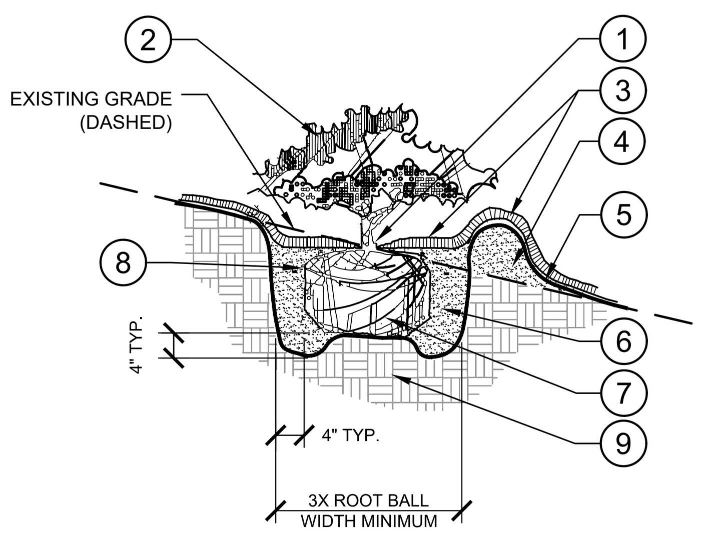
NOTES:

A. EXCAVATE A CONTINUOUS 24" DEEP PIT (FROM TOP OF CURB) FOR ENTIRE LENGTH AND WIDTH OF ISLAND & BACKFILL WITH APPROVED PLANTING MIX.

B. PROTECT AND RETAIN ALL CURBS AND BASE. COMPACTED SUBGRADE TO REMAIN FOR STRUCTURAL SUPPORT OF CURB SYSTEM (TYP).

C. ALL ISLANDS SHALL UTILIZE POOR DRAINAGE DETAIL WHEN PERCOLATION RATES ARE 2" PER HOUR OR LESS.

4 PLANTED PARKING LOT ISLANDS/MEDIANS
L1.50 SECTION — NTS



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE SHRUBS AS DIRECTED BY OWNER'S REPRESENTATIVE.
3. 3" MINIMUM OF MULCH AS SPECIFIED. WHERE SHRUBS ARE PLACED IN MASSES, MULCH SHALL BE SPREAD IN A CONTINUOUS BED.
4. SOIL BERM TO HOLD WATER. TOP OF PLANTING PIT 'BERM' TO BE LEVEL ACROSS PIT. SLOPE DOWNHILL PORTION OF BERM AS REQUIRED TO MEET EXISTING GRADE. MULCH OVER EXPOSED TOPSOIL.
5. FINISHED GRADE (SEE GRADING PLAN)
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).
7. SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
8. FERTILIZER TABLETS (MAX 3" DEEP).
9. UNDISTURBED NATIVE SOIL

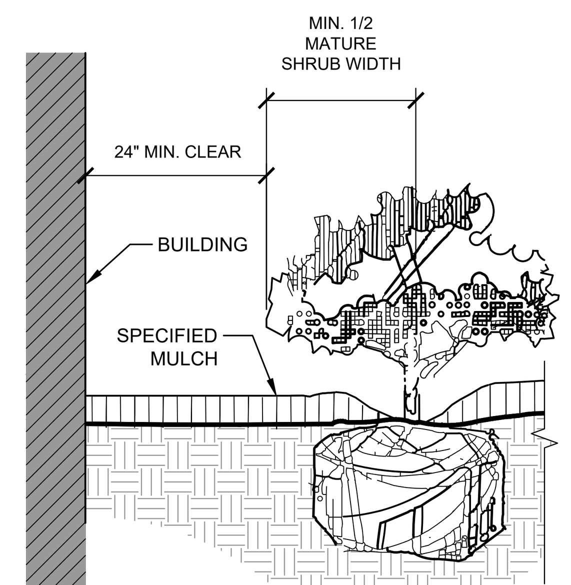
NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

5 SHRUB/GROUNDCOVER PLANTING ON A SLOPE
L1.50 SECTION — NTS

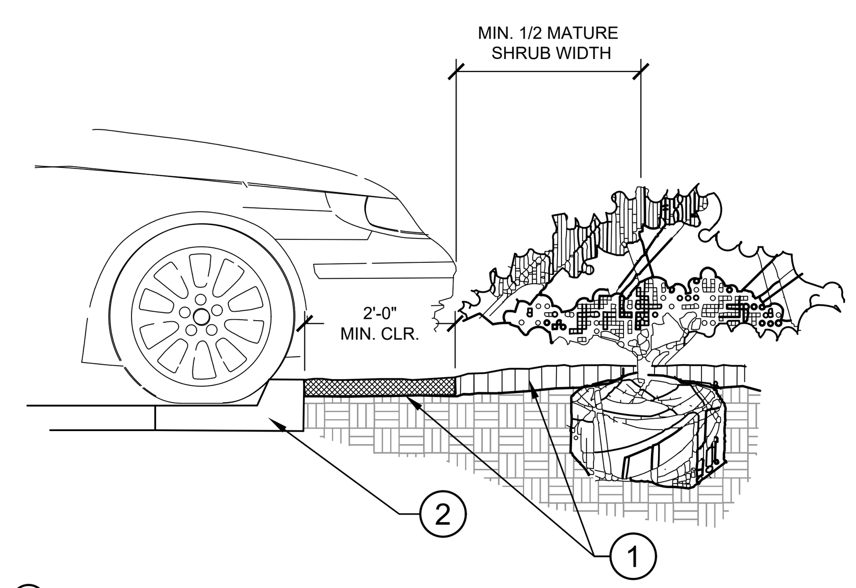


NOTES:

1. CLEAR ZONE: 36" MIN. FROM BUILDING TO CENTER OF NEAREST SHRUB.

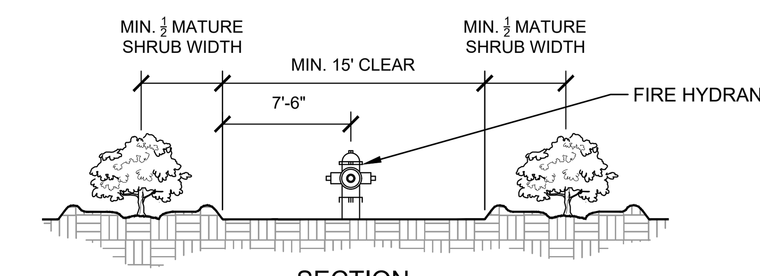
2. INSTALL SPECIFIED MULCH: 24" MIN. FROM BUILDING. SPECIFIED MULCH TO BE INSTALLED AT A DEPTH OF 3" (MIN.)

6 PLANTINGS ADJACENT TO BUILDINGS
L1.50 SECTION — NTS

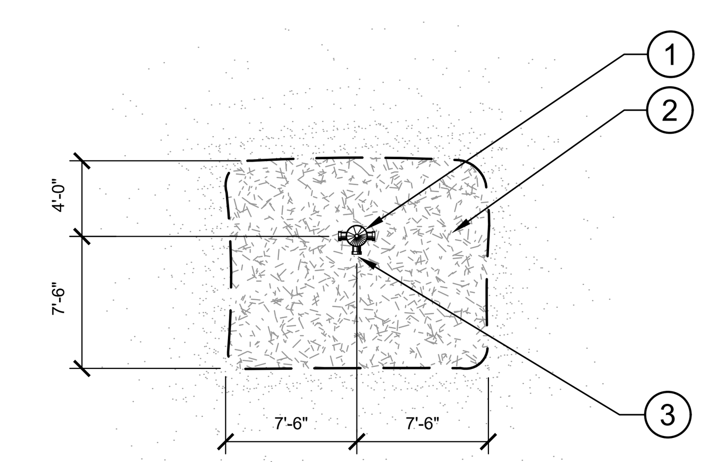


1. INSTALL CONTINUOUS MULCH BED ADJACENT TO PARKING SPACES AS SHOWN. MULCH SHALL BE MIN. 3" DEEP. NO POP-UP IRRIGATION HEADS SHALL BE LOCATED WITHIN 24" OF A PARKING SPACE ON ANY SIDE.
2. CURB / PARKING LOT EDGE.

7 PARKING SPACE/CURB PLANTING
L1.50 SECTION — NTS



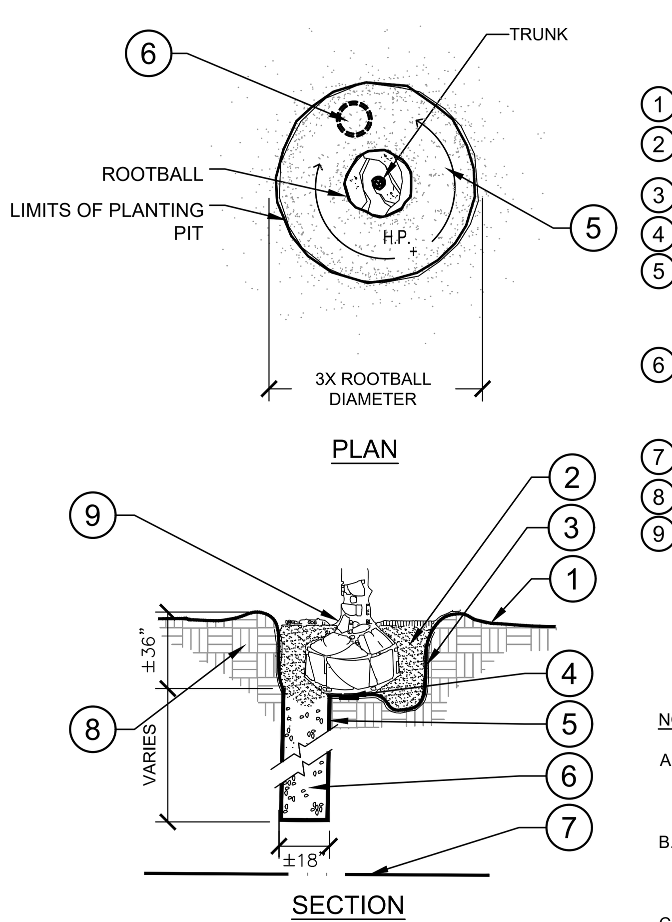
SECTION



PLAN

1. FIRE HYDRANT.
2. NO PLANT EXCEEDING 12" MATURE HEIGHT MATERIAL SHALL BE PLACED WITHIN SHOWN RADIUS OF ALL PROPOSED OR EXISTING FIRE HYDRANTS. CONTRACTOR SHALL ADJUST PLANT MATERIAL SO THAT NO CONFLICTS WITH FIRE HYDRANTS OCCUR ON SITE.
3. FRONT OF HYDRANT (TOWARD CURB)

8 SHRUB PLANTING AT FIRE HYDRANT
L1.50 SECTION / PLAN — NTS



1. FINISH GRADE (SEE GRADING PLANS).
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH, MIRAFI 500X OR BETTER.
4. SLOPE BOTTOM TO DRAIN.
5. AUGURED HOLE Ø ±18" PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
6. BACKFILL WITH 1/2" - 3/4" GRAVEL TO REQUIRED DEPTH THROUGH OCCLUDING LAYER TO ASSURE PROPER PERCOLATION.
7. WATER TABLE. (DEPTH VARIES)
8. UNDISTURBED NATIVE SOIL.
9. SET ROOTBALL ON UNDISTURBED STABLE SUBSOIL SO THAT TOP OF ROOT BALL IS 1" ABOVE FINISHED GRADE.

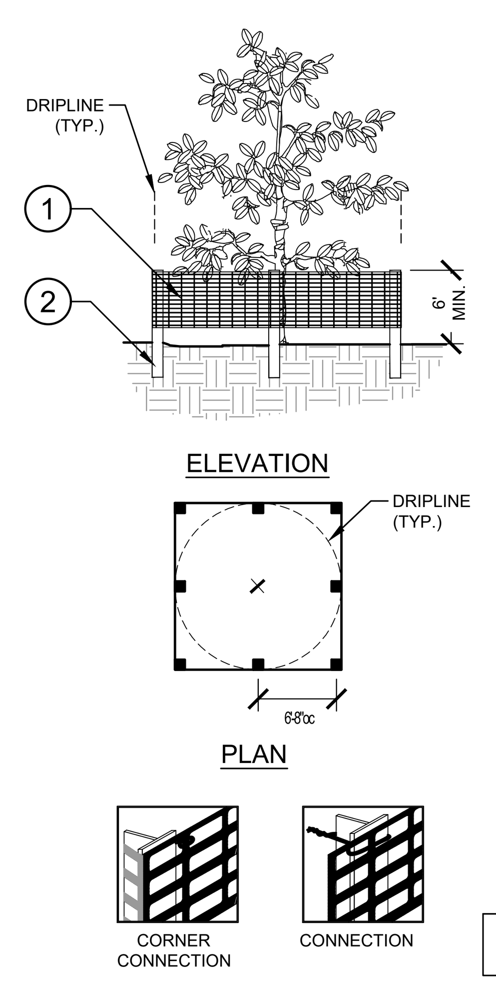
NOTES:

A. THIS DETAIL SHALL BE IMPLEMENTED WHERE PERCOLATION RATES ARE 2" PER HOUR OR LESS.

B. CONTRACTOR TO PERFORM PERCOLATION TEST AS REQUIRED. AND NOTIFY OWNER/LANDSCAPE ARCHITECT.

C. SEE TYPICAL TREE PLANTING DETAIL THIS SHEET FOR PLANT STAKING.

9 POOR DRAINAGE CONDITION
L1.50 SECTION / PLAN — NTS



1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:

A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.

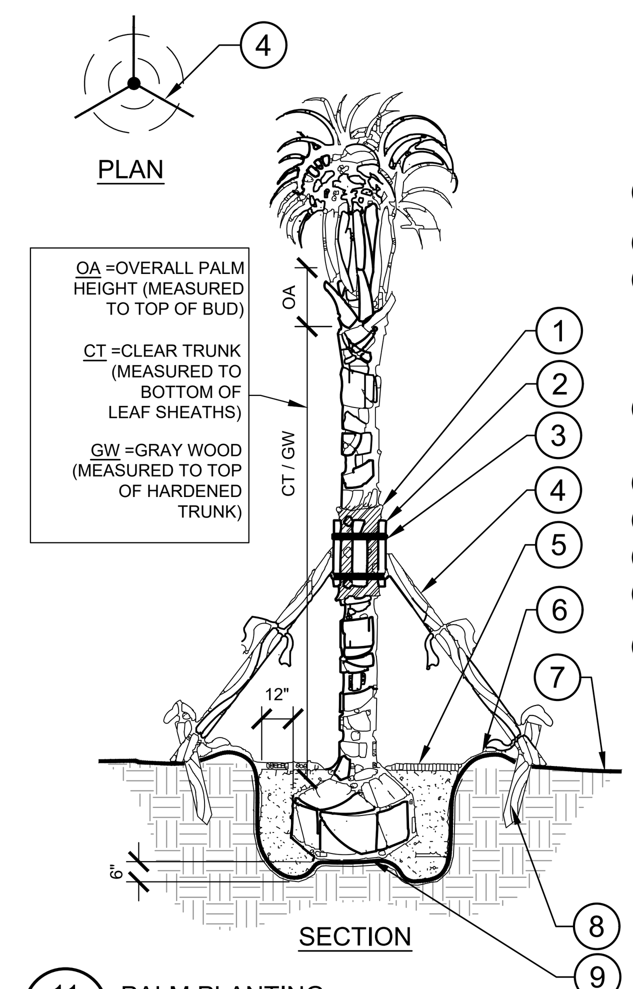
B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

10 TREE PROTECTION FENCING
L1.50 ELEVATION / PLAN — NTS



1. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
2. FIVE 2" X 4" X 18" WOOD BATTENS.
3. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
4. (3) 2"X4"X8' SUPPORTS. NAIL (DRILL AN NAIL IF NECESSARY) TO BATTENS AND 2" 4" STAKES. STAIN DARK BROWN.
5. 3" SPECIFIED MULCH
6. BERM SOIL TO HOLD WATER.
7. FINISH GRADE
8. 2X4X24" (MIN) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES.
9. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).

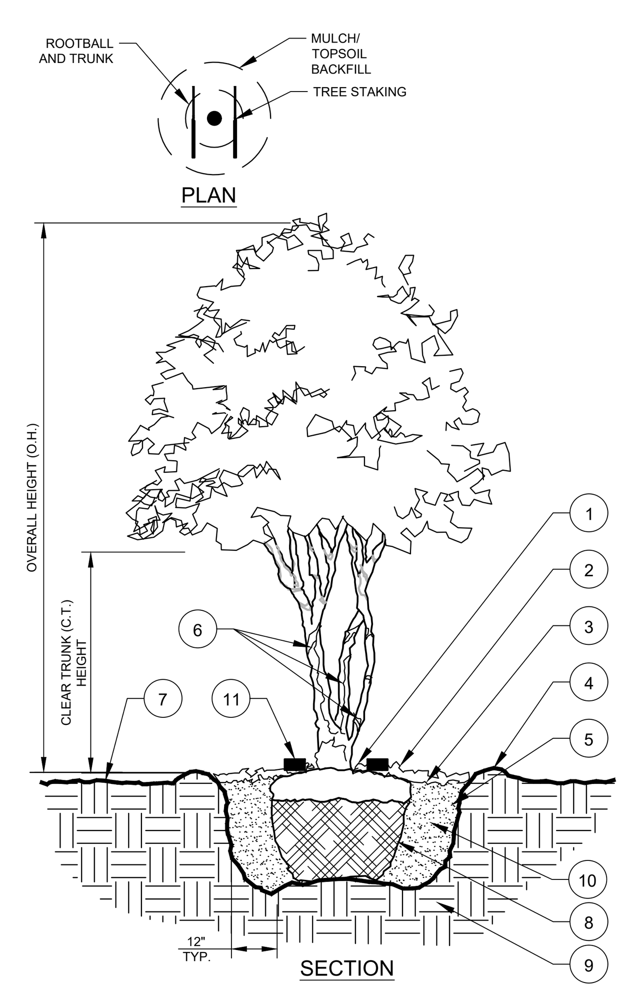
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. ALL TREE STAKING IS TO BE WITHIN MULCH BED AREA OUTSIDE TREE PIT.

C. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION - REFER TO POOR DRAINAGE CONDITION DETAIL.

11 PALM PLANTING
L1.50 SECTION / PLAN — NTS



1. BASE OF TREE SHALL BE PLANTED SLIGHTLY ABOVE (1" MIN.) ADJACENT FINISH GRADE. REMOVE ALL TWINE & STRAPS & CUT BURLAP FROM TOP 1/3 OF ROOT BALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
2. 4" SHREDDED HARDWOOD MULCH OR APPROVED EQUAL.
3. DIAMETER OF TREE PIT TO BE TWICE THE DIAMETER OF ROOT BALL-ROUGHEN SIDES OF TREE PIT.
4. 3" HIGH SOIL BERM TO HOLD WATER.
5. TOPSOIL MIX BACKFILL.
6. TREE WRAP.
7. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
8. ROOT BALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOT BALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
9. UNDISTURBED SUBSOIL.
10. PREPARE PLANTING SOIL AS SPECIFIED.
11. **Tree Frog® RBK40pt** FOR UP TO 4" TREE CALIPER OR **Tree Frog® RBK60pt** FOR GREATER THAN 4" AND UP TO 6" TREE CALIPER. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS.

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT

E. ASSURE PERCOLATION OF ALL PLANTING PITS

12 MULTI-TRUNK TREE PLANTING
L1.50 SECTION/PLAN — NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

DATE: 07/28/25

KHA PROJECT 149170026
DATE 07/18/25
SCALE AS SHOWN
DESIGNED BY SNS
DRAWN BY MMB
CHECKED BY ADG

LANDSCAPE DETAILS

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER L1.50

Plotted By:Kazemi, Mary Sheet Set:WINTER SPRINGS WAWA Layout:LANDSCAPE DETAILS July 28, 2025 05:41:37pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\L1.00 LANDSCAPE PLAN.dwg

GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS SPECIFIED HEREIN.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

1. ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL NECESSARY BMP DEVICES ACCORDING TO ALL REGULATORY AGENCY'S STANDARDS THROUGH THE DURATION OF ALL CONSTRUCTION ACTIVITIES.

3. THE CONTRACTOR SHALL SUBMIT A DETAILED PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN UNLESS THE WORK REQUIRES NOTHING MORE THAN A DIRECT APPLICATION OF FDOT DESIGN STANDARDS, INDEX 600. IF A DIRECT APPLICATION OF INDEX 600 IS PROPOSED, THE CONTRACTOR SHALL SUBMIT IN WRITING A STATEMENT INDICATING THE STANDARD INDEX AND PAGE NUMBER NO LESS THAN 10 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION. WHEN A DIRECT APPLICATION OF FDOT STANDARD INDEX 600 IS NOT ACCEPTABLE A PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY A FLORIDA PROFESSIONAL ENGINEER WHO HAS SUCCESSFULLY COMPLETED ADVANCED TRAINING IN MAINTENANCE OF TRAFFIC, AS DEFINED BY FDOT FOR APPROVAL BY THE COUNTY ENGINEER'S REPRESENTATIVE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNER OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR; REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UNDERGROUND FACILITIES DURING CONSTRUCTION; THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

C. PROTECTION OF EXISTING PLANT MATERIALS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETC... THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF THREE HUNDRED DOLLARS ($300) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

2. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE.

D. MATERIALS

1. GENERAL

MATERIAL SAMPLES LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER. UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATERIAL	SAMPLE SIZE
MULCH	ONE (1) CUBIC FOOT
TOPSOIL MIX	ONE (1) CUBIC FOOT
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NURSERY)

2. PLANT MATERIALS

a. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, SOUND, WELL-BRANCHED, AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY WITH APPROVAL FROM OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE.

b. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

c. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

1. CONTRACTOR SHALL TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:

2. SOIL MIXTURE (PLANTING MEDIUM FOR PLANT PITS) SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. CONTRACTOR TO SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.

a. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT PITS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND HAVE A PH BETWEEN 5.5 AND 7.0.

b. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.

c. SOIL AMENDMENT (IF NEEDED PER SOIL TESTING) THE CONTRACTOR SHALL FURNISH AND INSTALL A 3" LAYER OF AMENDED PLANTING SOIL IN ALL PLANTING BEDS, EXCLUDING SOD AREAS. THE AMENDED PLANTING SOIL SHALL BE COMPOSED OF 35% FERTICOMP 20% FLORIDA PEAT 45% SANDY LOAM. THE AMENDED PLANTING SOIL SHALL BE MIXED INTO THE BEDS UPON PLANTING.

2. TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE - AT WHICH POINT THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING (SUBMIT SOIL TESTING RESULTS AFTER INCORPORATING AMENDMENTS TO DEMNSTRATE COMPLIANCE WITH SOIL QUALITY REQUIREMENTS .

F. WATER

1. WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC.... IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

* WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

G. FERTILIZER

CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED.

* FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

H. MULCH

1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES. CLEAR MULCH FROM EACH PLANT'S CROWN (BASE). MULCH SHALL BE "FLORIMULCH," EUCALYPTUS MULCH, OR SIMILAR SUSTAINABLY HARVESTED MULCH UNLESS SPECIFIED OTHERWISE.

2. PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT (6' MINIMUM) PLANTED UNDER THIS CONTRACT.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO THE SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED (B&B), AND FIELD GROWN (FG) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT DURING TRANSPORTATION AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS: ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER PALM PLANTING DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. ROOT BOUND PLANTS ARE NOT ACCEPTABLE AND WILL BE REJECTED.

4. RPG= "ROOTS PLUS GROWER" CONTAINER PRODUCTS SHALL BE USED WHERE SPECIFIED.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY RE-ESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO BIDDING OR INSTALLATION. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED.

2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

3. SUBGRADE EXCAVATION: CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE POOR DRAINAGE CONDITION PLANTING DETAIL.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS SPECIFIED HEREIN. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ONSITE SHALL NOT REMAIN UNPLANTED OR APPROPRIATELY HEALED IN FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE PLANTING WITH IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION APPURTENANCES AND PLANTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACK FILLED WITH THE PREPARED PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS.

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).

11. AMEND PINE AND OAK PLANT PITS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT PITS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL PRIOR TO INOCULATION.

12. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET, ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE. ALL BURLAP, ROPE, WIRES, BASKETS, ETC.., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

13. TREES SHALL BE PRUNED, AT THE DIRECTION OF THE OWNER OR OWNER'S REPRESENTATIVE, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY CERTIFIED ARBORIST, IN ACCORDANCE WITH ANSI A-300.

14. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. MATERIALS INSTALLED SHALL MEET MINIMUM SPECIMEN REQUIREMENTS OR QUANTITIES SHOW ON PLANS, WHICHEVER IS GREATER. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. MIX TOP 4" THE PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

15. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE PROJECT LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY.

16. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.

2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS BY MEANS OF A SOD CUTTER TO A DEPTH OF THREE (3) INCHES, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.

3. PREPARE LOOSE BED FOUR (4) INCHES DEEP. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING

a. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

b. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND.

c. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. ADJACENT TO BUILDINGS, A 24 INCH STONE MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.

5. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE

a. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

b. CONTRACTOR RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PRIOR TO AND UPON ACCEPTANCE, CONTRACTOR TO PROVIDE WATERING/IRRIGATION SCHEDULE TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

Q. CLEANUP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY PLANT CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

S. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE WARRANTY PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR WARRANTY (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

T. WARRANTY

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED (INCLUDING SOD) BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE PROJECT SITE INCLUDING BUT NOT LIMITED TO WATERING OF LANDSCAPE MOWING, BLOWING, EDGING, TRIMMING, PRUNING, WEEDING, SPRAYING OF PESTICIDES, FUNGICIDES AND HERBICIDES, FROM CONSTRUCTION START THROUGH OWNER FINAL PROJECT ACCEPTANCE.

4. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE AND IRRIGATION MAINTENANCE, THE CONTRACTOR SHOULD VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE (1) YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTHY PLANT GROWTH. SITE VISITS SHALL BE CONDUCTED A MINIMUM OF ONCE PER MONTH FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE.

5. PALM INOCULATION: ALL PHOENIX GENUS AND BISMARKIA GENUS PALMS SHALL BE INOCULATED AGAINST LETHAL BRONZING PRIOR TO LEAVING THE TREE FARM/NURSERY. CONTRACTOR SHALL PROVIDE PROOF OF INOCULATION AND CERTIFICATION THAT THE PALMS ARE HEALTHY AND FREE OF ALL DISEASE. THE CONTRACTOR IS RESPONSIBLE FOR INOCULATION OF THE PALMS, ONCE PLANTED, TO THE END OF THE WARRANTY PERIOD.

1 / L1.51 TYPICAL LANDSCAPE SPECIFICATIONS (FLORIDA)

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franko DN: CN=Matthew T Franko dnQualifier=A01410D000001996A52118000261BF, O=KIMLEY-HORN AND ASSOCIATES INC., C=US Date: 2025.07.28 18:42:24-04'00'

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DATE: 07/28/25

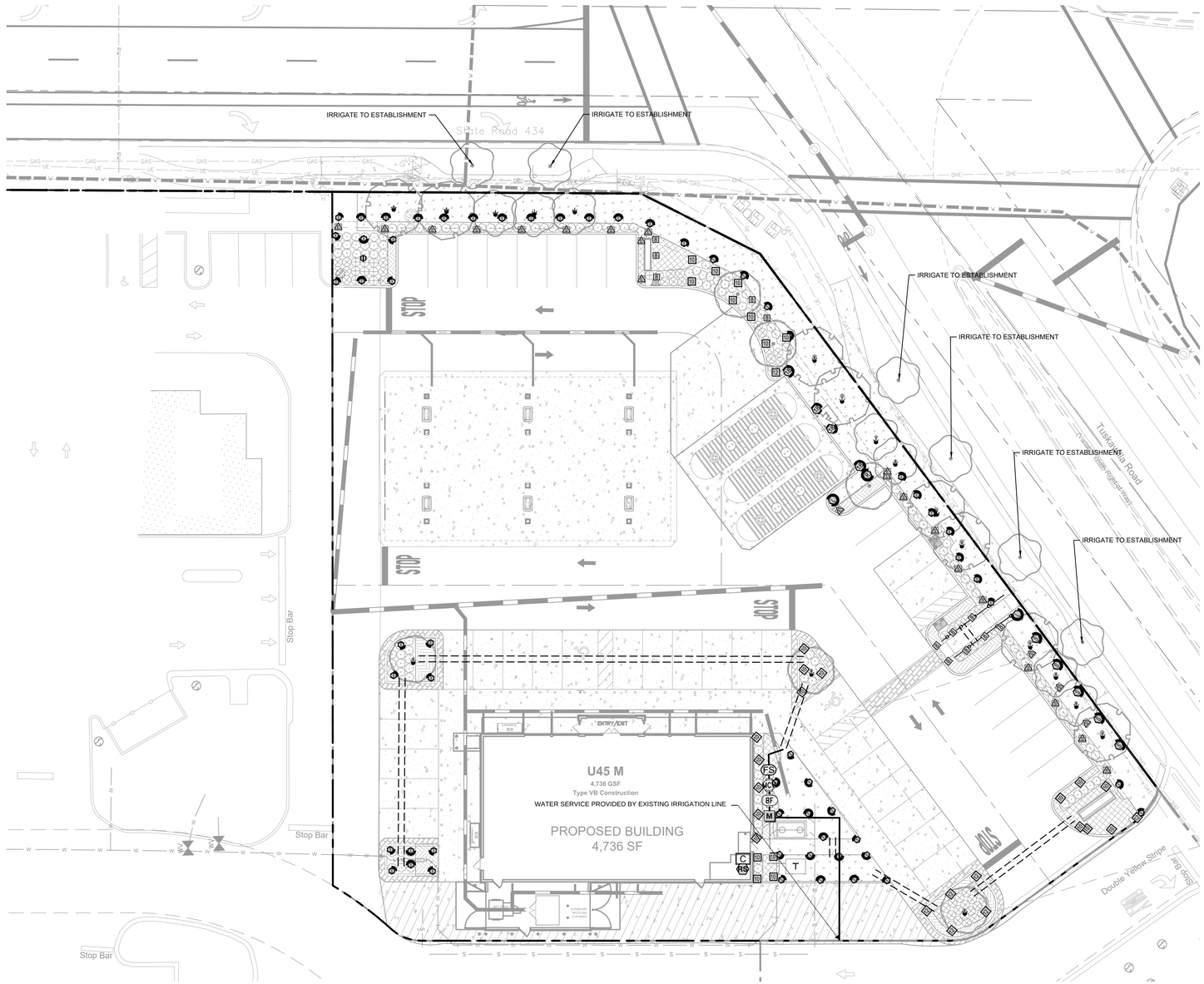
KHA PROJECT 149170026
DATE 07/18/25
SCALE AS SHOWN
DESIGNED BY CNS
DRAWN BY MMB
CHECKED BY ADG

LANDSCAPE SPECIFICATIONS

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.51

Plotted By:Kazemi, Mary Sheet Set:WINTER SPRINGS WAWA Layout:LANDSCAPE SPECIFICATIONS July 28, 2025 05:41:42pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\L1.00 LANDSCAPE PLAN.dwg



NOTE: IF SOURCE TO BE RECLAIMED (NON-POTABLE) ALL EQUIPMENT TO BE INDICATED AS SUCH AND PURPLE IN COLOR. FOLLOW ALL LOCAL JURISDICTION STANDARDS FOR RECLAIMED IRRIGATION SYSTEMS.

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.

CONTRACTOR TO PERMANENTLY MARK ALL SLEEVE CROSSINGS AT ASSOCIATED TOPS OF CURB (TYP).

CONTRACTOR TO ADJUST ALL OVERHEAD SPRAY HEADS TO ENSURE MINIMAL OVER-SPRAY OCCURS ON ANY HARDSCAPE SURFACE (TYP).

PROPOSED IRRIGATION CONTROLLER - PROVIDE ELECTRICAL POWER & CONDUIT FROM POWER SOURCE, BETWEEN CONTROLLER & WATER METER AND TO ANY ASSOCIATED APPURTENANCES.

CONTROLLER & RAIN SENSOR TO BE LOCATED OUTSIDE IN GREEN SPACE, SCREENED FROM THE PUBLIC VIEW. AVOID OVERHEAD OBSTRUCTIONS AND OVERSPRAY ASSOCIATED WITH RAIN SENSOR.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
EST LCS RCS CST SST	RAIN BIRD RD-06-P30-F-U** 15 STRIP SERIES 6IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, AND FLOW-SHIELD TECHNOLOGY. 1/2IN. NPT FEMALE THREADED INLET.	24	30
08 HE-VAN 10 HE-VAN / 12 HE-VAN 15 HE-VAN	RAIN BIRD RD-06-P30-F-U** HE-VAN SERIES 6IN. POP-UP, WITH 30 PSI IN-STEM PRESSURE REGULATION, AND FLOW-SHIELD TECHNOLOGY. 1/2IN. NPT FEMALE THREADED INLET.	46	30
LST SST RST	RAIN BIRD R-VAN-STRIP RD-06-S-P45-F TURF ROTARY, 5FT.X15FT. (LCS AND RCS), 5FT.X30FT. (SST) HAND ADJUSTABLE MULTI-STREAM ROTARY W/ RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. FLOW SHIELD TECH. 1/2IN. NPT FEMALE THREADED INLET.	8	30
14 ADJ 14 F	RAIN BIRD R-VAN14 RD-06-S-P45-F TURF ROTARY, 8FT.-14FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. FLOW-SHIELD TECHNOLOGY. 1/2IN. NPT FEMALE THREADED INLET.	64	30
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-06-S-P45-F TURF ROTARY, 13FT.-18FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR. FLOW-SHIELD TECHNOLOGY. 1/2IN. NPT FEMALE THREADED INLET.	6	30
1401 1402 1404	RAIN BIRD 1806-SAM-1400 FLOOD FLOOD BUBBLER 6IN. POPUP WITH CHECK VALVE, INSTALL W/ PA-80 ADAPTER.	20	20

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFDEP-09-12 XFDE ON-SURFACE PRESSURE COMPENSATING LANDSCAPE DRIPLINE. 0.9 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV & KINK RESISTANT. USE XF INSERT FITTINGS.	345.2 LF

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
MCV	RAIN BIRD PEB-PRS-D 1" 1IN., 1-1/2IN., 2IN., 3IN. PLASTIC INDUSTRIAL MASTER VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION. WITH PRESSURE REGULATOR MODULE.	1
BF	FEBCO 825Y 1" REDUCED PRESSURE BACKFLOW PREVENTER	1
C	RAIN BIRD ESPLXME2 12 STATION TRADITIONALLY-WIRED, COMMERCIAL CONTROLLER. INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE.	1
RS	RAIN BIRD RSD-CEX RAIN SENSING DEVICE, CONDUIT MOUNT. WITH THREADED ADAPTER, EXTENSION WIRE.	1
FS	RAIN BIRD FS-100-P 1IN. FLOW SENSOR, PLASTIC PVC MODEL. SUGGESTED OPERATING RANGE 5.4 GPM TO 54 GPM. SIZE FOR FLOW NOT ACCORDING TO PIPE SIZE. RAIN BIRD COMPATIBLE CONTROLLERS: ESP-LXI/VM(P)	LXD	LXME2(P)	ME3, OR CONTROLLERS ACCEPTING CUSTOM K-FACTOR AND OFFSET. INSTALL IN RAIN BIRD VALVE BOX	1
M	WATER METER 1"	1
	IRRIGATION MAINLINE: PVC SCHEDULE 40	132.5 LF
	PIPE SLEEVE: PVC SCHEDULE 40 - LATERALS	294.8 LF
	PIPE SLEEVE: PVC SCHEDULE 40 - MAINLINE	57.0 LF

FLOW TOTALS
Bubbler: 18
Shrub Spray: 49.2
Turf Rotary: 32.1
Total: 99.3 GPM

GRAPHIC SCALE IN FEET
0 10 20 40

IRRIGATION NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, ETC. PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANS OR SPECIFICATIONS PRIOR TO BEGINNING OR CONTINUING WORK.
3. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
4. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS.
5. THIS PLAN IS SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY TO IMPLEMENT PLAN.
6. CONTRACTOR TO VERIFY ACTUAL AVAILABLE WATER PRESSURE BEFORE BEGINNING INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE WILL NOT ALLOW SYSTEM MODIFICATION TO BE POSSIBLE.
7. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SUPPLY, SHALL HAVE A BACKFLOW PREVENTER INSTALLED.
8. WHERE APPLICABLE IRRIGATION HEADS ARE TO BE ADJUSTED FOR COMPLETE COVERAGE WITH MINIMUM OVER SPRAY BEYOND LANDSCAPE AREAS.
9. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
10. ALL IRRIGATION SLEEVING TO BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES.
11. IRRIGATION CONTRACTOR SHALL REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNER'S REPRESENTATIVE.
12. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
13. CONTRACTOR TO PROVIDE PERMANENT BENCH-MARKS ON ALL CURB LINES AT RELATED SLEEVE LOCATIONS (TYP).
14. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO MINIMIZE ROOT DISTURBANCE IN EXISTING TREES.
15. IRRIGATION SPRAYS AND ROTORS ARE NOT COMBINED ON THE SAME CONTROL VALVE CIRCUIT - LANDSCAPE BEDS AND TURF ON SEPARATE CIRCUITS.
16. MATCH PRECIPITATION RATES WITH ANY HEADS THAT ARE REPLACED.

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT MATTHEW T. TAYLOR FRANCIS LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Taylor Francis
DN: CN=Matthew T Taylor Francis, C=US, O=Kimley-Horn and Associates, Inc., OU=Orlando, E=matthew.taylor.francis@kimley-horn.com, L=ORLANDO, S=FLORIDA, 2.5.4.5=8200201e8b9f1d0a0d1a1b0000261bff
Date: 2025.07.25 08:40:39 -04'00'

DATE: 07/25/25

KHA PROJECT 149170026
DATE 07/18/25
SCALE AS SHOWN
DESIGNED BY GNG
DRAWN BY NMB
CHECKED BY ATDG

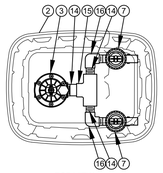
IRRIGATION PLAN

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER L2.00

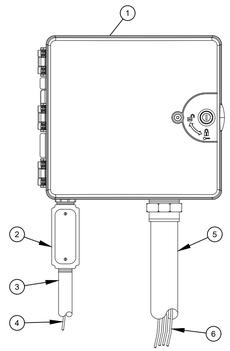
The electronic seal appearing on this document was authorized by Matthew T. Taylor Francis, LA6667292 on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Plotted By: Kozemi, Mary Sheet Set: WINTER SPRINGS WAWA Layout: L2.00 July 28, 2025 06:41:39pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- W\wawi\L2.00 IRRIGATION PLAN.dwg



1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. REMOTE CONTROL VALVE:
4. ID TAG
5. WATERPROOF CONNECTION:
6. 30-INCH LINEAR LENGTH OF WIRE, COILED
7. PRESSURE REGULATING QUICK CHECK BASKET FILTER:
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 ELL
10. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
11. PVC SCH 40 TEE OR ELL
12. MAINLINE PIPE
13. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
14. PVC SCH 80 NIPPLE, CLOSE
15. PVC SCH 40 TEE
16. PVC SCH 40 ELL
17. PVC SCH 40 FEMALE ADAPTOR
18. LATERAL PIPE

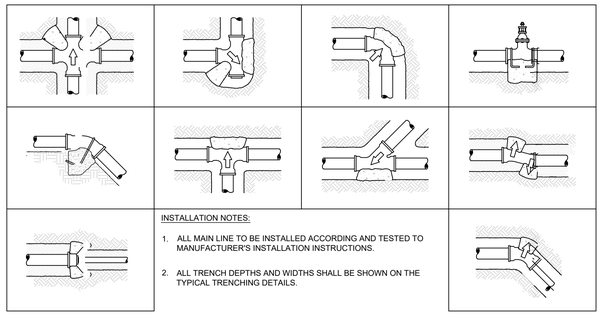
1 COMMERCIAL CONTROL DRIP ZONE VALVE KIT
L2.50 SECTION / PLAN — NTS



1. IRRIGATION CONTROLLER: CONTROLLER (OWNER TO SPECIFY WALL MOUNT OR STAINLESS STEEL PEDESTAL MOUNT). INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. JUNCTION BOX
3. 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY
4. POWER SUPPLY WIRE
5. 2-INCH CONDUIT AND FITTINGS FOR STATION WIRES
6. WIRES TO REMOTE CONTROL VALVES

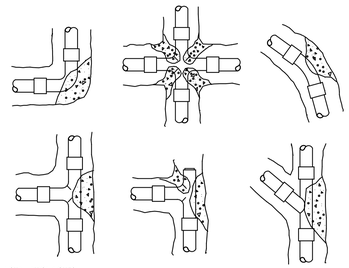
NOTES:
1. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

2 TYPICAL CONTROLLER
L2.50 ELEVATION — NTS



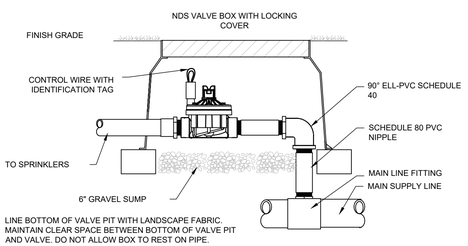
INSTALLATION NOTES:
1. ALL MAIN LINE TO BE INSTALLED ACCORDING AND TESTED TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. ALL TRENCH DEPTHS AND WIDTHS SHALL BE SHOWN ON THE TYPICAL TRENCHING DETAILS.

3 TYPICAL THRUST BLOCK
L2.50 SECTION — NTS

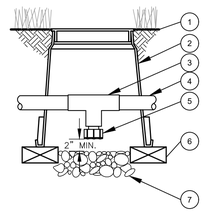


INSTALLATION NOTES
1. 3000 PSI CONCRETE OR BETTER IS TO BE USED FOR THRUST BLOCKS.
2. FOR 45°/90° FITTINGS, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
3. FOR 22-1/2° FITTINGS, MINIMUM OF 0.5 CUBIC FEET OF CONCRETE TO BE USED.
4. FOR TEES, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED. THRUST BLOCKS REQUIRED FOR IRRIGATION MAINLINE 2 1/2" AND LARGER.

4 THRUST BLOCK REINFORCEMENT
L2.50 SECTION — NTS

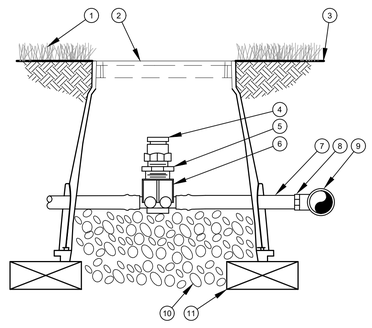


5 TYPICAL CONTROL VALVE
L2.50 SECTION — NTS



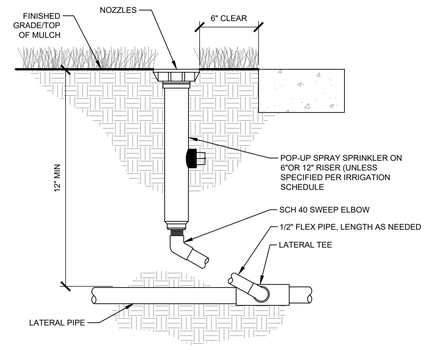
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE:
6. BRICK (1 OF 2)
7. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

6 DRAIN VALVE
L2.50 SECTION — NTS

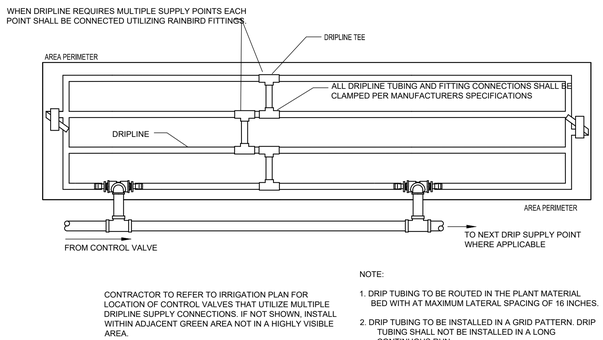


1. TURF GRASS
2. VALVE BOX LID
3. FINISH GRADE
4. ½" AIR RELIEF VALVE: TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
5. ½" X ¾" PVC REDUCER BUSHING
6. BARB X FEMALE THREAD CONNECTOR:
7. ½" BLANK DRIPLINE TUBING:
8. BARB X MALE THREAD CONNECTOR:
9. PVC TEE CONNECTED TO PVC HEADER PIPE
10. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL
11. BRICK (1 OF 2)

7 AIR RELIEF VALVE IN XFS DRIP LINE
L2.50 SECTION — NTS



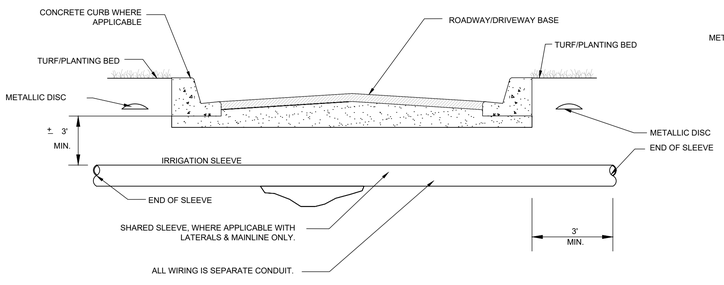
8 TYPICAL IRRIGATION HEAD
L2.50 SECTION — NTS



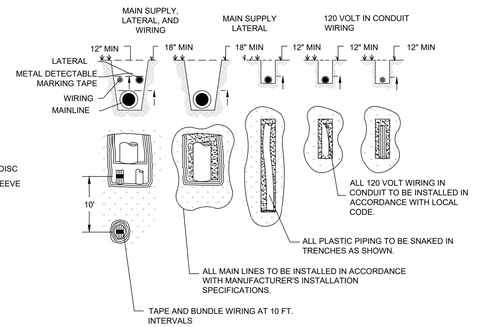
CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS. IF NOT SHOWN, INSTALL WITHIN ADJACENT GREEN AREA NOT IN A HIGHLY VISIBLE AREA.

NOTE:
1. DRIP TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 16 INCHES.
2. DRIP TUBING TO BE INSTALLED IN A GRID PATTERN. DRIP TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.
3. CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS (IF SHOWN).

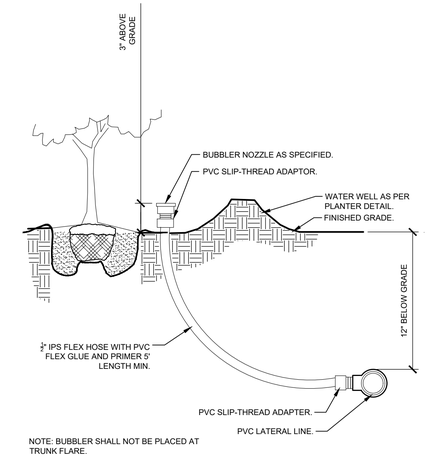
9 TYPICAL DRIP LINE
L2.50 PLAN — NTS



10 TYPICAL SLEEVING
L2.50 SECTION — NTS



11 TYPICAL TRENCHING
L2.50 SECTION / PLAN — NTS



NOTE: BUBBLER SHALL NOT BE PLACED AT TRUNK FLARE.

12 TYPICAL BUBBLER
L2.50 SECTION — NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANCIS LA6667292 STATE OF FLORIDA
DATE: 07/25

KHA PROJECT	149170026
DATE	07/18/25
SCALE	AS SHOWN
DESIGNED BY	GNG
DRAWN BY	NBMB
CHECKED BY	ATDG

IRRIGATION DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER L2.50

Plotted By: Kozemi, Mary Sheet Set:WINTER SPRINGS WAWA Layout:L2.50 July 28, 2025 08:42:02pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\PlanSheets- Wawa\L2.00 IRRIGATION PLAN.dwg

IRRIGATION SYSTEM NOTES:

1. THE IRRIGATION MAINLINE LAYOUT IS DIAGRAMMATIC. ANY CHANGES MADE IN THE IRRIGATION MAINLINE DUE TO FIELD CONDITIONS OR CONTRACTOR'S SUBMITTED DESIGN SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
2. SET SPRAY HEADS 6" AND ROTORS 12" IN FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
3. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.
4. CONTRACTOR TO PROVIDE NEW AUTOMATIC CONTROLLER FOR PROPOSED SYSTEM (NO BATTERY OPERATED CONTROLLERS ALLOWED). COORDINATE LOCATION WITH OWNER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AUTOMATIC RAIN SENSOR. COORDINATE LOCATION W/ OWNER.
6. IRRIGATION SHALL NOT BE COMBINED ON A SINGLE ZONE AND SHALL BE ZONED ACCORDING TO IRRIGATION TYPE, PRECIPITATION RATE, AND THE SYSTEM'S AVAILABLE WATER / PRESSURE. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW PRIOR TO INSTALLATION.
7. VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL FIELD VERIFY.
8. CONTRACTOR TO FIELD VERIFY ALL POINT OF CONNECTION SOURCE INFORMATION INCLUDING PSI AND GPM PRIOR TO CONSTRUCTION.
9. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON-SITE.
10. CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN FOR PLANTER BED AND TREE LOCATIONS TO ENSURE ALL PLANT MATERIAL IS COVERED BY 100% HEAD-TO-HEAD IRRIGATION.
11. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.
12. PRODUCTS SHALL BE AS SPECIFIED OR APPROVED EQUAL.

PRE-APPROVED MANUFACTURERS:
1. TORO
2. HUNTER
3. RAINBIRD

13. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE JURISDICTION.
14. LOCATE ALL IRRIGATION LINES WITHIN LANDSCAPED AREAS WHENEVER POSSIBLE. ALL LINES UNDER PAVEMENT MUST BE SLEEVED WITHIN SCH. 40 PVC 2x SIZE OF PIPE AND FREE OF STONES/DEBRIS. ALL VALVES SHALL BE LOCATED WITHIN LANDSCAPED AREAS.
15. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
16. THE IRRIGATION CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR SLEEVING AND DIRECTIONAL BORES.
17. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF THE SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES ON PLAN FOR WALL PENETRATIONS AND UNDER SIDEWALKS SHALL BE SIZED TWO PIPE SIZES GREATER THAN THE PIPE IT CARRIES.
18. ALL PRESSURIZED MAINLINES AND LATERALS UNDER PAVEMENT SHALL BE WITHIN SCH. 40 PVC SLEEVES. WHERE ELECTRIC OR HYDRAULIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
19. NUMBER THE TOP OF ALL VALVE BOX LIDS WITH MINIMUM 1" HEIGHT BLACK LETTERS TO CORRESPOND TO AUTOMATIC AND GATE VALVE DESIGNATIONS. ALL HOSE BIBB VALVE BOXES SHALL BE LABELED IN A SIMILAR MANNER WITH THE DESIGNATION "HB". LETTER OUTSIDE OF TIME CLOCK CABINETS TO CORRESPOND WITH IRRIGATION CLOCK PROGRAM DESIGNATION.
20. THE IRRIGATION CONTRACTOR SHALL INSTALL A COLOR CODED METAL DETECTABLE MARKING TAPE WHICH CLEARLY NOTES: "CAUTION: IRRIGATION LINE BURIED BELOW," THE TAPE SHALL BE INSTALLED THE FULL LENGTH OF THE IRRIGATION MAINLINE.
21. ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.
22. ALL 24 VAC WIRING FROM DECODER TO VALVE SHALL BE OF DIRECT BURIAL COPPER WIRE. MAXIMUM LENGTH OF WIRE FROM DECODER TO VALVE SHALL NOT EXCEED 400 FEET. AS FOLLOWS:
    CONTROL WIRES - #14
    COMMON WIRES - #14
23. ALL VALVES, SPLICES WITHIN CONTROL LINES, AND QUICK COUPLERS SHALL BE LOCATED WITHIN NDS VALVE BOXES AS FOLLOWS:
    -RECTANGULAR 12"X17" HEAVY DUTY BOX. (PURPLE COVER FOR REUSE TO BE PROVIDED WHERE APPROPRIATE).
24. ALL IRRIGATION HEADS/DRIP TUBING SHALL BE LOCATED ONE (1) FOOT FROM BACK OF CURB WHEN NEXT TO A ROADWAY. (THIS SHALL NOT INCLUDE PARKING AREAS OR DRIVE AISLES).
25. HEADS, LATERALS, EMITTERS, AND VALVES ARE NOT SHOWN, BUT ARE NECESSARY FOR A FULLY FUNCTIONING IRRIGATION SYSTEM.
26. LOCATE ALL VALVES IN PLANTING BEDS WITH A MINIMUM OF 3'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. PIPE SIZES ON EITHER SIDE OF SECTION VALVES CONNECTING MAINLINE TO SECTION LATERAL SHALL BE ONE (1) PIPE SIZE LARGER THAN VALVE SIZE. WHERE MAINLINES RUN PARALLEL TO PAVEMENT OR CURBING, THE MAINLINE SHALL BE OFFSET 2'-0" FROM THE EDGE OF PAVEMENT OR CURB.
27. IRRIGATION ZONES SHALL BE SEPARATED FOR HIGH AND LOW WATER USE REQUIREMENTS AND OPERATED ON DIFFERENT WATERING CYCLES. BUBBLERS, DRIPLINE, AND SPRAY HEADS SHALL BE SEPARATED ON DIFFERENT VALVES. AT NO TIME SHALL MULTIPLE IRRIGATION HEAD TYPES BE LOCATED ON THE SAME VALVE.
28. ALL DRIP ZONES SHALL BE INSTALLED WITH A FLUSH VALVE AND AIR RELIEF VALVE. IN THE EVENT THAT A DRIP ZONE HAS MORE THAN ONE HIGH OR LOW POINT, MORE THAN ONE AIR RELIEF VALVE OR FLUSH VALVE WILL BE REQUIRED FOR THAT ZONE. DRIPLINE SHALL PROVIDE 0.9 GPH EMITTERS, 12" O.C. WITH 12" LINE SPACING AT A MINIMUM.
29. ALL WIRING FOR CONNECTION OF THE VALVES TO THE CONTROLLER SHALL FOLLOW MANUFACTURERS SPECIFICATIONS. IF REQUIRED, ALL WIRING FOR A TWO WIRE PATH SHALL BE WITH RED/BLUE TWISTED PAIR 14 AWG. ELECTRIC CONTROL LINES FROM THE DECODER TO THE SOLENOID VALVES SHALL BE TWISTED PAIR 18 AWG. ALL DECODERS SHALL BE GROUNDED EVERY 1,000 L.F. OR EVERY 10 DEVICES. ALL WIRE SHALL BE FURNISHED IN MINIMUM 2,500' REELS AND SPLICING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE DONE IN ACCORDANCE WITH EXISTING CODES. SPLICING SHALL BE IN VALVE BOXES OR CONTROLLERS ONLY. IRRIGATION SYSTEM CONTROL SHALL BE TWO WIRE PATH. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR THIS INSTALLATION. TWO WIRE SYSTEM SHALL HAVE 2-WAY COMMUNICATIONS FIELD PROGRAMMABILITY, STATION SPECIFICATIONS AND INTEGRATED SURGE PROTECTION.
30. ALL CONTROL WIRE SHALL BE INSTALLED IN A 1 ½" ELECTRICAL CONDUIT.
31. SMALLEST DIAMETER LATERAL PIPE SHALL BE 3/4".
32. IRRIGATION SYSTEM SHALL BE CAPABLE OF SUPPLYING AN AVERAGE OF 1.05" OF WATER PER WEEK WITHIN WATERING RESTRICTIONS AS APPLICABLE.
33. IRRIGATION SYSTEM SHALL NOT BE INSTALLED THROUGH EXISTING, OR PRESERVED PLANT COMMUNITIES. DO NOT TRENCH THROUGH EXISTING ROOT SYSTEMS OF ANY VEGETATION INTENDED TO BE PRESERVED.
34. CONTRACTOR TO MINIMIZE IRRIGATION OVERTHROW TO IMPERVIOUS AND NATURAL AREAS THROUGH FIELD ADJUSTMENTS TO INDIVIDUAL HEADS.
35. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THE CONDITION DENOTED ON THE LANDSCAPE PLAN.
36. IRRIGATION PIPING INSTALLED UNDER ROADS AND SIDEWALKS SHALL BE IN SCHEDULE 40 PVC SLEEVING AT 2X THE PIPE SIZE. ALL SLEEVING SHALL BE FREE OF STONES AND DEBRIS.
37. IRRIGATION SOURCE TO BE EITHER WELL, POTABLE, OR NON-POTABLE WATER. IRRIGATION CONTRACTOR TO VERIFY SOURCE PRIOR TO DESIGN.
38. POINT OF CONNECTION TO BE DETERMINED BY OWNER. IRRIGATION SYSTEM CONNECTIONS TO THE LOCAL JURISDICTION SERVICE SHALL COMPLY WITH ALL APPLICABLE CODES.
39. IRRIGATION CONNECTION MAY REQUIRE BACKFLOW PREVENTION, VERIFY WITH LOCAL JURISDICTION.
40. IRRIGATION SYSTEM SHALL COMPLY WITH THE LOCAL JURISDICTION LAND DEVELOPMENT CODE.

1 L2.51 TYPICAL SCHEMATIC IRRIGATION NOTES

No.	REVISIONS	DATE	BY
1	REVISED PER CITY AND FDOT COMMENTS	07/18/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANCIS LA6667292 STATE OF FLORIDA

Digitally signed by Matthew Taylor Francis
DN: CN=Matthew Taylor Francis, E=matthew.francis@kimley-horn.com, O=Kimley-Horn and Associates, Inc., OU=LA6667292, C=US
Date: 2025.07.25 09:42:36 -04'00'

DATE: 07/25/25

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KHA PROJECT	149170026
DATE	07/18/25
SCALE	AS SHOWN
DESIGNED BY	CNS
DRAWN BY	MMB
CHECKED BY	ADL

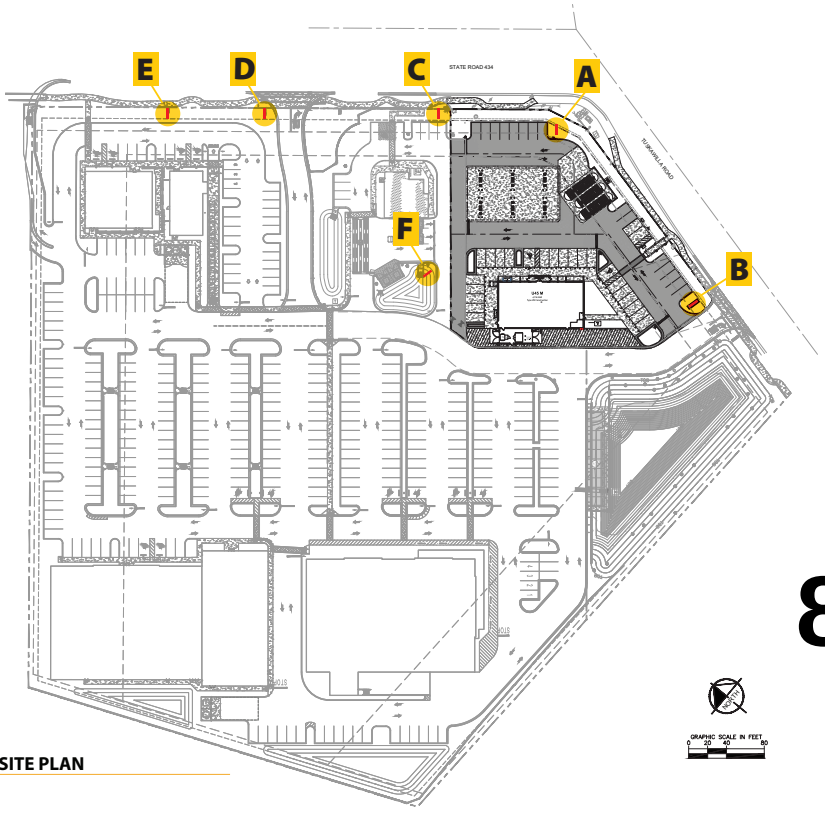
IRRIGATION NOTES

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L2.51

Plotted By:Kazami, Mary Sheet Set:WINTER SPRINGS WAWA Layout:IRRIGATION SPECIFICATIONS July 28, 2025 09:42:07pm K:\orl_civil\149170026-winter springs wawa\CADD\CONSTPlanSheets- Wawa\L2.00 IRRIGATION PLAN.dwg



SIGNAGE SITE PLAN

WHITE SIGN COMPANY

SIGN TYPE: MONUMENT SIGNS

JOB NUMBER: 0000

DATE: 06/06/2025

CUSTOMER: WINTER SPRINGS MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

ADDRESS: STATE ROAD 434 & TUSCAWILLA RD. WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

UMINATED ☑
N ILLUMINATED ☐

FT: 00

80

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ES 12000976

www.whitesigncompany.com
386-320-0623

WHITE SIGN COMPANY

SIGN TYPE:
MONUMENT SIGN

JOB NUMBER: 0000

DATE: 06/06/2025

CUSTOMER:
WINTER SPRINGS MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

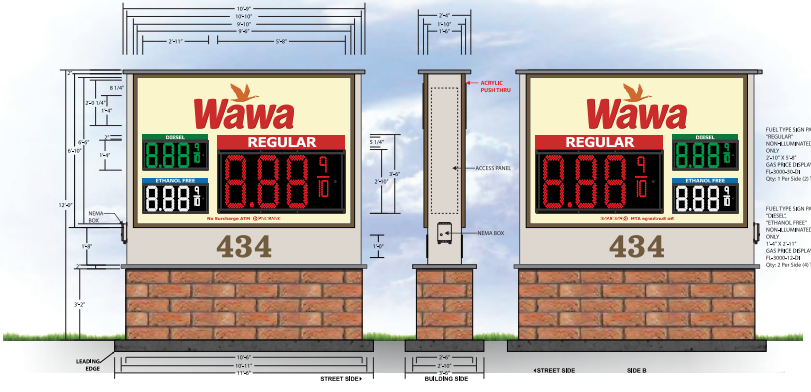
ADDRESS:
STATE ROAD 434
& TUSCAWILLA RD.
WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

UMINATED ☑
N ILLUMINATED ☐

FT: 61.75

81



A 3 PRODUCT
CUSTOM D/F ILLUMINATED MONUMENT SIGN (61.75 SQ. FT.) SR 434

Scale: 3/8"=1'-0"

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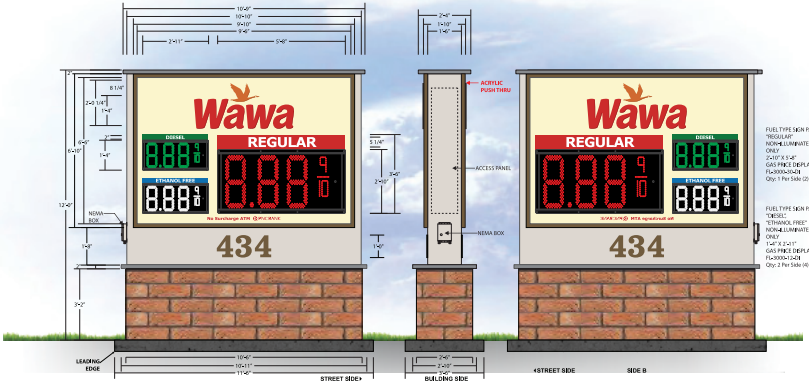

B 3 PRODUCT
CUSTOM D/F ILLUMINATED MONUMENT SIGN (61.75 SQ. FT.) Tuskawilla Rd.

Scale: 3/8"=1'-0"

WHITE SIGN COMPANY

SIGN TYPE: MONUMENT SIGN

JOB NUMBER: 0000

DATE: 08/06/2025

CUSTOMER: WINTER SPRINGS MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

ADDRESS: STATE ROAD 434 & TUSCAWILLA RD. WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

MINATED ☑
N ILLUMINATED ☐

FT: 61.75

82

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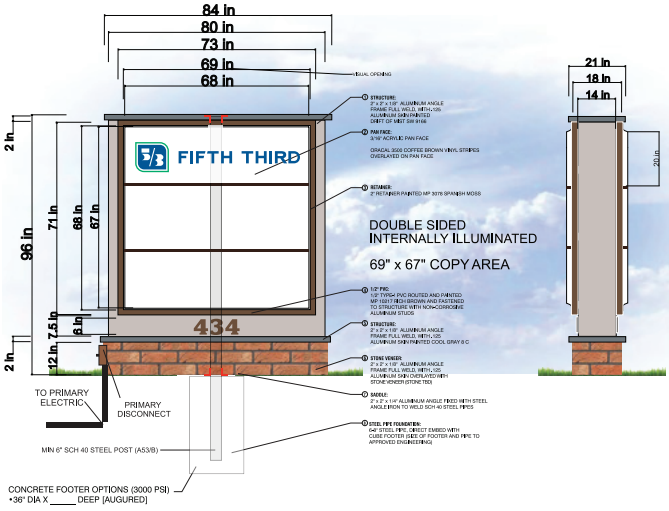

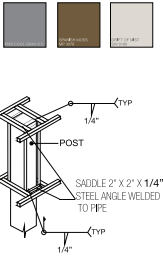

ELECTRICAL NOTES
•VOLTAGE TBD
•120V / 20 AMP CIRCUIT REQUIRED

GENERAL NOTES
THIS SIGN IS TO BE INSTALLED IN ACCORDANCE WITH
THE REQUIREMENTS OF ARTICLE 600 OF THE CURRENT
NATIONAL ELECTRICAL CODE.
1. GROUNDED AND BONDED PER NEC 600.7 (
2. EXISTING BRANCH CIRCUIT IN COMPLIANCE
NEC 600.6 NOT TO EXCEED 20 AMPS
3. LISTED AND LABELED PER NEC 600.3
ADD SIGN CONTROL SWITCH PER NEC 600.6 - PE
PER SIGN COMPONENT BEFORE LEAVING MANU

ADDRESS:
STATE ROAD 434
& TUSCAWILLA RD
WINTER SPRINGS, FL

SINGLE SIDED ☐
DOUBLE SIDED ☑

ILLUMINATED ☑
NON ILLUMINATED ☐

SQ. FT.: 56.0

83

C 3 PRODUCT
CUSTOM D/F ILLUMINATED MONUMENT SIGN (56.0 SQ. FT.) State Road 434

WHITE SIGN COMPANY

SIGN TYPE:
MONUMENT SIGN

JOB NUMBER: 0000

DATE: 06/06/2025

CUSTOMER:
WINTER SPRINGS
MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

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ES 12000976

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MONUMENT SIGN S-1 A

18" WIDE EXTRUDED ALUMINUM CABINET
WITH 2" RETAINER SYSTEM
CABINET FINISHED IN SATIN ACRYLIC ENAMEL
ID CABINET FACES TO BE 3/16" THICK TRANSLUCENT
WHITE PAN FORMED ACYRLIC WITH OUTSIDE SURFACE
APPLIED VINYL DECORATION
ID CABINET TO HAVE INTERNAL WHITE "L.E.D."
LLUMINATION

FABRICATED ALUMINUM CAP, POLE COVER AND
EMBELLISHMENTS TO HAVE INTERNAL ALUMINUM
ANGLE FRAME CONSTRUCTION
WITH SATIN ENAMEL AND LT. SPRAY STUCCO FINISHES
COLORS AS INDICATED

SIGN INSTALLED ON SINGLE VERTICAL STEEL SUPPORT
POLE WITH DIRECT BURIAL CONCRETE
FOUNDATION

DISCONNECT JUNCTION BOX ON SIDE
OF POLE COVER

BRICK / STONE VENEER BY OTHERS

INTERNALLY ILLUMINATED DOUBLE SIDED FREESTANDING SIGN SCALE 1/4" = 1'-0"

D 3 PRODUCT
CUSTOM D/F ILLUMINATED MONUMENT SIGN (108.0 SQ. FT.) State Road 434

WHITE SIGN COMPANY

SIGN TYPE: MONUMENT SIGN

JOB NUMBER: 0000

DATE: 08/06/2025

CUSTOMER: WINTER SPRINGS MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

ADDRESS: STATE ROAD 434 & TUSCAWILLA RD. WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

MINATED ☑
N ILLUMINATED ☐

FT: 108.0

84

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ES 12000976

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MONUMENT SIGN S-3

18" WIDE EXTRUDED ALUMINUM CABINET
WITH 2" RETAINER SYSTEM
CABINET FINISHED IN SATIN ACRYLIC ENAMEL
ID CABINET FACES TO BE 3/16" THICK TRANSLUCENT
WHITE PAN FORMED ACYRLIC WITH OUTSIDE SURFACE
APPLIED VINYL DECORATION
ID CABINET TO HAVE INTERNAL WHITE "L.E.D."
LLUMINATION

FABRICATED ALUMINUM CAP, POLE COVER AND
EMBELLISHMENTS TO HAVE INTERNAL ALUMINUM
ANGLE FRAME CONSTRUCTION
WITH SATIN ENAMEL AND LT. SPRAY STUCCO FINISHES
COLORS AS INDICATED

SIGN INSTALLED ON SINGLE VERTICAL STEEL SUPPORT
POLE WITH DIRECT BURIAL CONCRETE
FOUNDATION

DISCONNECT JUNCTION BOX ON SIDE
OF POLE COVER

BRICK / STONE VENEER BY OTHERS

INTERNALLY ILLUMINATED DOUBLE SIDED FREESTANDING SIGN SCALE 1/4" = 1'-0"

E 3 PRODUCT
CUSTOM D/F ILLUMINATED MONUMENT SIGN (48.0 SQ. FT.) State Road 434

WHITE SIGN COMPANY

SIGN TYPE:
MONUMENT SIGN

JOB NUMBER: 0000

DATE: 06/06/2025

CUSTOMER:
WINTER SPRINGS
MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

ADDRESS:
STATE ROAD 434
& TUSCAWILLA RD.
WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

UMINATED ☑
N ILLUMINATED ☐

FT: 48.0

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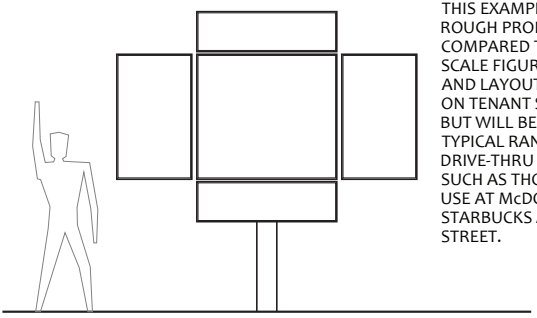
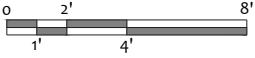


THIS EXAMPLE SHOWS ROUGH PROPORTIONS COMPARED TO A HUMAN SCALE FIGURE. EXACT SIZE AND LAYOUT WILL DEPEND ON TENANT STANDARDS, BUT WILL BE WITHIN THE TYPICAL RANGE OF A DRIVE-THRU MENU BOARD, SUCH AS THOSE ALREADY IN USE AT McDONALD'S AND STARBUCKS ACROSS THE STREET.



F **S-4 DIAGRAMATIC ELEVATION**

WHITE SIGN COMPANY

SIGN TYPE: MONUMENT SIGN

JOB NUMBER: 0000

DATE: 06/06/2025

CUSTOMER: WINTER SPRINGS MARKETPLACE

DESIGNER: Fernando Lima

SALES REP: Luke Mullins

ADDRESS: STATE ROAD 434 & TUSCAWILLA RD WINTER SPRINGS, FL

GLE SIDED ☐
JBLE SIDED ☑

UMINATED ☑
N ILLUMINATED ☐

FT: 00

86

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MEMORANDUM

TO: David W. Hamstra, P.E. CFM
FROM: Joseph T. Roviaro
DATE: August 15, 2025
RE: Review of the Revised July 2025 WaWa Convenience Store in Winter Springs Traffic Impact Analysis

---

This memorandum has been updated to incorporate the findings from the revised July 2025 traffic study for the WaWa Convenience Store in Winter Springs.

The WaWa Convenience Store in Winter Springs which will be located in the southwest quadrant of the SR 434 and Tuskawilla Road intersection. Specific comments and findings are provided below.

Project Description

The proposed WaWa Convenience Store in Winter Springs project will consist of a 4,736 square foot convenience store with 12 vehicle fueling positions development on the vacant ±1.21-acre parcel within the existing shopping center. Build-out date has been planned for 2026.

According to the provided site plan, access to the study site will be via the existing shopping centers access connections onto SR 434 and Tuskawilla Road. The SR 434 access driveways are a shared directional median opening (Roberts Family Lane) with the Jesup's Reserve apartment complex adjacent to the west property boundary and a right-in/right-out access driveway connection. The Tuskawilla Road access driveway is also a right-in/right-out driveway connection.

Existing Conditions Analysis

The list of study roadways is correct. The adopted City of Winter Springs level of service for the study roadways is D. Based on the results of this study, the roadways currently operate at acceptable levels of service.

The list of existing study intersections was expanded to include the Tuskawilla Road and Michael Blake Boulevard intersection as requested. Based on the results of this study, all

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but one of the study intersections currently operate at acceptable levels of service. The deficient study intersection is SR 434 and Tuskawilla Road.

Trip Generation

The ITE trip generation calculations are correct.

Trip Distribution and Assignment

The use of the CFRPM v7 is appropriate and a manual redistribution of project trips at each of the project driveways is also appropriate. However, in all likelihood exiting Project trips wanting to return west will not be able to easily make a u-turn at the Tuskawilla Road and SR 434 intersection. Rather they will likely use the Tuskawilla Road right-in/right-out access driveway (Intersection #3) and make a U-turn at the Michael Blake Boulevard (Intersection #5) intersection. This observation is based on a review of the existing turning movements at the shopping center access driveways, Intersection #2 (Roberts Family Lane), Intersection #3 (Tuskawilla access), and Intersection #4 (SR 434 access) and the existing eastbound queue lengths from the SR 434 and Tuskawilla Road (Intersection #1) intersection.

The existing right turn exit volume from Intersection #3 (Tuskawilla access) is 42% higher than the combined total of the two (2) Project access driveways on SR 434 during the AM peak period and 13% higher than the combined total of the two (2) Project access driveways on SR 434 during the PM peak period. In addition, the existing AM and PM peak hour queue lengths for the eastbound right-turn lane and through lanes will block both of the two (2) Project access driveways on SR 434 during the AM and PM peak hours making it difficult for exiting Project trips wanting to return west.

The diverted Project trips will reduce slightly the overall delay of the SR 434 and Tuskawilla Road intersection (Intersection # 1) for both the AM and PM peak hours and the LOS remains at E. The Synchro summary analysis sheets are attached.

Future Conditions Analysis – Year 2026

Based on the results of this study, the roadways are projected to operate at acceptable levels of service.

Based on the results of this study, all but one of the study intersections are projected to operate at levels of service similar to existing conditions. The deficient study intersection of SR 434 and Tuskawilla Road is projected to operate at LOS F during the PM peak hour. Traffic signal timing adjustments were implemented to the SR 434 and Tuskawilla Road intersection to mitigate Background/Project traffic impact.

We agree with the findings that none of the existing auxiliary turn lanes need to be extended. However, based on the projected southbound right turn volume for the Tuskawilla access driveway (Intersection #3), an auxiliary southbound right turn lane is recommended. Both the AM and PM peak hour volumes meet the recommendation for an auxiliary right-turn lane. The auxiliary turn lane analysis worksheets are attached. Note, the deceleration and taper length needs to be reviewed and confirmed by the site civil engineer for any actual design of the auxiliary right-turn lane.

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Conclusions

As documented in the report, all the study roadway segments operate with acceptable levels of service.

As documented in the report, all but one of the study intersections currently operate at acceptable levels of service. The deficient study intersection is SR 434 and Tuskawilla Road.

As documented in the report, all the roadways are projected to operate at acceptable levels of service.

As documented in the report, all but one of the study intersections are projected to operate at levels of service similar to existing conditions. The deficient study intersection of SR 434 and Tuskawilla Road is projected to operate at LOS F during the PM peak hour.

As documented in the report, traffic signal timing adjustments were implemented to the SR 434 and Tuskawilla Road intersection to mitigate the Background/Project traffic impact to maintain the existing LOS E condition.

As documented in the report, we agree with the findings that none of the existing auxiliary turn lanes need to be extended. However, based on the projected southbound right turn volume for the Tuskawilla access driveway (Intersection #3), **an auxiliary southbound right turn lane is recommended**. Both the AM and PM peak hour volumes meet the recommendation for an auxiliary right-turn lane. *Note, the deceleration and taper length needs to be reviewed and confirmed by the site civil engineer for any actual design of the auxiliary right-turn lane.*

This concludes our review of the *WaWa Convenience Store in Winter Springs - Traffic Impact Analysis.* If you have any questions, please call.

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Synchro Worksheets

HCM 7th Signalized Intersection Summary BO
1: Tuskawalla Rd & SR 434 AM BO

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	946	451	183	1094	23	640	97	204	49	97	43
Future Volume (veh/h)	54	946	451	183	1094	23	640	97	204	49	97	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1841	1870	1870	1841	1900	1885	1870	1885	1870	1900	1856
Adj Flow Rate, veh/h	56	985	470	191	1140	24	667	101	213	51	101	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	4	2	2	4	0	1	2	1	2	0	3
Cap, veh/h	71	1058	820	379	1664	35	748	115	243	167	117	52
Arrive On Green	0.04	0.30	0.30	0.21	0.47	0.47	0.21	0.21	0.21	0.09	0.09	0.09
Sat Flow, veh/h	1767	3497	1585	1781	3502	74	3483	536	1131	1781	1245	555
Grp Volume(v), veh/h	56	985	470	191	569	595	667	0	314	51	0	146
Grp Sat Flow(s),veh/h/ln	1767	1749	1585	1781	1749	1827	1742	0	1667	1781	0	1800
Q Serve(g_s), s	5.7	49.2	36.6	17.0	45.6	45.6	33.5	0.0	32.8	4.8	0.0	14.4
Cycle Q Clear(g_c), s	5.7	49.2	36.6	17.0	45.6	45.6	33.5	0.0	32.8	4.8	0.0	14.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.68	1.00		0.31
Lane Grp Cap(c), veh/h	71	1058	820	379	831	868	748	0	358	167	0	168
V/C Ratio(X)	0.79	0.93	0.57	0.50	0.69	0.69	0.89	0.00	0.88	0.31	0.00	0.87
Avail Cap(c_a), veh/h	139	1092	835	379	831	868	873	0	418	235	0	237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	85.6	60.9	29.8	62.5	36.8	36.8	68.7	0.0	68.4	76.1	0.0	80.5
Incr Delay (d2), s/veh	17.4	15.3	2.9	1.1	2.3	2.3	10.4	0.0	16.9	1.0	0.0	20.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	23.7	21.6	7.8	19.7	20.6	15.8	0.0	15.5	2.2	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	103.0	76.3	32.7	63.6	39.1	39.0	79.0	0.0	85.3	77.1	0.0	101.1
LnGrp LOS	F	E	C	E	D	D	E		F	E		F
Approach Vol, veh/h		1511			1355			981			197	
Approach Delay, s/veh		63.7			42.5			81.0			94.9	
Approach LOS		E			D			F			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	46.1	62.3		24.1	15.0	93.3		47.5				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	23.2	56.2		23.7	14.2	65.2		45.1				
Max Q Clear Time (g_c+I1), s	19.0	51.2		16.4	7.7	47.6		35.5				
Green Ext Time (p_c), s	0.2	3.2		0.4	0.0	6.7		3.1				
Intersection Summary												
HCM 7th Control Delay, s/veh			62.3									
HCM 7th LOS			E									

AM BO AM Peak Hour 8:29 am 08/15/2025 BO
JTR

Synchro 12 Report
Page 1

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HCM 7th Signalized Intersection Summary BO
1: Tuskawalla Rd & SR 434 PM BO

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1158	597	184	1255	37	779	218	165	107	164	36
Future Volume (veh/h)	107	1158	597	184	1255	37	779	218	165	107	164	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1885	1885	1841	1900	1826	1885	1900	1900	1900	1900
Adj Flow Rate, veh/h	109	1182	609	188	1281	38	795	222	168	109	167	37
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	2	1	1	4	0	5	1	0	0	0	0
Cap, veh/h	125	1263	944	196	1373	41	796	235	178	203	169	37
Arrive On Green	0.07	0.36	0.36	0.11	0.40	0.40	0.24	0.24	0.24	0.11	0.11	0.11
Sat Flow, veh/h	1810	3554	1598	1795	3468	103	3374	996	754	1810	1506	334
Grp Volume(v), veh/h	109	1182	609	188	646	673	795	0	390	109	0	204
Grp Sat Flow(s),veh/h/ln	1810	1777	1598	1795	1749	1822	1687	0	1750	1810	0	1840
Q Serve(g_s), s	10.1	54.6	42.8	17.7	60.1	60.2	40.0	0.0	37.3	9.7	0.0	18.8
Cycle Q Clear(g_c), s	10.1	54.6	42.8	17.7	60.1	60.2	40.0	0.0	37.3	9.7	0.0	18.8
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.43	1.00		0.18
Lane Grp Cap(c), veh/h	125	1263	944	196	692	721	796	0	413	203	0	207
V/C Ratio(X)	0.88	0.94	0.64	0.96	0.93	0.93	1.00	0.00	0.95	0.54	0.00	0.99
Avail Cap(c_a), veh/h	125	1263	944	196	692	721	796	0	413	203	0	207
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	78.4	52.9	23.0	75.3	49.2	49.2	64.9	0.0	63.9	71.3	0.0	75.3
Incr Delay (d2), s/veh	45.2	14.0	3.4	51.8	19.5	19.2	31.6	0.0	30.6	2.8	0.0	58.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	26.3	27.3	10.9	29.3	30.5	20.4	0.0	19.8	4.6	0.0	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	123.6	67.0	26.3	127.1	68.7	68.4	96.6	0.0	94.5	74.0	0.0	134.0
LnGrp LOS	F	E	C	F	E	E	F		F	E		F
Approach Vol, veh/h		1900			1507			1185			313	
Approach Delay, s/veh		57.2			75.8			95.9			113.1	
Approach LOS		E			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.4	68.2		26.4	19.5	75.1		49.0				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	18.6	60.4		19.1	11.7	67.3		40.1				
Max Q Clear Time (g_c+I1), s	19.7	56.6		20.8	12.1	62.2		42.0				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	3.3		0.0				

Intersection Summary			
HCM 7th Control Delay, s/veh		75.8	
HCM 7th LOS		E	

PM BO AM Peak Hour 2:09 pm 08/15/2025 BO Synchro 12 Report
JTR Page 1

[mailing address] po box 941556 maitland florida 32794-1556 • 2431 aloma avenue #307 winter park florida 32792 [phone] 407 423 8055 [web] Ltec-FL.com

Auxiliary Turn Lane Analysis Worksheets

Build-out – Southbound Right-Turn Lane Analysis Project Entrance (Intersection #3) on Tuskawilla Road

A.M. Peak Hour

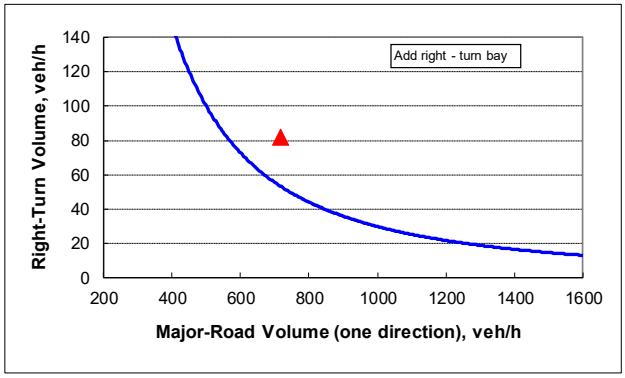
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	4-lane roadway
Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	715
Right-turn volume, veh/h:	82

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	54
Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:	
Add right-turn bay.	



Build-out – Southbound Right-Turn Lane Analysis Project Entrance (Intersection #3) on Tuskawilla Road

P.M. Peak Hour

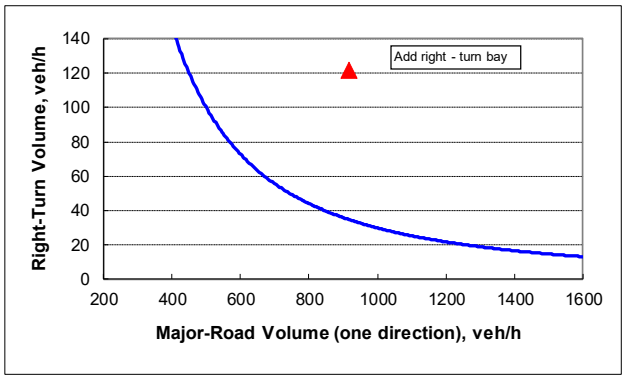
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	4-lane roadway
Variable	Value
Major-road speed, mph:	45
Major-road volume (one direction), veh/h:	915
Right-turn volume, veh/h:	122

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	35
Guidance for determining the need for a major-road right-turn bay for a 4-lane roadway:	
Add right-turn bay.	



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Kimley»Horn

MEMORANDUM

To: Terrilyn Rolle, MPA, AICP
Director of Community Development, Winter Springs

From: Emanuelle D Rodríguez Muñiz, P.E., IMSA[1]
Kimley-Horn and Associates, Inc.

Date: December 6, 2024

Subject: Wawa Winter Springs
Parking Demand Study

This document has been digitally signed and sealed by Emanuelle D Rodriguez Muñiz, P.E. on the date adjacent to the seal

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Emanuelle D Rodriguez

Digitally signed by Emanuelle D Rodriguez
DN: CN=Emanuelle D Rodriguez, dnQualifier=A01410C000001934168451000 2EF49, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2024.12.06 10:35:24-05'00'

Introduction

Kimley-Horn and Associates, Inc. has undertaken the following review and analysis to evaluate the anticipated parking needs for the proposed Wawa convenience store/gas station to be located south of SR 434 and west of Tuskawilla Road in the City of Winter Springs, Florida.

The site is zoned as (T-C) Town Center District. As stated in Section 20-324 of the City's Land Development Code (LDC), there are no minimum parking requirements for T-C; instead, a parking analysis shall be performed justifying the proposed parking solution. This study provides a comparison between the City's code-required parking for the most similar land use, Institute of Transportation Engineers (ITE) *Parking Generation Manual 6th Edition*, and Urban Land Institute (ULI) *Shared Parking 3rd Edition*. The study also includes the required bicycle parking for the site based on the Association of Pedestrian and Bicyclist Professionals (APBP).

The proposed Wawa development will consist of the following uses, as shown in the site plan provided in **Attachment A**:

- 4,736 square feet of convenience store
- 12 vehicle fueling positions (VFP)

Code Parking Requirements

Section 9-277 of the City's LDC defines the off-street parking requirements for specific land uses. The LDC does not have a specific land use for convenience store/gas station therefore “General business and retail commercial” was reviewed:

- General business and retail commercial. One (1) parking space for each three hundred (300) square feet of floor space in the building exclusive of storage space.

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As shown in **Table 1,** a total parking supply of 16 spaces (rounded to nearest integer) at a parking ratio of 3.38 spaces per a thousand square feet would potentially be required depending on interpretation of the City's LDC.

Table 1: City Code Parking Requirement

City LDC		Proposed Development		Required Parking
Land Use	Min. Requirement	Size	Units	
General business and retail commercial	1 space per 300 SF	4,736	SF	16

ITE's Parking Generation Manual, 6th Edition Evaluation

A calculation of the anticipated parking demand was undertaken using data published by the Institute of Transportation Engineers (ITE) *Parking Generation Manual 6th Edition*. Empirical data collected on sites throughout the country are compiled to develop parking demand ratios for similar land uses. The 85th percentile peak parking demand was utilized in accordance with industry-accepted standards.

As shown in **Table 2,** a total parking supply of 50 spaces (rounded to nearest integer) at a parking ratio of 10.56 spaces per a thousand square feet would be needed to serve the proposed convenience store/gas station as an isolated and stand-alone establishment.

Table 2: ITE Parking Demand Summary

ITE ParkGen			Proposed Development		Required Parking
Land Use	LUC	85th Percentile	Size	Units	
Convenience Store/Gas Station	945	10.65 per KSF	4.736	KSF	50

ULI Shared Parking, 3rd Edition Evaluation

Parking within mixed-use developments means patrons can "park once" though are able to visit multiple establishments essentially reducing overall parking demand. The Urban Land Institute (ULI) *Shared Parking 3rd Edition* provides a methodology to calculate the parking demand reduction based on the mix of land uses. The proposed Wawa is within a mixed-use development as shown in **Table 3.** Properties were identified through a desktop search as well as using data from the Seminole County Property Appraiser. Building configuration of the development is shown as **Attachment C**.

Table 3: ULI Land Uses by Existing Tenants

Bldg.	Existing Tenant	ULI Land Use	Sq. Ft.
A	Lake Jesup Dental Care	Medical/Dental Office	4,280
B	Chipotle	Fast Casual/Fast Food	2,325
C	Fifth Third Bank	Bank (Drive In Branch)	2,065
D	Crunch Fitness	Health Club	19,200
E	Dollar Tree	Discount Stores/Superstores	10,000
F	Aldi	Supermarket/Grocery	19,209
G	Wawa	Retail (over 2KSF)	4,736
		Total	**61,815**

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The ULI Shared Parking provides monthly adjustment factors and weekend time-of-day adjustment factors, which show the peak season and peak time-of-day, respectively. The parking ratio applied is the highest demand period which potentially generates demand for 311 spaces (rounded to the nearest integer). The results of ULI's Shared Parking analysis are shown in **Attachment D.**

As shown in **Table 4**, the mixed-use development *without* Wawa currently provides 344 parking spaces. ULI estimates even including Wawa's parking demand, 307 spaces would be sufficient. Therefore, a 33-parking space surplus exists prior to adding parking by Wawa.

Table 4: Parking Ratio Determination

ULI Peak Demand Estimate	Existing Spaces	Surplus/Deficit
311	344	+33

Bicycle Parking

According to the Association of Pedestrian and Bicyclist Professionals (APBP), bicycle parking can be measured by commercial activity including retail. Long-term bicycle parking is considered utilized by employees demanding less spaces per square foot. Short-term bicycle parking is considered utilized by patrons who routinely generate demand and require more spaces per square foot. Therefore, the short-term bicycle parking recommendation of 2 spaces is applied to the Wawa as shown in **Table 5**:

Table 5: Bicycle Parking Spaces Summary

Commercial Activity	Long-Term Bicycle Parking Requirement	Short-Term Bicycle Parking Requirement
General Retail	1 space for each 12,000 sf of floor area. Minimum requirement is 2 spaces	1 space for each 5,000 sf of floor area. Minimum requirement is 2 spaces

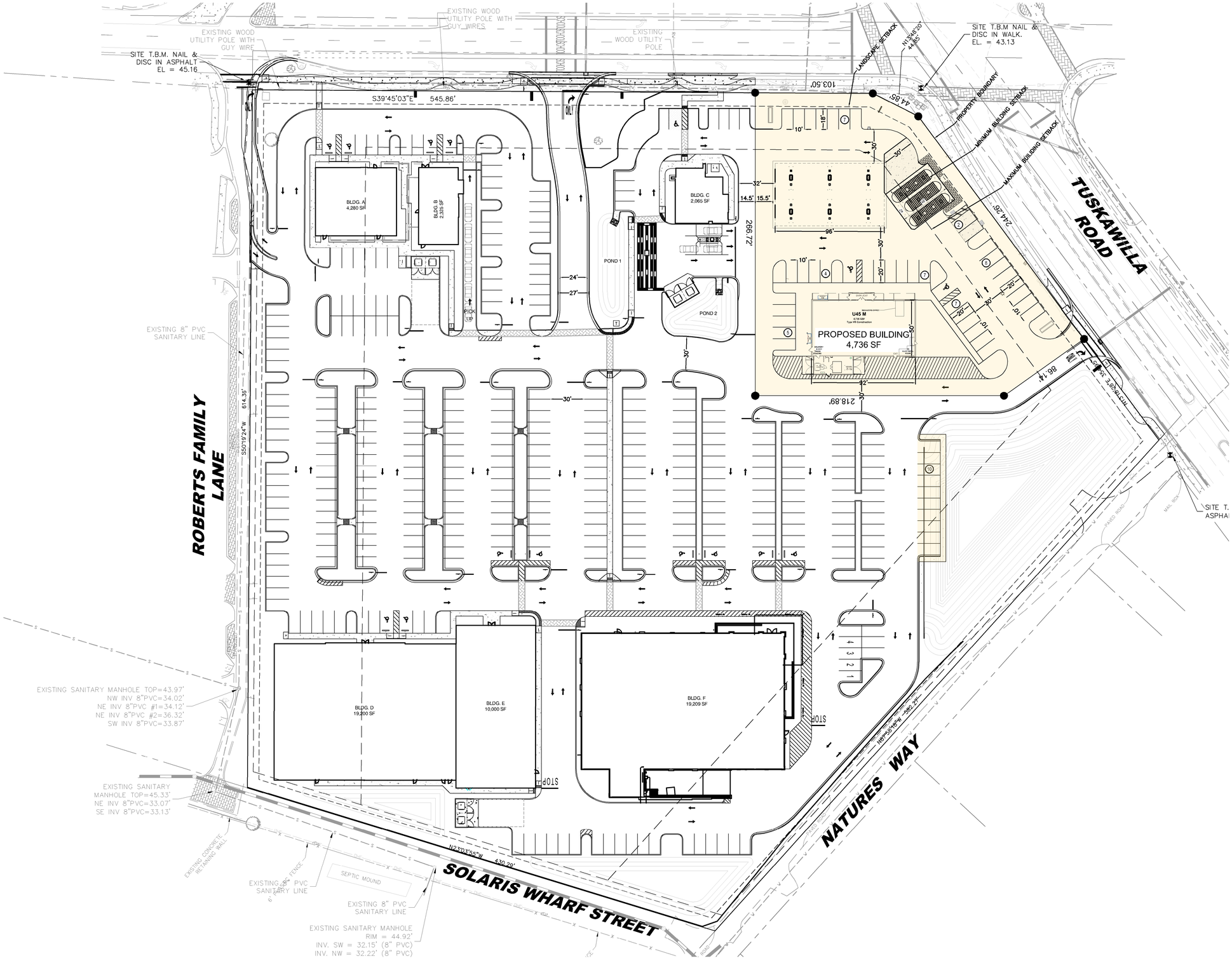
Conclusion

Upon review of the ITE parking ratio for a stand-alone convenience store/gas station, 10.65 spaces per KSF could be recommended. However, Wawa is within a mixed-use development which ULI measures would have shared parking capacity. The mixed-use development including the Wawa would generate demand for a total of 311 spaces. The mixed-use development currently supplies 344 parking spaces which *does not* reflect potential future parking from Wawa. Therefore, the existing 344 spaces is considered sufficient to address both the mixed-use development and Wawa's peak parking demand. Additional parking by Wawa will only serve to increase the existing 33 space surplus.

Additionally, it is recommended that 2 bicycle parking spaces be provided at the Wawa location based on the Association of Pedestrian and Bicyclist Professionals (APBP) guidelines.

ATTACHMENT A

Site Plan



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EQUINOX DEVELOPMENT

GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

Kimley»Horn

SP-47

S.R. 434 & TUSCAWILLA RD.

WINTER SPRINGS, FLORIDA

PROPOSED SITE LAYOUT

06/2052024 - CONTACT JONATHAN A. MARTIN, P.E. (407) 427-1686

ATTACHMENT B

ITE Parking Generation Manual

Land Use: 945 Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and premade sandwiches are also commonly sold. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

Convenience Store (Land Use 851) is a related use.

Time-of-Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday at five study sites in a general urban/suburban setting.

Hour Beginning	Percent of Weekday Peak Parking Demand
12:00–4:00 a.m.	-
5:00 a.m.	-
6:00 a.m.	-
7:00 a.m.	54
8:00 a.m.	73
9:00 a.m.	65
10:00 a.m.	72
11:00 a.m.	80
12:00 p.m.	100
1:00 p.m.	89
2:00 p.m.	69
3:00 p.m.	63
4:00 p.m.	54
5:00 p.m.	54
6:00 p.m.	49
7:00 p.m.	-
8:00 p.m.	-
9:00 p.m.	-
10:00 p.m.	-
11:00 p.m.	-

Additional Data

The reported parking demand does not include any vehicles parked at fueling pump spaces even though some motorists may leave their vehicle at the fueling pump while inside the convenience store.

The average parking supply ratio for the 15 study sites in a general urban/suburban setting with parking supply information is 12 spaces per 1,000 square feet GFA. The average peak parking occupancy at these sites is 69 percent.

The sites were surveyed in the 1990s, the 2000s, and the 2020s in California, New Jersey, Pennsylvania, Texas, and Virginia.

Source Numbers

417, 433, 443, 444, 626, 637

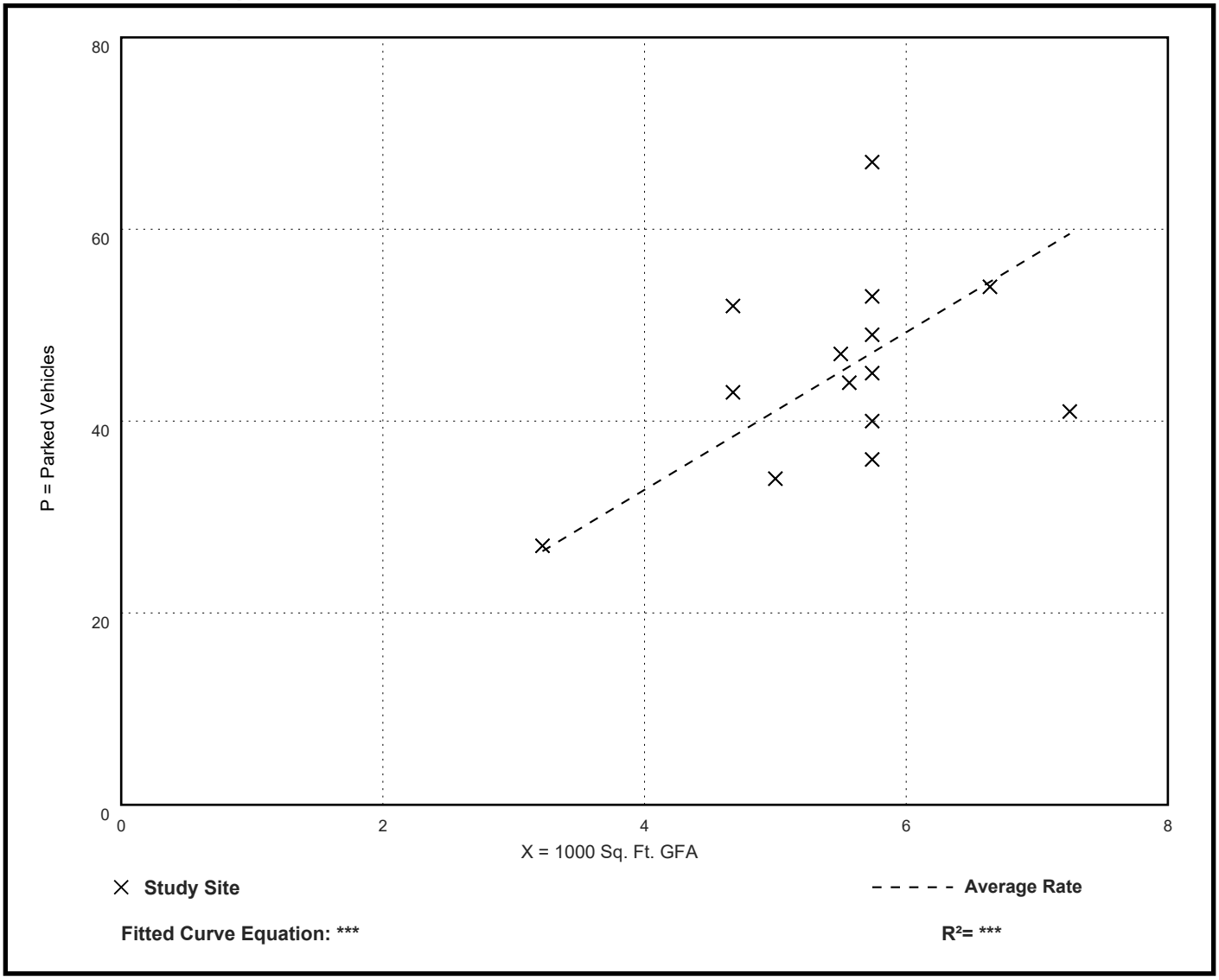
Convenience Store/Gas Station (945)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Number of Studies: 14
Avg. 1000 Sq. Ft. GFA: 5.5

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
8.21	5.66 - 11.67	7.80 / 10.65	***	1.71 (21%)

Data Plot and Equation

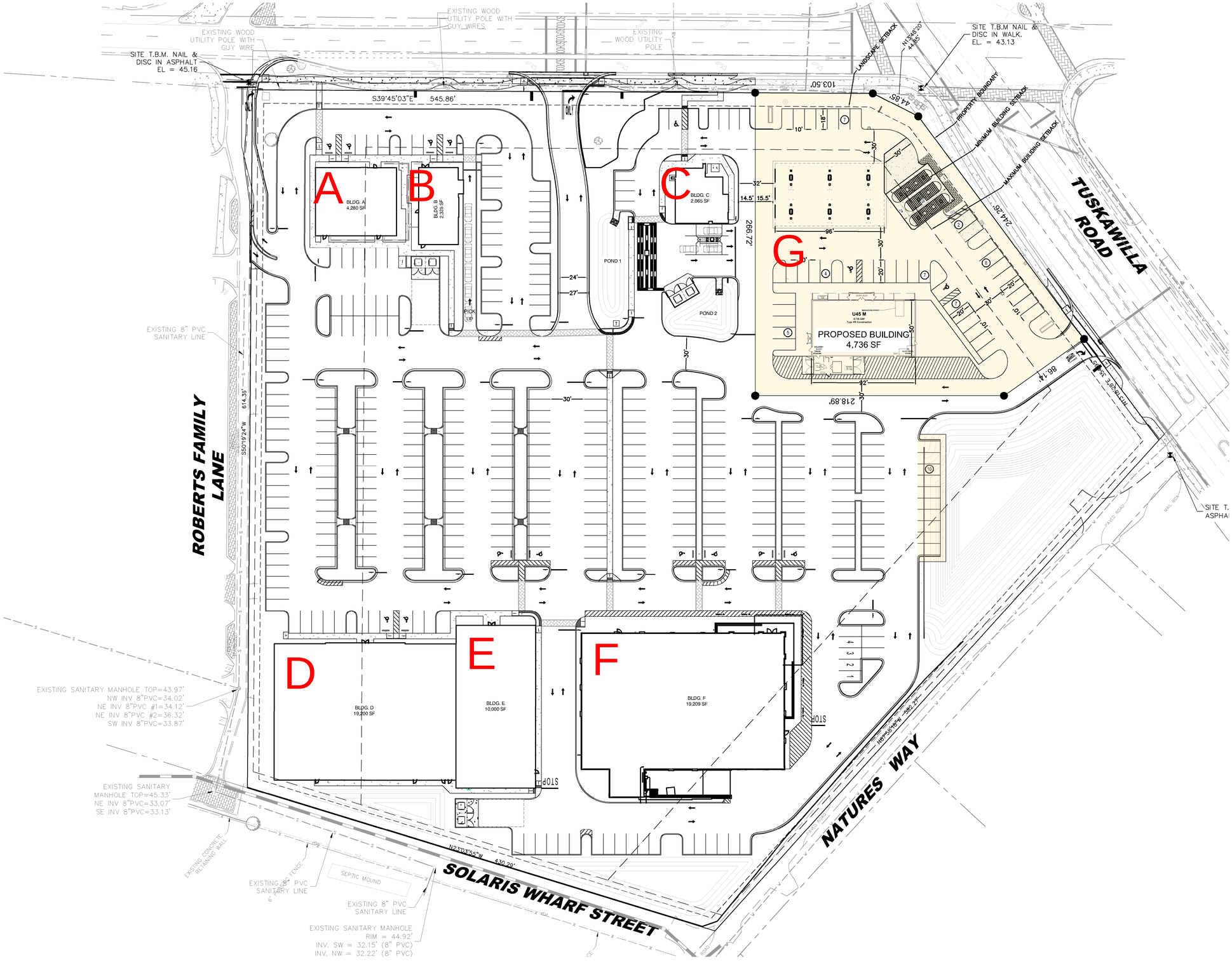


Fitted Curve Equation: *

R^2= *

ATTACHMENT C

Mixed-Use Development Layout



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EQUINOX DEVELOPMENT

SP-47	**S.R. 434 & TUSCAWILLA RD.** WINTER SPRINGS, FLORIDA	PROPOSED SITE LAYOUT 06/2052024 - CONTACT JONATHAN A. MARTIN, P.E. (407) 427-1686

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH

Kimley»Horn

ATTACHMENT D

ULI Shared Parking Results

Copyright © 2020 All rights reserved. The Urban Land Institute, International Council of Shopping Centers, and National Parking Association.

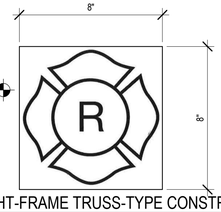
Project: Winter Spring
Description: Wawa

Shared Parking Demand Summary

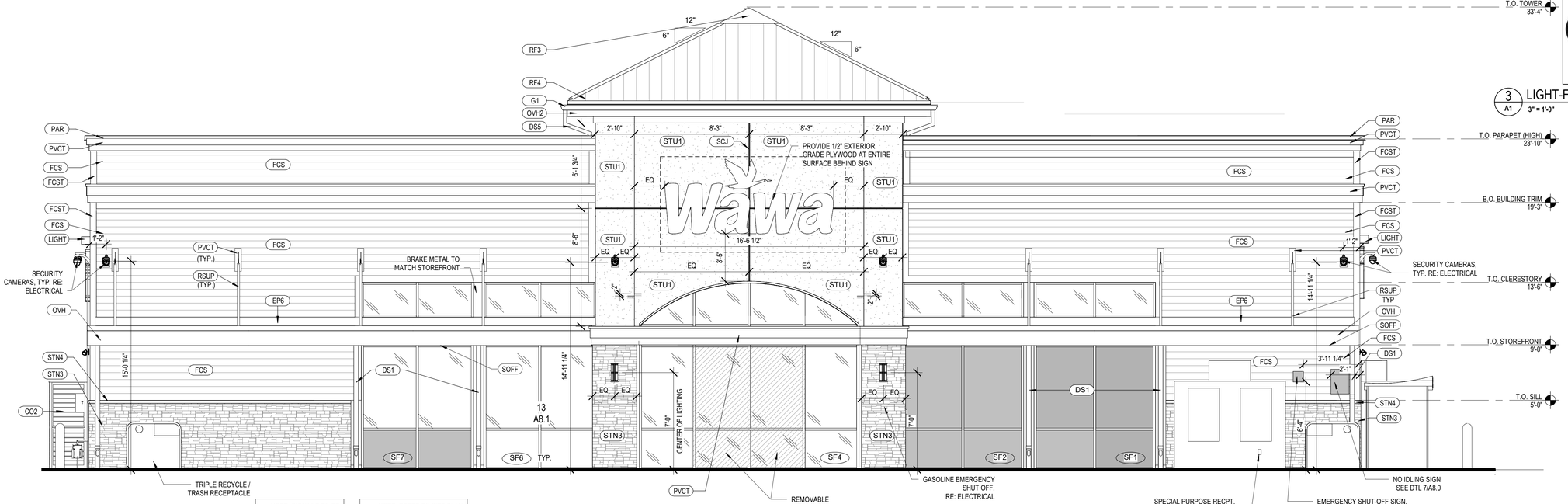
Peak Month: DECEMBER -- Peak Period: 5 PM, WEEKDAY

Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 5 PM	Peak Mo Adj December	Estimated Parking Demand	Peak Hr Adj 5 PM	Peak Mo Adj December	Estimated Parking Demand
Retail																		
Retail (over 2,000 ksf)	4,736	sf GLA	2.90	100%	100%	2.89	ksf GLA	3.20	100%	100%	3.20	ksf GLA	85%	100%	12	80%	100%	13
Employee			0.70	99%	100%	0.69		0.80	99%	100%	0.79		100%	100%	4	55%	100%	2
Supermarket/Grocery	19,209	sf GLA	4.00	100%	100%	3.99	ksf GLA	4.00	100%	100%	3.99	ksf GLA	100%	100%	77	90%	100%	69
Employee			0.75	99%	100%	0.74		0.75	99%	100%	0.74		100%	100%	15	55%	100%	8
Discount Stores/Superstores	10,000	sf GLA	3.40	100%	100%	3.39	ksf GLA	3.80	100%	100%	3.80	ksf GLA	85%	100%	29	95%	100%	36
Employee			0.85	99%	100%	0.84		0.95	99%	100%	0.94		95%	100%	8	100%	100%	10
Food and Beverage																		
Fast Casual/Fast Food	2,325	sf GLA	12.40	100%	50%	6.16	ksf GLA	12.70	100%	57%	7.26	ksf GLA	60%	96%	10	60%	96%	13
Employee			2.00	99%	100%	1.98		2.00	99%	100%	1.98		70%	100%	3	70%	100%	3
Entertainment and Institutions																		
Health Club	19,200	sf GLA	6.60	100%	99%	6.54	ksf GLA	5.50	100%	99%	5.47	ksf GLA	90%	100%	114	100%	100%	106
Employee			0.40	99%	100%	0.40		0.25	99%	100%	0.25		100%	100%	8	100%	100%	5
Hotel and Residential																		
Office																		
Medical/Dental Office	4,280	sf GFA	3.00	100%	100%	2.99	ksf GFA	0.00	100%	100%	0.00	ksf GFA	80%	100%	10	0%	100%	-
Employee			1.60	100%	100%	1.60		0.00	100%	100%	0.00		100%	100%	7	0%	100%	-
Bank (Drive In Branch)	2,065	sf GFA	3.50	100%	95%	3.34	ksf GFA	3.00	100%	100%	3.00	ksf GFA	100%	100%	8	0%	100%	-
Employee			2.50	100%	100%	2.50		1.75	100%	100%	1.75		100%	100%	6	0%	100%	-
Additional Land Uses																		
													Customer/Visitor		260	Customer/Visitor		237
													Employee/Resident		51	Employee/Resident		28
													Reserved		-	Reserved		-
													Total		311	Total		265
													Shared Parking Reduction		13%			16%

1. SYMBOL SHALL BE PLACED WITHIN 24" TO THE LEFT OF MAIN ENTRY DOOR.
2. PERMANENTY ATTACH TO FACE OF STRUCTURE ON CONTRASTING BACKGROUND.
3. BOTTOM OF SIGN 48" MIN. A.F.F. TOP OF SIGN 72" MAX A.F.F
4. AS PER 69A-60.0081



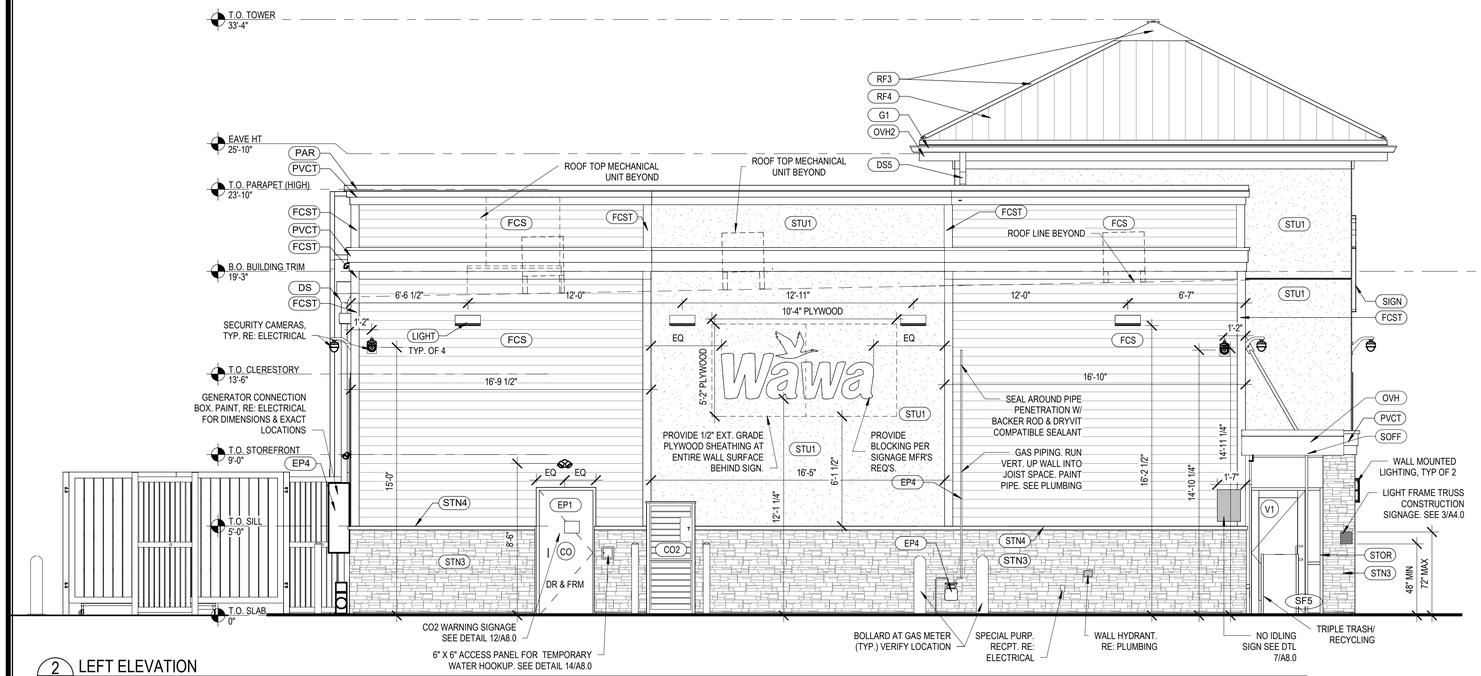
3 / A1 LIGHT-FRAME TRUSS-TYPE CONSTR. SIGN
3" = 1'-0"



1 / A1 FRONT ELEVATION
1/4" = 1'-0"

NOTE: SIGNAGE TO BE PERMITTED SEPERATELY

NOTE: REFER TO SITE PLAN FOR STL BOLLARD LOCATIONS



2 / A1 LEFT ELEVATION
1/4" = 1'-0"

NOTE: REFER TO SITE PLAN FOR STL BOLLARD LOCATIONS

NOTE: SIGNAGE TO BE PERMITTED SEPERATELY

GENERAL NOTES

1. VERIFY WITH SITE PLAN LOCATION OF STEEL BOLLARDS.
2. REFER TO EXTERIOR FINISH SCHEDULE FOR DETAILED MATERIAL INFORMATION.
3. G.C. TO INSTALL A 9" X 9" 'EMERGENCY SHUT-OFF' SIGN AT FRONT OF BUILDING AT BUTTON LOCATION - SIGN TO HAVE RED BACKGROUND AND WHITE LETTERS. REFER TO ELECTRICAL PLANS FOR LOCATION.
4. MOUNT SECURITY CAMERAS THE SAME HEIGHT AS THE EXTERIOR WALL FIXTURE
5. PETERSEN PAC-CLAD IS AN ACCEPTABLE ALTERNATE MFR. FOR PRODUCTS WHERE "ATAS" IS SPECIFIED. PROVIDE EQUAL OR BETTER QUALITY PRODUCTS. SUBMIT PRODUCT DATA TO ARCHITECT FOR APPROVAL.

EXTERIOR FINISH SCHEDULE

SYMB	MATERIAL	MANUFACTURER	COLOR	FPA APPROVAL #	NOTES
	ILLUMINATED SIGNAGE		-		-
CO2	CO2 FILL BOX	SUPPLIER	-		SEE A1.0 & EQ1.0 FOR LOCATION
DS	3"x4" .032 ALUMINUM DOWNSPOUT	ATAS ALUMINUM CORP.	COMMERCIAL GRADE, SMOOTH, PRE FINISHED ASCOT WHITE		COORDINATE WITH CIVIL FOR CONNECTION TO STORM SEWER.
DS1	3"x4" .032 ALUMINUM DOWNSPOUT	ATAS ALUMINUM CORP.	COMMERCIAL GRADE, SMOOTH, PRE FINISHED ASCOT WHITE		
DS5	3"x4" .032 ALUMINUM DOWNSPOUT	ATAZ INTERNATIONAL, INC (TYP)	COMMERCIAL GRADE, SMOOTH, PRE FINISHED ASCOT WHITE		PROVIDE WALK PADS ON ROOF
EP1	PAINT	SHERWIN WILLIAMS	SW7007 CEILING BRIGHT WHITE		FOR DOORS AND FRAMES
EP4	PAINT	SHERWIN WILLIAMS	SW COLOR MATCH BM PUMICE STONE #1197		FOR GAS METER, ICE BOX, GENERATOR
EP6	AZEK TRIM, PAINTED	SHERWIN WILLIAMS	COLOR: WHITE		
FCS	"HARDIEPLANK" FIBER CEMENT LAP SIDING	JAMES HARDIE	EMBELLISHED CREAM, FINISH: SMOOTH 8.25" X 12'	FL13192	PRE-FINISHED. PROVIDE COLOR-MATCHED CAULK BY JAMES HARDIE
FCST	HARDIE TRIM FIBER CEMENT ACCENT TRIM	JAMES HARDIE	ARTIC WHITE, FINISH: SMOOTH, 5/4" TH x 5.5" W x 10'-0" L		PRE-FINISHED. PROVIDE COLOR-MATCHED CAULK BY JAMES HARDIE
G1	ALUMINUM GUTTERS	ATAS ALUMINUM CORP.	.032 ALUMINUM, COLOR: WHITE		K-STYLE GUTTER. CONTINUOUS - NO SEAMS ALLOWED.
LADD	METAL EXT. LADDER	EASTERN METAL SUPPLY	POWDER COAT COLOR: SLATE GREY OR EQUIVALENT		PROVIDED BY WAWA VENDOR. REFER TO LADDER DETAILS.
LIGHT	EXTERIOR LIGHT FIXTURE	-	FINISH: WHITE		SEE ELECTRICAL DRAWINGS
MTPN	METAL PANEL	CFL ARCHITECTURAL, LLC.	PAINT TO MATCH DOOR, EP1	FL13192	
OFS	OVERFLOW COPING - .032 ALUMINUM 5" X10" OVERFLOW SCUPPER	-	PRE-FINISHED WHITE		ALTERNATE : PETERSON PAC-CLAD
OVH	METAL OVERHANG FASCIA	ATAS INTERNATIONAL, INC.	RAPID-LOK FASCIA. LOK FASCIA, COLOR: #17 BRITE RED		SEE DETAILS SHEET A3.1. ALTERNATE: PETERSEN PAC-CLAD
OVH2	HIP ROOF FASCIA	ATAS INTERNATIONAL, INC.	BRAKE METAL, COLOR #10 ASCOT WHITE		SEE DETAILS SHEET A3.1. ALTERNATE: PETERSEN PAC-CLAD
PAR	ALUM. PARAPET FASCIA	ATAS ALUMINUM CORP.	COLOR: SLATE GREY		RAPID LOCK COPING
PBS	PREFINISHED ALUMINUM BAHAMA SHUTTER	FENWALL FABRICATION & MFG.	COLOR TO MATCH ADJACENT TRIM	FL13192	SHUTTER PER SPECS. CONTACT (321) 926-6667, ALTERNATE SUPERIOR CUSTOM SHUTTERS, CONTACT DAVID DANIELS (407) 949-1969
PVCT	ACCENT TRIM	AZEK	COLOR: WHITE FINISH: SMOOTH		PRE-FINISHED. MITER ALL CORNERS; ALTERNATE: PALIGHT
RF3	STANDING SEAM ROOF HIP CAP	-	TO MATCH METAL ROOFING		-
RF4	METAL ROOFING	ATAS ALUMINUM CORP.	DUTCH SEAM 19.25" WIDE COLOR: SLATE GREY		-
RSUP	ROD SUPPORT	-	POWDER COAT, MATCH SW#6076		SEE STRUCTURAL DRAWINGS
SCJ	STUCCO CONTROL JOINT - 3/4" WIDE	-	-		"W" SHAPED ACCORDION STYLE RE:SPECS
SIGN	ILLUMINATED SIGNAGE	-	-		SIGN BY WAWA; SURFACE MOUNTED
SOFF	OPALINE OPW 085	ATAS INTERNATIONAL, INC.	#10 ASCOT WHITE		PORCH/ENTRY SOFFITS W/ VENT PANELS, COLOR TO MATCH SOFFIT
STN3	MANUFACTURED STONE VENEER	QUALITY STONE	PROVENCE		STYLE: OHIO DRYSTACK; MORTAR GREY
STN4	PRE-CAST MANUFACTURED STONE WATERTABLE/SILL	QUALITY STONE	HEWN STANDARD SILL BAND COLOR : EGGSHELL		24" MIN. LENGTH SECTIONS. VERTICAL GROUT JOINTS: 3/16" MAX WIDTH GROUT WITH QUIKRETE SM100 GRAY
STOR	STOREFRONT SYSTEM	YKK OR KAWNEER	DARK BRONZE	FL7237-R9	SEE SPECIFICATIONS
STU1	STUCCO	SENERGY	#3085 MERINGUE, FINISH: SAHARA		

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973.883.8500 FAX 973.883.8601
http://www.aecom.com

CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
U45 FL - R PROTOTYPE v2025.Q1
WAWA STORE #XXXX
SW 42ND & TUSKAWILLA RD.
WINTER SPRINGS, FL

SHEET TITLE
EXTERIOR ELEVATIONS Copy 1

RELEASE	DATE
ISSUED FOR PERMIT	XX/XX/XX

PROTOTYPE: U45 FL - R PROTOTYPE v2025.Q1
PROJECT NO. 60699612
DRAWN
CHECKED

XXXX
WINTER SPRINGS, FL

Wawa

A1

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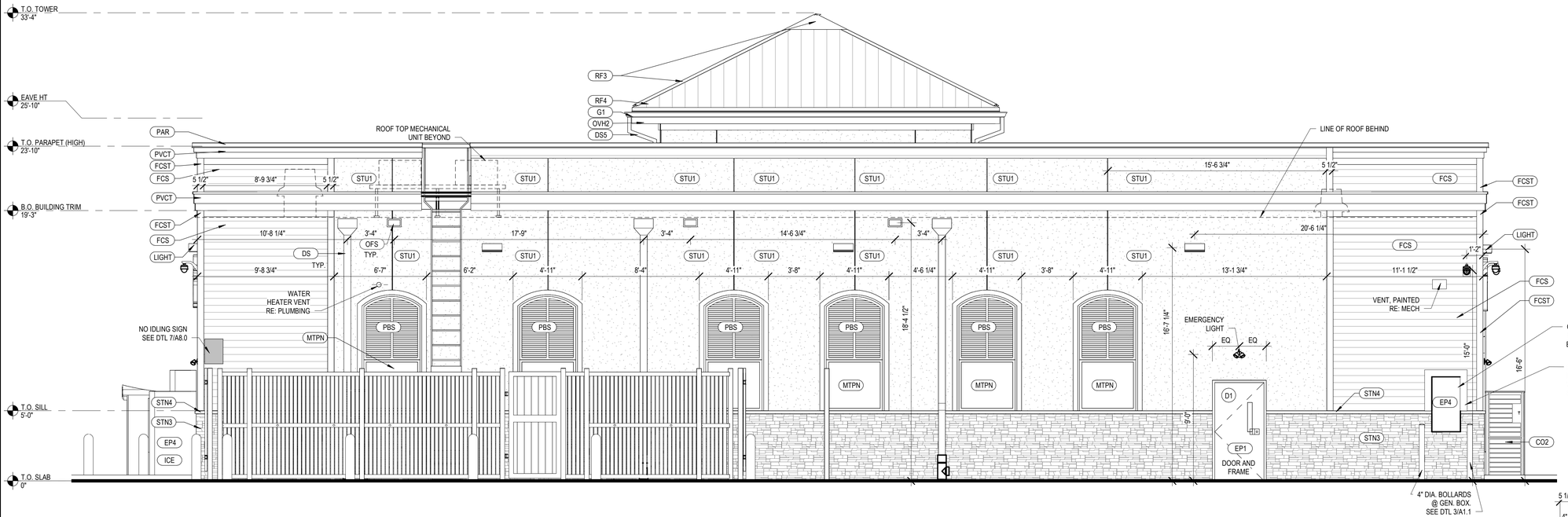
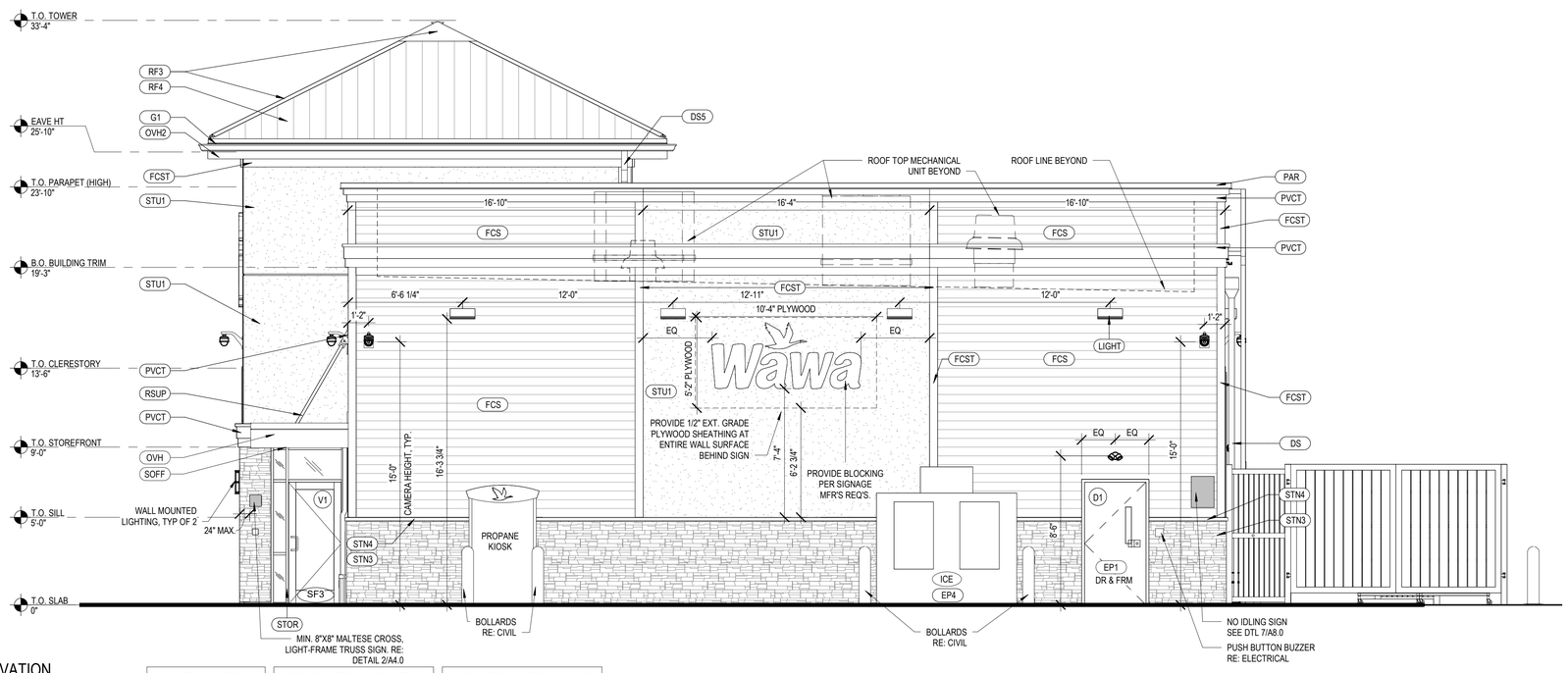


1 A2 REAR ELEVATION
1/4" = 1'-0"

NOTE: SIGNAGE TO BE PERMITTED SEPERATELY

REFER TO SHEET A4.0 FOR EXTERIOR FINISH SCHEDULE AND NOTES

REFER TO SITE PLAN FOR STL BOLLARD LOCATIONS

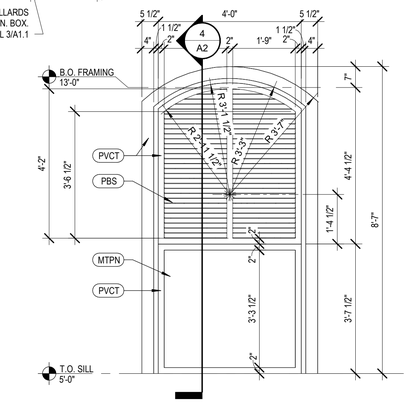


2 A2 RIGHT ELEVATION
1/4" = 1'-0"

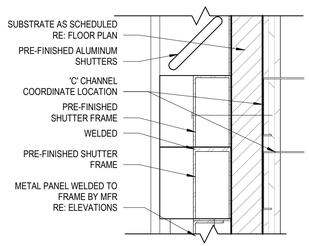
NOTE: SIGNAGE TO BE PERMITTED SEPERATELY

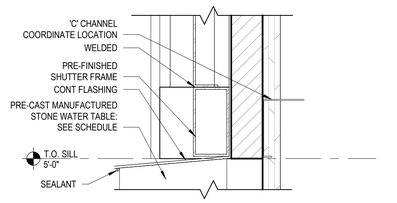
REFER TO SHEET A4.0 FOR EXTERIOR FINISH SCHEDULE AND NOTES

NOTE: REFER TO SITE PLAN FOR STL BOLLARD LOCATIONS



3 A2 BAHAMA SHUTTER DETAIL
1/2" = 1'-0"





4 A2 METAL PANEL UNDER SHUTTER, (MTPN)
6" = 1'-0"

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973.883.8500 FAX 973.883.8601
http://www.aecom.com

CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA, PA 19063

PROJECT NAME
U45 FL - R PROTOTYPE v2025.Q1
WAWA STORE #XXXX
SR 434 & TUSKAWILLA RD.
WINTER SPRINGS, FL

SHEET TITLE
EXTERIOR ELEVATIONS Copy 2

RELEASE	DATE
ISSUED FOR PERMIT	XX/XX/XX

PROTOTYPE: U45 FL - R PROTOTYPE v2025.Q1
PROJECT NO. 60659912
DRAWN
CHECKED

XXXX
WINTER SPRINGS, FL

Wawa

A2

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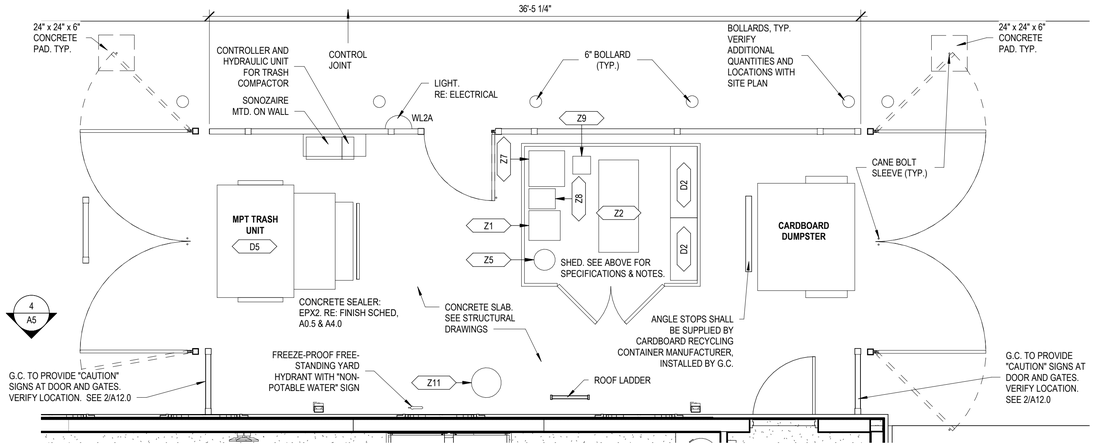
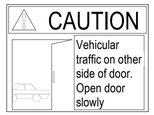


1 A3 TRASH COMPOUND PLAN
1/4" = 1'-0"

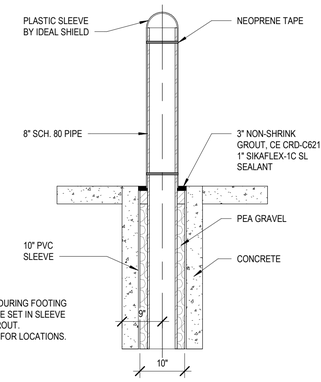
SHED SPECIFICATIONS
MFR: SUPERIOR SHEDS, INC.

MODEL: 10'-0" (WIDTH) X 8'-0" (DEPTH) VENTED SHED
PLAN TRACKING #33173-R1 (FBC 6TH EDITION - 2017)
AGENCY PLAN #SS-B-180CR1 (FBC 6TH EDITION - 2017)
COLOR: WHITE
NOTES: FURNISHED AND INSTALLED BY G.C. UNDER SEPARATE PERMIT



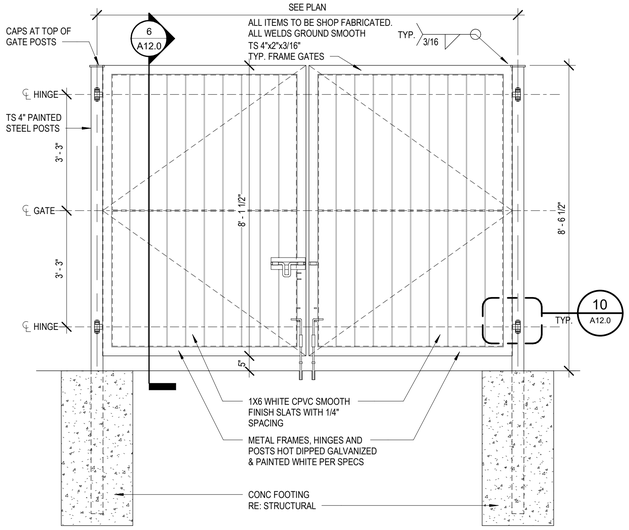
NOTE:
1. SIGN FURNISHED BY WAWA, INSTALLED BY GC
2. POST AT ALL GATES AND DOORS FACING TRAFFIC LANES

2 A3 SIGN AT DOORS AND GATES
3/4" = 1'-0"

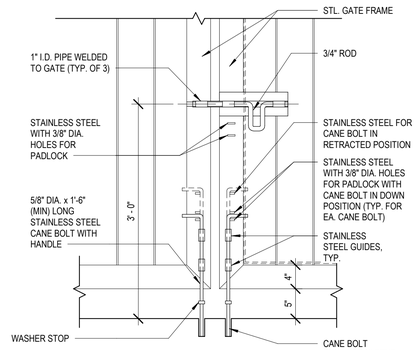


NOTES:
1. SET 10" PVC SLEEVE DURING FOOTING POUR. BOLLARD TO BE SET IN SLEEVE WITH NON SHRINK GROUT.
2. REFER TO SITE PLAN FOR LOCATIONS.

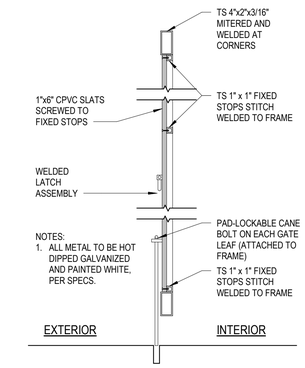
3 A3 BOLLARD DETAIL
3/4" = 1'-0"



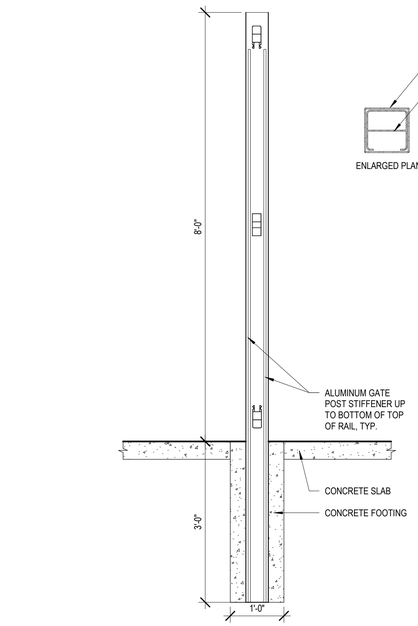
4 A3 TYPICAL GATE ELEVATION
1/2" = 1'-0"

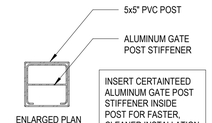


5 A3 CANE BOLT & LATCH DETAIL
1" = 1'-0"

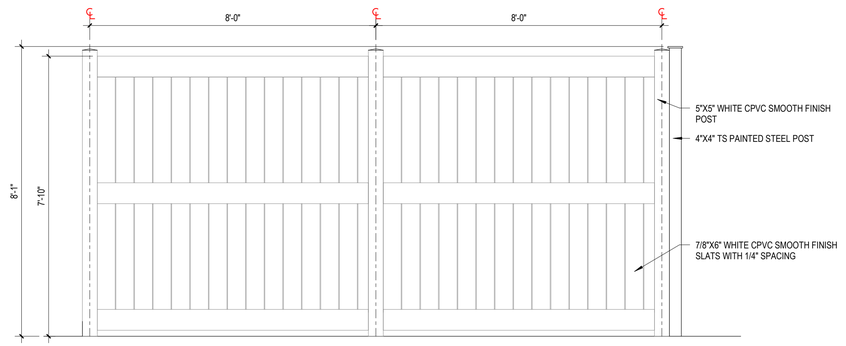


6 A3 GATE DETAIL
1" = 1'-0"

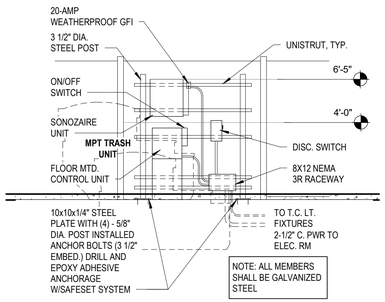




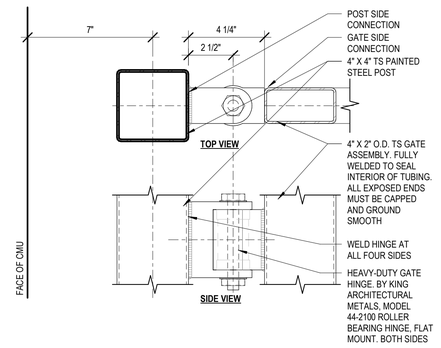
7 A3 PVC POST DETAIL
3/4" = 1'-0"



8 A3 TYPICAL PVC FENCE ELEVATION
1/2" = 1'-0"



9 A3 PARTIAL IN. ELEV.
1/4" = 1'-0"



10 A3 HINGE DETAIL
3" = 1'-0"

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CLIENT NAME
WAWA INC.
260 W. BALTIMORE PIKE
WAWA,PA 19063

PROJECT NAME
U45 FL - R PROTOTYPE v2025.Q1
WAWA STORE #XXXX
SR 434 & TUSKAWILLA RD.
WINTER SPRINGS, FL

SHEET TITLE
TRASH COMPOUND DETAILS

RELEASE	DATE
ISSUED FOR PERMIT	XX/XX/XX

PROTOTYPE	PROJECT NO.	DRAWN	CHECKED
U45 FL - R PROTOTYPE v2025.Q1	60699612		

XXXX
WINTER SPRINGS, FL

Wawa

A3

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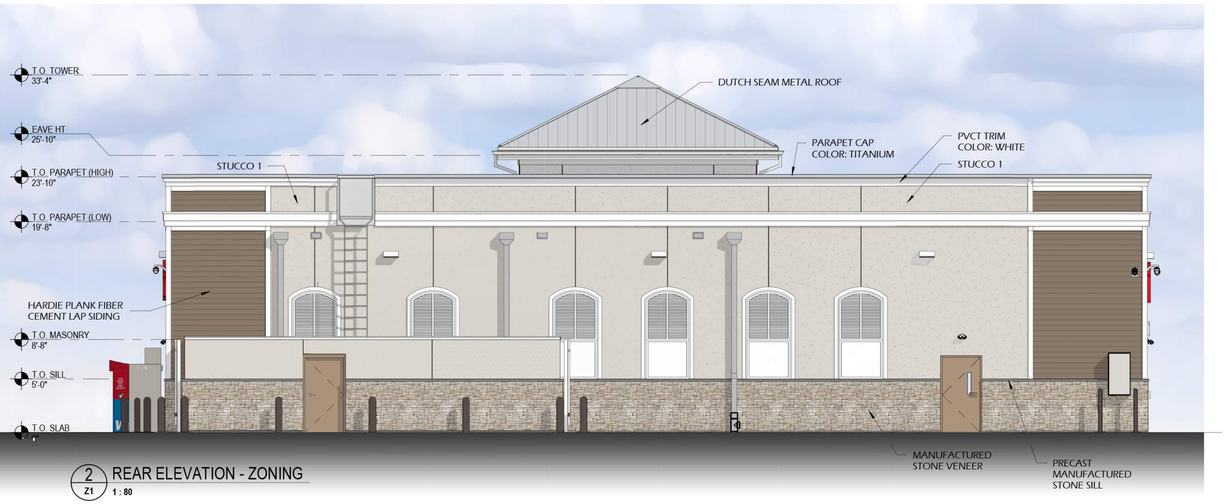
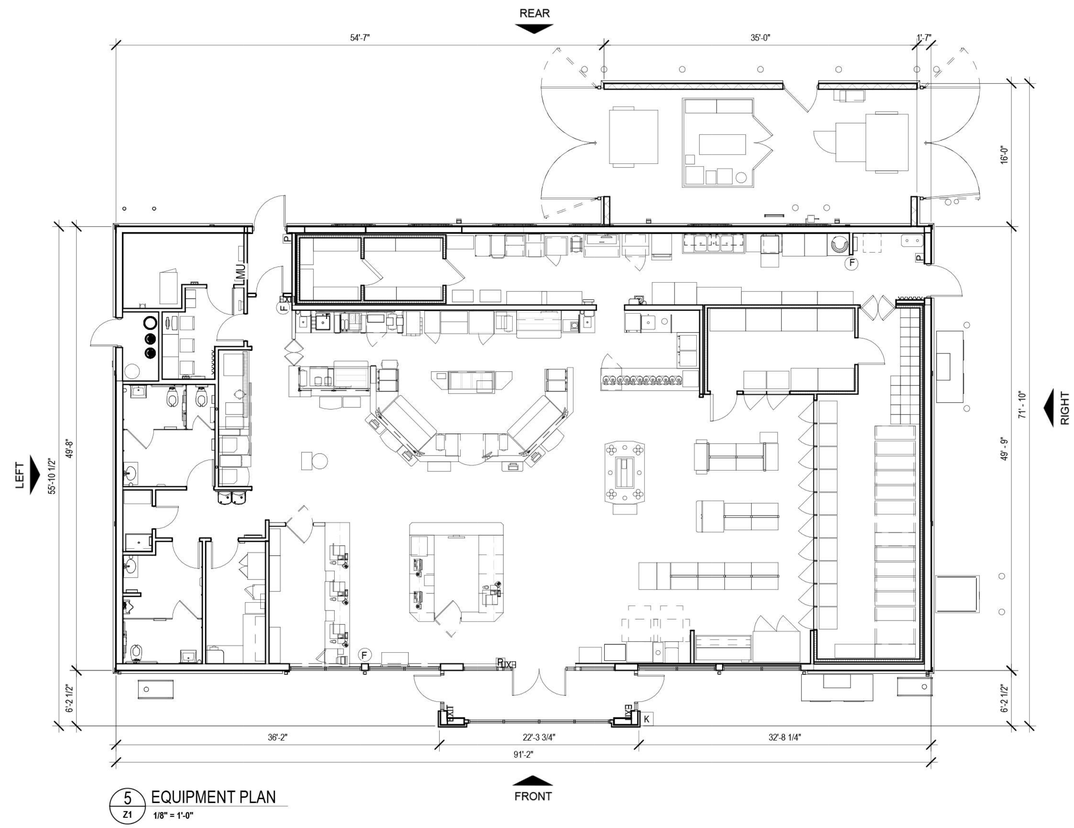
1 / Z1 FRONT ELEVATION - ZONING
1 : 80



2 / Z1 REAR ELEVATION - ZONING
1 : 80

3 / Z1 LEFT ELEVATION - ZONING
1 : 80

4 / Z1 RIGHT ELEVATION - ZONING
1 : 80



5 / Z1 EQUIPMENT PLAN
1/8" = 1'-0"

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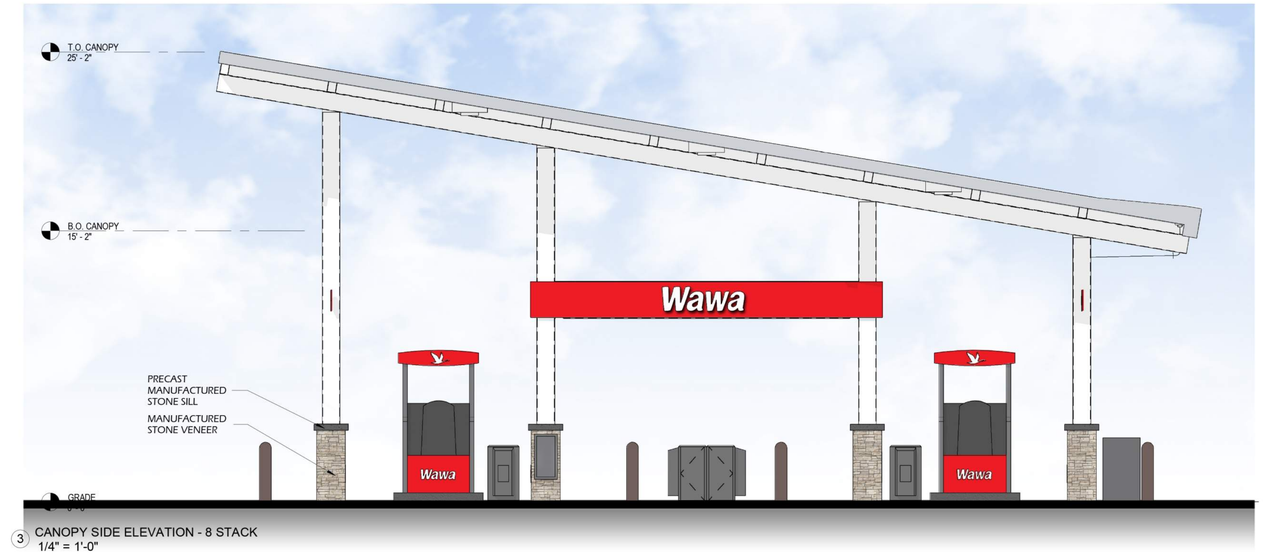
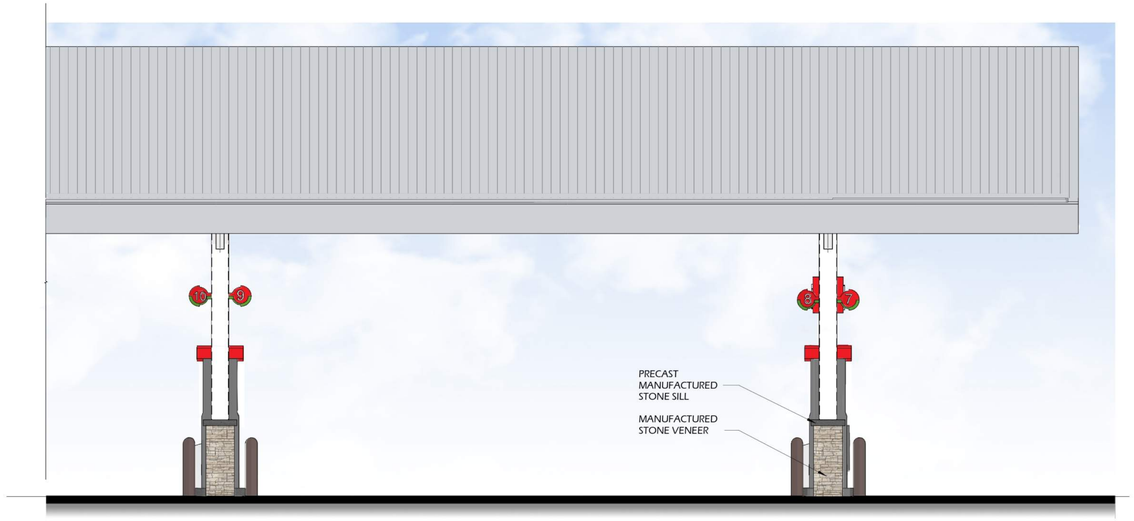
WAWA STORE #XXXX - U45 FL - R

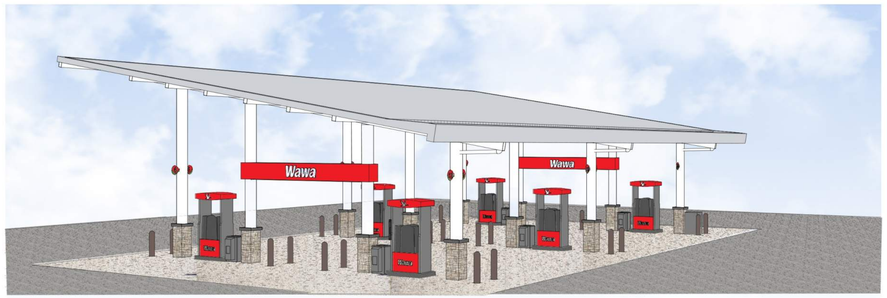
SR 434 & TUSKAWILLA RD.
WINTER SPRINGS, FL • XXXX • 09/03/2025



3 CANOPY SIDE ELEVATION - 8 STACK
1/4" = 1'-0"



2 CANOPY FRONT ELEVATION - 6 STACK
1/4" = 1'-0"



1 PERSPECTIVE (FOR REFERENCE ONLY)

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http://www.aecom.com

STACKED 6 GAS CANOPY - 5XXX

SR 434 & TUSKAWILLA RD.
WINTER SPRINGS, FL • xxxx • 09/03/2025

July 3, 2025

Terrilyn Rolle, Director of Community Development
City of Winter Springs
Community Development Department
1126 State Road 434
Winter Springs, Florida 32708

Subject: **Waiver Application Justification**
Wawa at Winter Springs Marketplace
Site Plan Case No.: FEDP-2025-0016

Please find attached plans and additional supporting documents for the waiver request from the City of Winter Springs Code Sections listed below.

1) Section 20-325 – Transect Standards – Lot Design Guidelines Table
   - ***a) A waiver is requested from Winter Springs City Code Sec. 20-325 to allow a maximum 98-ft front setback from Tuskawilla Road in lieu of the 50-ft max setback specified.***
   - ***b) A waiver is requested from Winter Springs City Code Sec. 20-325 to allow a maximum 182-ft front setback from S.R. 434 in lieu of the 50-ft max setback specified.***
   - ***c) A waiver is requested from Winter Springs City Code Sec. 20-325 to allow a 0-ft rear setback in lieu of the 15-ft min setback specified.***

The following is an itemized discussion to each of the six (6) waiver justification questions included with this request package.

1. Demonstrate that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development?

   1a) ***The waiver allowing a maximum 98-ft front building setback (to Tuskawilla Rd) in lieu of the 50-ft setback is requested in order to better accommodate safer traffic flow and better visibility of fueling services, making the site more functional and attractive.***

   A 50-ft setback hinders vehicle movement, causing congestion and safety concerns. Additionally, placing the building at the front obscures the gas pumps and car line from the road, which could deter potential customers. The 50-ft setback prevents functionality given the site's triangular geometry and would prevent adequate parking for the project. The 98-ft setback allows the design to accommodate these constraints, ensuring both safety and operational efficiency.

   1b) ***The waiver allowing a maximum 182-ft front building setback (to SR 434) in lieu of the 50-ft setback is requested in order to better accommodate safer traffic flow and better visibility of services, making the site more functional and attractive.***

   Positioning the building within the 50-ft setback would create poor traffic circulation and safety issues, as vehicles would have difficulty maneuvering efficiently due to the triangular geometry of the site. Additionally, placing the building at the front would obscure the gas pumps and car line from S.R. 434, deterring potential customers due to reduced visibility. Granting the 182-ft setback ensures better traffic flow, enhances visibility of the facilities, and ultimately results in a more functional and safe site design.

1c) ***The waiver allowing 0-ft rear setback in lieu of the 15-ft setback is requested in order to achieve integration of shared driveway aisles and optimal site circulation.***

This waiver is necessary because the 15-ft rear setback prevents functionality given the site's triangular geometry and would prevent adequate parking for the project. The adjoining properties are zoned commercial, and the master development plan incorporates internal driveway aisles. Enforcing the 15-ft rear setback would be impractical, as the cohesive design of the commercial area depends on unrestricted space for shared driveway aisles, ensuring seamless accessibility and site flow.

2. Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

   The proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and is generally consistent with the Comprehensive Plan. All design adjustments and enhancements have been made in accordance with city guidelines and feedback from Staff, ensuring the project aligns with Winter Springs' development standards and goals.

3. Will the proposed development plan significantly enhance the real property?

   The proposed development plan will significantly enhance the real property as the current property is an undeveloped vacant lot. By transforming the development parcel into a cohesive, visually appealing area, the project will add value and integrate seamlessly with the surrounding environment, benefiting both the property and the community.

4. Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

   The proposed development aims to serve the public health, safety, and welfare of the City of Winter Springs by introducing a gas station and convenience store developed to the City's commercial standards for this corridor. Additionally, the development will boost the City's commercial tax base, helping to reduce the financial burden on Winter Springs residents. Together, these improvements serve the community by providing essential services, enhancing safety and cleanliness, and contributing to the local economy.

5. Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

   The waiver will not diminish the property values and seeks to maintain the essential character of the surrounding neighborhood.

6. Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

   The requested waivers are the minimum waivers that will eliminate the unreasonable conditions caused by the sections of code detailed above in the introduction of this letter.

7. Is the proposed development plan compatible and harmonious with the surrounding neighborhood?

   The proposed site is designed to be compatible and harmonious with the surrounding neighborhood. Adding a gas station and convenience store will enhance the overall experience of the Marketplace, making it a convenient one-stop destination for various

needs. The cohesive design, landscaping, and well-maintained facilities will complement the existing retail and residential areas, ensuring a seamless integration with the community. The improved infrastructure, including well-lit and secure facilities will upgrade experience for Winter Springs residents. This design approach ensures that the development respects and improves the character of the neighborhood while providing valuable services and amenities in a convenient and attractive setting.

If you have any further questions, please do not hesitate to contact our office at 407-536-4440 or by email at **cory.sitler@kimley-horn.com**.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Cory N. Sitler, P.E.
FL PE No. 89984
Associate

K:\ORL_Civil\149170026-Winter Springs Wawa\LETTERS\2025-05-13 Waiver Letter - Setbacks.docx

Kimley»Horn

July 3, 2025

Terrilyn Rolle, Director of Community Development
City of Winter Springs
Community Development Department
1126 State Road 434
Winter Springs, Florida 32708

Subject: **Waiver Application Justification**
Wawa at Winter Springs Marketplace
Site Plan Case No.: FEDP-2025-0016

Please find attached plans and additional supporting documents for the waiver request from the City of Winter Springs Code Sections listed below.

1) Section 20-327.1 – Signs
   a) A waiver is requested from Winter Springs City Code Sec. 20-327.1 to allow monument-style ground signs on properties located along SR-434 and Tuskawilla Road within the Town Center, which includes this property. Two (2) signs are proposed. Please see the master signage site plan for the location of the proposed signs.

The following is an itemized discussion to each of the six (6) waiver justification questions included with this request package.

1. Demonstrate that the applicable term or condition clearly creates an illogical, impossible,

1a) ***The waiver to allowing monument-style ground signs along SR 434 and Tuskawilla Road within the Town Center is necessary due to the property's location. Positioned at the intersection of two major roads—SR 434 and Tuskawilla, which have six and five lanes respectively along the property's frontage and feature planted medians—business visibility from these wide, high-speed roads is essential for sustaining the development's commercial success. Additionally, separate monuments signage is needed for this specific tenant as fueling prices will be displayed for customers and cannot be added to the existing signage for the Marketplace.***

Monument-style ground signs are typical for this type of development, including comparable properties within the SR 434 overlay district nearby. Given that the property in question is situated near the edge of the Town Center district, we believe that allowing these monument-style signs is both fair and aligns with the City's intent for the area and development.

The proposed signs include: Two (2) monument ground signs along each property frontage (SR 434 & Tuskawilla Rd).

2. Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

The proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and is generally consistent with the Comprehensive Plan. All design adjustments and enhancements have been made in accordance with city guidelines and feedback from Staff, ensuring the project aligns with Winter Springs' development standards and goals.

3. Will the proposed development plan significantly enhance the real property?

   The proposed development plan will significantly enhance the real property as the current property is an undeveloped vacant lot. By transforming the development parcel into a cohesive, visually appealing area, the project will add value and integrate seamlessly with the surrounding environment, benefiting both the property and the community.

4. Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

   The proposed development aims to serve the public health, safety, and welfare of the City of Winter Springs by introducing a gas station and convenience store developed to the City's commercial standards for this corridor. Additionally, the development will boost the City's commercial tax base, helping to reduce the financial burden on Winter Springs residents. Together, these improvements serve the community by providing essential services, enhancing safety and cleanliness, and contributing to the local economy.

5. Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

   The waiver will not diminish the property values and seeks to maintain the essential character of the surrounding neighborhood.

6. Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

   The requested waivers are the minimum waivers that will eliminate the unreasonable conditions caused by the sections of code detailed above in the introduction of this letter.

7. Is the proposed development plan compatible and harmonious with the surrounding neighborhood?

   The proposed site is designed to be compatible and harmonious with the surrounding neighborhood. Adding a gas station and convenience store will enhance the overall experience of the Marketplace, making it a convenient one-stop destination for various needs. The cohesive design, landscaping, and well-maintained facilities will complement the existing retail and residential areas, ensuring a seamless integration with the community. The improved infrastructure, including well-lit and secure facilities will upgrade experience for Winter Springs residents. This design approach ensures that the development respects and improves the character of the neighborhood while providing valuable services and amenities in a convenient and attractive setting.

If you have any further questions, please do not hesitate to contact our office at 407-536-4440 or by email at **cory.sitler@kimley-horn.com**.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Cory Sitler

Cory N. Sitler, P.E.
FL PE No. 89984
Associate

K:\ORL_Civil\149170026-Winter Springs Wawa\LETTERS\2025-05-13 Waiver Letter -Signs.docx

Kimley»Horn

July 3, 2025

Terrilyn Rolle, Director of Community Development
City of Winter Springs
Community Development Department
1126 State Road 434
Winter Springs, Florida 32708

Subject: **Waiver Application Justification**
Wawa at Winter Springs Marketplace
Site Plan Case No.: FEDP-2025-0016

Please find attached plans and additional supporting documents for the waiver request from the City of Winter Springs Code Sections listed below.

1) Section 20-601 – Streetscape Requirements (Per Ordinance 2024)
   a) ***A waiver is requested from Winter Springs City Code Sec. 20-605 (Ordinance 2020-02) to allow a 13-ft onsite landscape buffer with canopy trees, a meandering 6-ft offsite sidewalk, and interspersed understory trees between back of sidewalk and front of sidewalk within the R/W. The requested streetscape buffer modification will provide the 27-ft buffer as required by code. This request will be in lieu of the required 5-ft landscape area adjacent to the R.O.W., followed by a 6-ft sidewalk, and a 16-ft landscape and treescape area (total 27-ft).*** **A waiver is requested for the Tuskawilla streetscape width due to insufficient right-of-way (R.O.W.) at the southern end, which limits the total streetscape to 22-ft. The site's geometry and layout have been optimized to ensure efficient parking and circulation. Unfortunately, this optimal parking arrangement restricts the availability of additional streetscape space. However, the landscaping will comply with the specified number of plantings as outlined in the relevant code section.**

The following is an itemized discussion to each of the six (6) waiver justification questions included with this request package.

1. Demonstrate that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development?

   1a) ***The waiver allowing modifications to the streetscape configuration and plant species along SR 434 and Tuskawilla Road is necessary due to existing utilities, sidewalks, and site geometry. Current underground and overhead utilities limit tree planting per the code requirements. A waiver is requested for the streetscape width on Tuskawilla Road due to the limited right-of-way (R.O.W.) and conflicts with overhead utilities affecting the sidewalk placement. These constraints interfere with the ability to meet the 27-foot streetscape requirement. The sidewalk cannot be moved further into the property to accommodate additional streetscape space due to the site's geometry and the necessity to maintain efficient parking and circulation. Given these fixed site conditions, meeting the required streetscape 27-ft width is not feasible.***

   To collaborate with City Staff, the applicant has agreed to place canopy trees within the onsite landscape buffer and intersperse understory trees among them consistent with other frontage within the Marketplace. The existing sidewalk within the R.O.W. will be upgraded to a 6-ft sidewalk in areas adjacent to the proposed development. Understory trees will be placed between the curb and sidewalk in the R.O.W.

This proposed configuration provides the required 6-ft sidewalk and canopy trees within the streetscape buffer, mitigating conflicts with overhead utilities as the trees mature. The inclusion of understory trees in the R.O.W. will enhance the streetscape for pedestrians and vehicular traffic. While this layout differs from the standard streetscape design, it meets the intent of the code requirements.

2. Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

   The proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and is generally consistent with the Comprehensive Plan. All design adjustments and enhancements have been made in accordance with city guidelines and feedback from Staff, ensuring the project aligns with Winter Springs' development standards and goals.

3. Will the proposed development plan significantly enhance the real property?

   The proposed development plan will significantly enhance the real property as the current property is an undeveloped vacant lot. By transforming the development parcel into a cohesive, visually appealing area, the project will add value and integrate seamlessly with the surrounding environment, benefiting both the property and the community.

4. Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

   The proposed development aims to serve the public health, safety, and welfare of the City of Winter Springs by introducing a gas station and convenience store developed to the City's commercial standards for this corridor. Additionally, the development will boost the City's commercial tax base, helping to reduce the financial burden on Winter Springs residents. Together, these improvements serve the community by providing essential services, enhancing safety and cleanliness, and contributing to the local economy.

5. Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

   The waiver will not diminish the property values and seeks to maintain the essential character of the surrounding neighborhood.

6. Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

   The requested waivers are the minimum waivers that will eliminate the unreasonable conditions caused by the sections of code detailed above in the introduction of this letter.

7. Is the proposed development plan compatible and harmonious with the surrounding neighborhood?

   The proposed site is designed to be compatible and harmonious with the surrounding neighborhood. Adding a gas station and convenience store will enhance the overall experience of the Marketplace, making it a convenient one-stop destination for various needs. The cohesive design, landscaping, and well-maintained facilities will complement the existing retail and residential areas, ensuring a seamless integration with the community. The improved infrastructure, including well-lit and secure facilities will upgrade experience for Winter Springs residents. This design approach ensures that the

development respects and improves the character of the neighborhood while providing valuable services and amenities in a convenient and attractive setting.

If you have any further questions, please do not hesitate to contact our office at 407-536-4440 or by email at **cory.sitler@kimley-horn.com**.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Cory N. Sitler, P.E.
FL PE No. 89984
Associate

K:\ORL_Civil\149170026-Winter Springs Wawa\LETTERS\2025-05-13 Waiver Letter - Streetscape.docx

Kimley»Horn

June 4, 2025

Terrilyn Rolle, Director of Community Development
City of Winter Springs
Community Development Department
1126 E State Road 434
Winter Springs, FL 32708

Re: **Conditional Use Application Cover Letter**
Wawa at Winter Springs Marketplace

Please find attached the plans and supporting documentation for the Conditional Use request for the proposed Wawa at Winter Springs Marketplace project. The numbered items below provide responses to the questions within the Conditional Use Application provided.

1. How is the Conditional Use (density, height, scale and intensity, hours of operation, building and lighting design, setbacks, buffers, noise, refuse, odor, particulates, smoke, fumes and other emissions parking and traffic generating characteristics, number of persons anticipated using, residing or working under the conditional use, and other offsite impacts) compatible and harmonious with adjacent land uses?
Response: The project is consistent with the commercialized corridor within the Urban Town Center District. The proposed use is complimentary to the other uses within the Winter Springs Marketplace and provides additional services that residents can utilize while at the Marketplace. The project improves the walkability and promotes pedestrian and bicycle traffic which further enhances the neighborhood-like atmosphere.

The proposed height, scale, and intensity of the development in the final engineering plans align with the uses previously approved in Winter Springs and the existing uses within the Winter Springs Marketplace master development. Impacts related to noise, refuse, odor, particulates, smoke, fumes, and other emissions are not expected to adversely affect the surrounding areas. The development is designed to be compatible and harmonious with adjacent land uses, ensuring it does not negatively impact activities in the vicinity.

2. Will the Conditional Use adversely impact land use activities in the immediate vicinity? If no, why not?
Response: This project use is consistent with surrounding uses within the Marketplace and does not adversely impact those tenants. The proposed development is strategically distanced from the residential areas along the northwest and southern boundaries. Additionally, enhanced streetscaping along the S.R. 434 frontage has been incorporated to ensure integration of open space with the development.

3. Demonstrate the size and shape of the site, the proposed access and internal circulation, and the design enhancements to be adequate to accommodate the proposed density, scale and intensity of the conditional use requested. The site shall be of sufficient size to accommodate design amenities such as screening, buffers, landscaping, open space, off-street parking, safe and convenient automobile, bicycle, and pedestrian mobility at the site, and other similar site plan improvements needed to mitigate against potential adverse impacts of the proposed use.
Response: Utilizing existing access points from the marketplace and internal drive aisles, the site access and internal circulation are designed to conform to existing traffic patterns. Streetscape improvements are proposed with enhanced landscaping along Tuskawilla Road and S.R. 434, aligning with the City's streetscape intentions. Onsite improvements

accommodate bikes and pedestrian mobility, ensuring a cohesive and accessible environment for all users.

The site's size, shape, proposed access points, and internal circulation are well-designed to support the proposed development. These connections provide direct access to the Wawa site without requiring vehicles to traverse other tenants' parking areas, SR 434, or Tuskawilla Rd. Additionally, access points have been verified through auto-turn simulations to ensure adequate movement and access larger vehicles.

4. Will the proposed use have an adverse impact on the local economy, including governmental fiscal impact, employment, and property values? If no, why not?
Response: The proposed development of a convenience store/gas station, a conditional use within the T5 Transect of the Town Center District, is expected to enhance the local economy, governmental fiscal impact, employment, and property values. By creating new job opportunities, the site will positively contribute to the local economy. Additionally, it will generate a beneficial fiscal impact on local government through impact fees, new revenue streams, and utility connections. Developing this undeveloped parcel into a cohesive part of the Winter Springs Town Center will also boost property values.

5. Will the proposed use have an adverse impact on natural environment, including air, water, and noise pollution, vegetation and wildlife, open space, noxious and desirable vegetation, and flood hazards? If no, why not?
Response: As part of the master development, ECS Florida, LLC completed geotechnical and environmental studies for all areas of the site. The reports did not identify adverse impacts to the natural environment. According to T5 Transect Town Center standards (Sec. 20-325), the site allows for a maximum lot coverage of 100%. However, the applicant has chosen to limit the impervious area and building coverage, opting not to utilize the full 100% lot coverage allowed.

A noise study is not required since the City's noise ordinance (Sec. 13-31) restricts decibel levels to 60-70 in commercial zones between 10:00 p.m. and 7:00 a.m., prohibiting any disturbance during these hours. The proposed use will fully comply with the City's noise regulations.

The site is not located within a floodplain. Based on Flood Insurance Rate Map (FIRM) No. 12117C0160F, Community No. 120295, City of Winter Springs, the site is located in Zone "X". As stated in the FIRM panel legend, Zone X is for areas of 0.2% annual chance of flooding.

The stormwater will connect to the existing system, which was permitted for future development of the parcel by the City of Winter Springs and the St. Johns Water Management District. The project is consistent with the master stormwater system design, ensuring efficient and compliant stormwater management.

6. Will the proposed use have an adverse impact on historic, scenic and cultural resources, including views and vistas, and loss or degradation of cultural and historic resources? If no, why not?
Response: Proposed development does not anticipate adverse impact on any historic, scenic, or cultural resources, including views and vistas, and loss or degradation of cultural and historic resources.

7. Will the proposed use have an adverse impact on public services, including water, sewer, stormwater and surface water management, police, fire, parks and recreation, streets, public transportation, marina and waterways, and bicycle and pedestrian facilities? If no, why not?
Response: The proposed development has been designed in accordance with the T5 Transect of the Town Center District Code, which includes criteria for water, sewer, stormwater and surface water management, police, and fire. The stormwater will connect to the existing system, permitted for future development by the City of Winter Springs and the St. Johns Water Management District, consistent with the master stormwater design for efficient and compliant stormwater management.

The proposed development includes the installation of bicycle racks and an onsite sidewalk network, which will provide safe connectivity from the right-of-way through the site and integrate with the master development's pedestrian circulation network.

8. Will the proposed use have an adverse impact on housing and social conditions, including a variety of housing unit types and prices, and neighborhood quality? If no, why not?
Response: The proposed development does not anticipate adverse impact on housing or social conditions.

9. Will the proposed use avoid significant adverse odor, emission, noise, glare, and vibration impacts on adjacent and surrounding lands regarding refuse collection, service delivery, parking and loading, signs, lighting, and other sire elements? If no, why not?
Response: The proposed Wawa at Winter Spring Marketplace does not anticipate emitting significant adverse odors, emission, noise, glare, or vibration impacts on adjacent properties. The site has been designed with adequate parking, lighting, and refuse collection. While the proposed project will utilize ten additional parking spaces adjacent to the stormwater pond, these spaces will be dedicated to employees and ensure sufficient parking for customers.

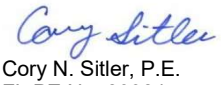
10. Demonstrate that the conditional use and associated site plan have been designed to incorporate mitigative techniques and plans needed to prevent adverse impacts addressed in the criteria stated herein or to adjacent and surrounding uses and properties.
Response: The proposed development includes adequate screening and buffering along the applicable property boundaries. The site was planned for future development within the Winter Springs Marketplace master development and is consistent with the overall look and feel of the area. Residential impacts are not anticipated as part of this project.

11. If the proposed conditional use is a residential use, whether the elementary, middle and high schools (K-12) that will be initially assigned to the residential project by the School District at the time the city commission considers final approval of the conditional use have both sufficient capacity, are in close proximity to the project so as to make each of the assigned schools accessible and convenient (e.g., walking distance, travel time, private and public transportation, and quality of route environment) to the majority of the school population that will be drawn from the project, and promote and support the integration of future residents of the project into the existing city of Winter Springs community in a sustainable manner.
Response: Not Applicable. The project proposes a gas station/ convenience store use.

If you have any further questions, please do not hesitate to contact our office at 407-536-4440 or by email at **cory.sitler@kimley-horn.com**.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.



Cory N. Sitler, P.E.
FL PE No. 89984
Associate

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CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Site Plan Review

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Florida Statue 419.001. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033. By submitting this application, you hereby grant temporary right of entry for City officials to enter upon the subject property for purposes of evaluating this application.

Site Plan Type

Type of Development: ____ Residential __X__ Non-Residential

___Preliminary Review __X__Final Review ___Combined Preliminary/Final ___Resubmittal ___ Recorded Plat

Project Name: Wawa At Winter Springs Marketplace Date: 5/13/2025

Applicant/Agent Information

Applicant(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Person Who Will Upload Plans: Cory Sitler

Email: cory.sitler@kimley-horn.com Phone#: 407-536-4440

Property Owner(s) Name (If Applicant is not the Property Owner)

Name: _____

Email: _____ Phone #: _____

Mailing Address: _____

Phone Number: _____

Site Information

Project Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Existing Use: Commercial

Proposed Use: Commercial

Zoning District: T-5 Urban Ceneter

Future Land Use: Commercial

Is the property located in the Town Center District? _X__Yes _____No

Is the property within the S.R. 434 Corridor Overlay District? _X__Yes _____No

Is the property located in the Greeneway Interchange Zoning District? _____Yes _X__No

The Planning and Zoning Board/Local Planning Agency shall review Site Plan Applications and make a written recommendation to the City Commission. The City Commission shall render all final decisions regarding Preliminary and Final Engineering Plans and may impose reasonable conditions on any approved plans to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the City Code and Comprehensive Plan. All formal decisions shall be based upon the applicable criteria as set forth in the City's Code of Ordinances Chapter 9, Land Development and Chapter 20, Zoning.

Applicants are advised, that if they decide to appeal any decisions made at the meetings or hearings, with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to ensure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per 286.0105, Florida Statutes.

Application Fees

Fees are as reflected on the Fee Schedule plus actual costs incurred for advertising or notification, and reimbursement for technical, and/or professional services which may be required in connection with the review, inspection, or approval of any development (based on accounting submitted by the City Consultant), payable prior to approval of the pertinent stage of development.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Site Plan Review

THIS APPLICATION MUST BE SIGNED IN THE PRESENCE OF A NOTARY

This is to certify that I am the owner in simple fee of the subject property as described in this application for Site Plan Review.

Property Owner(s) Name (Print): Tuscawilla Property Investors, LLC - Ryan Stahl

Property Owner Signature: _____ Date: 5/9/25

Property Owner(s) Name (Print): _____

Property Owner Signature: _____ Date: _____

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 20 25, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: Kristin Banks

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: If the applicant is not the property owner the Property Owner shall sign and have their signature notarized below, authorizing the applicant and/or agent permission to submit the Site Plan Review application.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____ Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Aesthetic Review

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC Date: 5/13/2025
Mailing address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751
Email: RStahl@equinox-development.com
Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC
Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751
Email: RStahl@equinox-development.com
Phone Number: (407) 628-0077

Project Name: Wawa At Winter Springs Marketplace
Property Address: Northwest corner of FL-434 & Tuskawilla Rd
Parcel ID(s): 36-20-30-502-0000-0090
Parcel Size: 1.21 Acres
Existing Use: Commercial

List all witnesses that the applicant intends to present to the City Commission to provide testimony:
Ryan Stahl and Cory Sitler

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:
Site plan, building/signage elevations and renderings

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Aesthetic Review

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Chapter 9–Aesthetic Review Sec.9-605. All applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033. Once the application is deemed sufficient, the applicant shall move forward with the Community Workshop, required per Chapter 20–Zoning Sec.20-29.1.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Conditional Use is quasi-judicial in nature. Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Aesthetic Review recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Aesthetic Review and may impose reasonable conditions on any approved Aesthetic Review to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan. All formal decisions shall be based on competent substantial evidence and the applicable criteria as set forth in Chapter 9, Aesthetic Review Standards. Applicants are advised that if, they decide to appeal any decisions made at the meetings or hearings with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to insure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per Florida Statute 286.0105.

An Aesthetic Review Approval by the City Commission under this article shall be valid for a maximum of eighteen (18) months from the date the city commission renders its approval at a public meeting. If the applicant fails to obtain a building permit within the eighteen (18) month period, the city commission's approval shall expire at the end of the period. However, once a building permit is issued, the approval shall be valid for a time period equal to the permit and shall expire only if the building permit expires. Reasonable extensions may be granted by the city commission upon good cause shown by the applicant, provided substantial changes have not occurred in the surrounding area that would make the prior approval inconsistent with the criteria set forth in Chapter 9-Aesthetic Review Sec.9-9603

Criteria for Review

1. The plans and specifications of the proposed project indicate that the setting, landscaping, proportions, materials, colors, texture, scale, unity, balance, rhythm, contrast, and simplicity are coordinated in a harmonious manner relevant to the particular proposal, surrounding area and cultural character of the community.
2. The plans for the proposed project are in harmony with any future development which has been formally approved by the City within the surrounding area.
3. The plans for the proposed project are not excessively similar or dissimilar to any other building, structure or sign which is either fully constructed, permitted but not fully constructed, or included on the same permit application, and facing upon the same or intersecting street within five hundred (500) feet of the proposed site, with respect to one or more of the following features of exterior design and appearance:
    a. Front or side elevations;
    b. Size and arrangement of elevation facing the street, including reverse arrangement; or
    c. Other significant features of design such as, but not limited to: materials, roof line, hardscape improvements, and height or design elements.
4. The plans for the proposed project are in harmony with, or significantly enhance, the established character of other buildings, structures or signs in the surrounding area with respect to architectural specifications and design features deemed significant based upon commonly accepted architectural principles of the local community.
5. The proposed project is consistent and compatible with the intent and purpose of this article, the Comprehensive Plan for Winter Springs, design criteria adopted by the City (e.g. Town Center guidelines, SR 434 design specifications) and other applicable federal, state or local laws.
6. The proposed project has incorporated significant architectural enhancements such as concrete masonry units with stucco, marble, termite-resistant wood, wrought iron, brick, columns and piers, porches, arches, fountains, planting areas, display windows, and other distinctive design detailing and promoting the character of the community.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Aesthetic Review

REQUIRED DOCUMENTATION

___ A complete Application and applicable fee

- X Minor (Site less than 2 acres)
- ___ Major (Site greater than 2 acres)
- ___ Modification of previously approved Aesthetic Review

X A Legal Description accompanied by a certified survey or the portion of the map maintained by the Seminole County Property Appraiser reflecting the boundaries of the subject property (To scale).

X Site Plan

X Building Elevations (color) illustrating all sides of structures

X Color rendering illustrating street view with landscaping at time of planting;

X Illustrations of all walls, fences, and other accessory structures and indication of their height and the materials proposed for their construction;

X Signage elevations of proposed exterior permanent signs, outdoor advertising or other constructed elements other than habitable space, if any;

X Identification of materials, textures, and colors to be used on all buildings, accessory structures, exterior signs, and other constructed elements;

X Other architectural and engineering data as may be requested to clarify the application.

___ For all new commercial development and new residential subdivisions of ten (10) or more lots or existing commercial buildings being altered by 50 percent or greater of the original floor plan or seating capacity and requiring a modified site plan, or development agreements process under section 20-28.1 of the City Code, or as otherwise deemed applicable by the city to relevantly and competently examine an application for compliance with the city code and the affect and impact the proposed use will have on neighborhood and surrounding properties, applicants shall be required to submit with the following additional information referenced in Chapter 20 – Zoning Sec.20.29 Applications (7) – (11).

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Aesthetic Review

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for an Aesthetic Review for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 5/9/25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: Kristin Banks

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Development Agreement

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per all applicable City Codes and the City Comprehensive Plan. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033. Once the application is deemed sufficient, the applicant shall move forward with the Community Workshop, required per Chapter 20–Zoning Sec.20-29.1.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Development Agreement is quasi-judicial in nature. Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Development Agreement recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Development Agreements and may impose reasonable conditions on any approved Development Agreement to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan.

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC

Applicant Signature: _____ Date: 7/21/2025

Mailing address: 630 South Maitland Avenue, Suite 100, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 100, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Development Agreement

Property Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Project Name: Wawa At Winter Springs Marketplace

A general description of the relief sought under this division.

The request is to revise the Development Agreement to incorporate the development of parcel 36-20-30-502-0000-0090 per the plans submitted under FDEP-2025-0016.

A brief explanation, with applicable supporting competent substantial evidence and documents, as to why the application satisfies the relevant criteria set forth in the City Zoning Code and City Comprehensive Plan.

This project satisfies the review criteria as proposed under the conditional use, waivers, and aesthetic applications that are currently under review.

List all witnesses that the applicant intends to present to the City Commission to provide testimony:

Cory Sitler and Ryan Stahl

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:

Photos (if needed)

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing.

REQUIRED DOCUMENTATION

_X_ A complete Application and Fee

_X_ An Electronic copy of the most recent survey of the subject property.

_X_ An Electronic copy of the Legal Description of the subject property.

_X_ Documentation and Data supporting the request.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@wintersprings fl.org

Application – Development Agreement

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for a Development Agreement for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 7.21.25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 21st day of July, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 7/21/2025 (seal):

Notary Public Signature: _____

My Commission expires: June 4, 2027

NOTARY PUBLIC STATE OF FLORIDA

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF _____ COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____ Date: _____ (seal):

Notary Public Signature: _____

My Commission expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Chapter 20 – Zoning Sec. 20-34. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Waiver is quasi-judicial in nature.

Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Waiver recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Waivers and may impose reasonable conditions on any approved Waiver to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan. All formal decisions shall be based on competent substantial evidence and the applicable criteria as set forth in Chapter 20, Zoning. Applicants are advised that if, they decide to appeal any decisions made at the meetings or hearings with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to insure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per Florida Statute 286.0105.

A Waiver which may be granted by the City Commission shall expire two (2) years after the effective date of such approval by the City Commission, unless a building permit based upon and incorporating the Waiver, is issued by the City within said time period. Upon written request of the property owner, the City Commission may extend the expiration date, without public hearing, an additional six (6) months, provided the property owner demonstrates good cause for the extension In addition, if the aforementioned building permit is timely issued, and the building permit subsequently expires and the subject development project is abandoned or discontinued for a period of six months, the Waiver shall be deemed expired and null and void, per Chapter 20 – Sec.20-36.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC Date: 5/13/2025

Mailing address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Project Name: Wawa At Winter Springs Marketplace

Property Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Existing Use: Commercial

All waiver requests shall be written in the following format: A waiver is requested from Winter Springs City Code 'X' to allow 'Y' in lieu of 'Z'. After the request, the applicant shall provide a justification for each waiver request.

List Waiver(s)(provide additional sheets if necessary): See attached cover letter.

Demonstrate that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development?

See attached cover letter.

Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

See attached cover letter.

Will the proposed development plan significantly enhance the real property?

See attached cover letter.

Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

See attached cover letter.

Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

See attached cover letter.

Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

See attached cover letter.

Is the proposed development plan compatible and harmonious with the surrounding neighborhood?

See attached cover letter.

List all witnesses that the applicant intends to present to the City Commission to provide testimony:

Ryan Stahl, Cory Sitler, and Jonathan Martin

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:

Photos (if needed)

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing_

REQUIRED DOCUMENTATION

_x_ A complete Application and Fee

_x_ A general description of the relief sought under this division

_x_ A brief explanation, with applicable supporting competent substantial evidence and documents, as to why the application satisfies the relevant criteria set forth in this division

_x_ A Legal Description accompanied by a certified survey or the portion of the map maintained by the Seminole County Property Appraiser reflecting the boundaries of the subject property (To scale).

_x_ An Excel mailing list with the names and addresses of each property owner within 500 ft. of each property line, along with the HOA Associations within 1/2 mile of each property line.

___ For all new commercial development and new residential subdivisions of ten (10) or more lots or existing commercial buildings being altered by 50 percent or greater of the original floor plan or seating capacity and requiring a modified site plan, or development agreements process under section 20-28.1 of the City Code, or as otherwise deemed applicable by the city to relevantly and competently examine an application for compliance with the city code and the affect and impact the proposed use will have on neighborhood and surrounding properties, applicants shall be required to submit with the following additional information referenced in Chapter 20 – Zoning Sec.20.29 Applications (7) – (11).

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for an Aesthetic Review for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 5/9/25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: _____

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
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Application – Waiver

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Chapter 20 – Zoning Sec. 20-34. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Waiver is quasi-judicial in nature.

Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Waiver recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Waivers and may impose reasonable conditions on any approved Waiver to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan. All formal decisions shall be based on competent substantial evidence and the applicable criteria as set forth in Chapter 20, Zoning. Applicants are advised that if, they decide to appeal any decisions made at the meetings or hearings with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to insure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per Florida Statute 286.0105.

A Waiver which may be granted by the City Commission shall expire two (2) years after the effective date of such approval by the City Commission, unless a building permit based upon and incorporating the Waiver, is issued by the City within said time period. Upon written request of the property owner, the City Commission may extend the expiration date, without public hearing, an additional six (6) months, provided the property owner demonstrates good cause for the extension In addition, if the aforementioned building permit is timely issued, and the building permit subsequently expires and the subject development project is abandoned or discontinued for a period of six months, the Waiver shall be deemed expired and null and void, per Chapter 20 – Sec.20-36.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC Date: 5/13/2025

Mailing address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Project Name: Wawa At Winter Springs Marketplace

Property Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Existing Use: Commercial

All waiver requests shall be written in the following format: A waiver is requested from Winter Springs City Code 'X' to allow 'Y' in lieu of 'Z'. After the request, the applicant shall provide a justification for each waiver request.

List Waiver(s)(provide additional sheets if necessary): See attached cover letter.

Demonstrate that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development?

See attached cover letter.

Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

See attached cover letter.

Will the proposed development plan significantly enhance the real property?

See attached cover letter.

Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

See attached cover letter.

Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

See attached cover letter.

Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

See attached cover letter.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org
Application – Waiver

Is the proposed development plan compatible and harmonious with the surrounding neighborhood?
See attached cover letter.

List all witnesses that the applicant intends to present to the City Commission to provide testimony:
Ryan Stahl, Cory Sitler, and Jonathan Martin

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:
Photos (if needed)

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing_

REQUIRED DOCUMENTATION

_x_ A complete Application and Fee

_x_ A general description of the relief sought under this division

_x_ A brief explanation, with applicable supporting competent substantial evidence and documents, as to why the application satisfies the relevant criteria set forth in this division

_x_ A Legal Description accompanied by a certified survey or the portion of the map maintained by the Seminole County Property Appraiser reflecting the boundaries of the subject property (To scale).

_x_ An Excel mailing list with the names and addresses of each property owner within 500 ft. of each property line, along with the HOA Associations within 1/2 mile of each property line.

___ For all new commercial development and new residential subdivisions of ten (10) or more lots or existing commercial buildings being altered by 50 percent or greater of the original floor plan or seating capacity and requiring a modified site plan, or development agreements process under section 20-28.1 of the City Code, or as otherwise deemed applicable by the city to relevantly and competently examine an application for compliance with the city code and the affect and impact the proposed use will have on neighborhood and surrounding properties, applicants shall be required to submit with the following additional information referenced in Chapter 20 – Zoning Sec.20.29 Applications (7) – (11).

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for an Aesthetic Review for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 5/9/25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: _____

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Conditional Use

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Chapter 20–Zoning Sec.20-33. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033. Once the application is deemed sufficient, the applicant shall move forward with the Community Workshop, required per Chapter 20–Zoning Sec.20-29.1.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Conditional Use is quasi-judicial in nature. Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Conditional Use recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Conditional Uses and may impose reasonable conditions on any approved Conditional Use to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan. All formal decisions shall be based on competent substantial evidence and the applicable criteria as set forth in Chapter 20, Zoning. Applicants are advised that if, they decide to appeal any decisions made at the meetings or hearings with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to insure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per Florida Statute 286.0105.

A Conditional Use which may be granted by the City Commission shall expire two (2) years after the effective date of such approval by the City Commission, unless a building permit based upon and incorporating the Conditional Use, is issued by the City within said time period. Upon written request of the property owner, the City Commission may extend the expiration date, without public hearing, an additional six (6) months, provided the property owner demonstrates good cause for the extension In addition, if the aforementioned building permit is timely issued, and the building permit subsequently expires and the subject development project is abandoned or discontinued for a period of six months, the Conditional Use shall be deemed expired and null and void, per Chapter 20 – Sec.20-36.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Conditional Use

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC Date: 5/13/2025

Mailing address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Project Name: Wawa At Winter Springs Marketplace

Property Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Existing Use: Commercial

Conditional Use that is being requested? Wawa - Gas station/convenience store

How is the Conditional Use (density, height, scale and intensity, hours of operation, building and lighting design, setbacks, buffers, noise, refuse, odor, particulates, smoke, fumes and other emissions parking and traffic generating characteristics, number of persons anticipated using, residing or working under the conditional use, and other offsite impacts) compatible and harmonious with adjacent land uses?

See attached cover letter.

Will the Conditional Use adversely impact land use activities in the immediate vicinity? If no, why not?

See attached cover letter.

Demonstrate the size and shape of the site, the proposed access and internal circulation, and the design enhancements to be adequate to accommodate the proposed density, scale and intensity of the conditional use requested. The site shall be of sufficient size to accommodate design amenities such as screening, buffers, landscaping, open space, off-street parking, safe and convenient automobile, bicycle, and

pedestrian mobility at the site, and other similar site plan improvements needed to mitigate against potential adverse impacts of the proposed use.

See attached cover letter.

Will the proposed use have an adverse impact on the local economy, including governmental fiscal impact, employment, and property values? If no, why not?

See attached cover letter.

Will the proposed use have an adverse impact on natural environment, including air, water, and noise pollution, vegetation and wildlife, open space, noxious and desirable vegetation, and flood hazards? If no, why not?

See attached cover letter.

Will the proposed use have an adverse impact on historic, scenic and cultural resources, including views and vistas, and loss or degradation of cultural and historic resources? If no, why not?

See attached cover letter.

Will the proposed use have an adverse impact on public services, including water, sewer, stormwater and surface water management, police, fire, parks and recreation, streets, public transportation, marina and waterways, and bicycle and pedestrian facilities? If no, why not?

See attached cover letter.

Will the proposed use have an adverse impact on housing and social conditions, including a variety of housing unit types and prices, and neighborhood quality? If no, why not?

See attached cover letter.

Will the proposed use avoids significant adverse odor, emission, noise, glare, and vibration impacts on adjacent and surrounding lands regarding refuse collection, service delivery, parking and loading, signs,

lighting, and other sire elements? If no, why not?

See attached cover letter.

Demonstrate that the conditional use and associated site plan have been designed to incorporate mitigative techniques and plans needed to prevent adverse impacts addressed in the criteria stated herein or to adjacent and surrounding uses and properties.

See attached cover letter.

If the proposed conditional use is a residential use, whether the elementary, middle and high schools (K-12) that will be initially assigned to the residential project by the School District at the time the city commission considers final approval of the conditional use have both sufficient capacity, are in close proximity to the project so as to make each of the assigned schools accessible and convenient (e.g., walking distance, travel time, private and public transportation, and quality of route environment) to the majority of the school population that will be drawn from the project, and promote and support the integration of future residents of the project into the existing city of Winter Springs community in a sustainable manner.

See attached cover letter.

List all witnesses that the applicant intends to present to the City Commission to provide testimony:

Ryan Stahl, Cory Sitler, and Jonathan Martin

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:

Photos (if needed)

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing

REQUIRED DOCUMENTATION

X A complete Application and Fee

X A general description of the relief sought under this division

X A brief explanation, with applicable supporting competent substantial evidence and documents, as to why the application satisfies the relevant criteria set forth in this division

X A Legal Description accompanied by a certified survey or the portion of the map maintained by the Seminole County Property Appraiser reflecting the boundaries of the subject property (to scale).

X An acceptable security plan for the proposed establishment that addresses the safety and security needs of the establishment and its users and employees and minimizes impacts on the neighborhood.

___ An acceptable plan for the mass delivery of merchandise for new large footprint buildings (greater than 20,000 square feet) including the hours of operation for delivery trucks to come into and exit the property and surrounding neighborhood.

___ For all new commercial development and new residential subdivisions of ten (10) or more lots or existing commercial buildings being altered by 50 percent or greater of the original floor plan or seating capacity and requiring a modified site plan, or development agreements process under section 20-28.1 of the City Code, or as otherwise deemed applicable by the city to relevantly and competently examine an application for compliance with the city code and the affect and impact the proposed use will have on neighborhood and surrounding properties, applicants shall be required to submit with the following additional information referenced in Chapter 20 – Zoning Sec.20.29 Applications (7) – (11).

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Conditional Use

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for an Aesthetic Review for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 5/9/25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: Kristin Banks

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

Drainage Calculations for
SJRWMD & City of Winter Springs

Winter Springs Marketplace

Winter Springs, FL

Prepared by:

Kimley-Horn and Associates, Inc.
Orlando, Florida
149170016

July 14, 2020
(Revised 11/03/2020)

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Kimley»Horn

Drainage Calculations for
SJRWMD & City of Winter Springs

Winter Springs Marketplace

Winter Springs, FL

Prepared for:

Tuscawilla Property Investors, LLC

Prepared by:

Kimley-Horn and Associates, Inc.
189 South Orange Avenue, Suite 1000
Orlando, Florida
CA 00000696
149170016

Marcus I. Geiger, P.E., State of Florida, Professional Engineer, License No. 89199

This item has been digitally signed and sealed by Marcus I. Geiger, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Marcus I Geiger
DN: cn=Marcus I Geiger, c=US, o=KIMLEY-HORN AND ASSOCIATES, ou=A01410D00000172C79918990000F4E7, email=Marcus.Geiger@Kimley-Horn.com
Date: 2020.09.25 18:43:33 -04'00'

July 14, 2020
(Revised 11/03/2020)

Marcus I. Geiger, P.E.
FL P.E. # 89199

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1 SUMMARY

The Winter Springs Marketplace project is a 10.23-acre development located at the southwest corner of State Road 434 and Tuskawilla Road in Winter Springs, Florida (Sections 1 & 6, Township 21 South, Ranges 30 & 31 East). See **Appendix A** for the limits of the project site superimposed on a general location map, aerial imagery, the USGS Quad map, and Map No. 12117C0160F of the FEMA Flood Insurance Rate Map (FIRM), effective date September 28, 2007.

The proposed commercial property consists of six (6) commercial buildings and associated surface parking and utility infrastructure. The majority of the site is currently undeveloped and vacant. There is an existing abandoned building and surface parking lot located at the eastern corner of the site. The eastern portion of the site has been previously permitted through St. John's River Water Management District (SJRWMD) under Permit No. 83445-1 for the outfall to the drainage structure immediately south of the site's Tuskawilla Road driveway connection. The site has also been included in permitting for its outfall to the west under Permit No. 97490-1. Stormwater runoff from the proposed site will be managed via exfiltration trench and dry retention pond which drain into an onsite wet detention pond. These systems will meet or exceed all requirements of SJRWMD and the City of Winter Springs.

2 EXISTING CONDITIONS

The property is currently undeveloped and vacant. Per the FEMA FIRM located in **Appendix A**, the site is considered "Zone X – Area determined to be outside the 0.2% annual chance floodplain." Based on existing SJRWMD permitting and topographic data collected via survey, there is a high point ridge through the middle of the site. As a result, the site discharges to the east and west. SJRWMD Permit No. 83445-1 covers the existing allowable discharges to the east. SJRWMD Permit No. 97490-1 covers the allowable discharges from the site to the west.

2.1 SOILS

ECS Florida, LLA (ECS) has performed a geotechnical report for the proposed site. Please refer to the Preliminary Geotechnical Engineering Report prepared by ECS, dated November 15, 2018, which has been included in this application submittal, for details. The SCS Soil Survey for the proposed site can be found in **Appendix A** of the Drainage Calculations.

2.2 GROUNDWATER

The groundwater levels were investigated and determined by ECS and are included as part of their Geotechnical Report. Please refer to the Geotechnical Report prepared by ECS (dated November 15, 2018), which has been included with this submittal.

The table below summarizes the groundwater elevations obtained for each boring based on the provided geotechnical report by Terracon. Based on these results, Terracon estimates the seasonal high groundwater level to be at a depth ranging from 2.5 to 5 ft below existing grade across the site.

Table 1: Groundwater Elevations for Each Boring Location

Boring Label	Depth to Encountered Water Table (ft)	Boring Label	Depth to Encountered Water Table (ft)
B-1	4.5	**B-11**	5.5
B-2	5.0	**B-12**	5.5
B-3	3.5	**B-13**	4.0
B-4	4.5	**B-14**	5.0
B-5	5.5	**B-15**	5.0
B-6	5.0	**B-16**	5.0
B-7	4.0	**B-17**	4.5
B-8	4.5	**B-18**	4.5
B-9	5.5	**B-19**	4.0
B-10	5.5		

2.3 WETLANDS

There are no wetland impacts proposed for this project.

2.4 EXISTING DRAINAGE

Stormwater management systems are not provided for the currently undeveloped portion of the site. The Jesup's Reserve SJRWMD Permit (No. 97490-1) included the flows from the western portion of the site in their ultimate design of the 30" HDPE storm sewer trunk line. This 30" HDPE trunk line runs along the western site boundary and flows into wetlands located west of the site.

The Walgreens Drug Store #6575 SJRWMD Permit (No. 83445-1) determines the flows from the existing abandoned facility located at the eastern corner of the site. Flows from this portion of the site are captured within a dry retention pond within this abandoned parcel. The dry retention pond drains via a 150-ft 12" VPP discharge line to a drainage manhole just south of the abandoned parcel's driveway. Refer to the USGS Quad Map in addition to the pre-condition basin maps from each of these permits in ***Appendix A***.

2.4.1 BASINS

The property consists of two (2) basins. One basin drains west towards existing wetlands. The other basin drains east to the FDOT SR 434 right of way. Refer to Table 2 below for the pre-development basin summary and the Pre-Development Drainage Basin Map located in **Appendix A** for details.

Table 2: Pre-Development Basin Summary Table

	*Basin 100	**ONDICK
Drainage Basin Area (acres)	3.56	10.56
Total Impervious Area (acres)	0.82	1.27
% Impervious	23.0%	12.0%
Time of Conc., TC (min.)	38.5	82.0
Composite Curve Number, CN	60.3	61
Node	NODE 10	ONDICK

*This basin's data is based on SJRWMD Permit 83445-1

**This basin's data is based on SJRWMD Permit No. 97490-1

2.4.2 CN CALCULATIONS

The pre-development CN calculations utilized for the pre-development basins can be found in ***Appendix B***.

2.4.3 TIME OF CONCENTRATION

The time of concentration ('Tc') calculations utilized for the pre-development basins can be found in ***Appendix B***.

2.4.4 TAILWATER CONDITION

Tailwater conditions are based on the existing SJRWMD data provided in Permit No. 83445-1 previously permitted for the site. "Node 99" within this permit utilizes stages of 40 (NGVD) at hour Zero and 41 (NGVD) at hour 24. These values have been converted to NAVD using the 1.056-ft conversion factor for the area. See ***Appendix B*** for the associated permit data.

2.4.5 EXISTING DEVELOPMENT RUNOFF

The stormwater runoff from the pre-development basins is based on the existing SJRWMD data previously permitted for the site. Please refer to ***Appendix B*** for the historic permit data utilized to calculate pre-development flows for the site.

3 PROPOSED CONDITIONS

The 10.23-acre Winter Springs Marketplace project consists of six (6) commercial buildings and associated surface parking and utility infrastructure. The eastern corner of the project is reserved for future commercial usage. The stormwater runoff from the proposed site will be managed via exfiltration trench and dry pond which drain into an onsite wet detention pond to provide adequate water treatment (quality) and attenuation (quantity) volumes. The stormwater management system has been designed to meet or exceed the requirements of the City of Winter Springs and St. John's River Water Management District (SJRWMD).

3.1 REQUIRED PERMITS AND REVIEWS

- City of Winter Springs, FL
- St. John's River Water Management District (SJRWMD)

3.2 BASINS

Proposed conditions will divide onsite basins into sub basins for each of the exfiltration trenches throughout the site. The back of the site along Natures Way (Basin A) will drain into the dry retention pond at the back of the site. The wet detention pond at the front of the site along Tuskawilla Road sits within its own basin (Basin B). All onsite basins ultimately drain through this basin before draining offsite.

The remaining basins consist of the onsite exfiltration trench throughout the site. The delineation between each of the exfiltration trench basins (Basins C through G) are based on the surface grading which determines the greatest areas generating runoff to each system. Basin C includes the future commercial parcel which is assumed to have 80% impervious area. Basins H through J are the parking areas at the center of the site which must first drain into retention swales before draining into the exfiltration trenches. Table 3 below provides an on-site post-development basin summary. See **Appendix A** for the Post-Development Drainage Basin Map.

Table 3: Proposed Post-Development Basin Summary Table

	Basin A	Basin B	Basin C	Basin D	Basin E
Drainage Basin Area (acres)	0.83	1.12	2.97	0.88	0.49
***Total Impervious Area (acres)**	0.42	0.31	2.58	0.68	0.38
% Impervious	50.6%	27.7%	86.7%	77.3%	77.6%
Time of Conc., TC (min.)	10	10	10	10	10
Composite Curve Number, CN	68.6	73.5	90.1	84.5	84.6
Node	SMA-A.1	SMA-B	SMA-C	SMA-D	SMA-E

*Any wet pond water surface area not included in this figure.

	Basin F	Basin G.1	Basin G.2	Basin H	Basin I	Basin J
Drainage Basin Area (acres)	0.95	0.67	0.56	0.79	0.44	0.53
***Total Impervious Area (acres)**	0.67	0.67	0.56	0.54	0.34	0.45
% Impervious	70.5%	100%	100%	68.3%	77.3%	84.9%
Time of Conc., TC (min.)	10	15	15	10	10	10
Composite Curve Number, CN	80.2	98.0	98.0	79.1	84.8	89.5
Node	SMA-F	SMA-A.2	SMA-B	SWALE-1	SWALE-2	SWALE-3

*Any wet pond water surface area not included in this figure.

3.2.1 CN CALCULATIONS

The CN calculations for the post-development conditions can be found in ***Appendix C***.

3.2.2 TIME OF CONCENTRATION

The time of concentration ('Tc') calculations for the post-development drainage basins was determined to be the minimum of 10 minutes. Please refer to the Post-Development Drainage Basin Map in **Appendix A**.

3.2.3 SEASONAL HIGH WATER TABLE AND CONTROL ELEVATIONS

Seasonal High Water Table (SHWT) elevations were determined using the Geotechnical Report provided by ECS, which has been included with this submittal for details. Based on the provided ECS Report, the estimated seasonal high water table elevation occurs within 2.5 to 5-ft below existing grade.

3.3 STORMWATER MANAGEMENT

Stormwater runoff for the proposed Winter Springs Marketplace property will be treated and attenuated through the use of off-line exfiltration trenches and a dry pond along with a wet detention pond which ultimately receives all on site flows prior to discharging. Runoff from the on-site post-development basins will sheet flow into the proposed inlets which will route flows to the exfiltration trenches and dry retention ponds. See **Appendix C** for the exfiltration trench, dry retention pond, and wet detention pond calculations.

Dry retention pond SMA-A will utilize a Type D control structure to route flows to wet detention pond SMA-B. Wet retention pond SMA-B will utilize Type E boxes to discharge to the offsite outfalls. The exfiltration trenches will utilize a diversion box near pond SMA-B along with weir structures to intermediate manholes to outfall to the wet detention pond. The parking lot swales utilize Type D boxes with elevated tops to convey flows from the swales to the exfiltration trenches. See Table 4 below for a summary of the controls structures proposed for the site.

Table 4: Control Structure Design for the Proposed Ponds

Post-Development Node	Weir Dimensions	Weir Elevation (ft.)	Top Elevation (ft.)	Structure Type
SMA-A (Combined)	5-ft Wide Rectangular	45.60	46.00	Type-D Inlet
SMA-B (To West Outfall)	N/A	N/A	44.50	Type-E Inlet
	1.4-ft Wide Rectangular	43.00	44.5	Sharp Crested Vertical Weir Within Control Structure
	3-in Circular	40.50	N/A	Circular Orifice
SMA-B (To East Outfall)	N/A	N/A	44.50	Type-E Inlet
	0.5-ft Wide Rectangular	43.35	44.5	Sharp Crested Vertical Weir Within Control Structure
SMA-C	8.75-ft Wide Rectangular	43.33	44.94	Diversion Structure Built into Type-H 4-Grate Inlet
	18-in Circular	43.33	N/A	*18-in CMP Connection to Secondary Outfall Trunk Line
SMA-D	18-in Circular (2)	43.66	N/A	*18-in CMP Connection to Secondary Outfall Trunk Line
SMA-E	18-in Circular	43.06	N/A	*18-in CMP Connection to Secondary Outfall Trunk Line
SMA-F	18-in Circular (2)	43.00	N/A	*18-in CMP Connection to Secondary Outfall Trunk Line
SMA-G	18-in Circular (2)	43.33	N/A	*18-in CMP Connection to Secondary Outfall Trunk Line
SMA-H	N/A	N/A	45.25	Type-D Inlet
SMA-I	N/A	N/A	45.25	Type-D Inlet
SMA-J	N/A	N/A	45.25	Type-D Inlet

*The secondary outfalls within the exfiltration trenches are 18-inch CMP which tie into the bottom elevation of each trench system at 42.0-ft and connect to the secondary outfall manhole at their associated weir elevations.

3.3.1 TAILWATER CONDITIONS

The tailwater conditions for the post-development condition are the same as the pre-development condition. Please refer to Section 2.4.4.

3.3.2 WATER QUALITY (TREATMENT VOLUME)

Offline exfiltration trenches, dry retention ponds, and dry retention swales interconnected with a wet detention pond are utilized as the Best Management Practice (BMP) to reduce the discharge of pollutants associated with stormwater runoff. Due to the site's ultimate discharge to Lake Jessup, the volume required for the removal of phosphorous is a third criteria used in finding the required water quality volume. The following standards were utilized for the treatment volume requirements for off-line exfiltration trenches.

The greater of:

0.5 inch of runoff over the site (SJRWMD)

OR

1.25 inches of runoff over the impervious area (SJRWMD)

OR

Inches of runoff over basin area provided in BMPTrains analysis (SJRWMD)

Table 5: Dry Retention Pond Treatment Volume Required vs. Provided

Drainage Area	Drainage Area (acres)	*Imp. Area (acres)	Required TV						Provided TV
			0.5" Over Site	1.25" Over Impervious Area	Add'l 0.5" Over Site	Pres. Criteria Volume Req.	TV Required for Nutrient Removal	Total Required	
SMA-A	1.49	1.08	0.06 ac-ft	0.11 ac-ft	0.06 ac-ft	0.17 ac-ft	0.14 ac-ft	0.17 ac-ft	0.21 ac-ft
SMA C	2.97	2.58	0.12 ac-ft	0.27 ac-ft	0.12 ac-ft	0.39 ac-ft	0.35 ac-ft	0.39 ac-ft	**0.35 ac-ft
SMA D	0.88	0.68	0.04 ac-ft	0.07 ac-ft	0.04 ac-ft	0.11 ac-ft	0.11 ac-ft	0.11 ac-ft	0.11 ac-ft
SMA E	0.49	0.38	0.02 ac-ft	0.04 ac-ft	0.02 ac-ft	0.06 ac-ft	0.09 ac-ft	0.09 ac-ft	0.09 ac-ft
SMA F	0.95	0.67	0.04 ac-ft	0.07 ac-ft	0.04 ac-ft	0.11 ac-ft	0.11 ac-ft	0.11 ac-ft	0.11 ac-ft
SMA G	1.76	1.33	0.07 ac-ft	0.14 ac-ft	0.07 ac-ft	0.21 ac-ft	N/A	0.21 ac-ft	0.40 ac-ft
BASIN H	0.79	0.54	0.03 ac-ft	0.06 ac-ft	0.03 ac-ft	0.09 ac-ft	0.06 ac-ft	0.09 ac-ft	***0.06 ac-ft
BASIN I	0.44	0.34	0.02 ac-ft	0.04 ac-ft	0.02 ac-ft	0.06 ac-ft	0.06 ac-ft	0.08 ac-ft	***0.06 ac-ft
BASIN J	0.53	0.45	0.02 ac-ft	0.05 ac-ft	0.02 ac-ft	0.07 ac-ft	0.02 ac-ft	0.07 ac-ft	***0.02 ac-ft
							Total:	**1.21 ac-ft**	**1.315 ac-ft**

***** Impervious area does not include pond surface area.

****** Remainder of required volume is provided within interconnected exfiltration system SMA-G.

******* This system holds volume for nutrient removal pretreatment. Treatment volume in accordance with SJRWMD Applicant's Handbook (Vol. 2) Section 8.2 is provided within SMA-G.
******** SMA-G provides additional nutrient removal pre-treatment volume and attenuation. Basins flowing through this system have previously met nutrient removal criteria. The additional volume provided within this system assists interconnected SMA-C, H, I, & J in meeting presumptive criteria treatment volume.

The following standards were utilized for the treatment volume associated with incidental areas draining to interconnected wet ponds A and B.

The greater of:

1.0 inch of runoff over the site (SJRWMD)

OR

2.5 inches of runoff over the impervious area (SJRWMD)

Table 6: *Wet Detention Pond Treatment Volume Required vs. Provided*

Drainage Area	Drainage Area (acres)	*Imp. Area (acres)	Required TV			Provided TV
			1.0" Over Site	2.5" Over Impervious Area	Total Required	
SMA B	1.68	0.87	0.14 ac-ft	0.18 ac-ft	0.18 ac-ft	1.02 ac-ft

*Impervious area does not include pond surface area.

** SMA B provides treatment for Basins B & G.2 in accordance with Section 8.2 of the SJRWMD Applicant's Handbook (Vol. 2).

As shown in the Tables 5 & 6 above, the provided Treatment Volume is greater than the required Treatment Volume per SJRWMD criteria. Please see **Appendix C** for treatment volume calculations.

3.3.3 WATER QUALITY VOLUME RECOVERY (BLEED DOWN)

Per SJRWMD criteria, the dry retention areas are required to provide the capacity for the appropriate treatment volume within 72-hours following a storm event. The wet pond is required to drawdown one-half of its required treatment volume within 24 to 30 hours following a storm event, but no more than half in the first 24 hours. Refer to the tables below for summary of permeability constants used with the exfiltration drawdown analysis.

Table 7: Design Permeability Rates

K (Horizontal) ft/day	K (Vertical) ft/day
51	17*

**Value includes safety factor of 2*

Recovery time was determined utilizing Advanced Interconnected Channel & Pond Routing (ICPR Ver. 4.04.00). As designed, the proposed dry retention ponds will drawdown the required water quality volume in less than 72 hours. The wet ponds will drawdown the volume within the 24 to 30 hour period provided in SJRWMD criteria. See **Appendix E** for supporting recovery analysis and results.

3.3.4 PROPOSED DEVELOPMENT RUNOFF

The stormwater runoff from the post-development basins was determined using Advanced Interconnected Channel & Pond Routing (ICPR Ver. 4.04.00) by Streamline Technologies, Inc. Please refer to ***Appendix A*** for the nodal exhibit and ***Appendix D*** for the input report and summary of results.

Please refer to the table below for a summary of the pre- vs. post- development peak discharge rates (Q) and the resulting maximum stage within the proposed BMP.

Table 8: Runoff Analysis

Storm Event	Tuskawilla Outfall (EAST) Q_{max} (CFS)		Wetland Outfall (WEST) Q_{max} (CFS)	
	Pre	Post	Pre	Post
25yr-24hr	3.01	0.57	28.14	25.46

Table 9: Proposed Max Stages

Storm Event	SMA-A.1 Max Stage (ft.) (NAVD)	SMA-A.2 Max Stage (ft.) (NAVD)	SMA-B Max Stage (ft.) (NAVD)	SMA-C Max Stage (ft.) (NAVD)	SMA-D Max Stage (ft.) (NAVD)	SMA-E Max Stage (ft.) (NAVD)
Mean Annual	45.67	45.67	41.70	43.39	43.84	43.13
10yr-24hr	46.01	46.06	43.66	43.85	44.34	43.68
25yr-24hr	46.05	46.11	43.85	43.97	44.40	43.88
100yr-24hr	46.11	46.24	44.46	44.63	44.61	44.63
Top of Bank/Trench	46.50	46.50	45.00	44.63	44.30	44.25

Storm Event	SMA-F Max Stage (ft.) (NAVD)	SMA-G Max Stage (ft.) (NAVD)	SWALE 1 Max Stage (ft.) (NAVD)	SWALE 2 Max Stage (ft.) (NAVD)	SWALE 3 Max Stage (ft.) (NAVD)
Mean Annual	43.07	43.39	45.29	45.26	45.30
10yr-24hr	43.69	43.88	45.35	45.32	45.34
25yr-24hr	43.89	44.00	45.36	45.33	45.34
100yr-24hr	44.63	44.64	45.38	45.34	45.36
Top of Bank/Trench	44.65	44.52	45.35	45.35	45.35

3.3.5 MINIMUM BUILDING FINISHED FLOORS (100-YEAR STORM EVENTS)

As required by SJRWMD ERP Applicants Handbook (Volume II), all building finished floor elevations must be designed to be above the pond design high elevation of the 100 year storm event. Please refer to Table 7 below for a summary of the design high water elevations for the 100-year storm events.

As demonstrated, all building finished floor elevations are established above the recommended elevations.

Table 10: Minimum Building Finished Floors (100yr Storm Event)

	100yr-24hr Max. Stage	Min. Allowed Finished Floor El. (ft.) (NAVD)		100yr-24hr Max. Stage	Min. Allowed Finished Floor El. (ft.) (NAVD)
SMA A.1	46.11	46.30	**SMA F**	44.63	46.30
SMA A.2	46.24		**SMA G**	44.64	
SMA B	44.46		**SWALE 1**	45.38	
SMA C	44.63		**SWALE 2**	45.34	
SMA D	44.61		**SWALE 3**	45.36	
SMA E	44.63				

3.4 NUTRIENT LOADING ANALYSIS

A nutrient loading analysis was performed to provide a pre- versus post- nutrient loading analysis to show that the proposed development does not add to the impairment of the receiving water body by increasing the post-development nitrogen and phosphorus annual mass loading.

The requirements dictated by SJRWMD are that the post-development nutrient loading rate will not be greater than the pre-development loading rate. The proposed stormwater systems utilize a combination of exfiltration trench, dry retention pond, and dry retention swales in series with a wet detention pond to treat and attenuate post-development runoff.

The resulting PRE-development annual mass loading rates were calculated to be:

	Pre-Development Nitrogen Loading Rate (kg/year)	Pre-Development Phosphorous Loading Rate (kg/year)		Pre-Development Nitrogen Loading Rate (kg/year)	Pre-Development Phosphorous Loading Rate (kg/year)
BASIN A & G.1	0.176	0.058	**BASIN F**	0.565	0.188
BASIN B	0.062	0.021	**BASIN G.2**	0.019	0.006
BASIN C	3.134	1.041	**BASIN H**	0.470	0.156
BASIN D	0.521	0.173	**BASIN I**	0.145	0.048
BASIN E	0.224	0.074	**BASIN J**	0.018	0.006

The resulting POST-development annual mass loading rates were calculated to be:

	Post-Development Nitrogen Loading Rate (kg/year)	Post-Development Phosphorous Loading Rate (kg/year)		Post-Development Nitrogen Loading Rate (kg/year)	Post-Development Phosphorous Loading Rate (kg/year)
BASIN A & G.1	5.096	0.848	**BASIN F**	3.161	0.526
BASIN B	1.036	0.172	**BASIN G.2**	2.632	0.438
BASIN C	12.149	2.021	**BASIN H**	2.547	0.424
BASIN D	3.206	0.533	**BASIN I**	1.603	0.267
BASIN E	1.790	0.298	**BASIN J**	2.119	0.352

Based on the pre- vs. post- development loading rates, the treatment systems have been sequenced in the following order to provide the removal efficiencies needed.

BMPTrains System Routing						
Catchment 8 (SWALE 1)	↘	Catchment 3 (SMA-C)	↘			
Catchment 9 (SWALE 2)	→	Catchment 7 (SMA-G)	↘			
Catchment 10 (SWALE 3)	↗	Catchment 4 (SMA-D)	→	Catchment 2 (SMA-B)	→	OUTLET
		Catchment 5 (SMA-E)	↗			
		Catchment 6 (SMA-F)	↗			
				Catchment 1 (SMA-A.1 & A.2)	→	OUTLET

As shown in the table above, Basin A drains into Basin B's wet detention for further nutrient removal. Basin C through Basin G route through Basin B's wet detention pond for further nutrient removal. Basin H through Basin J pass through Basin G and Basin B for additional nutrient removal. See ***Appendix C*** for the removal efficiencies of each of the individual systems. The summary report within ***Appendix C*** provides the overall removal efficiency of the site given the sequence in which drainage must flow before it is discharged from the site. The table below provides the summary of the sites overall removal efficiency.

	Nitrogen Loading Rate (kg/year)	Nitrogen Removal Efficiency (%)	Phosphorous Loading Rate (kg/year)	Phosphorous Removal Efficiency (%)
Target	5.33	85%	1.771	70%
Provided	4.59	87%	0.472	92%

As designed, the proposed BMPs provide sufficient removal of the resulting post-development nitrogen and phosphorus nutrient loading. Please refer to Appendix C for the loading calculations, per BMP Trains 2020 Ver. 2.1.

3.5 CONCLUSION

This Drainage Analysis demonstrates the proposed improvements and design of the proposed stormwater management system(s) meet or exceeds all the requirements of the St. John's River Water Management District (SJRWMD) and the City of Winter Springs.

APPENDICES

FIGURES..... APPENDIX A

Figure 1 Aerial Photograph
Figure 2 General Location Map
Figure 3 SCS soil survey
Figure 4 USGS Quad Map
Figure 5 FEMA F.I.R.M.
Figure 6 Pre-Development Basin Node Map
Figure 7 Post-Development Basin Node Map

PRE-DEVELOPMENT DRAINAGE CALCULATIONS AND ICPR ANALYSIS..... APPENDIX B

POST-DEVELOPMENT DRAINAGE CALCULATIONS ..... APPENDIX C

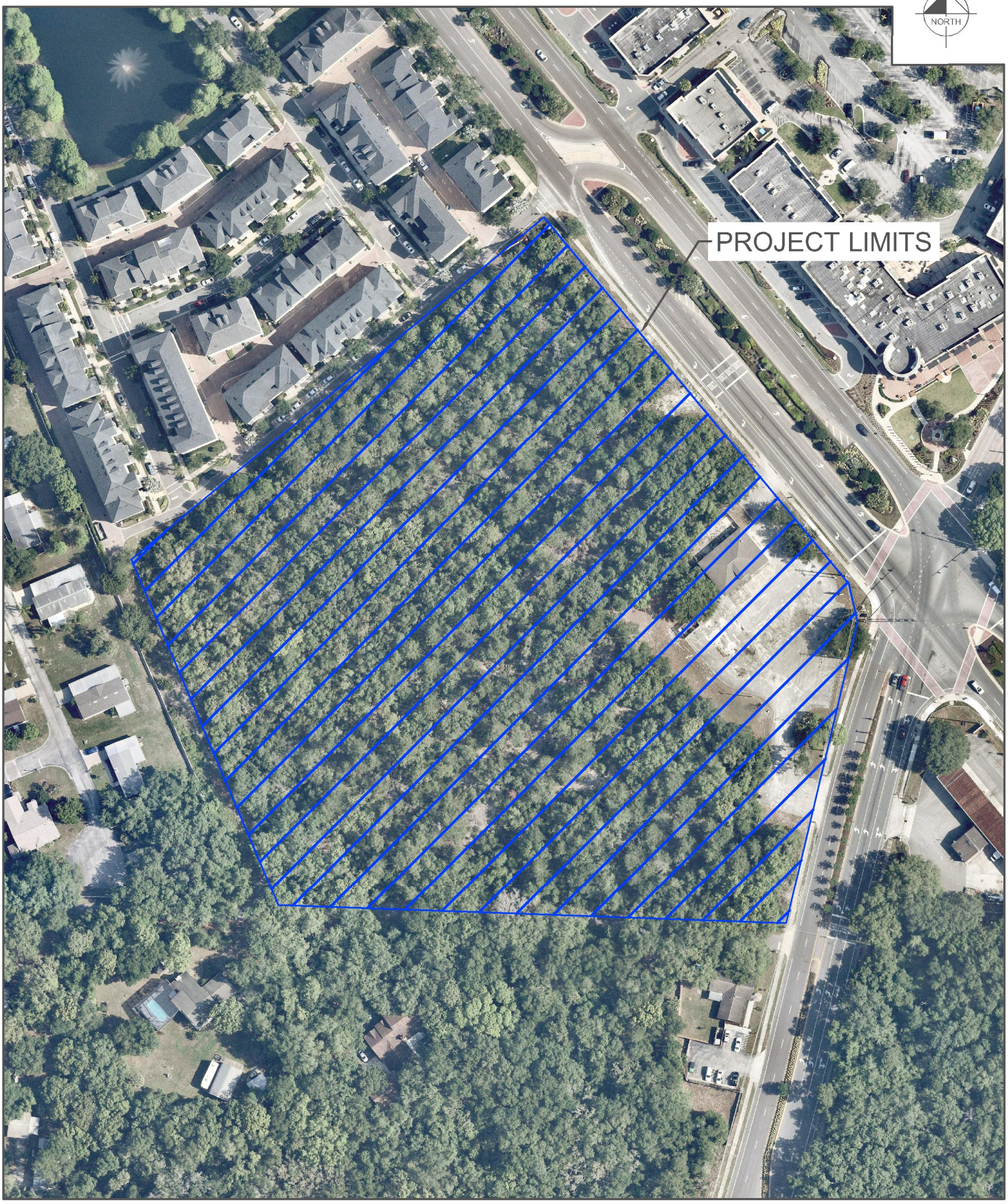
POST-DEVELOPMENT ICPR ANALYSIS..... APPENDIX D

WET & DRY POND RECOVERY ANALYSIS..... APPENDIX E

APPENDIX A

FIGURES

Aerial Photograph
General Location Map
SCS soil survey
USGS Quad Map
FEMA F.I.R.M.
Pre-Development Basin Node Map
Post-Development Basin Node Map



EX-1

WINTER SPRINGS MARKETPLACE

CITY OF WINTER SPRINGS, FL

LOCATION MAP

Kimley»Horn

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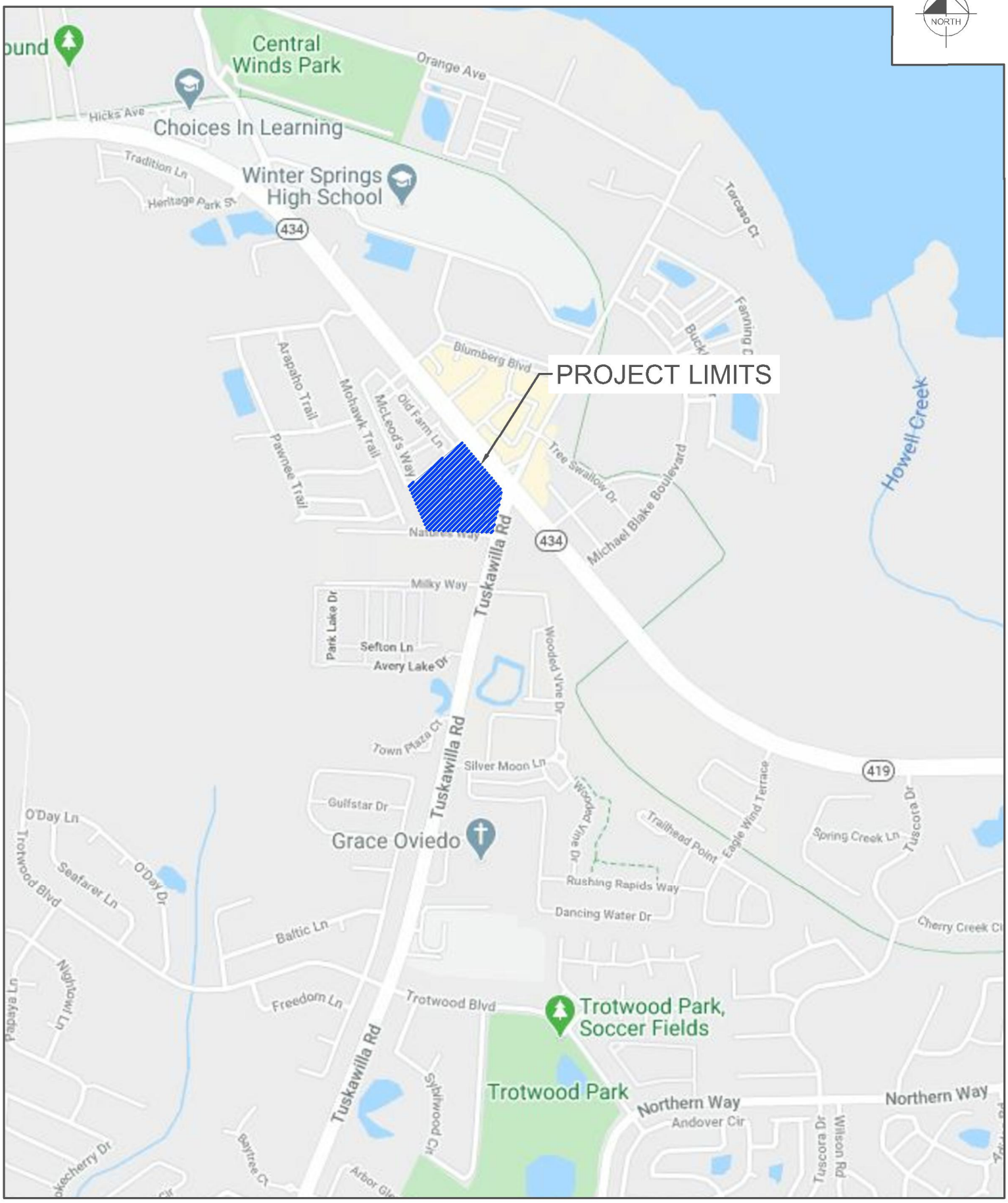

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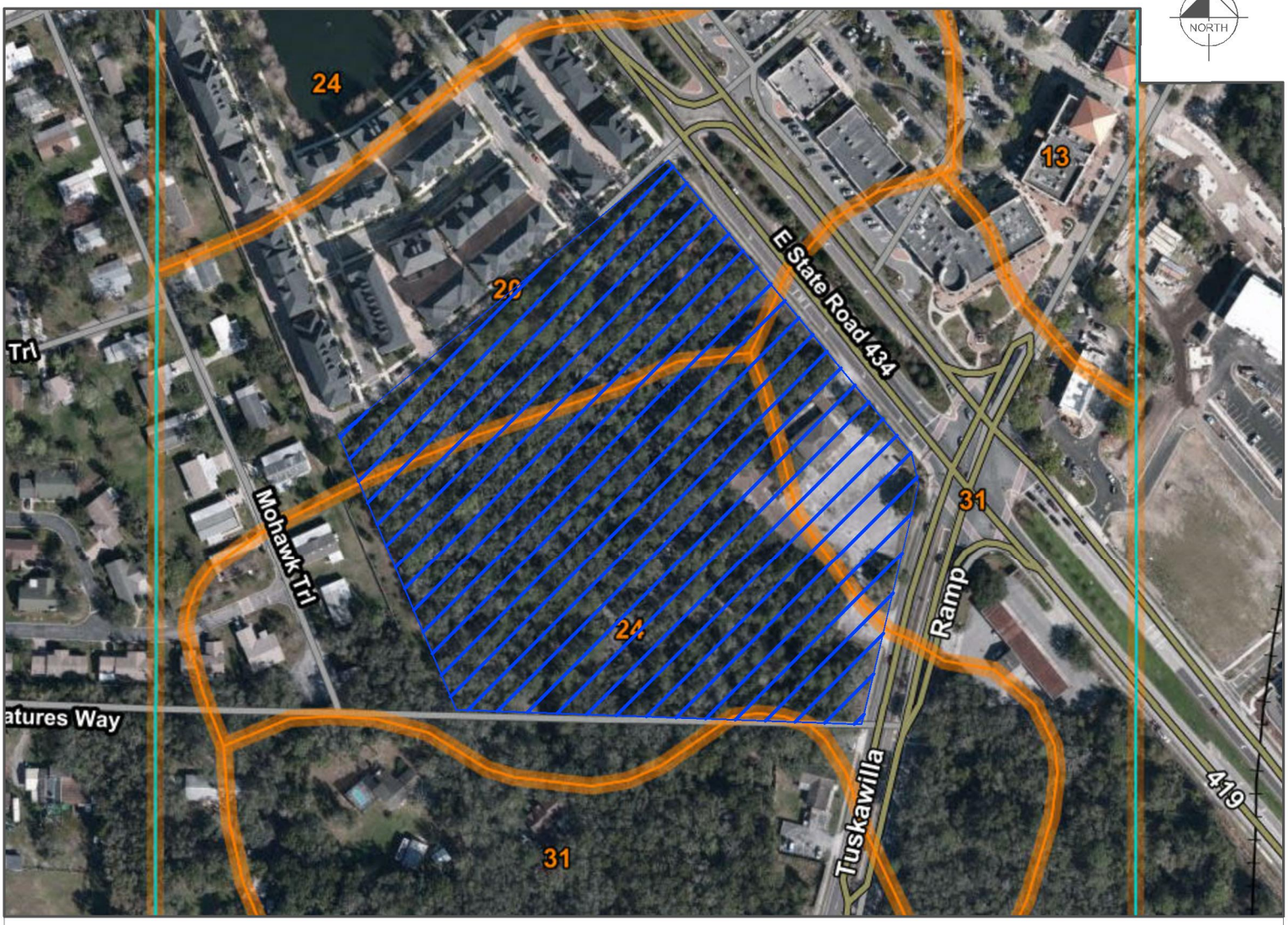
EX-2

WINTER SPRINGS MARKETPLACE

CITY OF WINTER SPRINGS, FL

LOCATION MAP

Kimley»Horn



RUSLE2 Related Attributes–Seminole County, Florida								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
20—Myakka and EauGallie fine sands								
Myakka	58	151	A/D	.02	5	97.0	1.0	2.0
EauGallie	32	151	A/D	.02	5	97.0	1.0	2.0
24—Paola-St. Lucie sands, 0 to 5 percent slopes								
Paola	52	151	A	.02	5	98.0	1.0	1.0
St. Lucie	43	151	A	.02	5	99.0	0.5	0.5
31—Tavares-Millhopper complex, 0 to 5 percent slopes								
Tavares	63	151	A	.05	5	97.0	1.0	2.0
Millhopper	32	151	A	.05	5	94.0	1.0	5.0

EX-3

WINTER SPRINGS MARKETPLACE

CITY OF WINTER SPRINGS, FL

SOILS MAP

Kimley»Horn

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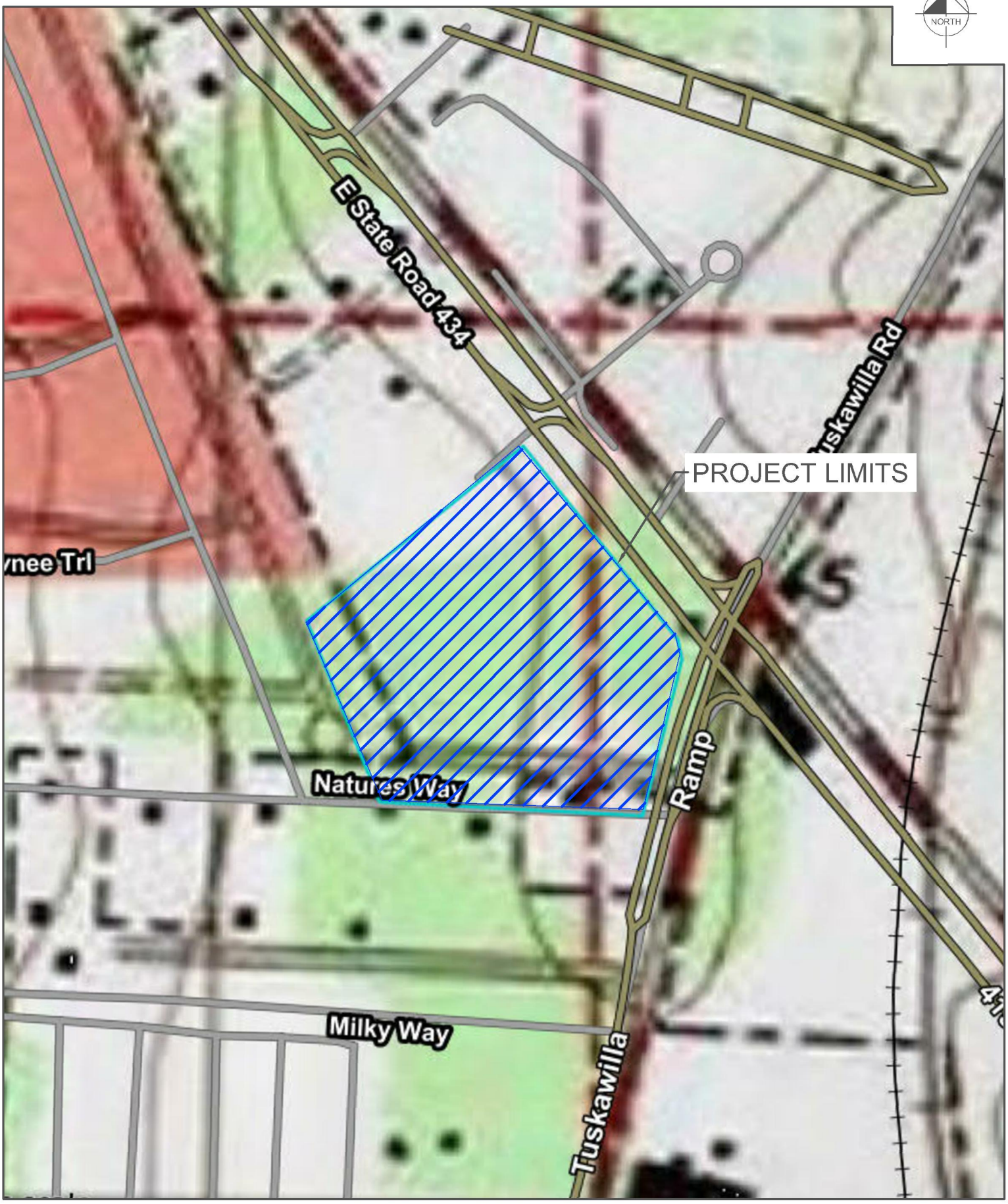


EX-4

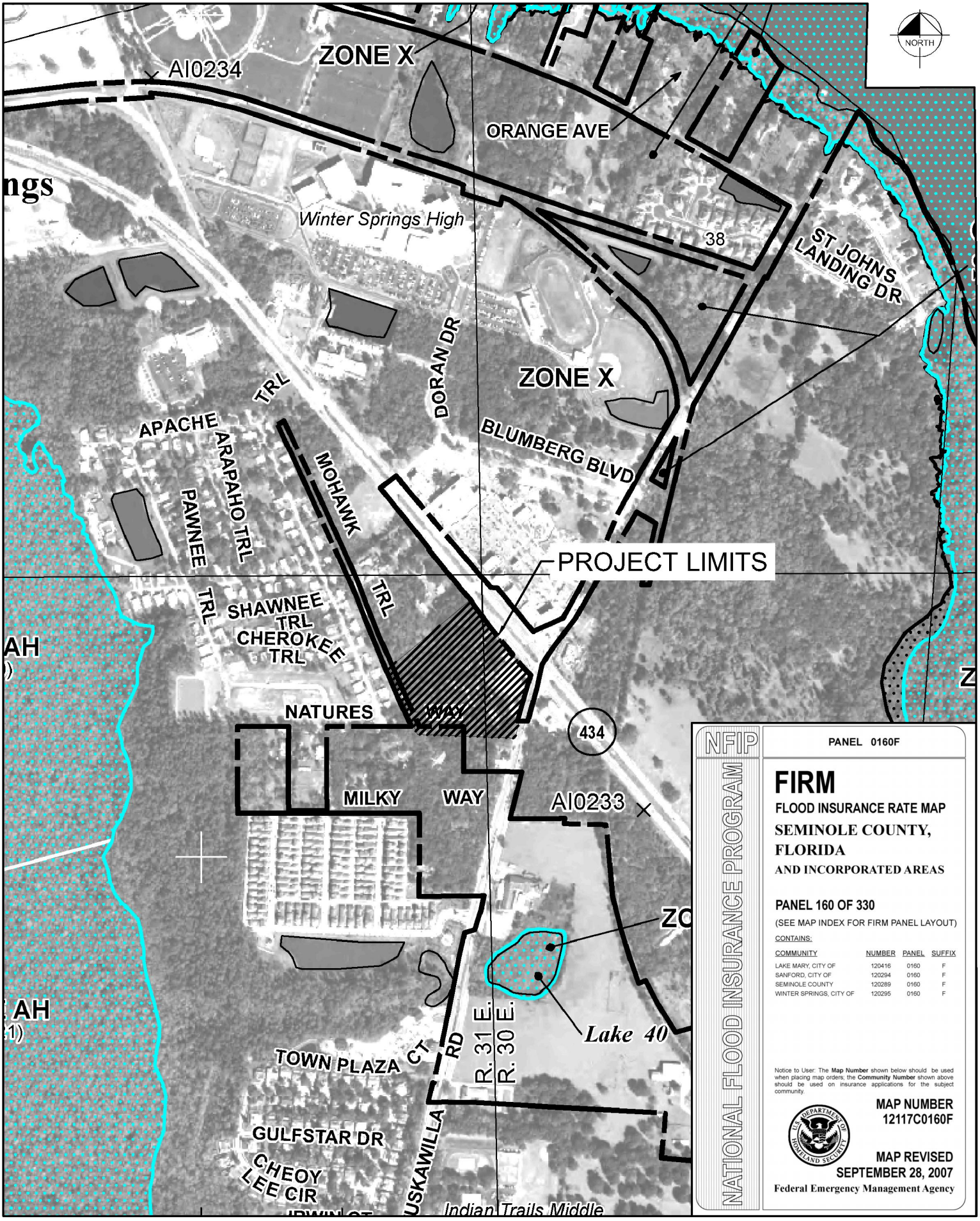
WINTER SPRINGS MARKETPLACE

CITY OF WINTER SPRINGS, FL

USGS QUAD MAP

Kimley»Horn

K:\ORL_Civil\149170016-Winter Springs Marketplace\CADD\EXHIBITS\DRAINAGE REPORT EXHIBITS.dwg



EX-5

WINTER SPRINGS MARKETPLACE

CITY OF WINTER SPRINGS, FL

FEMA F.I.R.M. MAP

K:\ORL_Civil\149170016-Winter Springs Marketplace\CADD\EXHIBITS\DRAINAGE REPORT EXHIBITS.dwg

PLAT OF SURVEY

ALTA/ACSM LAND TITLE SURVEY

GRAPHIC SCALE

0' 20' 40' 80' 120'

1" = 40'

LEGEND

BB – BOTTOM OF BANK
BC – BACK OF CURB
BF – BACKFLOW PREVENTER
BM – BENCHMARK
BPC – BURIED POWER CABLE
CALC – CALCULATED
C&M – CALCULATED & MEASURED
Δ – CENTRAL ANGLE
CBW – CONCRETE BLOCK WALL
CF – CONCRETE FLUME
CHW – CONCRETE HEAD WALL
CLF – CHAIN LINK FENCE
℄ – CENTERLINE
CM – CONCRETE MONUMENT
CMP – CORRUGATED METAL PIPE
CO – CLEAN OUT
CONC – CONCRETE
COVD – COVERED
CP – CONCRETE PAD
CPP – CORRUGATED PLASTIC PIPE
CR – CONCRETE RAILWAY
D&M – DEED/DESC & MEASURED
DE – DRAINAGE EASEMENT
DESC – DESCRIPTION
DM – DUMPSTER
DW – DRIVEWAY
EB – ELECTRIC METER
EB – ELECTRICAL BOX
ESMT – EASEMENT
E/P – EDGE OF PAVEMENT
FIRM – FLOOD INSURANCE RATE MAP
FFE – FINISHED FLOOR ELEVATION
FH – FIRE HYDRANT
FL – FLOW LINE
FND – FOUND
–G– – GAS LINE
GM – GAS METER
GY – GUY WIRE ANCHOR
HP – HANDICAP PARKING
HR – HANDICAP RAMP
INV – INVERT ELEVATION
IP – IRON PIPE
IR – IRON ROD
L – ARC LENGTH
LP – LIGHT POLE
LSA – LANDSCAPED AREA
MEAS – MEASURED
– WITERED END SECTION
– MONITORING WELL
N&D – NAIL & DISK
NTS – NOT TO SCALE
OHE – OVERHEAD ELECTRIC
OL – ON LINE
ORB – OFFICIAL RECORDS BOOK
PC – POINT OF CURVATURE
PER – PER ENGINEERS PLANS
PG – PAGE
PI – POINT OF INTERSECTION
POB – POINT OF BEGINNING
POC – POINT OF COMMENCEMENT
PP – POWER POLE
PS – PARKING SPACES
PT – POINT OF TANGENCY
PVC – PLASTIC PIPE
R – CURVE RADIUS
RCP – REINFORCED CONCRETE PIPE
R/W – RIGHT OF WAY
– SANITARY MANHOLE
SAN – SANITARY LINE
SN – SIGN
00.00 – SPOT ELEVATION
–SD– – STORM/DRAIN LINE
– STORM MANHOLE
T – TRANSFORMER
– STORM INLET
TB – TOP OF BANK
TP – TRAFFIC POLE
–T– – TRAFFIC SIGN
TR – TELEPHONE RISER
TSB – TRAFFIC SIGNAL BOX
TSW – TRAFFIC SIGNAL WIRE
TV – CABLE TV RISER
TYP – TYPICAL
UE – UTILITY EASEMENT
UVTL – UNDERGROUND TELEPHONE
–W– – WATER LINE
WF – WOOD FENCE
– WATER METER
– WATER VALVE
– NUMBER
– EASEMENT NUMBER

INVERTS

DOT INLET A
TOP = 45.88'
W INV (6" CPP) = 42.55'
NE INV (18" RCP) = 39.20'

DOT INLET B
TOP = 45.06'
NW INV (6" CPP) = 41.29'
NE INV (18" RCP) = 39.09'

INLET C
TOP = 44.64'
SW INV (18" RCP) = 39.04'

MANHOLE D
TOP = 43.36'
NW INV (18" RCP) = 38.43'
NE INV (18" RCP) = 38.72'
SW INV (18" RCP) = 38.55'

MANHOLE E
TOP = 43.26'
NE INV (18" RCP) = 38.88'
NW INV (18" RCP) = 39.01'

INLET F
TOP = 42.99'
SE INV (18" RCP) = 39.37'

INLET G
TOP = 44.86'
NE INV (12" CPP) = 42.33'
SE INV (18" RCP) = 40.61'
SW INV (18" RCP) = 40.71'

CONTROL STRUCTURE H
TOP = 44.77'
NE INV (12" CPP) = 42.82'
NW INV (12" CPP) = 41.87'
WEIR = 44.36'

INLET I
TOP = 44.14'
W INV (2-12" CPP) = 41.99'

GREASE TRAP J
TOP = 45.43'
E INV (4" PVC) = 44.04'

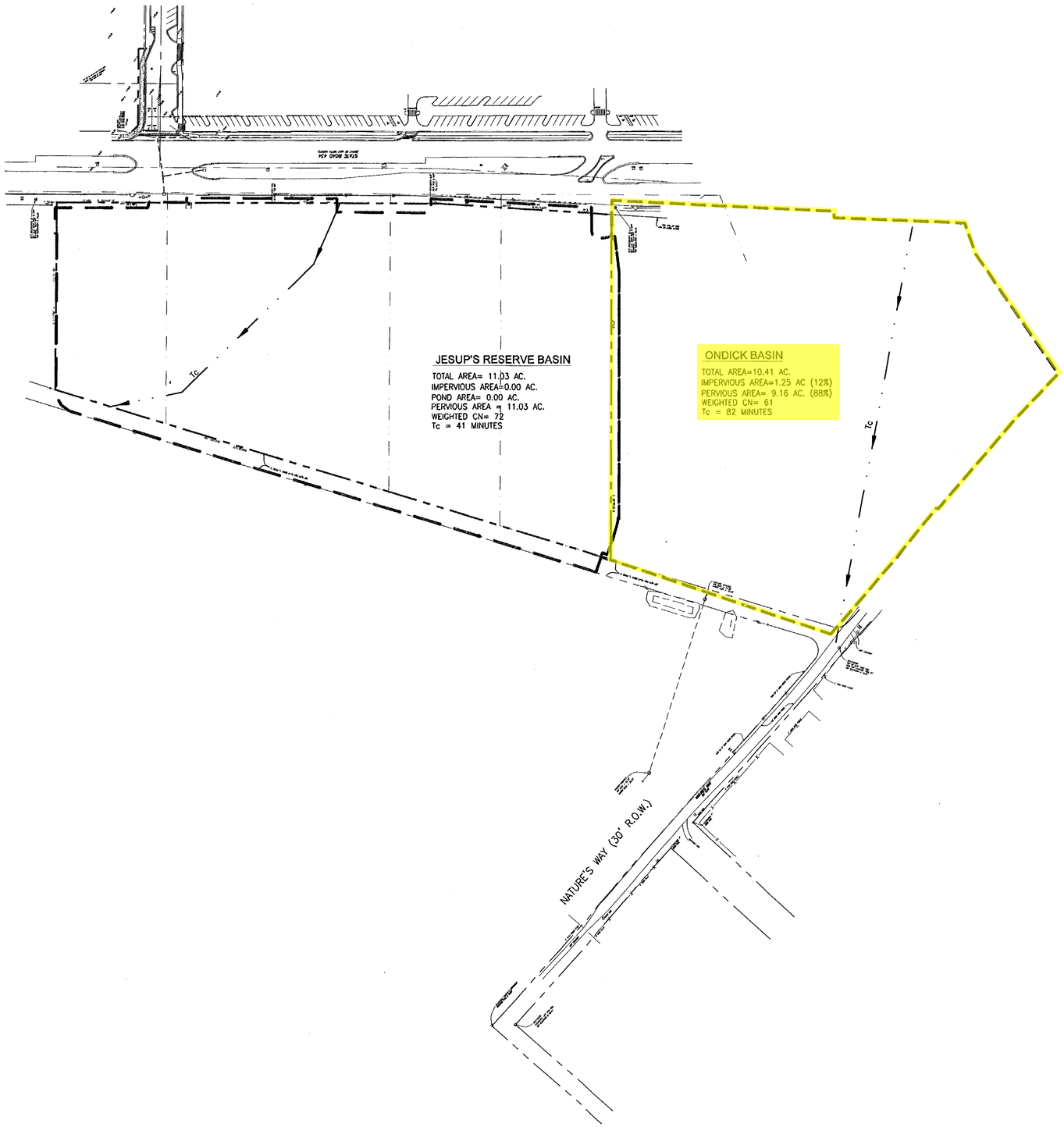
GREASE TRAP K
TOP = 45.59'
W INV (4" PVC) = 44.00'

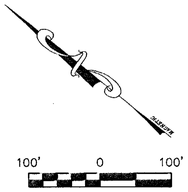
LINE CHART

L1 S 12°13'40" E 44.87' C&M

TREE CHART

114 – 12" OAK	501 – 8" PINE	608 – 6" OAK	695 – 5" OAK
115 – 15" OAK	502 – 15" PINE	607 – 16" PINE	696 – 11" OAK
116 – 12" OAK	504 – 6" OAK	609 – 6" OAK	697 – 6" OAK
117 – 8" OAK	505 – 7" OAK	610 – 6" OAK	698 – 6" OAK
118 – 18" OAK	506 – 20" PINE	611 – 6" OAK	701 – 6" OAK
119 – 8" OAK	507 – 6" OAK	612 – 6" OAK	702 – 6" OAK
120 – 8" OAK	508 – 6" OAK	613 – 6" OAK	703 – 6" OAK
121 – 8" OAK	509 – 6" OAK





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WINTER SPRINGS, FLORIDA

SEAL

3/30/05

DAVID F. PEIGLER, PE
FL. NO. 44100

REVISIONS

NO.	DESCRIPTION	DATE

DATE ISSUED: MARCH 18, 2005
REVIEWED BY: D. PEIGLER
DRAWN BY: J. NESS
DESIGNED BY: J. WARFLE

AEP PROJECT NUMBER
501-5760-000

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SHEET TITLE

PRE-DEVELOPEMENT DRAINAGE PLAN

SHEET NUMBER
C-4

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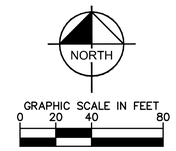

NOTES:
THE FOLLOWING NOTES ARE PROVIDED TO ALLOW FOR CLARIFICATION OF ROUTING WITHIN THE SYSTEM.

1. BASIN G.1 FLOWS TO SMA-A.2
2. BASIN G.2 FLOWS TO SMA-B
3. BASIN H FLOWS TO SWALE 1
4. BASIN I FLOWS TO SWALE 2
5. BASIN J FLOWS TO SWALE 3
6. SWALES 1, 2, & 3 FLOW INTO SMA-G TO ALLOW FOR FURTHER NUTRIENT REMOVAL.

LEGEND:

- STAGE VOLUME NODE
- STAGE AREA NODE
- TIME STAGE NODE
- PIPE LINK
- DROP STRUCTURE LINK
- WEIR LINK
- PERCOLATION LINK
- BASIN BOUNDARY

No.	REVISIONS	DATE	BY

Kimley»Horn
189 S ORANGE AVE, SUITE 1000, ORLANDO, FL 32801
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WWW.KIMLEY-HORN.COM CA 00000696

LICENSED PROFESSIONAL
DATE:

KHA PROJECT
DATE
SCALE AS SHOWN
DESIGNED BY
DRAWN BY
CHECKED BY

POST-DEVELOPMENT BASIN & NODE MAP

WINTER SPRINGS MARKETPLACE

SHEET NUMBER

APPENDIX B

Pre- Development Drainage Calculations and ICPR Analysis

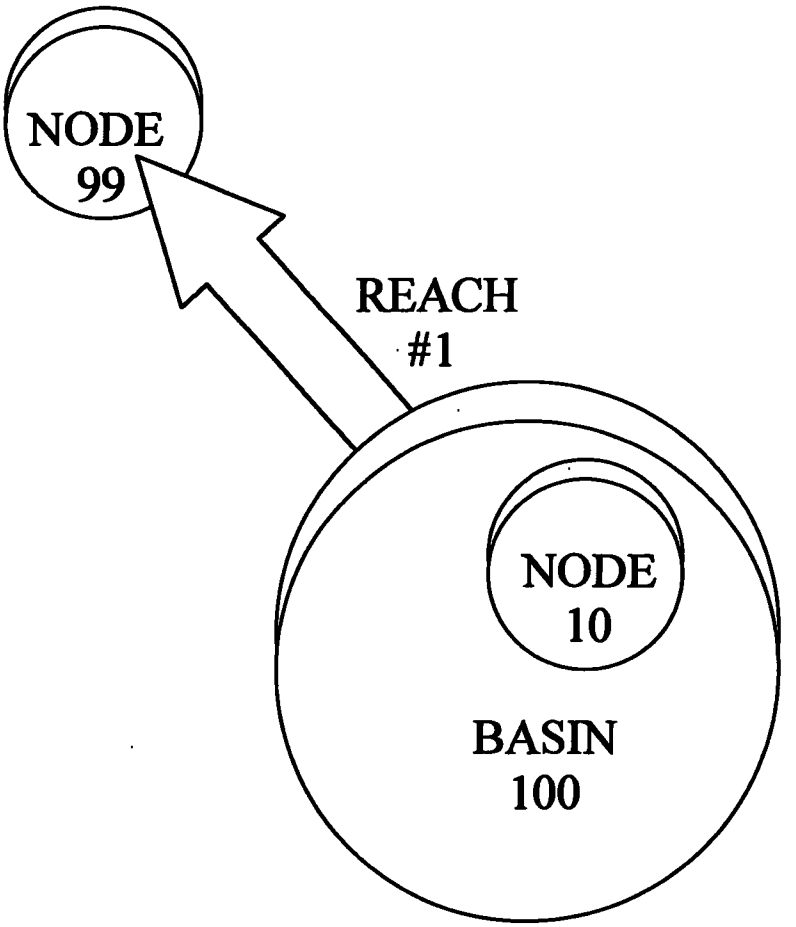
SJRWMD PERMIT NO. 83445-1

WALGREENS DRUG STORE #6575 EXISTING CONDITIONS MODELING OF SR 434 OUTFALL

PROJECT: **WALGREENS DRUG STORE #6575**
SEMINOLE COUNTY, FLORIDA

PRE DEVELOPMENT ANALYSIS

PRE-DEVELOPED HYD. SCHEMATIC:



AMERICAN CIVIL ENGINEERING COMPANY
207 N. MOSS ROAD, SUITE 211
WINTER SPRINGS, FLORIDA 32708
PHONE: (407) 327-7700
FAX: (407) 327-0227

PAGE:

PROJECT: **WALGREENS DRUG STORE #6575**
SEMINOLE COUNTY, FLORIDA

PRE-DEVELOPED ANALYSIS:

HYDROGRAPH DATA:

BASIN NO. **100**

TOTAL AREA (AC)	**3.56 ACRES**
PERVIOUS AREA (AC)	**2.74 ACRE**
IMPERVIOUS AREA (AC)	**0.82 ACRE**
WATER SURFACE AREA (AC)	**0.00 ACRE**

SCS SOIL TYPE	**PAOLA/MILLHOPPER HYD. GRP. A/A**	
PERVIOUS CN	**49**	
IMPERVIOUS CN	**98**	
WATER SURFACE CN	**100**	
COMPOSITE CN	[(2.74)(49) + (0.82)(98)] / [3.56]	**60.3**

TIME OF CONCENTRATION:

38.5 MINUTES

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PROJECT: **WALGREENS DRUG STORE #6575**
SEMINOLE COUNTY, FLORIDA

PRE-DEVELOPED TIME OF CONCENTRATION COMPUTATIONS:
BASED ON SOIL CONVERSATION SERVICE (SCS) TECHNICAL RELEASE 55 (TR-55)

BASIN NUMBER: **100**

1. **OVERLAND FLOW:** $T_1 = [0.007 (nL)^{0.8}] / (P)^{0.5}(s)^{0.4}$

n = MANNING'S ROUGHNESS	**0.40**
L = FLOW LENGTH (ft)	**175**
P = 4.75 INCHES	
S = SLOPE OF HYD. GR. (ft/ft)	**0.0087**
T_1 = TRAVEL TIME (hr)	**0.64 HOUR**

2. CONCENTRATED FLOW: T2 = L/V

L = FLOW LENGTH (ft)
V = VELOCITY BASED ON TR55
T2 = TRAVEL TIME (hr) **0.0 HOUR**

3. PIPE FLOW: T3 = L/V

L = FLOW LENGTH (ft)
V = VEL. IN PIPE, ASSUME 4.0 ft/s
T2 = TRAVEL TIME (hr) **0.0 HOUR**

4. TOTAL TIME OF CONCENTRATION:

Tc = T1 + T2 + T3

Tc = 0.5 + 0.0 + 0.0 = **0.64 HOUR**

38.5 MIN.

PROJECT: **WALGREENS DRUG STORE #6575**
SEMINOLE COUNTY, FLORIDA

PRE-DEVELOPMENT ANALYSIS

STAGE/STORAGE DATA:

NODE **10**

STAGE (ELEV)	AREA (ACRE)	AVE. AREA (ACRE)	DEPTH (FEET)	INCREM. VOLUME (AC-FT)	ACCUM. VOLUME (AC-FT)
44.00	**0.18**	-	-	-	-
45.00	**0.26**	**0.22**	**1.00**	**0.22**	**0.22**

EXISTING OVERFLOW STRUCTURE:
TOP EL. = 44.77
INV. (NE) = 42.82
WEIR EL. = 44.36

AMERICAN CIVIL ENGINEERING COMPANY
207 N. MOSS ROAD, SUITE 211
WINTER SPRINGS, FLORIDA 32708
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PAGE:

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.30)
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WALGREENS DRUG STORE #6575 - PRE DEVELOPED - 25 YR/24 HR
APRIL 19, 2002

NODE NAME	NODE TYPE	INI STAGE (ft)	X-COOR (ft)	Y-COOR (ft)	LENGTH (ft)	STAGE (ft)	AREA/TIME (ac)/(hr)
10	AREA	44.000	.000	.000	.000	44.000	.180
						45.000	.260
						46.000	2.500
99	TIME	40.000	.000	.000	.000	40.000	.000
						41.000	24.000

REACH SUMMARY

INDEX	RCHNAME	FRMNODE	TONODE	REACH TYPE
1	1	10	99	CIRCULAR CULVERT

Node-99 time stage node data in NGVD

>>REACH NAME : 1
FROM NODE : 10
TO NODE : 99
REACH TYPE : CIRCULAR CULVERT
FLOW DIRECTION : POSITIVE AND NEGATIVE FLOWS ALLOWED
TURBO SWITCH : OFF

CULVERT DATA :
SPAN (in): 12.000 RISE (in): 12.000 LENGTH (ft): 150.000
U/S INVERT (ft): 42.820 D/S INVERT (ft): 39.370 MANNING N: .026
ENTRNC LOSS: .500 # OF CULVERTS: 1.000

POSITION A : RECTANGULAR RISER SLOT
CREST EL. (ft): 44.770 CREST LN. (ft): 10.167 OPENING (ft): 999.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

POSITION B : RECTANGULAR RISER SLOT
CREST EL. (ft): 44.360 CREST LN. (ft): 2.000 OPENING (ft): 999.000
WEIR COEF.: 3.200 GATE COEF.: .600 NUMBER OF ELEM.: 1.000

NOTE:

PRE DEVELOPMENT HYDROGRAPHS & ROUTINGS

SCSIIMOD
25 YEAR/24 HOUR

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WALGREENS DRUG STORE #6575 - PRE DEVELOPED - 25 YR/24 HR
APRIL 19, 2002

BASIN NAME	100
NODE NAME	10
TIME INCREMENT (min)	5.00
RAINFALL FILE	SCSIIMOD
RAIN AMOUNT (in)	8.60
STORM DURATION (hrs)	24.00
AREA (ac)	3.56
CURVE NUMBER	60.30
DCIA (%)	.00
TC (mins)	38.50
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
100	5.21	12.00	3.82	

NODAL MIN/MAX/TIME CONDITIONS REPORT

		<-- MINIMUMS -->		<-- MAXIMUMS -->	
NODE ID	PARAMETER	VALUE	TIME (hr)	VALUE	TIME (hr)
10	STAGE (ft):	44.00	8.50	45.05	13.00
	VOLUME (af):	.00	8.50	.29	13.00
	RUNOFF (cfs):	.00	8.50	5.21	12.00
	OFFSITE (cfs):	.00	24.00	.00	24.00
	OTHER (cfs):	.00	24.00	.00	24.00
	OUTFLOW (cfs):	.00	11.50	3.01	12.50
99	STAGE (ft):	40.00	.00	41.00	24.00
	VOLUME (af):	.00	11.75	1.02	24.00
	RUNOFF (cfs):	.00	24.00	.00	24.00
	OFFSITE (cfs):	.00	24.00	.00	24.00
	OTHER (cfs):	.00	11.50	3.01	12.50
	OUTFLOW (cfs):	.00	24.00	.00	24.00

NODAL MAXIMUM CONDITIONS REPORT

			<-- INFLOW -->			
NODE ID	STAGE (ft)	VOLUME (af)	RUNOFF (cfs)	OFFSITE (cfs)	OTHER (cfs)	OUTFLOW (cfs)
10	45.05	.29	5.21	.00	.00	3.01
99	41.00	1.02	.00	.00	3.01	.00

Max allowable out-flow rate

REACH MAXIMUM FLOW REPORT

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
1	12.50	3.01	10	45.02	99	40.52

MEAN ANNUAL

Advanced Interconnected Channel & Pond Routing (adICPR Ver 1.30)
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WALGREENS DRUG STORE #6575 - PRE DEVELOPED - MEAN ANNUAL
APRIL 19, 2002

BASIN NAME	100
NODE NAME	10
TIME INCREMENT (min)	5.00
RAINFALL FILE	MEAN23
RAIN AMOUNT (in)	4.50
STORM DURATION (hrs)	24.00
AREA (ac)	3.56
CURVE NUMBER	60.30
DCIA (%)	.00
TC (mins)	38.50
LAG TIME (hrs)	.00
BASIN STATUS	ONSITE

BASIN	QMX (cfs)	TMX (hrs)	VOL (in)	NOTES
100	1.46	12.17	1.04	

NODAL MIN/MAX/TIME CONDITIONS REPORT

NODE ID	PARAMETER	MINIMUMS VALUE	MINIMUMS TIME (hr)	MAXIMUMS VALUE	MAXIMUMS TIME (hr)
10	STAGE (ft):	44.00	11.25	44.59	13.50
	VOLUME (af):	.00	11.25	.13	13.50
	RUNOFF (cfs):	.00	11.25	1.45	12.25
	OFFSITE (cfs):	.00	24.00	.00	24.00
	OTHER (cfs):	.00	24.00	.00	24.00
	OUTFLOW (cfs):	.00	12.50	.69	13.50
99	STAGE (ft):	40.00	.00	41.00	24.00
	VOLUME (af):	.00	12.50	.22	24.00
	RUNOFF (cfs):	.00	24.00	.00	24.00
	OFFSITE (cfs):	.00	24.00	.00	24.00
	OTHER (cfs):	.00	12.50	.69	13.50
	OUTFLOW (cfs):	.00	24.00	.00	24.00

NODAL MAXIMUM CONDITIONS REPORT

NODE ID	STAGE (ft)	VOLUME (af)	INFLOW RUNOFF (cfs)	INFLOW OFFSITE (cfs)	INFLOW OTHER (cfs)	OUTFLOW (cfs)
10	44.59	.13	1.45	.00	.00	.69
99	41.00	.22	.00	.00	.69	.00

REACH MAXIMUM FLOW REPORT

REACH ID	TIME (hrs)	FLOW (cfs)	FR NODE NAME	STAGE (ft)	TO NODE NAME	STAGE (ft)
1	13.50	.69	10	44.59	99	40.56

SJRWMD PERMIT NO. 97490-1

JESUP'S RESERVE EXISTING CONDITIONS MODELING OF WETLAND OUTFALL

Runoff curve number and runoff

Project:	Jesup's Reserve	By:	EMB	Date:	3/15/2005
Location:	Seminole County	Checked:	JSG	Date:	3/15/2005

Highlight one: [Present] Developed

Highlight one: [Jesup (on-site)] Ondick (off-site)

1. Runoff curve number

soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious, unconnected/connected impervious area ratio)	CN Table 2-2	CN Figure 2-3	CN Figure 2-4	Area ☐ acre ☒ %	Product of CN x area
Myakka and Eau Gallie, B/D	Wood or forest land: good cover	77			37.0	2849
Paola-St. Lucie, A	Wood or forest land: thin stand, poor cover	45			8.0	360
Paola-St. Lucie, A	Open space: poor condition	68			40.0	2720
Pomello, C	Open space: poor condition	86			10.0	860
Pomello, C	Wood or forest land: thin stand, poor cover	77			5.0	385
				Totals ➡	100	7,174

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{7174}{100}$ = 71.74 **Use CN** ➡ **72**

2. Runoff

S = 1000/CN - 10 = 3.89

	Storm #1	Storm #2	Storm #3
Frecuency ..... yr			
Rainfall, P (24 hr) ..... in			
Runoff, Q ..... in			

Runoff curve number and runoff

Project:	Jesup's Reserve	By:	EMB	Date:	3/15/2005
Location:	Seminole County	Checked:	JSG	Date:	3/15/2005

Highlight one: [Present] Developed

Highlight one: [Jesup (on-site)] Ondick (off-site)

1. Runoff curve number

soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious, unconnected/connected impervious area ratio)	CN Table 2-2	CN Figure 2-3	CN Figure 2-4	Area ☐ acre ☒ %	Product of CN x area
Myakka and Eau Gallie, B/D	Wood or forest: good condition	77			28.0	2156
Myakka and Eau Gallie, B/D	Open space: poor condition	89			7.0	623
Paola-St. Lucie, A	Wood or forest: good condition	25			20.0	500
Paola-St. Lucie, A	Wood or forest: poor condition	45			27.0	1215
Tavares-Millhopper, A	Open space: poor condition	68			6.0	408
Impervious	Impervious Land	98			12.0	1176
				Totals ➡	100	6,078

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{6078}{100} = 60.78$$

Use CN ➡ **61**

2. Runoff

$S = 1000/CN - 10 = 6.39$

	Storm #1	Storm #2	Storm #3
Frecuency ..... yr			
Rainfall, P (24 hr) ..... in			
Runoff, Q ..... in			

Runoff curve number and runoff

Project:	Jesup's Reserve	By:	EMB	Date:	3/15/2005
Location:	Seminole County	Checked:	JSG	Date:	3/15/2005

Highlight one: Present | Developed

Highlight one: Jesup (on-site) | Ondick (off-site)

1. Runoff curve number

soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious, unconnected/connected impervious area ratio)	CN Table 2-2	CN Figure 2-3	CN Figure 2-4	Area ☐ acre ☒ %	Product of CN x area
Myakka and Eau Gallie, B/D	Open Space: good condition	80			6.9	552
Paola-St. Lucie, A	Open Space: good condition	39			9.0	351
Pomello, C	Open Space: good condition	74			3.0	222
Impervious	Impervious Land	98			64.6	6,331
Impervious	Impervious Pond Area	100			10.0	1000
Paola-St. Lucie, A	Pervious Pond Area	39			6.5	253.5
				Totals ➡	100	8,709

$$\text{CN (weighted)} = \frac{\text{total product}}{\text{total area}} = \frac{8{,}709}{100} = 87.09$$

Use CN ➡ **87**

2. Runoff

S = 1000/CN - 10 = 1.49

	Storm #1	Storm #2	Storm #3
Frecuency ..... yr			
Rainfall, P (24 hr) ..... in			
Runoff, Q ..... in			

Time of Concentration (TR-55)

Project:	Jesup's Reserve	By:	EMB	Date:	03/15/05
Location:	Seminole County	Checked:	JSG	Date:	03/15/05

Highlight one: **Present** | Developed

Highlight one: **Jesup (on-site)** | Ondick (off-site)

Sheet flow

	Segment ID	1			
1. Surface Description (Table 3-1)		Range			
2. Manning's roughness coeff., n (Table 3-1)		0.13			
3. Flow Length, L (total <= 300 ft)	ft	300			
4. 2-year 24-hour rainfall, P_2	in	5.0			
5. Land slope, s	ft/ft	0.005			
6. $Tt = (0.007 * (nL)^{4/5})/((P_2^{1/2})*(s^{2/5}))$	hr	0.489	+	0.000	= 0.489

Shallow concentrate flow

	Segment ID	2			
7. Surface description (paved or unpaved)		Unpaved	Unpaved		
8. Flow length, L	ft	220	90		
9. Watercourse slope, s	ft/ft	0.003	0.008		
10. Average velocity, V (figure 3-1)	ft/s	0.433	0.483		
11. Tt = (L/(3600*V)	hr	0.141	+	0.052	= 0.193

Channel flow

	Segment ID				
12. Cross section flow area, a	ft^2				
13. Wetted perimeter, Pw	ft				
14. Hydraulic radius, r = a/Pw	ft				
15. Channel slope, s	ft/ft				
16. Manning/s roughness coeff.	n				
17. $V = (1.49*(r^{2/3})*(s^{1/2}))/n$	ft/s				
18. Flow length, L	ft				
19. Tt = (L/3600*V)	hr	0.000	+	0.000	= 0.000

Total

20. Total Tc (add 6,11,and 19)	hr	0.681
21. Total Tc	min	40.88
Plus pipe flow	min	0
Total	**min**	**40.9**
→ **Use**	**min**	**41.0**

Notes:

Time of Concentration (TR-55)

Project:	Jesup's Reserve	By:	EMB	Date:	03/15/05
Location:	Seminole County	Checked:	JSG	Date:	03/15/05

Highlight one: Present | Developed

Highlight one: Jesup (on-site) | Ondick (off-site)

Sheet flow

	Segment ID			
1. Surface Description (Table 3-1)	1			
2. Manning's roughness coeff., n (Table 3-1)	Woods			
3. Flow Length, L (total <= 300 ft) ... ft	0.4			
4. 2-year 24-hour rainfall, P_2 ... in	300			
5. Land slope, s ... ft/ft	5.00			
6. $Tt = (0.007 * (nL)^{4/5})/((P_2^{1/4})*(s^{2/5}))$ ... hr	0.006			
	1.116	+ 0.000	=	1.116

Shallow concentrate flow

	Segment ID			
7. Surface description (paved or unpaved)	2			
8. Flow length, L ... ft	Unpaved			
9. Watercourse slope, s ... ft/ft	453			
10. Average velocity, V (figure 3-1) ... ft/s	0.010			
11. Tt = (L/(3600*V) ... hr	0.50			
	0.252	+ 0.000	=	0.252

Channel flow

	Segment ID			
12. Cross section flow area, a ... ft^2				
13. Wetted perimeter, Pw ... ft				
14. Hydraulic radius, r = a/Pw ... ft				
15. Channel slope, s ... ft/ft				
16. Manning/s roughness coeff. ... n				
17. $V = (1.49*(r^{2/3})*(s^{1/2}))/n$ ... ft/s				
18. Flow length, L ... ft				
19. Tt = (L/3600*V) ... hr	0.000	+ 0.000	=	0.000

Total

20. Total Tc (add 6,11,and 19) ... hr		1.368
21. Total Tc ... min		82.07
Notes: Plus pipe flow ... min		0
Total ... min		**82.1**
→ Use ...min		**82.0**

Time of Concentration (TR-55)

Project:	Jesup's Reserve	By:	EMB	Date:	03/15/05
Location:	Seminole County	Checked:	JSG	Date:	03/15/05

Highlight one: **Present** / Developed

Highlight one: **Jesup (on-site)** / Ondick (off-site)

Sheet flow

	Segment ID	1			
1. Surface Description (Table 3-1)		Grass			
2. Manning's roughness coeff., n (Table 3-1)		0.41			
3. Flow Length, L (total <= 300 ft)	ft	10			
4. 2-year 24-hour rainfall, P_2	in	5.000			
5. Land slope, s	ft/ft	0.015			
6. $Tt = (0.007 * (nL)^{4/5})/((P_2^{1/2})*(s^{2/5}))$	hr	0.052	+ 0.000	=	0.052

Shallow concentrate flow

	Segment ID	2			
7. Surface description (paved or unpaved)		Unpaved			
8. Flow length, L	ft	50			
9. Watercourse slope, s	ft/ft	0.015			
10. Average velocity, V (figure 3-1)	ft/s	0.08			
11. Tt = (L/(3600*V)	hr	0.167	+ 0.000	=	0.167

Channel flow

	Segment ID	Pipe Flow			
12. Cross section flow area, a	ft^2	1.77			
13. Wetted perimeter, Pw	ft	4.71			
14. Hydraulic radius, r = a/Pw	ft	0.376			
15. Channel slope, s	ft/ft	0.002			
16. Manning/s roughness coeff.	n	0.012			
17. $V = (1.49*(r^{2/3})*(s^{1/2}))/n$	ft/s	2.50			
18. Flow length, L	ft	835			
19. Tt = (L/3600*V)	hr	0.093	+ 0.000	=	0.093

Total

20. Total Tc (add 6,11,and 19)	hr	0.312
21. Total Tc	min	18.72
Plus pipe flow	min	0
Total	**min**	**18.7**
→ **Use**	**min**	**19.0**

Notes:

AdICPR Model Results

Hydrologic and Hydraulic Calculations

Jesup's Reserve Pre-Development Conditions
Input Summary

==========
==== Basins ====
==========

Name: Jessup
Group: BASE

Node: Jessup
Type: SCS Unit Hydrograph

Status: Onsite

Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 11.030
Curve Number: 72.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 41.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: Ondick
Group: BASE

Node: Ondick
Type: SCS Unit Hydrograph

Status: Onsite

Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 10.410
Curve Number: 61.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 82.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Includes five parcels at the northwest quadrant of the
intersection of SR 434 and Tuskawilla Road.

==========
==== Hydrology Simulations ====
==========

Name: 100Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Pre\100Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 10.80

Time(hrs)	Print Inc(min)
30.000	5.00

Name: 25Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Pre\25Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.64

Time(hrs)	Print Inc(min)

30.000 5.00

==== Routing Simulations ====

Name: Hydrology Sim:
Filename:

Execute: No Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 0.00 Delta Z Factor: 0.00000
Time Step Optimizer: 0.000
Start Time(hrs): 0.000 End Time(hrs): 0.00
Min Calc Time(sec): 0.0000 Max Calc Time(sec): 0.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)

Group	Run
BASE	Yes

==== Boundary Conditions ====

Jesup's Reserve Pre-Development Conditions
Basin Summary

Basin Name:	Jessup
Group Name:	BASE
Simulation:	100Yr-24Hr
Node Name:	Jessup
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	5.47
Comp Time Inc (min):	5.47
Rainfall File:	Flmod
Rainfall Amount (in):	10.800
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	41.00
Time Shift (hrs):	0.00
Area (ac):	11.030
Vol of Unit Hyd (in):	1.000
Curve Number:	72.000
DCIA (%):	0.000
Time Max (hrs):	12.39
Flow Max (cfs):	27.829
Runoff Volume (in):	7.214
Runoff Volume (ft3):	288851.667

Basin Name:	Ondick
Group Name:	BASE
Simulation:	100Yr-24Hr
Node Name:	Ondick
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	10.93
Comp Time Inc (min):	10.93
Rainfall File:	Flmod
Rainfall Amount (in):	10.800
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	82.00
Time Shift (hrs):	0.00
Area (ac):	10.410
Vol of Unit Hyd (in):	1.000
Curve Number:	61.000
DCIA (%):	0.000
Time Max (hrs):	12.94
Flow Max (cfs):	12.885
Runoff Volume (in):	5.683
Runoff Volume (ft3):	214739.698

Basin Name:	Jessup
Group Name:	BASE
Simulation:	25Yr-24Hr
Node Name:	Jessup
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	5.47
Comp Time Inc (min):	5.47
Rainfall File:	Flmod
Rainfall Amount (in):	8.640
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	41.00
Time Shift (hrs):	0.00
Area (ac):	11.030
Vol of Unit Hyd (in):	1.000
Curve Number:	72.000
DCIA (%):	0.000
Time Max (hrs):	12.39
Flow Max (cfs):	20.235
Runoff Volume (in):	5.256
Runoff Volume (ft3):	210429.379

Basin Name:	Ondick
Group Name:	BASE
Simulation:	25Yr-24Hr
Node Name:	Ondick
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	10.93
Comp Time Inc (min):	10.93
Rainfall File:	Flmod
Rainfall Amount (in):	8.640
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	82.00
Time Shift (hrs):	0.00
Area (ac):	10.410
Vol of Unit Hyd (in):	1.000
Curve Number:	61.000
DCIA (%):	0.000
Time Max (hrs):	12.94
Flow Max (cfs):	8.727
Runoff Volume (in):	3.930
Runoff Volume (ft3):	148492.145

Jesup's Reserve Post-Development Conditions
Input Summary

==========
==== Basins ====
==========

Name: Jessup
Group: BASE

Node: Pond1
Type: SCS Unit Hydrograph

Status: Onsite

Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 11.030
Curve Number: 87.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 19.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Name: Ondick
Group: BASE

Node: Ondick
Type: SCS Unit Hydrograph

Status: Onsite

Unit Hydrograph: Uh256
Rainfall File:
Rainfall Amount(in): 0.000
Area(ac): 10.410
Curve Number: 61.00
DCIA(%): 0.00

Peaking Factor: 256.0
Storm Duration(hrs): 0.00
Time of Conc(min): 82.00
Time Shift(hrs): 0.00
Max Allowable Q(cfs): 999999.000

Includes five parcels at the northwest quadrant of the
intersection of SR 434 and Tuskawilla Road.

==========
==== Nodes ====
==========

Name: Ondick
Group: BASE
Type: Manhole, 1/2 Diameter Grooved

Base Flow(cfs): 0.000
Plunge Factor: 1.00

Init Stage(ft): 35.450
Warn Stage(ft): 43.000

Stage(ft)	Area(ac)

Name: Pond1
Group: BASE
Type: Stage/Area

Base Flow(cfs): 0.000

Init Stage(ft): 41.200
Warn Stage(ft): 44.000

Stage(ft)	Area(ac)
41.200	1.1010
45.000	1.3490

Name: Wetland
Group: BASE
Type: Time/Stage

Base Flow(cfs): 0.000

Init Stage(ft): 35.000
Warn Stage(ft): 35.300

Time(hrs)	Stage(ft)
0.00	35.000
48.00	35.000

==========
==== Operating Tables ====
==========

Name:

Group: BASE

Type: Bottom Clip
Function: Time vs. Depth of Clip

Time(hrs)	Clip Depth(in)

==== Pipes ====

Name: Outfall
Group: BASE
From Node: Ondick
To Node: Wetland
Length(ft): 1319.00
Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 1.00
Exit Loss Coef: 1.00
Bend Loss Coef: 0.50
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Stabilizer Option: None

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	34.770	29.500
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

==== Drop Structures ====

Name: Pond1Outlet
Group: BASE
From Node: Pond1
To Node: Ondick
Length(ft): 564.00
Count: 1
Friction Equation: Average Conveyance
Solution Algorithm: Automatic
Flow: Both
Entrance Loss Coef: 1.000
Exit Loss Coef: 0.500
Outlet Ctrl Spec: Use dc or tw
Inlet Ctrl Spec: Use dn
Solution Incs: 10

	UPSTREAM	DOWNSTREAM
Geometry:	Circular	Circular
Span(in):	30.00	30.00
Rise(in):	30.00	30.00
Invert(ft):	36.300	34.770
Manning's N:	0.012000	0.012000
Top Clip(in):	0.000	0.000
Bot Clip(in):	0.000	0.000

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

*** Weir 1 of 3 for Drop Structure Pond1Outlet ***

Count: 1
Type: Vertical: Mavis
Flow: Both
Geometry: Circular
Span(in): 2.84
Rise(in): 2.84
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 40.700
Control Elev(ft): 41.200

*** Weir 2 of 3 for Drop Structure Pond1Outlet ***

Count: 2
Type: Vertical: Mavis
Flow: Both
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200

Geometry: Rectangular
Span(in): 33.00
Rise(in): 13.12
Orifice Disc Coef: 0.600
Invert(ft): 42.440
Control Elev(ft): 42.440

*** Weir 3 of 3 for Drop Structure Pond1Outlet ***

Count: 1
Type: Horizontal
Flow: Both
Geometry: Rectangular
Span(in): 48.00
Rise(in): 36.00
TABLE
Bottom Clip(in): 0.000
Top Clip(in): 0.000
Weir Disc Coef: 3.200
Orifice Disc Coef: 0.600
Invert(ft): 43.700
Control Elev(ft): 43.700

==== Hydrology Simulations ====

Name: 100Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\100Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 10.80

Time(hrs)	Print Inc(min)
48.000	5.00

Name: 25Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\25Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 8.64

Time(hrs)	Print Inc(min)
48.000	5.00

Name: 3Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\3Yr-24Hr.R32

Override Defaults: Yes
Storm Duration(hrs): 24.00
Rainfall File: Flmod
Rainfall Amount(in): 5.64

Time(hrs)	Print Inc(min)
48.000	5.00

==== Routing Simulations ====

Name: 100Yr-24Hr
Hydrology Sim: 100Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\100Yr-24Hr.I32

Execute: Yes
Restart: No
Patch: No
Alternative: No

Max Delta Z(ft): 1.00
Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000
End Time(hrs): 48.00
Min Calc Time(sec): 0.5000
Max Calc Time(sec): 60.0000
Boundary Stages: 100Yr-24Hr
Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	5.000

Group	Run
BASE	Yes

Name: 25Yr-24Hr Hydrology Sim: 25Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\25Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: 25Yr-24Hr Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	5.000

Group	Run
BASE	Yes

Name: 3Yr-24Hr Hydrology Sim: 3Yr-24Hr
Filename: X:\501-5760-000\T\drainage\ICPR\Post\3Yr-24Hr.I32

Execute: Yes Restart: No Patch: No
Alternative: No

Max Delta Z(ft): 1.00 Delta Z Factor: 0.00500
Time Step Optimizer: 10.000
Start Time(hrs): 0.000 End Time(hrs): 48.00
Min Calc Time(sec): 0.5000 Max Calc Time(sec): 60.0000
Boundary Stages: Boundary Flows:

Time(hrs)	Print Inc(min)
48.000	5.000

Group	Run
BASE	Yes

Boundary Conditions

Name: 25Yr-24Hr Node: Wetland Type: Stage

Time(hrs)	Stage(ft)
0.000	35.230
48.000	35.230

Name: 100Yr-24Hr Node: Wetland Type: Stage

Time(hrs)	Stage(ft)
0.000	35.290
48.000	35.290

Jesup's Reserve Post-Development Conditions
Basin Summary

Basin Name:	Jessup
Group Name:	BASE
Simulation:	100Yr-24Hr
Node Name:	Pond1
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	2.53
Comp Time Inc (min):	2.53
Rainfall File:	Flmod
Rainfall Amount (in):	10.800
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	19.00
Time Shift (hrs):	0.00
Area (ac):	11.030
Vol of Unit Hyd (in):	1.000
Curve Number:	87.000
DCIA (%):	0.000
Time Max (hrs):	12.12
Flow Max (cfs):	51.588
Runoff Volume (in):	9.188
Runoff Volume (ft3):	367879.063

Basin Name:	Ondick
Group Name:	BASE
Simulation:	100Yr-24Hr
Node Name:	Ondick
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	10.93
Comp Time Inc (min):	10.93
Rainfall File:	Flmod
Rainfall Amount (in):	10.800
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	82.00
Time Shift (hrs):	0.00
Area (ac):	10.410
Vol of Unit Hyd (in):	1.000
Curve Number:	61.000
DCIA (%):	0.000
Time Max (hrs):	12.94
Flow Max (cfs):	12.885
Runoff Volume (in):	5.683
Runoff Volume (ft3):	214739.698

Basin Name:	Jessup
Group Name:	BASE
Simulation:	25Yr-24Hr
Node Name:	Pond1
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	2.53
Comp Time Inc (min):	2.53
Rainfall File:	Flmod
Rainfall Amount (in):	8.640
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	19.00
Time Shift (hrs):	0.00
Area (ac):	11.030
Vol of Unit Hyd (in):	1.000
Curve Number:	87.000
DCIA (%):	0.000
Time Max (hrs):	12.12
Flow Max (cfs):	40.164
Runoff Volume (in):	7.070
Runoff Volume (ft3):	283075.943

Basin Name:	Ondick
Group Name:	BASE
Simulation:	25Yr-24Hr
Node Name:	Ondick
Basin Type:	SCS Unit Hydrograph
Unit Hydrograph:	Uh256
Peaking Fator:	256.0
Spec Time Inc (min):	10.93
Comp Time Inc (min):	10.93
Rainfall File:	Flmod
Rainfall Amount (in):	8.640
Storm Duration (hrs):	24.00
Status:	Onsite
Time of Conc (min):	82.00
Time Shift (hrs):	0.00
Area (ac):	10.410
Vol of Unit Hyd (in):	1.000
Curve Number:	61.000
DCIA (%):	0.000
Time Max (hrs):	12.94
Flow Max (cfs):	8.727
Runoff Volume (in):	3.930
Runoff Volume (ft3):	148492.145

Jesup's Reserve Post-Development Conditions
Node Maximums

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
Ondick	BASE	100Yr-24Hr	12.94	42.712	43.000	0.0090	195	12.91	31.374	12.93	31.364
Pond1	BASE	100Yr-24Hr	13.03	44.260	44.000	0.0050	56660	12.17	50.821	12.23	21.173
Wetland	BASE	100Yr-24Hr	0.00	35.290	35.300	0.2900	429	12.93	31.364	0.00	0.000
Ondick	BASE	25Yr-24Hr	12.84	41.180	43.000	0.0076	195	12.82	28.141	12.84	28.140
Pond1	BASE	25Yr-24Hr	12.78	43.561	44.000	0.0050	54671	12.17	39.606	12.56	19.941
Wetland	BASE	25Yr-24Hr	0.00	35.230	35.300	0.2300	429	12.84	28.140	0.00	0.000

MAX ALLOWABLE 25YR-24HR STORM DISCHARGE RATE

Jesup's Reserve Post-Development Conditions
Link Maximums

Name	Group	Simulation	Max Time Flow hrs	Max Flow cfs	Max Delta Q cfs	Max Time US Stage hrs	Max US Stage ft	Max Time DS Stage hrs	Max DS Stage ft
Outfall	BASE	100Yr-24Hr	12.93	31.364	1.718	12.94	42.712	0.00	35.290
Pond1Outlet	BASE	100Yr-24Hr	12.23	21.173	0.050	13.03	44.260	12.94	42.712
Outfall	BASE	25Yr-24Hr	12.84	28.140	1.913	12.84	41.180	0.00	35.230
Pond1Outlet	BASE	25Yr-24Hr	12.56	19.941	0.054	12.78	43.561	12.84	41.180

Interconnected Channel and Pond Routing Model (ICPR) ©2002 Streamline Technologies, Inc.

APPENDIX C

Post- Development Drainage Calculations

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-A"

Basin Area = 0.83 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.41	A	Cover > 75%	39	16.1
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.42	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	40.7
			WEIGHTED CURVE NUMBER =	**68.6**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-B"

Basin Area = 1.12 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.46	A	Cover > 75%	39	18.1
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.34	A,B,C,D	Impervious (Pond)	98	33.6
0.31	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	30.5
			WEIGHTED CURVE NUMBER =	**73.5**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-C"

Basin Area = 2.97 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.40	A	Cover > 75%	39	15.5
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
2.58	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	252.4
			WEIGHTED CURVE NUMBER =	**90.1**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-D"

Basin Area = 0.88 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.20	A	Cover > 75%	39	7.9
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.68	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	66.7
			WEIGHTED CURVE NUMBER =	**84.5**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-E"

Basin Area = 0.49 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.11	A	Cover > 75%	39	4.3
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.38	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	36.9
			WEIGHTED CURVE NUMBER =	**84.6**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-F"

Basin Area = 0.95 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.29	A	Cover > 75%	39	11.2
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.67	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	65.2
			WEIGHTED CURVE NUMBER =	**80.2**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-G.1"

Basin Area = 0.67 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
	A	Cover > 75%	39	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.67	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	65.3
			WEIGHTED CURVE NUMBER =	**98.0**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-G.2"

Basin Area = 0.56 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
	A	Cover > 75%	39	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.56	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	54.8
			WEIGHTED CURVE NUMBER =	**98.0**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-H"

Basin Area = 0.79 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.25	A	Cover > 75%	39	9.8
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.54	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	52.5
			WEIGHTED CURVE NUMBER =	**79.1**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-I"

Basin Area = 0.44 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.10	A	Cover > 75%	39	3.9
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.34	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	33.8
			WEIGHTED CURVE NUMBER =	**84.8**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

CURVE NUMBER WORKSHEET

WINTER SPRINGS MARKETPLACE POST-DEVELOPMENT BASIN "BASIN-J"

Basin Area = 0.53 acres

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.08	A	Cover > 75%	39	3.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	B	Cover < 50%	79	0.0
	B	Cover 50% to 75%	69	0.0
	B	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	B	Cover < 50%	66	0.0
	B	Cover 50% to 75%	60	0.0
	B	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.00	A,B,C,D	Impervious (Pond)	98	0.0
0.45	A,B,C,D	Impervious (Pavement, Concrete, Roofs)	98	44.5
			WEIGHTED CURVE NUMBER =	**89.5**

WEIGHTED CURVE NUMBER = SUM (CN*AREA) / TOTAL AREA

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION POND "SMA-A" (COMBINED VOLUME)

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**Online**

Basin A Area =	0.83	acres
Basin G.1 Area =	0.67	acres
Total Basin Area =	1.49	acres
Basin A Impervious Area =	0.42	acres
Basin G.1 Impervious Area =	0.67	acres
Total Impervious Area =	1.08	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.06	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.11	acre-ft.
PLUS		
Online TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.06	acre-ft.
OR		
*Nutrient Removal = **1.165"** of runoff from drainage area = [(Basin Area-NWL Area)(1.165")]/12" =	0.14	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.17**	**acre-ft.**
	7,614	**CF**
Required Treatment Volume at Elevation =	45.42	ft
Provided Treatment Volume =	**0.21**	**acre-ft.**
	9,021	**CF**
Provided Treatment Volume at Elevation =	45.60	ft

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	46.5	3	9,156	0.210	15,984	0.367
	45.5	2	6,360	0.146	8,226	0.189
	44.5	1	3,966	0.091	3,063	0.070
BOTTOM	43.5	0	2,159	0.050	0	0.000

* Slopes > Elev. 43.5 ft (4:1)

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION POND "SMA-A.1"

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	46.5	3	6,112	0.140	11,368	0.261
	45.5	2	4,457	0.102	6,084	0.140
	44.5	1	2,967	0.068	2,372	0.054
BOTTOM	43.5	0	1,776	0.041	0	0.000

* Slopes > Elev. 43.5 ft (4:1)

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION POND "SMA-A.2"

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	46.5	3	3,044	0.070	4,616	0.106
	45.5	2	1,903	0.044	2,142	0.049
	44.5	1	999	0.023	691	0.016
BOTTOM	43.5	0	383	0.009	0	0.000

* Slopes > Elev. 43.5 ft (4:1)

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

WET DETENTION PROPOSED POND SMA-B

Littoral Zone OR Pre-Treatment Provided?	**YES**
Discharge Directly to Class I, II, III or OFW?	**NO**

Basin B Area =	1.12	acres
Basin G.2 Area =	0.56	acres
Total Basin Area =	1.68	acres
Basin B Impervious Area =	0.31	acres
Basin G.2 Impervious Area =	0.56	acres
Total Impervious Area (Excluding pond area) =	0.87	acres
TV = 1" of runoff over site = [(Basin Area)(1")]/12" =	0.14	acre-ft.
OR		
TV = 2.5" of runoff from imp. area = [(Imp Area)(2.5")]/12" =	0.18	acre-ft.

TOTAL REQUIRED TREATMENT VOLUME =	**0.18**	**acre-ft.**
	7,902	**CF**
Required Treatment Volume at Elevation =	41.01	ft
1/2 Required Treatment Volume =	0.09	acre-ft.
1/2 Required Treatment Volume at Elevation =	40.75	ft

Provided Treatment Volume =	**1.02**	**acre-ft.**
	44,608	**CF**
Provided Treatment Volume at Elevation =	43.00	ft

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	45	4.5	26,001	0.597	91,417	2.10
	44	3.5	23,385	0.537	66,724	1.53
	43	2.5	20,848	0.479	44,608	1.02
	42	1.5	18,398	0.422	24,985	0.57
	41	0.5	16,066	0.369	7,753	0.18
NWL	40.5	0	14,945	0.343	0	0.00
	39.5	1	12,218	0.280	13,582	0.31
	38.5	2	9,696	0.223	24,539	0.56
	37.5	3	8,742	0.201	33,758	0.77
	36.5	4	7,820	0.180	42,039	0.97
	35.5	5	6,928	0.159	49,413	1.13
	34.5	6	6,075	0.139	55,914	1.28
	33.5	7	5,262	0.121	61,583	1.41
	32.5	8	4,488	0.103	66,458	1.53
	31.5	9	3,758	0.086	70,581	1.62
	30.5	10	3,112	0.071	74,016	1.70
	29.5	11	2,553	0.059	76,848	1.76
BOTTOM	28.5	12	2,061	0.047	79,155	1.82

* Slopes > Elev. 40.5 ft (5:1), < Elev. 40.5 ft (2:1)

Mean Depth =	**5.30 ft**

REQUIRED PERMANENT POOL VOLUME

WET DETENTION PROPOSED POND SMA-B

Littoral Zone OR Pre-Treatment Provided?	**YES**
Discharge Directly to Class I, II, III or OFW?	**NO**

PPV = (DA*C*R*RT)/(WS* CF)

POND SMA-B

DA = Drainage Area =	1.68	acres
C = Runoff Coefficient =	0.550	
R = Wet Season Rainfall Depth =	31.0	inches
RT = Residence Time =	14	days
WS = Wet Season =	153	days
CF = Conversion Factor =	12	in/ft
Required PPV	0.22	ac-ft
additional 50% for no littoral Zone	N/A	ac-ft
additional 50% for OFW discharge	N/A	ac-ft

PPV Required	**0.22 ac-ft**
PPV Provided	**1.82 ac-ft**

Runoff Coefficient Calculation

	AREA (AC)	RUNOFF COEFFICIENT
IMPERVIOUS AREA	0.87	0.90
PERVIOUS AREA	0.46	0.30

C = [(Impervious Area)x(0.90) + (Pervious Area)x(0.30)] / (Total Area)

RUNOFF COEFFICIENT =	0.550

DRAWDOWN CALCULATION

WET DETENTION PROPOSED POND SMA-B

Q = TV / 2 t CF = 0.041 CFS

WHERE:	TV = TREATMENT VOLUME =	7902	CF
	t = RECOVERY TIME =	27	HrS
	CF = CONV FACTOR =	3600	sec/Hr

$H = (H_1 + H_2) / 2$ = 0.38 Ft.

WHERE:	H_1 = DEPTH OF TOTAL TREATMENT VOLUME =	0.51	Ft.
	H_2 = DEPTH OF HALF THE TREATMENT VOLUME =	0.25	Ft.

ORIFICE

$Q = C A (2 g h)^{1/2}$ ORIFICE FLOW EQUATION

$A = Q / C (2 g H)^{1/2}$ = 0.01 SF

WHERE:	C = ORIFICE COEFFICIENT =	0.6	
	g = CONSTANT =	32.2	Ft/S^2
	H = HEAD =	0.38	Ft.
	Q = RATE OF DISCHARGE =	0.041	CFS

THEREFORE: CALCULATED ORIFICE DIAMETER

$D = (4 A / PI)^{1/2}$ = **1.58** INCHES **Min. = 2.75 inches**

PROVIDED = 3.0 INCHES

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED EXFILTRATION TRENCH C

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin C Area =	2.97	acres
Basin C Impervious Area =	2.58	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.12	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.27	acre-ft.
PLUS		
ne TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.12	acre-ft.
OR		
*Nutrient Removal = **1.396"** of runoff from drainage area = [(Basin Area-NWL Area)(**1.396"**)]/12" =	0.35	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.39** **17,082**	**acre-ft.** **CF**

*See BMPTrains analysis for required inches over catchment area.

**0.35-ac-ft of volume provided within Exfiltration Trench C system, remainder of the 0.39-ac-ft of required volume provided within interconnected exfiltration system SMA-G.

SMA-C (COMBINED) STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Elevation nutrient volume is provided:	43.33	ft.
Required Nutrient Treatment Volume:	0.39	ac.ft.
Provided Nutrient Removal Volume:	0.35	ac.ft.

			PIPE		STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	43.58	1.58	0.00	0.0	0.0	0.0	16,579.2	0.381
	43.58	1.58	0.00	0.0	0.0	0.0	16,579.2	0.381
PIPE	43.58	1.58	0.04	141.2	196.3	337.5	16,579.2	0.381
	43.50	1.50	0.07	251.6	163.2	414.8	16,241.7	0.373
	43.42	1.42	0.09	437.1	319.0	756.0	15,827.0	0.363
	43.33	1.33	0.10	577.5	276.9	854.3	15,070.9	0.346
	43.25	1.25	0.11	666.9	250.0	917.0	14,216.6	0.326
	43.17	1.17	0.12	731.9	230.5	962.5	13,299.6	0.305
	43.08	1.08	0.13	779.7	216.2	995.9	12,337.2	0.283
	43.00	1.00	0.13	813.5	206.1	1,019.5	11,341.3	0.260
	42.92	0.92	0.13	835.2	199.6	1,034.7	10,321.7	0.237
	42.83	0.83	0.13	845.8	196.4	1,042.2	9,287.0	0.213
	42.75	0.75	0.13	845.9	196.4	1,042.2	8,244.8	0.189
	42.67	0.67	0.13	835.3	199.5	1,034.8	7,202.6	0.165
	42.58	0.58	0.13	813.8	206.0	1,019.7	6,167.7	0.142
	42.50	0.50	0.12	780.3	216.0	996.3	5,148.0	0.118
	42.42	0.42	0.11	733.3	230.1	963.4	4,151.7	0.095
	42.33	0.33	0.10	670.0	249.1	919.1	3,188.2	0.073
	42.25	0.25	0.09	584.9	274.7	859.5	2,269.1	0.052
	42.17	0.17	0.07	465.8	310.4	776.2	1,409.6	0.032
	42.08	0.08	0.04	261.8	371.6	633.4	633.4	0.015
	42.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

SMA-C (17" CMP) STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	8,458	sf
Pipe Diameter =	17	in
Pipe Invert =	42.00	ft
Total Pipe Length =	3,218	ft
Stone Porosity =	30	%
Stone Above Pipe =	0	in
Stone Below Invert =	0	in

			PIPE				STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Section Depth	Section Area	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	43.42	1.42	1.42	1.58	0.00	0.0	0.0	0.0	7,144.9	0.164
	43.42	1.42	1.42	1.58	0.00	0.0	0.0	0.0	7,144.9	0.164
PIPE	43.42	1.42	1.42	1.58	0.04	120.6	175.2	295.9	7,144.9	0.164
	43.33	1.33	1.33	1.54	0.07	214.3	147.2	361.4	6,849.0	0.157
	43.25	1.25	1.25	1.47	0.08	268.4	130.9	399.4	6,487.6	0.149
	43.17	1.17	1.17	1.39	0.10	306.8	119.4	426.2	6,088.2	0.140
	43.08	1.08	1.08	1.29	0.10	334.9	111.0	445.8	5,662.0	0.130
	43.00	1.00	1.00	1.19	0.11	355.2	104.9	460.1	5,216.2	0.120
	42.92	0.92	0.92	1.08	0.11	369.0	100.8	469.7	4,756.1	0.109
	42.83	0.83	0.83	0.96	0.12	377.0	98.3	475.3	4,286.4	0.098
	42.75	0.75	0.75	0.85	0.12	379.6	97.6	477.2	3,811.1	0.087
	42.67	0.67	0.67	0.73	0.12	377.0	98.3	475.3	3,333.9	0.077
	42.58	0.58	0.58	0.61	0.11	369.0	100.8	469.7	2,858.5	0.066
	42.50	0.50	0.50	0.50	0.11	355.2	104.9	460.1	2,388.8	0.055
	42.42	0.42	0.42	0.39	0.10	334.9	111.0	445.8	1,928.7	0.044
	42.33	0.33	0.33	0.28	0.10	306.8	119.4	426.2	1,482.9	0.034
	42.25	0.25	0.25	0.19	0.08	268.4	130.9	399.4	1,056.7	0.024
	42.17	0.17	0.17	0.10	0.07	214.3	147.2	361.4	657.3	0.015
	42.08	0.08	0.08	0.04	0.04	120.6	175.3	295.9	295.9	0.007
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

SMA-C (19" CMP) STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	9,547	sf
Pipe Diameter =	19	in
Pipe Invert =	42.00	ft
Total Pipe Length =	3,555	ft
Stone Porosity =	30	%
Stone Above Pipe =	0	in
Stone Below Invert =	0	in

			PIPE				STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Section Depth	Section Area	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	43.58	1.58	1.58	1.97	0.00	0.0	0.0	0.0	9,434.3	0.217
	43.58	1.58	1.58	1.97	0.00	0.0	0.0	0.0	9,434.3	0.217
PIPE	43.58	1.58	1.58	1.97	0.04	141.2	196.3	337.5	9,434.3	0.217
	43.50	1.50	1.50	1.93	0.07	251.6	163.2	414.8	9,096.8	0.209
	43.42	1.42	1.42	1.86	0.09	316.4	143.7	460.2	8,682.1	0.199
	43.33	1.33	1.33	1.77	0.10	363.2	129.7	492.9	8,221.9	0.189
	43.25	1.25	1.25	1.67	0.11	398.5	119.1	517.6	7,729.0	0.177
	43.17	1.17	1.17	1.56	0.12	425.2	111.1	536.3	7,211.4	0.166
	43.08	1.08	1.08	1.44	0.13	444.8	105.2	550.0	6,675.1	0.153
	43.00	1.00	1.00	1.31	0.13	458.3	101.2	559.5	6,125.1	0.141
	42.92	0.92	0.92	1.18	0.13	466.2	98.8	565.0	5,565.6	0.128
	42.83	0.83	0.83	1.05	0.13	468.8	98.0	566.9	5,000.6	0.115
	42.75	0.75	0.75	0.92	0.13	466.2	98.8	565.0	4,433.7	0.102
	42.67	0.67	0.67	0.79	0.13	458.3	101.2	559.5	3,868.7	0.089
	42.58	0.58	0.58	0.66	0.13	444.8	105.2	550.0	3,309.2	0.076
	42.50	0.50	0.50	0.53	0.12	425.2	111.1	536.3	2,759.2	0.063
	42.42	0.42	0.42	0.41	0.11	398.5	119.1	517.6	2,222.9	0.051
	42.33	0.33	0.33	0.30	0.10	363.2	129.7	492.9	1,705.3	0.039
	42.25	0.25	0.25	0.20	0.09	316.4	143.7	460.2	1,212.4	0.028
	42.17	0.17	0.17	0.11	0.07	251.6	163.2	414.8	752.3	0.017
	42.08	0.08	0.08	0.04	0.04	141.2	196.3	337.5	337.5	0.008
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED EXFILTRATION TRENCH D

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin D Area =	0.88	acres
Impervious Area =	0.68	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.04	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.07	acre-ft.
PLUS		
e TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.04	acre-ft.
OR		
*Nutrient Removal = **1.469"** of runoff from drainage area = [(Basin Area-NWL Area)(**1.469"**)]/12" =	0.11	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.11** **4,710**	**acre-ft.** **CF**

*See BMPTrains analysis for required inches over catchment area.

SMA-D STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	4,422	sf
Pipe Diameter =	24	in
Pipe Invert =	42.00	ft
Total Pipe Length =	1,287	ft
Stone Porosity =	30	%
Stone Above Pipe =		in
Stone Below Invert =	0	in

Elevation nutrient volume is provided:	43.66	ft.
Required Nutrient Treatment Volume:	0.11	ac.ft.
Provided Nutrient Removal Volume:	0.11	ac.ft.

			PIPE				STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Section Depth	Section Area	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	44.00	2.00	2.00	3.14	0.00	0.0	0.0	0.0	5,482.1	0.126
	44.00	2.00	2.00	3.14	0.00	0.0	0.0	0.0	5,482.1	0.126
PIPE	44.00	2.00	2.00	3.14	0.04	57.6	93.3	150.9	5,482.1	0.126
	43.92	1.92	1.92	3.10	0.08	103.2	79.6	182.8	5,331.2	0.122
	43.83	1.83	1.83	3.02	0.10	130.7	71.3	202.0	5,148.4	0.118
	43.75	1.75	1.75	2.91	0.12	151.2	65.2	216.4	4,946.3	0.114
	43.67	1.67	1.67	2.80	0.13	167.2	60.4	227.6	4,730.0	0.109
	43.58	1.58	1.58	2.67	0.14	180.1	56.5	236.6	4,502.4	0.103
	43.50	1.50	1.50	2.53	0.15	190.5	53.4	243.9	4,265.7	0.098
	43.42	1.42	1.42	2.38	0.15	198.7	50.9	249.6	4,021.9	0.092
	43.33	1.33	1.33	2.22	0.16	205.0	49.0	254.1	3,772.2	0.087
	43.25	1.25	1.25	2.07	0.16	209.6	47.6	257.3	3,518.2	0.081
	43.17	1.17	1.17	1.90	0.17	212.7	46.7	259.4	3,260.9	0.075
	43.08	1.08	1.08	1.74	0.17	214.2	46.3	260.5	3,001.5	0.069
	43.00	1.00	1.00	1.57	0.17	214.2	46.3	260.5	2,741.0	0.063
	42.92	0.92	0.92	1.40	0.17	212.7	46.7	259.4	2,480.6	0.057
	42.83	0.83	0.83	1.24	0.16	209.6	47.6	257.3	2,221.2	0.051
	42.75	0.75	0.75	1.08	0.16	205.0	49.0	254.1	1,963.9	0.045
	42.67	0.67	0.67	0.92	0.15	198.7	50.9	249.6	1,709.8	0.039
	42.58	0.58	0.58	0.76	0.15	190.5	53.4	243.9	1,460.2	0.034
	42.50	0.50	0.50	0.61	0.14	180.1	56.5	236.6	1,216.3	0.028
	42.42	0.42	0.42	0.47	0.13	167.2	60.4	227.6	979.7	0.022
	42.33	0.33	0.33	0.34	0.12	151.2	65.2	216.4	752.1	0.017
	42.25	0.25	0.25	0.23	0.10	130.7	71.3	202.0	535.7	0.012
	42.17	0.17	0.17	0.13	0.08	103.2	79.6	182.8	333.7	0.008
	42.08	0.08	0.08	0.04	0.04	57.6	93.3	150.9	150.9	0.003
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED EXFILTRATION TRENCH E

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin E Area =	0.49	acres
Impervious Area =	0.38	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.04	acre-ft.
PLUS		
e TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
*Nutrient Removal = **2.261"** of runoff from drainage area = [(Basin Area-NWL Area)(**2.261"**)]/12" =	0.09	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.09**	**acre-ft.**
	3,999	**CF**

*See BMPTrains analysis for required inches over catchment area.

SMA-E STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	5,960	sf
Pipe Diameter =	23	in
Pipe Invert =	42.00	ft
Total Pipe Length =	1,856	ft
Stone Porosity =	30	%
Stone Above Pipe =	0	in
Stone Below Invert =	0	in

Elevation nutrient volume is provided:	43.06	ft.
Required Nutrient Treatment Volume:	0.09	ac.ft.
Provided Nutrient Removal Volume:	0.09	ac.ft.

	Elevation (ft)	System Depth (ft)	PIPE Section Depth	PIPE Section Area	PIPE Incr. Area (cf)	PIPE Incr. Volume (cf)	STONE Incr. Volume (cf)	SYSTEM Incr. Volume (cf)	SYSTEM Cummulative Volume (cf)	SYSTEM Cummulative Volume (ac.-ft.)
STONE	43.92	1.92	1.92	2.89	0.00	0.0	0.0	0.0	7,175.4	0.165
	43.92	1.92	1.92	2.89	0.00	0.0	0.0	0.0	7,175.4	0.165
PIPE	43.92	1.92	1.92	2.89	0.04	81.3	124.6	205.9	7,175.4	0.165
	43.83	1.83	1.83	2.84	0.08	145.6	105.3	250.9	6,969.5	0.160
	43.75	1.75	1.75	2.76	0.10	184.1	93.8	277.9	6,718.6	0.154
	43.67	1.67	1.67	2.66	0.11	212.7	85.2	297.9	6,440.7	0.148
	43.58	1.58	1.58	2.55	0.13	235.0	78.5	313.5	6,142.8	0.141
	43.50	1.50	1.50	2.42	0.14	252.7	73.2	325.9	5,829.3	0.134
	43.42	1.42	1.42	2.29	0.14	266.8	69.0	335.8	5,503.4	0.126
	43.33	1.33	1.33	2.14	0.15	277.8	65.7	343.5	5,167.6	0.119
	43.25	1.25	1.25	1.99	0.15	286.1	63.2	349.2	4,824.1	0.111
	43.17	1.17	1.17	1.84	0.16	291.8	61.5	353.3	4,474.9	0.103
	43.08	1.08	1.08	1.68	0.16	295.2	60.4	355.7	4,121.6	0.095
	43.00	1.00	1.00	1.52	0.16	296.3	60.1	356.4	3,765.9	0.086
	42.92	0.92	0.92	1.36	0.16	295.2	60.4	355.7	3,409.5	0.078
	42.83	0.83	0.83	1.20	0.16	291.8	61.5	353.3	3,053.9	0.070
	42.75	0.75	0.75	1.05	0.15	286.1	63.2	349.2	2,700.6	0.062
	42.67	0.67	0.67	0.89	0.15	277.8	65.7	343.5	2,351.3	0.054
	42.58	0.58	0.58	0.74	0.14	266.8	69.0	335.8	2,007.9	0.046
	42.50	0.50	0.50	0.60	0.14	252.7	73.2	325.9	1,672.1	0.038
	42.42	0.42	0.42	0.46	0.13	235.0	78.5	313.5	1,346.2	0.031
	42.33	0.33	0.33	0.34	0.11	212.7	85.2	297.9	1,032.7	0.024
	42.25	0.25	0.25	0.22	0.10	184.1	93.8	277.9	734.8	0.017
	42.17	0.17	0.17	0.12	0.08	145.6	105.3	250.9	456.9	0.010
	42.08	0.08	0.08	0.04	0.04	81.3	124.6	205.9	205.9	0.005
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED EXFILTRATION TRENCH F

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin F Area =	0.95	acres
Impervious Area =	0.67	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.04	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.07	acre-ft.
PLUS		
e TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.04	acre-ft.
OR		
*Nutrient Removal = **1.369"** of runoff from drainage area = [(Basin Area-NWL Area)(**1.369"**)]/12" =	0.11	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.11**	**acre-ft.**
	4,749	**CF**

*See BMPTrains analysis for required inches over catchment area.
**0.02 ac-ft of nutrient removal volume provided within Exfiltration Trench F system.
Remainder of the 0.11-ac-ft of volume provided within wet detention pond SMA-B.

SMA-F STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	4,551	sf
Pipe Diameter =	37	in
Pipe Invert =	41.50	ft
Total Pipe Length =	1,069	ft
Stone Porosity =	30	%
Stone Above Pipe =	0	in
Stone Below Invert =	0	in

Elevation nutrient volume is provided:	43.00	ft.
Required Nutrient Treatment Volume:	0.11	ac.ft.
Provided Nutrient Removal Volume:	0.11	ac.ft.

			PIPE				STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Section Depth	Section Area	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	44.58	3.08	3.08	7.47	0.00	0.0	0.0	0.0	9,797.8	0.22
	44.58	3.08	3.08	7.47	0.00	0.0	0.0	0.0	9,797.8	0.22
PIPE	44.58	3.08	3.08	7.47	0.06	59.7	95.9	155.6	9,797.8	0.22
	44.50	3.00	3.00	7.41	0.10	107.8	81.4	189.2	9,642.3	0.22
	44.42	2.92	2.92	7.31	0.13	137.6	72.5	210.1	9,453.0	0.22
	44.33	2.83	2.83	7.18	0.15	160.6	65.6	226.2	9,242.9	0.21
	44.25	2.75	2.75	7.03	0.17	179.5	59.9	239.4	9,016.7	0.21
	44.17	2.67	2.67	6.86	0.18	195.4	55.2	250.5	8,777.3	0.20
	44.08	2.58	2.58	6.68	0.20	209.0	51.1	260.1	8,526.8	0.20
	44.00	2.50	2.50	6.49	0.21	220.8	47.5	268.3	8,266.7	0.19
	43.92	2.42	2.42	6.28	0.22	231.1	44.5	275.5	7,998.3	0.18
	43.83	2.33	2.33	6.06	0.22	240.0	41.8	281.7	7,722.8	0.18
	43.75	2.25	2.25	5.84	0.23	247.7	39.5	287.1	7,441.1	0.17
	43.67	2.17	2.17	5.61	0.24	254.2	37.5	291.7	7,153.9	0.16
	43.58	2.08	2.08	5.37	0.24	259.8	35.8	295.7	6,862.2	0.16
	43.50	2.00	2.00	5.13	0.25	264.5	34.4	298.9	6,566.5	0.15
	43.42	1.92	1.92	4.88	0.25	268.2	33.3	301.5	6,267.6	0.14
	43.33	1.83	1.83	4.63	0.25	271.0	32.5	303.5	5,966.1	0.14
	43.25	1.75	1.75	4.37	0.26	273.1	31.9	304.9	5,662.6	0.13
	43.17	1.67	1.67	4.12	0.26	274.3	31.5	305.8	5,357.7	0.12
	43.08	1.58	1.58	3.86	0.26	274.7	31.4	306.0	5,051.9	0.12
	43.00	1.50	1.50	3.60	0.26	274.3	31.5	305.8	4,745.9	0.11
	42.92	1.42	1.42	3.35	0.26	273.1	31.9	304.9	4,440.1	0.10
	42.83	1.33	1.33	3.09	0.25	271.0	32.5	303.5	4,135.2	0.09
	42.75	1.25	1.25	2.84	0.25	268.2	33.3	301.5	3,831.7	0.09
	42.67	1.17	1.17	2.59	0.25	264.5	34.4	298.9	3,530.2	0.08
	42.58	1.08	1.08	2.34	0.24	259.8	35.8	295.7	3,231.3	0.07
	42.50	1.00	1.00	2.10	0.24	254.2	37.5	291.7	2,935.7	0.07
	42.42	0.92	0.92	1.86	0.23	247.7	39.5	287.1	2,643.9	0.06
	42.33	0.83	0.83	1.63	0.22	240.0	41.8	281.7	2,356.8	0.05
	42.25	0.75	0.75	1.40	0.22	231.1	44.5	275.5	2,075.0	0.05
	42.17	0.67	0.67	1.19	0.21	220.8	47.5	268.3	1,799.5	0.04
	42.08	0.58	0.58	0.98	0.20	209.0	51.1	260.1	1,531.2	0.04
	42.00	0.50	0.50	0.79	0.18	195.4	55.2	250.5	1,271.1	0.03
	41.92	0.42	0.42	0.60	0.17	179.5	59.9	239.4	1,020.5	0.02
	41.83	0.33	0.33	0.44	0.15	160.6	65.6	226.2	781.2	0.02
	41.75	0.25	0.25	0.29	0.13	137.6	72.5	210.1	554.9	0.01
	41.67	0.17	0.17	0.16	0.10	107.8	81.4	189.2	344.8	0.01
	41.58	0.08	0.08	0.06	0.06	59.7	95.9	155.6	155.6	0.00
	41.50	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00
STONE	41.50	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00
	41.50	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED EXFILTRATION TRENCH G

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin H Area =	0.79	acres
Basin I Area =	0.44	acres
Basin J Area =	0.53	acres
Total Basin Area =	1.76	acres
Basin H ImperviousArea =	0.54	acres
Basin I Impervious Area =	0.34	acres
Basin J Impervious Area =	0.45	acres
Total Impervious Area (Excluding Pond Area) =	1.33	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.07	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.14	acre-ft.
PLUS		
e TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.07	acre-ft.
TOTAL REQUIRED TREATMENT VOLUME =	**0.21**	**acre-ft.**
	9,251	**CF**

*See BMPTrains analysis for required inches over catchment area.

SMA-G STAGE VERSUS STORAGE RELATIONSHIP

Winter Springs Marketplace
Winter Springs, FL
CES#: 653,316

Overall System Footprint =	19,282	sf
Pipe Diameter =	27	in
Pipe Invert =	42.00	ft
Total Pipe Length =	5,797	ft
Stone Porosity =	30	%
Stone Above Pipe =	0	in
Stone Below Invert =	0	in

Elevation nutrient volume is provided:	43.33	ft.
Required Nutrient Treatment Volume:	0.25	ac.-ft.
Provided Nutrient Removal Volume:	0.40	ac.-ft.

			PIPE				STONE	SYSTEM		
	Elevation (ft)	System Depth (ft)	Section Depth	Section Area	Incr. Area (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Incr. Volume (cf)	Cummulative Volume (cf)	Cummulative Volume (ac.-ft.)
STONE	44.25	2.25	2.25	3.98	0.00	0.0	0.0	0.0	29,150.6	0.669
	44.25	2.25	2.25	3.98	0.00	0.0	0.0	0.0	29,150.6	0.669
	44.25	2.25	2.25	3.98	0.05	275.8	399.3	675.1	29,150.6	0.669
	44.17	2.17	2.17	3.93	0.09	495.3	333.5	828.8	28,475.5	0.654
	44.08	2.08	2.08	3.84	0.11	628.9	293.4	922.3	27,646.7	0.635
	44.00	2.00	2.00	3.73	0.13	729.4	263.2	992.6	26,724.4	0.614
	43.92	1.92	1.92	3.61	0.14	809.6	239.2	1,048.8	25,731.8	0.591
	43.83	1.83	1.83	3.47	0.15	875.1	219.5	1,094.6	24,683.0	0.567
	43.75	1.75	1.75	3.32	0.16	929.0	203.3	1,132.4	23,588.4	0.542
	43.67	1.67	1.67	3.16	0.17	973.4	190.0	1,163.4	22,456.0	0.516
	43.58	1.58	1.58	2.99	0.17	1,009.4	179.2	1,188.6	21,292.6	0.489
	43.50	1.50	1.50	2.82	0.18	1,037.9	170.7	1,208.6	20,104.0	0.462
	43.42	1.42	1.42	2.64	0.18	1,059.5	164.2	1,223.7	18,895.4	0.434
	43.33	1.33	1.33	2.45	0.19	1,074.7	159.6	1,234.4	17,671.7	0.406
	43.25	1.25	1.25	2.27	0.19	1,083.7	156.9	1,240.7	16,437.3	0.377
PIPE	43.17	1.17	1.17	2.08	0.19	1,086.7	156.0	1,242.8	15,196.7	0.349
	43.08	1.08	1.08	1.89	0.19	1,083.7	156.9	1,240.7	13,953.9	0.320
	43.00	1.00	1.00	1.71	0.19	1,074.7	159.6	1,234.4	12,713.2	0.292
	42.92	0.92	0.92	1.52	0.18	1,059.5	164.2	1,223.7	11,478.9	0.264
	42.83	0.83	0.83	1.34	0.18	1,037.9	170.7	1,208.6	10,255.2	0.235
	42.75	0.75	0.75	1.16	0.17	1,009.4	179.2	1,188.6	9,046.6	0.208
	42.67	0.67	0.67	0.99	0.17	973.4	190.0	1,163.4	7,858.0	0.180
	42.58	0.58	0.58	0.82	0.16	929.0	203.3	1,132.4	6,694.5	0.154
	42.50	0.50	0.50	0.66	0.15	875.1	219.5	1,094.6	5,562.2	0.128
	42.42	0.42	0.42	0.51	0.14	809.6	239.2	1,048.8	4,467.5	0.103
	42.33	0.33	0.33	0.37	0.13	729.4	263.2	992.6	3,418.8	0.078
	42.25	0.25	0.25	0.24	0.11	628.9	293.4	922.3	2,426.2	0.056
	42.17	0.17	0.17	0.13	0.09	495.3	333.5	828.8	1,503.9	0.035
	42.08	0.08	0.08	0.05	0.05	275.8	399.3	675.1	675.1	0.015
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
STONE	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000
	42.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.000

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED SWALE 1

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin H Area =	0.79	acres
Impervious Area =	0.54	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.03	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.06	acre-ft.
PLUS		
Online TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.03	acre-ft.
OR		
*Nutrient Removal = **0.93"** of runoff from drainage area = [(Basin Area-NWL Area)(**0.93"**)]/12" =	0.06	acre-ft.

TOTAL REQUIRED TREATMENT VOLUME =	**0.09**	**acre-ft.**
	3,859	**CF**
Required Treatment Volume at Elevation =	45.88	ft

Provided Treatment Volume =	**0.06**	**acre-ft.**
	2,658	**CF**
Provided Treatment Volume at Elevation =	45.25	ft

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	45.35	2	2,500	0.057	2,893	0.066
TOP OF STRUCTURE	45.25	1.9	2,390	0.055	2,648	0.061
	44.35	1	1,432	0.033	929	0.021
BOTTOM	43.35	0	425	0.010	0	0.000

* Slopes > Elev. 43.35 ft (3:1)

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED SWALE 2

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin I Area =	0.44	acres
Impervious Area =	0.34	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.04	acre-ft.
PLUS		
Online TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
*Nutrient Removal = **1.65"** of runoff from drainage area = [(Basin Area-NWL Area)(**1.65"**)]/12" =	0.06	acre-ft.

TOTAL REQUIRED TREATMENT VOLUME =	**0.06**	**acre-ft.**
	2,659	**CF**
Required Treatment Volume at Elevation =	45.26	ft

Provided Treatment Volume =	**0.06**	**acre-ft.**
	2,658	**CF**
Provided Treatment Volume at Elevation =	45.25	ft

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	45.35	2	2,500	0.057	2,893	0.066
TOP OF STRUCTURE	45.25	1.9	2,390	0.055	2,648	0.061
	44.35	1	1,432	0.033	929	0.021
BOTTOM	43.35	0	425	0.010	0	0.000

* Slopes > Elev. 43.35 ft (3:1)

REQUIRED TREATMENT VOLUME & STAGE/STORAGE

DRY RETENTION PROPOSED SWALE 3

Littoral Zone Provided?	**NO**
Discharge Directly to Class I, II, III or OFW?	**NO**
Offline or Online?	**ONLINE**

Basin J Area =	0.53	acres
Impervious Area =	0.45	acres
TV = 0.5" of runoff over site = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
TV = 1.25" of runoff from imp. area = [(Imp Area)(1.25")]/12" =	0.05	acre-ft.
PLUS		
Online TV = 0.5" of runoff from drainage area = [(Basin Area)(0.5")]/12" =	0.02	acre-ft.
OR		
*Nutrient Removal = **0.53"** of runoff from drainage area = [(Basin Area-NWL Area)(**0.53"**)]/12" =	0.02	acre-ft.

TOTAL REQUIRED TREATMENT VOLUME =	**0.07**	**acre-ft.**
	3,023	**CF**
Required Treatment Volume at Elevation =	47.30	ft

Provided Treatment Volume =	**0.02**	**acre-ft.**
	1,025	**CF**
Provided Treatment Volume at Elevation =	45.25	ft

	Elevation (FT)	Feet	Area (SF)	Area (AC)	Volume Sum (CF)	Volume Sum (Ac-Ft)
T.O.B.	45.35	1.5	1,504	0.035	1,165	0.027
TOP OF STRUCTURE	45.25	1.4	1,406	0.032	1,020	0.023
	44.35	0.5	553	0.013	138	0.003
BOTTOM	43.85	0	0	0.000	0	0.000

* Slopes > Elev. 43.85 ft (3:1)

BMPTRAINS NUTRIENT REMOVAL REPORT

Complete Report (not including cost) Ver 2.1.0

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020 11:10:16 AM

Site and Catchment Information

Analysis: Net Improvement

Catchment Name	BASIN A & G.1	Basin B	Basin C	Basin D	Basin E	Basin F	Basin G.2	Basin H	Basin I	Basin J
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03	50.03

Pre-Condition Landuse Information

Landuse	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346	Undeveloped - Upland Hardwood : TN=1.042 TP=0.346
Area (acres)	1.49	1.12	2.97	0.88	0.49	0.95	0.56	0.79	0.44	0.53
Rational Coefficient (0-1)	0.02	0.01	0.20	0.11	0.09	0.11	0.01	0.11	0.06	0.01

Non DCIA Curve Number	55.00	39.00	39.00	39.00	76.00	80.00	39.00	80.00	71.00	39.00
DCIA Percent (0-100)	0.00	0.50	23.80	13.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042	1.042
Phosphorus EMC (mg/l)	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346	0.346
Runoff Volume (ac-ft/yr)	0.137	0.049	2.439	0.406	0.174	0.440	0.015	0.366	0.113	0.014
Nitrogen Loading (kg/yr)	0.176	0.062	3.134	0.521	0.224	0.565	0.019	0.470	0.145	0.018
Phosphorus Loading (kg/yr)	0.058	0.021	1.041	0.173	0.074	0.188	0.006	0.156	0.048	0.006

PRE-CONDITION NITROGEN LOADING RATE

PRE-CONDITION PHOSPHOROUS LOADING RATE

Post-Condition Landuse Information

Landuse	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188	Low-Intensity Commercial: TN=1.13 TP=0.188

Area (acres)	1.49	1.12	2.97	0.88	0.49	0.95	0.56	0.79	0.44	0.53
Rational Coefficient (0-1)	0.59	0.23	0.70	0.63	0.63	0.57	0.81	0.55	0.63	0.69
Non DCIA Curve Number	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00	39.00
DCIA Percent (0-100)	72.50	27.70	86.90	77.30	77.50	70.50	100.00	68.30	77.30	84.90
Wet Pond Area (ac)	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	1.130	1.130	1.130	1.130	1.130	1.130	1.130	1.130	1.130	1.130
Phosphorus EMC (mg/l)	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188	0.188
Runoff Volume (ac-ft/yr)	3.658	0.744	8.720	2.301	1.285	2.269	1.889	1.828	1.151	1.521
Nitrogen Loading (kg/yr)	5.096	1.036	12.149	3.206	1.790	3.161	2.632	2.547	1.603	2.119
Phosphorus Loading (kg/yr)	0.848	0.172	2.021	0.533	0.298	0.526	0.438	0.424	0.267	0.352

PRE-CONDITION NITROGEN LOADING RATE

PRE-CONDITION PHOSPHOROUS LOADING RATE

Catchment Number: 1 Name: BASIN A & G.1

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Retention Design

Retention Depth (in)	1.670
Retention Volume (ac-ft)	0.207

Watershed Characteristics

Catchment Area (acres)	1.49
Contributing Area (acres)	1.490
Non-DCIA Curve Number	39.00
DCIA Percent	72.50
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	97
Provided TN Treatment Efficiency (%)	91
Required TP Treatment Efficiency (%)	93
Provided TP Treatment Efficiency (%)	91

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Media Mix Information

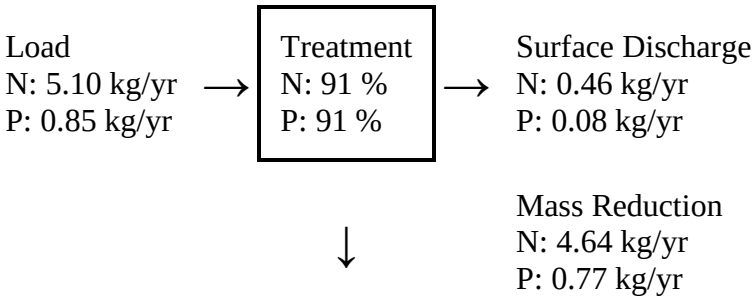
Type of Media Mix	Not Specified
Media N Reduction (%)	

Media P Reduction (%)

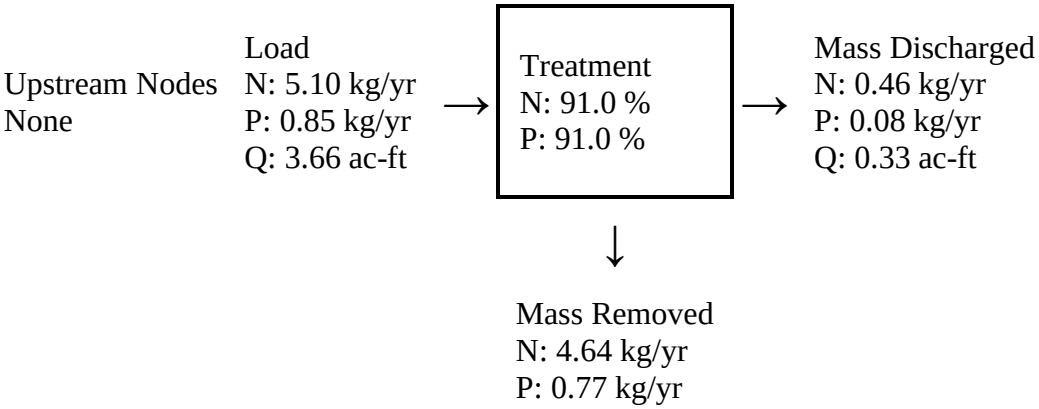
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	4.638
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.772
TP Concentration (mg/L)	0.000

Load Diagram for Retention (stand-alone)



Load Diagram for Retention (As Used In Routing)



Catchment Number: 2 Name: Basin B

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.063
Permanent Pool Volume (ac-ft) for 31 days residence	0.063
Annual Residence Time (days)	31
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	1.12
Contributing Area (acres)	0.780
Non-DCIA Curve Number	39.00
DCIA Percent	27.70

Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	94
Provided TN Treatment Efficiency (%)	38
Required TP Treatment Efficiency (%)	88
Provided TP Treatment Efficiency (%)	65

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

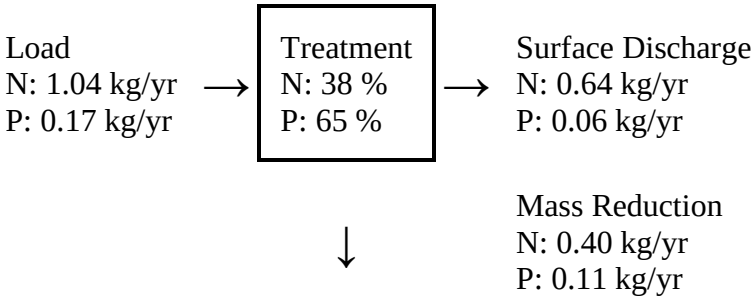
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

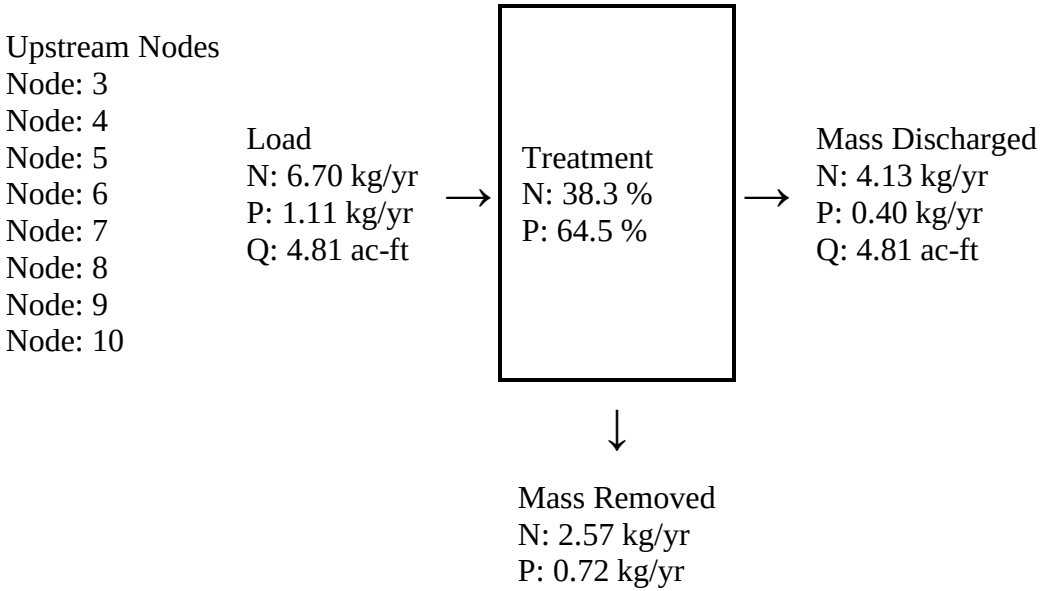
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 3 Name: Basin C

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Exfiltration Trench Design

Pipe Span (in)	18.0
Pipe Rise (in)	18.0
Pipe Length (ft)	5,352.0
Trench Width (ft)	3.5
Trench Depth (ft)	1.5
Trench Length (ft)	5,355.5
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.35
Retention Depth (in over CA)	1.396

Watershed Characteristics

Catchment Area (acres)	2.97
Contributing Area (acres)	2.970
Non-DCIA Curve Number	39.00
DCIA Percent	86.90
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	74
Provided TN Treatment Efficiency (%)	83
Required TP Treatment Efficiency (%)	49

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Provided TP Treatment Efficiency (%) 83

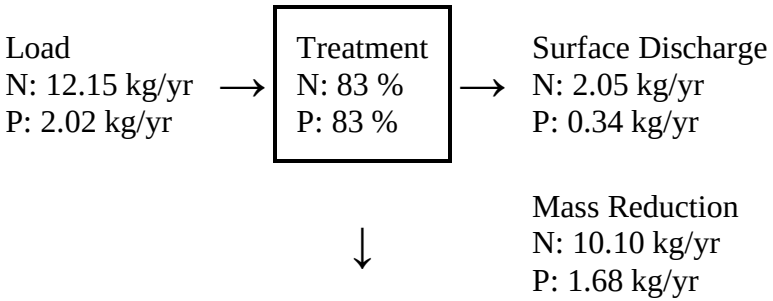
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

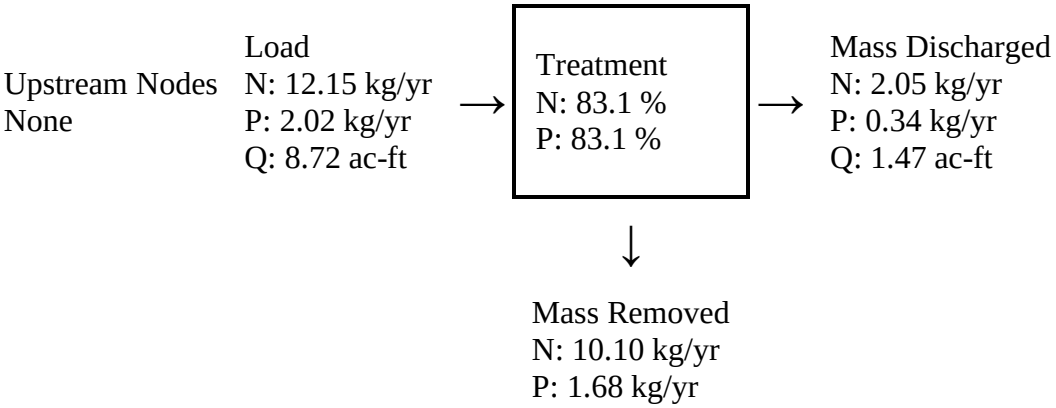
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	10.097
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	1.680
TP Concentration (mg/L)	0.000

Load Diagram for Exfiltration Trench (stand-alone)



Load Diagram for Exfiltration (As Used In Routing)



Catchment Number: 4 Name: Basin D

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Exfiltration Trench Design

Pipe Span (in)	24.0
Pipe Rise (in)	24.0
Pipe Length (ft)	1,018.0
Trench Width (ft)	4.0
Trench Depth (ft)	2.0
Trench Length (ft)	1,022.0
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.11

Retention Depth (in over CA) 1.469

Watershed Characteristics

Catchment Area (acres)	0.88
Contributing Area (acres)	0.880
Non-DCIA Curve Number	39.00
DCIA Percent	77.30
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	84
Provided TN Treatment Efficiency (%)	87
Required TP Treatment Efficiency (%)	68
Provided TP Treatment Efficiency (%)	87

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

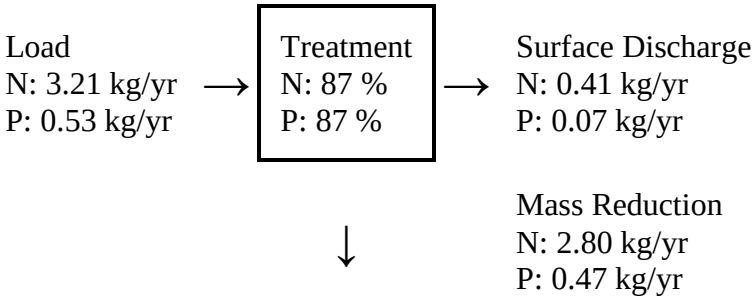
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

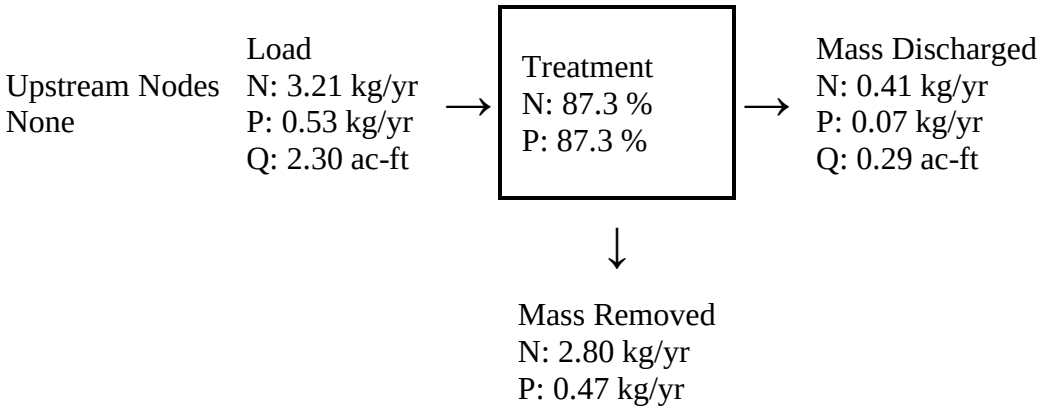
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.798
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.465
TP Concentration (mg/L)	0.000

Load Diagram for Exfiltration Trench (stand-alone)



Load Diagram for Exfiltration (As Used In Routing)



Catchment Number: 5 Name: Basin E

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Exfiltration Trench Design

Pipe Span (in)	23.0
Pipe Rise (in)	23.0
Pipe Length (ft)	946.0
Trench Width (ft)	3.9
Trench Depth (ft)	1.9
Trench Length (ft)	949.9
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.09
Retention Depth (in over CA)	2.261

Watershed Characteristics

Catchment Area (acres)	0.49
Contributing Area (acres)	0.490
Non-DCIA Curve Number	39.00
DCIA Percent	77.50
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	87
Provided TN Treatment Efficiency (%)	95
Required TP Treatment Efficiency (%)	75

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Provided TP Treatment Efficiency (%) 95

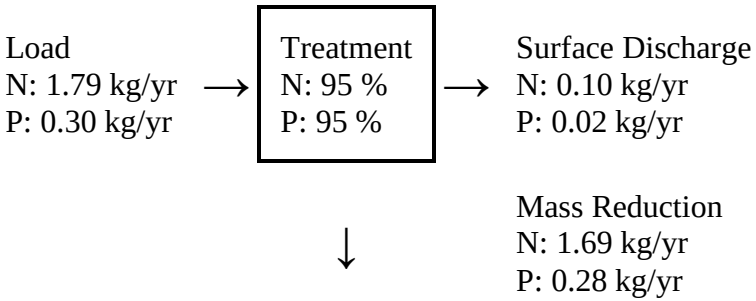
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

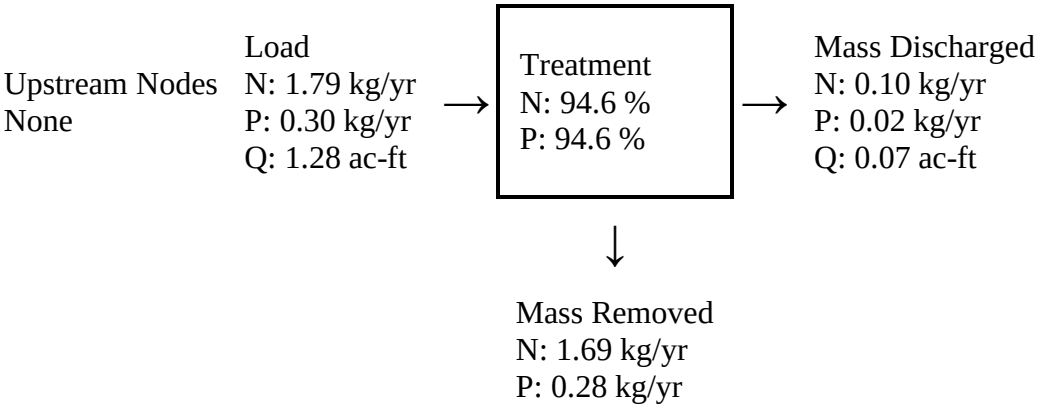
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	1.694
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.282
TP Concentration (mg/L)	0.000

Load Diagram for Exfiltration Trench (stand-alone)



Load Diagram for Exfiltration (As Used In Routing)



Catchment Number: 6 Name: Basin F

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Exfiltration Trench Design

Pipe Span (in)	37.0
Pipe Rise (in)	37.0
Pipe Length (ft)	471.0
Trench Width (ft)	5.1
Trench Depth (ft)	3.1
Trench Length (ft)	476.1
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.11

Retention Depth (in over CA) 1.369

Watershed Characteristics

Catchment Area (acres)	0.95
Contributing Area (acres)	0.950
Non-DCIA Curve Number	39.00
DCIA Percent	70.50
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	82
Provided TN Treatment Efficiency (%)	88
Required TP Treatment Efficiency (%)	64
Provided TP Treatment Efficiency (%)	88

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

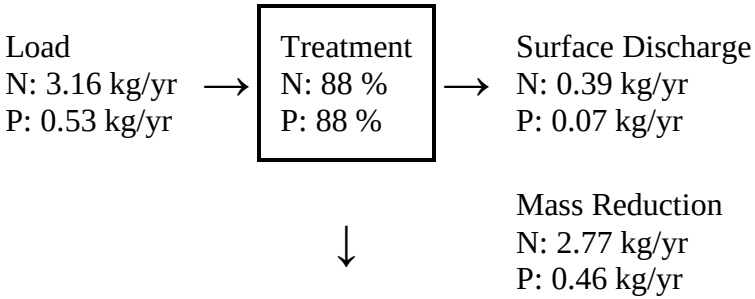
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

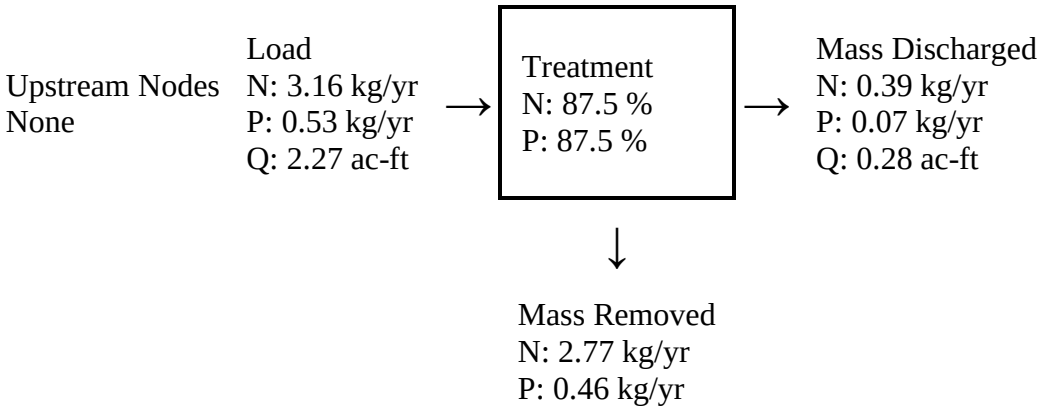
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	2.766
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.460
TP Concentration (mg/L)	0.000

Load Diagram for Exfiltration Trench (stand-alone)



Load Diagram for Exfiltration (As Used In Routing)



Catchment Number: 7 Name: Basin G.2

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

None Design

Watershed Characteristics

Catchment Area (acres)	0.56
Contributing Area (acres)	0.560
Non-DCIA Curve Number	39.00
DCIA Percent	100.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	99
Provided TN Treatment Efficiency (%)	
Required TP Treatment Efficiency (%)	99
Provided TP Treatment Efficiency (%)	

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

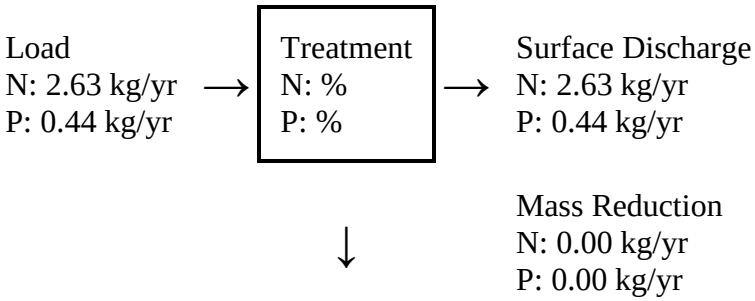
Media Mix Information

Type of Media Mix	
Media N Reduction (%)	0.000
Media P Reduction (%)	0.000

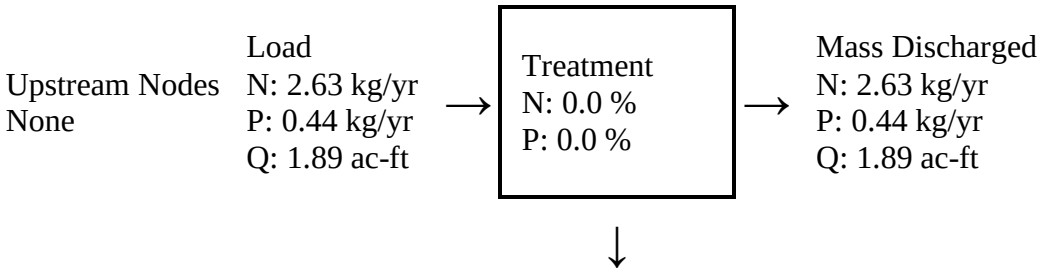
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Mass Removed
N: 0.00 kg/yr
P: 0.00 kg/yr

Catchment Number: 8 Name: Basin H

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Multiple BMP in Series Design Parameters

BMP in Series Number: 1
BMP Type: Retention

Retention Depth (in)	0.930
Retention Volume (ac-ft)	0.061

BMP in Series Number: 2
BMP Type: Exfiltration

Pipe Span (in)	27.0
Pipe Rise (in)	27.0
Pipe Length (ft)	2,550.0
Trench Width (ft)	4.3
Trench Depth (ft)	2.3
Trench Length (ft)	2,554.3
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.34
Retention Depth (in over CA)	5.118

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

Watershed Characteristics

Catchment Area (acres)	0.79
Contributing Area (acres)	0.790
Non-DCIA Curve Number	39.00
DCIA Percent	68.30
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	82
Provided TN Treatment Efficiency (%)	99
Required TP Treatment Efficiency (%)	63
Provided TP Treatment Efficiency (%)	99

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Media Mix Information

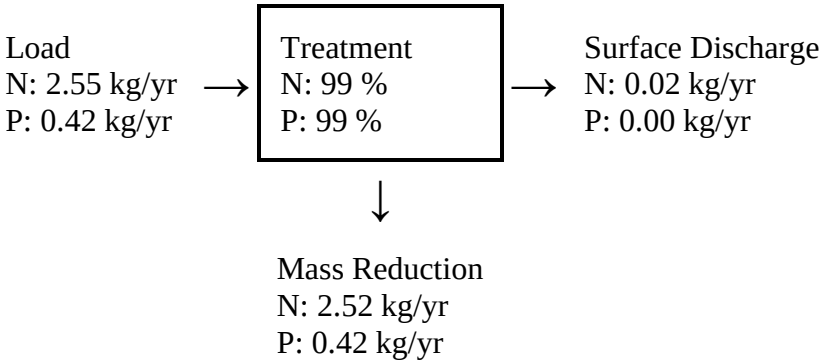
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

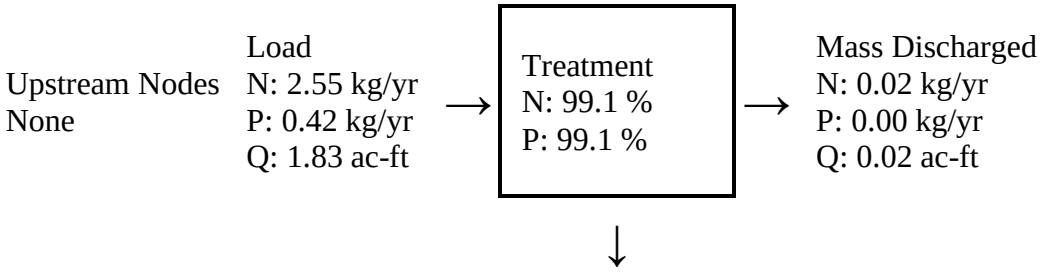
Treatment Rate (MG/yr)	0.000

TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Mass Removed
N: 2.52 kg/yr
P: 0.42 kg/yr

Catchment Number: 9 Name: Basin I

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Multiple BMP in Series Design Parameters

BMP in Series Number: 1
BMP Type: Retention

Retention Depth (in)	1.650
Retention Volume (ac-ft)	0.061

BMP in Series Number: 2
BMP Type: Exfiltration

Pipe Span (in)	27.0
Pipe Rise (in)	27.0
Pipe Length (ft)	2,550.0
Trench Width (ft)	4.3
Trench Depth (ft)	2.3
Trench Length (ft)	2,554.3
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.34
Retention Depth (in over CA)	9.189

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

Watershed Characteristics

Catchment Area (acres)	0.44
Contributing Area (acres)	0.440
Non-DCIA Curve Number	39.00
DCIA Percent	77.30
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	91
Provided TN Treatment Efficiency (%)	99
Required TP Treatment Efficiency (%)	82
Provided TP Treatment Efficiency (%)	99

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Media Mix Information

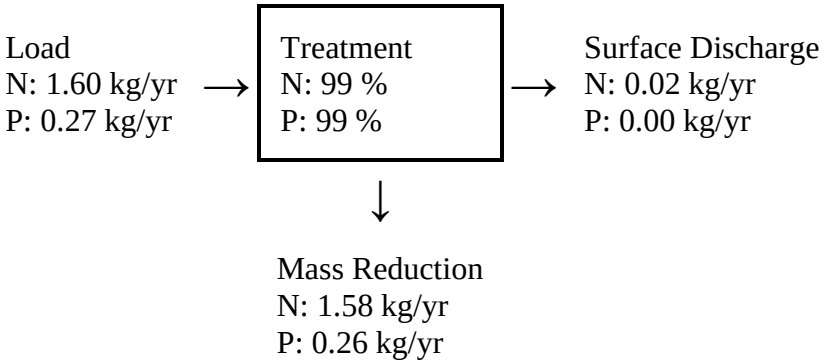
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

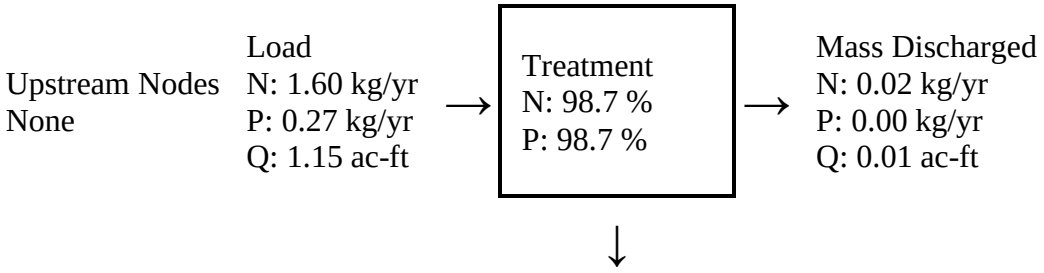
Treatment Rate (MG/yr)	0.000

TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Mass Removed
N: 1.58 kg/yr
P: 0.26 kg/yr

Catchment Number: 10 Name: Basin J

Project: Winter Springs Marketplace (Rev. 5)
Date: 11/12/2020

Multiple BMP in Series Design Parameters

BMP in Series Number: 1
BMP Type: Retention

Retention Depth (in)	0.530
Retention Volume (ac-ft)	0.023

BMP in Series Number: 2
BMP Type: Exfiltration

Pipe Span (in)	27.0
Pipe Rise (in)	27.0
Pipe Length (ft)	2,550.0
Trench Width (ft)	4.3
Trench Depth (ft)	2.3
Trench Length (ft)	2,554.3
Aggregate Void %	0.30
Storage Volume (Ac-ft)	0.34
Retention Depth (in over CA)	7.628

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

Watershed Characteristics

Catchment Area (acres)	0.53
Contributing Area (acres)	0.530
Non-DCIA Curve Number	39.00
DCIA Percent	84.90
Rainfall Zone	Florida Zone 2
Rainfall (in)	50.03

Surface Water Discharge

Required TN Treatment Efficiency (%)	99
Provided TN Treatment Efficiency (%)	98
Required TP Treatment Efficiency (%)	98
Provided TP Treatment Efficiency (%)	98

REQUIRED & PROVIDED INDIVIDUAL BMP NITROGEN & PHOSPHOROUS REMOVAL EFFICIENCY

Media Mix Information

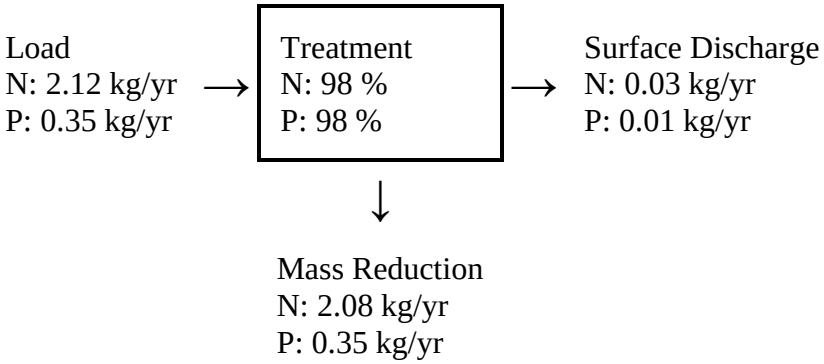
Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

Groundwater Discharge (Stand-Alone)

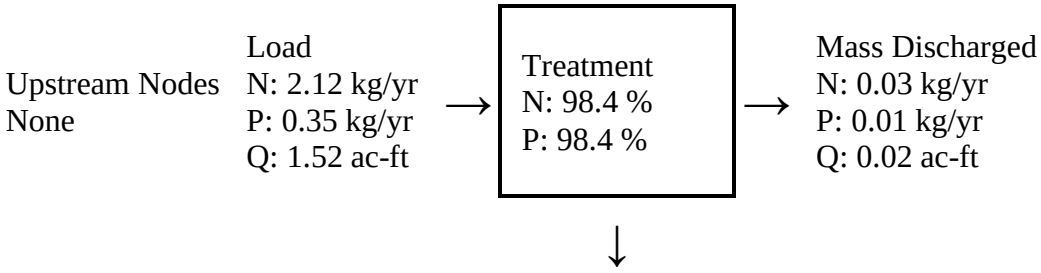
Treatment Rate (MG/yr)	0.000

TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Mass Removed
N: 2.08 kg/yr
P: 0.35 kg/yr

Summary Treatment Report Version: 2.1.0

Project: Winter Springs Marketplace (Rev. 5)

Date:11/12/2020

Analysis Type: Net Improvement
BMP Types:

- Catchment 1 - Retention
- Catchment 2 - Wet Detention
- Catchment 3 - Exfiltration Trench
- Catchment 4 - Exfiltration Trench
- Catchment 5 - Exfiltration Trench
- Catchment 6 - Exfiltration Trench
- Catchment 7 - None
- Catchment 8 - Multiple BMP
- Catchment 9 - Multiple BMP
- Catchment 10 - Multiple BMP

Total nitrogen target removal met? YES
Total phosphorus target removal met? YES

Treatment system each catchment provides

Routing Summary
Catchment 1 Routed to Outlet
Catchment 2 Routed to Outlet
Catchment 3 Routed to Catchment 2
Catchment 4 Routed to Catchment 2
Catchment 5 Routed to Catchment 2
Catchment 6 Routed to Catchment 2
Catchment 7 Routed to Catchment 2
Catchment 8 Routed to Catchment 2
Catchment 9 Routed to Catchment 2
Catchment 10 Routed to Catchment 2

How each of the catchments are routed to the ultimate outfall.

Confirmation the system, as designed, treats for nitrogen and phosphorous in the ultimate discharge from site

Summary Report

Nitrogen

Surface Water Discharge

Total N pre load	5.33 kg/yr	
Total N post load	35.34 kg/yr	
Target N load reduction	85 %	
Target N discharge load	5.33 kg/yr	
Percent N load reduction	87 %	
Provided N discharge load	4.59 kg/yr	10.12 lb/yr
Provided N load removed	30.75 kg/yr	67.8 lb/yr

Target overall site loading rate based on existing conditions loading rate

Provided overall site loading rate

Phosphorus

Surface Water Discharge

Total P pre load	1.771 kg/yr	
Total P post load	5.879 kg/yr	
Target P load reduction	70 %	
Target P discharge load	1.771 kg/yr	
Percent P load reduction	92 %	
Provided P discharge load	.472 kg/yr	1.04 lb/yr
Provided P load removed	5.407 kg/yr	11.924 lb/yr

Target overall site loading rate based on existing conditions loading rate

Provided overall site loading rate

From Pre-Condition Loads

Existing N Discharge	5.33 (kg/yr)
Existing P Discharge	1.771 (kg/yr)

REQUIRED SMA-B PPV CHECK

WET DETENTION PROPOSED POND SMA-B

Littoral Zone OR Pre-Treatment Provided?	**YES**
Discharge Directly to Class I, II, III or OFW?	**NO**

Basin B Area =	1.12	acres
Basin C Area =	2.97	acres
Basin D Area =	0.88	acres
Basin E Area =	0.49	acres
Basin F Area =	0.95	acres
Basin G.2 Area =	0.56	acres
Basin H Area =	0.79	acres
Basin I Area =	0.44	acres
Basin J Area =	0.53	acres
Total Basin Area =	8.74	acres

Basin B Impervious Area =	0.31	acres
Basin C Impervious Area =	2.58	acres
Basin D Impervious Area =	0.68	acres
Basin E Impervious Area =	0.38	acres
Basin F Impervious Area =	0.67	acres
Basin G.2 Impervious Area =	0.56	acres
Basin H Impervious Area =	0.54	acres
Basin I Impervious Area =	0.34	acres
Basin J Impervious Area =	0.45	acres
Total Impervious Area (Excluding pond area) =	6.50	acres

PPV = (DA*C*R*RT)/(WS* CF)

POND SMA-B

DA = Drainage Area =	8.74	acres
C = Runoff Coefficient =	0.735	
R = Wet Season Rainfall Depth =	31.0	inches
RT = Residence Time =	14	days
WS = Wet Season =	153	days
CF = Conversion Factor =	12	in/ft
Required PPV	1.52	ac-ft
additional 50% for no littoral Zone	N/A	ac-ft
additional 50% for OFW discharge	N/A	ac-ft

PPV Required for area of upstream basins draining through SMA-B in nutrient removal treatment train

PPV Required	**1.52 ac-ft**
PPV Provided	**1.82 ac-ft**

Runoff Coefficient Calculation

	AREA (AC)	RUNOFF COEFFICIENT
IMPERVIOUS AREA	6.50	0.90
PERVIOUS AREA	1.89	0.30

C = [(Impervious Area)x(0.90) + (Pervious Area)x(0.30)] / (Total Area)

RUNOFF COEFFICIENT =	0.735

APPENDIX D

Post- Development ICPR Analysis

Node Max Conditions [POST-CONDITIONS (DIVERSION)]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
CS-C	100YR-24HR	47.08	40.70	0.0014	11.18	11.18	460
D15	100YR-24HR	46.78	44.63	0.0036	8.06	6.34	137
D16	100YR-24HR	46.89	44.62	-0.0014	8.86	8.64	309
D17	100YR-24HR	47.22	44.60	0.0015	16.13	15.96	238
D18	100YR-24HR	46.22	44.57	0.0014	15.96	15.80	325
D19	100YR-24HR	46.12	44.55	0.0107	15.80	15.64	293
D32	100YR-24HR	44.76	44.62	0.0145	14.48	10.88	100
D33	100YR-24HR	45.52	44.51	0.0210	36.62	25.61	196
D34	100YR-24HR	45.96	44.48	0.0835	83.54	36.62	151
D38	100YR-24HR	44.24	40.89	0.0010	8.31	8.33	367
D39	100YR-24HR	46.26	44.46	0.0010	2.69	2.52	177
D40	100YR-24HR	46.62	44.46	0.0010	2.86	2.69	191
D43	100YR-24HR	46.28	44.52	0.0010	3.03	2.86	178
GWT D & E	100YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT G & SWALES	100YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT-A	100YR-24HR	42.01	42.00	0.0000	0.00	0.00	0
GWT-C	100YR-24HR	41.01	41.00	0.0000	0.00	0.00	0
GWT-F	100YR-24HR	40.51	40.50	0.0000	0.00	0.00	0
JESUP POND 1	100YR-24HR	45.00	44.08	0.0004	50.50	24.21	56160
ONDICK	100YR-24HR	45.12	40.51	0.0019	34.97	34.97	568
POST-EAST-OUTFALL	100YR-24HR	39.94	39.94	0.0002	1.86	0.00	0
SMA-A.1	100YR-24HR	46.50	46.11	0.0003	6.74	6.60	5457
SMA-A.2	100YR-24HR	46.50	46.24	0.0007	3.61	3.36	2754
SMA-B	100YR-24HR	45.00	44.46	-0.0535	33.41	83.54	24586
SMA-C	100YR-24HR	44.63	44.63	-0.0145	18.21	15.62	13197
SMA-D	100YR-24HR	44.30	44.61	0.0006	5.17	4.83	3308
SMA-E	100YR-24HR	44.25	44.63	0.0004	3.10	0.95	4673
SMA-F	100YR-24HR	44.65	44.63	0.0004	5.32	6.51	3811
SMA-G	100YR-24HR	44.52	44.64	0.0005	12.75	7.24	15012
SWALE 1	100YR-24HR	45.35	45.38	0.0003	4.33	4.31	2483
SWALE 2	100YR-24HR	45.35	45.34	0.0003	2.61	2.59	2477

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SWALE 3	100YR-24HR	45.35	45.36	0.0002	3.24	3.23	1525
WETLAND	100YR-24HR	35.01	35.00	0.0000	34.97	9.73	0
CS-C	10YR-24HR	47.08	36.87	0.0014	6.44	3.90	460
D15	10YR-24HR	46.78	43.68	0.0009	3.83	3.81	139
D16	10YR-24HR	46.89	43.68	-0.0014	5.16	5.17	309
D17	10YR-24HR	47.22	43.68	-0.0017	8.57	8.37	238
D18	10YR-24HR	46.22	43.68	0.0014	8.37	8.26	325
D19	10YR-24HR	46.12	43.67	0.0107	12.03	8.16	293
D32	10YR-24HR	44.76	43.77	0.0145	14.48	8.26	100
D33	10YR-24HR	45.52	43.67	0.0210	36.62	16.32	196
D34	10YR-24HR	45.96	43.67	0.0835	83.54	36.62	151
D38	10YR-24HR	44.24	36.88	0.0010	3.64	2.88	367
D39	10YR-24HR	46.26	43.66	0.0010	2.06	1.97	177
D40	10YR-24HR	46.62	43.67	0.0010	2.16	2.06	191
D43	10YR-24HR	46.28	43.67	0.0010	2.26	2.16	180
GWT D & E	10YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT G & SWALES	10YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT-A	10YR-24HR	42.01	42.00	0.0000	0.00	0.00	0
GWT-C	10YR-24HR	41.01	41.00	0.0000	0.00	0.00	0
GWT-F	10YR-24HR	40.51	40.50	0.0000	0.00	0.00	0
JESUP POND 1	10YR-24HR	45.00	43.52	0.0005	36.21	16.51	54546
ONDICK	10YR-24HR	45.12	36.85	0.0019	20.26	20.25	568
POST-EAST-OUTFALL	10YR-24HR	39.94	39.94	0.0003	0.28	0.00	0
SMA-A.1	10YR-24HR	46.50	46.01	0.0005	4.02	3.71	5289
SMA-A.2	10YR-24HR	46.50	46.06	0.0007	2.69	2.08	2551
SMA-B	10YR-24HR	45.00	43.66	-0.0535	20.15	83.54	22538
SMA-C	10YR-24HR	44.63	43.85	-0.0145	13.27	14.48	13198
SMA-D	10YR-24HR	44.30	44.34	0.0009	3.67	3.16	3308
SMA-E	10YR-24HR	44.25	43.68	0.0003	2.03	0.67	4673
SMA-F	10YR-24HR	44.65	43.69	0.0006	3.69	3.11	3812
SMA-G	10YR-24HR	44.52	43.88	0.0006	11.95	4.21	15008
SWALE 1	10YR-24HR	45.35	45.35	0.0004	2.99	2.97	2483

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SWALE 2	10YR-24HR	45.35	45.32	0.0005	1.85	1.84	2460
SWALE 3	10YR-24HR	45.35	45.34	0.0001	2.35	2.35	1507
WETLAND	10YR-24HR	35.01	35.00	0.0000	20.25	9.73	0
CS-C	25YR-24HR	47.08	37.97	0.0014	6.44	5.72	460
D15	25YR-24HR	46.78	43.88	0.0010	4.72	4.63	139
D16	25YR-24HR	46.89	43.88	-0.0011	6.63	6.51	309
D17	25YR-24HR	47.22	43.88	-0.0014	11.08	10.96	238
D18	25YR-24HR	46.22	43.87	0.0014	10.96	10.85	325
D19	25YR-24HR	46.12	43.87	0.0107	12.03	10.73	293
D32	25YR-24HR	44.76	43.90	0.0145	14.48	9.45	100
D33	25YR-24HR	45.52	43.86	0.0210	36.62	19.62	196
D34	25YR-24HR	45.96	43.86	0.0835	83.54	36.62	151
D38	25YR-24HR	44.24	38.00	0.0010	3.95	4.02	367
D39	25YR-24HR	46.26	43.86	0.0010	2.20	2.08	177
D40	25YR-24HR	46.62	43.86	0.0010	2.33	2.20	191
D43	25YR-24HR	46.28	43.87	0.0010	2.46	2.33	178
GWT D & E	25YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT G & SWALES	25YR-24HR	40.01	40.00	0.0000	0.00	0.00	0
GWT-A	25YR-24HR	42.01	42.00	0.0000	0.00	0.00	0
GWT-C	25YR-24HR	41.01	41.00	0.0000	0.00	0.00	0
GWT-F	25YR-24HR	40.51	40.50	0.0000	0.00	0.00	0
JESUP POND 1	25YR-24HR	45.00	43.64	0.0004	39.93	19.90	54907
ONDICK	25YR-24HR	45.12	37.92	0.0019	25.47	25.46	568
POST-EAST-OUTFALL	25YR-24HR	39.94	39.94	0.0003	0.57	0.00	0
SMA-A.1	25YR-24HR	46.50	46.05	0.0005	4.72	4.54	5348
SMA-A.2	25YR-24HR	46.50	46.11	0.0007	2.93	2.45	2613
SMA-B	25YR-24HR	45.00	43.85	-0.0535	24.40	83.54	23023
SMA-C	25YR-24HR	44.63	43.97	-0.0145	14.56	14.48	13198
SMA-D	25YR-24HR	44.30	44.40	0.0010	4.06	3.66	3308
SMA-E	25YR-24HR	44.25	43.88	0.0003	2.24	0.88	4673
SMA-F	25YR-24HR	44.65	43.89	0.0006	4.11	3.71	3811
SMA-G	25YR-24HR	44.52	44.00	0.0005	12.49	4.63	15010

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SWALE 1	25YR-24HR	45.35	45.36	0.0004	3.34	3.32	2483
SWALE 2	25YR-24HR	45.35	45.33	0.0005	2.05	2.04	2465
SWALE 3	25YR-24HR	45.35	45.34	0.0001	2.58	2.58	1515
WETLAND	25YR-24HR	35.01	35.00	0.0000	25.46	9.73	0
CS-C	MEAN ANNUAL	47.08	35.02	0.0014	6.44	3.64	460
D15	MEAN ANNUAL	46.78	41.71	-0.0001	0.16	0.16	100
D16	MEAN ANNUAL	46.89	41.71	0.0008	0.39	0.27	301
D17	MEAN ANNUAL	47.22	41.71	0.0010	0.89	0.99	238
D18	MEAN ANNUAL	46.22	41.70	0.0012	2.29	1.40	325
D19	MEAN ANNUAL	46.12	41.70	0.0107	12.03	2.29	293
D32	MEAN ANNUAL	44.76	43.39	0.0145	14.48	0.40	100
D33	MEAN ANNUAL	45.52	41.70	0.0210	36.62	12.03	196
D34	MEAN ANNUAL	45.96	41.70	0.0835	83.54	36.62	151
D38	MEAN ANNUAL	44.24	35.02	0.0010	3.64	0.32	367
D39	MEAN ANNUAL	46.26	41.70	0.0010	1.19	1.17	203
D40	MEAN ANNUAL	46.62	41.70	0.0010	1.22	1.19	193
D43	MEAN ANNUAL	46.28	41.70	0.0010	1.22	1.22	232
GWT D & E	MEAN ANNUAL	40.01	40.00	0.0000	0.00	0.00	0
GWT G & SWALES	MEAN ANNUAL	40.01	40.00	0.0000	0.00	0.00	0
GWT-A	MEAN ANNUAL	42.01	42.00	0.0000	0.00	0.00	0
GWT-C	MEAN ANNUAL	41.01	41.00	0.0000	0.00	0.00	0
GWT-F	MEAN ANNUAL	40.51	40.50	0.0000	0.00	0.00	0
JESUP POND 1	MEAN ANNUAL	45.00	42.77	0.0004	16.99	1.76	52411
ONDICK	MEAN ANNUAL	45.12	35.02	0.0019	9.73	6.44	568
POST-EAST-OUTFALL	MEAN ANNUAL	39.94	39.94	0.0006	0.00	0.00	0
SMA-A.1	MEAN ANNUAL	46.50	45.67	0.0003	1.61	0.26	4726
SMA-A.2	MEAN ANNUAL	46.50	45.67	0.0007	1.45	0.82	2114
SMA-B	MEAN ANNUAL	45.00	41.70	-0.0535	2.52	83.54	17695
SMA-C	MEAN ANNUAL	44.63	43.39	-0.0145	6.59	14.48	13198
SMA-D	MEAN ANNUAL	44.30	43.84	0.0004	1.67	0.26	3308
SMA-E	MEAN ANNUAL	44.25	43.13	0.0002	0.92	0.02	4673
SMA-F	MEAN ANNUAL	44.65	43.07	0.0003	1.55	0.16	3811

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SMA-G	MEAN ANNUAL	44.52	43.39	0.0003	4.56	0.17	15010
SWALE 1	MEAN ANNUAL	45.35	45.29	0.0004	1.23	0.70	2430
SWALE 2	MEAN ANNUAL	45.35	45.26	0.0003	0.85	0.15	2408
SWALE 3	MEAN ANNUAL	45.35	45.30	0.0001	1.16	1.15	1465
WETLAND	MEAN ANNUAL	35.01	35.00	0.0000	2.12	9.73	0

Simple Basin Runoff Summary [POST-CONDITIONS (DIVERSION)]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN A	100YR-24HR	3.83	12.0500	10.60	6.57	0.8267	68.6	0.00	0.00
BASIN B	100YR-24HR	5.67	12.0500	10.60	7.23	1.1200	73.5	0.00	0.00
BASIN C	100YR-24HR	18.21	12.0500	10.60	9.38	2.9700	90.1	0.00	0.00
BASIN D	100YR-24HR	5.17	12.0500	10.60	8.67	0.8832	84.5	0.00	0.00
BASIN E	100YR-24HR	2.85	12.0500	10.60	8.68	0.4872	84.6	0.00	0.00
BASIN F	100YR-24HR	5.32	12.0500	10.60	8.11	0.9536	80.2	0.00	0.00
BASIN G.1	100YR-24HR	3.61	12.0833	10.60	10.36	0.6659	98.0	0.00	0.00
BASIN G.2	100YR-24HR	3.03	12.0833	10.60	10.36	0.5591	98.0	0.00	0.00
BASIN H	100YR-24HR	4.33	12.0500	10.60	7.97	0.7877	79.1	0.00	0.00
BASIN I	100YR-24HR	2.61	12.0500	10.60	8.71	0.4439	84.8	0.00	0.00
BASIN J	100YR-24HR	3.24	12.0500	10.60	9.30	0.5302	89.5	0.00	0.00
JESSUP	100YR-24HR	50.50	12.1333	10.60	8.99	11.0300	87.0	0.00	0.00
BASIN A	10YR-24HR	2.46	12.0500	7.90	4.21	0.8267	68.6	0.00	0.00
BASIN B	10YR-24HR	3.77	12.0500	7.90	4.77	1.1200	73.5	0.00	0.00
BASIN C	10YR-24HR	13.27	12.0500	7.90	6.71	2.9700	90.1	0.00	0.00
BASIN D	10YR-24HR	3.67	12.0500	7.90	6.05	0.8832	84.5	0.00	0.00
BASIN E	10YR-24HR	2.03	12.0500	7.90	6.06	0.4872	84.6	0.00	0.00
BASIN F	10YR-24HR	3.69	12.0500	7.90	5.55	0.9536	80.2	0.00	0.00
BASIN G.1	10YR-24HR	2.69	12.0833	7.90	7.66	0.6659	98.0	0.00	0.00
BASIN G.2	10YR-24HR	2.26	12.0833	7.90	7.66	0.5591	98.0	0.00	0.00
BASIN H	10YR-24HR	2.99	12.0500	7.90	5.42	0.7877	79.1	0.00	0.00
BASIN I	10YR-24HR	1.85	12.0500	7.90	6.09	0.4439	84.8	0.00	0.00
BASIN J	10YR-24HR	2.35	12.0500	7.90	6.64	0.5302	89.5	0.00	0.00
JESSUP	10YR-24HR	36.21	12.1333	7.90	6.35	11.0300	87.0	0.00	0.00
BASIN A	25YR-24HR	2.81	12.0500	8.60	4.81	0.8267	68.6	0.00	0.00
BASIN B	25YR-24HR	4.26	12.0500	8.60	5.40	1.1200	73.5	0.00	0.00
BASIN C	25YR-24HR	14.56	12.0500	8.60	7.40	2.9700	90.1	0.00	0.00
BASIN D	25YR-24HR	4.06	12.0500	8.60	6.73	0.8832	84.5	0.00	0.00
BASIN E	25YR-24HR	2.24	12.0500	8.60	6.74	0.4872	84.6	0.00	0.00
BASIN F	25YR-24HR	4.11	12.0500	8.60	6.21	0.9536	80.2	0.00	0.00
BASIN G.1	25YR-24HR	2.93	12.0833	8.60	8.36	0.6659	98.0	0.00	0.00
BASIN G.2	25YR-24HR	2.46	12.0833	8.60	8.36	0.5591	98.0	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
BASIN H	25YR-24HR	3.34	12.0500	8.60	6.07	0.7877	79.1	0.00	0.00
BASIN I	25YR-24HR	2.05	12.0500	8.60	6.76	0.4439	84.8	0.00	0.00
BASIN J	25YR-24HR	2.58	12.0500	8.60	7.33	0.5302	89.5	0.00	0.00
JESSUP	25YR-24HR	39.93	12.1333	8.60	7.03	11.0300	87.0	0.00	0.00
BASIN A	MEAN ANNUAL	0.79	12.0667	4.30	1.44	0.8267	68.6	0.00	0.00
BASIN B	MEAN ANNUAL	1.38	12.0667	4.30	1.78	1.1200	73.5	0.00	0.00
BASIN C	MEAN ANNUAL	6.59	12.0500	4.30	3.21	2.9700	90.1	0.00	0.00
BASIN D	MEAN ANNUAL	1.67	12.0500	4.30	2.68	0.8832	84.5	0.00	0.00
BASIN E	MEAN ANNUAL	0.92	12.0500	4.30	2.69	0.4872	84.6	0.00	0.00
BASIN F	MEAN ANNUAL	1.55	12.0500	4.30	2.31	0.9536	80.2	0.00	0.00
BASIN G.1	MEAN ANNUAL	1.45	12.0833	4.30	4.06	0.6659	98.0	0.00	0.00
BASIN G.2	MEAN ANNUAL	1.22	12.0833	4.30	4.06	0.5591	98.0	0.00	0.00
BASIN H	MEAN ANNUAL	1.23	12.0500	4.30	2.22	0.7877	79.1	0.00	0.00
BASIN I	MEAN ANNUAL	0.85	12.0500	4.30	2.71	0.4439	84.8	0.00	0.00
BASIN J	MEAN ANNUAL	1.16	12.0500	4.30	3.15	0.5302	89.5	0.00	0.00
JESSUP	MEAN ANNUAL	16.99	12.1500	4.30	2.91	11.0300	87.0	0.00	0.00

Simple Basin: BASIN A

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-A.1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8267 ac
Curve Number:	68.6
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN B

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-B
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	1.1200 ac
Curve Number:	73.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN C

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-C
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	2.9700 ac
Curve Number:	90.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN D

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-D
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.8832 ac
Curve Number:	84.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN E

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-E
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4872 ac
Curve Number:	84.6
% Impervious:	0.00
% DCIA:	0.00

% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN F

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-F
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	9999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.9536 ac
Curve Number:	80.2
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN G.1

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SMA-A.2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.6659 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN G.2

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	D43
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	15.0000 min
Max Allowable Q:	999999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5591 ac
Curve Number:	98.0
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN H

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SWALE 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.7877 ac
Curve Number:	79.1
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN I

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SWALE 2
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs

Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.4439 ac
Curve Number:	84.8
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: BASIN J

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	SWALE 3
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	10.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	0.5302 ac
Curve Number:	89.5
% Impervious:	0.00
% DCIA:	0.00
% Direct:	0.00
Rainfall Name:	

Comment:

Simple Basin: JESSUP

Scenario:	POST-CONDITIONS (DIVERSION)
Node:	JESUP POND 1
Hydrograph Method:	NRCS Unit Hydrograph
Infiltration Method:	Curve Number
Time of Concentration:	19.0000 min
Max Allowable Q:	999999.00 cfs
Time Shift:	0.0000 hr
Unit Hydrograph:	UH256
Peaking Factor:	256.0
Area:	11.0300 ac
Curve Number:	87.0
% Impervious:	0.00
% DCIA:	0.00

% Direct: 0.00
Rainfall Name:

Comment: BASED ON SJRWMD APP. NO. 97490-1

Node: CS-C

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 33.30 ft
Warning Stage: 47.08 ft

Comment:

Node: D15

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 41.30 ft
Warning Stage: 46.78 ft

Comment:

Node: D16

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 40.18 ft
Warning Stage: 46.89 ft

Comment:

Node: D17

Scenario: POST-CONDITIONS

(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 35.15 ft
Warning Stage: 47.22 ft

Comment:

Node: D18

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 35.06 ft
Warning Stage: 46.22 ft

Comment:

Node: D19

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 34.93 ft
Warning Stage: 46.12 ft

Comment:

Node: D32

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 40.25 ft
Warning Stage: 44.76 ft

Comment:

Node: D33

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 34.86 ft
Warning Stage: 45.52 ft

Comment:

Node: D34

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 34.34 ft
Warning Stage: 45.96 ft

Comment:

Node: D38

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 33.80 ft
Warning Stage: 44.24 ft

Comment:

Node: D39

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 39.23 ft
Warning Stage: 46.26 ft

Comment:

Node: D40

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 39.37 ft
Warning Stage: 46.62 ft

Comment:

Node: D43

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 39.29 ft
Warning Stage: 46.28 ft

Comment:

Node: GWT D & E

Scenario: POST-CONDITIONS (DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 40.00 ft
Warning Stage: 40.01 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	40.00
0	0	0	72.0000	40.00

Comment: SYSTEM SMA-E - SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-4, B-6, B-9

SYSTEM SMA-D - SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-9, B-11, B-12, B-15

Node: GWT G & SWALES

Scenario: POST-CONDITIONS (DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 40.00 ft
Warning Stage: 40.01 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	40.00
0	0	0	72.0000	40.00

Comment: SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-2, B-3, B-5, B-6

Node: GWT-A

Scenario: POST-CONDITIONS (DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 42.00 ft
Warning Stage: 42.01 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	42.00
0	0	0	72.0000	42.00

Comment: SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-7 & B-13

Node: GWT-C

Scenario: POST-CONDITIONS (DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 41.00 ft
Warning Stage: 41.01 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	41.00
0	0	0	72.0000	41.00

Comment: SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-8, B-11, B-16

Node: GWT-F

Scenario: POST-CONDITIONS (DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 40.50 ft
Warning Stage: 40.51 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	40.50
0	0	0	72.0000	40.50

Comment: SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-3, B-4, B-6

Node: JESUP POND 1

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 41.20 ft
Warning Stage: 45.00 ft

Stage [ft]	Area [ac]	Area [ft2]
41.20	1.1010	47960
45.00	1.3490	58762

Comment: BASED ON SJRWMD APP. NO. 97490-1, NODE "POND 1"

Node: ONDICK

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 32.89 ft
Warning Stage: 45.12 ft

Comment: BASED ON AS-BUILTS FOR STRUCTURE "S-7" PROVIDED BY THE CITY OF WINTER SPRINGS.

Node: POST-EAST-OUTFALL

Scenario: POST-CONDITIONS

(DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 38.94 ft
Warning Stage: 39.94 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	38.94
0	0	0	24.0000	39.94

Comment: BASED ON OUTFALL "NODE 99" FROM SJRWMD PERMIT NO. 83445-1. CONVERTED FROM NGVD29 TO NAVD88 USING 1.056-FT CONVERSION FACTOR.

Node: SMA-A.1

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 43.50 ft
Warning Stage: 46.50 ft

Stage [ft]	Area [ac]	Area [ft2]
43.50	0.0410	1786
44.50	0.0680	2962
45.50	0.1020	4443
46.50	0.1400	6098

Comment:

Node: SMA-A.2

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 43.50 ft
Warning Stage: 46.50 ft

Stage [ft]	Area [ac]	Area [ft2]
43.50	0.0090	392
44.50	0.0230	1002
45.50	0.0440	1917
46.50	0.0700	3049

Comment:

Node: SMA-B

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 40.50 ft
Warning Stage: 45.00 ft

Stage [ft]	Area [ac]	Area [ft2]
40.50	0.3430	14941
41.00	0.3690	16074
42.00	0.4220	18382
43.00	0.4790	20865
44.00	0.5370	23392
45.00	0.5970	26005

Comment:

Node: SMA-C

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 42.00 ft
Warning Stage: 44.63 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
42.00	0.00	0
42.08	0.02	653
42.17	0.03	1394
42.25	0.05	2265
42.33	0.07	3180
42.42	0.10	4138
42.50	0.12	5140
42.58	0.14	6186
42.67	0.17	7187
42.75	0.19	8233
42.83	0.21	9278
42.92	0.24	10324
43.00	0.26	11326
43.08	0.28	12327
43.17	0.31	13286
43.25	0.33	14201
43.33	0.35	15072
43.42	0.36	15812
43.50	0.37	16248
43.58	0.38	16596

Comment: SHWT ASSUMED TO BE 41-FT NAVD-88

SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-8, B-11, B-16

Node: SMA-D

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 42.00 ft
Warning Stage: 44.30 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
42.00	0.00	0
42.08	0.00	131
42.17	0.01	348
42.25	0.01	523
42.33	0.02	741
42.42	0.02	958
42.50	0.03	1220
42.58	0.03	1481
42.67	0.04	1699
42.75	0.05	1960
42.83	0.05	2222
42.92	0.06	2483
43.00	0.06	2744
43.08	0.07	3006
43.17	0.08	3267
43.25	0.08	3528
43.33	0.09	3790
43.42	0.09	4008
43.50	0.10	4269
43.58	0.10	4487
43.67	0.11	4748
43.75	0.11	4966
43.83	0.12	5140
43.92	0.12	5314
44.00	0.13	5489

Comment: SHWT ASSUMED TO BE 40-FT NAVD88

SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-9, B-11, B-12, B-15

Node: SMA-E

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 42.00 ft
Warning Stage: 44.25 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
42.00	0.00	0
42.08	0.01	218
42.17	0.01	436
42.25	0.02	741
42.33	0.02	1045
42.42	0.03	1350
42.50	0.04	1655
42.58	0.05	2004
42.67	0.05	2352
42.75	0.06	2701
42.83	0.07	3049
42.92	0.08	3398
43.00	0.09	3746
43.08	0.10	4138
43.17	0.10	4487
43.25	0.11	4835
43.33	0.12	5184
43.42	0.13	5489
43.50	0.13	5837
43.58	0.14	6142
43.67	0.15	6447
43.75	0.15	6708
43.83	0.16	6970
43.92	0.17	7187

Comment: SHWT ASSUMED TO BE 40-FT NAVD88

SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-4, B-6, B-9

Node: SMA-F

Scenario: POST-CONDITIONS
(DIVERSION)
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 41.50 ft
Warning Stage: 44.65 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
44.58	0.23	9888

Stage [ft]	Volume [ac-ft]	Volume [ft3]
44.50	0.22	9757
44.42	0.22	9540
44.33	0.21	9322
44.25	0.21	9104
44.17	0.20	8886
44.08	0.20	8625
44.00	0.19	8364
43.92	0.19	8102
43.83	0.18	7797
43.75	0.17	7536
43.67	0.17	7231
43.58	0.16	6926
43.50	0.15	6621
43.42	0.14	6316
43.33	0.14	6011
43.25	0.13	5706
43.17	0.12	5401
43.08	0.12	5097
43.00	0.11	4792
42.92	0.10	4487
42.83	0.10	4182
42.75	0.09	3877
42.67	0.08	3572
42.58	0.08	3267
42.50	0.07	2962
42.42	0.06	2657
42.33	0.06	2396
42.25	0.05	2091
42.17	0.04	1830
42.08	0.04	1525
42.00	0.03	1263
41.92	0.02	1045
41.83	0.02	784
41.75	0.01	566
41.67	0.01	348
41.58	0.00	174
41.50	0.00	0

Comment: SHWT ASSUMED TO BE 40.5-FT NAVD88

SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-3, B-4, B-6

Node: SMA-G

Scenario: POST-CONDITIONS (DIVERSION)

Type: Stage/Volume

Base Flow: 0.00 cfs
Initial Stage: 42.00 ft
Warning Stage: 44.52 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
42.00	0.00	0
42.08	0.02	653
42.17	0.04	1525
42.25	0.06	2439
42.33	0.08	3398
42.42	0.10	4487
42.50	0.13	5576
42.58	0.15	6708
42.67	0.18	7841
42.75	0.21	9060
42.83	0.24	10237
42.92	0.26	11500
43.00	0.29	12720
43.08	0.32	13939
43.17	0.35	15202
43.25	0.38	16422
43.33	0.41	17685
43.42	0.43	18905
43.50	0.46	20125
43.58	0.49	21301
43.67	0.52	22477
43.75	0.54	23610
43.83	0.57	24699
43.92	0.59	25744
44.00	0.61	26746
44.08	0.64	27661
44.17	0.65	28488
44.25	0.67	29142

Comment: SHWT ASSUMED TO BE 40.0-FT NAVD88

SHWT BASED ON THE AVERAGE OF DATA FROM SOIL BORINGS B-2, B-3, B-5, B-6

Node: SWALE 1

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 43.35 ft
Warning Stage: 45.35 ft

Stage [ft]	Area [ac]	Area [ft2]
43.35	0.0100	436
44.35	0.0330	1437
45.25	0.0550	2396
45.35	0.0570	2483

Comment:

Node: SWALE 2

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 43.35 ft
Warning Stage: 45.35 ft

Stage [ft]	Area [ac]	Area [ft2]
43.35	0.0100	436
44.35	0.0330	1437
45.25	0.0550	2396
45.35	0.0570	2483

Comment:

Node: SWALE 3

Scenario: POST-CONDITIONS (DIVERSION)
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 43.85 ft
Warning Stage: 45.35 ft

Stage [ft]	Area [ac]	Area [ft2]
43.85	0.0000	0
44.35	0.0130	566
45.25	0.0320	1394
45.35	0.0350	1525

Comment:

Node: WETLAND

Scenario: POST-CONDITIONS

(DIVERSION)
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 35.00 ft
Warning Stage: 35.01 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	35.00
0	0	0	48.0000	35.00

Comment: BASED ON SJRWMD APP. NO. 97490-1

Pipe Link: CS-C > ONDICK		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	33.20 ft	Invert:	33.10 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	CS-C	Geometry: Circular		Geometry: Circular	
To Node:	ONDICK	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	49.05 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: D-38 > CS-C		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	33.80 ft	Invert:	33.20 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D38	Geometry: Circular		Geometry: Circular	
To Node:	CS-C	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	295.59 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: D15 > D16		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	41.30 ft	Invert:	41.15 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D15	Geometry: Circular		Geometry: Circular	
To Node:	D16	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	75.10 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: D16 > D17		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	40.18 ft	Invert:	40.03 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D16	Geometry: Circular		Geometry: Circular	
To Node:	D17	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	157.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: D17 > D18		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	35.15 ft	Invert:	35.06 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D17	Geometry: Circular		Geometry: Circular	
To Node:	D18	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			

Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	89.40 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D18 > D19		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	35.06 ft	Invert:	35.93 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D18	Geometry: Circular		Geometry: Circular	
To Node:	D19	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	128.96 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	0.50	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D19 > D33		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	34.93 ft	Invert:	34.86 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D19	Geometry: Circular		Geometry: Circular	
To Node:	D33	Max Depth:	3.00 ft	Max Depth:	3.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	74.84 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Drop Structure Link: D32 > D33		Upstream Pipe		Downstream Pipe	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	40.92 ft	Invert:	38.73 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D32	Geometry: Circular		Geometry: Circular	
To Node:	D33	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	72.59 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	1.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Sharp Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	43.33 ft	Ref Node:	
Control Elevation:	43.33 ft	Discharge Coefficients	
Max Depth:	999999999.00 ft	Weir Default:	3.200
Max Width:	8.75 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Pipe Link: D33 > D34		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	34.86 ft	Invert:	34.34 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D33	Geometry: Circular		Geometry: Circular	
To Node:	D34	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	48.00 ft	Ref Node:		Ref Node:	

FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00		Top Clip		
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D34 > SMA-B		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	34.34 ft	Invert:	33.93 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D34	Geometry: Circular		Geometry: Circular	
To Node:	SMA-B	Max Depth:	3.50 ft	Max Depth:	3.50 ft
Link Count:	1		Bottom Clip		
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	38.41 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00		Top Clip		
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D39 > SMA-B		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	39.23 ft	Invert:	39.00 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D39	Geometry: Circular		Geometry: Circular	
To Node:	SMA-B	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1		Bottom Clip		
Flow Direction:	Positive	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	105.71 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00		Top Clip		
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D40 > D39		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	39.37 ft	Invert:	39.23 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D40	Geometry: Circular		Geometry: Circular	
To Node:	D39	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	71.33 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: D43 > D40		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	40.29 ft	Invert:	39.90 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	D43	Geometry: Circular		Geometry: Circular	
To Node:	D40	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	196.50 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.50	Top Clip			
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Drop Structure Link: JESUP POND OUTFALL		Upstream Pipe		Downstream Pipe	
		Invert:	38.25 ft	Invert:	32.89 ft
Scenario:	POST-CONDITIONS (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
		Geometry: Circular		Geometry: Circular	
From Node:	JESUP POND 1	Max Depth:	2.50 ft	Max Depth:	2.50 ft
To Node:	ONDICK	Bottom Clip			
Link Count:	1	Default:	0.00 ft	Default:	0.00 ft
Flow Direction:	Both	Op Table:		Op Table:	
Solution:	Combine	Ref Node:		Ref Node:	
Increments:	0	Manning's N:	0.0000	Manning's N:	0.0000
Pipe Count:	1	Top Clip			

Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft
Length:	1004.00 ft	Op Table:		Op Table:	
FHWA Code:	1	Ref Node:		Ref Node:	
Entr Loss Coef:	1.00	Manning's N:	0.0000	Manning's N:	0.0000
Exit Loss Coef:	0.50				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment: LENGTH OF PIPE AND INVERTS BASED ON AS-BUILTS PROVIDED BY CITY OF WINTER SPRINGS

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	43.64 ft
Control Elevation:	43.64 ft
Max Depth:	3.00 ft
Max Width:	4.50 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: TYPE E INLET

Weir Component

Weir:	2
Weir Count:	2
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	42.57 ft
Control Elevation:	42.57 ft
Max Depth:	999999999.00 ft
Max Width:	2.75 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Weir Component

Weir:	3
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Circular
Invert:	41.46 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	

Control Elevation:	41.46 ft
Max Depth:	0.24 ft

Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Pipe Link: OUTFALL		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	32.89 ft	Invert:	29.53 ft
		Manning's N:	0.0120	Manning's N:	0.0120
From Node:	ONDICK	Geometry: Circular		Geometry: Circular	
To Node:	WETLAND	Max Depth:	2.50 ft	Max Depth:	2.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	890.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment: BASED ON ELEVATIONS AND LENGTHS PROVIDED WITHIN AS-BUILTS PROVIDED BY CITY OF WINTER SPRINGS.

Percolation Link: SMA A.1 > GWT			
Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	SMA-A.1	Vertical Flow Termination:	Horizontal Flow Algorithm
To Node:	GWT-A	Perimeter 1:	200.00 ft
Link Count:	1	Perimeter 2:	200.00 ft
Flow Direction:	Both	Perimeter 3:	200.00 ft
Aquifer Base Elevation:	25.00 ft	Distance P1 to P2:	50.00 ft
Water Table Elevation:	42.00 ft	Distance P2 to P3:	450.00 ft
Annual Recharge Rate:	0 ipy	# of Cells P1 to P2:	10
Horizontal Conductivity:	25.500 fpd	# of Cells P2 to P3:	45
Vertical Conductivity:	0.000 fpd		
Fillable Porosity:	0.250		
Layer Thickness:	1.50 ft		

Comment:

Percolation Link: SMA A.2 > GWT			
Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	Vary Based on Stage/Area Table
From Node:	SMA-A.2	Vertical Flow Termination:	Horizontal Flow Algorithm
To Node:	GWT-A	Perimeter 1:	200.00 ft
Link Count:	1	Perimeter 2:	200.00 ft
Flow Direction:	Both	Perimeter 3:	200.00 ft
Aquifer Base Elevation:	25.00 ft	Distance P1 to P2:	50.00 ft
Water Table Elevation:	42.00 ft	Distance P2 to P3:	450.00 ft
Annual Recharge Rate:	0 ipy	# of Cells P1 to P2:	10
Horizontal Conductivity:	25.500 fpd	# of Cells P2 to P3:	45
Vertical Conductivity:	0.000 fpd		
Fillable Porosity:	0.250		
Layer Thickness:	1.50 ft		

Comment:

Drop Structure Link: SMA B > EAST OUTFALL		Upstream Pipe		Downstream Pipe	
		Invert:	39.84 ft	Invert:	39.55 ft
Scenario:	POST-CONDITIONS (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
		Geometry: Circular		Geometry: Circular	
From Node:	SMA-B	Max Depth:	1.50 ft	Max Depth:	1.50 ft
To Node:	POST-EAST-OUTFALL	Bottom Clip			
		Default:	0.00 ft	Default:	0.00 ft
Link Count:	1	Op Table:		Op Table:	
Flow Direction:	Both	Ref Node:		Ref Node:	
Solution:	Combine	Manning's N:	0.0000	Manning's N:	0.0000
Increments:	0	Top Clip			
Pipe Count:	1	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	59.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00				
Exit Loss Coef:	0.00				
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment: NGVD TO NAVD CONVERSION FACTOR OF 1.056.
POND OUTFALL TO TIE INTO LOWEST ELEVATION OF EXISTING STRUCTURE AT INVERT 40.61 (NGVD)

Weir Component		Bottom Clip	
Weir:	1	Default:	0.00 ft
Weir Count:	1	Op Table:	
Weir Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Horizontal	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	44.50 ft		

Control Elevation:	44.50 ft
Max Depth:	3.00 ft
Max Width:	4.50 ft
Fillet:	0.00 ft

Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: TYPE E BOX

Weir Component

Weir:	2
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Sharp Crested Vertical
Geometry Type:	Rectangular
Invert:	43.35 ft
Control Elevation:	43.35 ft
Max Depth:	999999999.00 ft
Max Width:	0.50 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment:

Drop Structure Comment:

Drop Structure Link: SMA B > WEST OUTFALL

Scenario:	POST-CONDITIONS (DIVERSION)
From Node:	SMA-B
To Node:	D38
Link Count:	1
Flow Direction:	Both
Solution:	Combine
Increments:	0
Pipe Count:	1
Damping:	0.0000 ft
Length:	230.08 ft
FHWA Code:	1
Entr Loss Coef:	1.00
Exit Loss Coef:	0.50
Bend Loss Coef:	0.00
Bend Location:	0.00 dec
Energy Switch:	Energy

Upstream Pipe

Invert:	34.26 ft
Manning's N:	0.0120

Geometry: Circular

Max Depth:	2.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Downstream Pipe

Invert:	33.80 ft
Manning's N:	0.0120

Geometry: Circular

Max Depth:	2.50 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	
Manning's N:	0.0000

Pipe Comment:

Weir Component			
Weir:	1	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Horizontal	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	44.50 ft	Op Table:	
Control Elevation:	44.50 ft	Ref Node:	
Max Depth:	3.00 ft	Discharge Coefficients	
Max Width:	4.50 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment: TYPE E BOX

Weir Component			
Weir:	2	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Rectangular	Default:	0.00 ft
Invert:	43.00 ft	Op Table:	
Control Elevation:	43.00 ft	Ref Node:	
Max Depth:	999999999.00 ft	Discharge Coefficients	
Max Width:	1.40 ft	Weir Default:	3.200
Fillet:	0.00 ft	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Weir Component			
Weir:	3	Bottom Clip	
Weir Count:	1	Default:	0.00 ft
Weir Flow Direction:	Both	Op Table:	
Damping:	0.0000 ft	Ref Node:	
Weir Type:	Sharp Crested Vertical	Top Clip	
Geometry Type:	Circular	Default:	0.00 ft
Invert:	40.50 ft	Op Table:	
Control Elevation:	40.50 ft	Ref Node:	
Max Depth:	0.25 ft	Discharge Coefficients	
		Weir Default:	3.200
		Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Weir Comment:

Drop Structure Comment:

Pipe Link: SMA C > D32		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	39.80 ft	Invert:	39.73 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	SMA-C	Geometry: Circular		Geometry: Circular	
To Node:	D32	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	70.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Percolation Link: SMA C > GWT			
Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	User Specified
		Bottom Elevation:	42.00 ft
From Node:	SMA-C	Surface Area:	0.7185 ac
To Node:	GWT-C	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	354.00 ft
Flow Direction:	Both	Perimeter 2:	432.00 ft
Aquifer Base Elevation:	25.00 ft	Perimeter 3:	490.00 ft
Water Table Elevation:	41.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	25.500 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	0.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.250		
Layer Thickness:	1.00 ft		
Comment:			

Percolation Link: SMA D > GWT			
Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	User Specified
		Bottom Elevation:	42.00 ft
From Node:	SMA-D	Surface Area:	0.3090 ac
To Node:	GWT D & E	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	254.00 ft
Flow Direction:	Both	Perimeter 2:	337.00 ft
Aquifer Base Elevation:	25.00 ft	Perimeter 3:	1044.00 ft
Water Table Elevation:	40.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	25.500 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	0.000 fpd	# of Cells P2 to P3:	45

Fillable Porosity:	0.250
Layer Thickness:	2.00 ft

Comment:

Percolation Link: SMA E > GWT

Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	User Specified
		Bottom Elevation:	42.00 ft
From Node:	SMA-E	Surface Area:	0.5063 ac
To Node:	GWT D & E	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	120.00 ft
Flow Direction:	Both	Perimeter 2:	120.00 ft
Aquifer Base Elevation:	25.00 ft	Perimeter 3:	120.00 ft
Water Table Elevation:	40.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	25.500 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	0.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.250		
Layer Thickness:	2.00 ft		

Comment:

Percolation Link: SMA G > GWT

Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	User Specified
		Bottom Elevation:	42.00 ft
From Node:	SMA-G	Surface Area:	0.8593 ac
To Node:	GWT G & SWALES	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	389.00 ft
Flow Direction:	Both	Perimeter 2:	468.00 ft
Aquifer Base Elevation:	25.00 ft	Perimeter 3:	1161.00 ft
Water Table Elevation:	40.00 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	25.500 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	0.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.250		
Layer Thickness:	2.00 ft		

Comment:

Pipe Link: SMA G > SMA C

		Upstream	Downstream
Scenario:	POST-CONDITIONS (DIVERSION)	Invert: 42.00 ft	Invert: 42.00 ft
		Manning's N: 0.0200	Manning's N: 0.0200
From Node:	SMA-G	Geometry: Circular	Geometry: Circular
To Node:	SMA-C	Max Depth: 1.25 ft	Max Depth: 1.25 ft
Link Count:	2	Bottom Clip	

Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	95.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Weir Link: SMA-A > CS-C (1)

Scenario:	POST-CONDITIONS (DIVERSION)	Bottom Clip	
		Default:	0.00 ft
From Node:	SMA-A.1	Op Table:	
To Node:	CS-C	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Sharp Crested Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	45.60 ft	Weir Default:	2.800
Control Elevation:	45.60 ft	Weir Table:	
Max Depth:	999999.00 ft	Orifice Default:	0.600
Max Width:	5.00 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Weir Link: SMA-A > CS-C (2)

Scenario:	POST-CONDITIONS (DIVERSION)	Bottom Clip	
		Default:	0.00 ft
From Node:	SMA-A.1	Op Table:	
To Node:	CS-C	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Horizontal	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	46.00 ft	Weir Default:	2.800
Control Elevation:	46.00 ft	Weir Table:	
Max Depth:	3.08 ft	Orifice Default:	0.600
Max Width:	4.08 ft	Orifice Table:	
Fillet:	0.00 ft		

Comment:

Pipe Link: SMA-A EQUALIZER		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	44.00 ft	Invert:	43.50 ft
	S (DIVERSION)	Manning's N:	0.0120	Manning's N:	0.0120
From Node:	SMA-A.2	Geometry: Circular		Geometry: Circular	
To Node:	SMA-A.1	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	146.00 ft	Ref Node:		Ref Node:	
FHWA Code:	5	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: SMA-C > D17		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	42.00 ft	Invert:	43.33 ft
	S (DIVERSION)	Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SMA-C	Geometry: Circular		Geometry: Circular	
To Node:	D17	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	27.70 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: SMA-D > D17		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	42.00 ft	Invert:	43.66 ft
	S (DIVERSION)	Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SMA-D	Geometry: Circular		Geometry: Circular	
To Node:	D17	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	48.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			

Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Pipe Link: SMA-E > D16		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	42.00 ft	Invert:	43.06 ft
		Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SMA-E	Geometry: Circular		Geometry: Circular	
To Node:	D16	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	67.10 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000

Comment:

Percolation Link: SMA-F > GWT			
Scenario:	POST-CONDITIONS (DIVERSION)	Surface Area Option:	User Specified
		Bottom Elevation:	41.50 ft
From Node:	SMA-F	Surface Area:	0.1354 ac
To Node:	GWT-F	Vertical Flow Termination:	Horizontal Flow Algorithm
Link Count:	1	Perimeter 1:	157.00 ft
Flow Direction:	Both	Perimeter 2:	236.00 ft
Aquifer Base Elevation:	25.00 ft	Perimeter 3:	943.00 ft
Water Table Elevation:	40.50 ft	Distance P1 to P2:	50.00 ft
Annual Recharge Rate:	0 ipy	Distance P2 to P3:	450.00 ft
Horizontal Conductivity:	25.500 fpd	# of Cells P1 to P2:	10
Vertical Conductivity:	0.000 fpd	# of Cells P2 to P3:	45
Fillable Porosity:	0.250		
Layer Thickness:	1.00 ft		

Comment:

Pipe Link: SMA-G > D15		Upstream		Downstream	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	42.00 ft	Invert:	43.33 ft
		Manning's N:	0.0200	Manning's N:	0.0200

From Node:	SMA-G	Geometry: Circular		Geometry: Circular	
To Node:	D15	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	27.70 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: SMA-G > D16		Upstream		Downstream	
Scenario:	POST-CONDITION	Invert:	42.00 ft	Invert:	43.33 ft
	S (DIVERSION)	Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SMA-G	Geometry: Circular		Geometry: Circular	
To Node:	D16	Max Depth:	1.50 ft	Max Depth:	1.50 ft
Link Count:	1	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	53.40 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00	Top Clip			
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Drop Structure Link: SWALE 1 > SMA G		Upstream Pipe		Downstream Pipe	
Scenario:	POST-CONDITION	Invert:	42.10 ft	Invert:	42.00 ft
	S (DIVERSION)	Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SWALE 1	Geometry: Circular		Geometry: Circular	
To Node:	SMA-G	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	4.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	

Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	45.25 ft
Control Elevation:	45.25 ft
Max Depth:	3.08 ft
Max Width:	4.08 ft
Fillet:	0.00 ft

Bottom Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Top Clip

Default:	0.00 ft
Op Table:	
Ref Node:	

Discharge Coefficients

Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: TYPE D BOX

Drop Structure Comment:

Drop Structure Link: SWALE 2 > SMA G		Upstream Pipe		Downstream Pipe	
Scenario:	POST-CONDITIONS (DIVERSION)	Invert:	42.10 ft	Invert:	42.00 ft
		Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SWALE 2	Geometry: Circular		Geometry: Circular	
To Node:	SMA-G	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	4.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component

Weir:	1
Weir Count:	1

Bottom Clip

Default:	0.00 ft

Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	45.25 ft
Control Elevation:	45.25 ft
Max Depth:	3.08 ft
Max Width:	4.08 ft
Fillet:	0.00 ft

Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Weir Comment: TYPE D BOX

Drop Structure Comment:

Drop Structure Link: SWALE 3 > SMA G		Upstream Pipe		Downstream Pipe	
Scenario:	POST-CONDITION S (DIVERSION)	Invert:	42.10 ft	Invert:	42.00 ft
		Manning's N:	0.0200	Manning's N:	0.0200
From Node:	SWALE 3	Geometry: Circular		Geometry: Circular	
To Node:	SMA-G	Max Depth:	1.25 ft	Max Depth:	1.25 ft
Link Count:	2	Bottom Clip			
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Solution:	Combine	Op Table:		Op Table:	
Increments:	0	Ref Node:		Ref Node:	
Pipe Count:	1	Manning's N:	0.0000	Manning's N:	0.0000
Damping:	0.0000 ft	Top Clip			
Length:	4.00 ft	Default:	0.00 ft	Default:	0.00 ft
FHWA Code:	1	Op Table:		Op Table:	
Entr Loss Coef:	0.00	Ref Node:		Ref Node:	
Exit Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000
Bend Loss Coef:	0.00				
Bend Location:	0.00 dec				
Energy Switch:	Energy				

Pipe Comment:

Weir Component	
Weir:	1
Weir Count:	1
Weir Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Horizontal
Geometry Type:	Rectangular
Invert:	45.25 ft
Control Elevation:	45.25 ft
Max Depth:	3.08 ft
Max Width:	4.08 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	3.200

Fillet: 0.00 ft

Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment: TYPE D BOX

Drop Structure Comment:

Weir Link: WEIR SMA-F > D40

Scenario: POST-CONDITIONS (DIVERSION)
From Node: SMA-F
To Node: D15
Link Count: 2
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Sharp Crested Vertical
Geometry Type: Arch Structural Plate
Invert: 43.00 ft
Control Elevation: 43.00 ft
Max Depth: 1.58 ft
Max Width: 3.08 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:

Top Clip
Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment:

Simulation: 100YR-24HR

Scenario: POST-CONDITIONS (DIVERSION)
Run Date/Time: 11/10/2020 6:11:39 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		60.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: SITE
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 10.60 in
Storm Duration: 24.0000 hr
Dflt Damping (1D): 0.0050 ft

Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment: 100 yr / 24 hr

Simulation: 10YR-24HR

Scenario: POST-CONDITIONS (DIVERSION)
Run Date/Time: 11/10/2020 6:27:23 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		60.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:	
Reference ET Folder:	
Unit Hydrograph Folder:	

Lookup Tables

Boundary Stage Set:	
Extern Hydrograph Set:	
Curve Number Set:	SITE
Green-Ampt Set:	
Vertical Layers Set:	
Impervious Set:	SITE
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.90 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment: 10 yr / 24 hr

Simulation: 25YR-24HR

Scenario:	POST-CONDITIONS (DIVERSION)
Run Date/Time:	11/10/2020 6:37:55 PM
Program Version:	ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		60.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: SITE
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
IA Recovery Time: 24.0000 hr
ET for Manual Basins: False

Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	8.60 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment: 25 yr / 24 hr

Simulation: MEAN ANNUAL

Scenario: POST-CONDITIONS (DIVERSION)
Run Date/Time: 11/10/2020 6:49:02 PM
Program Version: ICPR4 4.07.04

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		60.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	14.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: SITE
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	4.30 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	100 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment: Mean Annual (2.33 yr / 24 hr)

APPENDIX E

Wet & Dry Pond Recovery Analysis

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	0.0000	45.60	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	0.2501	45.42	0.85
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	0.5003	45.25	0.80
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	0.7501	45.07	0.75
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	1.0001	44.90	0.70
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	1.2502	44.76	0.45
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	1.5004	44.65	0.36
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	1.7500	44.56	0.31
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	2.0000	44.48	0.28
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	2.2501	44.40	0.25
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	2.5002	44.32	0.23
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	2.7501	44.25	0.21
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	3.0001	44.19	0.19
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	3.2503	44.13	0.16
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	3.5002	44.08	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	3.7502	44.05	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	4.0002	44.02	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	4.2504	43.99	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	4.5004	43.96	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	4.7501	43.94	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	5.0005	43.91	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	5.2505	43.89	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	5.5000	43.87	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	5.7500	43.84	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	6.0005	43.82	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	6.2504	43.80	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	6.5005	43.78	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	6.7500	43.76	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	7.0000	43.74	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	7.2504	43.73	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	7.5005	43.71	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	7.7502	43.69	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	8.0001	43.68	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	8.2501	43.66	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	8.5000	43.64	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	8.7506	43.63	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	9.0002	43.61	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	9.2504	43.60	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	9.5003	43.59	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	9.7502	43.57	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	10.0000	43.56	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	10.2501	43.55	0.03

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	10.5006	43.53	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	10.7501	43.52	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	11.0004	43.51	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	11.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	11.5002	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	11.7503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	12.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	12.2506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	12.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	12.7505	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	13.0002	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	13.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	13.5000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	13.7500	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	14.0004	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	14.2507	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	14.5001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	14.7506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	15.0000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	15.2502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	15.5001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	15.7502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	16.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	16.2506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	16.5006	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	16.7504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	17.0006	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	17.2503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	17.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	17.7502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	18.0001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	18.2503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	18.5003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	18.7506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	19.0004	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	19.2502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	19.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	19.7506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	20.0007	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	20.2503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	20.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	20.7503	43.50	0.00

SMA-A.1 RECOVERS WITHIN 11.25 HOURS

REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	63.0034	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	63.2512	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	63.5007	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	63.7512	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	64.0007	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	64.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	64.5038	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	64.7510	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	65.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	65.2508	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	65.5025	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	65.7538	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	66.0030	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	66.2532	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	66.5041	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	66.7503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	67.0029	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	67.2516	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	67.5030	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	67.7530	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	68.0055	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	68.2504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	68.5001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	68.7527	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	69.0002	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	69.2536	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	69.5040	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	69.7562	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	70.0025	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	70.2514	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	70.5014	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	70.7510	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	71.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	71.2558	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	71.5045	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	71.7544	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.1	72.0073	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	0.0000	45.60	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	0.2501	45.42	0.36
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	0.5003	45.25	0.34
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	0.7501	45.07	0.31
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	1.0001	44.90	0.28

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	1.2502	44.76	0.24
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	1.5004	44.65	0.22
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	1.7500	44.56	0.21
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	2.0000	44.47	0.19
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	2.2501	44.39	0.18
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	2.5002	44.32	0.18
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	2.7501	44.25	0.17
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	3.0001	44.18	0.16
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	3.2503	44.10	0.15
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	3.5002	43.99	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	3.7502	43.86	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	4.0002	43.76	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	4.2504	43.66	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	4.5004	43.58	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	4.7501	43.51	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	5.0005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	5.2505	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	5.5000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	5.7500	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	6.0005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	6.2504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	6.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	6.7500	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	7.0000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	7.2504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	7.5005	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	7.7502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	8.0001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	8.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	8.5000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	8.7506	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	9.0002	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	9.2504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	9.5003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	9.7502	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	10.0000	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	10.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	10.5006	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	10.7501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	11.0004	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	11.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	11.5002	43.50	0.00

SMA-A.2 RECOVERS WITHIN 5.0 HOURS

REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	64.2501	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	64.5038	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	64.7510	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	65.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	65.2508	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	65.5025	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	65.7538	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	66.0030	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	66.2532	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	66.5041	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	66.7503	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	67.0029	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	67.2516	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	67.5030	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	67.7530	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	68.0055	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	68.2504	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	68.5001	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	68.7527	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	69.0002	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	69.2536	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	69.5040	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	69.7562	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	70.0025	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	70.2514	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	70.5014	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	70.7510	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	71.0003	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	71.2558	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	71.5045	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	71.7544	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-A.2	72.0073	43.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	0.0000	41.01	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	0.2501	41.00	0.15
RECOVERY (DIVERSION)	RECOVERY	SMA-B	0.5003	40.99	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	0.7501	40.99	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	1.0001	40.98	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	1.2502	40.97	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	1.5004	40.96	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	1.7500	40.96	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-B	2.0000	40.95	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	2.2501	40.94	0.13

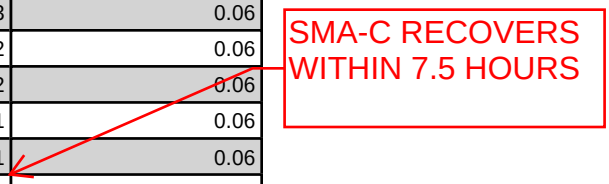
Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-B	2.5002	40.94	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	2.7501	40.93	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	3.0001	40.92	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	3.2503	40.92	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	3.5002	40.91	0.13
RECOVERY (DIVERSION)	RECOVERY	SMA-B	3.7502	40.90	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	4.0002	40.90	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	4.2504	40.89	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	4.5004	40.88	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	4.7501	40.88	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	5.0005	40.87	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	5.2505	40.86	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-B	5.5000	40.86	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	5.7500	40.85	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	6.0005	40.85	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	6.2504	40.84	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	6.5005	40.83	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	6.7500	40.83	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-B	7.0000	40.82	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	7.2504	40.82	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	7.5005	40.81	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	7.7502	40.81	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	8.0001	40.80	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	8.2501	40.79	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-B	8.5000	40.79	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-B	8.7506	40.78	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-B	9.0002	40.78	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-B	9.2504	40.77	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-B	9.5003	40.77	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-B	9.7502	40.77	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-B	10.0000	40.76	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-B	10.2501	40.76	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-B	10.5006	40.75	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-B	10.7501	40.75	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	11.0004	40.74	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	11.2501	40.74	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	11.5002	40.74	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	11.7503	40.73	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	12.0003	40.73	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	12.2506	40.73	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	12.5005	40.72	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-B	12.7505	40.72	0.06

HALF OF SMA-B TREATMENT VOLUME RECOVERS WITHIN APPROXIMATELY 10.5 HOURS. (MINIMUM ORIFICE SIZING UTILIZED)

REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

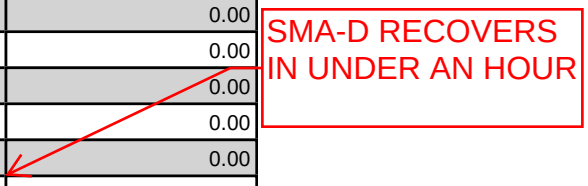
Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-B	65.5025	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	65.7538	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	66.0030	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	66.2532	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	66.5041	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	66.7503	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	67.0029	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	67.2516	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	67.5030	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	67.7530	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	68.0055	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	68.2504	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	68.5001	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	68.7527	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	69.0002	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	69.2536	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	69.5040	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	69.7562	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	70.0025	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	70.2514	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	70.5014	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	70.7510	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	71.0003	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	71.2558	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	71.5045	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	71.7544	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-B	72.0073	40.54	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	0.0000	43.33	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	0.2501	42.59	2.03
RECOVERY (DIVERSION)	RECOVERY	SMA-C	0.5003	42.48	1.18
RECOVERY (DIVERSION)	RECOVERY	SMA-C	0.7501	42.41	0.82
RECOVERY (DIVERSION)	RECOVERY	SMA-C	1.0001	42.35	0.61
RECOVERY (DIVERSION)	RECOVERY	SMA-C	1.2502	42.31	0.47
RECOVERY (DIVERSION)	RECOVERY	SMA-C	1.5004	42.28	0.38
RECOVERY (DIVERSION)	RECOVERY	SMA-C	1.7500	42.25	0.31
RECOVERY (DIVERSION)	RECOVERY	SMA-C	2.0000	42.23	0.27
RECOVERY (DIVERSION)	RECOVERY	SMA-C	2.2501	42.20	0.23
RECOVERY (DIVERSION)	RECOVERY	SMA-C	2.5002	42.19	0.20
RECOVERY (DIVERSION)	RECOVERY	SMA-C	2.7501	42.17	0.17
RECOVERY (DIVERSION)	RECOVERY	SMA-C	3.0001	42.15	0.15
RECOVERY (DIVERSION)	RECOVERY	SMA-C	3.2503	42.14	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-C	3.5002	42.13	0.12

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-C	3.7502	42.12	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-C	4.0002	42.11	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-C	4.2504	42.10	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-C	4.5004	42.09	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-C	4.7501	42.08	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-C	5.0005	42.07	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-C	5.2505	42.06	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-C	5.5000	42.05	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-C	5.7500	42.04	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-C	6.0005	42.04	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	6.2504	42.03	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	6.5005	42.02	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	6.7500	42.02	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	7.0000	42.01	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	7.2504	42.01	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-C	7.5005	42.00	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-C	7.7502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	8.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	8.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	8.5000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	8.7506	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	9.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	9.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	9.5003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	9.7502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	10.0000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	10.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	10.5006	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	10.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	11.0004	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	11.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	11.5002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	11.7503	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	12.0003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	12.2506	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	12.5005	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	12.7505	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	13.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	13.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	13.5000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	13.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	14.0004	42.00	0.00



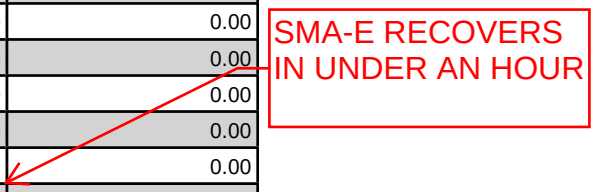
REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-C	66.7503	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	67.0029	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	67.2516	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	67.5030	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	67.7530	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	68.0055	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	68.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	68.5001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	68.7527	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	69.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	69.2536	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	69.5040	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	69.7562	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	70.0025	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	70.2514	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	70.5014	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	70.7510	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	71.0003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	71.2558	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	71.5045	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	71.7544	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-C	72.0073	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	0.0000	43.66	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	0.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	0.5003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	0.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	1.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	1.2502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	1.5004	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	1.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	2.0000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	2.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	2.5002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	2.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	3.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	3.2503	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	3.5002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	3.7502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	4.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	4.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	4.5004	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	4.7501	42.00	0.00



REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-D	68.0055	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	68.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	68.5001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	68.7527	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	69.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	69.2536	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	69.5040	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	69.7562	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	70.0025	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	70.2514	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	70.5014	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	70.7510	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	71.0003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	71.2558	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	71.5045	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	71.7544	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-D	72.0073	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	0.0000	43.06	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	0.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	0.5003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	0.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	1.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	1.2502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	1.5004	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	1.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	2.0000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	2.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	2.5002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	2.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	3.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	3.2503	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	3.5002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	3.7502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	4.0002	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	4.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	4.5004	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	4.7501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	5.0005	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	5.2505	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	5.5000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	5.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	6.0005	42.00	0.00

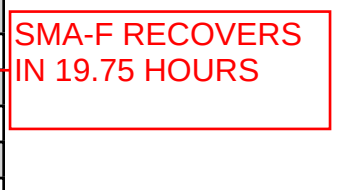


REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-E	69.2536	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	69.5040	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	69.7562	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	70.0025	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	70.2514	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	70.5014	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	70.7510	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	71.0003	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	71.2558	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	71.5045	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	71.7544	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-E	72.0073	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	0.0000	43.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	0.2501	42.49	0.41
RECOVERY (DIVERSION)	RECOVERY	SMA-F	0.5003	42.42	0.23
RECOVERY (DIVERSION)	RECOVERY	SMA-F	0.7501	42.37	0.17
RECOVERY (DIVERSION)	RECOVERY	SMA-F	1.0001	42.33	0.14
RECOVERY (DIVERSION)	RECOVERY	SMA-F	1.2502	42.29	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-F	1.5004	42.26	0.11
RECOVERY (DIVERSION)	RECOVERY	SMA-F	1.7500	42.23	0.10
RECOVERY (DIVERSION)	RECOVERY	SMA-F	2.0000	42.21	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-F	2.2501	42.19	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-F	2.5002	42.16	0.08
RECOVERY (DIVERSION)	RECOVERY	SMA-F	2.7501	42.14	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-F	3.0001	42.12	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-F	3.2503	42.11	0.07
RECOVERY (DIVERSION)	RECOVERY	SMA-F	3.5002	42.09	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-F	3.7502	42.07	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-F	4.0002	42.06	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-F	4.2504	42.04	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-F	4.5004	42.03	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-F	4.7501	42.01	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-F	5.0005	42.00	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-F	5.2505	41.98	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-F	5.5000	41.97	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	5.7500	41.95	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	6.0005	41.94	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	6.2504	41.93	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	6.5005	41.91	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	6.7500	41.90	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	7.0000	41.89	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-F	7.2504	41.88	0.04

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-F	7.5005	41.87	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	7.7502	41.86	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	8.0001	41.85	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	8.2501	41.84	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	8.5000	41.83	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	8.7506	41.82	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	9.0002	41.81	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	9.2504	41.80	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	9.5003	41.79	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	9.7502	41.78	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	10.0000	41.77	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	10.2501	41.76	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	10.5006	41.75	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-F	10.7501	41.74	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	11.0004	41.74	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	11.2501	41.73	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	11.5002	41.72	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	11.7503	41.71	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	12.0003	41.70	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	12.2506	41.70	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	12.5005	41.69	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	12.7505	41.68	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	13.0002	41.67	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	13.2501	41.66	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	13.5000	41.66	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	13.7500	41.65	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	14.0004	41.64	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	14.2507	41.63	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	14.5001	41.63	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	14.7506	41.62	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	15.0000	41.61	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	15.2502	41.61	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	15.5001	41.60	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	15.7502	41.59	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	16.0003	41.59	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	16.2506	41.58	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-F	16.5006	41.57	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	16.7504	41.57	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	17.0006	41.56	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	17.2503	41.55	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	17.5005	41.55	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	17.7502	41.54	0.01

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-F	18.0001	41.54	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	18.2503	41.53	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	18.5003	41.53	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	18.7506	41.52	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	19.0004	41.52	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	19.2502	41.51	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	19.5005	41.51	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	19.7506	41.50	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-F	20.0007	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	20.2503	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	20.5005	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	20.7503	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	21.0009	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	21.2510	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	21.5005	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	21.7501	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	22.0003	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	22.2509	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	22.5006	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	22.7510	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	23.0005	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	23.2506	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	23.5004	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	23.7503	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	24.0011	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	24.2507	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	24.5000	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	24.7504	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	25.0004	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	25.2513	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	25.5010	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	25.7510	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	26.0012	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	26.2501	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	26.5004	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	26.7503	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	27.0012	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	27.2506	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	27.5002	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	27.7513	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	28.0002	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	28.2505	41.50	0.00



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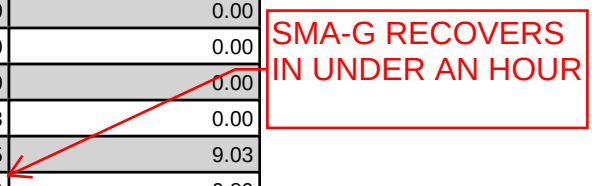
Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Outflow Rate [cfs]
RECOVERY (DIVERSION)	RECOVERY	SMA-F	70.5014	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	70.7510	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	71.0003	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	71.2558	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	71.5045	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	71.7544	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-F	72.0073	41.50	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	0.0000	43.33	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	0.2501	42.35	9.03
RECOVERY (DIVERSION)	RECOVERY	SMA-G	0.5003	42.00	0.80
RECOVERY (DIVERSION)	RECOVERY	SMA-G	0.7501	42.00	0.55
RECOVERY (DIVERSION)	RECOVERY	SMA-G	1.0001	42.00	0.39
RECOVERY (DIVERSION)	RECOVERY	SMA-G	1.2502	42.00	0.29
RECOVERY (DIVERSION)	RECOVERY	SMA-G	1.5004	42.00	0.22
RECOVERY (DIVERSION)	RECOVERY	SMA-G	1.7500	42.00	0.17
RECOVERY (DIVERSION)	RECOVERY	SMA-G	2.0000	42.00	0.12
RECOVERY (DIVERSION)	RECOVERY	SMA-G	2.2501	42.00	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-G	2.5002	42.00	0.09
RECOVERY (DIVERSION)	RECOVERY	SMA-G	2.7501	42.00	0.06
RECOVERY (DIVERSION)	RECOVERY	SMA-G	3.0001	42.00	0.05
RECOVERY (DIVERSION)	RECOVERY	SMA-G	3.2503	42.00	0.04
RECOVERY (DIVERSION)	RECOVERY	SMA-G	3.5002	42.00	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-G	3.7502	42.00	0.03
RECOVERY (DIVERSION)	RECOVERY	SMA-G	4.0002	42.00	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-G	4.2504	42.00	0.02
RECOVERY (DIVERSION)	RECOVERY	SMA-G	4.5004	42.00	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-G	4.7501	42.00	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-G	5.0005	42.00	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-G	5.2505	42.00	0.01
RECOVERY (DIVERSION)	RECOVERY	SMA-G	5.5000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	5.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	6.0005	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	6.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	6.5005	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	6.7500	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	7.0000	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	7.2504	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	7.5005	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	7.7502	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	8.0001	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	8.2501	42.00	0.00
RECOVERY (DIVERSION)	RECOVERY	SMA-G	8.5000	42.00	0.00



REMAINDER OF THIS RECOVERY TABLE HAS BEEN REMOVED TO LIMIT LENGTH OF REPORT

Potable Water System Report for
City of Winter Springs, FL

Winter Springs Marketplace Potable Water Analysis

Winter Springs, FL

Prepared by:

Kimley-Horn and Associates, Inc.
Orlando, Florida
July 28, 2020 (Revised September 24, 2020)

Potable Water System Report for
Winter Springs, FL

Winter Springs Marketplace
Winter Springs, FL

Prepared for:

EQUINOX DEVELOPMENT

Prepared by:

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July 28, 2020 (Revised September 24, 2020)

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1 PROJECT DESCRIPTION

Winter Springs Marketplace is a proposed ±10.23 acre commercial retail project. The project will contain six (6) commercial retail buildings with associated parking (±9.11 AC.) and an area dedicated to Future Development (±1.12 AC.) The site is located south of SR-434, west of Tuskawilla Rd. in Winter Springs, FL.

2 POTABLE WATER DISTRIBUTION SYSTEM

The proposed potable water system will connect to the existing 12-inch water main located along SR-434.
A combined system will be utilized to provide potable water service, as well as fire protection. A Reduced Pressure Zone backflow preventer will be provided at the connection point to the City of Winter Springs Utility System while each of the businesses will be individually metered.

2.1 POTABLE WATER HYDRAULIC ANALYSIS SUMMARY

A complete water distribution system analysis has been performed for the proposed Winter Springs Marketplace development.
Estimated domestic potable water Average Daily Flows (ADF), Max Daily Flows (MDF), and Peak Hourly Flows (PHF) for the proposed site are shown in Section 2.2. The MDF was determined by multiplying the ADF by a peaking factor of 2.0, while the PHF uses a peaking factor of 4.0. Additional service and fire flow as a placeholder for the Future Development has been implemented into the demands and schematic.
Needed Fire Flow (NFF) calculations for buildings within the site were determined per NFPA 1 Uniform Code. The NFF for the future development was designed to provide the required flow rate based on NFPA requirements. Based on City of Winter Springs criteria (Section 23.2.2) no fire flows will be less than 1,250 gpm. The NFF Calculations are summarized in Section 2.3.
The domestic water distribution system has been modeled in WaterCAD V8i.
The model has been analyzed to ensure adequate flows and pressures are provided within the system during potential worst-case scenarios. Five (5) scenarios were analyzed within the WaterCAD model. Three (3) scenarios are comprised of the MDF plus the required fire flow split between two of the proposed hydrants on the site. The remaining scenarios analyzed were the ADF and PHF.

Wiginton Fire Systems has provided a static pressure of 57 PSI and a residual pressure of 64 PSI per a hydrant flow test performed on July 7, 2020. The results of the hydrant flow test, performed by Wiginton Fire Systems, can be found in Appendix A. The residual pressure (57 PSI) was converted to a pressure head of 131.67 ft and was added to the elevation of the tested flow hydrant (44 ft), resulting in a reservoir pressure head of 175.67 ft for both connection points.

Per City of Winter Springs Utility Manual (Section 3.2.B.iv), the system must provide a normal level of service of 20 PSI. The lowest pressure in the system during Average Daily Flow is 46 PSI. The lowest pressure in the system during Peak Hourly Flow is 45 PSI. During any Fire Flow scenario the potable system must maintain a minimum pressure of 20 PSI at all nodes per Winter Springs Utility Manual criteria (Section 3.2.B.ii). The minimum system pressure measured during any of the three (3) Fire Flow scenarios was 41 PSI (MDF+FF [H4+H5]).

The proposed system meets or exceeds all of the Winter Springs Utility Manual criteria (Section 3). Please see the WaterCAD results in Section 2.5 for more details regarding the flows and pressures provided during each scenario.

2.2 POTABLE WATER DEMAND DETERMINATION

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Orlando, Florida 32801

Made By: DCB DATE: 9/24/2020
Checked By: MIG DATE: 9/24/2020
KHA Project Number: 149170016

Winter Springs Marketplace

Potable Water Demand

per Exhibit A of Seminole County Administrative Code and Seminole County Utilities Engineering Manual
GPM calculated by dividing GDP by 720 to simulate flow period of 12 hours, rather than 24 hours.

Building	Building Type	Number of Units	GPD/Unit	ADF		MDF		PHF	
				GPD	GPM (12 HR PERIOD)	GPD	GPM (12 HR PERIOD)	GPD	GPM (12 HR PERIOD)
Retail C	Store (Grocery)	19,209 SF	0.1	1,921	2.67	3,842	5.34	7,684	10.67
Retail B	Store	10,000 SF	0.1	1,000	1.39	2,000	2.78	4,000	5.56
Retail A	Store	19,000 SF	0.1	1,900	2.64	3,800	5.28	7,600	10.56
OP 1	Fast Food	82 Seats	25.0	2,050	2.85	4,100	5.69	8,200	11.39
OP 2	Fast Food	62 Seats	25.0	1,550	2.15	3,100	4.31	6,200	8.61
BLDG A	Store	4,280 SF	0.1	428	0.59	856	1.19	1,712	2.38
Future Dev.	Store	4,500 SF	0.1	450	0.63	900	1.25	1,800	2.50
TOTAL				**9,299**	**12.92**	**18,598**	**25.83**	**37,196**	**51.66**

Max Daily Flow (MDF)
MDF = ADF x 2.0

Peak Hourly Flow (PHF)
PHF = ADF x 4.0

2.3 NEEDED FIRE FLOW DETERMINATION

September 24, 2020
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Winter Springs Marketplace

Retail A Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

19,000 SF Building

Building Fire Area=	19,000	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	2,500	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	625	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

September 24, 2020
KHA Job #149170016

Winter Springs Marketplace

Retail B Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

10,000 SF Building

Building Fire Area=	10,000	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	1,750	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	438	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

September 24, 2020
KHA Job #149170016

Winter Springs Marketplace

Retail C Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

19,209 SF Building

Building Fire Area=	19,209	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	2,500	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	625	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

September 24, 2020
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Winter Springs Marketplace

Bldg A Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

4,280 SF Building

Building Fire Area=	4,280	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	1,500	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	375	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

September 24, 2020
KHA Job #149170016

Winter Springs Marketplace

Outparcel 1 Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

2,325 SF Building

Building Fire Area=	2,325	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	1,500	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	375	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

September 24, 2020
KHA Job #149170016

Winter Springs Marketplace

Outparcel 2 Needed Fire Flow (NFF)

per NFPA 1 Uniform Fire Code Handbook, 2015 Edition

3,056 SF Building

Building Fire Area=	3,056	**SF**
Building Type (per NFPA 220) =	V(III)	
Associated Min. Required Fire Flow=	1,500	**GPM**
(per Table 18.4.5.1.2 of the NFPA 1 Uniform Fire Code Handbook)		
Fire Sprinkler - Yes or No=	yes	
Calculated Fire Flow=	375	**GPM**
(with 75% fire sprinkler credit, if applicable)		
Minimum Fire Flow Required (City of Winter Springs) =	1,250	**GPM**

Fire Flow Provided= 2,000 GPM

2.4 WATERCAD SCHEMATIC DIAGRAM

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- 1" PIPE
- 2" PIPE
- 6" PIPE
- 8" PIPE
- 10" PIPE
- 12" PIPE

No.	REVISIONS	DATE	BY
1	PER CLIENT AND AGENCY COMMENTS	09-18-20	MIC

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KHA PROJECT

DATE

SCALE AS SHOWN

DESIGNED BY

DRAWN BY

CHECKED BY

WATERCAD POTABLE SCHEMATIC

WINTER SPRINGS MARKETPLACE

SHEET NUMBER

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2.5 WATERCAD RESULTS

BUILD-OUT
AVERAGE DAILY FLOW (ADF) ANALYSIS

Winter Springs Marketplace WaterCAD Tables

ADF

Pipe Table - Time: 0.00 hours

Label	Start Node	Stop Node	Length (Scaled) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Unified)	Velocity (ft/s)	Headloss (ft)
P-1	R-1	RPZ-1	16	12.0	PVC	120.0	13	0.050	0.04	0.00
P-2	RPZ-1	J-1	410	12.0	PVC	120.0	13	1.330	0.04	0.00
P-3	J-1	J-2	209	10.0	PVC	120.0	4	0.790	0.02	0.00
P-4	J-2	J-3	200	8.0	PVC	120.0	4	1.670	0.03	0.00
P-5	J-39	J-3	46	8.0	PVC	120.0	0	0.350	0.00	0.00
P-6	J-6	J-39	345	8.0	PVC	120.0	2	0.750	0.02	0.00
P-7	J-7	J-6	236	8.0	PVC	120.0	2	1.540	0.02	0.00
P-8	J-7	J-8	44	10.0	PVC	120.0	-3	0.890	0.01	0.00
P-9	J-8	J-9	55	10.0	PVC	120.0	-6	0.350	0.02	0.00
P-10	J-9	J-1	63	10.0	PVC	120.0	-6	1.490	0.02	0.00
P-11	J-10	H-1	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-12	J-1	J-10	75	8.0	PVC	120.0	3	0.790	0.02	0.00
P-13	J-10	J-11	42	8.0	PVC	120.0	3	0.350	0.02	0.00
P-14	J-11	J-12	36	8.0	PVC	120.0	1	0.350	0.00	0.00
P-15	J-11	OP-2	76	2.0	PVC	120.0	2	1.280	0.22	0.02
P-16	OP-2	OP-2	12	2.0	PVC	120.0	2	0.800	0.22	0.00
P-17	J-12	BLDG-A	90	1.0	PVC	120.0	1	0.800	0.24	0.05
P-18	BLDG-A	BLDG-A	10	1.0	PVC	120.0	1	0.800	0.24	0.01
P-19	J-8	OP-1	85	2.0	PVC	120.0	3	1.280	0.29	0.03
P-20	OP-1	OP-1	12	2.0	PVC	120.0	3	0.800	0.29	0.01
P-21	J-2	J-37	203	8.0	PVC	120.0	0	2.760	0.00	0.00
P-22	J-37	H-4	20	6.0	PVC	120.0	0	4.010	0.00	0.00
P-23	J-3	J-13	39	8.0	PVC	120.0	4	0.690	0.03	0.00
P-24	J-13	J-14	22	2.0	PVC	120.0	4	0.800	0.41	0.02
P-25	J-13	H-5	34	6.0	PVC	120.0	0	1.390	0.00	0.00
P-26	J-14	RTL-B	21	1.0	PVC	120.0	1	1.300	0.57	0.06
P-27	RTL-B	RTL-B	13	1.0	PVC	120.0	1	0.800	0.57	0.04
P-28	J-14	RTL-A	41	2.0	PVC	120.0	3	0.300	0.27	0.01
P-29	RTL-A	RTL-A	22	2.0	PVC	120.0	3	1.600	0.27	0.01
P-30	J-39	RTL-C	41	2.0	PVC	120.0	3	2.080	0.27	0.02
P-31	J-9	H-2	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-31	RTL-C	RTL-C	122	2.0	PVC	120.0	3	0.800	0.27	0.04
P-33	J-6	H-3	100	6.0	PVC	120.0	0	2.470	0.00	0.00
P-34	J-7	J-15	41	8.0	PVC	120.0	1	1.990	0.00	0.00
P-35	J-15	B-FUTURE	17	1.0	PVC	120.0	1	3.270	0.26	0.01
P-36	B-FUTURE	B-FUTURE	15	1.0	PVC	120.0	1	3.270	0.26	0.01
P-37	J-15	H-6	232	6.0	PVC	120.0	0	4.340	0.00	0.00

Winter Springs Marketplace WaterCAD Tables

ADF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
RTL-C	47.00	3	154.85	47
RTL-B	47.35	1	154.71	46
RTL-A	47.35	3	154.86	47
OP-2	47.00	2	154.93	47
OP-1	47.00	3	154.85	47
J-37	43.00	0	155.15	49
J-15	43.00	0	155.15	49
J-14	43.00	0	155.13	49
J-13	43.00	0	155.15	49
J-12	43.00	0	155.15	49
J-11	43.00	0	155.15	49
J-10	43.00	0	155.15	49
J-9	43.00	0	155.15	49
J-8	43.00	0	155.15	49
J-7	43.00	0	155.15	49
J-6	43.00	0	155.15	49
J-3	43.00	0	155.15	49
J-2	43.00	0	155.15	49
J-1	43.00	0	155.15	49
BLDG-A	47.00	1	154.95	47
B-FUTURE	47.00	1	154.97	47

Winter Springs Marketplace WaterCAD Tables

ADF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	175.67	13	175.67

Winter Springs Marketplace WaterCAD Tables

ADF

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
BLDG-A	46.61	0.8	Sensus 3/4" MTR	1	155.10	154.96	0.14
OP-1	46.57	1.0	Sensus 1" MTR	3	155.11	154.85	0.26
OP-2	46.46	1.0	Sensus 1" MTR	2	155.13	154.93	0.20
RPZ-1	44.00	10.0	Watts 10" RPZ	13	175.67	155.15	20.52
RTL-A	45.85	1.0	Sensus 1" MTR	3	155.12	154.87	0.24
RTL-B	45.64	0.8	Sensus 3/4" MTR	1	155.07	154.75	0.32
RTL-C	44.00	1.0	Sensus 1" MTR	-3	154.89	155.13	0.25

BUILD-OUT
PEAK HOURLY FLOW (PHF) ANALYSIS

Winter Springs Marketplace WaterCAD Tables

PHF

Pipe Table - Time: 0.00 hours

Label	Start Node	Stop Node	Length (Scaled) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Unified)	Velocity (ft/s)	Headloss (ft)
P-1	R-1	RPZ-1	16	12.0	PVC	120.0	52	0.050	0.15	0.00
P-2	RPZ-1	J-1	410	12.0	PVC	120.0	52	1.330	0.15	0.01
P-3	J-1	J-2	209	10.0	PVC	120.0	17	0.790	0.07	0.00
P-4	J-2	J-3	200	8.0	PVC	120.0	17	1.670	0.11	0.00
P-5	J-39	J-3	46	8.0	PVC	120.0	-1	0.350	0.01	0.00
P-6	J-6	J-39	345	8.0	PVC	120.0	9	0.750	0.06	0.00
P-7	J-7	J-6	236	8.0	PVC	120.0	9	1.540	0.06	0.00
P-8	J-7	J-8	44	10.0	PVC	120.0	-12	0.890	0.05	0.00
P-9	J-8	J-9	55	10.0	PVC	120.0	-23	0.350	0.10	0.00
P-10	J-9	J-1	63	10.0	PVC	120.0	-23	1.490	0.10	0.00
P-11	J-10	H-1	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-12	J-1	J-10	75	8.0	PVC	120.0	11	0.790	0.07	0.00
P-13	J-10	J-11	42	8.0	PVC	120.0	11	0.350	0.07	0.00
P-14	J-11	J-12	36	8.0	PVC	120.0	2	0.350	0.02	0.00
P-15	J-11	OP-2	76	2.0	PVC	120.0	9	1.280	0.88	0.22
P-16	OP-2	OP-2	12	2.0	PVC	120.0	9	0.800	0.88	0.04
P-17	J-12	BLDG-A	90	1.0	PVC	120.0	2	0.800	0.97	0.67
P-18	BLDG-A	BLDG-A	10	1.0	PVC	120.0	2	0.800	0.97	0.08
P-19	J-8	OP-1	85	2.0	PVC	120.0	11	1.280	1.16	0.42
P-20	OP-1	OP-1	12	2.0	PVC	120.0	11	0.800	1.16	0.07
P-21	J-2	J-37	203	8.0	PVC	120.0	0	2.760	0.00	0.00
P-22	J-37	H-4	20	6.0	PVC	120.0	0	4.010	0.00	0.00
P-23	J-3	J-13	39	8.0	PVC	120.0	16	0.690	0.10	0.00
P-24	J-13	J-14	22	2.0	PVC	120.0	16	0.800	1.65	0.23
P-25	J-13	H-5	34	6.0	PVC	120.0	0	1.390	0.00	0.00
P-26	J-14	RTL-B	21	1.0	PVC	120.0	6	1.300	2.27	0.84
P-27	RTL-B	RTL-B	13	1.0	PVC	120.0	6	0.800	2.27	0.54
P-28	J-14	RTL-A	41	2.0	PVC	120.0	11	0.300	1.08	0.17
P-29	RTL-A	RTL-A	22	2.0	PVC	120.0	11	1.600	1.08	0.11
P-30	J-39	RTL-C	41	2.0	PVC	120.0	11	2.080	1.09	0.20
P-31	J-9	H-2	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-31	RTL-C	RTL-C	122	2.0	PVC	120.0	11	0.800	1.09	0.51
P-33	J-6	H-3	100	6.0	PVC	120.0	0	2.470	0.00	0.00
P-34	J-7	J-15	41	8.0	PVC	120.0	3	1.990	0.02	0.00
P-35	J-15	B-FUTURE	17	1.0	PVC	120.0	3	3.270	1.02	0.19
P-36	B-FUTURE	B-FUTURE	15	1.0	PVC	120.0	3	3.270	1.02	0.17
P-37	J-15	H-6	232	6.0	PVC	120.0	0	4.340	0.00	0.00

Winter Springs Marketplace WaterCAD Tables

PHF

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
RTL-C	47.00	11	152.50	46
RTL-B	47.35	6	151.18	45
RTL-A	47.35	11	152.71	46
OP-2	47.00	9	153.21	46
OP-1	47.00	11	152.66	46
J-37	43.00	0	154.20	48
J-15	43.00	0	154.20	48
J-14	43.00	0	153.97	48
J-13	43.00	0	154.20	48
J-12	43.00	0	154.20	48
J-11	43.00	0	154.20	48
J-10	43.00	0	154.20	48
J-9	43.00	0	154.20	48
J-8	43.00	0	154.20	48
J-7	43.00	0	154.20	48
J-6	43.00	0	154.20	48
J-3	43.00	0	154.20	48
J-2	43.00	0	154.20	48
J-1	43.00	0	154.20	48
BLDG-A	47.00	2	152.90	46
B-FUTURE	47.00	3	153.26	46

Winter Springs Marketplace WaterCAD Tables

PHF

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	175.67	52	175.67

Winter Springs Marketplace WaterCAD Tables

PHF

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
BLDG-A	46.61	0.8	Sensus 3/4" MTR	2	153.53	152.98	0.55
OP-1	46.57	1.0	Sensus 1" MTR	11	153.78	152.73	1.05
OP-2	46.46	1.0	Sensus 1" MTR	9	153.98	153.25	0.73
RPZ-1	44.00	10.0	Watts 10" RPZ	52	175.67	154.21	21.46
RTL-A	45.85	1.0	Sensus 1" MTR	11	153.80	152.83	0.97
RTL-B	45.64	0.8	Sensus 3/4" MTR	6	153.13	151.72	1.41
RTL-C	44.00	1.0	Sensus 1" MTR	-11	153.01	153.99	0.98

NEEDED FIRE FLOW (NFF) ANALYSIS
MDF+FF (H1+H2)

Winter Springs Marketplace WaterCAD Tables

MDF+H1+H2

Pipe Table - Time: 0.00 hours

Label	Start Node	Stop Node	Length (Scaled) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Unified)	Velocity (ft/s)	Headloss (ft)
P-1	R-1	RPZ-1	16	12.0	PVC	120.0	2,026	0.050	5.75	0.20
P-2	RPZ-1	J-1	410	12.0	PVC	120.0	2,026	1.330	5.75	5.14
P-3	J-1	J-2	209	10.0	PVC	120.0	156	0.790	0.64	0.05
P-4	J-2	J-3	200	8.0	PVC	120.0	156	1.670	0.99	0.16
P-5	J-39	J-3	46	8.0	PVC	120.0	-147	0.350	0.94	0.03
P-6	J-6	J-39	345	8.0	PVC	120.0	-142	0.750	0.91	0.21
P-7	J-7	J-6	236	8.0	PVC	120.0	-142	1.540	0.91	0.15
P-8	J-7	J-8	44	10.0	PVC	120.0	141	0.890	0.58	0.01
P-9	J-8	J-9	55	10.0	PVC	120.0	135	0.350	0.55	0.01
P-10	J-9	J-1	63	10.0	PVC	120.0	-865	1.490	3.53	0.63
P-11	J-10	H-1	21	6.0	PVC	120.0	1,000	2.470	11.35	6.77
P-12	J-1	J-10	75	8.0	PVC	120.0	1,005	0.790	6.42	2.10
P-13	J-10	J-11	42	8.0	PVC	120.0	6	0.350	0.04	0.00
P-14	J-11	J-12	36	8.0	PVC	120.0	1	0.350	0.01	0.00
P-15	J-11	OP-2	76	2.0	PVC	120.0	4	1.280	0.44	0.06
P-16	OP-2	OP-2	12	2.0	PVC	120.0	4	0.800	0.44	0.01
P-17	J-12	BLDG-A	90	1.0	PVC	120.0	1	0.800	0.49	0.19
P-18	BLDG-A	BLDG-A	10	1.0	PVC	120.0	1	0.800	0.49	0.02
P-19	J-8	OP-1	85	2.0	PVC	120.0	6	1.280	0.58	0.11
P-20	OP-1	OP-1	12	2.0	PVC	120.0	6	0.800	0.58	0.02
P-21	J-2	J-37	203	8.0	PVC	120.0	0	2.760	0.00	0.00
P-22	J-37	H-4	20	6.0	PVC	120.0	0	4.010	0.00	0.00
P-23	J-3	J-13	39	8.0	PVC	120.0	8	0.690	0.05	0.00
P-24	J-13	J-14	22	2.0	PVC	120.0	8	0.800	0.82	0.06
P-25	J-13	H-5	34	6.0	PVC	120.0	0	1.390	0.00	0.00
P-26	J-14	RTL-B	21	1.0	PVC	120.0	3	1.300	1.14	0.23
P-27	RTL-B	RTL-B	13	1.0	PVC	120.0	3	0.800	1.14	0.15
P-28	J-14	RTL-A	41	2.0	PVC	120.0	5	0.300	0.54	0.05
P-29	RTL-A	RTL-A	22	2.0	PVC	120.0	5	1.600	0.54	0.03
P-30	J-39	RTL-C	41	2.0	PVC	120.0	5	2.080	0.55	0.06
P-31	J-9	H-2	21	6.0	PVC	120.0	1,000	2.470	11.35	6.73
P-31	RTL-C	RTL-C	122	2.0	PVC	120.0	5	0.800	0.55	0.14
P-33	J-6	H-3	100	6.0	PVC	120.0	0	2.470	0.00	0.00
P-34	J-7	J-15	41	8.0	PVC	120.0	1	1.990	0.01	0.00
P-35	J-15	B-FUTURE	17	1.0	PVC	120.0	1	3.270	0.51	0.05
P-36	B-FUTURE	B-FUTURE	15	1.0	PVC	120.0	1	3.270	0.51	0.05
P-37	J-15	H-6	232	6.0	PVC	120.0	0	4.340	0.00	0.00

Winter Springs Marketplace WaterCAD Tables

MDF+H1+H2

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
RTL-C	47.00	5	147.98	44
RTL-B	47.35	3	147.61	43
RTL-A	47.35	5	148.07	44
OP-2	47.00	4	146.32	43
OP-1	47.00	6	147.65	44
J-37	43.00	0	148.85	46
J-15	43.00	0	148.29	46
J-14	43.00	0	148.62	46
J-13	43.00	0	148.68	46
J-12	43.00	0	146.79	45
J-11	43.00	0	146.79	45
J-10	43.00	0	146.79	45
J-9	43.00	0	148.27	46
J-8	43.00	0	148.28	46
J-7	43.00	0	148.29	46
J-6	43.00	0	148.44	46
J-3	43.00	0	148.69	46
J-2	43.00	0	148.85	46
J-1	43.00	0	148.90	46
BLDG-A	47.00	1	146.31	43
B-FUTURE	47.00	1	147.91	44

Winter Springs Marketplace WaterCAD Tables

MDF+H1+H2

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	175.67	2,026	175.67

Winter Springs Marketplace WaterCAD Tables

MDF+H1+H2

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
BLDG-A	46.61	0.8	Sensus 3/4" MTR	1	146.61	146.33	0.27
OP-1	46.57	1.0	Sensus 1" MTR	6	148.16	147.67	0.49
OP-2	46.46	1.0	Sensus 1" MTR	4	146.73	146.34	0.40
RPZ-1	44.00	10.0	Watts 10" RPZ	2,026	175.47	154.04	21.44
RTL-A	45.85	1.0	Sensus 1" MTR	5	148.58	148.10	0.47
RTL-B	45.64	0.8	Sensus 3/4" MTR	3	148.39	147.75	0.64
RTL-C	44.00	1.0	Sensus 1" MTR	-5	148.12	148.60	0.48

Winter Springs Marketplace WaterCAD Tables

MDF+H1+H2

Hydrant Table - Time: 0.00 hours

Label	Length (Hydrant Lateral) (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	20	45.00	1,000	140.03	41
H-2	20	45.00	1,000	141.53	42
H-3	20	45.00	0	148.44	45
H-4	20	45.00	0	148.85	45
H-5	20	45.00	0	148.68	45
H-6	20	45.00	0	148.29	45

NEEDED FIRE FLOW (NFF) ANALYSIS
MDF+FF (H4+H5)

Winter Springs Marketplace WaterCAD Tables

MDF+H4+H5

Pipe Table - Time: 0.00 hours

Label	Start Node	Stop Node	Length (Scaled) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Unified)	Velocity (ft/s)	Headloss (ft)
P-1	R-1	RPZ-1	16	12.0	PVC	120.0	2,026	0.050	5.75	0.20
P-2	RPZ-1	J-1	410	12.0	PVC	120.0	2,026	1.330	5.75	5.14
P-3	J-1	J-2	209	10.0	PVC	120.0	1,492	0.790	6.09	3.59
P-4	J-2	J-3	200	8.0	PVC	120.0	492	1.670	3.14	1.39
P-5	J-39	J-3	46	8.0	PVC	120.0	516	0.350	3.29	0.35
P-6	J-6	J-39	345	8.0	PVC	120.0	521	0.750	3.33	2.32
P-7	J-7	J-6	236	8.0	PVC	120.0	521	1.540	3.33	1.76
P-8	J-7	J-8	44	10.0	PVC	120.0	-523	0.890	2.14	0.16
P-9	J-8	J-9	55	10.0	PVC	120.0	-528	0.350	2.16	0.15
P-10	J-9	J-1	63	10.0	PVC	120.0	-528	1.490	2.16	0.25
P-11	J-10	H-1	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-12	J-1	J-10	75	8.0	PVC	120.0	6	0.790	0.04	0.00
P-13	J-10	J-11	42	8.0	PVC	120.0	6	0.350	0.04	0.00
P-14	J-11	J-12	36	8.0	PVC	120.0	1	0.350	0.01	0.00
P-15	J-11	OP-2	76	2.0	PVC	120.0	4	1.280	0.44	0.06
P-16	OP-2	OP-2	12	2.0	PVC	120.0	4	0.800	0.44	0.01
P-17	J-12	BLDG-A	90	1.0	PVC	120.0	1	0.800	0.49	0.19
P-18	BLDG-A	BLDG-A	10	1.0	PVC	120.0	1	0.800	0.49	0.02
P-19	J-8	OP-1	85	2.0	PVC	120.0	6	1.280	0.58	0.11
P-20	OP-1	OP-1	12	2.0	PVC	120.0	6	0.800	0.58	0.02
P-21	J-2	J-37	203	8.0	PVC	120.0	1,000	2.760	6.38	6.05
P-22	J-37	H-4	20	6.0	PVC	120.0	1,000	4.010	11.35	9.76
P-23	J-3	J-13	39	8.0	PVC	120.0	1,008	0.690	6.43	1.29
P-24	J-13	J-14	22	2.0	PVC	120.0	8	0.800	0.82	0.06
P-25	J-13	H-5	34	6.0	PVC	120.0	1,000	1.390	11.35	5.69
P-26	J-14	RTL-B	21	1.0	PVC	120.0	3	1.300	1.14	0.23
P-27	RTL-B	RTL-B	13	1.0	PVC	120.0	3	0.800	1.14	0.15
P-28	J-14	RTL-A	41	2.0	PVC	120.0	5	0.300	0.54	0.05
P-29	RTL-A	RTL-A	22	2.0	PVC	120.0	5	1.600	0.54	0.03
P-30	J-39	RTL-C	41	2.0	PVC	120.0	5	2.080	0.55	0.06
P-31	J-9	H-2	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-31	RTL-C	RTL-C	122	2.0	PVC	120.0	5	0.800	0.55	0.14
P-33	J-6	H-3	100	6.0	PVC	120.0	0	2.470	0.00	0.00
P-34	J-7	J-15	41	8.0	PVC	120.0	1	1.990	0.01	0.00
P-35	J-15	B-FUTURE	17	1.0	PVC	120.0	1	3.270	0.51	0.05
P-36	B-FUTURE	B-FUTURE	15	1.0	PVC	120.0	1	3.270	0.51	0.05
P-37	J-15	H-6	232	6.0	PVC	120.0	0	4.340	0.00	0.00

Winter Springs Marketplace WaterCAD Tables

MDF+H4+H5

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
RTL-C	47.00	5	143.59	42
RTL-B	47.35	3	141.55	41
RTL-A	47.35	5	142.01	41
OP-2	47.00	4	148.43	44
OP-1	47.00	6	147.88	44
J-37	43.00	0	139.26	42
J-15	43.00	0	148.35	46
J-14	43.00	0	142.56	43
J-13	43.00	0	142.63	43
J-12	43.00	0	148.90	46
J-11	43.00	0	148.90	46
J-10	43.00	0	148.90	46
J-9	43.00	0	148.65	46
J-8	43.00	0	148.51	46
J-7	43.00	0	148.35	46
J-6	43.00	0	146.59	45
J-3	43.00	0	143.92	44
J-2	43.00	0	145.31	44
J-1	43.00	0	148.90	46
BLDG-A	47.00	1	148.41	44
B-FUTURE	47.00	1	147.96	44

Winter Springs Marketplace WaterCAD Tables

MDF+H4+H5

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	175.67	2,026	175.67

Winter Springs Marketplace WaterCAD Tables

MDF+H4+H5

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
BLDG-A	46.61	0.8	Sensus 3/4" MTR	1	148.71	148.44	0.27
OP-1	46.57	1.0	Sensus 1" MTR	6	148.39	147.90	0.49
OP-2	46.46	1.0	Sensus 1" MTR	4	148.84	148.44	0.40
RPZ-1	44.00	10.0	Watts 10" RPZ	2,026	175.47	154.04	21.44
RTL-A	45.85	1.0	Sensus 1" MTR	5	142.52	142.05	0.47
RTL-B	45.64	0.8	Sensus 3/4" MTR	3	142.34	141.70	0.64
RTL-C	44.00	1.0	Sensus 1" MTR	-5	143.73	144.21	0.48

Winter Springs Marketplace WaterCAD Tables

MDF+H4+H5

Hydrant Table - Time: 0.00 hours

Label	Length (Hydrant Lateral) (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	20	45.00	0	148.90	45
H-2	20	45.00	0	148.65	45
H-3	20	45.00	0	146.59	44
H-4	20	45.00	1,000	129.50	37
H-5	20	45.00	1,000	136.94	40
H-6	20	45.00	0	148.35	45

NEEDED FIRE FLOW (NFF) ANALYSIS
MDF+FF (H3+H6)

Winter Springs Marketplace WaterCAD Tables

MDF+H3+H6

Pipe Table - Time: 0.00 hours

Label	Start Node	Stop Node	Length (Scaled) (ft)	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Minor Loss Coefficient (Unified)	Velocity (ft/s)	Headloss (ft)
P-1	R-1	RPZ-1	16	12.0	PVC	120.0	2,026	0.050	5.75	0.20
P-2	RPZ-1	J-1	410	12.0	PVC	120.0	2,026	1.330	5.75	5.14
P-3	J-1	J-2	209	10.0	PVC	120.0	557	0.790	2.27	0.57
P-4	J-2	J-3	200	8.0	PVC	120.0	557	1.670	3.55	1.76
P-5	J-39	J-3	46	8.0	PVC	120.0	-549	0.350	3.50	0.39
P-6	J-6	J-39	345	8.0	PVC	120.0	-543	0.750	3.47	2.50
P-7	J-7	J-6	236	8.0	PVC	120.0	457	1.540	2.91	1.38
P-8	J-7	J-8	44	10.0	PVC	120.0	-1,458	0.890	5.96	1.12
P-9	J-8	J-9	55	10.0	PVC	120.0	-1,464	0.350	5.98	0.99
P-10	J-9	J-1	63	10.0	PVC	120.0	-1,464	1.490	5.98	1.74
P-11	J-10	H-1	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-12	J-1	J-10	75	8.0	PVC	120.0	6	0.790	0.04	0.00
P-13	J-10	J-11	42	8.0	PVC	120.0	6	0.350	0.04	0.00
P-14	J-11	J-12	36	8.0	PVC	120.0	1	0.350	0.01	0.00
P-15	J-11	OP-2	76	2.0	PVC	120.0	4	1.280	0.44	0.06
P-16	OP-2	OP-2	12	2.0	PVC	120.0	4	0.800	0.44	0.01
P-17	J-12	BLDG-A	90	1.0	PVC	120.0	1	0.800	0.49	0.19
P-18	BLDG-A	BLDG-A	10	1.0	PVC	120.0	1	0.800	0.49	0.02
P-19	J-8	OP-1	85	2.0	PVC	120.0	6	1.280	0.58	0.11
P-20	OP-1	OP-1	12	2.0	PVC	120.0	6	0.800	0.58	0.02
P-21	J-2	J-37	203	8.0	PVC	120.0	0	2.760	0.00	0.00
P-22	J-37	H-4	20	6.0	PVC	120.0	0	4.010	0.00	0.00
P-23	J-3	J-13	39	8.0	PVC	120.0	8	0.690	0.05	0.00
P-24	J-13	J-14	22	2.0	PVC	120.0	8	0.800	0.82	0.06
P-25	J-13	H-5	34	6.0	PVC	120.0	0	1.390	0.00	0.00
P-26	J-14	RTL-B	21	1.0	PVC	120.0	3	1.300	1.14	0.23
P-27	RTL-B	RTL-B	13	1.0	PVC	120.0	3	0.800	1.14	0.15
P-28	J-14	RTL-A	41	2.0	PVC	120.0	5	0.300	0.54	0.05
P-29	RTL-A	RTL-A	22	2.0	PVC	120.0	5	1.600	0.54	0.03
P-30	J-39	RTL-C	41	2.0	PVC	120.0	5	2.080	0.55	0.06
P-31	J-9	H-2	21	6.0	PVC	120.0	0	2.470	0.00	0.00
P-31	RTL-C	RTL-C	122	2.0	PVC	120.0	5	0.800	0.55	0.14
P-33	J-6	H-3	100	6.0	PVC	120.0	1,000	2.470	11.35	13.52
P-34	J-7	J-15	41	8.0	PVC	120.0	1,001	1.990	6.39	2.13
P-35	J-15	B-FUTURE	17	1.0	PVC	120.0	1	3.270	0.51	0.05
P-36	B-FUTURE	B-FUTURE	15	1.0	PVC	120.0	1	3.270	0.51	0.05
P-37	J-15	H-6	232	6.0	PVC	120.0	1,000	4.340	11.35	28.67

Winter Springs Marketplace WaterCAD Tables

MDF+H3+H6

Junction Table - Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
RTL-C	47.00	5	145.51	43
RTL-B	47.35	3	145.49	42
RTL-A	47.35	5	145.96	43
OP-2	47.00	4	148.43	44
OP-1	47.00	6	145.54	43
J-37	43.00	0	148.33	46
J-15	43.00	0	142.93	43
J-14	43.00	0	146.51	45
J-13	43.00	0	146.57	45
J-12	43.00	0	148.90	46
J-11	43.00	0	148.90	46
J-10	43.00	0	148.90	46
J-9	43.00	0	147.16	45
J-8	43.00	0	146.17	45
J-7	43.00	0	145.06	44
J-6	43.00	0	143.68	44
J-3	43.00	0	146.57	45
J-2	43.00	0	148.33	46
J-1	43.00	0	148.90	46
BLDG-A	47.00	1	148.41	44
B-FUTURE	47.00	1	142.54	41

Winter Springs Marketplace WaterCAD Tables

MDF+H3+H6

Reservoir Table - Time: 0.00 hours

Label	Elevation (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	175.67	2,026	175.67

Winter Springs Marketplace WaterCAD Tables

MDF+H3+H6

GPV Table - Time: 0.00 hours

Label	Elevation (ft)	Diameter (Valve) (in)	General Purpose Valve Headloss Curve	Flow (gpm)	Hydraulic Grade (From) (ft)	Hydraulic Grade (To) (ft)	Headloss (ft)
BLDG-A	46.61	0.8	Sensus 3/4" MTR	1	148.71	148.44	0.27
OP-1	46.57	1.0	Sensus 1" MTR	6	146.06	145.56	0.49
OP-2	46.46	1.0	Sensus 1" MTR	4	148.84	148.44	0.40
RPZ-1	44.00	10.0	Watts 10" RPZ	2,026	175.47	154.04	21.44
RTL-A	45.85	1.0	Sensus 1" MTR	5	146.47	145.99	0.47
RTL-B	45.64	0.8	Sensus 3/4" MTR	3	146.28	145.64	0.64
RTL-C	44.00	1.0	Sensus 1" MTR	-5	145.65	146.13	0.48

Winter Springs Marketplace WaterCAD Tables

MDF+H3+H6

Hydrant Table - Time: 0.00 hours

Label	Length (Hydrant Lateral) (ft)	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
H-1	20	45.00	0	148.90	45
H-2	20	45.00	0	147.16	44
H-3	20	45.00	1,000	130.17	37
H-4	20	45.00	0	148.33	45
H-5	20	45.00	0	146.57	44
H-6	20	45.00	1,000	114.26	30

2.6 METER SPECIFICATIONS

For Health Hazard Applications

Job Name _____ Contractor _____

Job Location _____ Approval _____

Engineer _____ Contractor's P.O. No. _____

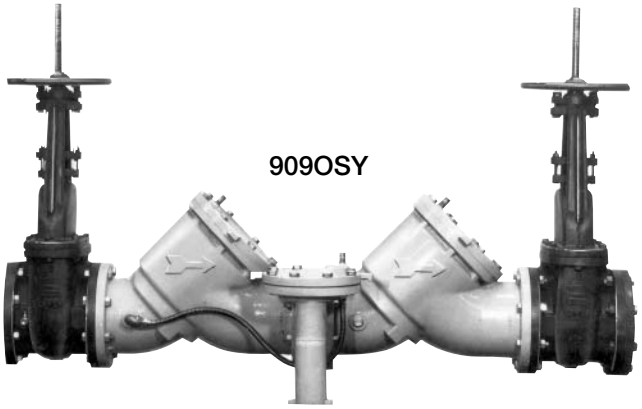
Approval _____ Representative _____

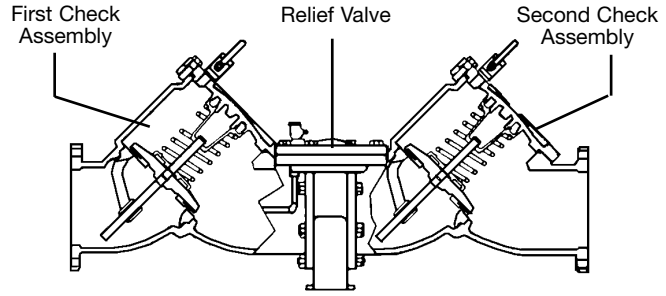
Series 909

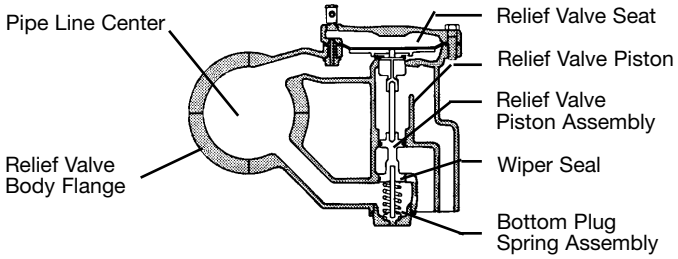
Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65–250mm)

Series 909 Reduced Pressure Zone Assemblies are designed to provide cross-connection control protection of the potable water supply in accordance with national plumbing codes. This series can be utilized in a variety of installations, including health hazard cross-connections in plumbing systems or for containment at the service line entrance. With its exclusive patented relief valve design incorporating the "air-in/water-out" principle, it provides substantially improved relief valve discharge performance during the emergency conditions of combined backsiphonage and backpressure with both checks fouled.







Features

- Replaceable bronze seats
- Stainless steel internal parts
- No special tools required for servicing
- Captured spring check assemblies
- Fused epoxy coated & lined checks
- Industrial strength sensing hose
- Field reversible relief valve
- Air-in/water-out relief valve design provides maximum capacity during emergency conditions

Available Models

Suffix:

BB –	bronze body (2½", 3" only) (64, 76mm)
LF –	without shutoff valves
NRS –	non-rising stem resilient seated gate valves
OSY -	UL/FM outside stem & yoke resilient seated gate valves
QT-FDA –	FDA epoxy coated quarter-turn ball valves
S –	cast iron strainer
S-FDA –	FDA epoxy coated strainer

Note: The installation of a drain line is recommended. When installing a drain line, an air gap is necessary.

Specifications

A Reduced Pressure Zone Assembly shall be installed at each cross-connection to prevent backsiphonage and backpressure backflow of hazardous materials into the potable water supply. The assembly shall consist of a pressure differential relief valve located in a zone between two positive seating check valves and captured springs. Backsiphonage protection shall include provision to admit air directly into the reduced pressure zone via a separate channel from the water discharge channel. The assembly shall include two tightly closing shutoff valves before and after the valve and test cocks. The assembly shall meet the requirements of ASSE Std. 1013; AWWA Std. C511-92; CSA B64.5; and UL Classified File No. EX3185. Listed by IAPMO (UPC). Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California. The assembly shall be a Watts Regulator Company Series 909.

Now Available
WattsBox Insulated Enclosures.
For more information, send for literature ES-WB.

IMPORTANT: *INQUIRE WITH GOVERNING AUTHORITIES FOR LOCAL INSTALLATION REQUIREMENTS*

WATTS®

Watts product specifications in U.S. customary units and metric are approximate and are provided for reference only. For precise measurements, please contact Watts Technical Service. Watts reserves the right to change or modify product design, construction, specifications, or materials without prior notice and without incurring any obligation to make such changes and modifications on Watts products previously or subsequently sold.

Materials

Check Valve Bodies: FDA epoxy coated cast iron or bronze
Seats: bronze
Trim: stainless steel
Relief Valve Body: 2½"-3" (60-80mm) bronze
4"-10" (100-250mm) FDA epoxy coated cast iron
Test Cocks: bronze body ball valve

Pressure — Temperature

Temperature Range: 33°F-110°F (5°C-43°C) continuous, 140°F (60°C) intermittent

Maximum Working Pressure: 175psi (12.06 bar)

Standards

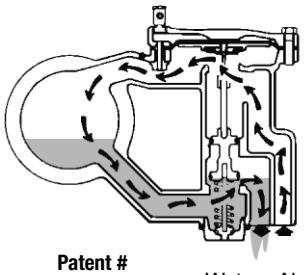
AWWA C511-92

IAPMO PS 31, SBCCI (Standard Plumbing Code)

USC manual for Cross-Connection Control, 8th Edition

How It Operates

The unique relief valve construction incorporates two channels: one for air, one for water. When the relief valve opens, as in the accompanying air-in/water-out diagram, the right-hand channel admits air to the top of the reduced pressure zone, relieving the zone vacuum. The channel on the left then drains the zone to atmosphere. Therefore, if both check valves foul, and simultaneous negative supply and positive backpressure develops, the relief valve uses the air-in/water-out principle to stop potential backflow.



Patent # 4,241,752

Approvals

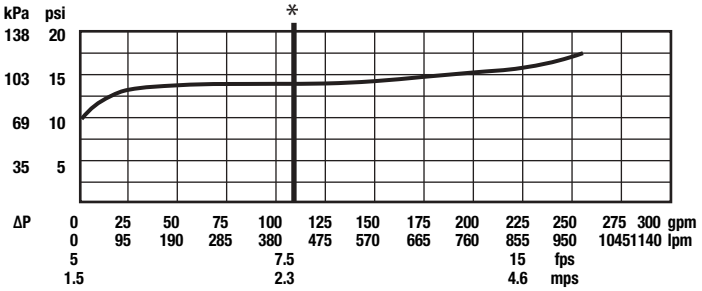
1013 B64.5

Approved by the Foundation for Cross-Connection Control and Hydraulic Research at the University of Southern California.

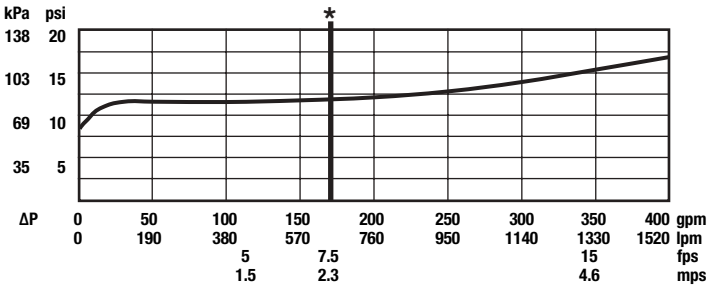
Capacity

*Typical maximum flow rate (7.5 feet/sec.)

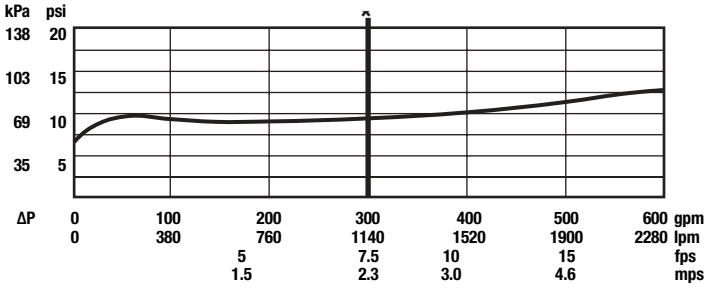
2½" (65mm)



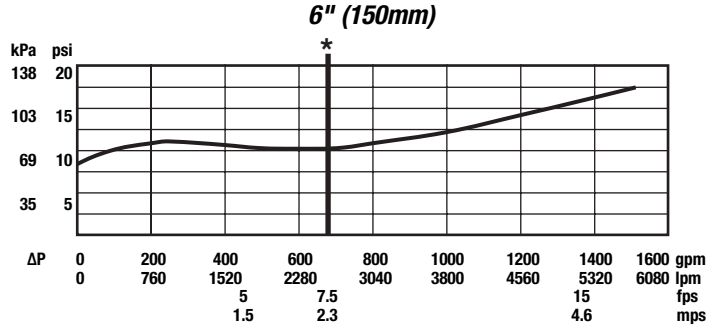
3" (80mm)



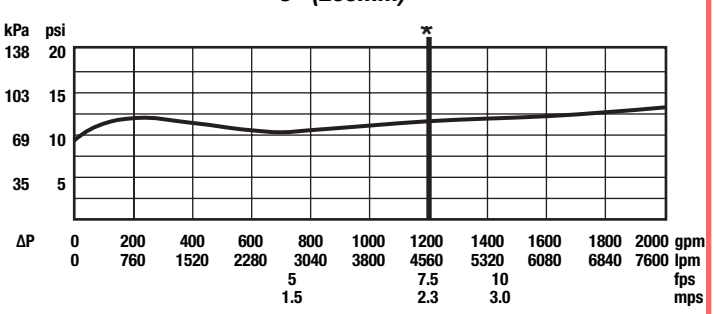
4" (100mm)



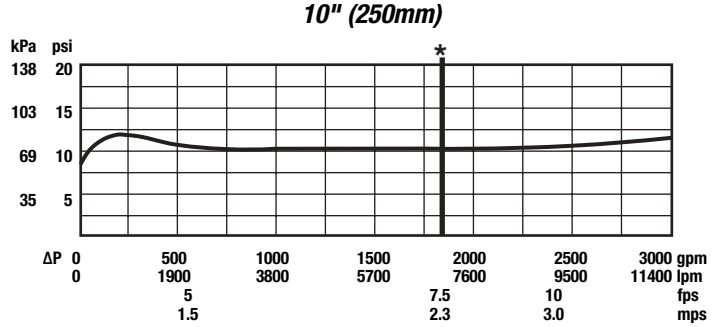
6" (150mm)



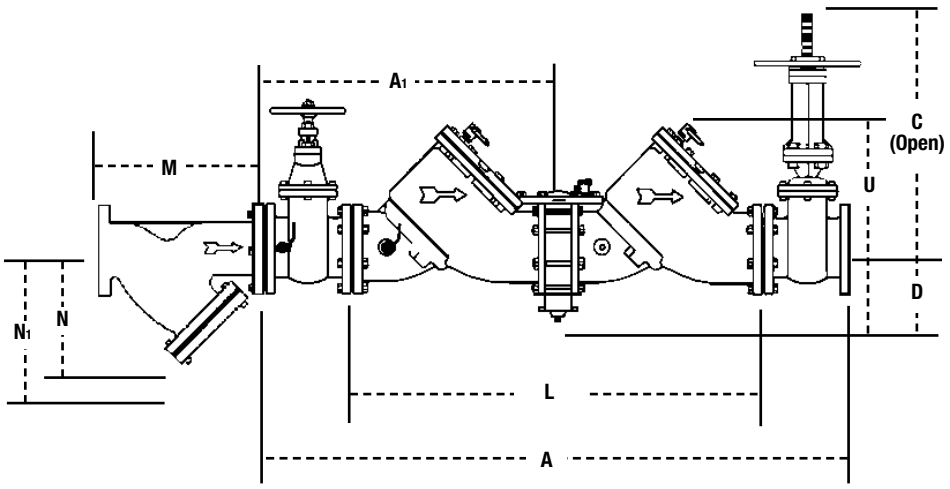
8" (200mm)

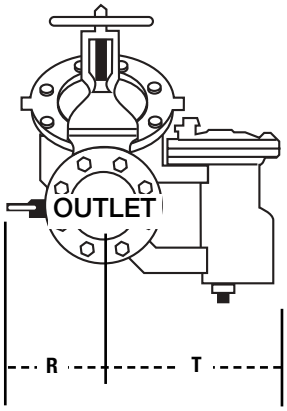


10" (250mm)

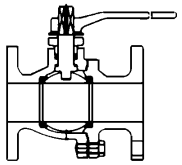


Dimensions — Weights





Quarter-turn (QT) Valve



Watts G-4000 Series Ball Valves Send for F-G4000

NOTE: Relief valve section is reversible, therefore, can be on either side and is furnished standardly as shown.

SIZE (DN)		DIMENSIONS																WEIGHT					
					C						clearance for check												
		A		A1	(OSY)*		(NRS)		D		L		U		R		R (QT)		T		NRS		OSY		QT	
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*	*lbs.*	*kgs.*	*lbs.*	*kgs.*
2½	65	41¼	1048	20⅝	524	16⅜	416	9⅜	238	5¼	133	26⅛	663	11	279	4	102	16	406	9¹⁄₁₆	230	195	88.4	198	89.8	182	82.6
3	80	42¼	1073	21¼	540	18⅞	479	10¼	260	5¼	133	26⅛	663	11	279	5	127	16	406	9¹⁄₁₆	230	225	102	230	104	190	86
4	100	55⅛	1400	27⅝	702	22¾	578	12³⁄₁₆	310	6	152	37	940	14	356	6	152	19¾	502	14⅜	365	455	206	470	213	352	160
6	150	65½	1664	32¾	832	30⅛	765	16	406	6	152	44½	1130	16	406	11	279	26	660	14⅜	365	718	326	798	362	762	346
8	200	78½	2000	39⅜	1000	37¾	959	19¹⁵⁄₁₆	506	9¾	248	55¼	1403	21	533	11¼	286	11¼	286	19¼	489	1350	612	1456	660	2286	1037
10	250	93⅝	2378	46⅞	1190	45¾	1162	23¹³⁄₁₆	605	9¾	248	67⅜	1711	21	533	12½	318	12½	318	21	533	2160	980	2230	1011	3716	1685

*UL, FM approved backflow preventers must include UL/FM approved OSY gate valves.

Strainer Dimensions

SIZE (DN)		DIMENSIONS						WEIGHT	
		M		N1†		N			
in.	*mm*	*in.*	*mm*	*in.*	*mm*	*in.*	*mm*	*lbs.*	*kgs.*
2½	65	10	254	10	254	6½	165	28	12.7
3	80	10⅛	257	10	254	7	178	34	15.4
4	100	12⅛	308	12	305	8¼	210	60	27
6	150	18½	470	20	508	13½	343	133	60
8	200	21⅝	549	22¾	578	15½	394	247	112
10	250	26	660	28	711	18½	470	370	168

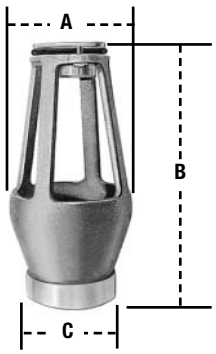
† – Dimension required for screen removal

Air Gap Dimensions

When installing a drain line on Series 909 backflow preventers that are installed horizontally, use 909 AG series air gaps.

			DIMENSIONS						WEIGHT	
Iron Body Model No.	Ordering Code	Series/Sizes	A		B		C			
			in.	mm	in.	mm	in.	mm	lbs	kgs
909AG-F	0881378	1¼" – 3" 009/909 1¼" – 2" 009 M1 2" 009 M2	4⅜	111	6¾	171	2	51	3.25	1.47
909AG-K	0881385	4" – 6" 909 8" – 10" 909 M1	6⅜	162	9⅝	244	3	76	6.25	2.83
909AG-M	0881387	8" – 10" 909	7⅜	187	11¼	286	4	102	15.50	7.03

For flange size backflow preventers installed vertically (flow down), a fabricated air gap is recommended.



For additional information, visit our website at: www.watts.com

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SENSUS METERING SYSTEMS

SR® Water Meters

Displacement Type Magnetic Drive Cold Water Meters

5/8" (DN 15mm), 3/4" (DN 20mm) and 1" (DN 25mm) Sizes

Description

Applications: Measurement of cold water where flow is only in one direction; in residential, commercial and industrial services.

Conformance To Standards: Sensus Sealed Register® Water Meters comply with ANSI/AWWA Standard C700, latest revision. Each meter is tested to insure compliance.

Construction: Sensus SR Water Meters consist of three basic components: maincase; measuring chamber; and permanently, hermetically-sealed register. Maincases are of bronze with externally-threaded spuds. Measuring chambers are of Rocksyn®, a corrosion-resistant thermoplastic material. Bronze measuring chambers are available as an option.

Maincase bottom plates are available in bronze or, if frost protection is desired, in cast iron or synthetic polymer. Simplicity of design and precise machining of components allows interchangeability of parts among like-size meters to provide ease of maintenance. The register, measuring chamber and strainer can be removed without removing the maincase from the installation.

Sealed Register: Permanently, hermetically sealed; proven magnetic drive design; with integral tamper-proof locking device. Guaranteed for 25 years. The standard register includes a straight-reading, odometer-type totalization display; a 360° test circle with center sweep hand; and a low flow (leak) detector. Gears are self-lubricating, molded plastic for long life and minimum friction. The hermetic sealing of the register eliminates dirt and moisture, tampering, and lens fogging problems.

No change gears are required for accuracy calibration. Encoded-type remote reading systems are available for all SR Water Meters. (See back of sheet for additional information.)

Tamperproof Features: Removing the register to obtain free water is prevented by a locking system inside the meter. Removing the register requires a special tool that is available only to water utilities.

Magnetic Drive: The unique design of the direct magnetic drive is a positive, reliable, dependable drive coupling, proven in millions of SR Water Meters.

Operation: Water flows through the meter's strainer and into the measuring chamber where it operates the piston. The piston, which moves freely, oscillates around a central hub, guided by the rubber-coated division plate.

A drive magnet, incorporated in the piston, rotates around the outside of the hermetically sealed register well and magnetically drives the "follower" magnet sealed within the well. The "follower" magnet drives a crank connected to the register gear train, which translates the number of piston oscillations into volume totalization units displayed on the register face.

Maintenance: Sensus Sealed Register® Water Meters are engineered to provide long-term value and virtually maintenance-free operation because of their design simplicity and interchangeability of modules. Sensus SR® Water Meters are easy to repair, even without removing the maincase from the installation. As an alternate to repair by the utility, Sensus offers various maintenance programs which provide factory reconditioning of the maincase and replacement of components at low fixed prices.

Connections: Tailpieces/Unions for installing the meters on a variety of pipe types and sizes are available as an option.

Guarantee: Sensus SR® Water Meters are backed by "The Sensus Guarantee." Ask your Sensus representative for details, or see Bulletin G-500.

Specifications

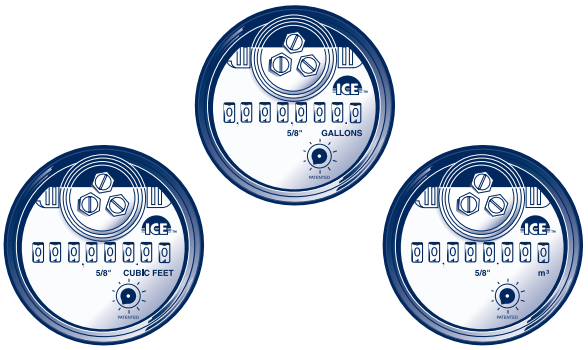
5/8" SR® (DN 15mm) | 3/4" SR® (DN 20mm) | 1" SR® (DN 25mm)

SERVICE	Measurement of cold water with flow in one direction only.
NORMAL OPERATING FLOW RANGE①	5/8" (DN 15mm) size: 1 to 20 gal/min. (0.25 to 4.5 m^3h) 3/4" (DN 20mm) size: 2 to 30 gal/min. (0.45 to 7.0 m^3h) 1" (DN 25mm) size: 3 to 50 gal/min. (0.7 to 11.0 m^3h)
ACCURACY	100% ± 1.5% of actual thruput
LOW FLOW REGISTRATION	5/8" (DN 15mm) size: 95% at 1/4 gal/min. (0.96 m^3h) 3/4" (DN 20mm) size: 95% at 1/2 gal/min. (0.10 m^3h) 1" (DN 25mm) size: 95% at 3/4 gal/min. (0.15 m^3h)
MAXIMUM PRESSURE LOSS	5/8" (DN 15mm) size: 10.8 psi at 20 gal/min. (0.7 bar at 4.5 m^3h) 3/4" (DN 20mm) size: 11.0 psi at 30 gal/min. (0.8 bar at 7.0 m^3h) 1" (DN 25mm) size: 10.9 psi at 50 gal/min. (0.8 bar at 11.0 m^3h)
MAXIMUM OPERATING PRESSURE	150 psi (10.0 bar)
MEASUREMENT ELEMENT	Oscillating piston
REGISTER	Straight reading, hermetically sealed magnetic drive. Remote reading unit optional.
REGISTRATION	5/8", 3/4", 1": 10 gallons, 1 cubic foot, 0.01 m^3 or 0.1 m^3/sweep hand revolution. 5/8", 3/4", 1": odometer wheels (10,000,000 gallons, 1,000,000 cubic feet or 100,000 m^3)
METER CONNECTIONS②	5/8" (DN 15mm) size: 3/4" (26.44mm) threads 5/8" x 3/4" (DN 15mm x 33mm) size: 1" (33.25) threads 3/4" (DN 20mm) size: 1" (33.25mm) threads 3/4" x 1" (DN 20mm x 42mm) size: 1-1/4" (41.91mm) threads 1" x 1-1/4" (DN 25mm x 48mm) size: 1-1/2" (47.75mm) threads (All threads are straight pipe, external type, conforming to ANSI B1.20.1, or ISO R228, if specified.)
MATERIALS③	Maincase—Bronze Measuring chamber—Rocksyn—standard Bronze—optional Bottom plate—Bronze, cast iron or synthetic polymer Magnets—Alnico Trim—Stainless Steel Casing bolts—Stainless Steel Strainer—Thermoplastic

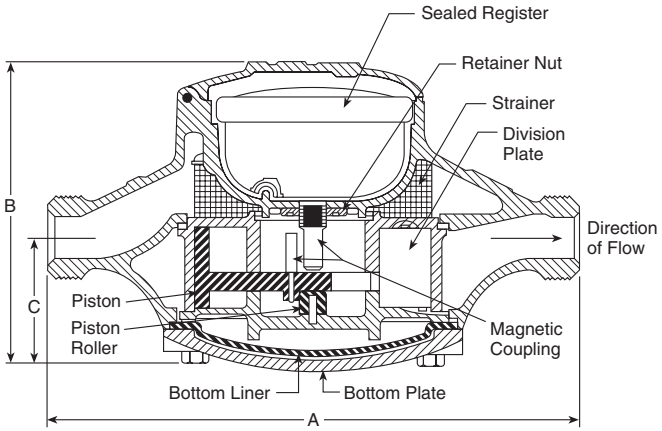
① Maximum rates listed are for intermittent flow only. Maximum continuous flow rates as specified by AWWA are:
5/8" (DN 15mm)—10 gal/min (2.3 m^3h)
3/4" (DN 20mm)—15 gal/min (3.4 m^3h)
1" (DN 25mm)—25 gal/min (5.7 m^3h)

② Unless otherwise noted, 5/8" size and 5/8" x 3/4" characteristics are identical. 5/8" x 3/4" designates 5/8" with 3/4" connection thread. Metric designation is the normal bore x the outside diameter.

③ Synthetic polymer maincase bottom plate available on 5/8" meter only.



5/8" (DN 15mm) Dials Shown



Dimensions and Net Weights

Metric Size	A	B	C	Width	Net Weight①
5/8" (DN 15mm)	7-1/2" (190mm)	4-9/16" (115mm)	2-1/8" (55mm)	4-5/8" (120mm)	5 lb. 12 oz. (2.6 kg)
5/8" x 3/4" (DN 15mm x 33mm)	7-1/2" (190mm)	4-9/16" (115mm)	2-1/8" (55mm)	4-5/8" (120mm)	5 lb. 15 oz. (2.7 kg)
3/4" (DN 20mm)	9" (230mm)	5-1/8" (130mm)	2-9/32" (60mm)	5-1/4" (135mm)	8 lb. (3.6 kg)
3/4" short (DN 20mm)	7-1/2" (190mm)	5-1/8" (130mm)	2-9/32" (60mm)	5-1/4" (135mm)	8 lb. (3.6 kg)
1" (DN 25mm)	10-3/4" (275mm)	5-3/4" (145mm)	2-5/8" (70mm)	6-13/16" (175mm)	12 lb. (5.5 kg)

① With Rocksyn® measuring chamber.

Remote Reading Systems

For use with all sizes of Sensus Water Meters

All Sensus AMR systems work with the same absolute encoder Electronic Communications Registers (ECR), enabling the utility to mix and match or easily move from one system to another without changing registers for each.

The TouchRead® Automated Meter Reading and Billing System—is a multipurpose encoder remote system suitable for indoor and/or outdoor use. The ECR Register uses a wired connection between the meter and an outside remote for inside set meters—or a pitlid mounted module, enabling underground meters to be read automatically without opening the meter box or vault. All wired connections and terminals of the TouchRead PitLid (TR/PL) modules and registers are fully sealed at the factory using a special process to ensure protection from water infiltration. The connection terminals of ECR/WP registers are also factory sealed.

Meters equipped for TouchRead System reading can be read with a visual reading device, stand alone AutoGun, and/or reading gun with an AutoRead HandHeld Device. For more information on TouchRead System equipment refer to bulletins AMR-TR, AMR-401, AMR-403, AMR-312 and EXSUMHH.

PhonRead® AMR—is a reliable telephone based call-in system that does not require batteries for operation. It also does note require equipment to be installed at telephone company facilities. PhonRead Meter Interface Units (MIU) automatically call "in" to the utility office for transferring meter reading data from the meter site to a PC. PhonRead is a transparent AMR system that does not interfere with customers' telephone service. For more information refer to bulletins AMR-PR and AMR-302.

RadioRead® AMR—uses superior Direct Sequence Spread Spectrum modulation to provide reliable, safe and virtually interference free radio-based transmission of reading data from underground or inside-set meters that are equipped with Meter Transceiver Units (MXU). A choice of meter reading options is available. A radio frequency hand-held device (RF-HHD) can be used by a meter reader on foot. The RF-HHD can also be used to collect readings from TouchRead equipped meters, or for manual meter reading entries. A more powerful Vehicle Transceiver Unit (VXU) can be used in any car or truck to read meters while on the move. (A dedicated meter reading vehicle is not required.) For more information refer to bulletins AMR-RR, AMR-301 and AMR-303, and AMR-401.

MultiRead® Port Expanders—can provide the capability to connect multiple ECR equipped meters to a single PhonRead MIU or RadioRead MXU to save the utility time and money for installations such as apartment complexes and shopping centers. Refer to bulletin AMR-305, AMR-306 and AMR-308.

AUTHORIZED SENSUS DISTRIBUTOR

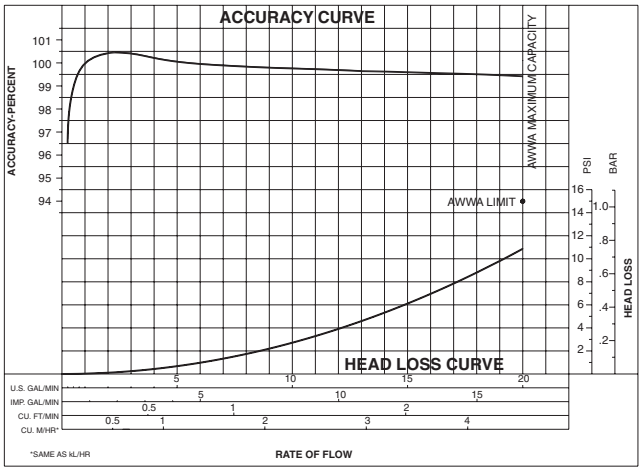
SENSUS METERING SYSTEMS
P.O. Box 487 • 450 N. Gallatin Avenue
Uniontown, PA 15401
1-800-METER-IT • 1-800-638-3748
Fax: Direct to Factory
Local: 724-439-7729 • Toll Free: 1-800-888-2403
www.sensus.com (select "North America Water")
Email: h2oinfo@sensus.com

SENSUS METERING SYSTEMS

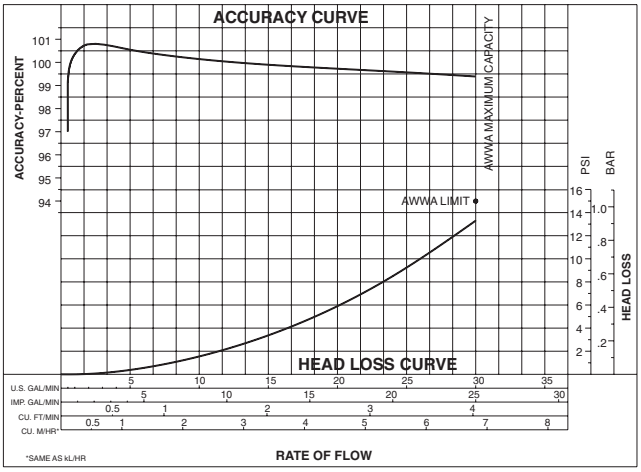
SR® Water Meters

Typical Performance Curves

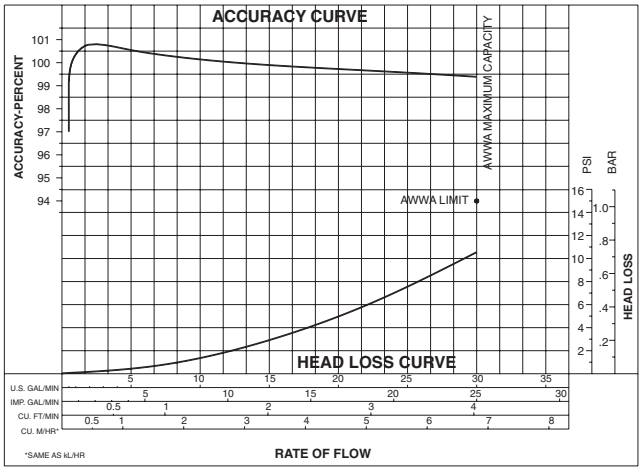
5/8" and 5/8" x 3/4" SR Meter
UA-5619



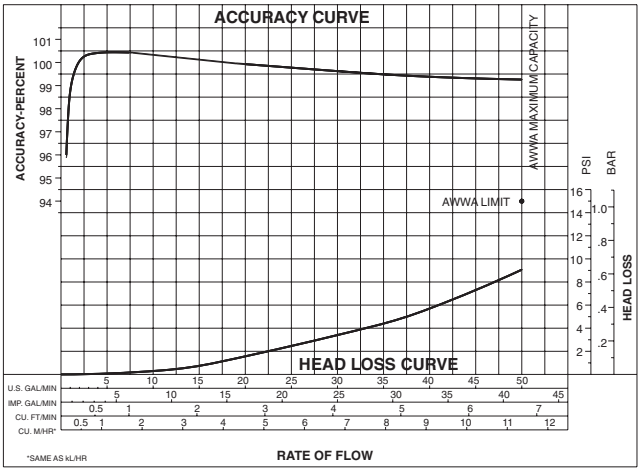
3/4" SR Meter 7-1/2" Laying Length
UA-5831



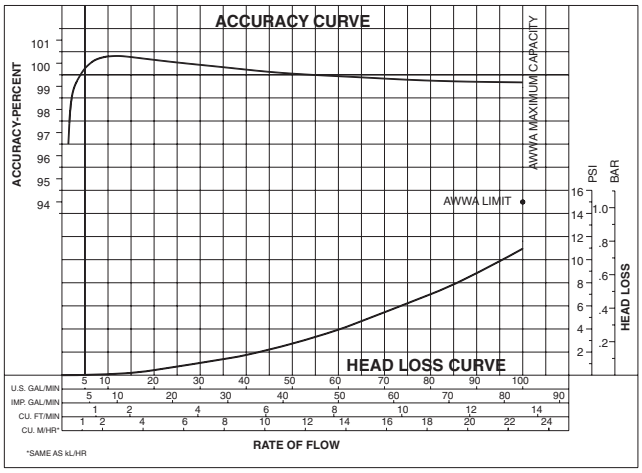
3/4" and 3/4" x 1" SR Meter
UA-5830



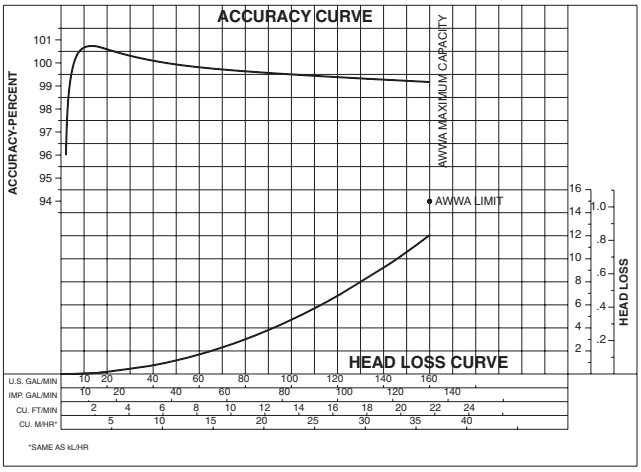
1" and 1" x 1-1/4" SR Meter
UA-5832



1-1/2" SR Meter
UA-5674



2" SR Meter
UA-5673



APPENDICES

HYDRANT FLOW TEST RESULTS WIGINTON FIRE SYSTEMS ..... APPENDIX A

APPENDIX A

HYDRANT FLOW TEST RESULTS

PER WIGINTON FIRE SYSTEMS

From: Nick E. Guerrina <neg@Wiginton.net>
Sent: Thursday, July 9, 2020 1:51 PM
To: Baker, Danny
Cc: Geiger, Marcus
Subject: RE: Winter Springs Marketplace Hydrant Flow Test
Attachments: Hydrant Flow Location results.pdf

Categories: External

Hey Danny see attached as requested. Please keep me updated with the project. I would like the opportunity to try to estimate it. Also please reach out if the architect is looking for a fire protection drawing for the building permit.
Thank you,

Nick E. Guerrina | Contract Sales Representative
Wiginton Fire Systems - Orlando, FL
699 Aero Lane, Sanford, FL 32771

tel: 407-585-3200,292
dir: 407-585-3292
cell: 407-639-7800
neg@wiginton.net
100% EMPLOYEE OWNED | www.wiginton.net

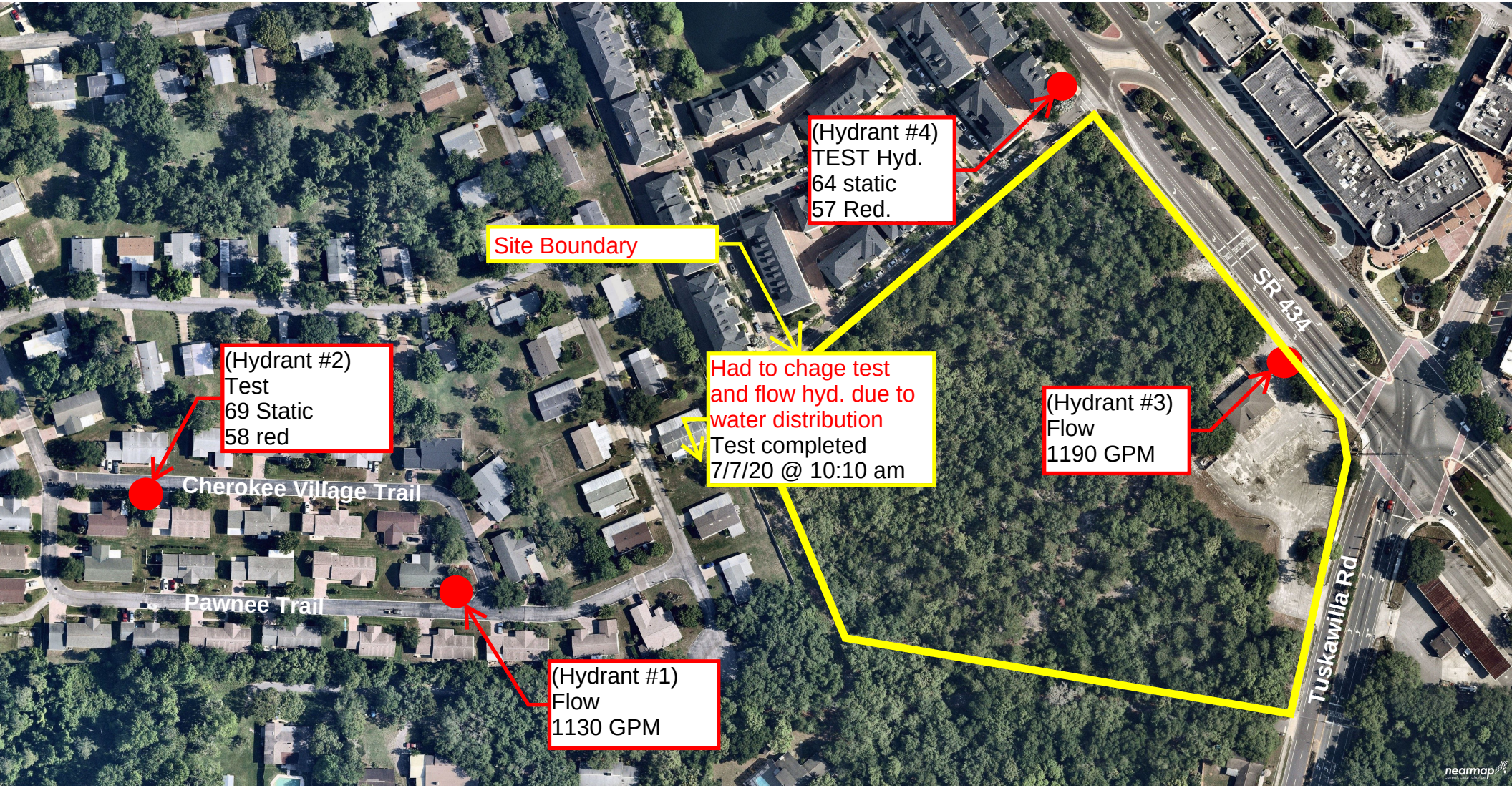
********** NOTICE **********
Have you seen our Customer Portal?
To get registered click the following link
https://customer.wiginton.net

From: Baker, Danny [mailto:Danny.Baker@kimley-horn.com]
Sent: Monday, July 6, 2020 12:21 PM
To: Nick E. Guerrina <neg@Wiginton.net>
Cc: Geiger, Marcus <Marcus.Geiger@kimley-horn.com>
Subject: RE: Winter Springs Marketplace Hydrant Flow Test

Nick,

Yes, 9:00 AM works well for me, thank you. I'll be there tomorrow at 9:00 AM. My cell phone number is 561-354-8543. If you want to give me call tomorrow morning to let me know which hydrants you want to start on or if you want to let me know via email, either works. Thank you.

Danny Baker, E.I.
Kimley-Horn | 189 S. Orange Avenue, Suite 1000, Orlando, FL 32801
Direct: 407 815 3574
Connect with us: Twitter | LinkedIn | Facebook | Instagram | Kimley-Horn.com


(Hydrant #4)
TEST Hyd.
64 static
57 Red.
Site Boundary
SR 434
(Hydrant #2)
Test
69 Static
58 red
Had to chage test
and flow hyd. due to
water distribution
Test completed
7/7/20 @ 10:10 am
(Hydrant #3)
Flow
1190 GPM
Cherokee Village Trail
Pawnee Trail
Tuskawilla Rd
(Hydrant #1)
Flow
1130 GPM
nearmap

August 4, 2020

Ms. Kirsten Davis
Equinox Development
630 S. Maitland Avenue
Suite 100
Maitland, Florida 32751

ECS Project No. 55:3210

SUBJECT: Listed Wildlife Species Survey
± 10.25 - Acre Winter Springs Property
Winter Springs, Seminole County, Florida

Dear Ms. Davis:

As requested, ECS Florida, LLC (ECS) is pleased to present the following Listed Wildlife Species Survey for the ± 10.25 - Acre Winter Springs Property located in Winter Springs, Seminole County, Florida. Work was provided by our sub-consultant, Thomson Environmental Consulting (Thomson). We have attached Thomson's report. Thank you for this opportunity to offer our services. Please call the undersigned with questions or comments at (407) 859-8378.

Respectfully submitted,

ECS FLORIDA, LLC

Ivona Minossora
Environmental Group Manager

James (Cliff) Hendrickson, P.G.
Florida Professional Geologist 2226
Environmental Principal

Attachment: Thomson's Listed Wildlife Species Survey

2324 Leu Road
ORLANDO, FLORIDA 32803
407.374.3681 – tel
407.405.8725 – cell

October 22, 2018

Ivona Minossora
ECS Florida, LLC
2815 Directors Row, Suite 500
Orlando, Florida 32809

RE: Listed Wildlife Species Survey
±10.25-Acre Winter Springs Property
Winter Springs, Seminole County, Florida
Thomson Project No. 18-650

Ms. Minossora:

Thomson Environmental Consulting, LLC (Thomson) completed a Listed Wildlife Species Survey of the ±10.25-Acre Winter Springs Property (the property) generally located in the southwest corner of the intersection of State Road 434 and Tuskawilla Road. The field portion of the survey was conducted on October 9, 2018. The purpose of the field visit was to evaluate the subject property for the occurrence and/or potential for occurrence of protected wildlife species (and their habitat). The following report (and referenced exhibits) describes relevant ecological conditions observed on the site during the field investigation and the results of documented literature regarding the presence of protected wildlife species and/or habit on the site and its relevant surroundings.

SITE DESCRIPTION AND LOCATION

The property is generally located in the southwest corner of the intersection of State Road 434 and Tuskawilla Road in Winter Springs, Seminole County, Florida. The property measures ±10.25 acres using the Seminole County Geographic Information System (GIS) coverages, but only ±9.9 acres according to the Seminole County Property Appraiser (SCPA). Per the SCPA, the property comprises 4 legal parcels identified as follows:

- SCPA PID 36-20-30-502-0000-0070 (±2.82 acres)
- SCPA PID 36-20-30-502-0000-0080 (±3.03 acres)
- SCPA PID 26-20-30-5AR-0A00-008F (±0.26 acre)
- SCPA PID 36-20-30-502-0000-0090 (±3.79 acres)

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ORLANDO, FLORIDA 32803
407.374.3681 – tel
407.405.8725 – cell

Figure 1 is a location map showing the entirety of the property, including internal named streets.

Figure 2 is a true-color rectified aerial (circa 2017) of the property and its immediate surroundings.

Figure 3 is a topographic quadrangle map showing the topographic relief on the property and in the local region surrounding the site.

SOILS

Soils were identified using the Natural Resource Conservation Service's *Soil Survey of Seminole County, Florida*. The following soil units and descriptions were mapped by the soil survey on the property:

Myakka and EauGallie Fine Sands (Map Unit 20) – This soil represented approximately 2.66 acres of the property. The soils in this map unit are nearly level and poorly drained. These soils are on broad plains on the flatwoods. The slopes are dominantly less than 2 percent. During most years, the soils in this map unit have a seasonal high water table within 12 inches of the surface for 1 month to 4 months. The permeability of Myakka soil is rapid in the surface and subsurface layers and substratum and moderate or moderately rapid in the subsoil. The permeability of EauGallie soil is rapid in the surface and subsurface layers, moderate or moderately rapid in the sandy part of the subsoil, and moderately slow in the loamy part of the subsoil.

Paola-St. Lucie Sands, 0 to 5 percent slopes (Map Unit 24) – This soil represented approximately 6.33 acres of the property. The soils in this map unit are nearly level to gently sloping and excessively drained. These soils are on upland ridges. The slopes are 0 to 5 percent. The soils in this map unit have a seasonal high water table at a depth of 80 inches or more.

Tavares-Millhopper Fine Sands, 0 to 5 percent slopes (Map Unit 31) – This soil represented approximately 1.26 acres of the property. The soils in this map unit are nearly level to gently sloping and moderately well drained. These soils are on low ridges and knolls on the uplands. The slopes are nearly smooth to slightly convex. The soils in this map unit have a seasonal high water table at a depth of 36 to 60 inches for 2 to 6 months.

Figure 4 shows the property and soils as mapped by the Soil Survey.

Soils observed during the site visit seemed to generally match those as described in the Soil Survey. No indications of hydric soils were observed.

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VEGETATIVE COMMUNITIES AND LAND USES

Prior to the field visit, Geographic Information System (GIS) data from the St. Johns River Water Management District (SJRWMD) was reviewed to identify documented vegetative communities and land uses on the property. These site conditions are documented using the Florida Land Use, Cover and Forms Classification System (FLUCCS, Florida Department of Transportation, 1999). FLUCCS classifications for the land covers and uses (as adapted from SJRWMD coverages) on the property are as follows:

Commercial and Services - Abandoned (FLUCFCS code 0140) – This classification represented approximately 1.24 acres of the property. It is the eastern portion of the property that was formerly a Pinch a Penny pool supply store accessible from both Tuskawilla Road and SR 434.

Hardwood-Conifer Mixed (FLUCFCS code 434) – This classification represented approximately 9.01 acres and the majority of the property. This upland, undeveloped area was dominated by slash and sand pine, with a dense subcanopy of xeric oaks in the central portion of the property.

Figure 5 is a FLUCFCS map that depicts the land cover classification described above.

PROTECTED WILDLIFE SPECIES SURVEY

Protected wildlife species are defined as those listed as Threatened, Endangered, or Species of Special Concern by the U.S. Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission (FWC). The survey consisted of both a search of documented literature and a field reconnaissance.

Documented Literature Search

Prior to the field investigation, documented literature resources were consulted regarding known occurrences of protected wildlife species on or in the vicinity of the project site. These included the FWC's Bald Eagle (*Haliaeetus leucocephalus*) Nest Locator (*https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx*) and Waterbird Colony Locator (*http://atoll.floridamarine.org/waterBirds/*) online locator sites. A query of both databases (from the center of the site extending outward a radius of one mile) revealed no documented occurrences of waterbird colonies within 1 mile of the property. The closest documented bald eagle nest (Nest ID SE087) was documented approximately 2,250 feet east of the property, which is well outside of any applicable buffer zones.

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The NRCS Web Soil Survey (*https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx*) was used to identify soils suitable for the burrowing needs of gopher tortoises (*Gopherus polyphemus*, state-Threatened). The areas identified as Paola-St. Lucie Sands and Tavares-Millhopper Complex were rated as "Highly Suited" soils for gopher tortoises, while the area identified as Myakka and EauGallie Fine Sands are rated as "Less Suited".

The property was mapped within the USFWS Consultation Area for the following federally-listed species: Audubon's Crested Caracara (*Polyborus plancus audubonii*, Threatened), Red-Cockaded Woodpecker (*Picoides borealis*, Endangered), Florida Scrub-Jay (*Aphelocoma coerulescens*, Threatened), the Everglades Snail Kite (*Rostrhamus sociabilis plumbeus*, Endangered), and the Florida Wood Stork (*Mycteria americana*, Endangered).

Field Reconnaissance and Observations

A protected wildlife species survey and habitat assessment was conducted over the entire property on October 9, 2018. Protected wildlife species are defined as those listed as Threatened, Endangered, or Species of Special Concern by the U.S. Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission (FWC).

No indication of bald eagle foraging was observed. No nests or juveniles were observed on the property.

A survey for gopher tortoises and/or occupied habitat was conducted over 100% of the suitable soils on the property by Mr. Joel Thomson of Thomson Environmental Consulting, LLC (an Authorized Agent for surveying by FWC). The results of the survey yielded no potentially-occupied gopher tortoise burrows, and no indication of gopher tortoise presence. Based on the quality of habitat, it is recommended that an additional survey of the property be performed within 90 days of intended construction, per the FWC's guidelines.

The presence of some scrub oaks on the property often represents potential habitat for the Florida Scrub-Jay. The habitat was determined to be too overgrown to represent viable habitat, likely the result of fire exclusion and other factors related to the surrounding development. No indications of Florida Scrub-Jays was observed during the survey.

No other protected wildlife species concerns were observed during the course of the field survey. The numerous species with Consultation Areas covering the property have unique, individualized habitat needs that are not offered on the property due to developed nature of much of the property and the lack of natural habitat.

2324 Leu Road
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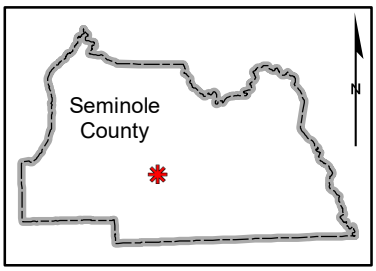
LIMITATIONS OF THIS REPORT

It is important to note that the conclusions of this report are necessarily based on the conditions observed on the day of the field investigation, as well as our scientific judgment of the site's potential to support protected species (based on each species' optimal habitat requirements). Due to this "snapshot" view of the site, the results presented in this report may not accurately reflect changing site conditions and/or wildlife species' temporal and spatial movements.

Thomson appreciates the opportunity to provide these services to you. If there are questions regarding this report, or a need for further information, please contact the undersigned at your convenience.

Respectfully,
Thomson Environmental Consulting, LLC

Joel A. Thomson
President



General Location

0 500 1,000

1" = 1,000'

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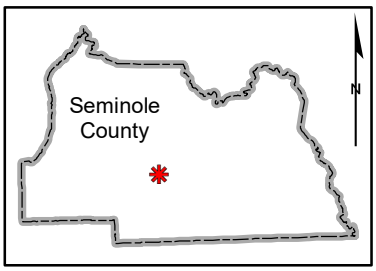
3428 PELICAN LANE ORLANDO, FLORIDA 32803
TEL 407.405.8725 FAX 407.792.5692
WWW.THOMSONENV.COM

Figure 1
Location Map
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018



General Location

0 75 150

1" = 150'

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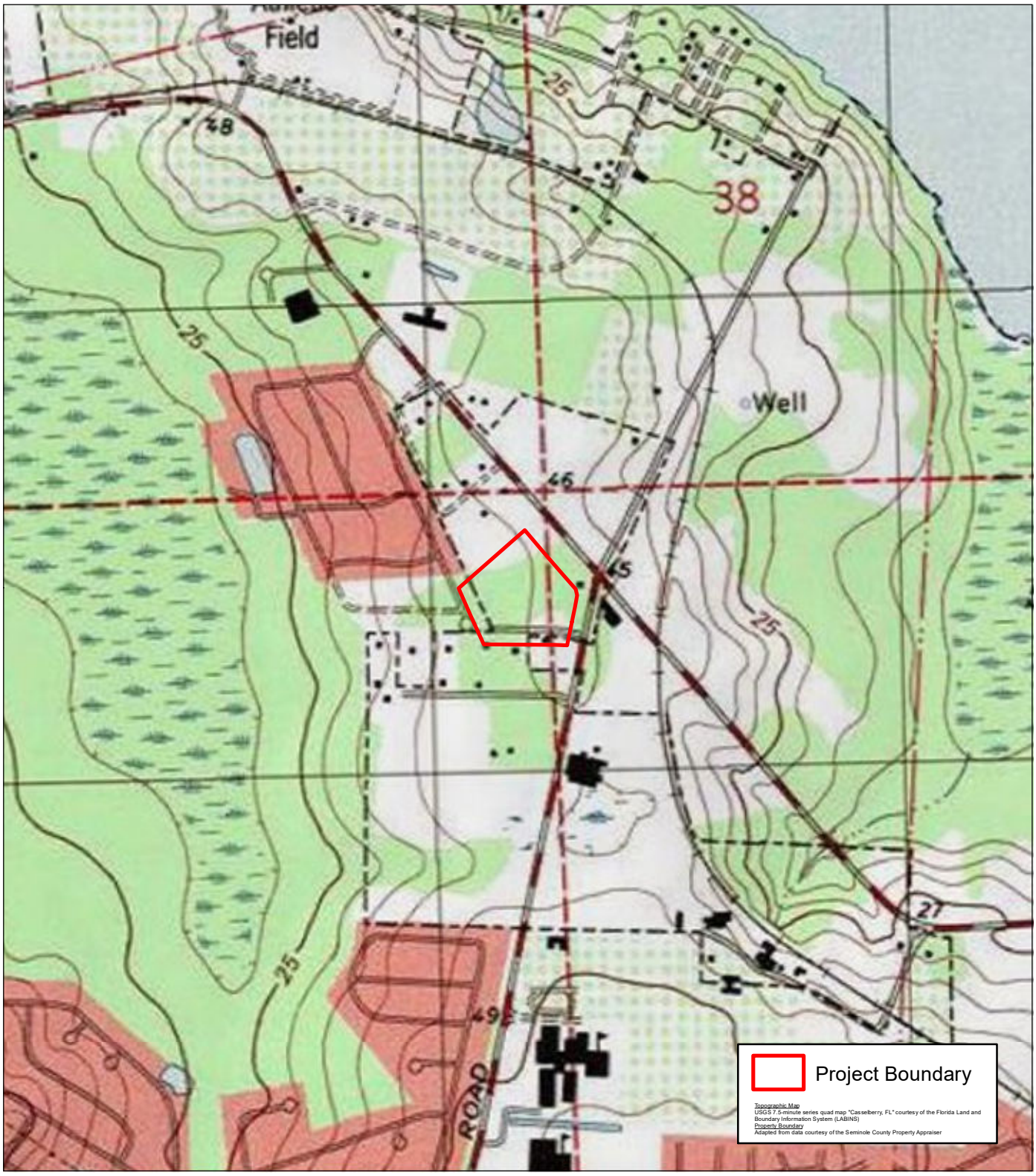
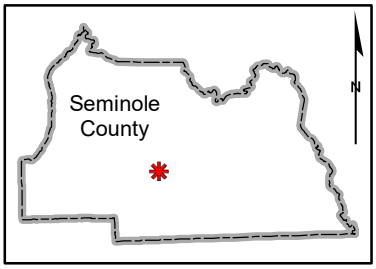
Figure 2
Aerial Photograph
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018





General Location

0 500 1,000

1" = 1,000'

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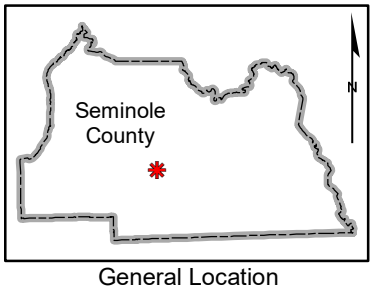
Figure 3
Topographic Map
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018



General Location

0 75 150

1" = 150'

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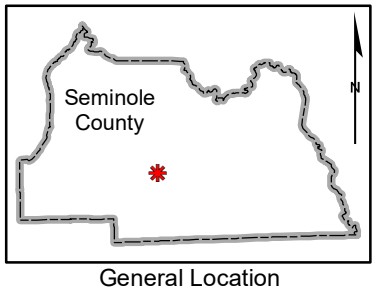
Figure 4
Soils Map

Winter Springs Property
Winter Springs, Seminole County, Florida

Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018



General Location

0 75 150

1" = 150'

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Figure 5
FLUCCS Map
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Chapter 20 – Zoning Sec. 20-34. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033.

All applicants shall be afforded minimal due process as required by law, including the right to receive notice, be heard, present evidence, cross-examine witnesses, and be represented by a duly authorized representative. Applicants are further advised that a Waiver is quasi-judicial in nature.

Therefore, APPLICANT ACKNOWLEDGES and AGREES, by signing below, that he or she:

- May be sworn-in as a witness in order to provide testimony to the City Commission;
- Shall be subject to cross-examination by party intervenors (if requested); and
- Shall be required to qualify expert witnesses, as appropriate.

Applicants are encouraged to familiarize themselves with Chapter 2 – Administration Sec. 2-30 of the Winter Springs City Code relating to Quasi-Judicial Rules and Procedures of the City Commission. All Waiver recommendations shall be based from the required information/documentation provided, the Winter Springs Code of Ordinances, and the Winter Springs Comprehensive Plan (to the extent applicable).

The City Commission (CC) shall render all final decisions regarding Waivers and may impose reasonable conditions on any approved Waiver to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the Winter Springs Code of Ordinances and the Winter Springs Comprehensive Plan. All formal decisions shall be based on competent substantial evidence and the applicable criteria as set forth in Chapter 20, Zoning. Applicants are advised that if, they decide to appeal any decisions made at the meetings or hearings with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to insure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per Florida Statute 286.0105.

A Waiver which may be granted by the City Commission shall expire two (2) years after the effective date of such approval by the City Commission, unless a building permit based upon and incorporating the Waiver, is issued by the City within said time period. Upon written request of the property owner, the City Commission may extend the expiration date, without public hearing, an additional six (6) months, provided the property owner demonstrates good cause for the extension In addition, if the aforementioned building permit is timely issued, and the building permit subsequently expires and the subject development project is abandoned or discontinued for a period of six months, the Waiver shall be deemed expired and null and void, per Chapter 20 – Sec.20-36.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

REQUIRED INFORMATION

Applicant(s): Tuscawilla Property Investors, LLC Date: 5/13/2025

Mailing address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Property Owner(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Project Name: Wawa At Winter Springs Marketplace

Property Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 1.21 Acres

Existing Use: Commercial

All waiver requests shall be written in the following format: A waiver is requested from Winter Springs City Code 'X' to allow 'Y' in lieu of 'Z'. After the request, the applicant shall provide a justification for each waiver request.

List Waiver(s)(provide additional sheets if necessary): See attached cover letter.

Demonstrate that the applicable term or condition clearly creates an illogical, impossible, impractical, or patently unreasonable result related to the proposed property and development?

See attached cover letter.

Demonstrate that the proposed development plan is in substantial compliance with Chapter 20 of the City's Code of Ordinances and in compliance with the Comprehensive Plan?

See attached cover letter.

Will the proposed development plan significantly enhance the real property?

See attached cover letter.

Will the proposed development plan serve the public health, safety, and welfare of the City of Winter Springs?

See attached cover letter.

Will the waiver diminish property values in or alter the essential character of the surrounding neighborhood?

See attached cover letter.

Is the waiver request the minimum waiver that will eliminate or reduce the illogical, impossible, impractical, or patently unreasonable result caused by the applicable term or condition under Chapter 20 – Zoning?

See attached cover letter.

Is the proposed development plan compatible and harmonious with the surrounding neighborhood?

See attached cover letter.

List all witnesses that the applicant intends to present to the City Commission to provide testimony:

Ryan Stahl, Cory Sitler, and Jonathan Martin

Describe with specificity any evidence which the applicant intends to present to the City Commission, including oral factual testimony, maps, photographs, records or reports and/or expert testimony:

Photos (if needed)

Attach all documentary evidence which the applicant intends to present to the city commission to the back of this application. The Applicant has a continuing duty to update the list of witnesses, description of evidence, and documentary evidence throughout the application process. Additional witnesses or evidence will not be admitted at the city commission hearing if not submitted at least seven (7) days prior to such hearing.

REQUIRED DOCUMENTATION

_x_ A complete Application and Fee

_x_ A general description of the relief sought under this division

_x_ A brief explanation, with applicable supporting competent substantial evidence and documents, as to why the application satisfies the relevant criteria set forth in this division

_x_ A Legal Description accompanied by a certified survey or the portion of the map maintained by the Seminole County Property Appraiser reflecting the boundaries of the subject property (To scale).

_x_ An Excel mailing list with the names and addresses of each property owner within 500 ft. of each property line, along with the HOA Associations within 1/2 mile of each property line.

___ For all new commercial development and new residential subdivisions of ten (10) or more lots or existing commercial buildings being altered by 50 percent or greater of the original floor plan or seating capacity and requiring a modified site plan, or development agreements process under section 20-28.1 of the City Code, or as otherwise deemed applicable by the city to relevantly and competently examine an application for compliance with the city code and the affect and impact the proposed use will have on neighborhood and surrounding properties, applicants shall be required to submit with the following additional information referenced in Chapter 20 – Zoning Sec.20.29 Applications (7) – (11).

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Waiver

CITY LIMITED RIGHT OF ENTRY: By submitting this Application you hereby grant temporary right of entry for City Officials to enter upon the subject property for purposes of evaluating this Application and posting on the subject property.

APPLICANT'S AUTHORIZATION: I desire to make Application for an Aesthetic Review for the aforementioned project and have read and agree to the terms contained herein. In addition, if the Applicant is a corporate entity, the undersigned hereby represents and warrants that he/she is authorized to act on behalf of, and bind, the corporate entity.

Applicant Name (Print): Ryan Stahl

Applicant Signature: _____ Date: 5/9/25

Business Name: Tuscawilla Property Investors, LLC

Address: Northwest corner of FL-434 & Tuskawilla Rd Parcel ID: 36-20-30-502-0000-0090

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 2025, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: Kristin Banks

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: The Property Owner shall sign and have their signature notarized below if the Applicant is not the owner of the subject property.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

ECS Florida, LLC

Preliminary Geotechnical Engineering Report

Tuskawilla Retail Development

170 Tuskawilla Road
Winter Springs, Seminole County, Florida

ECS Project Number 24:6366

November 15, 2018
Revised December 15, 2020

November 15, 2018
Revised December 15, 2020

Equinox Development Properties, Inc.
630 South Maitland Avenue, Suite 100
Maitland, Florida 32751

Attention: Ms. Kirsten Davis

ECS Project No. 24:6366

Reference: Preliminary Geotechnical Engineering Report
Tuskawilla Retail Development
170 Tuskawilla Road
Winter Springs, Seminole County, Florida

Dear Ms. Davis:

ECS Florida, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our Proposal No. 24:12884-GP dated August 17, 2018. This report presents our understanding of the geotechnical aspects of the project, the results of the field exploration and laboratory testing conducted, and the design and construction aspects. **This report has been revised at the request of your group based on the revised scope of the project.**

It has been our pleasure to be of service to Equinox Development Properties, Inc. during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

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EXECUTIVE SUMMARY

The following paragraphs provide a brief discussion of our findings and recommendations. Please refer to the complete report for more detailed discussion.

ECS Florida, LLC (ECS) has completed the subsurface exploration for the proposed Tuskawilla Retail Development (approximately 9.95 acres in size) located at 170 Tuskawilla Road in Winter Springs, Seminole County, Florida. The project information summarized below is based exclusively on the information made available to us by your group at the time of this report. Our findings, conclusions and recommendations are summarized below.

PROJECT INFORMATION:

- Site Location : 170 Tuskawilla Road in Winter Springs, Seminole County, Florida
- Building Scope: Four (4) one-story retail structures & two (2) out parcel buildings
- Building Type: Concrete Masonry Unit (CMU) and steel framed structures.
- Assumed Loads: Max. Column loads = 80 kips, Max. wall loads = 5 klf
- Earthwork: Estimated fills of up to 3 feet and cuts up to 10 feet (pond area)
- SWM Facility: Two (2) dry ponds, one (1) wet pond and five (5) exfiltration systems

SUBSURFACE CONDITIONS:

- Field Exploration: 19 SPT borings drilled within the subject property limits to the depths ranging between 10 feet and 20 feet below the existing ground surface.
- Site Conditions: Heavily wooded except in the north eastern corner of the property, where there is an existing structure with associated parking area.
- Probable Fill: Not encountered
- Natural Soils: SAND (SP), and SAND WITH SILT (SP-SM)
- Refusal Materials: Not encountered within the depths of borings
- Groundwater: Encountered between 3.5 feet and 5.5 feet below the ground surface at the boring locations, seasonal high water table is anticipated to be between 2.5 feet and 5 feet below the existing grades.

GEOTECHNICAL & CONSTRUCTABILITY CONSIDERATIONS

- **Wet fill soils:** We anticipate soils excavated from the proposed pond area will be used for structural fill across the site for grading purposes. Due to a higher groundwater table, soils anticipated to be used as structural fill are expected to be wet. Wet soils will require a drying period prior to being compacted for structural fill. Due to the granular nature of the material encountered; however, we anticipate that the soils should dry relatively quickly if spread during hot/dry conditions.

- **High groundwater table:** High groundwater was observed across the site and will need to be considered with respect to the dewatering of utility excavations.

- **Existing Structure:** An existing structure was noted within the eastern portion of the site. The existing structure and its associated subsurface foundations and utilities should be removed prior to the placement of structural fill or foundations for the proposed building areas.

PRELIMINARY DESIGN & CONSTRUCTION RECOMMENDATIONS:

- Shallow foundations:

Max. Net Allow. Bearing Pressure	= 3,000 psf
Min. Exterior (Unheated) Embedment	= 18 inches
Min. Interior (Heated) Embedment	= Minimum 24 inches
Slab Subgrade Modulus:	= 100 pci

Based on the information provided to us, it should be noted that the recommendations made in our report are preliminary in nature. Therefore, a final geotechnical exploration report meeting regulatory standards may be necessary in future for final design recommendations. The recommendations made in our report are based on the loading assumptions noted above. A final site development plan has not been provided to us. Once the final site plan is developed along with the proposed grading information, we recommend that our office be contacted to review these items and propose a final geotechnical scope of exploration. Final recommendations regarding the bearing capacity, settlements, and foundation design must be made after completion of a final geotechnical exploration program.

This summary should not be considered apart from the entire text of the report with all the qualifications and considerations mentioned herein. Details of our conclusions and recommendations are discussed in the report text.

1.0 INTRODUCTION

1.1 GENERAL

The purpose of this study was to provide geotechnical information for the design of structure foundations and construction consideration and recommendations for the proposed Tuskawilla Retail Development. This report includes preliminary recommendations regarding the new buildings, pavements, stormwater management area, and associated utilities. This report contains the results of our subsurface explorations and laboratory testing programs, site characterization, engineering analyses, and recommendations for the design and construction of the proposed development. The recommendations developed for this report are based on project information supplied by Equinox Development Properties, Inc.

1.2 SCOPE OF SERVICES

In order to explore the subsurface soil conditions and to determine the depth and character of soils on this site, a total of nineteen (19) soil test borings were performed within the proposed area of the development. A Conceptual Sketch dated August 8, 2018 of the proposed development prepared by Kimley-Horn and Associates, Inc. was provided prior to the field exploration and a revised Conceptual Sketch dated October 30, 2018 was provided **after** the field exploration had been completed. **Additionally, this report has been revised based on an updated Overall Site Plan dated November 3, 2020 prepared by Marcus Gieger with Kimley-Horn**. The Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc. was also provided at the time of writing this report.

Conclusions and recommendations contained in this report are based upon these soil borings, a site reconnaissance, laboratory test results of boring samples, and provided plans. This preliminary report discusses our exploratory and testing procedures, presents our findings and evaluations and includes the following:

- A brief review and description of our field and laboratory test procedures and the results of testing conducted.
- A review of surface topographical features and site conditions.
- A review of area and site geologic conditions.
- A review of subsurface soil stratigraphy with pertinent available physical properties.
- Copies of our soil test boring logs.
- Preliminary recommendations for site preparation and construction of compacted fills, including an evaluation of on-site soils for use as compacted fills and delineation of potentially unsuitable soils and/or soils exhibiting excessive moisture at the time of sampling.
- Evaluation and recommendations relative to groundwater control.
- Preliminary foundation recommendations for the proposed retail buildings.
- Preliminary recommendations for pavement design.
- Stormwater management design parameters for the ten (10) proposed stormwater management facilities anticipated within the property.

The recommendations contained herein were developed from the data obtained in the soil test borings, which indicate subsurface conditions at these specific locations at the time of exploration. Soil conditions may vary between the borings. If during the course of construction variations appear evident; the Geotechnical Engineer should be informed so that the conditions can be addressed.

1.3 AUTHORIZATION

Our services were provided in accordance with our Proposal No. 24:12884-GP dated August 17, 2018 and as authorized by you on September 22, 2018, and includes the Terms and Conditions of Service outlined with our Proposal/Contract between ECS Florida, LLC and Equinox Development Properties, Inc.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The subject site is located to the southwest of the intersection between Tuskawilla Road and State Road 434, more specifically at 170 Tuskawilla Road in Winter Springs, Seminole County, Florida. The subject property (approximately 9.95 acres in size) is pentagonal in shape, generally bounded to the north by State Road 434, to the east by Tuskawilla Road, to the south by a vacant property and to the west by a residential community. A Conceptual Sketch is included below and within Appendix A of this report.

Figure 2.1.1 – Approximate Site Location

2.2 PAST SITE HISTORY/USES

A review of available aerial imagery dated back to 1980 and our knowledge of the site, we understand that the site is primarily heavily wooded with a retail building located within the north eastern corner of the proposed area of development which appears to have been built in either the 1980s or 1990s.

2.3 CURRENT SITE CONDITIONS

Based on our site reconnaissance and review of the topographic data, provided by you from Shannon Surveying Inc., dated October 15, 2018, the site is sloping from the south downward to primarily the northwestern portion of the proposed development with existing ground surface elevations varying approximately between EL. +46 feet-datum and EL. +42.5 feet-datum. A boring location survey was not performed as a part of our scope.

2.4 PROPOSED CONSTRUCTION

Our understanding of the proposed construction is based on information provided by Equinox Development Properties, Inc and the Overall Site Plan dated November 3, 2020 prepared by Marcus Gieger with Kimley-Horn. Based on our understanding of the project, the proposed

construction would likely consist of multiple structures including, four (4) one-story retail buildings (approximately between 4,280 and 19,209 square feet, respectively) two (2) out parcel building (approximately 2,325 and 3,056 square feet). Site features are to include a stormwater , one (1) wet pond, two (2) dry retention pond areas within the southern portion of the site, and the associated paved parking areas with five (5) underground exfiltration systems within the northern portion of the property, driveway lanes, and utilities.

We would anticipate based on current site grading as well surrounding grading for adjacent commercial properties that the proposed structures may be supported on conventional shallow foundations bearing at an assumed elevation of EL. +42 feet-datum on natural soils. We assumed that finished floor elevation of the proposed structures would be approximately at EL. +44 feet-datum. Based on the existing and proposed grades, we expect maximum fills for the structures to be on the order of 3 feet given the current conceptual drawings for the development. We understand structural loads for the retail structures will be up to approximately 80 kips for column loading, and we have assumed continuous wall loading up to about 5 kips per linear foot.

3.0 FIELD EXPLORATION

3.1 FIELD EXPLORATION PROGRAM

The field exploration was planned with the objective of providing an assessment of the site, characterizing the project site in general geotechnical and geological terms and to evaluate subsequent field and laboratory data to assist in the determination of geotechnical recommendations.

3.1.1 Test Borings

Prior to performing the subsurface exploration, underground utilities were located through the Sunshine State One-Call system. The soil test borings were located in the field by an ECS representative utilizing a hand held GPS unit as reference. The Boring Location Diagram in the Appendix A indicates the approximate location of the borings. The soil test borings were completed with the following drilling and sampling equipment:

- ATV drill rig
- Mud Rotary drilling utilizing 3 ¼ inch hollow-stem augers
- Manual hammer
- Conventional split-spoon soil sampler

Representative soil samples were obtained by means of the split-barrel sampling procedure in accordance with ASTM Specification D 1586. In this procedure, a two-inch O.D., split-spoon sampler is driven into the soil a distance of 18 inches by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through the final 12-inch interval, after initial setting of 6 inches, is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs (attached in Appendix B). The SPT values can be used as a qualitative indication of the in-place relative density of cohesionless soils, and as a relative indication of consistency in cohesive soils. This indication is qualitative, since many factors can significantly affect the standard penetration resistance value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod-sampler assemblies.

A field log of the soil encountered at each boring was maintained by the drilling crew. After recovery, each geotechnical sample was removed from the sampler and visually classified by the driller. Representative portions of each sample were then sealed in containers and transported to our laboratory in Orlando, Florida for further visual examination and laboratory testing. After completion of the drilling operations, the boreholes were backfilled with auger cuttings.

Please note that ground surface elevations noted on our boring logs were interpolated from the Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc.; however, we recommend that the boring locations are surveyed for elevations to extend the usefulness of the subsurface information obtained.

3.2 REGIONAL/SITE GEOLOGY

Based on the Geologic Map of Florida, Central Florida geologic conditions can generally be described in terms of three basic sedimentary layers. The near-surface layer is primarily composed of sands containing varying amounts of silt and clay fines that are underlain by a layer of clay, clayey sand, locally referred to as the "Hawthorn Group" which is underlain by phosphate, and limestone. The thickness of these strata varies throughout Central Florida. In general, the surficial sands typically extend to depths of 40 feet to 70 feet below the ground surface, while the "Hawthorn Group" ranges from nearly absent in some locations to thicknesses greater than 100 feet. The limestone formation may be several thousand feet thick.

The groundwater hydrogeology of Central Florida can be described in terms of the nature and relationship of the three basic geologic strata. The near surface and upper stratum are fairly permeable and comprise the water table (unconfined) aquifer. The deep limestone formation of the Floridian aquifer is highly permeable due to the presence of large interconnected channels and cavities throughout the rock. The Floridian aquifer is the primary source of drinking water in Central Florida. These two permeable strata are separated by the relatively low permeability clays in the "Hawthorn Group." The amount of groundwater flow between the two aquifer systems is dependent on the thickness and consistency of the "Hawthorn Group" clay confining beds which, as previously stated, varies widely throughout Central Florida. The following Figure 3.2.1 shows the regional geologic map.

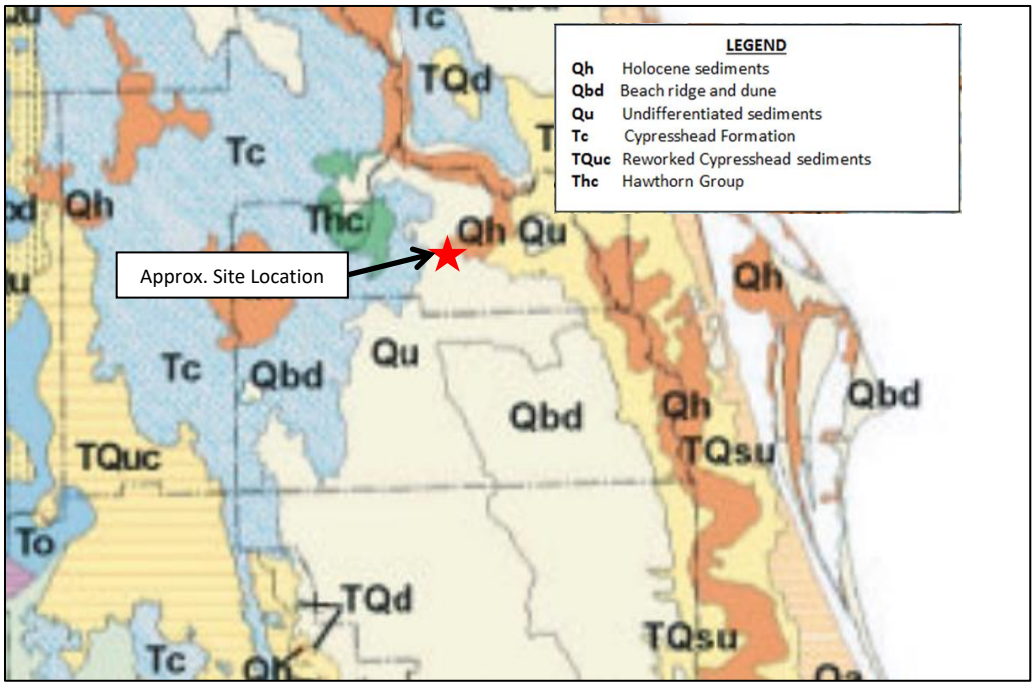


Figure 3.2.1 Regional Geologic Map (Geologic Map of Florida, 2001)

3.3 KARST GEOLOGY

Areas within Central Florida are known to have karst geology. Karst terrain is characterized by voids, soil domes, soil raveling, interrupted drainage, disappearing streams, and topographical

features such as sinkholes and closed depressions. These features are the result of the dissolution of soluble bedrock such as limestone by groundwater and/or the infiltration of surface water.

As water enters fractures, bedding planes, and other bedrock discontinuities within soluble bedrock, it slowly dissolves the rock and enlarges the discontinuities. Over geologic time, this results in the formation of solution channels or underground passages and ravines which may develop into surficial manifestations such as sinkholes and closed depressions. The dissolution of bedrock is generally a very slow process. However, soil may be eroded or raveled into the enlarged bedrock fractures, creating soil domes. Eventually, soil in these features can be lost through groundwater movement, resulting in surface depressions and potential sudden ground subsidence.

The soils derived from and overlying the carbonate bedrock are typically a clayey and silty soil with varying amounts of sand and rock fragments. The bedrock within the general geographic region is characterized by jointed and faulted soluble carbonate lithologies interbedded with non-carbonate lithologies. These carbonate formations are generally moderately to highly solution prone.

The degree of weathering or solutioning is often controlled by lithological variations and structural orientations. Where structural discontinuities intersect or in areas which are highly fractured, solutioning is intensified creating low areas and seams that are typically filled with residual clayey soils. Conversely, more competent, high areas represent slightly- to non-fractured lithologies that are often coarser grained and only slightly solution prone.

The underlying carbonate formations of the project geographic area are susceptible to Karst-related sinkhole development. Contributing characteristics and factors controlling the development include subsurface structural deformation, joint sets, and thick carbonate bedding within the area. Due to the shallow nature of the exploration performed, the borings did not reveal overt signs of soils associated with karst activity or carbonate rocks.

3.4 SOIL SURVEY MAPPING

Based on the Soil Survey for Seminole County, Florida by the US Department of Agriculture (USDA) Soil Conservation Service the predominant predevelopment soil type(s) at the site is identified and a summary of characteristics of this soil series is included below in Table 3.4.1.

Table 3.4.1 Soil Survey

Soil Type	Constituents	Drainage Class	Water Table Depth
20—Myakka and EauGallie	Fine sand	Poorly drained	0.5 to 1.5 feet
24—Paola-St. Lucie sands, 0 to 5 percent slopes	Sand	Excessively drained	-
31—Tavares-Millhopper complex, 0 to 5 percent slopes	Fine sand and sandy loam	Moderately well drained	3.5 to 6 feet

Soil mapping of the site vicinity showing soil numbers (20, 24, and 31) are presented in Figure 3.4.1 below.

Figure 3.4.1 Site Soil Survey

3.5 SUBSURFACE CHARACTERIZATION

The site subsurface conditions were evaluated with 19 SPT borings advanced to the depths ranging between 10 feet and 20 feet below the existing ground surface at the approximate locations shown on the Boring Location Diagram in Appendix A.

The quantity of borings, boring locations, and drilling depths were developed by ECS prior to performing subsurface exploration based on the type and location of the proposed development from the Kimley-Horn Conceptual Sketch dated August 8, 2018.

The subsurface exploration at each boring location indicated generally SAND (SP) and SAND WITH SIL (SP-SM) from existing grade to the maximum termination of the borings (20 feet below existing grade). The soil auger was able to reach the termination depth at each of the borings. SPT N-values ranged from 5 to 19 blows per foot (bpf). The loose soils encountered were primarily observed within the upper 10 feet of the subsurface profiles

The subsurface conditions at each boring are summarized in Table 3.5.1. The subsurface conditions presented in Table 3.5.1 and shown on the Boring Logs should be considered approximate, based on interpretation of the exploration data using normally accepted geotechnical engineering judgments. It should be noted that transitions between different soil strata are typically less distinct than what is shown on the exploration records. Subsurface conditions between the actual boring locations will vary.

Table 3.5.1 Subsurface Stratigraphy

Approximate Depth Range (ft)	Approximate Elev. Range (ft) (1)	Stratum	Description	Ranges of SPT(2) N-values (bpf)
0 – 20(3)	+45.5 to +22.5	I	SAND (SP), SAND WITH SILT (SP-SM)	5 to 19

Notes: (1) Please note elevations at the boring locations were estimated based upon the Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc. and should be considered approximate.
(2) Standard Penetration Test.
(3) Maximum Termination Depth.

3.6 GROUNDWATER OBSERVATIONS

Groundwater levels were measured in our borings as noted on the soil boring logs in Appendix B. The groundwater table was measured approximately between 3.5 feet and 5.5 feet below the existing grades at the boring locations within the drilling depths at the time of our exploration. No further groundwater measurements were made subsequent to drilling operations.

Variations in the long-term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors. The groundwater will fluctuate seasonally depending upon local rainfall. The rainy season in Central Florida is normally between June and September. Based upon our site specific field data, our review of the USDA Soils Survey of Seminole County, the topography of the area, the expected regional hydrogeology and our experience in the area, we estimate the seasonal high groundwater levels likely to be encountered approximately between 2.5 feet and 5 feet below existing grades at the boring locations. Please refer to the individual boring logs presented in Appendix B for boring specific groundwater levels.

Variations in the location of the long-term groundwater level may occur as a result of changes in precipitation, evaporation, surface water runoff, and other factors not apparent at the time of this exploration. The summary of groundwater conditions within the boring locations are provided below in Table 3.6.1.

Table 3.6.1 Summary of Groundwater Conditions

Boring ID	Approximate Ground Surface Elevation (ft-datum) *	Encountered Ground Water Table Depth (ft)	Encountered Groundwater Table Elevation (ft-datum)	Estimated Seasonal High Ground Water Table Depth (ft)	Estimated Seasonal High Ground Water Elevation (ft-datum)
B-1	44	4.5	39.5	3.5	40.5
B-2	44	5	39	4	40
B-3	43.5	3.5	40	2.5	41
B-4	44.5	4.5	40	3.5	41
B-5	45	5.5	39.5	4.5	40.5
B-6	45.5	5	40.5	4	41.5
B-7	42.5	4	38.5	3	39.5
B-8	43	4.5	38.5	3.5	39.5
B-9	45	5.5	39.5	5	40
B-10	45.5	5.5	40	5	40.5
B-11	45	5.5	39.5	4.5	40.5
B-12	44	5.5	38.5	4.5	39.5
B-13	44.5	4	40.5	3	41.5
B-14	45	5	40	4	41
B-15	45	5	40	4	41
B-16	45	5	40	4	41
B-17	43.5	4.5	39	3.5	39.5
B-18	44.5	4.5	40	4	40.5
B-19	45	4	41	3.5	41.5

Note: * Elevations at the boring locations were estimated using the Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc.

4.0 LABORATORY TESTING PROGRAM

The laboratory testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. The following paragraphs briefly discuss the results of the completed laboratory testing program.

4.1 VISUAL CLASSIFICATION

Each soil sample from the test borings was visually classified on the basis of texture and plasticity in accordance with the Unified Soil Classification System (USCS) and ASTM D 2488 (Description and Identification of Soils-Visual/Manual Procedures). After classification, the various soil types were grouped into the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses following the soil descriptions on the boring logs. The stratification lines designating the interfaces between earth materials on the boring logs are approximate; in situ, the transitions may be gradual.

The soil samples from our current exploration will be retained in our laboratory for a period of two months after the subsurface exploration program is completed, after which they will be discarded unless other instructions are received as to their disposition.

4.2 INDEX TESTING

The index testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. Index property tests were performed on representative soil samples obtained from the test borings in order to aid in classifying soils according to the Unified Soil Classification System (USCS) and to quantify and correlate engineering properties. The index testing program included natural moisture content tests (ASTM D 2216) and percent passing the No. 200 sieve (ASTM D 6913). The results of the index testing results conducted are included in Appendix C of this report.

5.0 PRELIMINARY DESIGN RECOMMENDATIONS

The following sections provide preliminary recommendations for foundation design, pavements and the stormwater management facilities. Loose soils and shallow groundwater condition are likely to be encountered near-surface. The existing building, associated asphalt pavement and utilities within the eastern portion of the property will need to be removed prior to proposed development. Based on our subsurface exploration, the proposed site is feasible given the preliminary recommendations provided within this report. Details associated with the preliminary geotechnical recommendations are provided below.

5.1 BUILDING DESIGN

Based upon information provided at the time this report was prepared, the site is feasible for the proposed development from a geotechnical perspective**.** It is our professional opinion that subsurface conditions are not likely to significantly impact the construction of the proposed development. However, a temporary dewatering program during the installation of the foundations may be necessary based upon the final grades especially during the rainy season given the shallow estimated seasonal high groundwater level.

As previously noted, the site appears to consist of an existing structure within the eastern portion of the property. Uncontrolled fill soils which could contain construction debris and organics from in-place or placed topsoil grubbing operations, while not encountered during this exploration, may be present within the depths of excavation. Special attention should be taken to observe such conditions, if encountered during the foundation excavations. If uncontrolled fill soils are observed, we recommend test pits be performed within the vicinity of the foundation during a final geotechnical exploration in order to access the potential extents and depths of these materials.

All asphalt pavement, structural and site components (foundation, slabs, and utilities) of the existing facility located within the proposed building pad or canopy areas should be removed prior to construction; however, the existing limerock may remain in place if determined to be suitable based upon the design criteria, laboratory testing and satisfactory proofroll testing as determined by the Geotechnical Engineer of Record.

5.2 FOUNDATIONS

We anticipate that the proposed structures for this site can be supported on a shallow foundations after adequate site preparation procedures. Upon successful completion of the recommended site preparation procedure, the anticipated structures would be able to be supported on shallow foundations sized to exert a maximum allowable soil bearing pressure of 3,000 pounds per square foot (psf).

The estimate of maximum allowable bearing pressure is based on assumed column and wall foundation loads of 80 kips and 5 kips per linear foot, respectively bearing at an elevation of approximately EL. +42 feet-datum on natural or controlled, compacted fill soils. If loads are higher than assumed, ECS should be contacted to review the foundation recommendations. Based on the Conceptual Sketch dated October 30, 2018 prepared by Kimley-Horn and existing site grades, we assumed the final finished floor elevation of the proposed structure to be approximately at EL. +44 feet-datum. The estimate of allowable bearing pressure may be refined based on more

precise estimates of loads (provided by the structural engineer) and proposed site grades. The foundations should be designed based on the maximum load which could be imposed by all loading conditions.

All shallow foundations should be embedded at least 18 inches below lowest adjacent grade. Further, we recommend minimum foundation widths of 18 and 24 inches of strip and square footings, respectively, even though the maximum allowable soil bearing pressure may not be developed in all cases.

Post-construction settlements of the structure will be influenced by several interrelated factors, including: (1) strength and compressibility characteristics of the subsurface; (2) footing size, bearing level, applied loads, and resulting bearing pressures beneath the foundations; and (3) site preparation and earthwork construction techniques used by the contractor. Our settlement estimates for the structure are based on the use of the earthwork construction techniques as recommended in Section 6.2 of this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlements of the structure.

Assuming the site preparation procedure as outlined is followed; we estimate that total post construction settlements of the structure are likely to be 1 inch or less. If the recommended earthwork construction techniques outlined in this report are followed, differential settlements of 0.75 inch or less should be anticipated. The above settlement estimates are based on the assumed maximum structural loads, recommended maximum allowable bearing pressure, and the field data.

5.3 STORMWATER MANAGEMENT SYSTEM DESIGN PARAMETERS

It is our understanding that the proposed development is likely to include a proposed three (3) stormwater dry retention pond areas within the southern portion of the proposed development and seven (7) exfiltration systems within the northern portion of the site. Based on the laboratory test results obtained from the borings performed around the underground exfiltration systems areas (B-2 through B-6, B-8, B-9, B-11, B-12, B-14 and B-16), two (2) dry pond areas (B-1, B-7, and B-13) and wet pond area (B-18 and B-19), the upper stratum is classified predominantly as Fine SAND (SP) and Fine SAND with SILT (SP-SM) to the maximum termination of depth of borings (20 feet below existing grades).

The groundwater table was encountered between approximately 4 feet to 5.5 feet below the existing grades at the boring locations within the drilling depths at the time of our exploration, and therefore the seasonal high groundwater level is estimated to between approximately between 3 feet to 5 feet below existing grades.

Table 5.3.1 outlines the recommended design parameters for the proposed stormwater dry pond area within the southern portion of the property.

Table 5.3.1 Dry Stormwater System Design Subsurface Input Design Parameters

Stormwater System ID	Boring ID	Average Seasonal High Ground Water Table Elevation (ft-datum)*	Average Base of Aquifer Elevation (ft-datum) *	Fillable Porosity	Average Horizontal Saturated Hydraulic Conductivity of Mobilized Surficial Aquifer, Kh (ft/day)	Average Vertical Unsaturated Hydraulic Conductivity of Mobilized Surficial Aquifer, Kv (ft/day)
SMA-A.1	B-1 & B-7	40.0	34.0	0.25	51**	17**
SMA-A.2	B-13	41.5	35.0	0.25		
SMA-C	B-8, B-11, B-14, B-16	40.5	32.6	0.25	51**	17**
SMA-D	B-9 & B-12	39.8	29.5	0.25	51**	17**
SMA-E	B-6 & B-9	40.8	29.2	0.25	51**	17**
SMA-F	B-3	41	22.5	0.25	51**	17**
SMA-G	B-2, B-3, B-5, B-6 & B-8	40.5	27.9	0.25	55	37
					51**	17**

Notes: : * Elevations at the boring locations were estimated using the available Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc., and therefore these elevations should be considered approximate to the closest half foot.

** Average Horizontal Saturated Hydraulic Conductivity of Mobilized Surficial Aquifer (K_h) and Average Vertical Unsaturated Hydraulic Conductivity of Mobilized Surficial Aquifer (K_v) factored values selected by Kimley Horn for recovery analysis..

Table 5.5.1 Stormwater System Design Parameters

Stormwater System ID	Boring ID	Average Seasonal High Ground Water Table Elevation (ft-datum)*	Average Wet Season Groundwater Table Elevation (ft-datum) *	Average Normal Seasonal Low Ground Water Table Elevation (ft-datum) *	Average Horizontal Saturated Hydraulic Conductivity of Mobilized Surficial Aquifer, Kh (ft/day)	Average Vertical Unsaturated Hydraulic Conductivity of Mobilized Surficial Aquifer, Kv (ft/day)
SMA-B	B-18 & B-19	41.0	40.5	39.5	51	34

Notes: : * Elevations at the boring locations were estimated using the available Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc., and therefore these elevations should be considered approximate to the closest half foot.

Please note that the hydraulic conductivity values presented in table above do not incorporate any factors of safety, except as otherwise noted. Appropriate factors of safety will have to be applied during design and drawdown analysis. Moreover, please note that parameters presented in the table above are based on assumptions made to ground surface elevations noted on our boring logs are approximately based on the Boundary and Topographic Survey dated October 15, 2018 prepared by Shannon Surveying, Inc. our surface elevations with one-foot contour intervals; therefore, should be considered approximate to the closest half foot. We recommend that boring location survey be performed by a professional surveyor to extend the usefulness of the subsurface information obtained.

ECS can perform a baseflow/groundwater seepage analysis once the stormwater pond configurations have been established. The stormwater pond bottom and side slopes should be stabilized according to applicable Water Management district and local municipality guidelines.

5.4 PAVEMENT DESIGN CONSIDERATIONS

As discussed in the aforementioned Design Considerations Section 5.0, the subsurface conditions are suitable for the proposed pavement design.

General Recommendations: Our scope of services did not include extensive sampling and Limerock Bearing Ratio (LBR) testing of existing subgrade or potential sources of imported fill for the specific purpose of a detailed pavement analysis. Instead, we have assumed pavement-related design parameters that are considered to be typical for the area soil types and roadway type as per the "FDOT Standards & Specifications". The recommended pavement thicknesses presented in this report section are considered typical and minimum for the assumed parameters in the general site area. We understand that budgetary considerations sometimes warrant thinner pavement sections than those presented. However, the client, the owner, and the project designers should be aware that thinner pavement sections may result in increased maintenance costs and lower than anticipated pavement life. We recommend the following pavement section designs included in Table 5.6.1 below.

Table 5.4.1 Pavement Sections

	Asphalt		Concrete	
Component	**Standard**	**Heavy**	**Standard**	**Heavy**
Stabilized Subgrade	12"	12"	12"	12"
Base Course	6"	8"	N/A	N/A
Surface Course	1.5"	2"	5"	6"

All pavement subgrades should be prepared in accordance with the recommendations presented in the section entitled Earthwork Operations.

In areas where Portland cement concrete pavement is planned, the concrete should be placed upon a minimum of 12 inches of compacted, free draining material and compacted to 98 percent of the Modified Proctor maximum dry density (ASTM D1557).

In areas where asphaltic concrete pavements are used, we suggest stabilizing the subgrade materials to a minimum Florida Bearing Value (FBV) of 75 pounds per square inch (psi). As an alternate for the FBV, materials can have a LBR of 40 percent. All stabilized subgrade materials should be compacted to 98 percent of the Modified Proctor (ASTM D-1557) maximum dry density and meet specification requirements for Type B or Type C Stabilized Subgrade by the Florida Department of Transportation (FDOT). The stabilized subgrade may consist of imported material or a blend of on-site soils and imported materials. If a blend is proposed, we recommend that the contractor performs a mix design to find the optimum mix proportions.

Base Course: Based on the groundwater conditions encountered at the subject property, it is our professional opinion that crushed concrete or limerock are likely to be the economical and feasible base course options for this project.

Limerock should follow a minimum LBR of 100 percent and should be mined from an FDOT approved source. Place limerock in maximum six-inch lifts and compact each lift to a minimum density of 95 percent of the Modified Proctor maximum dry density (ASTM D-1557).

Crushed concrete should follow the FDOT specification for material qualifications and placement. Place crushed concrete base in maximum 6-inch lifts and compact to a minimum density of 95 percent of the Modified Proctor (ASTM D-1557) maximum dry density according to their specification. Perform compliance testing for the base course to a depth of one foot at a frequency of one test per 5,000 square feet, or at a minimum of two test locations, whichever is greater.

Effects of Groundwater: One of the most critical influences on the pavement performance in Central Florida is the relationship between the pavement subgrade and the seasonal high groundwater level. Roadways and parking areas that have not considered these effects typically exhibit signs of deterioration due to degradation of the base and the base/surface course bond. Regardless of the type of base selected, we recommend that the seasonal high groundwater (SHGWT) and the bottom of the base course be separated by at least 12 inches for crushed concrete and 18 inches for limerock. Please note that a higher separation criterion between SHGWT and bottom of the base course may be required based on reviewing agency indication.

Landscape Drains and Curbing: If needed, where landscaped sections are located adjacent to parking lots or driveways, we recommend that drains be installed around these landscaped sections to protect the asphalt pavement from excess rainfall and over irrigation. Migration of irrigation water from the landscape areas to the interface between the asphalt and the base usually occurs unless landscape drains are installed. This migration often causes separation of the wearing surface from the base and subsequent rippling and pavement deterioration. The underdrains or strip drains should be routed to a positive outfall at the pavement area catch basins.

It is recommended that curbing around landscaped sections adjacent to parking lots and driveways be constructed with full-depth curb sections. Using extended curb sections which lie directly on top of the final asphalt level, or eliminating curbing entirely, can allow migration of irrigation water from the landscaped areas to the interface between the asphalt and the base. This migration often causes separation of the wearing surface from the base and subsequent rippling and pavement deterioration.

6.0 SITE CONSTRUCTION RECOMMENDATIONS

6.1 SUBGRADE PREPARATION

6.1.1 Stripping and Subgrade Preparation

The subgrade preparation should consist of stripping vegetation, rootmat, topsoil, any existing fill materials and any other soft or unsuitable materials from the 10-feet expanded building limit and 5-feet expanded pavement limits. Stripping limits should be extended an additional 1 foot for each foot of fill required at the structure's exterior edge. These activities should include removing soft and/or wet soils or otherwise unsuitable surface materials.

It should be anticipated that existing subgrade materials from the site will be loose and wet. A contingency should be included in the budget for isolated undercutting during proofroll operations. In the building areas, the depth of the soft wet soil, if encountered, should be removed to stable soil and replaced with approved structural fill. If the depth of unsuitable material is identified to be deeper than 3 feet below design subgrade in foundation or pavement areas, then alternative pavement subgrade stabilization may be considered. This could consist of excavating down a maximum of 3 feet below the pavement subgrade elevation, placing geogrid (such as Mirafi BXG-11 or approved equivalent), and then placing granular material over the grid to the design subgrade elevation. The actual depth of the undercut and/or remedial approach will vary depending on the conditions and should be evaluated at the time of construction.

The contractor should have a dewatering plan prepared in order to control high groundwater conditions observed on site. The amount and frequency of precipitation may also affect the groundwater conditions. The contractor should make provisions to keep excavations dry during construction to maintain the integrity of the exposed soils and help reduce the potential for otherwise unnecessary remedial work.

Erosion and sedimentation shall be controlled in accordance with Best Management Practices and current state, local, and NPDES requirements. At the appropriate time, we would be pleased to provide a proposal for construction materials testing and NPDES related services.

6.1.2 Proofrolling

Following the stripping operations and prior to the placement of structural fills or structural elements, the exposed subgrade soils should be observed by a geotechnical engineer or their approved representative. Proofrolling using a loaded dump truck, having an axle weight of at least 10 tons, may be used at this time to aid in identifying localized soft or unsuitable materials that should be removed. Any soft or unsuitable material encountered during proofrolling should be removed to a stable subgrade and replaced with an approved backfill compacted to the criteria given below.

Due to the loose soils encountered within this exploration a representative of the Geotechnical Engineer of Record is recommended to be on-site during the proofroll of the building pad areas to confirm the suitability of the natural soils prior to the placement of structural fill or foundations. The natural soils within the building pad areas should be densified with a 20 ton smooth drum roller that should traverse the pads in a perpendicular (orthogonal) pattern using

the maximum vibratory setting prior to commencing proofroll operations and subsequent structural fill placement.

6.2 EARTHWORK OPERATIONS

6.2.1 Structural Fill Materials

After subgrade preparation and observation has been completed and a stable subgrade exists, fill placement may begin. Structural fill materials should not be placed on soils which have been recently subjected to precipitation. Wet soils should be removed prior to the placement of engineered fill, granular sub-base materials, foundation/slab concrete, or paving materials.

Materials used as structural fill for shallow fill areas should consist of approved material classified as SP, SP-SM, SM, SC or more granular, which are free of debris, particles larger than 3 inches in diameter (4-inches for trench/utility backfill), organic inclusions, cinders, ash, or excess moisture. **It should be noted that the soils observed within the proposed dry pond area would be considered suitable for use as structural fill; however, due to the nature of the high groundwater table there should be consideration with respect to a time allowance for these soils to dry prior to compactive effort being applied. Due to the coarse, granular nature of the soils, we would expect the soils to dry relatively quickly during periods of no precipitation.**

Prior to placement of structural fill, representative bulk samples (about 50 pounds) of on-site and off-site borrow should be submitted to ECS for laboratory testing, which will include natural moisture content, grain-size distribution, and moisture-density relationships for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications.

The structural fill, consisting of suitable on-site soils or off-site granular borrow material, or a mixture thereof, should be placed in essentially horizontal lifts with a maximum loose thickness of 8 inches and moisture conditioned to within $\pm$3 percentage points of the optimum moisture content. Structural fill should be placed and compacted to a minimum compaction of 95% of the maximum dry density in accordance with the Modified Proctor method (ASTM D1557).

Each lift of compacted engineered fill should be tested by a representative of the geotechnical engineer prior to placement of subsequent lifts. Compaction testing should be performed at the rate of at least 1 test per 2,500 square feet for each lift of fill within the building pad and at the rate of at least 1 test per 5,000 square feet for each lift of fill outside of the building pad, with a minimum of 3 tests per lift of fill within the building footprint. The elevation and location of the tests should be accurately identified at the time of fill placement. Areas which fail to achieve the required degree of compaction should be recompacted and retested until minimum compaction is achieved. Failing test areas may require adjustments in moisture content or other suitable remedial activities in order to achieve the required compaction.

The expanded limits of the proposed construction areas should be well defined, including the limits of the fill zones for buildings, pavements, and slopes, etc., at the time of fill placement. Grade controls should be maintained throughout the filling operations.

Compaction equipment suitable to the soil type being compacted should be used to compact the subgrades and fill materials. Sheepsfoot compaction equipment should be suitable for the fine-

grained soils (Clays and Silts). A vibratory steel drum roller should be used for compaction of coarse-grained soils (Sands) as well as for sealing compacted surfaces. In confined areas such as utility trenches, portable compaction equipment and thin lifts of 3 to 4 inches may be required to achieve specified degrees of compaction.

At the end of each work day, all fill areas should be graded to facilitate drainage of any precipitation and the surface should be sealed by use of a smooth-drum roller to limit infiltration of surface water. During placement and compaction of new fill at the beginning of each workday, the contractor may need to scarify existing subgrades to a depth on the order of 4 inches so that a weak plane will not be formed between the new fill and the existing subgrade soils.

Positive site drainage should be maintained during earthwork operations in an effort to maintain the integrity of the site surface soil. When wet, the site soils may degrade quickly with disturbance from contractor operations and will be extremely difficult to stabilize for fill placement. Consequently, the contractor should be prepared to implement aggressive mechanical or chemical drying, depending upon the actual site conditions. We strongly recommend that mass grading for the project be performed during the drier summer months to help facilitate favorable moisture conditions for the site soils. If water must be added to raise the moisture content of the soil, it should be uniformly applied and thoroughly mixed into the soil. In addition to maintaining proper site drainage for the purpose of maintaining the integrity of the site soils, care must be taken to control the surface water flow due to the inherent risks associated with risk for sinkhole development as previously discussed.

6.3 UTILITY INSTALLATIONS

Utility Subgrades and Excavation: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes to include an underground storage tank (UST). The pipe subgrade, especially where existing fill was encountered, should be observed and probed for stability by the testing agency to evaluate the suitability of the materials encountered. Any loose or unsuitable materials encountered at the utility pipe subgrade elevation should be removed and replaced with suitable compacted structural fill or pipe bedding material. Based upon the type of soils and high groundwater table encountered on site, the contractor will need to consider installing trench boxes during deep utility and UST excavations.

Utility Backfilling: The granular bedding material should be at least 4 inches thick, but not less than that specified by the project drawings and specifications. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for structural fill given in this report. Compacted backfill should be free of topsoil, roots, ice, or any other material designated as unsuitable. The backfill should be moisture conditioned, placed, and compacted in accordance with the recommendations of this report. Where the utility and UST will be located below water, the contractor should be aware of potential buoyancy and tie down the pipes or UST structure. In addition, soil backfill will not be able to be compacted. In this case, backfill can consist of FDOT 57 stone to approximately 1 foot over the water level, a fabric separator placed, followed by compacted fill to design subgrade.

Utility Excavation Dewatering: Groundwater will likely be encountered for UST and utility excavations. Depending on the amount of controlled fill and the depth of the utility, pumping from the excavations may not be enough for the installation of the utility and UST. Well points

would need to be considered if localized dewatering equipment such as sump pumps are unable to control water during the installation of the utilities and UST. It is expected that removal of perched water which seeps into excavations could be accomplished by pumping from sumps excavated in the trench bottom and which are backfilled with FDOT Size No. 57 Stone or open graded bedding material. Should water conditions beyond the capability of sump pumping be encountered, the contractor should submit a Dewatering Plan in accordance with project specifications.

6.4 GENERAL CONSTRUCTION CONSIDERATIONS

Site Drainage and Surface Water Control: Adequate temporary and permanent control of surface water runoff will be required in order to allow site access, grading and construction to proceed. Standing water or ice should be removed from the completed building pad and pavement subgrades as soon as practical after each precipitation event without damaging the subgrade throughout the construction period. This may include the use of temporary under-drains, sump pits and pumps, plowing, or other means. In addition, the building pad and pavement subgrades should be maintained on a regular basis to grade out any ruts or low points where water may accumulate, and to aerate and/or re-compact any areas disturbed by weather or construction activities. The responsibility for this maintenance role should be clearly defined in the contract documents.

Subgrade Protection: Measures should also be taken to limit site disturbance, especially from rubber-tired heavy construction equipment, and to control and remove surface water from development areas, including structural and pavement areas. It would be advisable to designate a haul road and construction staging area to limit the areas of disturbance and to prevent construction traffic from excessively degrading sensitive subgrade soils and existing pavement areas. Haul roads and construction staging areas could be covered with excess depths of aggregate to protect those subgrades. The aggregate can later be removed and used in pavement areas.

Excavation Safety: Cuts or excavations associated with utility excavations may require forming or bracing, slope flattening, or other physical measures to control sloughing and/or prevent slope failures. Contractors should be familiar with applicable OSHA codes to ensure that adequate protection of the excavations and trench walls is provided.

Erosion Control: Install soil erosion and sedimentation control devices, as well as temporary stormwater management facilities, as specified by Site/Civil Engineer. Maintain positive drainage conditions throughout construction, avoiding unnecessary ponding of stormwater in excavations or low areas of the site. Seal-roll exposed soil or subgrade surfaces prior to rain events, and promptly remove any standing water immediately afterwards.

6.5 CONSTRUCTION OBSERVATION AND TESTING

Regardless of the thoroughness of a geotechnical engineering study, there is always a possibility that subsurface conditions between test borings may be different from those encountered at the test boring locations, that conditions are not as anticipated by the designers, or that the demolition or construction process has altered the subsurface conditions. Therefore, geotechnical engineering construction observation should be performed under the supervision of a qualified

Geotechnical Engineer who is familiar with the intent of the recommendations presented in this report. Such observation services are recommended to evaluate whether the conditions anticipated in the design actually exist, or whether the recommendations presented in the report should be modified where necessary.

7.0 CLOSING

The report has been prepared for the exclusive use of Equinox Development Properties Inc., and their design team. ECS has prepared this report of findings, evaluations, and recommendations to guide geotechnical-related design and construction aspects of the project.

The description of the proposed project is based on information provided to ECS by Equinox Development Properties Inc. If any of this information is inaccurate, either due to our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted immediately in order that we can review the report in light of the changes and provide additional or alternate recommendations as may be required to reflect the proposed construction.

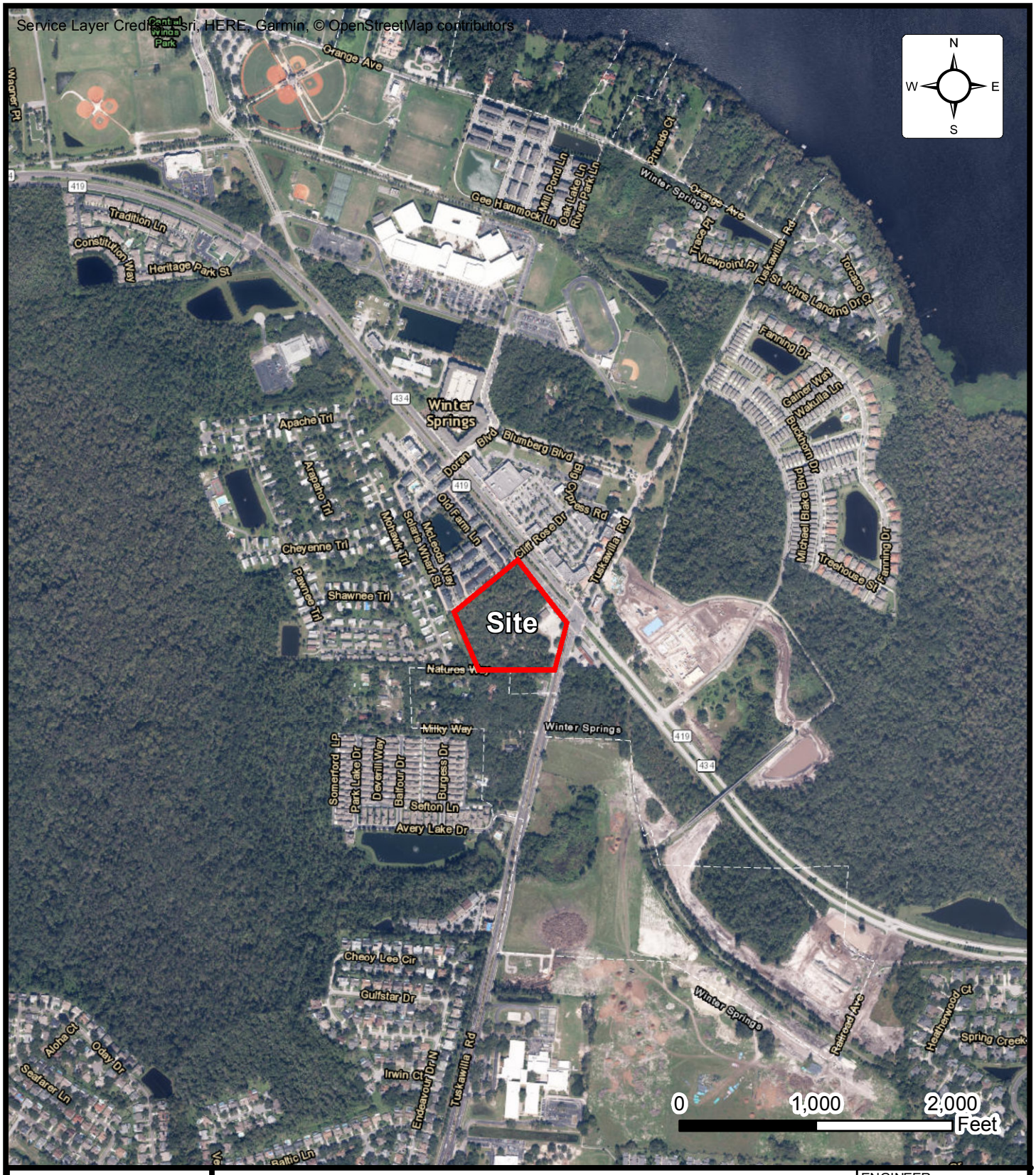
We recommend that ECS be allowed to review the project's plans and specifications pertaining to our work so that we may ascertain consistency of those plans/specifications with the intent of the geotechnical report.

Field observations, monitoring, and quality assurance testing during earthwork and foundation installation are an extension of and integral to the geotechnical design recommendation. We recommend that the owner retain these quality assurance services and that ECS be allowed to continue our involvement throughout these critical phases of construction to provide general consultation as issues arise. ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

The scope of this investigation was limited to the evaluation of the load-carrying capabilities and load stability of the soils and bedrock. Oil, hazardous waste, radioactivity, irritants, pollutants, radon or other dangerous substances and conditions were not the subject of this study. Their presence and/or absence are not implied, inferred or suggested by this report or results of this study.

APPENDIX A – Diagrams

Site Location Diagram
Boring Location Diagram



Site Line Location Diagram
TUSKAWILLA RETAIL DEVELOPMENT

170 TUSKAWILLA ROAD, WINTER SPRINGS, FL

EQUINOX DEVELOPMENT PROPERTIES, INC.

ENGINEER	JPH
SCALE	1 " = 1000'
PROJECT NO.	6366
SHEET	1 OF 1
DATE	11/8/2018

Boring Location Diagram

EQUINOX DEVELOPMENT PROPERTIES, INC.

TUSKAWILLA RETAIL DEVELOPMENT

170 TUSKAWILLA RD, WINTER SPRINGS, FL

ENGINEER	JPH
SCALE	AS NOTED
PROJECT NO.	24:6366
SHEET	1 OF 1
DATE	12/11/2020

APPENDIX B – Field Operations

Reference Notes for Boring Logs
Boring Logs (B-1 through B-19)
Cross Section A-A'
Cross Section B-B'
Cross Section C-C'

REFERENCE NOTES FOR BORING LOGS

MATERIAL[1,2]	
	ASPHALT
	CONCRETE
	GRAVEL
	TOPSOIL
	VOID
	BRICK
	AGGREGATE BASE COURSE
	FILL[3] MAN-PLACED SOILS
	GW **WELL-GRADED GRAVEL** gravel-sand mixtures, little or no fines
	GP **POORLY-GRADED GRAVEL** gravel-sand mixtures, little or no fines
	GM **SILTY GRAVEL** gravel-sand-silt mixtures
	GC **CLAYEY GRAVEL** gravel-sand-clay mixtures
	SW **WELL-GRADED SAND** gravelly sand, little or no fines
	SP **POORLY-GRADED SAND** gravelly sand, little or no fines
	SM **SILTY SAND** sand-silt mixtures
	SC **CLAYEY SAND** sand-clay mixtures
	ML **SILT** non-plastic to medium plasticity
	MH **ELASTIC SILT** high plasticity
	CL **LEAN CLAY** low to medium plasticity
	CH **FAT CLAY** high plasticity
	OL **ORGANIC SILT or CLAY** non-plastic to low plasticity
	OH **ORGANIC SILT or CLAY** high plasticity
	PT **PEAT** highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS			
SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION		
DESIGNATION		**PARTICLE SIZES**
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS		
UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	**SPT[5] (BPF)**	**CONSISTENCY[7] (COHESIVE)**
<0.25	<3	Very Soft
0.25 - <0.50	3 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS	
SPT[5]	**DENSITY**
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
Dual Symbol *(ex: SW-SM)*	10	10
With	15 - 20	15 - 25
Adjective *(ex: "Silty")*	≥25	≥30

WATER LEVELS[6]		
	WL	Water Level (WS)(WD)
		(WS) While Sampling
		(WD) While Drilling
	SHW	Seasonal High WT
	ACR	After Casing Removal
	SWT	Stabilized Water Table
	DCI	Dry Cave-In
	WCI	Wet Cave-In

[1] *Classifications and symbols per ASTM D 2488-09 (Visual-Manual Procedure) unless noted otherwise.*

[2] *To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.*

[3] *Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-**FILL**)].*

[4] *Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).*

[5] *Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf).*

[6] *The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.*

[7] *Minor deviation from ASTM D 2488-09 Note 16.*

[8] *Percentages are estimated to the nearest 5% per ASTM D 2488-09.*

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CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 44'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			3 2 4
	S-2	SS	24	24				4 4 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense		40	3 4 4
	S-4	SS	24	24				5 4 6
	S-5	SS	24	24			35	5 6 5
10								7 9 7
	S-6	SS	18	18	(SP) SAND, light gray, wet, medium dense		30	8 7 7
15								7 7 7
	S-7	SS	18	18			25	6 7 9
20					END OF BORING @ 20'		20	
25							15	
30								

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 4.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-9	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 44'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			2 2 3 5
	S-2	SS	24	24				4 5 4 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense		40	3 5 4 6
	S-4	SS	24	24				6 5 7 7
	S-5	SS	24	24			35	6 8 7 8
10					(SP) SAND, light gray, wet, medium dense			
	S-6	SS	18	18			30	6 7 9
15								
	S-7	SS	18	18			25	8 7 8
20					END OF BORING @ 20'			
25							20	
							15	
30								

5 – 9 – 9 – 12 – 15 – 16 – 15

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-15	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

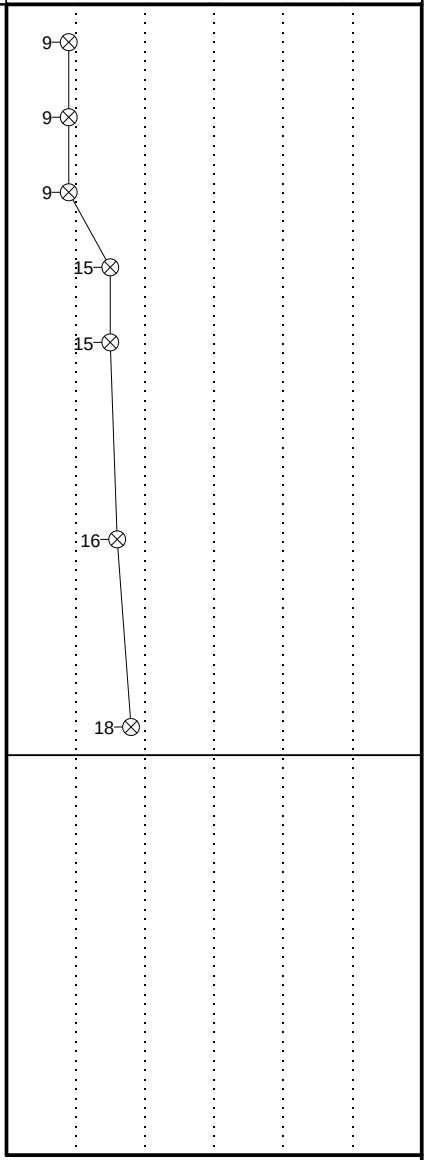
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 43.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			3 5 4
	S-2	SS	24	24			40	4 3 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense			5 4 5
	S-4	SS	24	24				5 4 6
	S-5	SS	24	24			35	7 8 7
10								7 5 7
	S-6	SS	18	18	(SP) SAND, light gray, wet, medium dense		30	8 9 6
15								7 9
	S-7	SS	18	18			25	8 8 10
20					END OF BORING @ 20'			
							20	
25								
							15	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 3.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 2.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-5	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

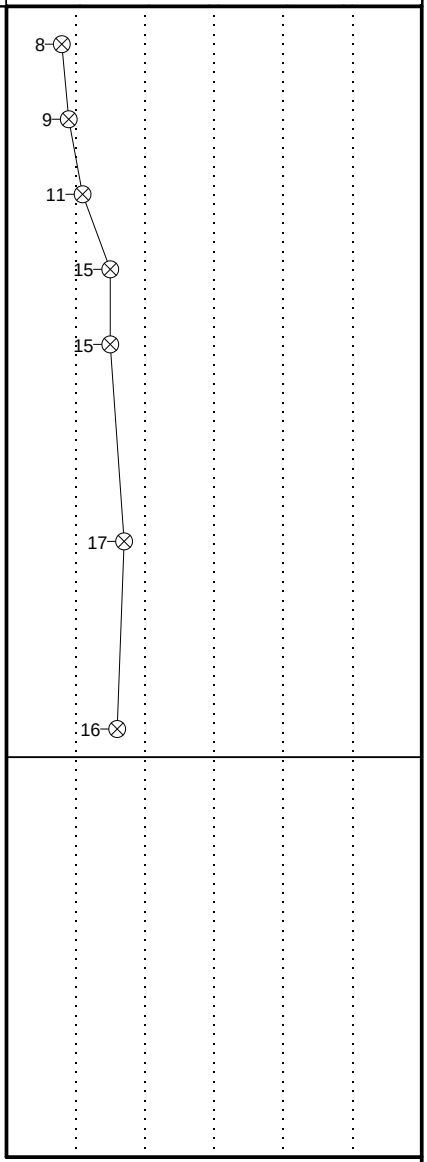
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 44.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			4 3 5
	S-2	SS	24	24				4 5 5
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, medium dense		40	4 6 5
	S-4	SS	24	24	(SP) SAND, light gray, wet, medium dense			7 5 8
	S-5	SS	24	24			35	7 7 8 8
10								
	S-6	SS	18	18			30	6 7 10
15								
	S-7	SS	18	18			25	6 8 8
20					END OF BORING @ 20'			
25							20	
30							15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 4.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-10	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	3 4 4 3 3 3 2 4 5 5 5
	S-2	SS	24	24				
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, medium dense		40	4 5 7 8 6 7 6 7 8 7 6 8
	S-4	SS	24	24				
	S-5	SS	24	24	(SP) SAND, light gray, wet, medium dense			
10							35	
	S-6	SS	18	18				6 7 7
15							30	
	S-7	SS	18	18				5 7 8
20					END OF BORING @ 20'		25	
25							20	
30							15	

7 9 12 13 13 14 15

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-14	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

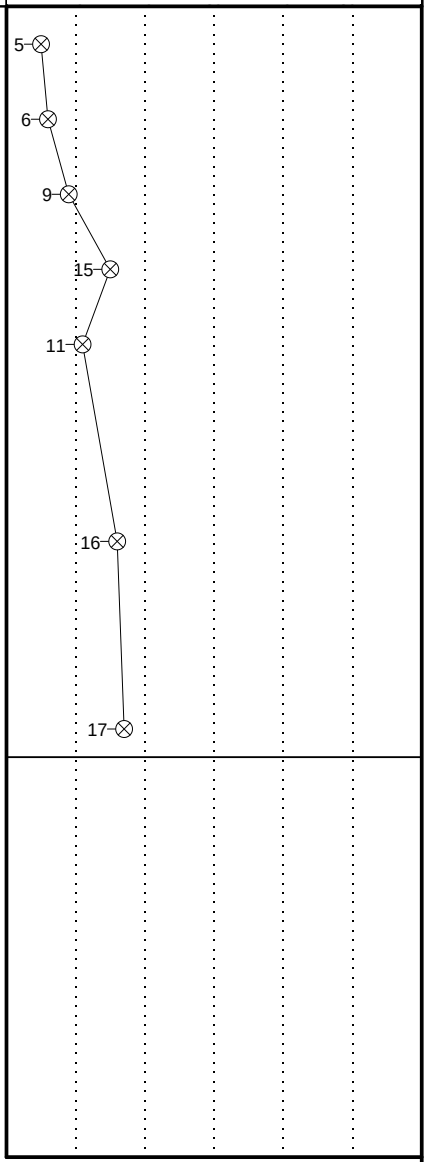
STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	3 2 3
	S-2	SS	24	24				3 4 3
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense		40	3 5 4
	S-4	SS	24	24				4 5 7
	S-5	SS	24	24	(SP) SAND, light gray, wet, medium dense		35	6 7 8 7 6 6 5 8
10								
	S-6	SS	18	18			30	7 7 9
15								
	S-7	SS	18	18			25	6 7 10
20					END OF BORING @ 20'			
25							20	
30							15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

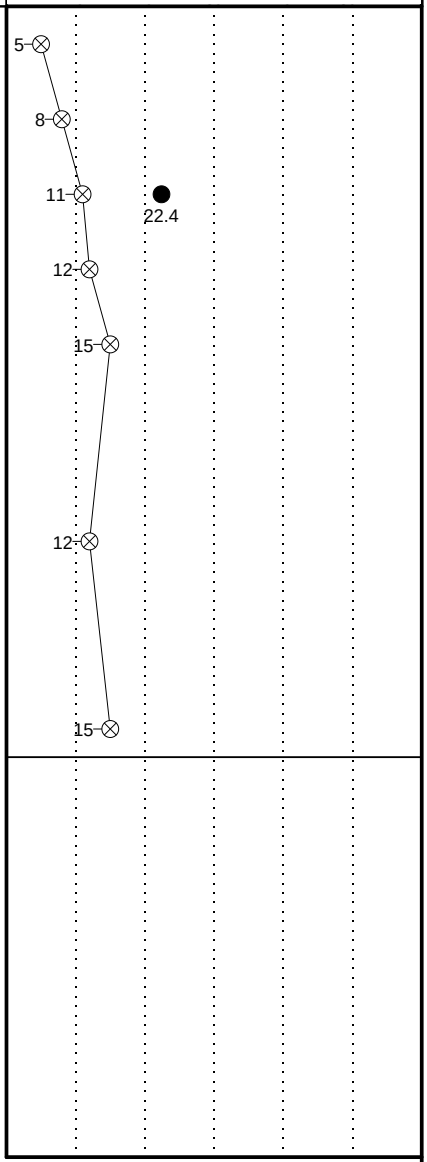
STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 42.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			2 3 2 2 2
	S-2	SS	24	24			40	5 4 4 6 5
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, brown, wet, medium dense			6 5 7 6 7
	S-4	SS	24	24			35	5 8 6 8 7
	S-5	SS	24	24				7
10					(SP) SAND, light gray, wet, medium dense		30	
	S-6	SS	18	18				6 5 7
15							25	
	S-7	SS	18	18				5 8 7
20					END OF BORING @ 20'		20	
25							15	
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 4' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 43'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0							
	S-1	SS	24	24			4 3 4
						40	
	S-2	SS	24	24			4 5 5
5	S-3	SS	24	24			4 6 5
	S-4	SS	24	24			7 6 8
	S-5	SS	24	24		35	7 8 9
10							9 8 7
	S-6	SS	18	18		30	5 8 9
15							
	S-7	SS	18	18		25	7 8 8
20						20	
25						15	
30							

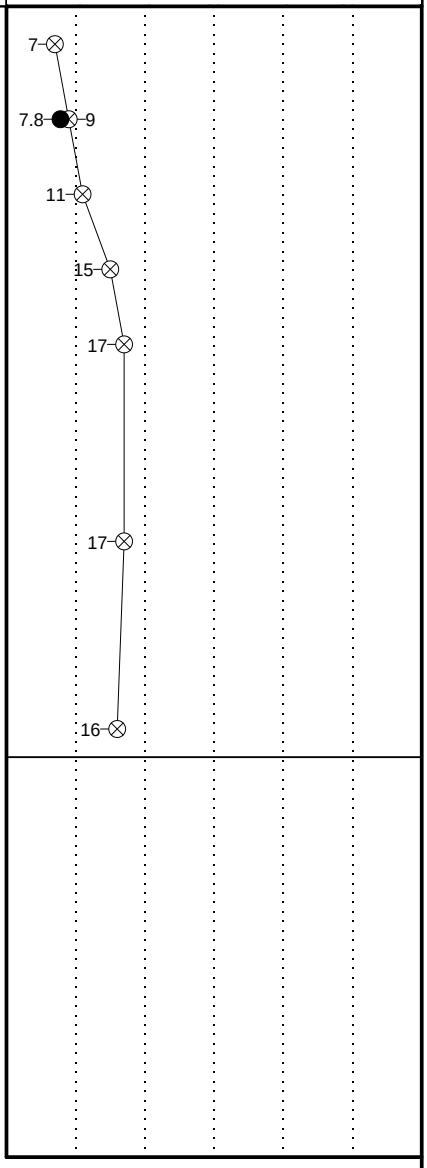
Topsoil Thickness [3.00"]

(SP) SAND, gray to light gray, moist, loose

(SP-SM) SAND WITH SILT, brown, wet, medium dense

(SP) SAND, light gray, wet, medium dense

END OF BORING @ 20'



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 4.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-19	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

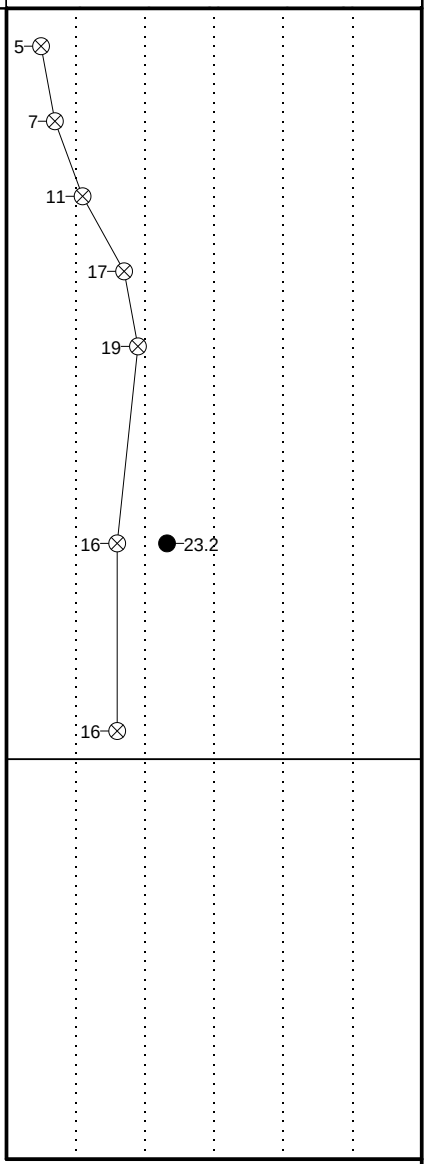
STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, gray to light gray, moist, loose		45	3 2 3
	S-2	SS	24	24				3 4 3
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, brown, wet, medium dense		40	4 5 4
	S-4	SS	24	24				6 5 7
	S-5	SS	24	24				6 8 9
10							35	8 9 9
					(SP) SAND, gray, wet, medium dense			10 9
	S-6	SS	18	18				6 7 9
15							30	
	S-7	SS	18	18				8 8 8
20					END OF BORING @ 20'		25	
25							20	
30							15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-18	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	3 4 5
	S-2	SS	24	24				4 4 5
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, brown, wet, medium dense to loose		40	5 5 4 6 5 7
	S-4	SS	24	24				7 8 7
	S-5	SS	24	24				5 6 5
10							35	5 4 5
	S-6	SS	18	18	(SP) SAND, light gray, wet, medium dense			5 7 10
15							30	
	S-7	SS	18	18				6 6 7
20					END OF BORING @ 20'		25	
25							20	
30							15	

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-12	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

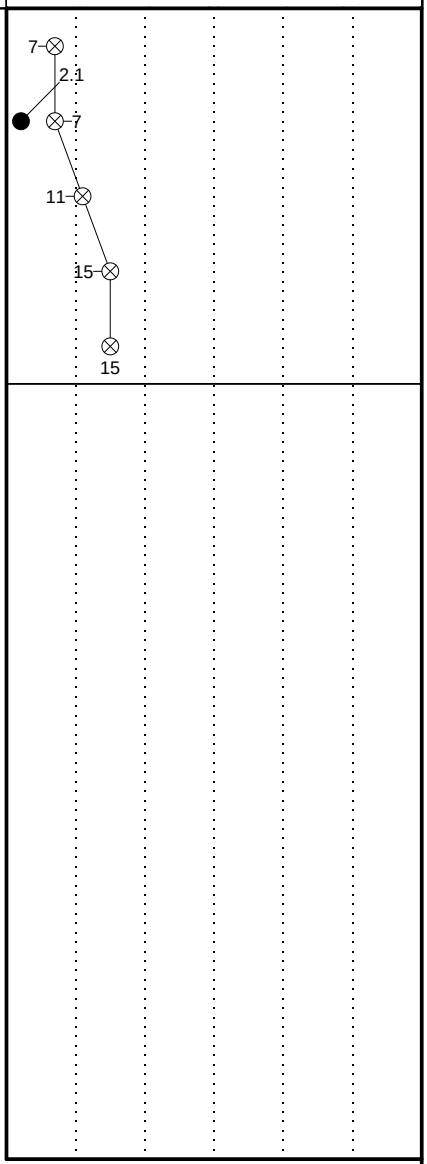
STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	4 4 3
	S-2	SS	24	24				5 2 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, brown, wet, medium dense		40	3 4 4
	S-4	SS	24	24				6 5 7
	S-5	SS	24	24				6 8 7
10					END OF BORING @ 10'		35	9 6 8 7 10
15							30	
20							25	
25							20	
30							15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-17	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION

170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 44'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24		40	4 4 5
							Asphalt Thickness [2.00"]
							Limerock Thickness [5.00"]
							(SP) SAND, brown, moist, loose to medium dense
	S-2	SS	24	24			4 6 5
5	S-3	SS	24	24		35	6 5 5
							(SP-SM) SAND WITH SILT, brown, moist to wet, loose
	S-4	SS	24	24			5 7 4
	S-5	SS	24	24		30	4 4 5
10							END OF BORING @ 10'
15						25	5 4 4 6
20						20	
25						15	
30							

9 11 10 13.8 8 8

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5.5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-6	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION

170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 44.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			3 2 4
	S-2	SS	24	24				3 6 5
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, brown, wet, medium dense		40	5 5 6
	S-4	SS	24	24				5 7 8
	S-5	SS	24	24	(SP) SAND, light gray, wet, loose		35	7 6 5 4 7
10					END OF BORING @ 10'			
15							30	
20							25	
25							20	
30							15	

6 – 10 – 11 – 15 – 9

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 4' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-11	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION

170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

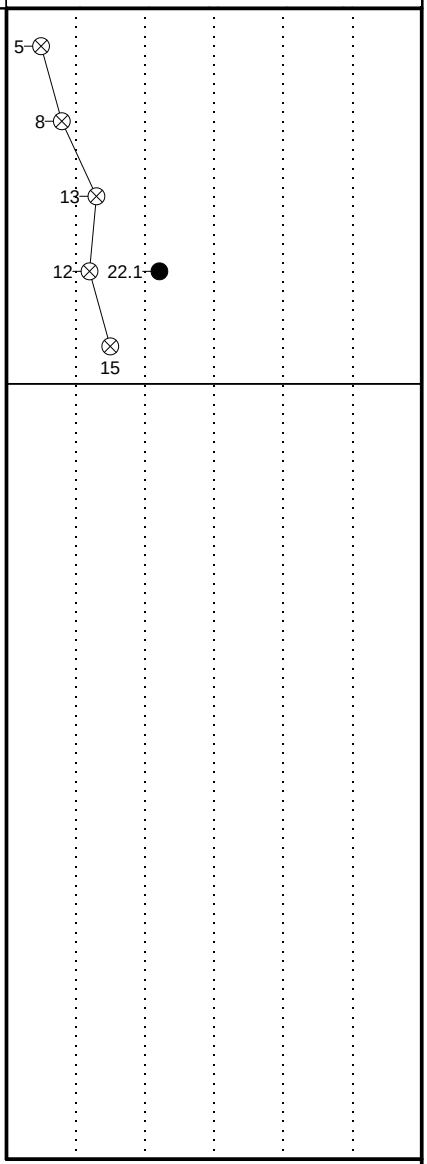
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	4 3 2
	S-2	SS	24	24				3 4 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, medium dense		40	4 3 5
	S-4	SS	24	24	(SP) SAND, light gray, wet, medium dense			7 6 7
	S-5	SS	24	24				6 5 7
10					END OF BORING @ 10'		35	7 6 8
15							30	7 8
20							25	
25							20	
30							15	



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 5' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-8	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION

170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

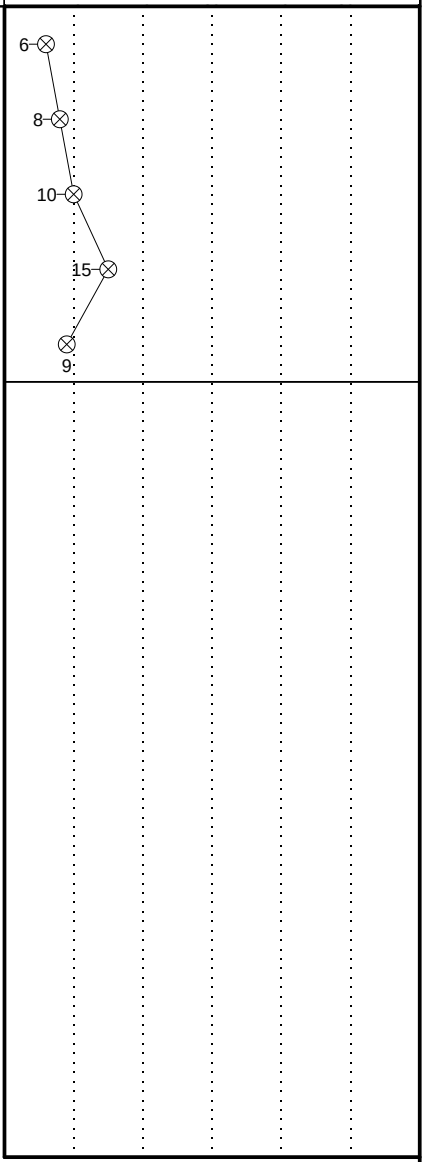
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	4 3 3 3 4
	S-2	SS	24	24				5 5 3 5 4
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose		40	5 5 5 4 6
	S-4	SS	24	24	(SP) SAND, light gray, wet, medium dense to loose			8 7 7 5 4
	S-5	SS	24	24				5 7
10					END OF BORING @ 10'		35	
15							30	
20							25	
25							20	
30							15	



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WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-16	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	2 5 4 3 3 5 4 6 6 5 5 5 6 5 9 7 8 7 9 9
	S-2	SS	24	24				
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense		40	
	S-4	SS	24	24				
	S-5	SS	24	24				
10					END OF BORING @ 10'		35	
15							30	
20							25	
25							20	
30							15	

9 9 10 14 16

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

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WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 43.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose			6
	S-2	SS	24	24			40	6
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, loose to medium dense			9
	S-4	SS	24	24				13
	S-5	SS	24	24			35	12
10					END OF BORING @ 10'			
15							30	
20							25	
25							20	
30							15	

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

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WL(SHW) 3.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-7	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION: 170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 44.5'

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
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	S-2	SS	24	24				
5	S-3	SS	24	24	(SP-SM) SAND WITH SILT, dark brown, wet, medium dense		40	
	S-4	SS	24	24				
	S-5	SS	24	24			35	
10					END OF BORING @ 10'			
15							30	
20							25	
25							20	
30							15	

9 9 13 13 15

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WL(SHW) 4' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

CLIENT	Job #:	BORING #	SHEET
Equinox Development Properties, Inc.	24:6366	B-13	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Tuskawilla Retail Development GEO	Kimley Horn

SITE LOCATION

170 Tuskawilla Road, Winter Springs, Seminole County, FL

NORTHING	EASTING	STATION

CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION 45'

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0	S-1	SS	24	24	Topsoil Thickness [3.00"] (SP) SAND, light gray, moist, loose		45	3 3 2 4 4 5 4 5 5 4 6 5 7 6 8 7 7 6 9 7 9
	S-2	SS	24	24				
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	S-4	SS	24	24				
	S-5	SS	24	24				
10					END OF BORING @ 10'		35	
15							30	
20							25	
25							20	
30							15	

5 – 9 – 11 – 15 – 16

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WL 4' WS ☐ WD ☒	BORING STARTED 10/08/18	CAVE IN DEPTH
WL(SHW) 3.5' WL(ACR)	BORING COMPLETED 10/08/18	HAMMER TYPE Manual
WL	RIG ATV FOREMAN Gary	DRILLING METHOD Mud Rotary

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GP - POORLY GRADED GRAVEL
GM - SILTY GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT
ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND
RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
PT - PEAT

NOTE: NUMBERS IMMEDIATELY TO THE LEFT OF THE BORING PROFILE ARE SPT-N VALUES.

WR - WEATHERED ROCK
PWR - PARTIALLY WEATHERED ROCK
- FILL
- POSSIBLE FILL
- PROBABLE FILL

SURFACE MATERIALS

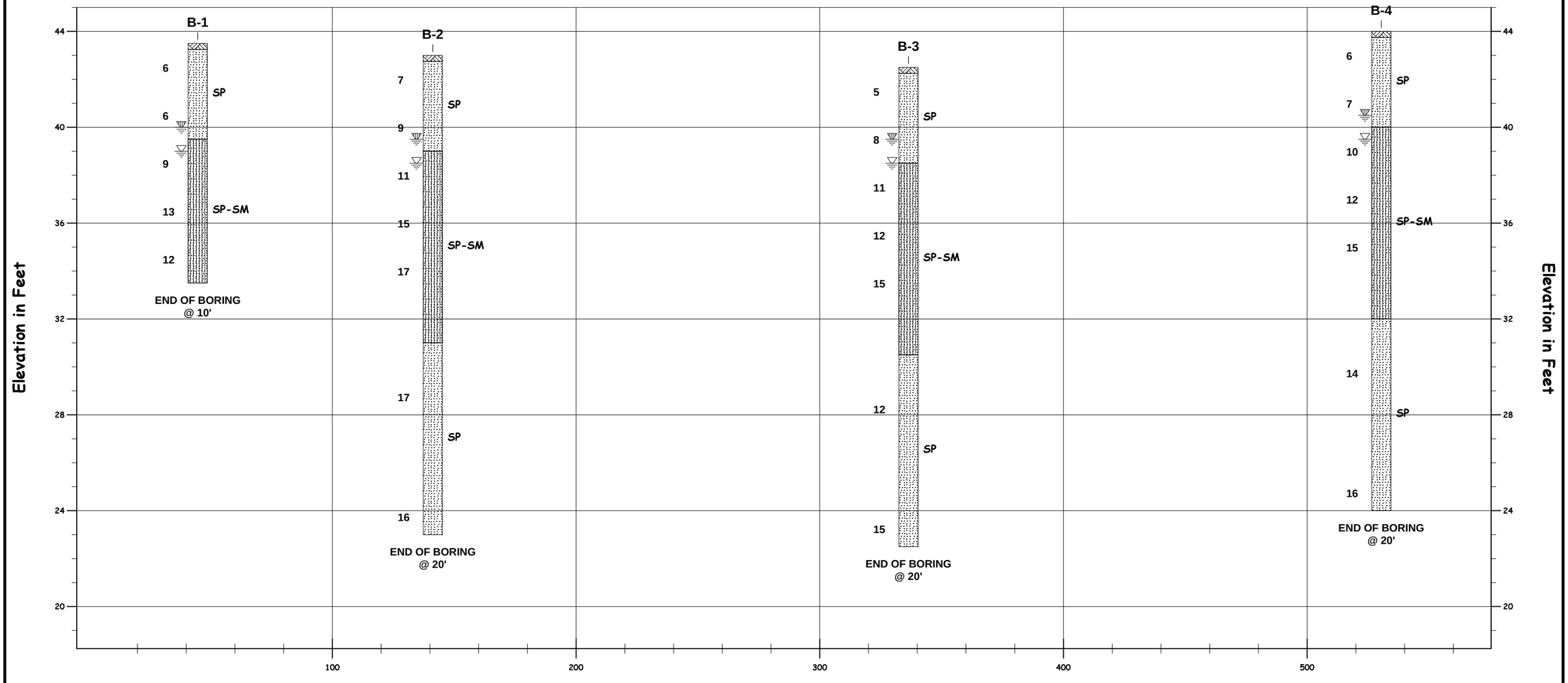
TOPSOIL
ASPHALT
GRAVEL
CONCRETE
VOID

ROCK TYPES

IGNEOUS
METAMORPHIC
SEDIMENTARY

SYMBOL LEGEND

WATER LEVEL - DURING DRILLING/SAMPLING
WATER LEVEL - SEASONAL, HIGH WATER
WATER LEVEL - AFTER CASING REMOVAL
WATER LEVEL - AFTER 24 HOURS
PLASTIC LIMIT% WATER CONTENT% % PASSING #200 SIEVE [88%] LIQUID LIMIT%



NOTES:
1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).

Subsurface Soil Profile
Cross Section A-A

Tuskawilla Retail Development GEO
Equinox Development Properties, Inc.
170 Tuskawilla Rd, Winter Springs, Seminole County, FL

PROJECT NO.: 6366 | DATE: 11/14/2018 | VERTICAL SCALE: 1"=4'

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GM - SILTY GRAVEL
GP - POORLY GRADED GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
ML - LOW PLASTICITY SILT
ST - SHELBY TUBE
CL - LOW PLASTICITY CLAY
MH - HIGH PLASTICITY SILT
SM - SILTY SAND
RC - ROCK CORE
SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
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OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
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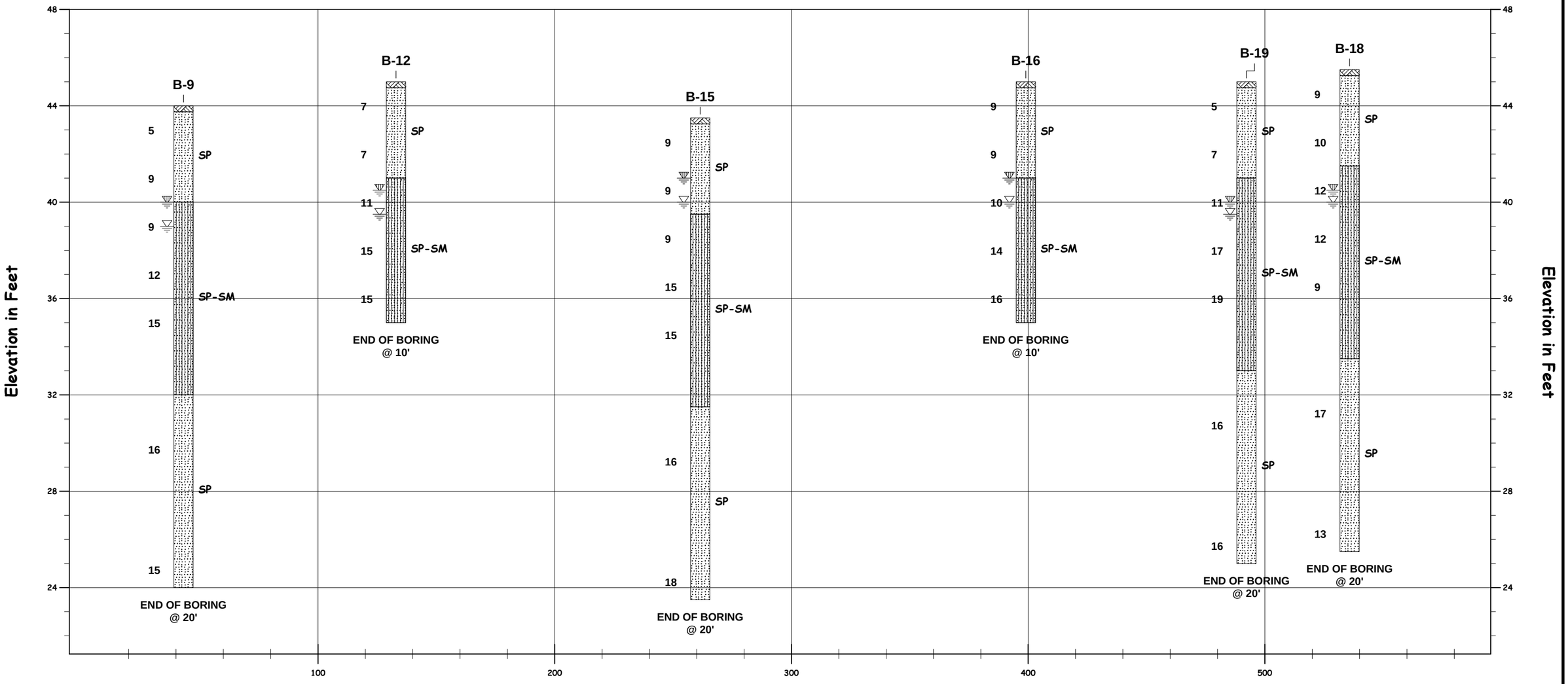
WATER LEVEL - SEASONAL, HIGH WATER
WATER LEVEL - AFTER CASING REMOVAL
WATER LEVEL - AFTER 24 HOURS
PLASTIC LIMIT% WATER CONTENT% % PASSING #200 SIEVE [88%] LIQUID LIMIT%



NOTES:
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2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).

Subsurface Soil Profile
Cross Section B-B

Tuskawilla Retail Development GEO
Equinox Development Properties, Inc.
170 Tuskawilla Rd, Winter Springs, Seminole County, FL

PROJECT NO.: 6366 | DATE: 11/14/2018 | VERTICAL SCALE: 1"=4'

SOIL CLASSIFICATION LEGEND

GW - WELL GRADED GRAVEL
GM - SILTY GRAVEL
GP - POORLY GRADED GRAVEL
GC - CLAYEY GRAVEL
SW - WELL GRADED SAND
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SP - POORLY GRADED SAND
SC - CLAYEY SAND
CH - HIGH PLASTICITY CLAY
PM - PRESSURE METER
OH - HIGH PLASTICITY ORGANIC SILTS AND CLAYS
OL - LOW PLASTICITY ORGANIC SILTS AND CLAY
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PWR - PARTIALLY WEATHERED ROCK
- FILL
- POSSIBLE FILL
- PROBABLE FILL

SURFACE MATERIALS

TOPSOIL
CONCRETE
ASPHALT
VOID
GRAVEL

ROCK TYPES

IGNEOUS
METAMORPHIC
SEDIMENTARY

SYMBOL LEGEND

WATER LEVEL - DURING DRILLING/SAMPLING
WATER LEVEL - SEASONAL, HIGH WATER
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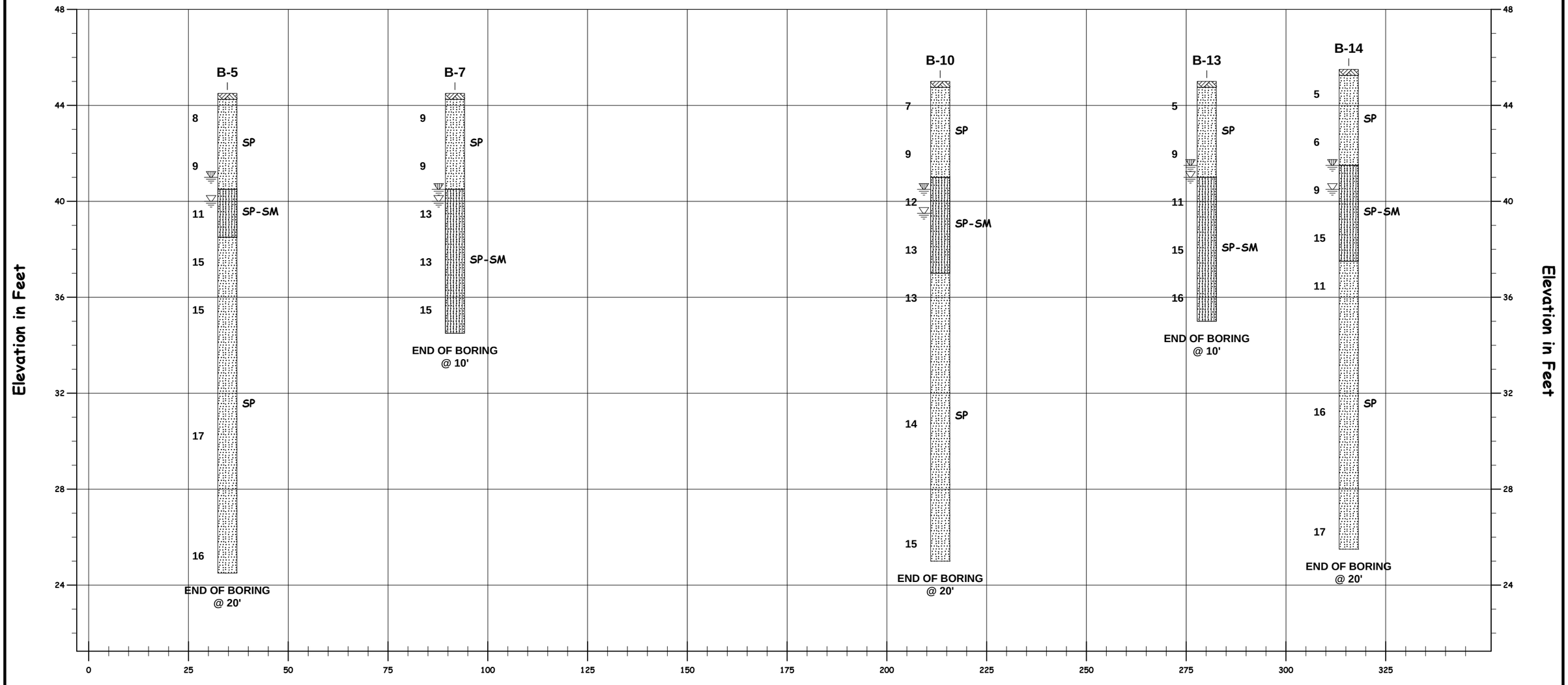
WATER LEVEL - AFTER 24 HOURS
PLASTIC LIMIT% WATER CONTENT% % PASSING #200 SIEVE [88%] LIQUID LIMIT%



NOTES:
1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).

Subsurface Soil Profile
Cross Section C-C

Tuskawilla Retail Development GEO
Equinox Development Properties, Inc.
170 Tuskawilla Rd, Winter Springs, Seminole County, FL

PROJECT NO.: 6366 | DATE: 11/14/2018 | VERTICAL SCALE: 1"=4'

APPENDIX C – Laboratory Testing

Laboratory Testing Results Summary

Laboratory Testing Summary

Sample Source	Sample Number	Depth (feet)	MC[1] (%)	Soil Type[2]	Atterberg Limits[3]			Percent Passing No. 200 Sieve[4]	Moisture - Density (Corr.)[5]		CBR Value[6]	Other
					LL	PL	PI		Maximum Density (pcf)	Optimum Moisture (%)		
B-3	S-3	4.00 - 6.00	22.4	SP-SM				5.8				
B-2	S-2	2.00 - 4.00	7.8	SP				2.7				Kh = 55 ft/day Kv = 37 ft/day
B-19	S-6	13.50 - 15.00	23.2	SP				1.7				
B-18	S-4	6.00 - 8.00	23.4	SP-SM				5.1				Kh = 51 ft/day Kv = 34 ft/day
B-12	S-2	2.00 - 4.00	2.1	SP				0.7				
B-17	S-3	4.00 - 6.00	13.8	SP-SM				8.9				
B-11	S-4	6.00 - 8.00	22.1	SP				0.9				

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 1140, 5. See test reports for test method, 6. See test reports for test method

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content (ASTM D 2974)

Project No. 24:6366
Project Name: Tuskawilla Retail Development GEO
PM: DAS
PE: JPH
Printed On: Tuesday, November 13, 2018

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Orlando, FL 32809
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Wawa Winter Springs

Traffic Impact Analysis

Winter Springs, FL

December 2024

Kimley»Horn

Wawa Winter Springs

Traffic Impact Analysis

Winter Springs, FL

Prepared by:

Kimley-Horn and Associates, Inc.

This document has been digitally signed and sealed by Emanuelle D Rodriguez Muñiz, P.E. on the date adjacent to the seal

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Emanuelle D Rodriguez

Digitally signed by Emanuelle D Rodriguez
DN: CN=Emanuelle D Rodriguez, dnQualifier=A01410C0000019341168451000 2EF49, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2024.12.13 14:52:05-05'00'

December 2024

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Kimley»Horn

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Appendix B: Site Plan

Appendix C: Turning Movement Counts

Appendix D: FDOT's Florida Traffic Online (FTO) Data

Appendix E: Turning Movement Volume Worksheets

Appendix F: Synchro Outputs

Appendix G: AADT Historical Trend

Appendix H: ITE Land Use Codes

Appendix I: CFRPMv7 Model Plot

Appendix J: Seminole County Roadway Concurrency Information

1.0 INTRODUCTION

Kimley-Horn has been retained to analyze and document the traffic impacts associated with developing a Wawa convenience store with a gas station in the City of Winter Springs, Florida. The methodology for this Traffic Impact Analysis (TIA) is provided in **Appendix A**.

The project site is currently vacant and will consist of 12 vehicle fueling positions (VFP) and a ±4,736 square foot convenience store within the existing shopping plaza located at the southwest corner of SR 434 & Tuskawilla Road. The existing shopping plaza consists of various land uses, such as a bank, health club, medical office, fast-casual restaurant, discount store, and supermarket. The gas station will utilize the shopping plaza's access points off of SR 434 and Tuskawilla Road, as shown in the site plan in **Appendix B**.

1.1 STUDY AREA

As stated in the methodology, included in **Appendix A**, the study area will include all signalized intersections and major unsignalized intersections within a 1/4-mile radius from the perimeter of the site were evaluated as part of the traffic study, as well as the proposed project driveways:

- SR 434 & Tuskawilla Road
- SR 434 & Roberts Family Lane
- SR 434 & Project Driveway
- Tuskawilla Road & Project Driveway

Per Seminole County traffic study requirements, all roadway segments with projects trips within a 1-mile radius from the perimeter of the site were evaluated as part of the traffic study:

- #296 – SR 434 from Spring Ave to Tuskawilla Rd
- #297 – SR 434 from Tuskawilla Rd to SR 419
- #326 – Tuskawilla Rd from SR 434 to Trotwood Blvd

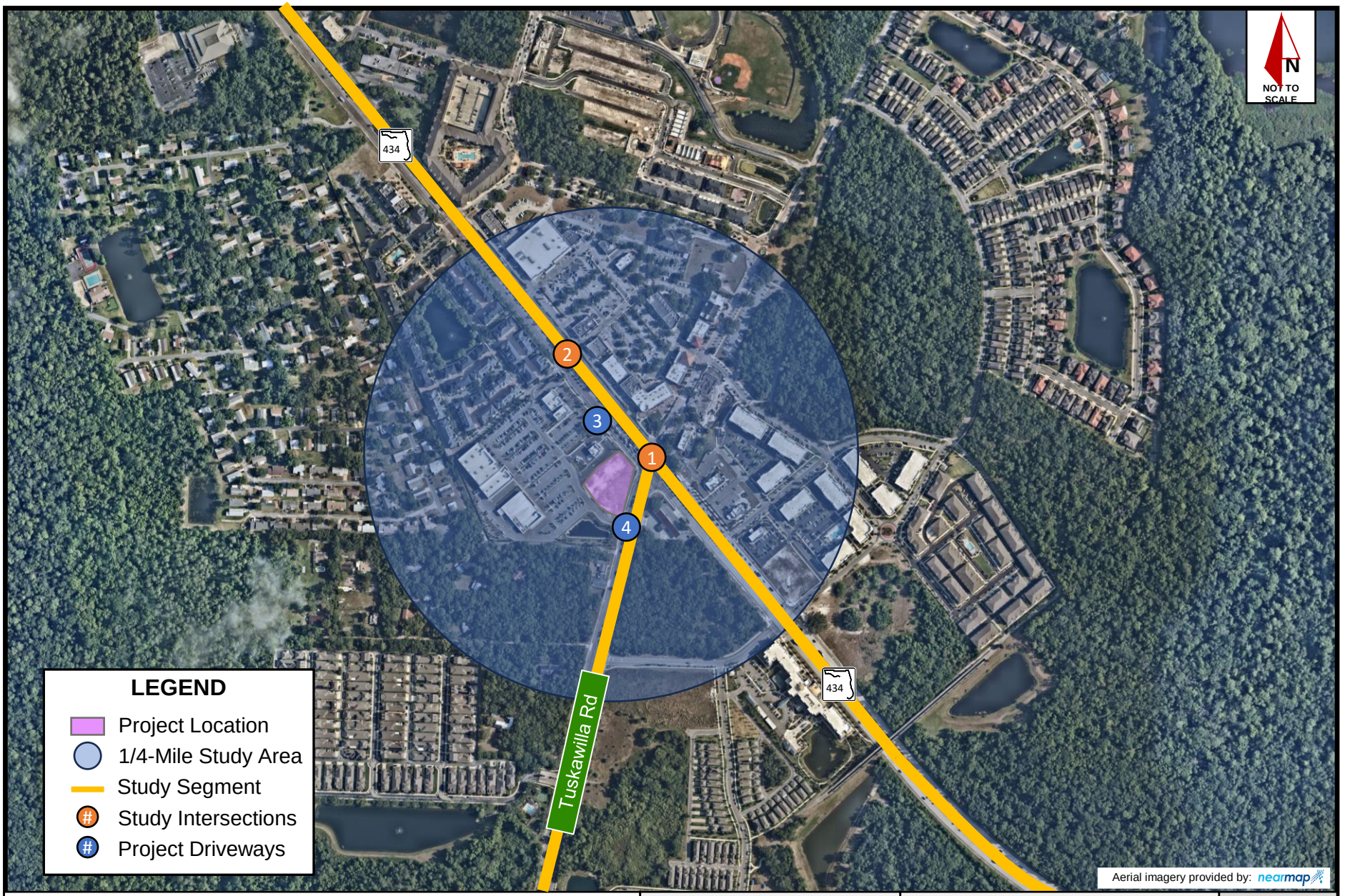

Figure 1: Project Location Map

Winter Springs Wawa | Winter Springs, FL

November 2024

Kimley»Horn
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1530 Cornerstone Boulevard, Suite 200A,
Daytona Beach, FL 32117
Phone: (386) 271-0282

2.0 EXISTING CONDITIONS ANALYSIS – YEAR 2024

2.1 EXISTING TRAFFIC COUNTS

Turning movement counts (TMCs) were collected on Thursday, November 14, 2024, at the study intersections. Data was collected during the AM Peak Period (7:00 AM to 9:00 AM) and PM Peak Period (4:00 PM to 6:00 PM) and is provided in **Appendix C**. The counts were adjusted using the seasonal factor (SF) from FDOT's Florida Traffic Online (FTO) publication. SF data is provided in **Appendix D**. Turning movement volume development worksheets, including adjusted existing (2024) turning movement volumes for all intersections, are provided in **Appendix E.**

2.2 EXISTING INTERSECTION CONDITIONS

Intersection operational analyses were performed for existing (2024) conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual 7th Edition* with Synchro (v12) software. Intersection level of service (LOS), maximum volume to capacity (v/c) ratios, delay, and queue for existing conditions are provided in **Table 1**. Synchro outputs are provided in **Appendix F**.

As shown in the table below, all of the study area intersection approaches operate with an acceptable overall level of service (LOS) and v/c ratio less than one (1.0), with the exception of the following:

#1 SR 434 Tuskawilla Road

- Northbound Approach – LOS F and V/C > 1.0 (PM)
- Southbound Approach – LOS F (PM)
- Overall LOS F (PM)

Other movements are shown to experience high delays, as depicted in the table.

Table 1: Existing Intersection Conditions

Int. #	Intersection	Control Type	Movement/Approach/Intersection	Existing (2024) AM Peak Hour				Existing (2024) PM Peak Hour			
				LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
1	Tuskawilla & SR 434	Signalized	**EBL**	F	107.9	0.79	3	F	161.0	0.98	11
			EBT	D	44.4	0.64	17	D	44.8	0.74	28
			EBR	B	18.7	0.43	16	C	25.6	0.61	30
			WBL	F	114.9	0.90	10	F	115.2	0.91	15
			WBT	D	39.1	0.65	19	D	43.9	0.76	31
			WBR	D	38.9	0.65	20	D	43.7	0.76	32
			NBL	E	74.4	0.84	14	F	234.8	1.34	38
			NBT	-	0.0	0.00	0	-	0.0	0.00	0
			NBR	E	73.9	0.77	13	F	199.6	1.23	34
			SBL	E	78.0	0.30	2	E	72.4	0.49	8
			SBT	-	0.0	0.00	0	-	0.0	0.00	0
			SBR	F	107.6	0.86	8	F	107.4	0.90	16
			NB	D	39.0	-	-	F	223.5	-	-
			SB	D	49.3	-	-	F	95.1	-	-
			EB	E	74.3	-	-	D	45.6	-	-
			WB	F	99.9	-	-	D	52.4	-	-
			Intersection	**D**	**53.9**	**-**	**-**	**F**	**93.4**	**-**	**-**
2	Roberts Family Ln & SR 434	Unsignalized (TWSC)	**EBL**	C	16.8	0.13	0	C	20.3	0.24	1
			EBT	-	-	-	-	-	-	-	-
			EBR	-	-	-	-	-	-	-	-
			WBL	B	13.5	0.13	0	C	19.5	0.29	1
			WBT	-	-	-	-	-	-	-	-
			WBR	-	-	-	-	-	-	-	-
			NBR	B	14.9	0.05	0	C	20.0	0.16	1
			NB	B	14.9	-	-	C	20.0	-	-
			EB	-	0.5	-	-	-	0.8	-	-
			WB	-	0.5	-	-	-	1.0	-	-
			Intersection	**-**	**0.6**	**-**	**-**	**-**	**1.1**	**-**	**-**
3	Tuskawilla Rd & Project Driveway	Unsignalized (TWSC)	**EBR**	B	11.4	0.10	0.3	B	14	0.26	1
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	-	-	-	-	-	-	-	-
			NB	-	0	-	-	-	0	-	-
			SB	-	0	-	-	-	0	-	-
			EB	B	11.42	-	-	B	14.03	-	-
			Intersection	**-**	**0.4**	**-**	**-**	**-**	**0.9**	**-**	**-**
4	SR 434 & Project Driveway	Unsignalized (TWSC)	**EBR**	-	-	-	-	-	-	-	-
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	C	18.7	0.08	0.3	D	26.6	0.31	1.2
			NB	C	18.73	-	-	D	26.61	-	-
			SB	-	0	-	-	-	0	-	-
			EB	-	0	-	-	-	0	-	-
			Intersection	**-**	**0.3**	**-**	**-**	**-**	**1**	**-**	**-**

3.0 BACKGROUND CONDITIONS ANALYSIS – YEAR 2026

3.1 BACKGROUND TRAFFIC

Traffic conditions were evaluated for Year 2026 background conditions without the impact of project trips on the roadway network. Background volumes at study area intersections were derived by applying a 2% annual growth to existing turning movement volumes. The historical annual growth rate was calculated for SR 434 and Tuskawilla Road and it indicated a growth rate less than 2%. Historical trend sheets are included in **Appendix G**.

Background growth and intersection volumes are shown in the intersection turning movement volume development worksheets provided in **Appendix E.**

3.2 BACKGROUND INTERSECTION ANALYSIS

Intersection operational analyses were performed for Year 2024 background conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual 7th Edition* with Synchro (v11) software. Intersection level of service (LOS) and maximum volume to capacity (v/c) ratios for the background conditions are provided in **Table 2**. Synchro outputs are provided in **Appendix F**.

As shown in the tables below, the study area intersection movements operate with acceptable overall LOS and v/c ratio less than one (1.0), with the exception of the existing deficiencies and the following background deficiencies:

#1 SR 434 Tuskawilla Road

- Eastbound Left movement – V/C > 1.0 (PM)
- Southbound Approach – LOS F (AM)

Table 2: Background Intersection Conditions

Int. #	Intersection	Control Type	Movement/Approach/Intersection	Background (2026) AM Peak Hour				Background (2026) PM Peak Hour			
				LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
1	Tuskawilla & SR 434	Signalized	**EBL**	F	109.4	0.79	6	F	172.4	1.02	12
			EBT	D	47.6	0.68	25	D	46.7	0.78	29
			EBR	B	19.7	0.45	24	C	26.8	0.63	32
			WBL	F	116.1	0.91	16	F	126.0	0.95	16
			WBT	D	42.2	0.69	29	D	46.5	0.79	33
			WBR	D	42.0	0.69	30	D	46.3	0.80	34
			NBL	E	74.4	0.85	21	F	258.0	1.39	41
			NBT	-	0.0	0.00	0	-	0.0	0.00	0
			NBR	E	73.8	0.77	19	F	217.5	1.27	36
			SBL	E	77.5	0.31	4	E	72.0	0.50	8
			SBT	-	0.0	0.00	0	-	0.0	0.00	0
			SBR	F	109.0	0.87	13	F	109.0	0.91	17
			NB	E	74.2	-	-	F	245.0	-	-
			SB	F	100.8	-	-	F	96.1	-	-
			EB	D	41.5	-	-	D	47.8	-	-
			WB	D	52.1	-	-	E	56.0	-	-
			Intersection	**E**	**55.8**	**-**	**-**	**F**	**100.5**	**-**	**-**
2	Roberts Family Ln & SR 434	Unsignalized (TWSC)	**EBL**	C	17.8	0.14	1	C	22.0	0.26	1
			EBT	-	-	-	-	-	-	-	-
			EBR	-	-	-	-	-	-	-	-
			WBL	B	14.0	0.14	1	C	21.1	0.32	1
			WBT	-	-	-	-	-	-	-	-
			WBR	-	-	-	-	-	-	-	-
			NBR	C	15.4	0.06	0	C	21.1	0.18	1
			NB	C	15.4	-	-	C	21.1	-	-
			EB	-	0.5	-	-	-	0.9	-	-
			WB	-	0.5	-	-	-	1.0	-	-
			Intersection	**-**	**0.6**	**-**	**-**	**-**	**1.2**	**-**	**-**
3	Tuskawilla Rd & Project Driveway	Unsignalized (TWSC)	**EBR**	B	11.6	0.10	0.3	B	14.5	0.28	1.1
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	-	-	-	-	-	-	-	-
			NB	-	0	-	-	-	0	-	-
			SB	-	0	-	-	-	0	-	-
			EB	B	11.6	-	-	B	14.5	-	-
			Intersection	**-**	**0.4**	**-**	**-**		**0.9**	**-**	**-**
4	SR 434 & Project Driveway	Unsignalized (TWSC)	**EBR**	-	-	-	-	-	-	-	-
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	C	19.5	0.09	0.3	D	28.9	0.34	1.4
			NB	C	19.5	-	-	D	28.9	-	-
			SB	-	0	-	-	-	0	-	-
			EB	-	0	-	-	-	0	-	-
			Intersection	**-**	**0.3**	**-**	**-**	**-**	**1.1**	**-**	**-**

4.0 DEVELOPMENT TRAFFIC

The proposed development consists of 12 vehicle fueling positions (VFP) and a ±4,736 square foot convenience store within the existing shopping plaza. Buildout of the project is anticipated in 2026. The latest industry standards were referenced to evaluate the new external trips to be generated by the site at buildout. The latest adopted regional travel demand model was used to forecast the distribution of trips throughout the study area.

4.1 TRIP GENERATION

Trip generation rates for the proposed development were calculated using the 11th Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*. Land Use Code (LUC) 945 – Convenience Store / Gas Station (4-5.5k) was used for the proposed development. Relevant excerpts from the ITE *Trip Generation Manual* are included in **Appendix H**. The project is anticipated to generate 693 daily new external trips, 73 net new external trips during the AM peak hour (37 in, 36 out), and 60 new external trips during the PM peak hour (31 in, 29 out). **Table 3** provides the daily, AM peak hour, and PM peak hour trip generation summary for the proposed development.

Table 3: Trip Generation Summary

	Land Use	LUC[1]	Size	Units	Trip Rate[1]	Daily				
						Total	In[1]		Out[1]	
Daily	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	257.13	3,086	*50%*	1,543	*50%*	1,543
	Total Generated Trips					**3,086**	**1,543**		**1,543**	
	Internal Capture =	*10.0%*				*310*	*155*		*155*	
	Net External Trips					**2,776**	**1,388**		**1,388**	
	Pass by Trips[3] =	*75.0%*	*of external retail trips*			*2,083*	*1,042*		*1,041*	
	New External Trips					**693**	**346**		**347**	
	Land Use	**LUC[1]**	**Size**	**Units**	**Trip Rate[1]**	**AM Peak Hour**				
						Total	**In[1]**		**Out[1]**	
AM Peak Hour	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	27.04	324	*50%*	162	*50%*	162
	Total Generated Trips					**324**	**162**		**162**	
	Internal Capture =	*10.0%*				33	16		16	
	Net External Trips					**291**	**146**		**145**	
	Pass by Trips[3] =	*75.0%*	*of external retail trips*			218	109		109	
	New External Trips					**73**	**37**		**36**	
	Land Use	**LUC[1]**	**Size**	**Units**	**Trip Rate[1]**	**PM Peak Hour**				
						Total	**In[1]**		**Out[1]**	
PM Peak Hour	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	22.76	273	*50%*	137	*50%*	136
	Total Generated Trips					**273**	**137**		**136**	
	Internal Capture =	*10.0%*				27	13		14	
	Net External Trips					**246**	**124**		**122**	
	Pass by Trips[3] =	*76.0%*	*of external retail trips*			186	93		93	
	New External Trips					**60**	**31**		**29**	

Notes: *1. Vehicle trip rates and directional splits per ITE Trip Generation Manual, 11th Edition*

2. A 10% internal capture to account for the +/- 60K SF of shopping plaza.

3. Land Use Code 945 pass-by rates obtained from ITE Trip Generation Manual, 11th Edition Appendices.

4.2 TRIP DISTRIBUTION

Projected traffic demand of project trips on study roadways was derived with the use of the latest adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the Central Florida Regional Planning Model (CFRPM v7) model set and situated within the existing roadway network. The model was used to assign trips for all trip purposes between allocated origin and destination pairs using project buildout year model data. Trip distribution for the project was extracted from the completed model assignment and reviewed for logic. The resulting model plot showing percent of daily project distribution is provided in **Appendix I**. Daily model project distribution was referenced to manually assign project distribution at study area intersections and driveways in general accordance with model output. **Figure 2** shows the intersection movement project distribution generated by the proposed industrial development within the study area.

4.3 TRIP ASSIGNMENT

Project trip distribution percentages were used to assign anticipated project trips to the study area roadways and intersections. **Figure 3** shows the anticipated AM and PM peak hour project movements at the study area intersections generated by the proposed industrial development and **Figure 4** shows the pass-by trips.

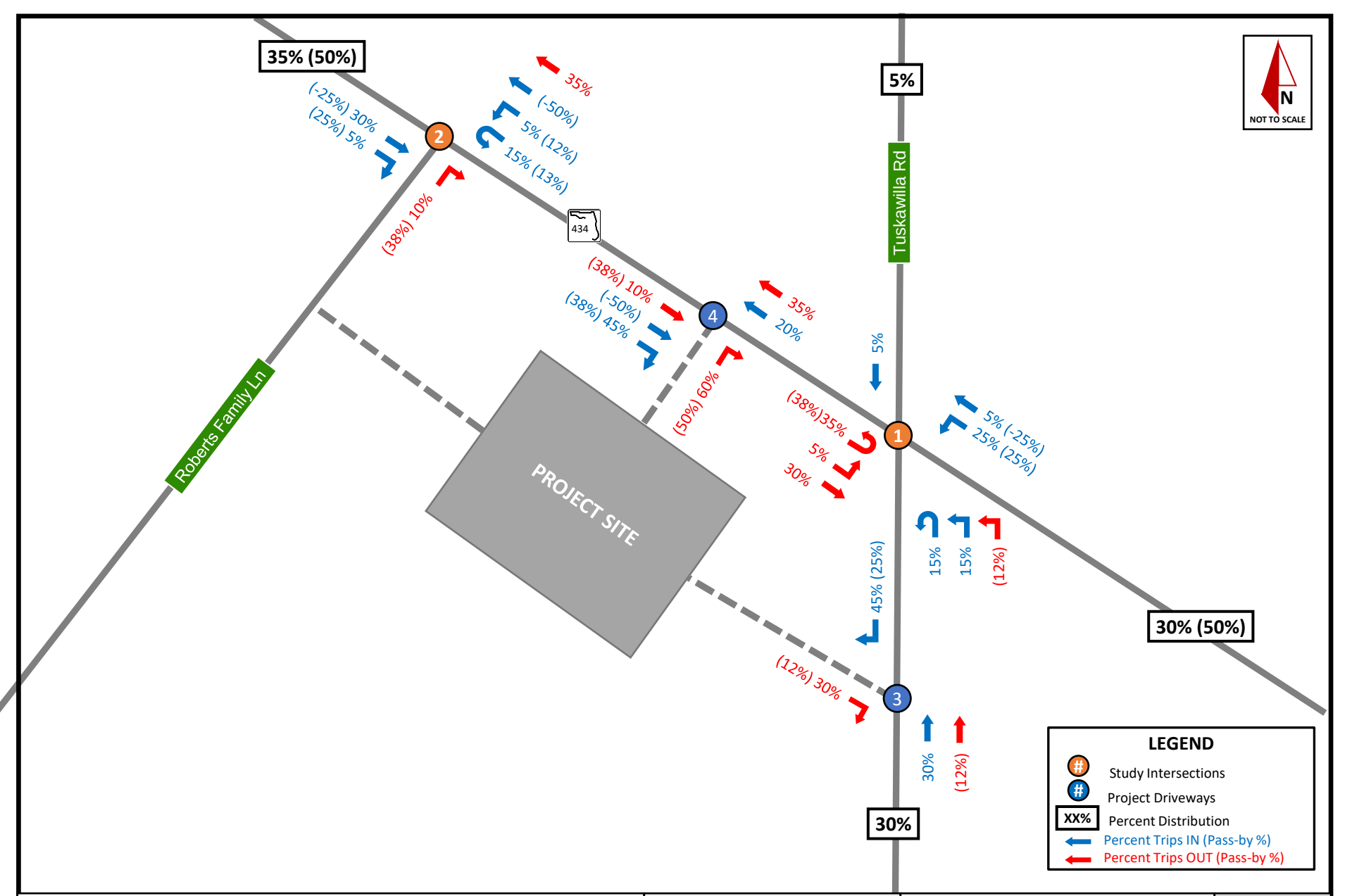

Figure 2: Project Trip Distribution

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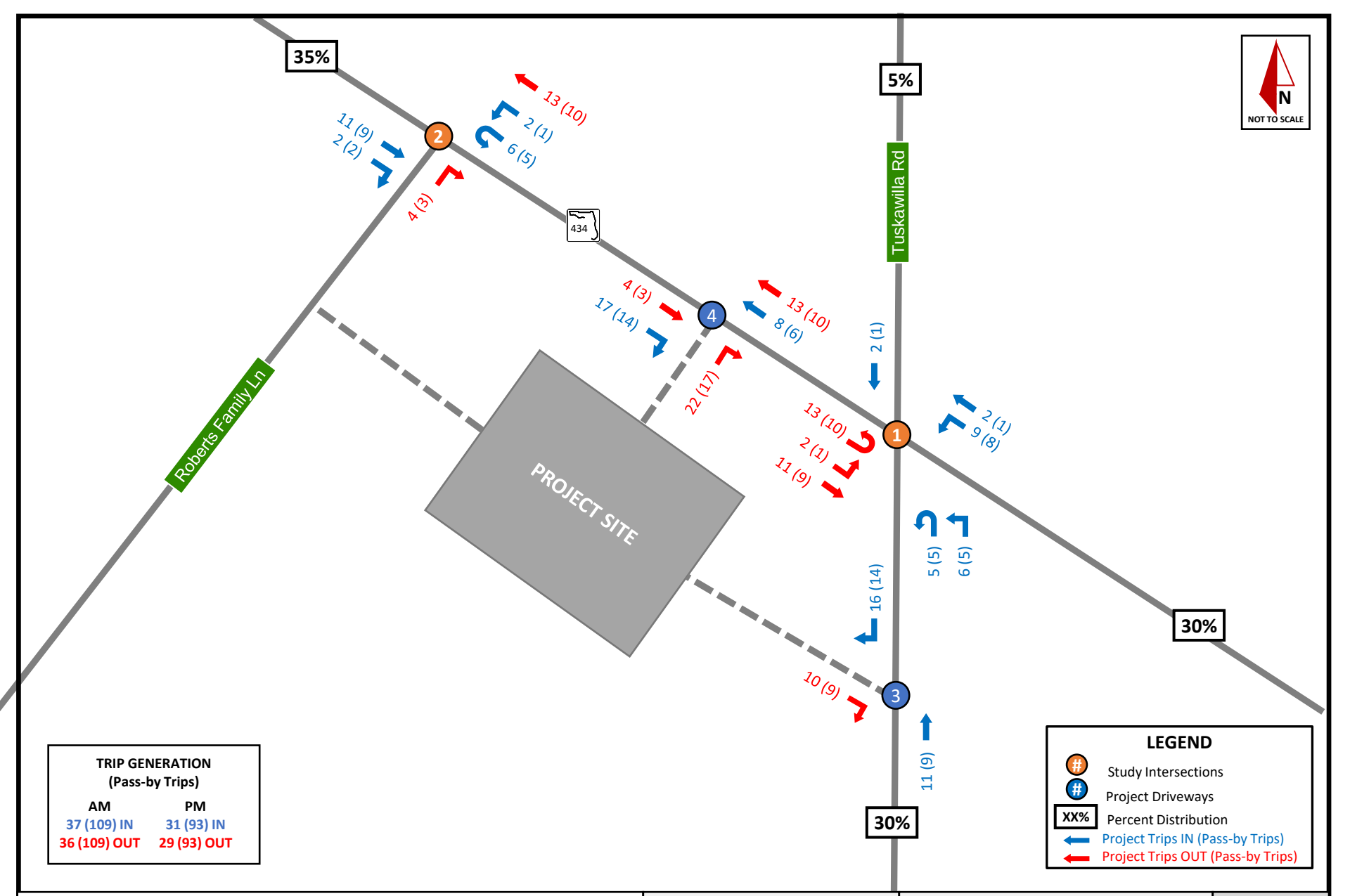

Figure 3: Project Trip Assignment

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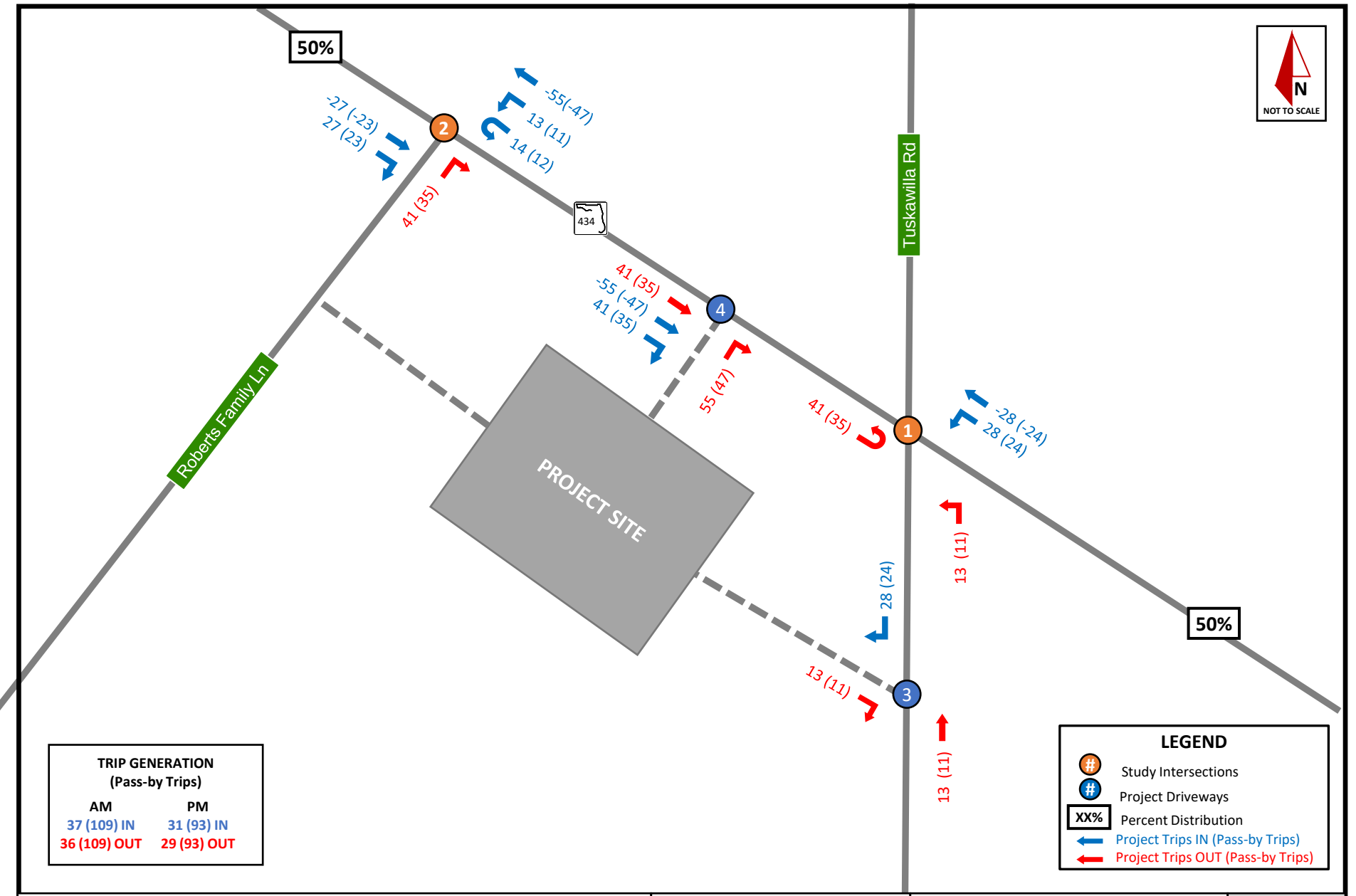

Figure 4: Project Pass-by Trip Assignment

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5.0 BUILDOUT CONDITIONS ANALYSIS – YEAR 2026

5.1 BUILDOUT TRAFFIC

Future traffic conditions for the proposed development were evaluated for Year 2026 buildout conditions. Buildout volumes were developed by adding anticipated project trips to Year 2026 background volumes. A determination of the impact of project traffic on the study intersections was made. Intersection turning movement volume development worksheets for all intersections are provided in **Appendix E.**

5.2 BUILDOUT INTERSECTION ANALYSIS

Intersection operational analyses were performed for Year 2026 buildout conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual 7th Edition* with Synchro (v12) software. A summary of intersection level of service (LOS) and maximum volume to capacity (v/c) ratios for the buildout conditions are provided in **Table 4**. Synchro outputs are provided in **Appendix F**. **Figures 5 and 6** display total intersection volume counts for the buildout year of 2023 in the AM and PM peak hours, respectively.

As shown in the tables below, all intersection movements are anticipated to operate similarly to background conditions. Traffic signal timing adjustments were implemented to SR 434 & Tuskawilla Road to mitigate project traffic impact. No new deficiencies were identified as a result of project traffic.

Table 4: Buildout Intersection Conditions

Int. #	Intersection	Control Type	Movement/Approach/Intersection	Buildout (2026) AM				Buildout (2026) PM			
				LOS	Delay	V/C	Queue	LOS	Delay	V/C	Queue
1	Tuskawilla & SR 434	Signalized	**EBL**	F	220.3	1.15	14	F	122.5	0.92	14
			EBT	D	50.3	0.72	26	D	51.7	0.82	31
			EBR	C	20.5	0.46	24	C	27.4	0.64	33
			WBL	F	154.9	1.05	21	F	122.6	0.96	18
			WBT	D	45.9	0.71	29	E	55.9	0.85	35
			WBR	D	45.7	0.71	30	E	55.6	0.85	36
			NBL	E	74.5	0.86	22	F	212.4	1.29	38
			NBT	-	0.0	0.00	0	-	0.0	0.00	0
			NBR	E	71.8	0.75	19	F	166.5	1.15	33
			SBL	E	77.3	0.30	4	E	76.1	0.56	8
			SBT	-	0.0	0.00	0	-	0.0	0.00	0
			SBR	F	109.4	0.87	13	F	145.8	1.02	19
			NB	E	73.7	-	-	F	197.9	-	-
			SB	F	101.1	-	-	F	121.5	-	-
			EB	D	54.5	-	-	D	50.0	-	-
			WB	E	63.5	-	-	E	65.2	-	-
			Intersection	**E**	**64.4**	**-**	**-**	**F**	**94.6**	**-**	**-**
2	Roberts Family Ln & SR 434	Unsignalized (TWSC)	**EBL**	C	17.2	0.13	1	C	21.2	0.26	1
			EBT	-	-	-	-	-	-	-	-
			EBR	-	-	-	-	-	-	-	-
			WBL	C	15.1	0.22	1	C	23.8	0.41	2
			WBT	-	-	-	-	-	-	-	-
			WBR	-	-	-	-	-	-	-	-
			NBR	C	17.2	0.19	1	C	24.6	0.32	1
			NB	C	17.2	-	-	C	24.6	-	-
			EB	-	0.5	-	-	-	0.8	-	-
			WB	-	0.8	-	-	-	1.5	-	-
			Intersection	**-**	**1.0**	**-**	**-**	**-**	**1.7**	**-**	**-**
3	Tuskawilla Rd & Project Driveway	Unsignalized (TWSC)	**EBR**	B	12.2	0.15	0.5	C	15.6	0.33	1.4
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	-	-	-	-	-	-	-	-
			NB	-	0	-	-	-	0	-	-
			SB	-	0	-	-	-	0	-	-
			EB	B	12.2	-	-	C	15.6	-	-
			Intersection		**0.6**	**-**	**-**		**1.1**	**-**	**-**
4	SR 434 & Project Driveway	Unsignalized (TWSC)	**EBR**	-	-	-	-	-	-	-	-
			NBT	-	-	-	-	-	-	-	-
			SBT	-	-	-	-	-	-	-	-
			SBR	D	26.4	0.39	1.8	E	45.5	0.64	3.9
			NB	D	26.4	-	-	E	45.5	-	-
			SB	-	0	-	-	-	0	-	-
			EB	-	0	-	-	-	0	-	-
			Intersection	**-**	**1.5**	**-**	**-**	**-**	**3.0**	**-**	**-**

Figure 5: Intersection Volumes – AM Peak Hour

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Figure 6: Intersection Volumes – PM Peak Hour

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5.3 TURN LANE ANALYSIS

Per the Seminole County *Public Works Engineering Manual*, section 1.3.1, right turn lanes should be provided on 2-lane roads for developments generating greater than 3,000 daily trips and on 4- or 6-lane roads for developments generating greater than 4,000 daily trips. None of the project driveways are anticipated to exceed the 4,000 average daily trips, and therefore, right turn lanes are not warranted or recommended.

Additionally, most of the impacted turn lanes at the study intersection are built to their maximum extent or with minimal space to extend it further, which will provide an additional two vehicle queues. Therefore, no turn lane extensions are recommended due to limited room for turn lane extension.

6.0 ROADWAY SEGMENT ANALYSIS

A roadway segment analysis was performed for segments located within a one-mile radius of the proposed development to determine existing, background, and buildout conditions. The following roadway segments were analyzed:

- S.R. 434 from S.R. 419 to Tuskawilla Road
- S.R. 434 from Tuskawilla Road to Springs Ave
- Tuskawilla Road from S.R. 434 to Trotwood Boulevard

Existing and vested trip data were referenced from Seminole County's latest Roadway Concurrency Information dated March 27th, 2020, included in **Appendix J.** This data was used to analyze the roadway segments listed above and is summarized in **Table 5**.

As shown in the table, the analysis identifies no existing, background, or buildout capacity deficiencies.

Table 5: Roadway Segment Analysis

					Existing (2024)				Background (2026)					Buildout (2026)					
Roadway Segment	Station # [1]	LOS Std. [2]	Rdwy Link Capacity [1]	Committed Trips [1]	Existing AADT [1]	Existing Deficiency	V/C Ratio	Existing LOS [2]	Annual Growth Rate	Back-ground AADT	Back-ground Deficiency	V/C Ratio	Back-ground LOS [2]	Project Dist. %	Daily Project Trips [3]	Buildout AADT	Buildout Deficiency	V/C Ratio	Buildout LOS [2]
SR 434																			
Spring Ave to Tuskawilla Rd	296	F	48,000	293	28,677	No	0.60	C	2%	29,835	No	0.62	C	30%	208	30,043	No	0.63	C
Tuskawilla Rd to SR 419	297	F	48,000	0	37,812	No	0.79	D	2%	39,340	No	0.82	D	35%	243	39,582	No	0.82	D
Tuskawilla Rd																			
SR 434 to Trotwood Blvd	326	F	42,560	8	22,099	No	0.52	B	2%	22,992	No	0.54	B	30%	208	23,200	No	0.55	B

Notes:
1. From Seminole County Roadway Concurrency Information dated 12/22/2022
2. LOS Volume Thresholds from Seminole County Vision Comprehensive Plan as Amended through March 26, 2024
3. Assigned using the determined daily net external trips of 693 vehicles

7.0 CONCLUSION

This traffic impact analysis was performed to analyze the traffic impacts associated with the development of a 12 VFP Wawa gas station with a 4,736 square foot convenience store within the existing shopping plaza located at the southwest corner of SR 434 & Tuskawilla Road in the City of Winter Springs, Florida. No new access points were proposed as part of this development. The site will have access via the existing connections on Tuskawilla Rod and SR 434.

Based on ITE trip rates, the proposed development is anticipated to generate 693 daily new external trips, 73 net new external trips during the AM peak hour (37 in, 36 out), and 60 new external trips during the PM peak hour (31 in, 29 out).

An operational analysis for existing, background, and buildout conditions was performed at the study area intersections and project driveways. Under existing background and buildout conditions, all intersections operate at an acceptable LOS and with a v/c ratio less than one (1.0), except some movements and approaches at the intersection of SR 434 and Tuskawilla Road. This intersection is mainly built to its maximum extent with limited room for additional capacity improvements. Signal timing adjustments are recommended to maintain pre-project (background) conditions at the intersection. However, some movements will continue to operate with high delays and/or over their capacity.

A roadway segment analysis was performed to assess the impact of the project on the surrounding roadway network capacity. The roadway segments operate at an acceptable LOS and do not exceed capacity in the existing, background, and buildout conditions.

No roadway or intersection deficiencies were identified as a result of project impact.

APPENDIX A
TIA Methodology Statement

Kimley»Horn

MEMORANDUM

To: Terrilyn Rolle
Community Development Director
City of Winter Springs, FL

Arturo J. Perez, MSCE, P.E.
Professional Engineer - Transportation
Seminole County Public Works Department – Engineering Division

From: Emanuelle D Rodriguez Muñiz, P.E., IMSA[1]
Kimley-Horn and Associates, Inc.

Date: November 27, 2024

Subject: Winter Springs Wawa TIA Methodology
Winter Springs, FL

PURPOSE

The following memorandum is a Traffic Impact Analysis (TIA) methodology for the above-referenced project in the City of Winter Springs, FL. The forthcoming TIA will generally conform to the methodology herein and the policies and guidelines as established by Seminole County Public Works Department – Engineering Division (March 2023).

PROJECT DESCRIPTION

The proposed project consists of a 12-vehicle fueling positions (VFP) Wawa gas station with a 4,736-square-foot convenience store within the existing shopping plaza. The site is located on the southwest corner of Tuskawilla Road and SR 434. Access to the site will be available through the existing driveways on SR 434 and Tuskawilla Road, as shown in the conceptual site plan provided in **Attachment A**. **Figure 1** shows the project location, study area, and its access points.

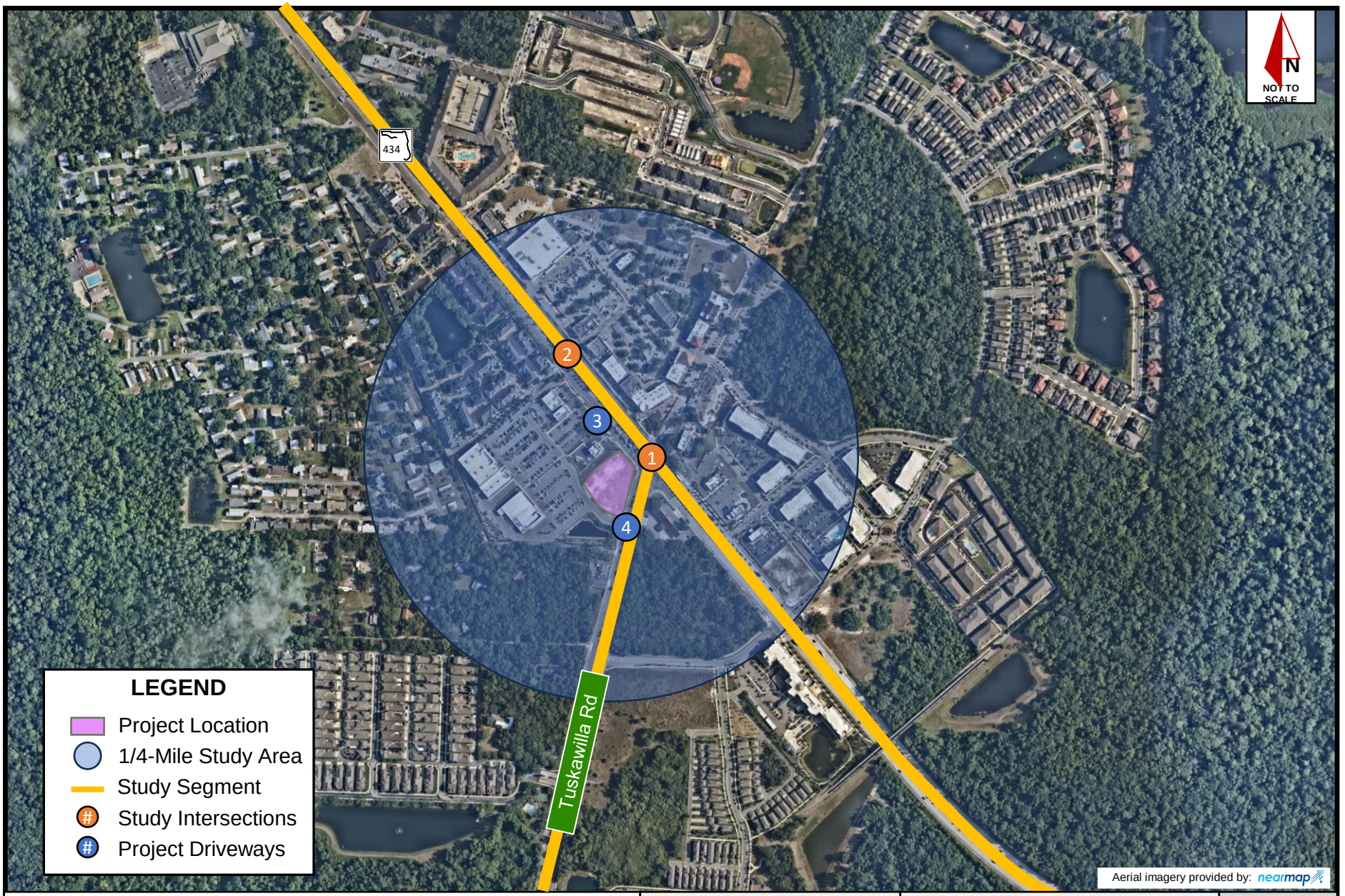

Figure 1: Project Location Map

Winter Springs Wawa | Winter Springs, FL

November 2024

Kimley»Horn

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1530 Cornerstone Boulevard, Suite 200A,
Daytona Beach, FL 32117
Phone: (386) 271-0282

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EXISTING CONDITIONS (OPERATIONAL ANALYSIS)

AM (7:00 AM - 9:00 AM) and PM (4:00 PM - 6:00 PM) peak period turning movement counts (TMC) data will be collected at the study area intersections. The data will be adjusted using the respective seasonal factor from FDOT's *Florida Traffic Online* database.

Intersection capacity analyses will be performed for existing AM and PM peak hour conditions using the operational analysis procedures outlined in the *Highway Capacity Manual 7th Edition*. Specifically, Synchro (v12) software will be used to evaluate existing operational conditions at study area intersections and driveways by reporting volume-to-capacity (v/c) ratios, delay, and queue length demands.

TRIP GENERATION

Trip generation for the proposed development was calculated per procedures published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 11th Edition*. The following land use codes (LUC) were used to estimate the trips generated by the proposed development:

- LUC 945 – Convenience Store/Gas Station (4 - 5.5K)

Given the location of the proposed gas station, surrounded by various commercial restaurant land uses and a drive-in bank within the same site, a 10% internal capture was assumed. The pass-by rates were obtained from the *Trip Generation Manual, 11th Edition* appendices. **Table 1** provides Daily, AM, and PM peak-hour trip generation summaries for the proposed development at buildout. The project is anticipated to generate 693 new daily trips, 73 new AM peak-hour trips (37 inbound and 36 outbound), and 60 new PM peak-hour trips (31 inbound and 29 outbound) at the project driveways.

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Table 1: Trip Generation

	Land Use	LUC[1]	Size	Units	Trip Rate[1]	Daily				
						Total	In[1]		Out[1]	
Daily	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	257.13	3,086	*50%*	1,543	*50%*	1,543
	Total Generated Trips					**3,086**	**1,543**		**1,543**	
	Internal Capture =	*10.0%*				*310*	*155*		*155*	
	Net External Trips					**2,776**	**1,388**		**1,388**	
	Pass by Trips[3] =	*75.0%*	*of external retail trips*			*2,083*	*1,042*		*1,041*	
	New External Trips					**693**	**346**		**347**	
	Land Use	**LUC[1]**	**Size**	**Units**	**Trip Rate[1]**	**AM Peak Hour**				
						Total	**In[1]**		**Out[1]**	
AM Peak Hour	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	27.04	324	*50%*	162	*50%*	162
	Total Generated Trips					**324**	**162**		**162**	
	Internal Capture =	*10.0%*				33	16		16	
	Net External Trips					**291**	**146**		**145**	
	Pass by Trips[3] =	*75.0%*	*of external retail trips*			218	109		109	
	New External Trips					**73**	**37**		**36**	
	Land Use	**LUC[1]**	**Size**	**Units**	**Trip Rate[1]**	**PM Peak Hour**				
						Total	**In[1]**		**Out[1]**	
PM Peak Hour	Convenience Store/ Gas Station - GFA (4-5.5k)	945	**12**	VFP	22.76	273	*50%*	137	*50%*	136
	Total Generated Trips					**273**	**137**		**136**	
	Internal Capture =	*10.0%*				27	13		14	
	Net External Trips					**246**	**124**		**122**	
	Pass by Trips[3] =	*76.0%*	*of external retail trips*			186	93		93	
	New External Trips					**60**	**31**		**29**	

Notes: *1. Vehicle trip rates and directional splits per ITE Trip Generation Manual, 11th Edition*

2. A 10% internal capture to account for the +/- 57K SF of shopping plaza.

3. Land Use Code 945 pass-by rates obtained from ITE Trip Generation Manual, 11th Edition Appendices.

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TRIP DISTRIBUTION AND TRIP ASSIGNMENT

Projected traffic demand of project trips on study roadways was derived with use of the latest adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the Central Florida Regional Planning Model (CFRPM v7) model set and situated within the existing roadway network to appropriately represent project access. The select zone model distribution for the project was reviewed for logic.

The proposed trip distribution, shown in **Figure 2**, will be used to assign external project traffic to the study area intersections and driveway. The model output plot showing percent of daily trip distribution is provided in **Attachment B**.

STUDY AREA

A roadway segment analysis will be performed for segments within a 1-mile radius of the project site. Forecasted project traffic will be assigned per the project distribution shown in **Attachment B**. Existing and vested trip data will be referenced from Seminole County's most recent roadway concurrency information. The standard Seminole County "K" factor will be used to convert daily committed trip information to peak hour volumes. The "D" factor will be obtained from the turning movement volumes. The following roadway segments are included in the analysis:

- **#296** – SR 434 from Spring Ave to Tuskawilla Rd
- **#297** – SR 434 from Tuskawilla Rd to SR 419
- **#326** – Tuskawilla Rd from SR 434 to Trotwood Blvd

Per Seminole County traffic study requirements, all signalized intersections and major unsignalized intersections within a 1/4-mile radius from the perimeter of the site will be evaluated as part of the traffic study, as well as the proposed project driveways. The following intersections will be analyzed in the TIA:

- SR 434 & Tuskawilla Road
- SR 434 & Roberts Family Lane
- SR 434 & Project Driveway
- Tuskawilla Road & Project Driveway

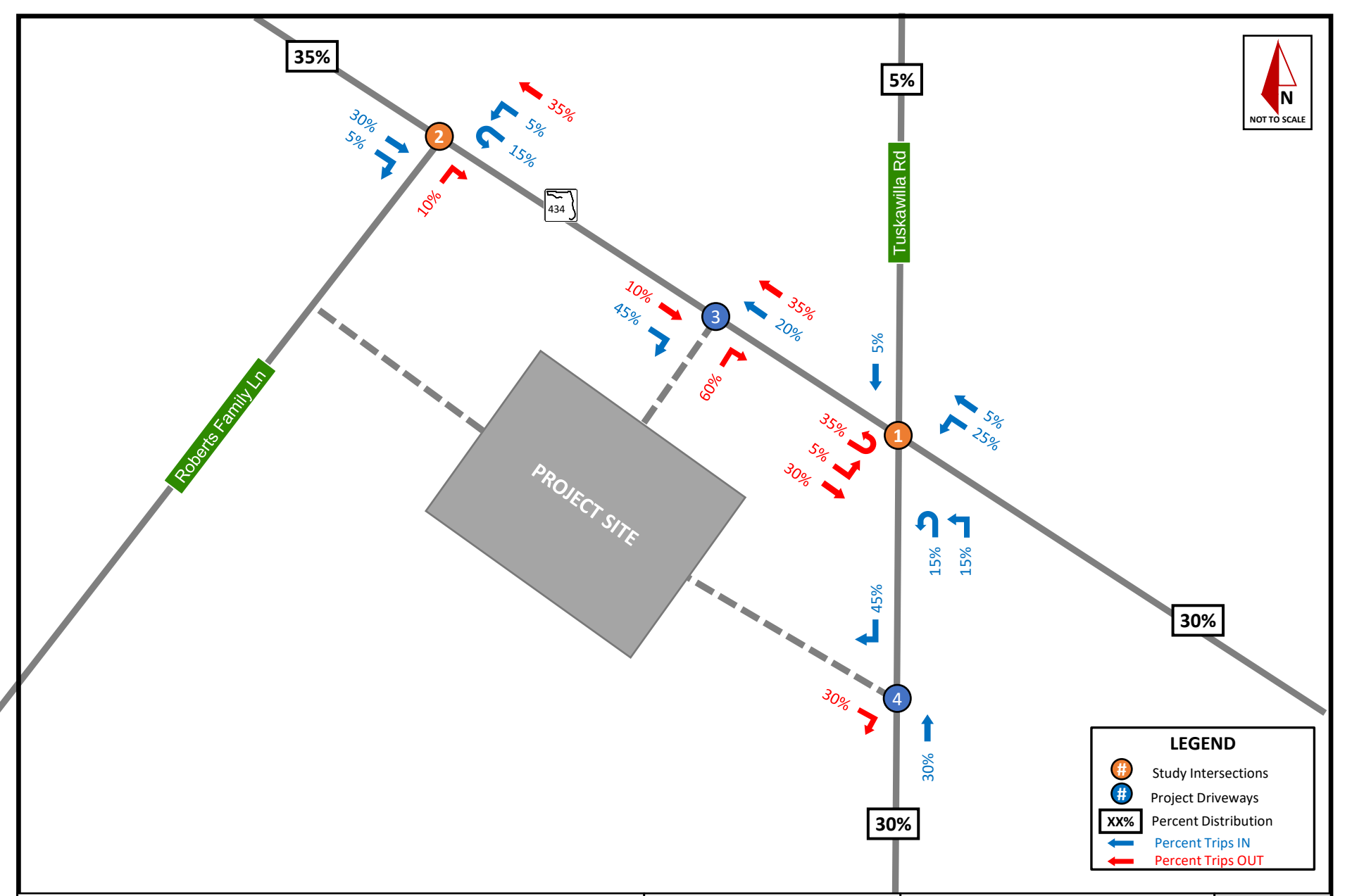

Figure 2: Project Trip Distribution

Winter Springs Wawa | Winter Springs, FL

November 2024

Kimley»Horn

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1530 Cornerstone Boulevard, Suite 200A,
Daytona Beach, FL 32117
Phone: (386) 271-0282

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BACKGROUND & BUILDOUT CONDITIONS (OPERATIONAL ANALYSIS)

Existing volumes will be grown no less than two percent (2%) per year to develop Year 2025 background traffic. Buildout traffic volumes will be determined by combining background (2025) volumes with project traffic volumes. Project trips will be assigned to the roadway network in accordance with the project trip distribution.

Intersection capacity analyses will be performed for background (2025) and buildout (2025) AM and PM peak hour conditions using the operational analysis procedures outlined in the *Highway Capacity Manual 7th Edition*. Specifically, Synchro (v12) software will be used to evaluate background and buildout operational conditions at study area intersections and the project driveway by reporting volume-to-capacity (v/c) ratios, delay, and queue length demands.

SEGMENT ANALYSIS

A daily and PM peak hour roadway segment analysis will be performed for the segments located within a 1-mile radius of the proposed retail development. The analysis will include existing, background, and buildout scenarios. Volumes for the background scenario will be determined by applying a minimum 2% annual growth rate to existing (2024) volumes to obtain future (2026) volumes. Volumes for the buildout scenario will be determined by adding project trips to background volumes. Relevant data will be referenced from Seminole County's *Summary of Roadway Concurrency Information*. The analysis will identify any existing, background or buildout deficiencies along the study area roadway segments.

TURN LANE ANALYSIS

The need for turn lanes at the proposed driveways will be assessed per Seminole County's Transportation Standards in the Public Works Engineering Manual on County facilities and per FDOT and/or NCHRP guidance on non-County facilities.

REPORT

All analysis and findings will be documented in a report to be provided to the City of Winter Springs and Seminole County for review. If necessary, mitigating measures for any operational deficiencies identified due to project traffic impact will be recommended in the TIA.

APPENDIX B
Site Plan

S.R. 434 & TUSCAWILLA RD.

WINTER SPRINGS, FLORIDA

SP-47

PROPOSED SITE LAYOUT

06/2052024 - CONTACT JONATHAN A. MARTIN, P.E. (407) 427-1686

EQUINOX DEVELOPMENT

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH

Kimley»Horn

K:\ORL_Civil\149170016 - Winter Springs Marketplace\CADD\CONCEPT\SP-47.dwg

APPENDIX C
Turning Movement Counts

National Data & Surveying Services

N

N/S Street: **Tuskawilla Rd**

Speed: **25/45 MPH**

Site Code: **24-130385-001**

Date: **11/14/2024**

Weather: **Sunny**

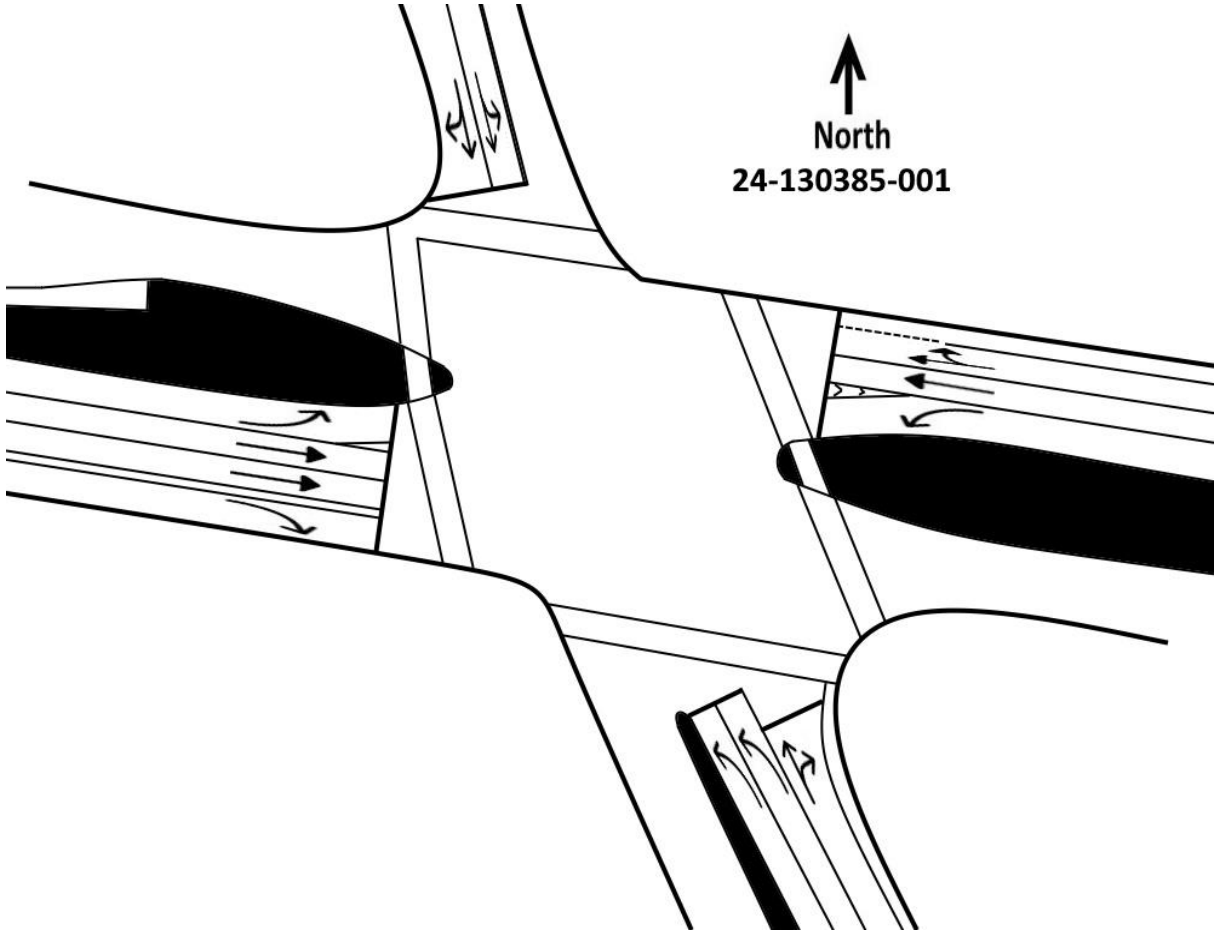
City: **Winter Springs**

County: **Seminole**

Count Times: **07:00 - 09:00**

16:00 - 18:00

Control: **Signalized**



E/W Street: **SR 436/SR 434/SR419/E Florida 434**

Speed: **45/50 MPH**

National Data & Surveying Services

N

N/S Street: **Roberts Family Ln/Cliff Rose Dr**

Speed: **N/A**

E/W Street: **SR 436/SR 434/SR419/E Florida 434**

Speed: **45/50 MPH**

Site Code: **24-130385-002**

Date: **11/14/2024**

Weather: **Sunny**

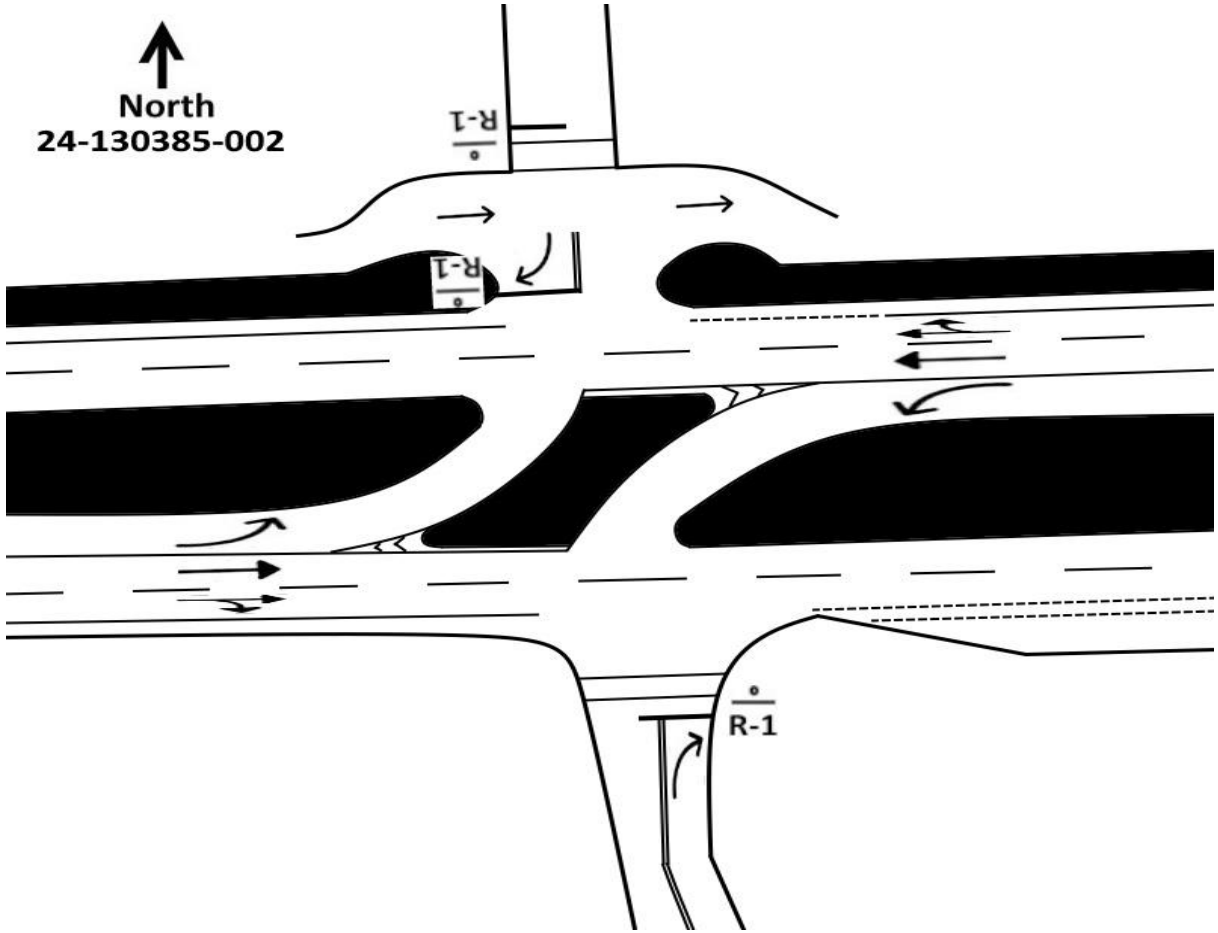
City: **Winter Springs**

County: **Seminole**

Count Times: **07:00 - 09:00**

16:00 - 18:00

Control: **2-Way Stop(NB/SB)**



National Data & Surveying Services

N/S Street: **Tuskawilla Rd**

Speed: **25/45 MPH**

E/W Street: **180 Shopping Center Dwy/Mobil Dwy**

Speed: **N/A**

Site Code: **24-130385-003**

Date: **11/14/2024**

Weather: **Sunny**

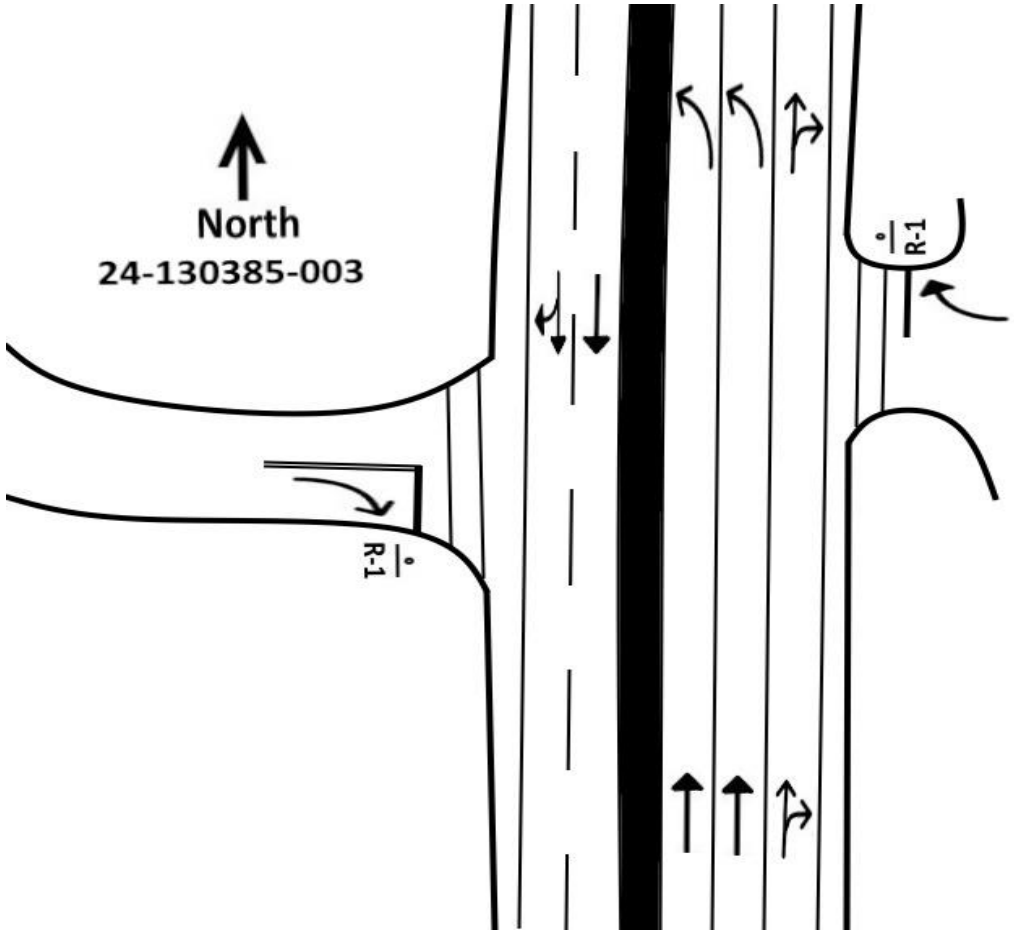
City: **Winter Springs**

County: **Seminole**

Count Times: **07:00 - 09:00**

16:00 - 18:00

Control: **2-Way Stop(EB/WB)**



National Data & Surveying Services

N/S Street: **1179 Shopping Center Dwy**

Speed: **N/A**

E/W Street: **SR 436/SR 434/SR419/E Florida 434**

Speed: **45/50 MPH**

Site Code: **24-130385-004**

Date: **11/14/2024**

Weather: **Sunny**

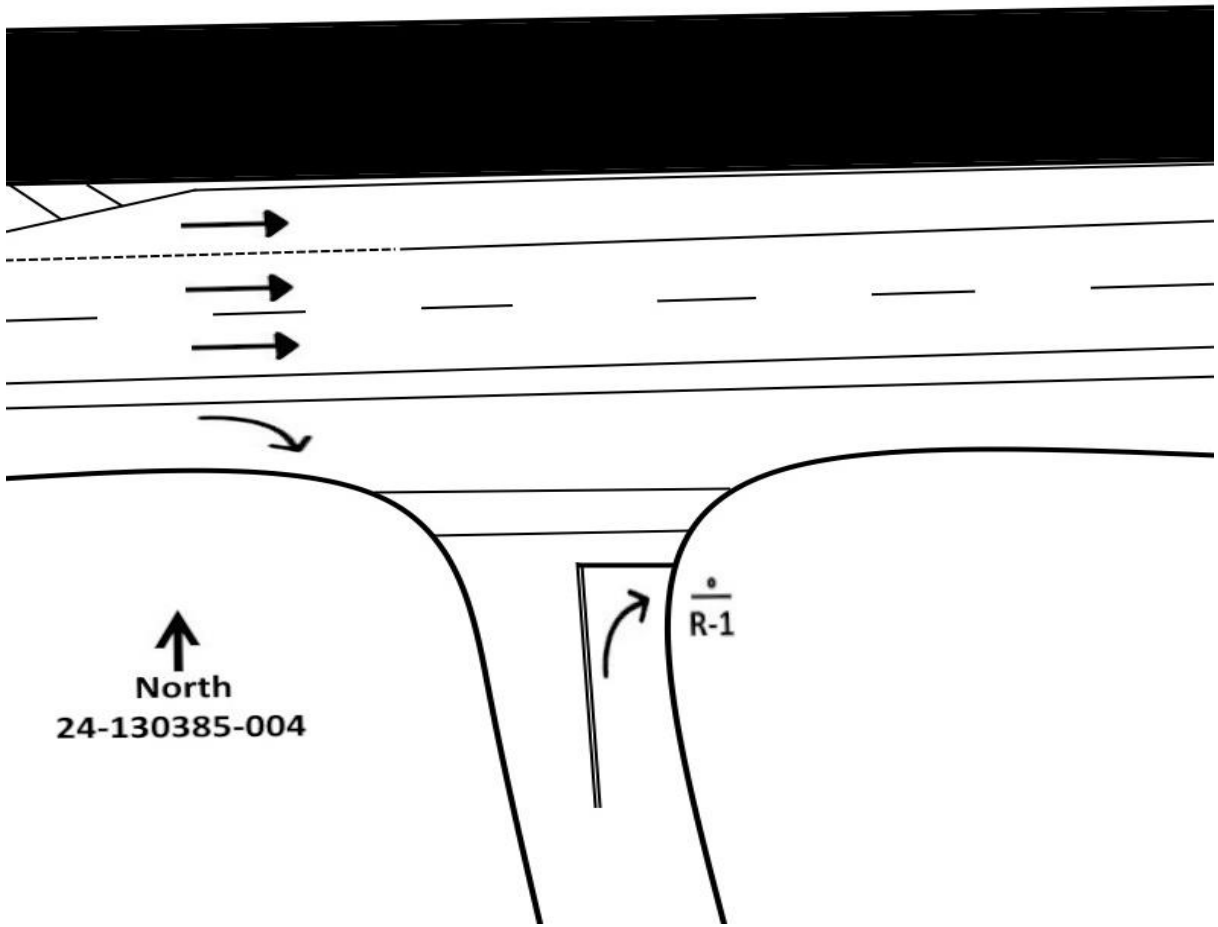
City: **Winter Springs**

County: **Seminole**

Count Times: **07:00 - 09:00**

16:00 - 18:00

Control: **1-Way Stop(NB)**



Prepared by National Data & Surveying Services

Tuskawilla Rd & SR 436 / SR 434 / SR419 / E Florida 434

Peak Hour Turning Movement Count

ID: 24-130385-001
City: Winter Springs

Day: Thursday
Date: 11/14/2024

PEAK HOURS

AM: 07:30 AM - 08:30 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS

AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

Tuskawilla Rd

SOUTHBOUND

AM	40	88	46	0	151	AM
NOON	0	0	0	0	0	NOON
PM	34	152	100	0	305	PM

EASTBOUND

SR 436/SR 434/SR419/E Florida 434

AM	NOON	PM	
1647	0	1948	⇦
11	0	34	↰ 0
40	0	66	↱ 0
848	0	1051	→ 0
396	0	536	↳ 0

CONTROL

Signalized

TEV	3504 AM	0 NOON	4390 PM
PHF	0.96		0.98

WESTBOUND

SR 436/SR 434/SR419/E Florida 434

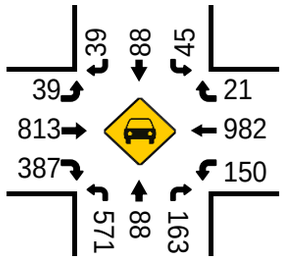
PM	NOON	AM	
35	0	21	0 ↰
1170	0	1019	0 ←
164	0	153	0 ↶
1	0	10	0 ↩
1285	0	1069	⇨

NORTHBOUND

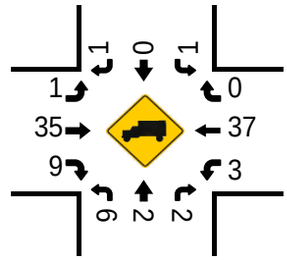
PM	852	0	710	204	133	PM
NOON	0	0	0	0	0	NOON
AM	637	0	577	90	165	AM

Tuskawilla Rd

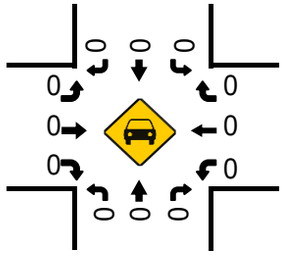
Cars (AM)



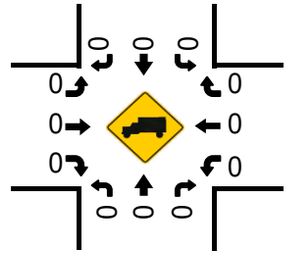
HT (AM)



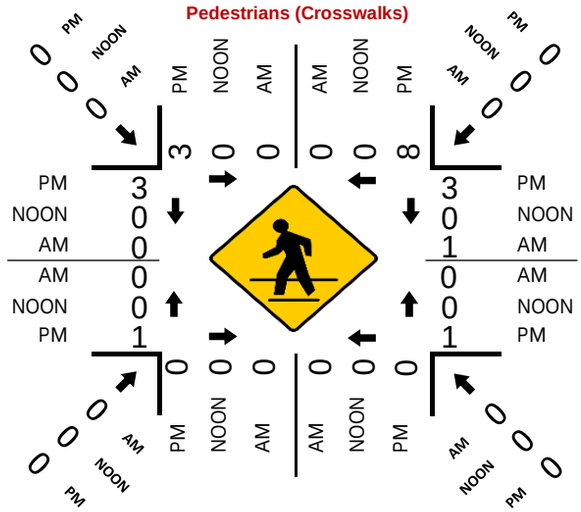
Cars (NOON)



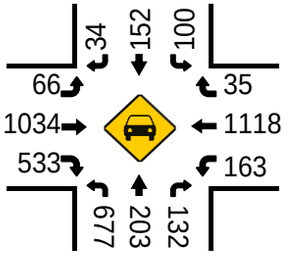
HT (NOON)



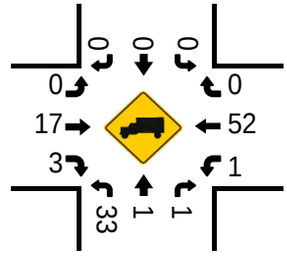
Pedestrians (Crosswalks)



Cars (PM)



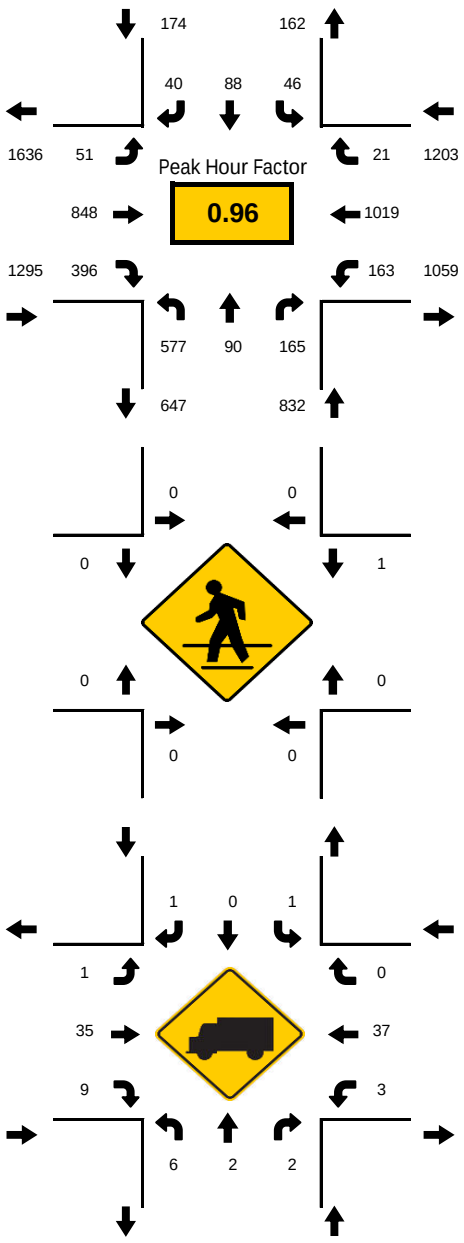
HT (PM)



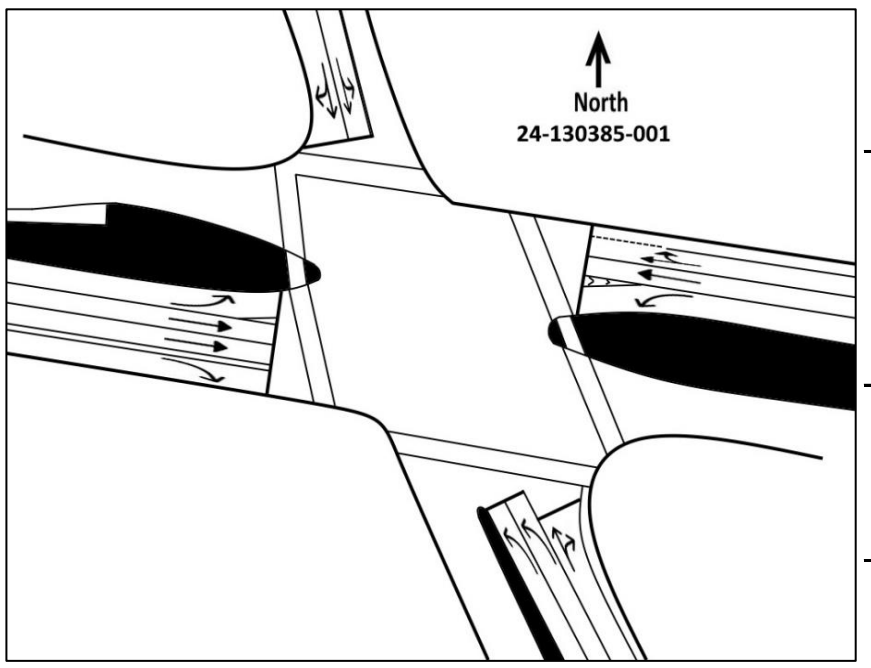
LOCATION: Tuskawilla Rd & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

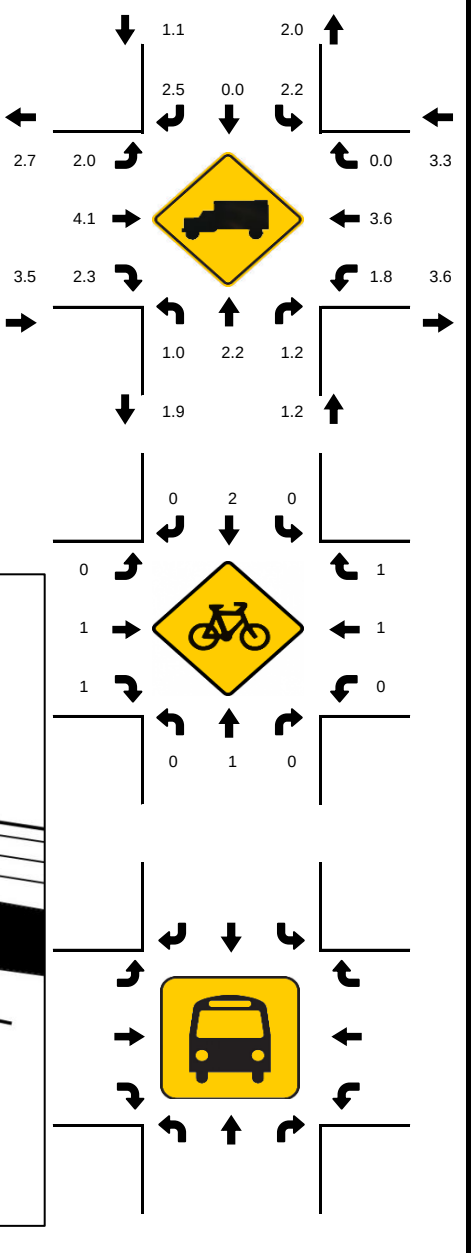
PROJECT ID: 24-130385-001
DATE: Thu, Nov 14, 2024

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 08:15 AM - 08:30 AM



National Data & Surveying Services



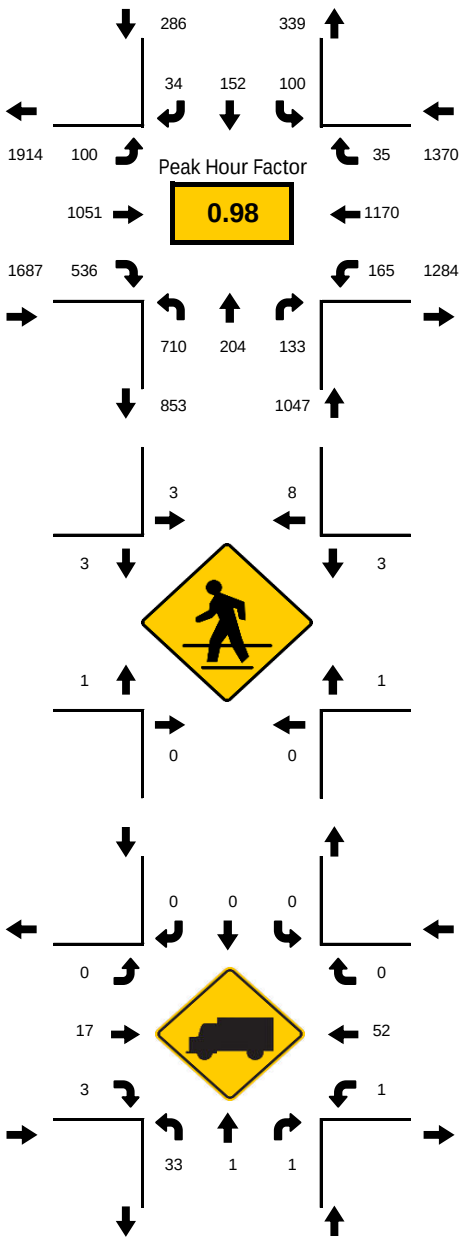


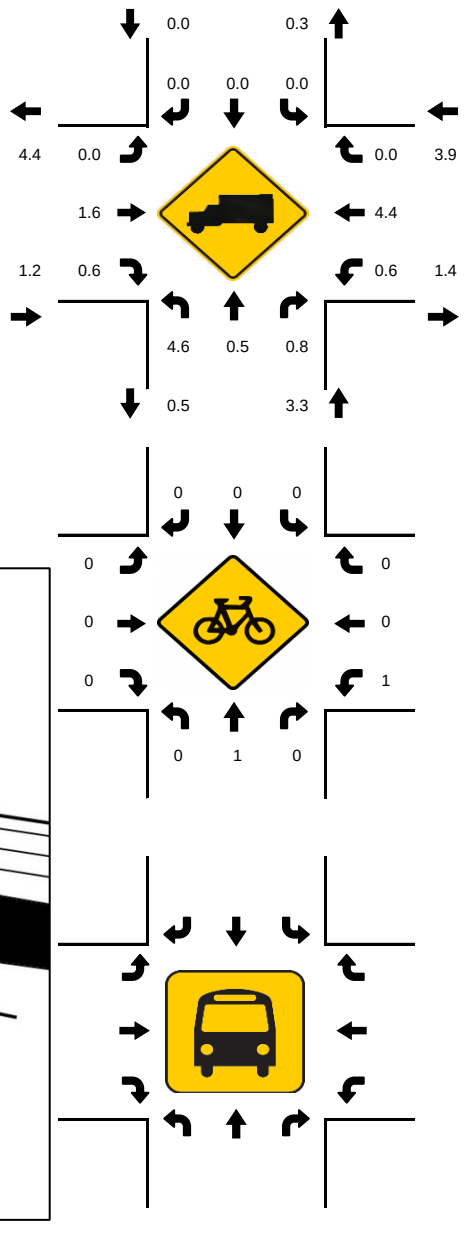
15-Min Count Period Beginning At	Tuskawilla Rd Northbound					Tuskawilla Rd Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	137	90	14	0		30	48	6	0		9	178	101	4		29	213	12	1		872	3414
7:15 AM	124	19	7	0		20	32	5	0		6	200	106	1		39	251	10	1		821	3408
7:30 AM	139	23	50	0		13	30	15	0		5	208	94	1		39	240	4	2		863	3504
7:45 AM	171	27	41	0		11	16	9	0		15	175	82	5		32	268	3	3		858	3474
8:00 AM	121	18	38	0		15	22	9	0		6	232	106	3		50	236	8	2		866	3493
8:15 AM	146	22	36	0		7	20	7	0		14	233	114	2		32	275	6	3		917	2627
8:30 AM	122	30	29	0		17	20	4	0		18	201	110	1		53	218	9	1		833	1710
8:45 AM	137	31	29	0		14	41	4	0		11	251	132	2		43	175	5	2		877	877
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	684	108	200	0		60	120	60	0		60	932	456	20		200	1100	32	12		**4044**	
Heavy Trucks	8	4	4	0		4	0	4	0		4	52	16	0		8	44	0	0		**148**	
Pedestrians		0					0					0					4				**4**	
Bicycles	0	4	0	0		0	8	0	0		0	4	4	0		0	4	4	0		**28**	
Buses																						
Stopped Buses																						

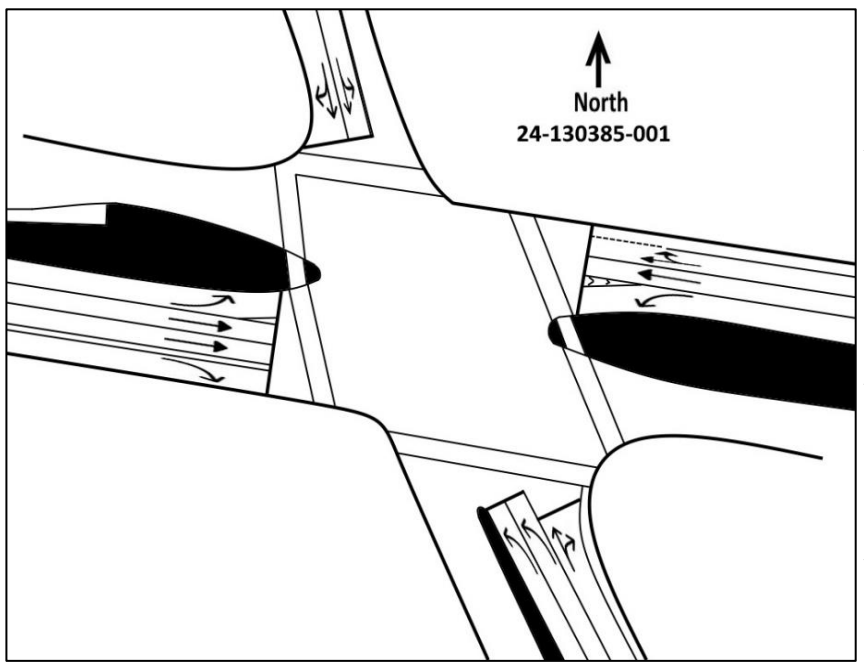
LOCATION: Tuskawilla Rd & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

PROJECT ID: 24-130385-001
DATE: Thu, Nov 14, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM







15-Min Count Period Beginning At	Tuskawilla Rd Northbound					Tuskawilla Rd Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	131	24	27	0		34	48	4	0		7	182	99	14		36	220	3	0		829	3884
4:15 PM	114	19	28	0		16	39	10	0		18	239	128	4		38	326	6	1		986	4135
4:30 PM	147	50	25	0		17	31	11	0		12	215	124	10		38	324	4	3		1011	4271
4:45 PM	156	52	16	0		30	51	7	0		15	222	123	16		47	318	4	1		1058	4359
5:00 PM	160	53	23	0		31	32	9	0		12	258	130	3		49	313	6	1		1080	4390
5:15 PM	201	50	43	0		25	41	11	0		17	263	123	12		34	290	12	0		1122	3310
5:30 PM	181	44	35	0		22	44	6	0		20	257	132	12		43	296	7	0		1099	2188
5:45 PM	168	57	32	0		22	35	8	0		17	273	151	7		38	271	10	0		1089	1089
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**						
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Total**	
All Vehicles	804	228	172	0		124	176	44	0		80	1092	604	48		196	1252	48	4		**4872**	
Heavy Trucks	52	4	4	0		0	0	0	0		0	28	4	0		4	64	0	0		**160**	
Pedestrians		0					32					16					4				**52**	
Bicycles	0	4	0	0		0	0	0	0		0	0	0	0		4	0	0	0		**8**	
Buses																						
Stopped Buses																						

Prepared by National Data & Surveying Services

Roberts Family Ln / Cliff Rose Dr & SR 436 / SR 434 / SR419 / E Florida 434

Peak Hour Turning Movement Count

ID: 24-130385-002
City: Winter Springs

Day: Thursday
Date: 11/14/2024

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	7:00 AM - 09:00 AM
NONE	NOON	NONE
05:00 PM - 06:00 PM	PM	4:00 PM - 06:00 PM

SOUTHBOUND — Roberts Family Ln/Cliff Rose Dr

	Right	Thru	Left	U-Turn	Exit
AM	10	0	0	0	56
NOON	0	0	0	0	0
PM	43	0	0	0	133
	0	0	0	0	

EASTBOUND — SR 436/SR 434/SR419/E Florida 434

	AM	NOON	PM	
Exit	1607	0	1814	
U-Turn	5	0	4	0
Left	36	0	66	0
Thru	1263	0	1673	0
Right	9	0	34	0

WESTBOUND — SR 436/SR 434/SR419/E Florida 434

		PM	NOON	AM
Right	0	67	0	20
Thru	0	1767	0	1592
Left	0	81	0	52
U-Turn	0	15	0	4
Exit		1733	0	1284

NORTHBOUND — Roberts Family Ln/Cliff Rose Dr

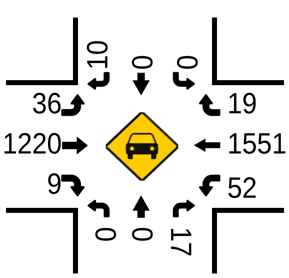
	Exit	U-Turn	Left	Thru	Right
		0	0	0	0
PM	115	0	0	0	45
NOON	0	0	0	0	0
AM	61	0	0	0	17

CONTROL

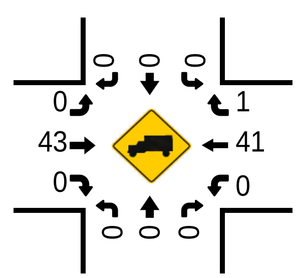
2-Way Stop(NB/SB)

	AM	NOON	PM
TEV	3008	0	3795
PHF	0.94		0.99

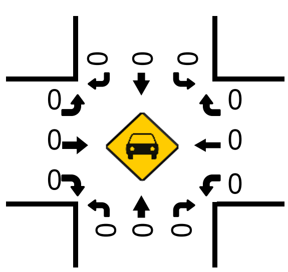
Cars (AM)



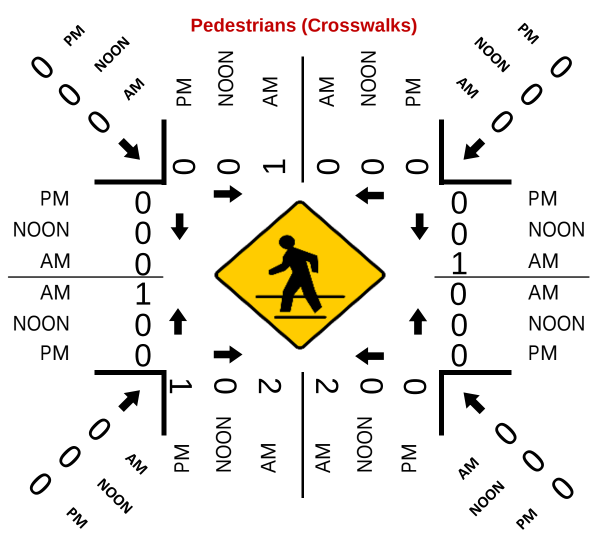
HT (AM)



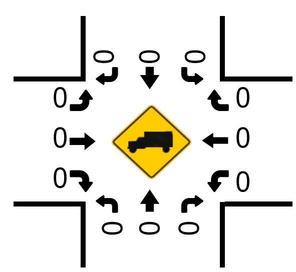
Cars (NOON)



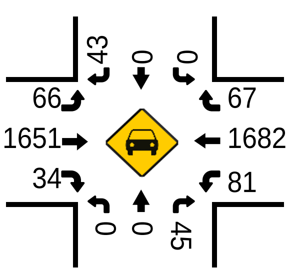
Pedestrians (Crosswalks)



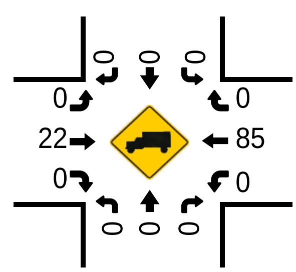
HT (NOON)



Cars (PM)



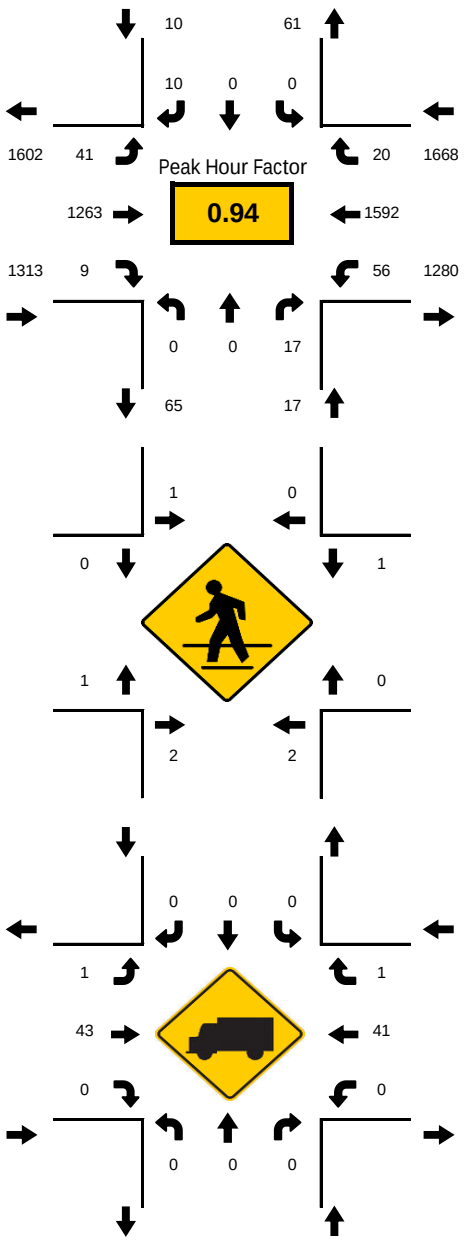
HT (PM)

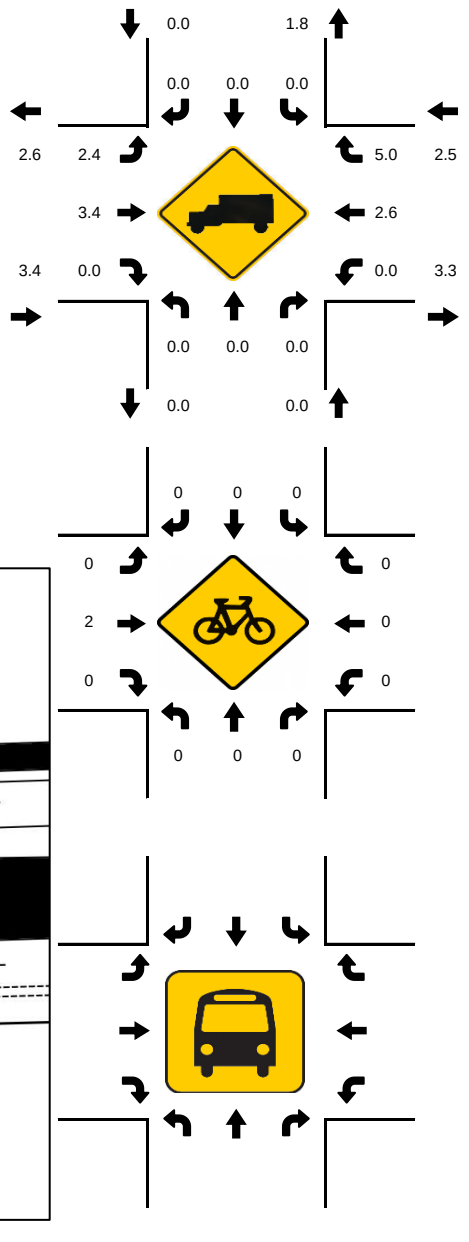


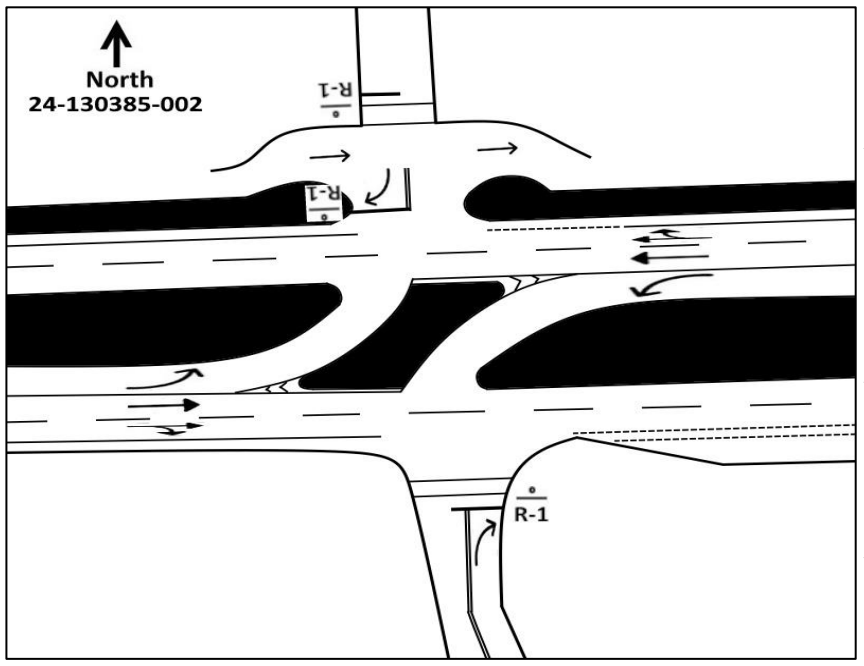
LOCATION: Roberts Family Ln/Cliff Rose Dr & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

PROJECT ID: 24-130385-002
DATE: Thu, Nov 14, 2024

Peak-Hour: 07:30 AM - 08:30 AM
Peak 15-Minute: 08:15 AM - 08:30 AM





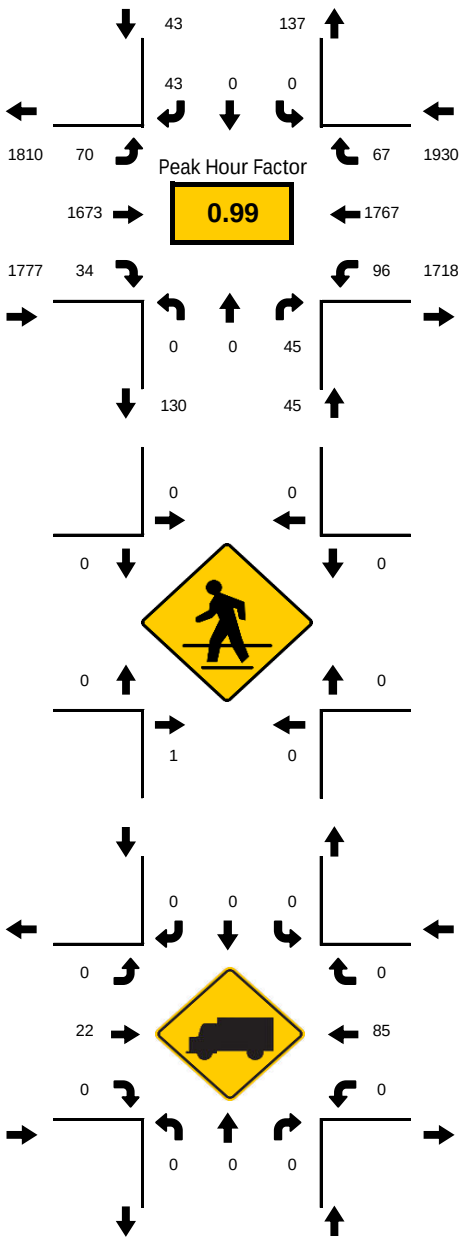


15-Min Count Period Beginning At	Roberts Family Ln/Cliff Rose Dr Northbound					Roberts Family Ln/Cliff Rose Dr Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	0	10	0		0	0	1	0		7	271	4	1		11	359	7	0		671	2868
7:15 AM	0	0	2	0		0	0	0	0		8	318	3	1		7	361	5	3		708	2917
7:30 AM	0	0	4	0		0	0	2	0		5	295	2	1		21	402	3	1		736	3008
7:45 AM	0	0	6	0		0	0	3	0		7	272	3	2		12	435	11	2		753	2970
8:00 AM	0	0	4	0		0	0	1	0		18	340	3	1		11	338	4	0		720	2931
8:15 AM	0	0	3	0		0	0	4	0		6	356	1	1		8	417	2	1		799	2211
8:30 AM	0	0	0	0		0	0	3	0		5	356	3	1		11	309	7	3		698	1412
8:45 AM	0	0	2	0		0	0	3	0		10	382	4	0		23	281	9	0		714	714
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	24	0		0	0	16	0		72	1424	12	8		84	1740	44	8		**3432**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	68	0	4		0	44	4	0		**116**	
Pedestrians		12					4					4					4				**24**	
Bicycles	0	0	0	0		0	0	0	0		0	8	0	0		0	0	0	0		**8**	
Buses																						
Stopped Buses																						

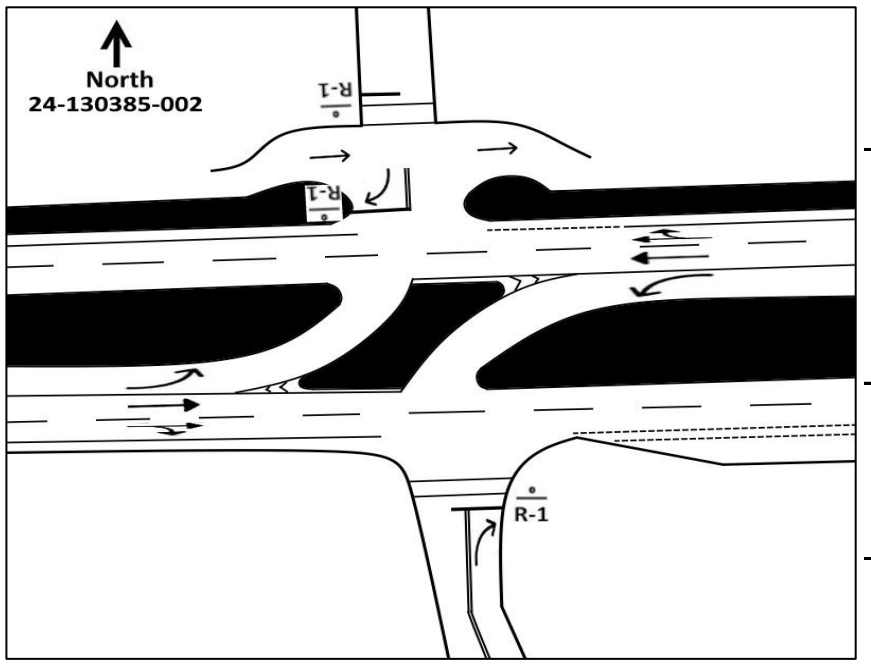
LOCATION: Roberts Family Ln/Cliff Rose Dr & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

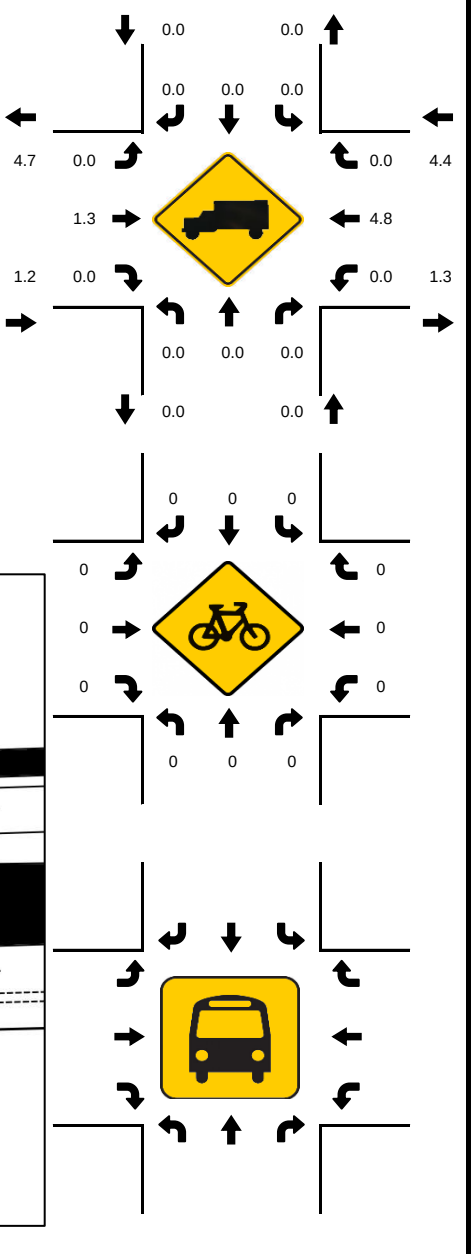
PROJECT ID: 24-130385-002
DATE: Thu, Nov 14, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:15 PM - 05:30 PM



National Data & Surveying Services





15-Min Count Period Beginning At	Roberts Family Ln/Cliff Rose Dr Northbound					Roberts Family Ln/Cliff Rose Dr Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	0	12	0		0	0	14	0		15	291	6	2		16	326	20	1		703	3365
4:15 PM	0	0	3	0		0	0	10	0		22	376	7	0		12	434	10	4		878	3616
4:30 PM	0	0	9	0		0	0	15	0		15	361	9	3		18	456	10	4		900	3702
4:45 PM	0	0	13	0		0	0	6	0		20	341	2	1		20	459	18	4		884	3757
5:00 PM	0	0	8	0		0	0	11	0		15	426	7	1		20	451	14	1		954	3795
5:15 PM	0	0	13	0		0	0	12	0		15	416	8	0		19	465	11	5		964	2841
5:30 PM	0	0	11	0		0	0	13	0		14	407	10	1		17	455	22	5		955	1877
5:45 PM	0	0	13	0		0	0	7	0		22	424	9	2		25	396	20	4		922	922
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	52	0		0	0	52	0		88	1704	40	8		100	1860	88	20		**4012**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	36	0	0		0	112	0	0		**148**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

Prepared by National Data & Surveying Services

Tuskawilla Rd & 180 Shopping Center Dwy / Mobil Dwy

Peak Hour Turning Movement Count

ID: 24-130385-003
City: Winter Springs

Day: Thursday
Date: 11/14/2024

PEAK HOURS
AM: 07:00 AM - 08:00 AM
NOON: NONE
PM: 05:00 PM - 06:00 PM

COUNT PERIODS
AM: 7:00 AM - 09:00 AM
NOON: NONE
PM: 4:00 PM - 06:00 PM

Tuskawilla Rd

SOUTHBOUND

AM	15	643	0	0	867	AM
NOON	0	0	0	0	0	NOON
PM	61	784	0	0	1046	PM

EASTBOUND

AM	NOON	PM	
15	0	61	
0	0	0	0
0	0	0	0
0	0	0	0
53	0	124	0
AM	NOON	PM	

WESTBOUND

PM	NOON	AM	
2	0	9	0
0	0	0	0
0	0	0	0
0	0	0	0
22	0	16	
PM	NOON	AM	

CONTROL
2-Way Stop(EB/WB)

TEV	1594 AM	0 NOON	2037 PM
PHF	0.90		0.98

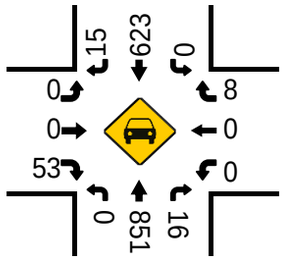
PM	908	0	0	1044	22	PM
NOON	0	0	0	0	0	NOON
AM	696	0	0	858	16	AM

NORTHBOUND

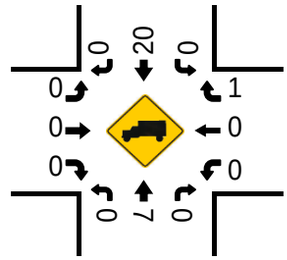
Tuskawilla Rd

180 Shopping Center Dwy/Mobil Dwy (EASTBOUND side)
180 Shopping Center Dwy/Mobil Dwy (WESTBOUND side)

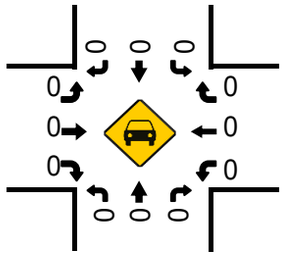
Cars (AM)



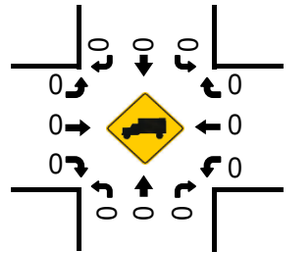
HT (AM)



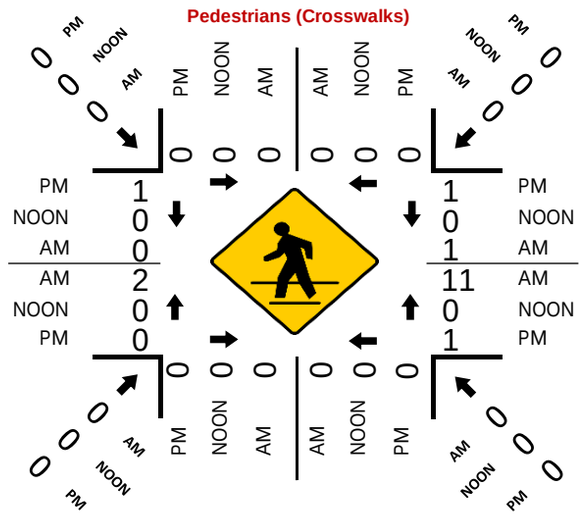
Cars (NOON)



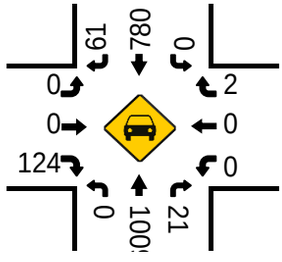
HT (NOON)



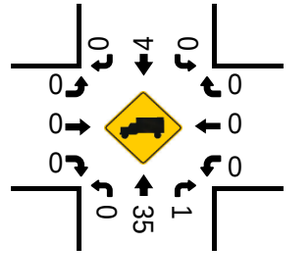
Pedestrians (Crosswalks)



Cars (PM)



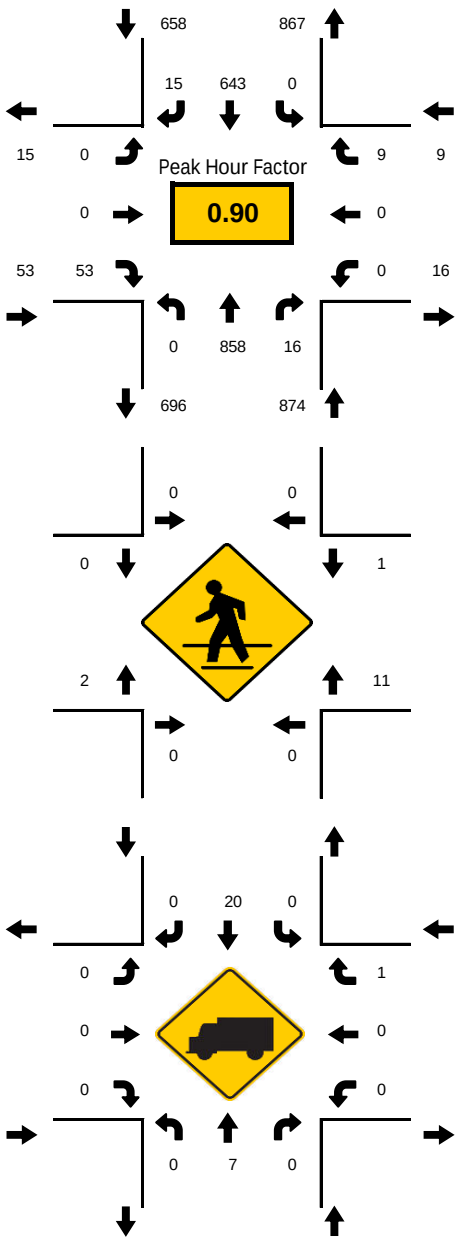
HT (PM)

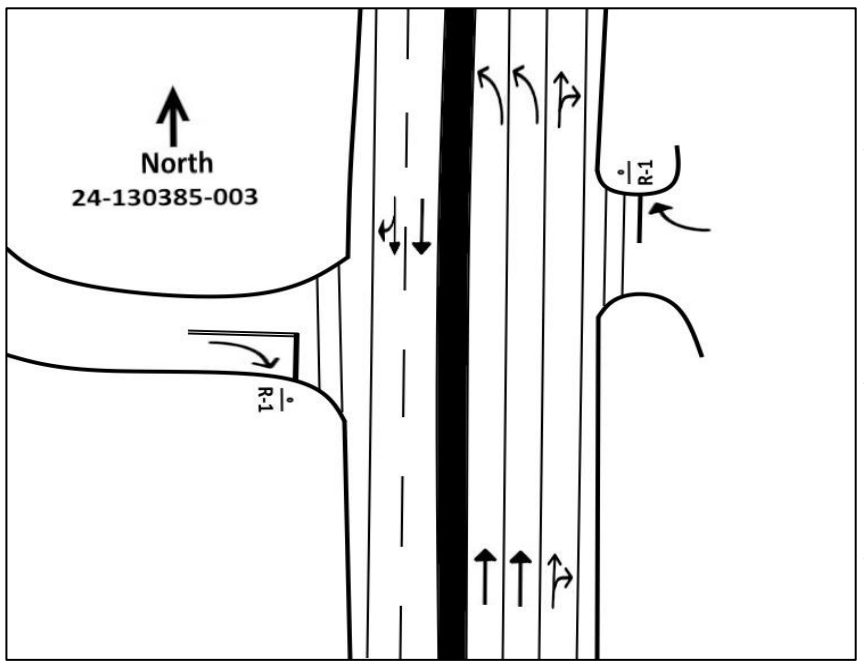


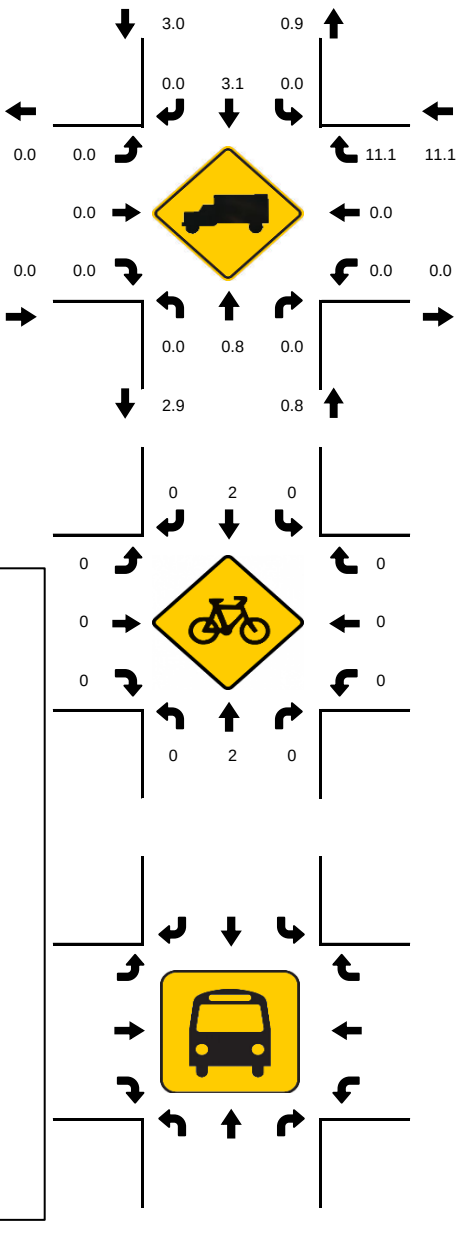
LOCATION: Tuskawilla Rd & 180 Shopping Center Dwy/Mobil Dwy
CITY/STATE: Winter Springs, FL

PROJECT ID: 24-130385-003
DATE: Thu, Nov 14, 2024

Peak-Hour: 07:00 AM - 08:00 AM
Peak 15-Minute: 07:00 AM - 07:15 AM





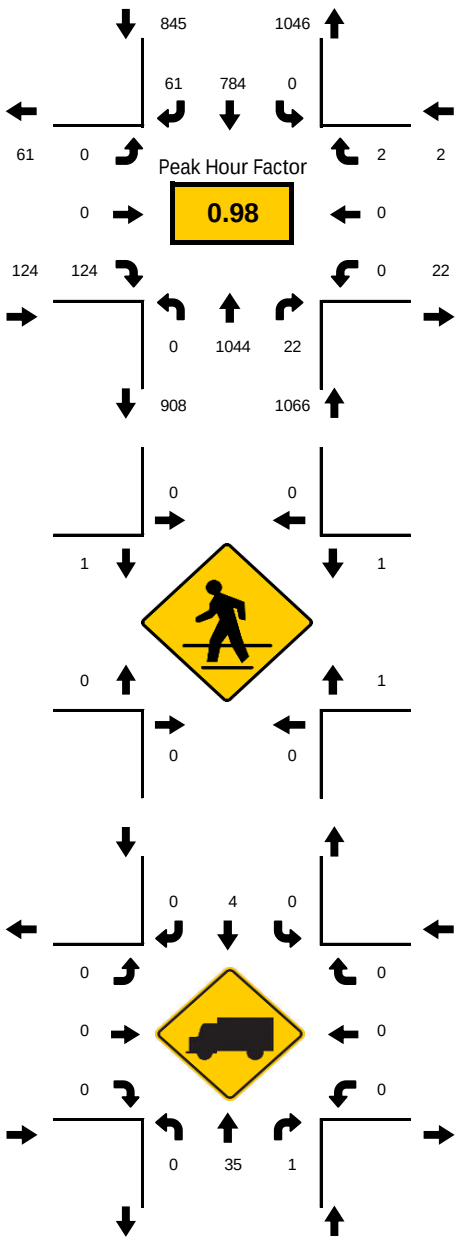


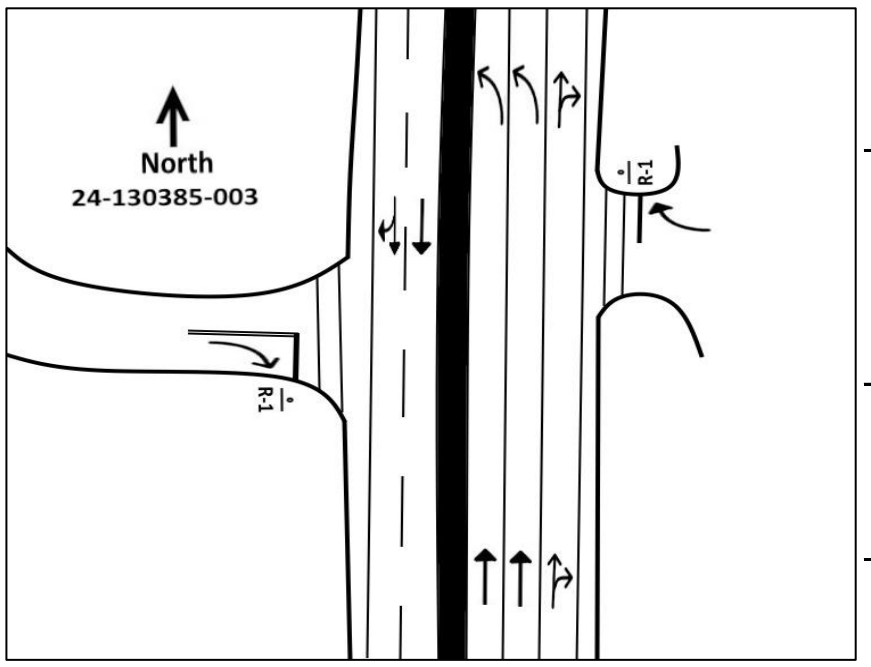
15-Min Count Period Beginning At	Tuskawilla Rd Northbound					Tuskawilla Rd Southbound					0 Shopping Center Dwy/Mobil D Eastbound					0 Shopping Center Dwy/Mobil D Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	242	2	0		0	185	3	0		0	0	11	0		0	0	1	0		444	1594
7:15 AM	0	156	4	0		0	174	3	0		0	0	15	0		0	0	1	0		353	1519
7:30 AM	0	233	8	0		0	157	5	0		0	0	13	0		0	0	3	0		419	1549
7:45 AM	0	227	2	0		0	127	4	0		0	0	14	0		0	0	4	0		378	1484
8:00 AM	0	176	3	0		0	170	8	0		0	0	10	0		0	0	2	0		369	1511
8:15 AM	0	207	1	0		0	163	3	0		0	0	6	0		0	0	3	0		383	1142
8:30 AM	0	160	1	0		0	178	5	0		0	0	9	0		0	0	1	0		354	759
8:45 AM	0	188	3	0		0	191	9	0		0	0	12	0		0	0	2	0		405	405
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	968	32	0		0	740	20	0		0	0	60	0		0	0	16	0		**1836**	
Heavy Trucks	0	12	0	0		0	28	0	0		0	0	0	0		0	0	4	0		**44**	
Pedestrians		0					0					8					44				**52**	
Bicycles	0	8	0	0		0	4	0	0		0	0	0	0		0	0	0	0		**12**	
Buses																						
Stopped Buses																						

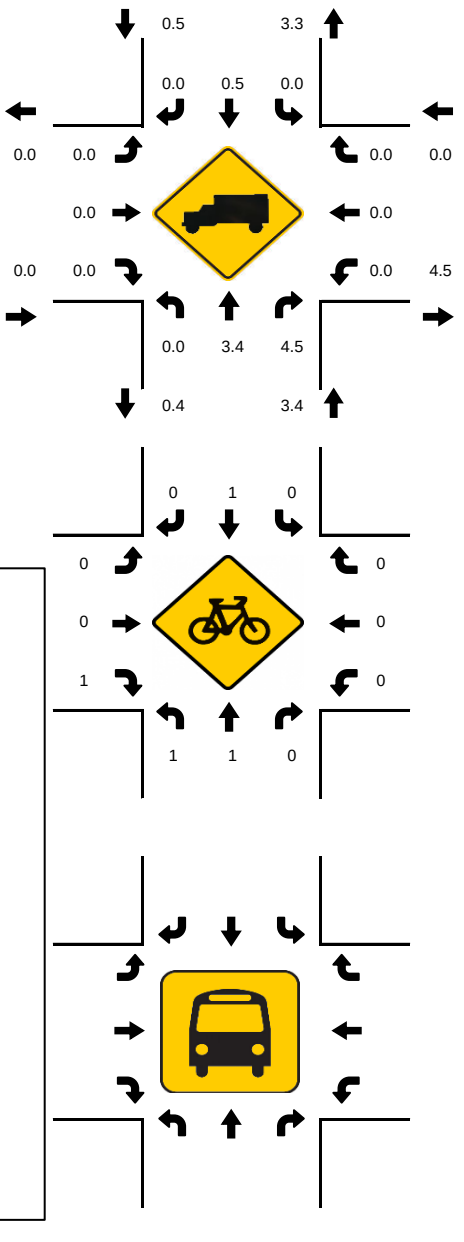
LOCATION: Tuskawilla Rd & 180 Shopping Center Dwy/Mobil Dwy
CITY/STATE: Winter Springs, FL

PROJECT ID: 24-130385-003
DATE: Thu, Nov 14, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM







15-Min Count Period Beginning At	Tuskawilla Rd Northbound					Tuskawilla Rd Southbound					0 Shopping Center Dwy/Mobil D Eastbound					0 Shopping Center Dwy/Mobil D Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	174	4	0		0	174	8	0		0	0	25	0		0	0	2	0		387	1727
4:15 PM	0	164	5	0		0	197	9	0		0	0	33	0		0	0	0	0		408	1826
4:30 PM	0	220	6	0		0	184	9	0		0	0	27	0		0	0	2	0		448	1934
4:45 PM	0	222	5	0		0	206	14	0		0	0	37	0		0	0	0	0		484	2007
5:00 PM	0	240	5	0		0	199	13	0		0	0	28	0		0	0	1	0		486	2037
5:15 PM	0	290	2	0		0	188	10	0		0	0	26	0		0	0	0	0		516	1551
5:30 PM	0	260	10	0		0	198	19	0		0	0	34	0		0	0	0	0		521	1035
5:45 PM	0	254	5	0		0	199	19	0		0	0	36	0		0	0	1	0		514	514
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	1160	40	0		0	796	76	0		0	0	144	0		0	0	4	0		**2220**	
Heavy Trucks	0	60	4	0		0	8	0	0		0	0	0	0		0	0	0	0		**72**	
Pedestrians		0					0					4					4				**8**	
Bicycles	4	4	0	0		0	4	0	0		0	0	4	0		0	0	0	0		**16**	
Buses																						
Stopped Buses																						

Prepared by National Data & Surveying Services

1179 Shopping Center Dwy & SR 436 / SR 434 / SR419 / E Florida 434

Peak Hour Turning Movement Count

ID: 24-130385-004
City: Winter Springs

Day: Thursday
Date: 11/14/2024

PEAK HOURS

AM	08:00 AM - 09:00 AM
NOON	NONE
PM	05:00 PM - 06:00 PM

COUNT PERIODS

AM	7:00 AM - 09:00 AM
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND — 1179 Shopping Center Dwy

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — SR 436/SR 434/SR419/E Florida 434

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
1415	0	1624	0
24	0	101	0
AM	NOON	PM	

WESTBOUND — SR 436/SR 434/SR419/E Florida 434

PM	NOON	AM	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
PM	NOON	AM	

0 0 0 0

1689 0 1435

0 0 0 0

NORTHBOUND — 1179 Shopping Center Dwy

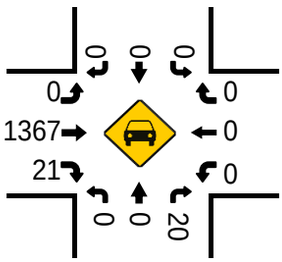
PM	101	0	0	0	65	PM
NOON	0	0	0	0	0	NOON
AM	24	0	0	0	20	AM

CONTROL

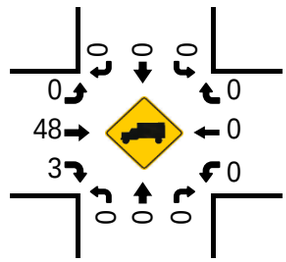
1-Way Stop(NB)

TEV	1459 AM	0 NOON	1790 PM
PHF	0.92		0.96

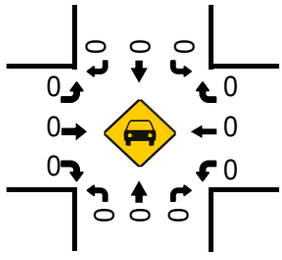
Cars (AM)



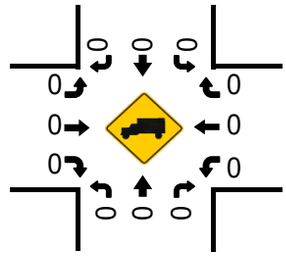
HT (AM)



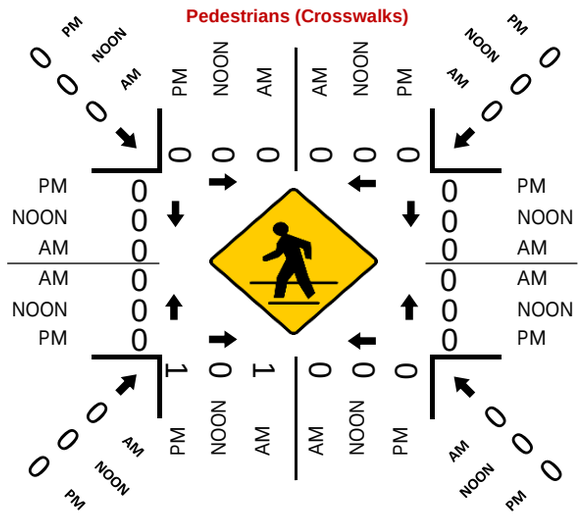
Cars (NOON)



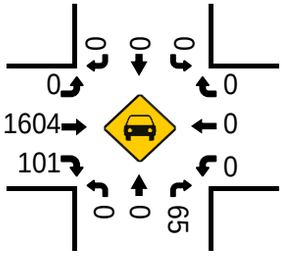
HT (NOON)



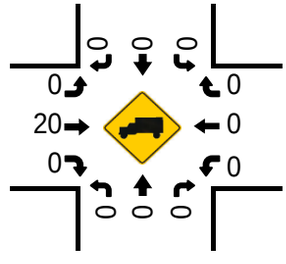
Pedestrians (Crosswalks)



Cars (PM)



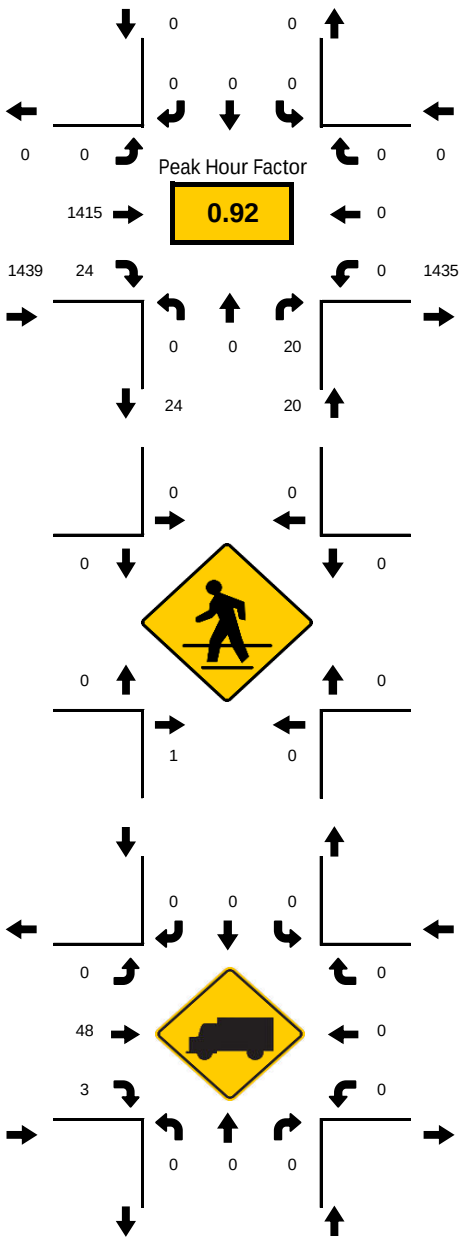
HT (PM)



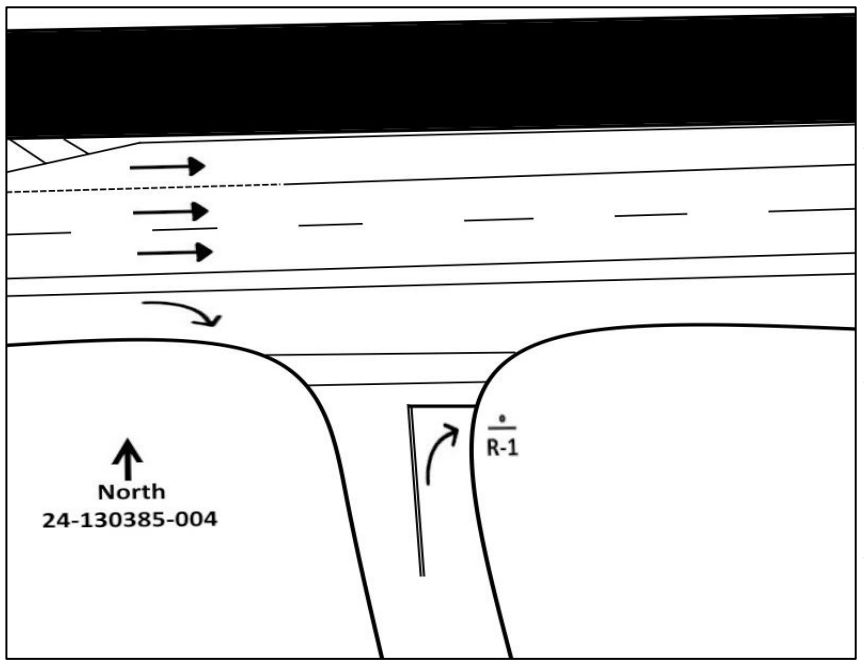
LOCATION: 1179 Shopping Center Dwy & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

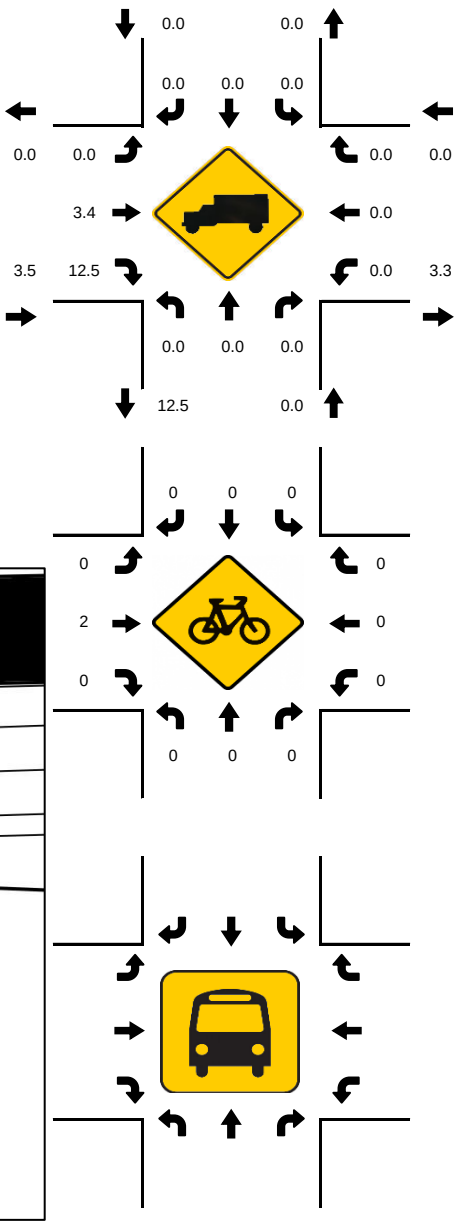
PROJECT ID: 24-130385-004
DATE: Thu, Nov 14, 2024

Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM



National Data & Surveying Services



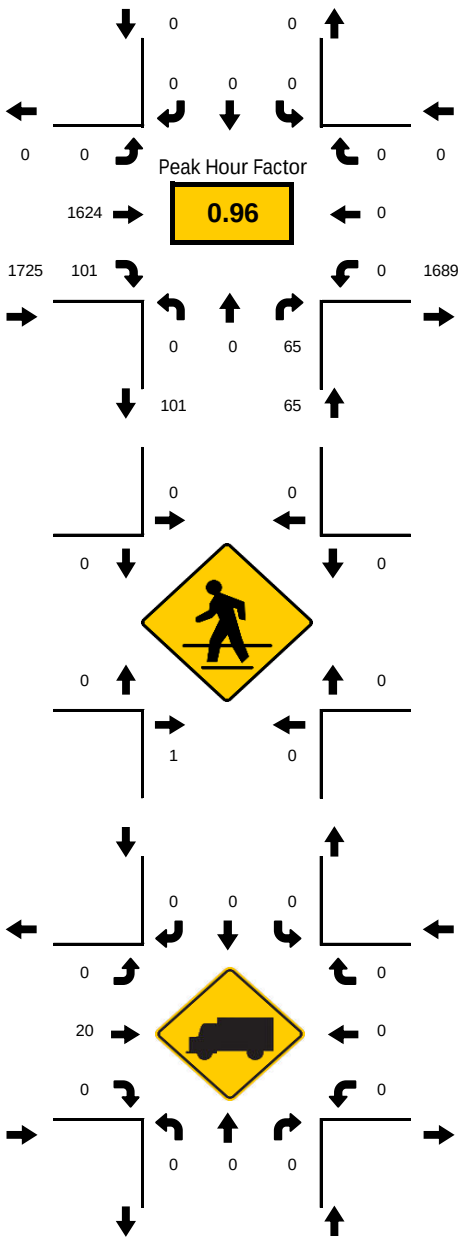


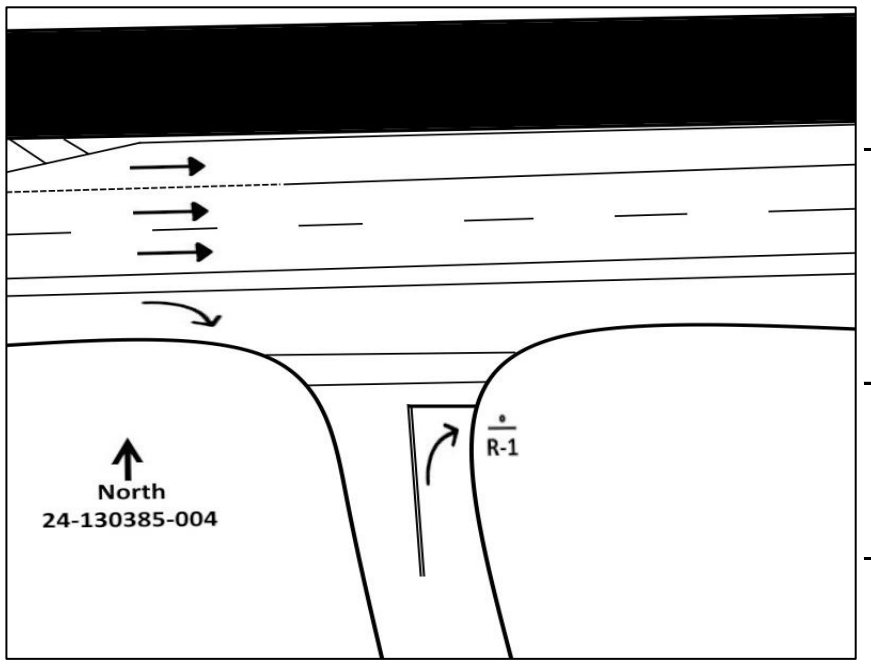
15-Min Count Period Beginning At	1179 Shopping Center Dwy Northbound					1179 Shopping Center Dwy Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
7:00 AM	0	0	6	0		0	0	0	0		0	278	6	0		0	0	0	0		290	1202
7:15 AM	0	0	3	0		0	0	0	0		0	310	3	0		0	0	0	0		316	1262
7:30 AM	0	0	5	0		0	0	0	0		0	303	3	0		0	0	0	0		311	1311
7:45 AM	0	0	3	0		0	0	0	0		0	276	6	0		0	0	0	0		285	1349
8:00 AM	0	0	4	0		0	0	0	0		0	343	3	0		0	0	0	0		350	1459
8:15 AM	0	0	5	0		0	0	0	0		0	356	4	0		0	0	0	0		365	1109
8:30 AM	0	0	4	0		0	0	0	0		0	334	11	0		0	0	0	0		349	744
8:45 AM	0	0	7	0		0	0	0	0		0	382	6	0		0	0	0	0		395	395
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	28	0		0	0	0	0		0	1528	44	0		0	0	0	0		**1600**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	68	12	0		0	0	0	0		**80**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	4	0	0		0	0	0	0		**4**	
Buses																						
Stopped Buses																						

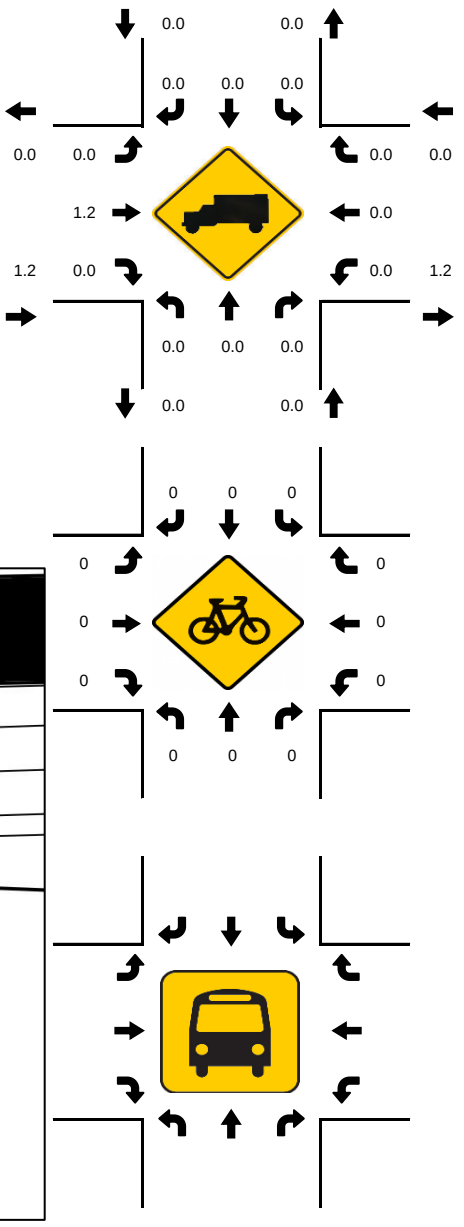
LOCATION: 1179 Shopping Center Dwy & SR 436/SR 434/SR419/E Florida 434
CITY/STATE: Winter Springs, FL

PROJECT ID: 24-130385-004
DATE: Thu, Nov 14, 2024

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:45 PM - 06:00 PM







15-Min Count Period Beginning At	1179 Shopping Center Dwy Northbound					1179 Shopping Center Dwy Southbound					R 436/SR 434/SR419/E Florida 43 Eastbound					R 436/SR 434/SR419/E Florida 43 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
4:00 PM	0	0	18	0		0	0	0	0		0	300	13	0		0	0	0	0		331	1502
4:15 PM	0	0	13	0		0	0	0	0		0	362	22	0		0	0	0	0		397	1613
4:30 PM	0	0	14	0		0	0	0	0		0	351	24	0		0	0	0	0		389	1666
4:45 PM	0	0	27	0		0	0	0	0		0	342	16	0		0	0	0	0		385	1710
5:00 PM	0	0	11	0		0	0	0	0		0	409	22	0		0	0	0	0		442	1790
5:15 PM	0	0	12	0		0	0	0	0		0	407	31	0		0	0	0	0		450	1348
5:30 PM	0	0	20	0		0	0	0	0		0	386	27	0		0	0	0	0		433	898
5:45 PM	0	0	22	0		0	0	0	0		0	422	21	0		0	0	0	0		465	465
Peak 15-Min Flowrates	**Northbound**					**Southbound**					**Eastbound**					**Westbound**					**Total**	
	Left	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***	**Left**	**Thru**	**Rgt**	**U**	**R***		
All Vehicles	0	0	88	0		0	0	0	0		0	1688	124	0		0	0	0	0		**1900**	
Heavy Trucks	0	0	0	0		0	0	0	0		0	28	0	0		0	0	0	0		**28**	
Pedestrians		4					0					0					0				**4**	
Bicycles	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		**0**	
Buses																						
Stopped Buses																						

APPENDIX D
FDOT's Florida Traffic Online (FTO) Data

2023 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7700 SEMINOLE COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.97 PSCF
1	01/01/2023 - 01/07/2023	1.05	1.08
2	01/08/2023 - 01/14/2023	1.04	1.07
3	01/15/2023 - 01/21/2023	1.02	1.05
4	01/22/2023 - 01/28/2023	1.01	1.04
5	01/29/2023 - 02/04/2023	0.99	1.02
6	02/05/2023 - 02/11/2023	0.98	1.01
* 7	02/12/2023 - 02/18/2023	0.96	0.99
* 8	02/19/2023 - 02/25/2023	0.96	0.99
* 9	02/26/2023 - 03/04/2023	0.96	0.99
*10	03/05/2023 - 03/11/2023	0.95	0.98
*11	03/12/2023 - 03/18/2023	0.95	0.98
*12	03/19/2023 - 03/25/2023	0.96	0.99
*13	03/26/2023 - 04/01/2023	0.97	1.00
*14	04/02/2023 - 04/08/2023	0.97	1.00
*15	04/09/2023 - 04/15/2023	0.98	1.01
*16	04/16/2023 - 04/22/2023	0.98	1.01
*17	04/23/2023 - 04/29/2023	0.98	1.01
*18	04/30/2023 - 05/06/2023	0.97	1.00
*19	05/07/2023 - 05/13/2023	0.97	1.00
20	05/14/2023 - 05/20/2023	0.97	1.00
21	05/21/2023 - 05/27/2023	0.98	1.01
22	05/28/2023 - 06/03/2023	0.99	1.02
23	06/04/2023 - 06/10/2023	1.00	1.03
24	06/11/2023 - 06/17/2023	1.01	1.04
25	06/18/2023 - 06/24/2023	1.01	1.04
26	06/25/2023 - 07/01/2023	1.02	1.05
27	07/02/2023 - 07/08/2023	1.02	1.05
28	07/09/2023 - 07/15/2023	1.02	1.05
29	07/16/2023 - 07/22/2023	1.02	1.05
30	07/23/2023 - 07/29/2023	1.03	1.06
31	07/30/2023 - 08/05/2023	1.03	1.06
32	08/06/2023 - 08/12/2023	1.04	1.07
33	08/13/2023 - 08/19/2023	1.04	1.07
34	08/20/2023 - 08/26/2023	1.04	1.07
35	08/27/2023 - 09/02/2023	1.04	1.07
36	09/03/2023 - 09/09/2023	1.03	1.06
37	09/10/2023 - 09/16/2023	1.03	1.06
38	09/17/2023 - 09/23/2023	1.02	1.05
39	09/24/2023 - 09/30/2023	1.01	1.04
40	10/01/2023 - 10/07/2023	1.01	1.04
41	10/08/2023 - 10/14/2023	1.00	1.03
42	10/15/2023 - 10/21/2023	0.99	1.02
43	10/22/2023 - 10/28/2023	1.00	1.03
44	10/29/2023 - 11/04/2023	1.01	1.04
45	11/05/2023 - 11/11/2023	1.02	1.05
46	11/12/2023 - 11/18/2023	1.03	1.06
47	11/19/2023 - 11/25/2023	1.04	1.07
48	11/26/2023 - 12/02/2023	1.04	1.07
49	12/03/2023 - 12/09/2023	1.05	1.08
50	12/10/2023 - 12/16/2023	1.05	1.08
51	12/17/2023 - 12/23/2023	1.04	1.07
52	12/24/2023 - 12/30/2023	1.03	1.06
53	12/31/2023 - 12/31/2023	1.02	1.05

* PEAK SEASON

09-MAR-2024 18:41:41 830UPD 5_7700_PKSEASON.TXT

APPENDIX E
Turning Movement Volume Worksheets

Intersection Development Worksheet

Kimley»Horn
Expect More. Experience Better.

Intersection #:	1		*Existing Year:*	2024	*TMC Year:* 2024
Major Street:	SR 434	E/W	*Opening Year:*	2026	
Minor Street:	Tuskawilla Rd	N/S	*Design Year:*		
			Seasonal Factor:	1.03	
			Buildout Year Growth Rate:	2.00%	
PHF:	0.96		*Design Year Growth Rate:*		

AM Peak Hour Trips: IN = 37 OUT = 36
AM Peak Hour Pass-by Trips: IN = 109 OUT = 109

Weekday AM Peak Hour	Tuskawilla Rd								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
7:30 AM - 8:30 AM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	577	90	165	0	46	88	40	11	40	848	396	10	153	1,019	21
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	1%	2%	1%	0%	2%	0%	3%	0%	3%	4%	2%	0%	2%	4%	0%
Peak Hour Factor	0.00	0.84	0.83	0.83	0.00	0.77	0.73	0.67	0.55	0.67	0.91	0.87	0.83	0.77	0.93	0.66
Existing (2024)	**0**	**594**	**93**	**170**	**0**	**47**	**91**	**41**	**11**	**41**	**873**	**408**	**10**	**158**	**1,050**	**22**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**618**	**97**	**177**	**0**	**49**	**95**	**43**	**11**	**43**	**908**	**424**	**10**	**164**	**1,092**	**23**
Project Assignment																
Ingress	15%	15%					5%							25%	5%	
Egress									35%	5%	30%					
Project Trips	5	6	0	0	0	0	2	0	13	2	11	0	0	9	2	0
Pass-By Trips?		Yes							Yes					Yes	Yes	
Project Assignment																
Ingress														25%	-25%	
Egress		12%							38%							
Pass-By Trips	0	13	0	0	0	0	0	0	41	0	0	0	0	28	-28	0
Buildout (2026)	**5**	**637**	**97**	**177**	**0**	**49**	**97**	**43**	**65**	**45**	**919**	**424**	**10**	**201**	**1,066**	**23**

PM Peak Hour Trips: IN = 31 OUT = 29
PM Peak Hour Pass-by Trips: IN = 93 OUT = 93

PHF:	0.98				

Weekday PM Peak Hour	Tuskawilla Rd								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
5:00 PM - 6:00 PM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	710	204	133	0	100	152	34	34	66	1,051	536	1	164	1,170	35
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	5%	0%	1%	0%	0%	0%	0%	0%	0%	2%	1%	0%	1%	4%	0%
Peak Hour Factor	0.00	0.88	0.89	0.77	0.00	0.81	0.86	0.77	0.71	0.83	0.96	0.89	0.25	0.84	0.93	0.73
Existing (2024)	**0**	**731**	**210**	**137**	**0**	**103**	**157**	**35**	**35**	**68**	**1,083**	**552**	**1**	**169**	**1,205**	**36**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**760**	**218**	**142**	**0**	**107**	**163**	**36**	**36**	**71**	**1,126**	**574**	**1**	**176**	**1,253**	**37**
Project Assignment																
Ingress	15%	15%					5%							25%	5%	
Egress									35%	5%	30%					
Project Trips	5	5	0	0	0	0	1	0	10	1	9	0	0	8	1	0
Pass-By Trips?		Yes							Yes					Yes	Yes	
Project Assignment																
Ingress														25%	-25%	
Egress		12%							38%							
Pass-By Trips	0	11	0	0	0	0	0	0	35	0	0	0	0	24	-24	0
Buildout (2026)	**5**	**776**	**218**	**142**	**0**	**107**	**164**	**36**	**81**	**72**	**1,135**	**574**	**1**	**208**	**1,230**	**37**

Intersection Development Worksheet

Kimley»Horn
Expect More. Experience Better.

Intersection #:	2		*Existing Year:*	2024	*TMC Year:* 2024
Major Street:	SR 434	E/W	*Opening Year:*	2026	
Minor Street:	Roberts Family Ln	N/S	*Design Year:*		
			Seasonal Factor:	1.03	
			Buildout Year Growth Rate:	2.00%	
PHF:	0.94		*Design Year Growth Rate:*		

AM Peak Hour Trips: IN = 37 OUT = 36
AM Peak Hour Pass-by Trips: IN = 109 OUT = 109

Weekday AM Peak Hour	Roberts Family Ln								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
7:30 AM - 8:30 AM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	0	17	0	0	0	10	5	36	1,263	9	4	52	1,592	20
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	0%	0%	0%	3%	0%
Peak Hour Factor	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.63	0.63	0.50	0.89	0.75	0.50	0.62	0.91	0.45
Existing (2024)	**0**	**0**	**0**	**18**	**0**	**0**	**0**	**10**	**5**	**37**	**1,301**	**9**	**4**	**54**	**1,640**	**21**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**0**	**19**	**0**	**0**	**0**	**10**	**5**	**38**	**1,353**	**9**	**4**	**56**	**1,706**	**22**
Project Assignment																
Ingress											30%	5%	15%	5%		
Egress				10%											35%	
Project Trips	0	0	0	4	0	0	0	0	0	0	11	2	6	2	13	0
Pass-By Trips?				Yes							Yes	Yes	Yes	Yes	Yes	
Project Assignment																
Ingress											-25%	25%	13%	12%	-50%	
Egress				38%												
Pass-By Trips	0	0	0	41	0	0	0	0	0	0	-27	27	14	13	-55	0
Buildout (2026)	**0**	**0**	**0**	**64**	**0**	**0**	**0**	**10**	**5**	**38**	**1,337**	**38**	**24**	**71**	**1,664**	**22**

PM Peak Hour Trips: IN = 31 OUT = 29
PM Peak Hour Pass-by Trips: IN = 93 OUT = 93

PHF: 0.99

Weekday PM Peak Hour	Roberts Family Ln								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
5:00 PM - 6:00 PM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	0	45	0	0	0	4	4	66	1,673	34	15	81	1,767	67
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%
Peak Hour Factor	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.33	0.50	0.75	0.98	0.85	0.75	0.81	0.95	0.76
Existing (2024)	**0**	**0**	**0**	**46**	**0**	**0**	**0**	**4**	**4**	**68**	**1,723**	**35**	**15**	**83**	**1,820**	**69**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**0**	**48**	**0**	**0**	**0**	**4**	**4**	**71**	**1,792**	**36**	**16**	**86**	**1,893**	**72**
Project Assignment																
Ingress											30%	5%	15%	5%		
Egress				10%											35%	
Project Trips	0	0	0	3	0	0	0	0	0	0	9	2	5	1	10	0
Pass-By Trips?				Yes							Yes	Yes	Yes	Yes	Yes	
Project Assignment																
Ingress											-25%	25%	13%	12%	-50%	
Egress				38%												
Pass-By Trips	0	0	0	35	0	0	0	0	0	0	-23	23	12	11	-47	0
Buildout (2026)	**0**	**0**	**0**	**86**	**0**	**0**	**0**	**4**	**4**	**71**	**1,778**	**61**	**33**	**98**	**1,856**	**72**

Intersection Development Worksheet

Kimley»Horn
Expect More. Experience Better.

Intersection #:	3		*Existing Year:*	2024	*TMC Year:* 2024
Major Street:	Tuskawilla Rd	E/W	*Opening Year:*	2026	
Minor Street:	Project Driveway	N/S	*Design Year:*		
			Seasonal Factor:	1.03	
			Buildout Year Growth Rate:	2.00%	*AM Peak Hour Trips:* IN = 37 OUT = 36
PHF:	0.90		*Design Year Growth Rate:*		*AM Peak Hour Pass-by Trips:* IN = 109 OUT = 109

Weekday AM Peak Hour	Project Driveway								Tuskawilla Rd							
	Northbound				Southbound				Eastbound				Westbound			
7:00 Am - 8:00 AM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	858	16	0	0	643	15	0	0	0	53	0	0	0	9
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	1%	0%	0%	0%	3%	0%	0%	0%	0%	0%	0%	0%	0%	11%
Peak Hour Factor	0.00	0.00	0.89	0.50	0.00	0.00	0.87	0.75	0.00	0.00	0.00	0.88	0.00	0.00	0.00	0.56
Existing (2024)	**0**	**0**	**884**	**16**	**0**	**0**	**662**	**15**	**0**	**0**	**0**	**55**	**0**	**0**	**0**	**9**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**919**	**17**	**0**	**0**	**688**	**16**	**0**	**0**	**0**	**57**	**0**	**0**	**0**	**9**
Project Assignment																
Ingress			30%					45%								
Egress												30%				
Project Trips	0	0	11	0	0	0	0	16	0	0	0	10	0	0	0	0
Pass-By Trips?			Yes					Yes				Yes				
Project Assignment																
Ingress								25%								
Egress			12%									12%				
Pass-By Trips	0	0	13	0	0	0	0	28	0	0	0	13	0	0	0	0
Buildout (2026)	**0**	**0**	**943**	**17**	**0**	**0**	**688**	**60**	**0**	**0**	**0**	**80**	**0**	**0**	**0**	**9**

PHF:	0.98	*PM Peak Hour Trips:*	IN = 31	OUT = 29
		PM Peak Hour Pass-by Trips:	IN = 93	OUT = 93

Weekday PM Peak Hour	Project Driveway								Tuskawilla Rd							
	Northbound				Southbound				Eastbound				Westbound			
5:00 PM - 6:00 PM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	1,044	22	0	0	784	61	0	0	0	124	0	0	0	2
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	3%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.00	0.00	0.90	0.55	0.00	0.00	0.98	0.80	0.00	0.00	0.00	0.86	0.00	0.00	0.00	0.50
Existing (2024)	**0**	**0**	**1,075**	**23**	**0**	**0**	**808**	**63**	**0**	**0**	**0**	**128**	**0**	**0**	**0**	**2**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**1,118**	**24**	**0**	**0**	**840**	**66**	**0**	**0**	**0**	**133**	**0**	**0**	**0**	**2**
Project Assignment																
Ingress			30%					45%								
Egress												30%				
Project Trips	0	0	9	0	0	0	0	14	0	0	0	9	0	0	0	0
Pass-By Trips?			Yes					Yes				Yes				
Project Assignment																
Ingress								25%								
Egress			12%									12%				
Pass-By Trips	0	0	11	0	0	0	0	24	0	0	0	11	0	0	0	0
Buildout (2026)	**0**	**0**	**1,138**	**24**	**0**	**0**	**840**	**104**	**0**	**0**	**0**	**153**	**0**	**0**	**0**	**2**

Intersection Development Worksheet

Kimley»Horn
Expect More. Experience Better.

Intersection #:	4		*Existing Year:*	2024	*TMC Year:* 2024
Major Street:	SR 434	E/W	*Opening Year:*	2026	
Minor Street:	Project Driveway	N/S	*Design Year:*		
			Seasonal Factor:	1.03	
			Buildout Year Growth Rate:	2.00%	*AM Peak Hour Trips:* IN = 37 OUT = 36
PHF:	0.92		*Design Year Growth Rate:*		*AM Peak Hour Pass-by Trips:* IN = 109 OUT = 109

Weekday AM Peak Hour	Project Driveway								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
8:00 Am - 9:00 AM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	0	20	0	0	0	0	0	0	1,415	24	0	0	0	0
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	13%	0%	0%	0%	0%
Peak Hour Factor	0.00	0.00	0.00	0.71	0.00	0.00	0.00	0.00	0.00	0.00	0.93	0.55	0.00	0.00	0.00	0.00
Existing (2024)	**0**	**0**	**0**	**21**	**0**	**0**	**0**	**0**	**0**	**0**	**1,457**	**25**	**0**	**0**	**0**	**0**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**0**	**22**	**0**	**0**	**0**	**0**	**0**	**0**	**1,515**	**26**	**0**	**0**	**0**	**0**
Project Assignment																
Ingress												45%			20%	
Egress				60%							10%				35%	
Project Trips	0	0	0	22	0	0	0	0	0	0	4	17	0	0	21	0
Pass-By Trips?				Yes							Yes	Yes				
Project Assignment																
Ingress											-50%	38%				
Egress				50%							38%					
Pass-By Trips	0	0	0	55	0	0	0	0	0	0	-13	41	0	0	0	0
Buildout (2026)	**0**	**0**	**0**	**99**	**0**	**0**	**0**	**0**	**0**	**0**	**1,506**	**84**	**0**	**0**	**21**	**0**

PHF:	0.96				*PM Peak Hour Trips:* IN = 31 OUT = 29
					PM Peak Hour Pass-by Trips: IN = 93 OUT = 93

Weekday PM Peak Hour	Project Driveway								SR 434							
	Northbound				Southbound				Eastbound				Westbound			
5:00 PM - 6:00 PM	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
TMC (2024)	0	0	0	65	0	0	0	0	0	0	1,624	101	0	0	0	0
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
Heavy Vehicle (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Peak Hour Factor	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00	0.00	0.96	0.81	0.00	0.00	0.00	0.00
Existing (2024)	**0**	**0**	**0**	**67**	**0**	**0**	**0**	**0**	**0**	**0**	**1,673**	**104**	**0**	**0**	**0**	**0**
Growth Factor (Linear)	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Background (2026)	**0**	**0**	**0**	**70**	**0**	**0**	**0**	**0**	**0**	**0**	**1,740**	**108**	**0**	**0**	**0**	**0**
Project Assignment																
Ingress												45%			20%	
Egress				60%							10%				35%	
Project Trips	0	0	0	17	0	0	0	0	0	0	3	14	0	0	16	0
Pass-By Trips?				Yes							Yes	Yes				
Project Assignment																
Ingress											-50%	38%				
Egress				50%							38%					
Pass-By Trips	0	0	0	47	0	0	0	0	0	0	-11	35	0	0	0	0
Buildout (2026)	**0**	**0**	**0**	**134**	**0**	**0**	**0**	**0**	**0**	**0**	**1,732**	**157**	**0**	**0**	**16**	**0**

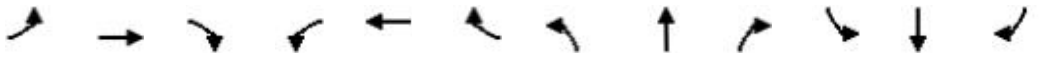
APPENDIX F
Synchro Outputs

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	52	873	408	168	1050	594	93	47	91
Future Volume (vph)	52	873	408	168	1050	594	93	47	91
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	18.0	66.0		29.0	77.0	57.0	57.0	28.0	28.0
Total Split (%)	10.0%	36.7%		16.1%	42.8%	31.7%	31.7%	15.6%	15.6%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tuskawilla Rd & SR 434



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	52	873	408	168	1050	22	594	93	170	47	91	41
Future Volume (veh/h)	52	873	408	168	1050	22	594	93	170	47	91	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1826	1870	1870	1841	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	54	909	425	175	1094	23	619	97	177	49	95	43
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	5	2	2	4	2	2	2	2	2	2	3
Cap, veh/h	68	1427	989	194	1686	35	735	126	230	161	110	50
Arrive On Green	0.04	0.41	0.41	0.11	0.48	0.48	0.21	0.21	0.21	0.09	0.09	0.09
Sat Flow, veh/h	1767	3469	1585	1781	3503	74	3456	593	1082	1781	1219	552
Grp Volume(v), veh/h	54	909	425	175	546	571	619	0	274	49	0	138
Grp Sat Flow(s),veh/h/ln	1767	1735	1585	1781	1749	1827	1728	0	1676	1781	0	1771
Q Serve(g_s), s	5.5	37.6	24.8	17.5	42.4	42.4	30.9	0.0	27.7	4.6	0.0	13.8
Cycle Q Clear(g_c), s	5.5	37.6	24.8	17.5	42.4	42.4	30.9	0.0	27.7	4.6	0.0	13.8
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.65	1.00		0.31
Lane Grp Cap(c), veh/h	68	1427	989	194	842	880	735	0	357	161	0	160
V/C Ratio(X)	0.79	0.64	0.43	0.90	0.65	0.65	0.84	0.00	0.77	0.30	0.00	0.86
Avail Cap(c_a), veh/h	100	1427	989	210	842	880	923	0	448	205	0	204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	85.8	42.3	17.4	79.3	35.2	35.2	67.9	0.0	66.7	76.5	0.0	80.7
Incr Delay (d2), s/veh	22.2	2.2	1.4	35.6	3.9	3.7	6.5	0.0	7.3	1.5	0.0	26.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.9	16.8	15.8	10.0	19.2	20.0	14.4	0.0	12.7	2.2	0.0	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	107.9	44.4	18.7	114.9	39.1	38.9	74.4	0.0	73.9	78.0	0.0	107.6
LnGrp LOS	F	D	B	F	D	D	E		E	E		F
Approach Vol, veh/h		1388			1292			893			187	
Approach Delay, s/veh		39.0			49.3			74.3			99.9	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.4	81.9		23.6	14.8	94.4		47.2				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	21.2	58.2		20.7	10.2	69.2		48.1				
Max Q Clear Time (g_c+I1), s	19.5	39.6		15.8	7.5	44.4		32.9				
Green Ext Time (p_c), s	0.1	10.6		0.5	0.0	11.6		5.4				

Intersection Summary		
HCM 7th Control Delay, s/veh		53.9
HCM 7th LOS		D

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	1301	9	58	1640	21	0	0	18	0	0	10
Future Vol, veh/h	42	1301	9	58	1640	21	0	0	18	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	45	1384	10	62	1745	22	0	0	19	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1767	0	0	1394	0	0	-	-	697
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	349	-	-	487	-	-	0	0	384
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	349	-	-	487	-	-	-	0	384
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.52	0.45	14.88
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	384	349	-	-	487	-	-
HCM Lane V/C Ratio	0.05	0.128	-	-	0.127	-	-
HCM Control Delay (s/veh)	14.9	16.8	-	-	13.5	-	-
HCM Lane LOS	B	C	-	-	B	-	-
HCM 95th %tile Q(veh)	0.2	0.4	-	-	0.4	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	55	0	884	662	15
Future Vol, veh/h	0	55	0	884	662	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	61	0	982	736	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	376	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	621	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	621	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.42	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	621	-	-
HCM Lane V/C Ratio	-	0.098	-	-
HCM Control Delay (s/veh)	-	11.4	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1457	25	0	0	0	0	0	21	0	0	0
Future Vol, veh/h	0	1457	25	0	0	0	0	0	21	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	13	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1584	27	0	0	0	0	0	23	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	792
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	285
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	285
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	18.73
HCM LOS			C

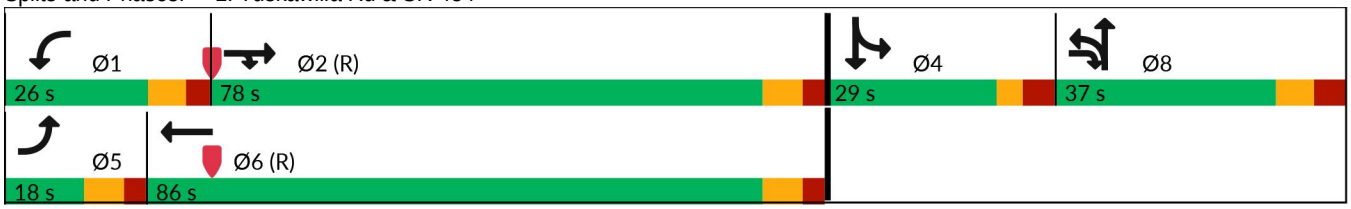
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	285	-	-	-
HCM Lane V/C Ratio	0.08	-	-	-
HCM Control Delay (s/veh)	18.7	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

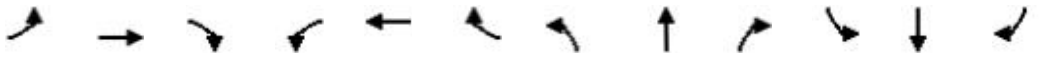
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	103	1083	552	170	1205	731	210	103	157
Future Volume (vph)	103	1083	552	170	1205	731	210	103	157
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	18.0	78.0		26.0	86.0	37.0	37.0	29.0	29.0
Total Split (%)	10.6%	45.9%		15.3%	50.6%	21.8%	21.8%	17.1%	17.1%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tuskawilla Rd & SR 434





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	103	1083	552	170	1205	36	731	210	137	103	157	35
Future Volume (veh/h)	103	1083	552	170	1205	36	731	210	137	103	157	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1826	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	105	1105	563	173	1230	37	746	214	140	105	160	36
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	4	2	5	2	2	2	2	2
Cap, veh/h	107	1494	928	191	1620	49	558	174	114	214	178	40
Arrive On Green	0.06	0.42	0.42	0.11	0.47	0.47	0.17	0.17	0.17	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3466	104	3374	1056	691	1781	1478	333
Grp Volume(v), veh/h	105	1105	563	173	620	647	746	0	354	105	0	196
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1749	1822	1687	0	1746	1781	0	1811
Q Serve(g_s), s	10.0	44.5	38.8	16.3	49.8	49.8	28.1	0.0	28.1	9.4	0.0	18.2
Cycle Q Clear(g_c), s	10.0	44.5	38.8	16.3	49.8	49.8	28.1	0.0	28.1	9.4	0.0	18.2
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.40	1.00		0.18
Lane Grp Cap(c), veh/h	107	1494	928	191	817	851	558	0	289	214	0	218
V/C Ratio(X)	0.98	0.74	0.61	0.91	0.76	0.76	1.34	0.00	1.23	0.49	0.00	0.90
Avail Cap(c_a), veh/h	107	1494	928	191	817	851	558	0	289	227	0	231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	79.8	41.5	22.6	75.1	37.4	37.4	70.9	0.0	71.0	69.9	0.0	73.8
Incr Delay (d2), s/veh	81.2	3.3	2.9	40.2	6.5	6.3	163.9	0.0	128.7	2.5	0.0	33.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	20.3	22.1	9.7	22.9	23.8	24.9	0.0	22.9	4.5	0.0	10.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	161.0	44.8	25.6	115.2	43.9	43.7	234.8	0.0	199.6	72.4	0.0	107.4
LnGrp LOS	F	D	C	F	D	D	F		F	E		F
Approach Vol, veh/h		1773			1440			1100			301	
Approach Delay, s/veh		45.6			52.4			223.5			95.1	
Approach LOS		D			D			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	79.2		27.8	18.0	87.2		37.0				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	18.2	70.2		21.7	10.2	78.2		28.1				
Max Q Clear Time (g_c+I1), s	18.3	46.5		20.2	12.0	51.8		30.1				
Green Ext Time (p_c), s	0.0	15.4		0.3	0.0	14.0		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	93.4
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	72	1723	35	98	1820	69	0	0	46	0	0	4
Future Vol, veh/h	72	1723	35	98	1820	69	0	0	46	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	73	1740	35	99	1838	70	0	0	46	0	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1908	0	0	1776	0	0	-	-	888
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	307	-	-	346	-	-	0	0	287
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	307	-	-	346	-	-	-	0	287
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.8	0.96	19.96
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	287	307	-	-	346	-	-
HCM Lane V/C Ratio	0.162	0.237	-	-	0.286	-	-
HCM Control Delay (s/veh)	20	20.3	-	-	19.5	-	-
HCM Lane LOS	C	C	-	-	C	-	-
HCM 95th %tile Q(veh)	0.6	0.9	-	-	1.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	128	0	1075	808	63
Future Vol, veh/h	0	128	0	1075	808	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	139	0	1168	878	68

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	473	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	537	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	537	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.03	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	537	-	-
HCM Lane V/C Ratio	-	0.259	-	-
HCM Control Delay (s/veh)	-	14	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	1	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1673	104	0	0	0	0	0	67	0	0	0
Future Vol, veh/h	0	1673	104	0	0	0	0	0	67	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1818	113	0	0	0	0	0	73	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	909
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	238
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	238
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	26.61
HCM LOS			D

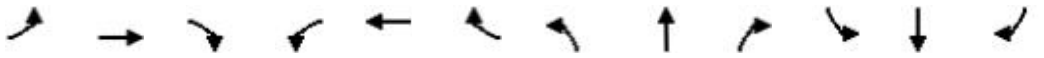
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	238	-	-	-
HCM Lane V/C Ratio	0.306	-	-	-
HCM Control Delay (s/veh)	26.6	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	1.2	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	54	908	424	174	1092	618	97	49	95
Future Volume (vph)	54	908	424	174	1092	618	97	49	95
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	18.0	66.0		29.0	77.0	57.0	57.0	28.0	28.0
Total Split (%)	10.0%	36.7%		16.1%	42.8%	31.7%	31.7%	15.6%	15.6%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tuskawilla Rd & SR 434



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	908	424	174	1092	23	618	97	177	49	95	43
Future Volume (veh/h)	54	908	424	174	1092	23	618	97	177	49	95	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1826	1870	1870	1841	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	56	946	442	181	1138	24	644	101	184	51	99	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	5	2	2	4	2	2	2	2	2	2	3
Cap, veh/h	71	1381	979	199	1646	35	759	130	238	167	114	52
Arrive On Green	0.04	0.40	0.40	0.11	0.47	0.47	0.22	0.22	0.22	0.09	0.09	0.09
Sat Flow, veh/h	1767	3469	1585	1781	3502	74	3456	594	1082	1781	1217	553
Grp Volume(v), veh/h	56	946	442	181	568	594	644	0	285	51	0	144
Grp Sat Flow(s),veh/h/ln	1767	1735	1585	1781	1749	1827	1728	0	1676	1781	0	1771
Q Serve(g_s), s	5.7	40.6	26.6	18.1	45.9	45.9	32.2	0.0	28.8	4.8	0.0	14.4
Cycle Q Clear(g_c), s	5.7	40.6	26.6	18.1	45.9	45.9	32.2	0.0	28.8	4.8	0.0	14.4
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.65	1.00		0.31
Lane Grp Cap(c), veh/h	71	1381	979	199	822	859	759	0	368	167	0	166
V/C Ratio(X)	0.79	0.68	0.45	0.91	0.69	0.69	0.85	0.00	0.77	0.31	0.00	0.87
Avail Cap(c_a), veh/h	100	1381	979	210	822	859	923	0	448	205	0	204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	85.7	44.8	18.2	79.0	37.5	37.5	67.4	0.0	66.0	76.1	0.0	80.5
Incr Delay (d2), s/veh	23.8	2.8	1.5	37.0	4.7	4.6	7.0	0.0	7.8	1.5	0.0	28.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	18.2	17.1	10.4	21.0	21.9	15.0	0.0	13.2	2.3	0.0	8.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	109.4	47.6	19.7	116.1	42.2	42.0	74.4	0.0	73.8	77.5	0.0	109.0
LnGrp LOS	F	D	B	F	D	D	E		E	E		F
Approach Vol, veh/h		1444			1343			929			195	
Approach Delay, s/veh		41.5			52.1			74.2			100.8	
Approach LOS		D			D			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.9	79.5		24.2	15.0	92.4		48.4				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	21.2	58.2		20.7	10.2	69.2		48.1				
Max Q Clear Time (g_c+I1), s	20.1	42.6		16.4	7.7	47.9		34.2				
Green Ext Time (p_c), s	0.1	9.8		0.4	0.0	11.1		5.4				

Intersection Summary												
HCM 7th Control Delay, s/veh			55.8									
HCM 7th LOS			E									

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	1353	9	60	1706	22	0	0	19	0	0	10
Future Vol, veh/h	43	1353	9	60	1706	22	0	0	19	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	46	1439	10	64	1815	23	0	0	20	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1838	0	0	1449	0	0	-	-	724
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	327	-	-	463	-	-	0	0	368
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	327	-	-	463	-	-	-	0	368
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.54	0.47	15.36
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	368	327	-	-	463	-	-
HCM Lane V/C Ratio	0.055	0.14	-	-	0.138	-	-
HCM Control Delay (s/veh)	15.4	17.8	-	-	14	-	-
HCM Lane LOS	C	C	-	-	B	-	-
HCM 95th %tile Q(veh)	0.2	0.5	-	-	0.5	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	57	0	919	688	16
Future Vol, veh/h	0	57	0	919	688	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	63	0	1021	764	18

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	391	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	608	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	608	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	11.61	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	608	-	-
HCM Lane V/C Ratio	-	0.104	-	-
HCM Control Delay (s/veh)	-	11.6	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1515	26	0	0	0	0	0	22	0	0	0
Future Vol, veh/h	0	1515	26	0	0	0	0	0	22	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	13	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1647	28	0	0	0	0	0	24	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	823
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	272
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	272
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	19.53
HCM LOS			C

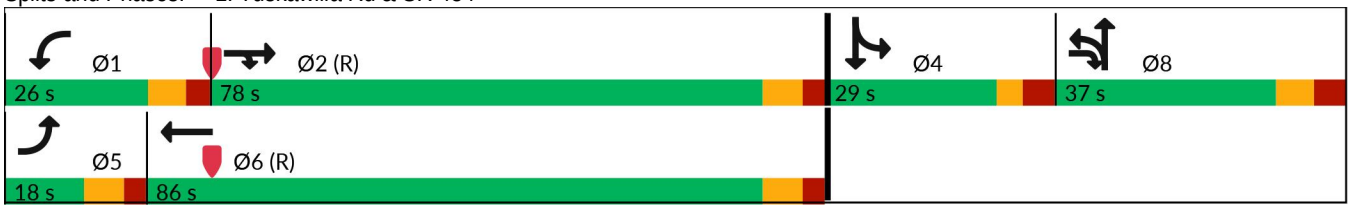
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	272	-	-	-
HCM Lane V/C Ratio	0.088	-	-	-
HCM Control Delay (s/veh)	19.5	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.3	-	-	-

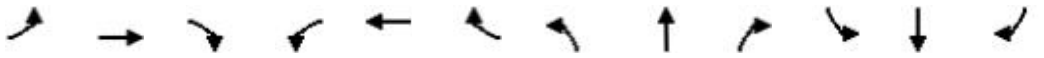
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	107	1126	574	177	1253	760	218	107	163
Future Volume (vph)	107	1126	574	177	1253	760	218	107	163
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	18.0	78.0		26.0	86.0	37.0	37.0	29.0	29.0
Total Split (%)	10.6%	45.9%		15.3%	50.6%	21.8%	21.8%	17.1%	17.1%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tuskawilla Rd & SR 434





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	1126	574	177	1253	37	760	218	142	107	163	36
Future Volume (veh/h)	107	1126	574	177	1253	37	760	218	142	107	163	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1826	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	109	1149	586	181	1279	38	776	222	145	109	166	37
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	4	2	5	2	2	2	2	2
Cap, veh/h	107	1482	923	191	1610	48	558	175	114	220	183	41
Arrive On Green	0.06	0.42	0.42	0.11	0.46	0.46	0.17	0.17	0.17	0.12	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3468	103	3374	1056	690	1781	1481	330
Grp Volume(v), veh/h	109	1149	586	181	645	672	776	0	367	109	0	203
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1749	1822	1687	0	1746	1781	0	1811
Q Serve(g_s), s	10.2	47.3	41.6	17.2	53.2	53.3	28.1	0.0	28.1	9.7	0.0	18.8
Cycle Q Clear(g_c), s	10.2	47.3	41.6	17.2	53.2	53.3	28.1	0.0	28.1	9.7	0.0	18.8
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.40	1.00		0.18
Lane Grp Cap(c), veh/h	107	1482	923	191	812	846	558	0	289	220	0	224
V/C Ratio(X)	1.02	0.78	0.63	0.95	0.79	0.80	1.39	0.00	1.27	0.50	0.00	0.91
Avail Cap(c_a), veh/h	107	1482	923	191	812	846	558	0	289	227	0	231
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	79.9	42.7	23.5	75.4	38.7	38.7	70.9	0.0	71.0	69.6	0.0	73.5
Incr Delay (d2), s/veh	92.5	4.0	3.3	50.5	7.9	7.6	187.0	0.0	146.5	2.4	0.0	35.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.5	21.7	23.8	10.6	24.7	25.7	26.7	0.0	24.4	4.6	0.0	11.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	172.4	46.7	26.8	126.0	46.5	46.3	258.0	0.0	217.5	72.0	0.0	109.0
LnGrp LOS	F	D	C	F	D	D	F		F	E		F
Approach Vol, veh/h		1844			1498			1143			312	
Approach Delay, s/veh		47.8			56.0			245.0			96.1	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	26.0	78.7		28.3	18.0	86.7		37.0				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	18.2	70.2		21.7	10.2	78.2		28.1				
Max Q Clear Time (g_c+I1), s	19.2	49.3		20.8	12.2	55.3		30.1				
Green Ext Time (p_c), s	0.0	14.6		0.2	0.0	13.4		0.0				

Intersection Summary		
HCM 7th Control Delay, s/veh		100.5
HCM 7th LOS		F

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	1792	36	102	1893	72	0	0	48	0	0	4
Future Vol, veh/h	75	1792	36	102	1893	72	0	0	48	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	76	1810	36	103	1912	73	0	0	48	0	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1985	0	0	1846	0	0	-	-	923
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	287	-	-	325	-	-	0	0	272
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	287	-	-	325	-	-	-	0	272
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.87	1.04	21.11
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	272	287	-	-	325	-	-
HCM Lane V/C Ratio	0.178	0.264	-	-	0.317	-	-
HCM Control Delay (s/veh)	21.1	22	-	-	21.1	-	-
HCM Lane LOS	C	C	-	-	C	-	-
HCM 95th %tile Q(veh)	0.6	1	-	-	1.3	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	133	0	1118	840	66
Future Vol, veh/h	0	133	0	1118	840	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	145	0	1215	913	72

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	492	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	522	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	522	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	14.51	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	522	-	-
HCM Lane V/C Ratio	-	0.277	-	-
HCM Control Delay (s/veh)	-	14.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	1.1	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1740	108	0	0	0	0	0	70	0	0	0
Future Vol, veh/h	0	1740	108	0	0	0	0	0	70	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1891	117	0	0	0	0	0	76	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	946
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	225
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	225
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	28.89
HCM LOS			D

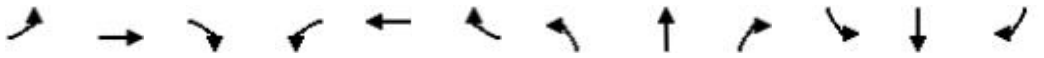
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	225	-	-	-
HCM Lane V/C Ratio	0.337	-	-	-
HCM Control Delay (s/veh)	28.9	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	1.4	-	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	110	919	424	211	1066	642	97	49	97
Future Volume (vph)	110	919	424	211	1066	642	97	49	97
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	18.0	66.0		29.0	77.0	57.0	57.0	28.0	28.0
Total Split (%)	10.0%	36.7%		16.1%	42.8%	31.7%	31.7%	15.6%	15.6%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: Tuskawilla Rd & SR 434



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	919	424	211	1066	23	642	97	177	49	97	43
Future Volume (veh/h)	110	919	424	211	1066	23	642	97	177	49	97	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1826	1870	1870	1841	1870	1870	1870	1870	1870	1870	1856
Adj Flow Rate, veh/h	115	957	442	220	1110	24	669	101	184	51	101	45
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	5	2	2	4	2	2	2	2	2	2	3
Cap, veh/h	100	1336	968	210	1561	34	780	134	244	169	116	52
Arrive On Green	0.06	0.38	0.38	0.12	0.45	0.45	0.23	0.23	0.23	0.09	0.09	0.09
Sat Flow, veh/h	1767	3469	1585	1781	3500	76	3456	594	1082	1781	1226	546
Grp Volume(v), veh/h	115	957	442	220	555	579	669	0	285	51	0	146
Grp Sat Flow(s),veh/h/ln	1767	1735	1585	1781	1749	1827	1728	0	1676	1781	0	1772
Q Serve(g_s), s	10.2	42.2	27.1	21.2	46.3	46.3	33.5	0.0	28.6	4.8	0.0	14.6
Cycle Q Clear(g_c), s	10.2	42.2	27.1	21.2	46.3	46.3	33.5	0.0	28.6	4.8	0.0	14.6
Prop In Lane	1.00		1.00	1.00		0.04	1.00		0.65	1.00		0.31
Lane Grp Cap(c), veh/h	100	1336	968	210	780	815	780	0	378	169	0	168
V/C Ratio(X)	1.15	0.72	0.46	1.05	0.71	0.71	0.86	0.00	0.75	0.30	0.00	0.87
Avail Cap(c_a), veh/h	100	1336	968	210	780	815	923	0	448	205	0	204
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	84.9	47.0	18.9	79.4	40.4	40.4	66.9	0.0	65.0	75.9	0.0	80.4
Incr Delay (d2), s/veh	135.4	3.3	1.6	75.5	5.4	5.2	7.7	0.0	6.8	1.4	0.0	29.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.5	19.0	17.5	14.2	21.3	22.3	15.7	0.0	13.0	2.3	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	220.3	50.3	20.5	154.9	45.9	45.7	74.5	0.0	71.8	77.3	0.0	109.4
LnGrp LOS	F	D	C	F	D	D	E		E	E		F
Approach Vol, veh/h		1514			1354			954			197	
Approach Delay, s/veh		54.5			63.5			73.7			101.1	
Approach LOS		D			E			E			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.0	77.1		24.4	18.0	88.1		49.5				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	21.2	58.2		20.7	10.2	69.2		48.1				
Max Q Clear Time (g_c+I1), s	23.2	44.2		16.6	12.2	48.3		35.5				
Green Ext Time (p_c), s	0.0	9.1		0.4	0.0	10.7		5.2				

Intersection Summary		
HCM 7th Control Delay, s/veh		64.4
HCM 7th LOS		E

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	43	1337	38	95	1664	22	0	0	64	0	0	10
Future Vol, veh/h	43	1337	38	95	1664	22	0	0	64	0	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	3	2	2	3	2	2	2	2	2	2	2
Mvmt Flow	46	1422	40	101	1770	23	0	0	68	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1794	0	0	1463	0	0	-	-	731
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	341	-	-	458	-	-	0	0	364
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	341	-	-	458	-	-	-	0	364
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.52	0.8	17.15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	364	341	-	-	458	-	-
HCM Lane V/C Ratio	0.187	0.134	-	-	0.221	-	-
HCM Control Delay (s/veh)	17.2	17.2	-	-	15.1	-	-
HCM Lane LOS	C	C	-	-	C	-	-
HCM 95th %tile Q(veh)	0.7	0.5	-	-	0.8	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	80	0	943	688	60
Future Vol, veh/h	0	80	0	943	688	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	3	2
Mvmt Flow	0	89	0	1048	764	67

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	416	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	586	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	586	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	12.24	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	586	-	-
HCM Lane V/C Ratio	-	0.152	-	-
HCM Control Delay (s/veh)	-	12.2	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.5	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1506	84	0	21	0	0	0	99	0	0	0
Future Vol, veh/h	0	1506	84	0	21	0	0	0	99	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	3	13	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1637	91	0	23	0	0	0	108	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	818
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	274
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	26.42
HCM LOS			D

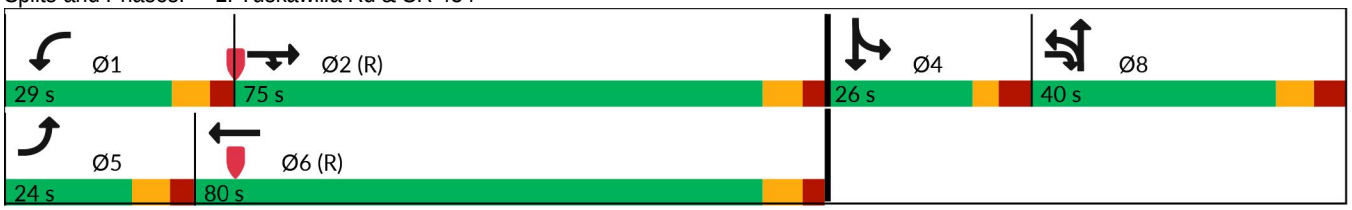
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	274	-	-	-
HCM Lane V/C Ratio	0.393	-	-	-
HCM Control Delay (s/veh)	26.4	-	-	-
HCM Lane LOS	D	-	-	-
HCM 95th %tile Q(veh)	1.8	-	-	-

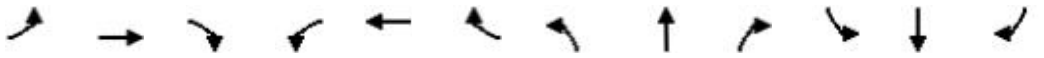
Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	153	1135	574	209	1230	781	218	107	164
Future Volume (vph)	153	1135	574	209	1230	781	218	107	164
Turn Type	Prot	NA	pt+ov	Prot	NA	Split	NA	Split	NA
Protected Phases	5	2	2 8	1	6	8	8	4	4
Permitted Phases									
Detector Phase	5	2	2 8	1	6	8	8	4	4
Switch Phase									
Minimum Initial (s)	6.0	15.0		6.0	15.0	6.0	6.0	6.0	6.0
Minimum Split (s)	13.8	22.8		13.8	22.8	14.9	14.9	13.3	13.3
Total Split (s)	24.0	75.0		29.0	80.0	40.0	40.0	26.0	26.0
Total Split (%)	14.1%	44.1%		17.1%	47.1%	23.5%	23.5%	15.3%	15.3%
Yellow Time (s)	4.9	4.9		4.9	4.9	4.8	4.8	3.4	3.4
All-Red Time (s)	2.9	2.9		2.9	2.9	4.1	4.1	3.9	3.9
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.8	7.8		7.8	7.8	8.9	8.9	7.3	7.3
Lead/Lag	Lead	Lag		Lead	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes	Yes				
Recall Mode	None	C-Min		None	C-Min	None	None	None	None

Intersection Summary

Cycle Length: 170
Actuated Cycle Length: 170
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Description: signal timing improvements

Splits and Phases: 1: Tuskawilla Rd & SR 434





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1135	574	209	1230	37	781	218	142	107	164	36
Future Volume (veh/h)	153	1135	574	209	1230	37	781	218	142	107	164	36
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1841	1870	1826	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	156	1158	586	213	1255	38	797	222	145	109	167	37
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	4	2	5	2	2	2	2	2
Cap, veh/h	170	1405	917	222	1472	45	617	193	126	196	163	36
Arrive On Green	0.10	0.40	0.40	0.12	0.42	0.42	0.18	0.18	0.18	0.11	0.11	0.11
Sat Flow, veh/h	1781	3554	1585	1781	3466	105	3374	1056	690	1781	1483	329
Grp Volume(v), veh/h	156	1158	586	213	633	660	797	0	367	109	0	204
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1749	1822	1687	0	1746	1781	0	1811
Q Serve(g_s), s	14.8	49.7	42.1	20.2	55.5	55.6	31.1	0.0	31.1	9.9	0.0	18.7
Cycle Q Clear(g_c), s	14.8	49.7	42.1	20.2	55.5	55.6	31.1	0.0	31.1	9.9	0.0	18.7
Prop In Lane	1.00		1.00	1.00		0.06	1.00		0.40	1.00		0.18
Lane Grp Cap(c), veh/h	170	1405	917	222	743	774	617	0	319	196	0	199
V/C Ratio(X)	0.92	0.82	0.64	0.96	0.85	0.85	1.29	0.00	1.15	0.56	0.00	1.02
Avail Cap(c_a), veh/h	170	1405	917	222	743	774	617	0	319	196	0	199
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	76.2	46.1	24.0	74.0	44.1	44.1	69.4	0.0	69.5	71.7	0.0	75.7
Incr Delay (d2), s/veh	46.3	5.6	3.4	48.7	11.9	11.5	143.0	0.0	97.0	4.3	0.0	70.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	23.1	24.7	12.3	26.5	27.6	25.7	0.0	22.6	4.8	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	122.5	51.7	27.4	122.6	55.9	55.6	212.4	0.0	166.5	76.1	0.0	145.8
LnGrp LOS	F	D	C	F	E	E	F		F	E		F
Approach Vol, veh/h		1900			1506			1164			313	
Approach Delay, s/veh		50.0			65.2			197.9			121.5	
Approach LOS		D			E			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	29.0	75.0		26.0	24.0	80.0		40.0				
Change Period (Y+Rc), s	7.8	7.8		7.3	7.8	7.8		8.9				
Max Green Setting (Gmax), s	21.2	67.2		18.7	16.2	72.2		31.1				
Max Q Clear Time (g_c+I1), s	22.2	51.7		20.7	16.8	57.6		33.1				
Green Ext Time (p_c), s	0.0	11.7		0.0	0.0	9.6		0.0				

Intersection Summary	
HCM 7th Control Delay, s/veh	94.6
HCM 7th LOS	F

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	1778	61	131	1856	72	0	0	86	0	0	4
Future Vol, veh/h	75	1778	61	131	1856	72	0	0	86	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	345	-	-	-	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	2	2	2	2	5	2	2	2	2	2	2	2
Mvmt Flow	76	1796	62	132	1875	73	0	0	87	0	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1947	0	0	1858	0	0	-	-	929
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32
Pot Cap-1 Maneuver	297	-	-	322	-	-	0	0	269
Stage 1	-	-	-	-	-	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	297	-	-	322	-	-	-	0	269
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0.83	1.51	24.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	269	297	-	-	322	-	-
HCM Lane V/C Ratio	0.322	0.255	-	-	0.411	-	-
HCM Control Delay (s/veh)	24.6	21.2	-	-	23.8	-	-
HCM Lane LOS	C	C	-	-	C	-	-
HCM 95th %tile Q(veh)	1.3	1	-	-	1.9	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	153	0	1138	840	104
Future Vol, veh/h	0	153	0	1138	840	104
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	166	0	1237	913	113

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	513	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	506	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	506	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	15.55	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	506	-	-
HCM Lane V/C Ratio	-	0.329	-	-
HCM Control Delay (s/veh)	-	15.6	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	1.4	-	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑	↱		↑↑↑				↱			
Traffic Vol, veh/h	0	1732	157	0	16	0	0	0	134	0	0	0
Future Vol, veh/h	0	1732	157	0	16	0	0	0	134	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	150	50	-	-	-	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	1883	171	0	17	0	0	0	146	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	0	-	-	0	-	-	941
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	-	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	-	-	-	3.92
Pot Cap-1 Maneuver	0	-	-	0	-	0	0	0	227
Stage 1	0	-	-	0	-	0	0	0	-
Stage 2	0	-	-	0	-	0	0	0	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	0	227
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	0	-
Stage 1	-	-	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	-	-	0	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	45.51
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBT
Capacity (veh/h)	227	-	-	-
HCM Lane V/C Ratio	0.642	-	-	-
HCM Control Delay (s/veh)	45.5	-	-	-
HCM Lane LOS	E	-	-	-
HCM 95th %tile Q(veh)	3.9	-	-	-

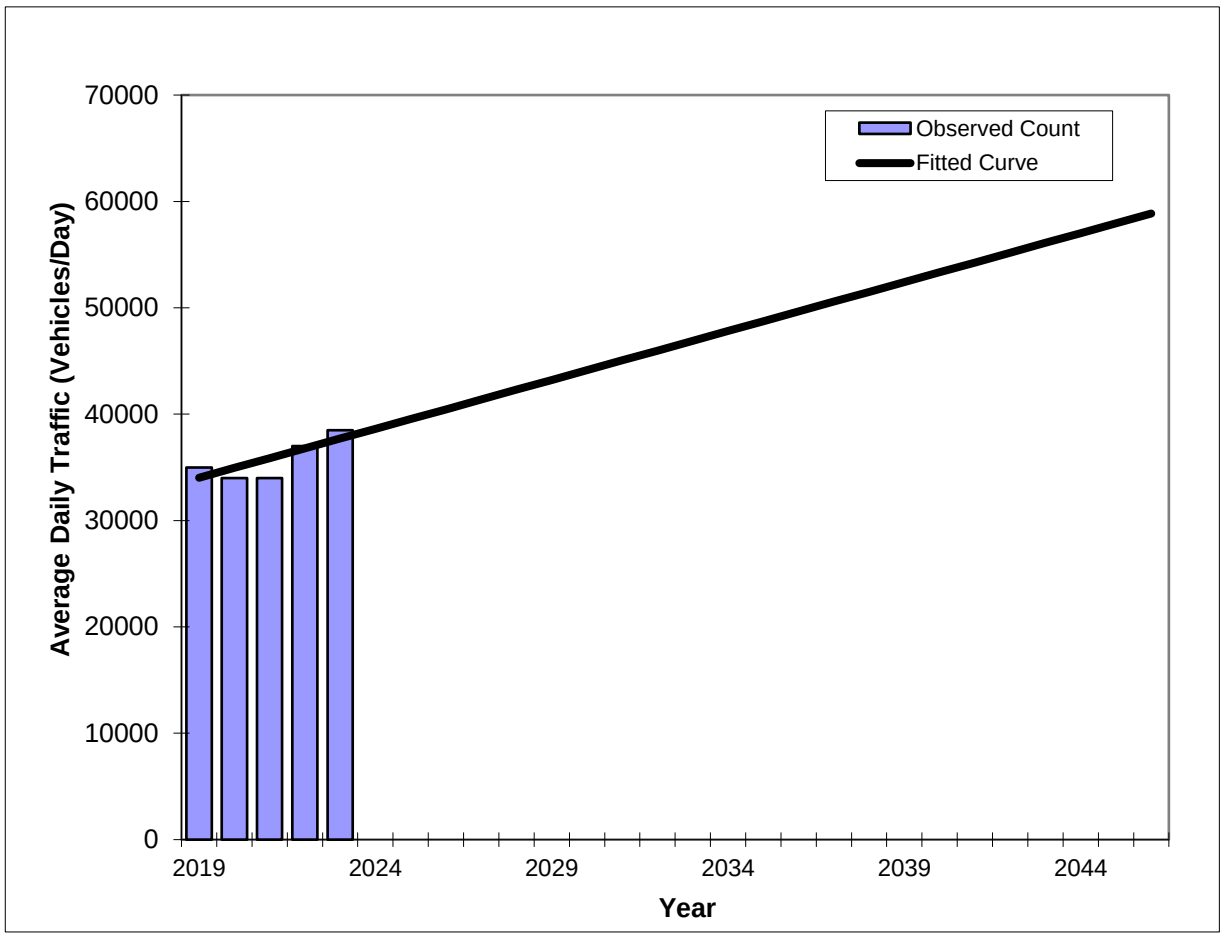
APPENDIX G
AADT Historical Trend

Traffic Trends - V2023

-- ON SR-434, 0.464 MI. E OF SR-419 (UCLP) NW

FM #	
Location	**1**

County:	Seminole (77)
Station #:	771002
Roadway:	



Annual Trend Increase:	920
Trend R-squared:	74.96%
Trend Annual Historic Growth Rate:	2.70%
Trend Growth Rate (2023 to Design Year)	2.44%
Printed:	12/5/2024

Linear Growth Option

	Traffic (ADT/AADT)	
Year	**Count***	**Trend**
2019	35,000	34,020
2020	34,000	34,940
2021	34,000	35,860
2022	37,000	36,780
2023	38,500	37,700
2026 Opening Year Trend		
2026	N/A	40,460
2036 Interim Year Trend		
2036	N/A	49,660
2046 Design Year Trend		
2046	N/A	58,860
FSUTMS Forecasts/Trends		

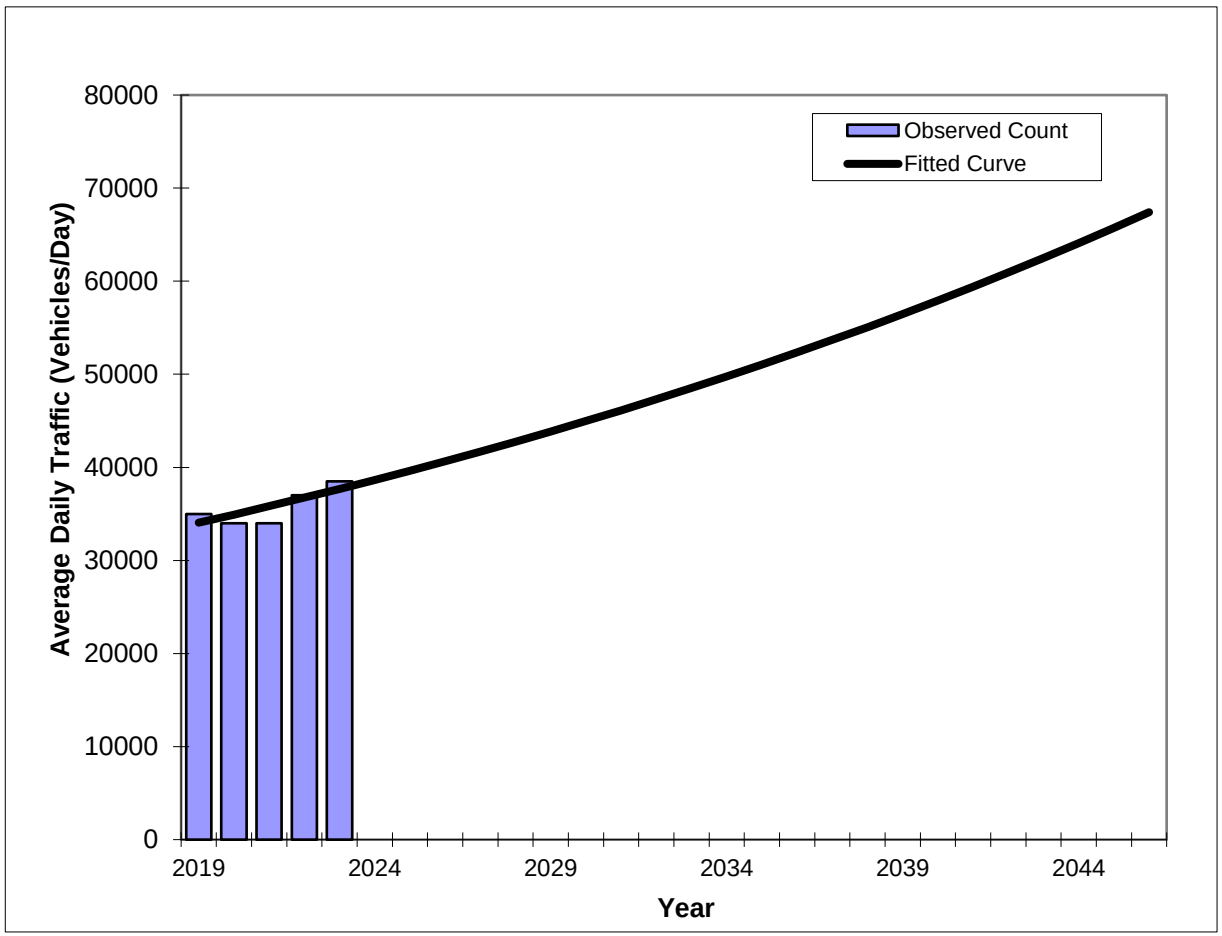
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.464 MI. E OF SR-419 (UCLP) NW

FM #	
Location	**1**

County:	Seminole (77)
Station #:	771002
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	35,000	34,060
2020	34,000	34,930
2021	34,000	35,830
2022	37,000	36,750
2023	38,500	37,690
2026 Opening Year Trend		
2026	N/A	40,660
2036 Interim Year Trend		
2036	N/A	52,350
2046 Design Year Trend		
2046	N/A	67,410
FSUTMS Forecasts/Trends		

Trend R-squared:	75.07%
Compounded Annual Historic Growth Rate:	2.56%
Compounded Growth Rate (2023 to Design Year)	2.56%
Printed:	12/5/2024

Exponential Growth Option

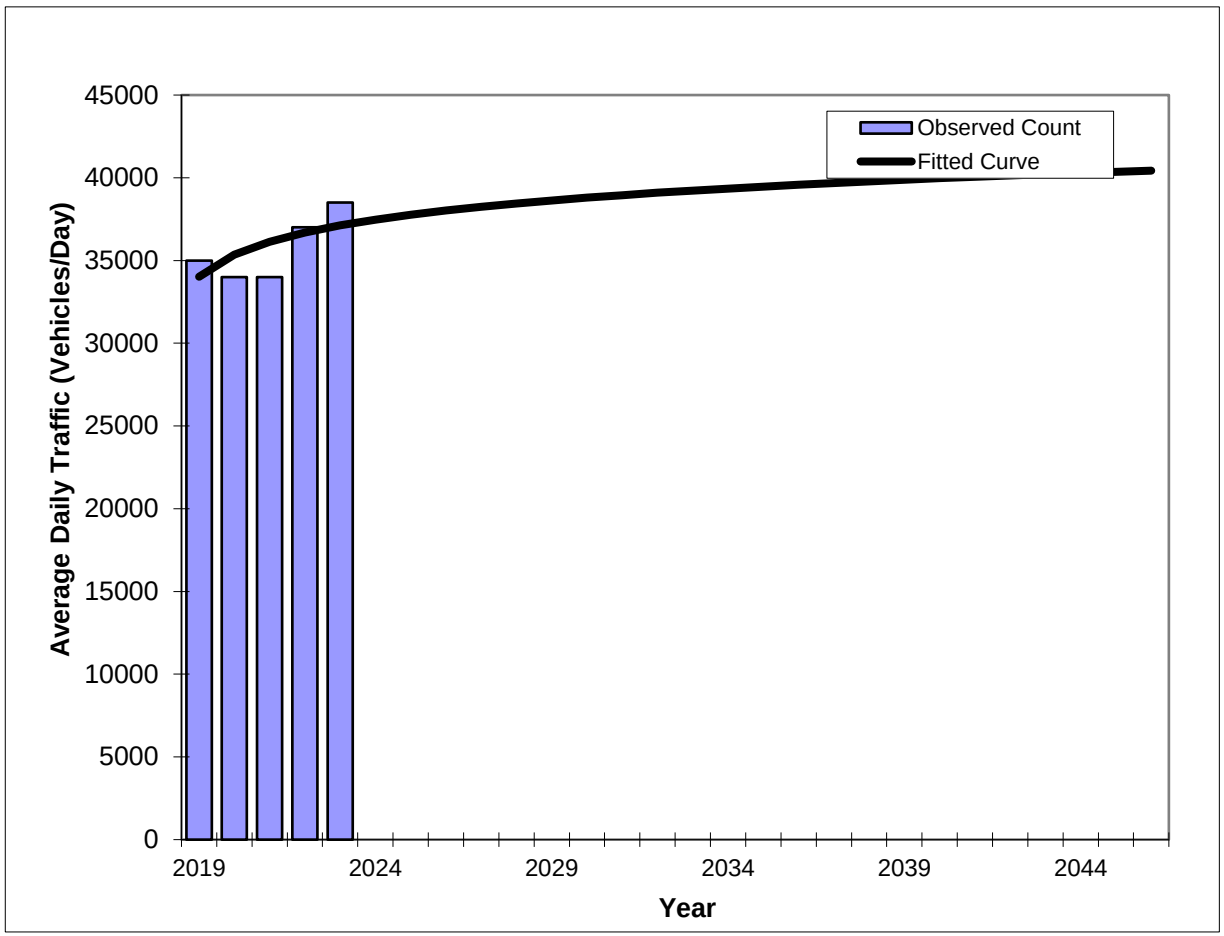
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.464 MI. E OF SR-419 (UCLP) NW

FM #	
Location	**1**

County:	Seminole (77)
Station #:	771002
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	35,000	34,020
2020	34,000	35,350
2021	34,000	36,130
2022	37,000	36,690
2023	38,500	37,120
2026 Opening Year Trend		
2026	N/A	38,020
2036 Interim Year Trend		
2036	N/A	39,580
2046 Design Year Trend		
2046	N/A	40,430
FSUTMS Forecasts/Trends		

Trend R-squared:	53.02%
Compounded Annual Historic Growth Rate:	2.20%
Compounded Growth Rate (2023 to Design Year)	0.37%
Printed:	12/5/2024

Decaying Exponential Growth Option

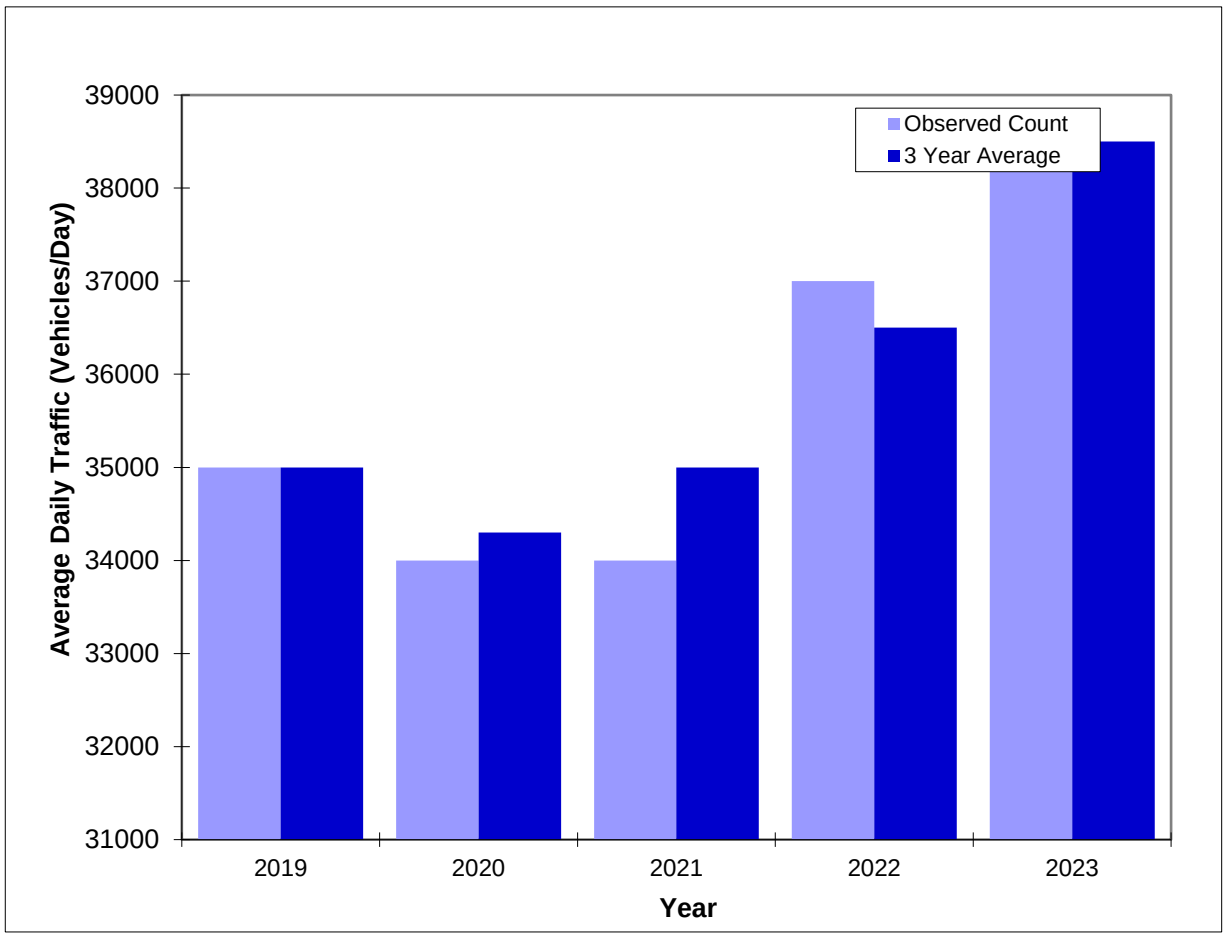
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.464 MI. E OF SR-419 (UCLP) NW

FM #	
Location	**1**

County:	Seminole (77)
Station #:	771002
Roadway:	



Year	Traffic (ADT/AADT) Count*	3 Yr Avg
2019	35,000	35,000
2020	34,000	34,300
2021	34,000	35,000
2022	37,000	36,500
2023	38,500	38,500

Actual AADT vs 3 Year Average

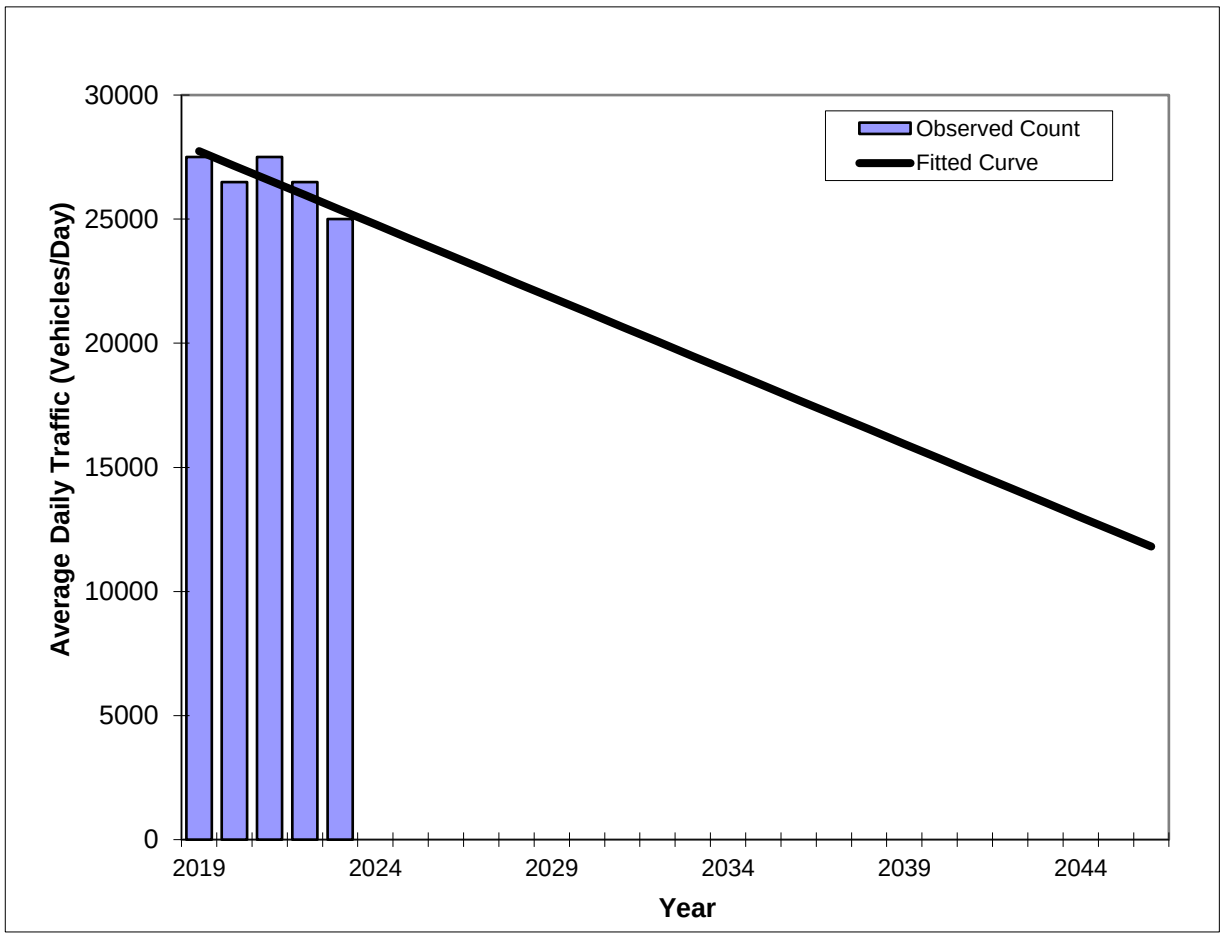
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.618 MI. E OF TUSKAWILA RD (UVL)

FM #	
Location	**1**

County:	Seminole (77)
Station #:	770278
Roadway:	



Annual Trend Decrease:	590
Trend R-squared:	90.37%
Trend Annual Historic Growth Rate:	-2.13%
Trend Growth Rate (2023 to Design Year)	-2.32%
Printed:	12/5/2024

Linear Growth Option

	Traffic (ADT/AADT)	
Year	**Count***	**Trend**
2019	27,500	27,740
2020	26,500	27,150
2021	27,500	26,560
2022	26,500	25,970
2023	25,000	25,380
2026 Opening Year Trend		
2026	N/A	23,610
2036 Interim Year Trend		
2036	N/A	17,710
2046 Design Year Trend		
2046	N/A	11,810
FSUTMS Forecasts/Trends		

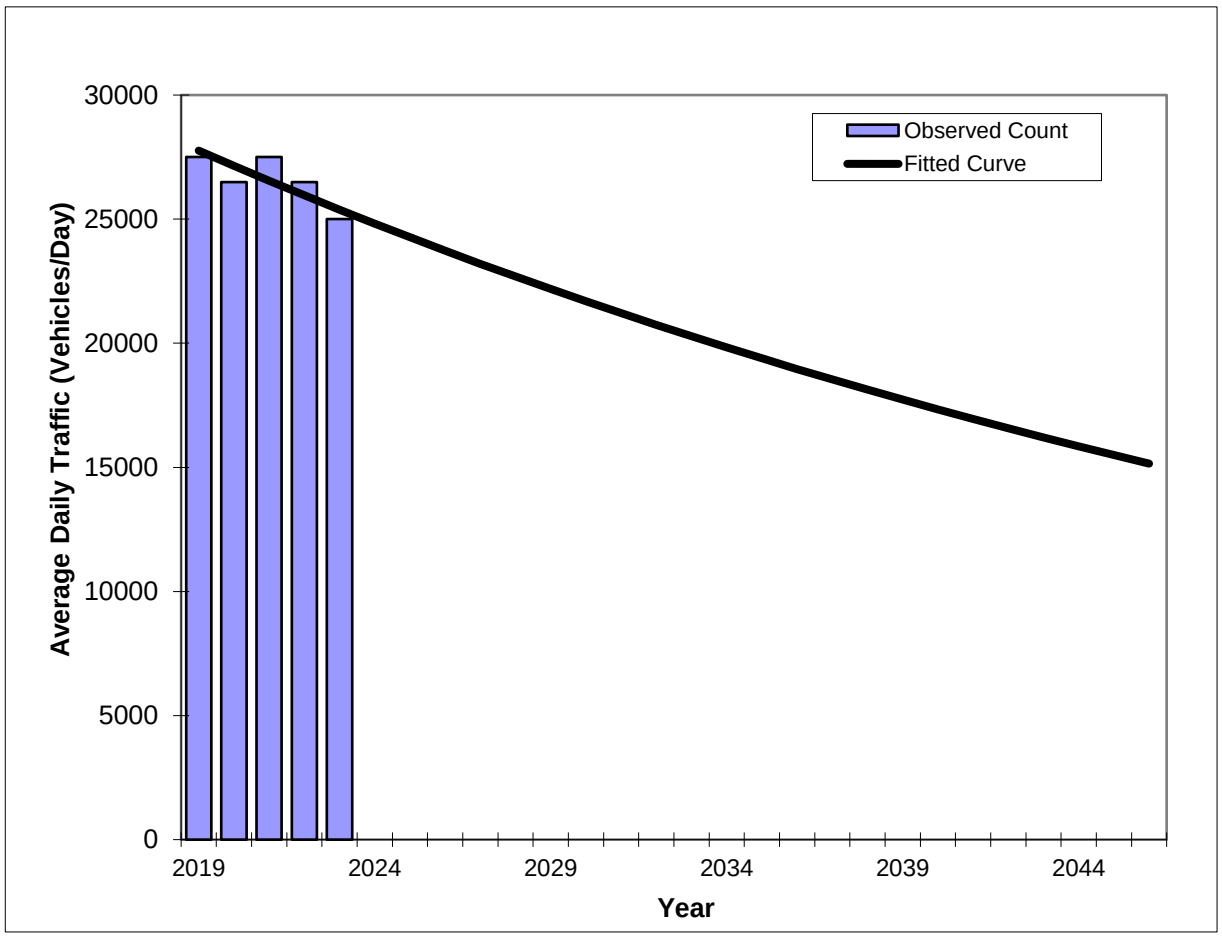
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.618 MI. E OF TUSKAWILA RD (UVL)

FM #	
Location	**1**

County:	Seminole (77)
Station #:	770278
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	27,500	27,760
2020	26,500	27,150
2021	27,500	26,550
2022	26,500	25,960
2023	25,000	25,380
2026 Opening Year Trend		
2026	N/A	23,730
2036 Interim Year Trend		
2036	N/A	18,960
2046 Design Year Trend		
2046	N/A	15,150
FSUTMS Forecasts/Trends		

*Axle-Adjusted

Trend R-squared:	89.55%
Compounded Annual Historic Growth Rate:	-2.22%
Compounded Growth Rate (2023 to Design Year)	-2.22%
Printed:	12/5/2024

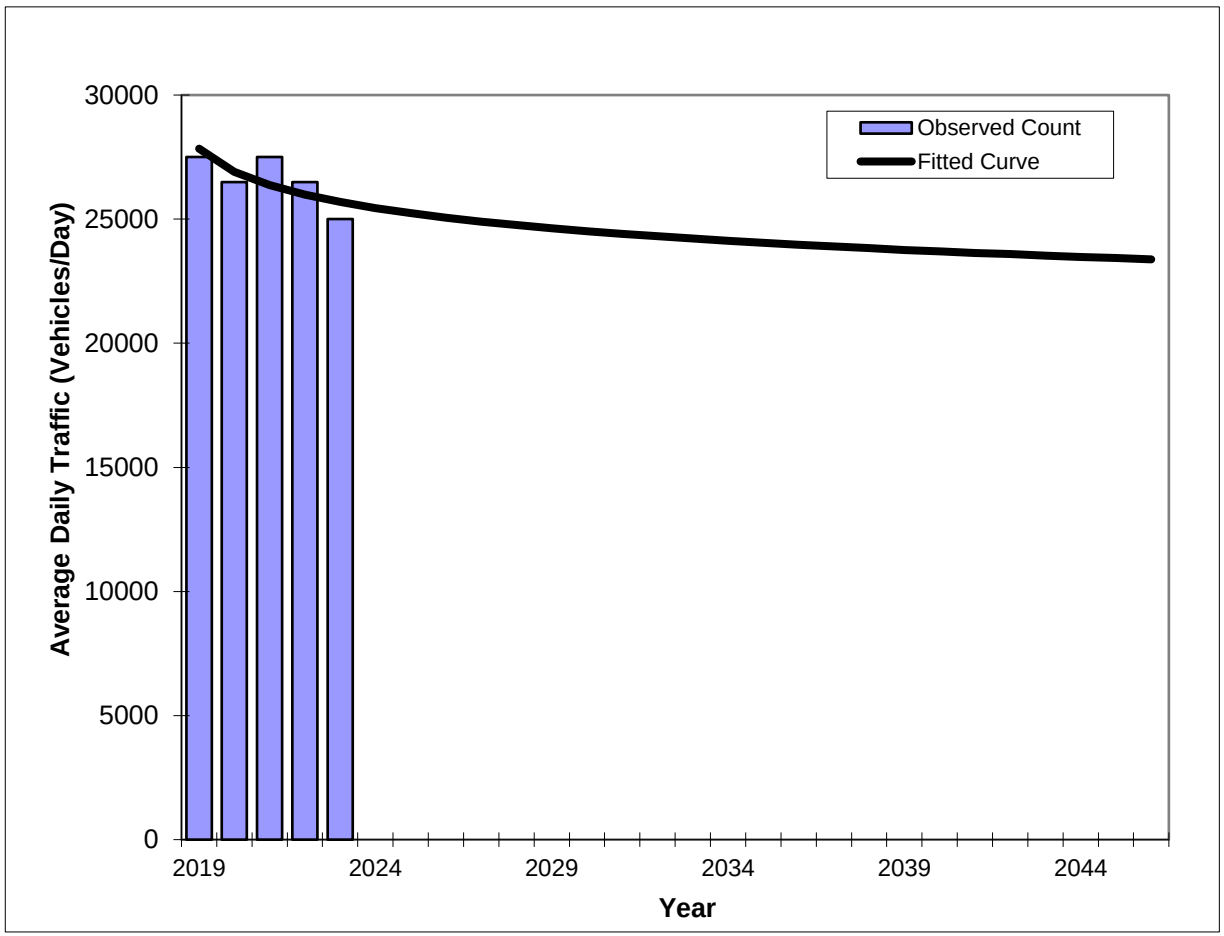
Exponential Growth Option

Traffic Trends - V2023

-- ON SR-434, 0.618 MI. E OF TUSKAWILA RD (UVL)

FM #	
Location	**1**

County:	Seminole (77)
Station #:	770278
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	27,500	27,840
2020	26,500	26,910
2021	27,500	26,370
2022	26,500	25,990
2023	25,000	25,690
2026 Opening Year Trend		
2026	N/A	25,060
2036 Interim Year Trend		
2036	N/A	23,970
2046 Design Year Trend		
2046	N/A	23,380
FSUTMS Forecasts/Trends		

Trend R-squared:	75.24%
Compounded Annual Historic Growth Rate:	-1.99%
Compounded Growth Rate (2023 to Design Year)	-0.41%
Printed:	12/5/2024

Decaying Exponential Growth Option

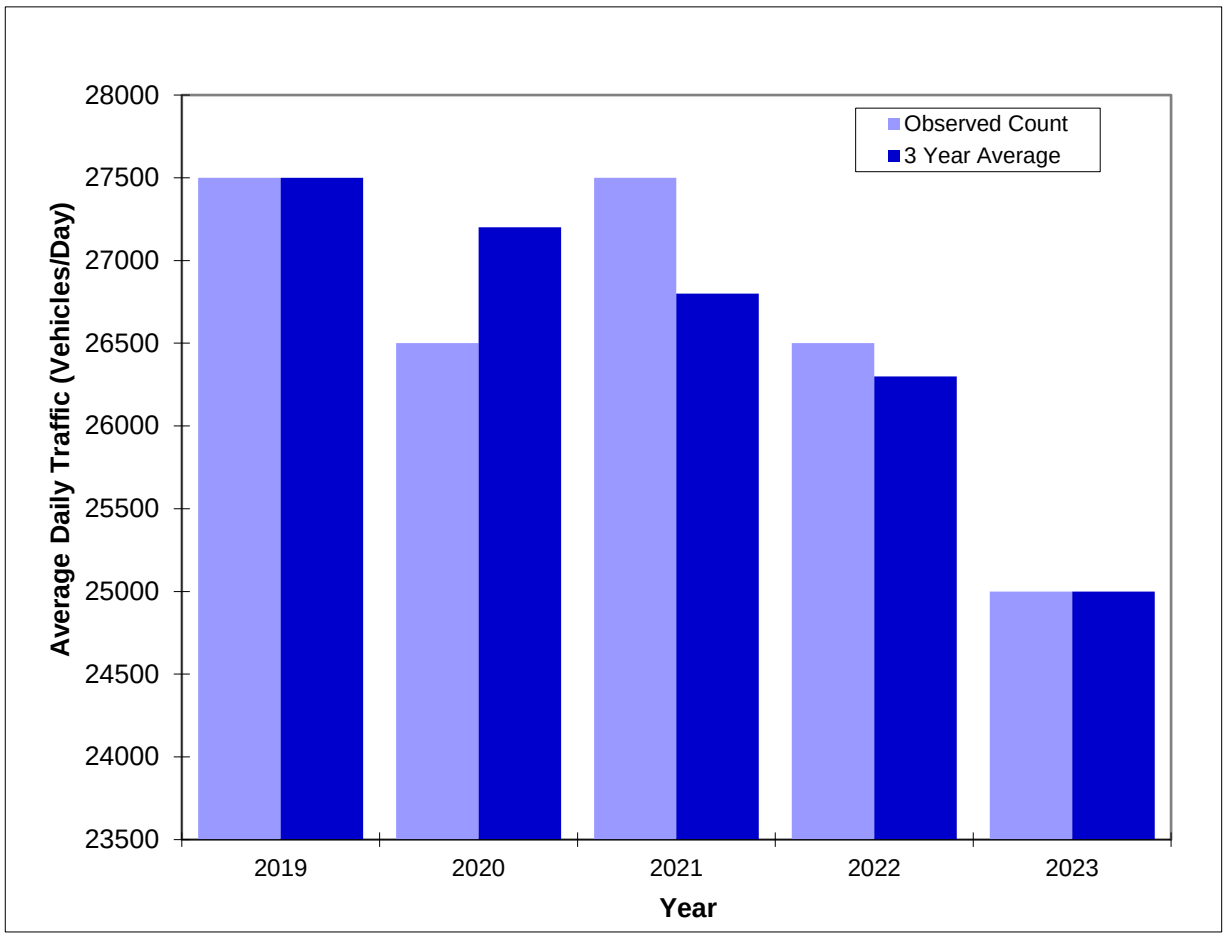
***Axle-Adjusted**

Traffic Trends - V2023

-- ON SR-434, 0.618 MI. E OF TUSKAWILA RD (UVL)

FM #	
Location	**1**

County:	Seminole (77)
Station #:	770278
Roadway:	



Year	Traffic (ADT/AADT) Count*	3 Yr Avg
2019	27,500	27,500
2020	26,500	27,200
2021	27,500	26,800
2022	26,500	26,300
2023	25,000	25,000

Actual AADT vs 3 Year Average

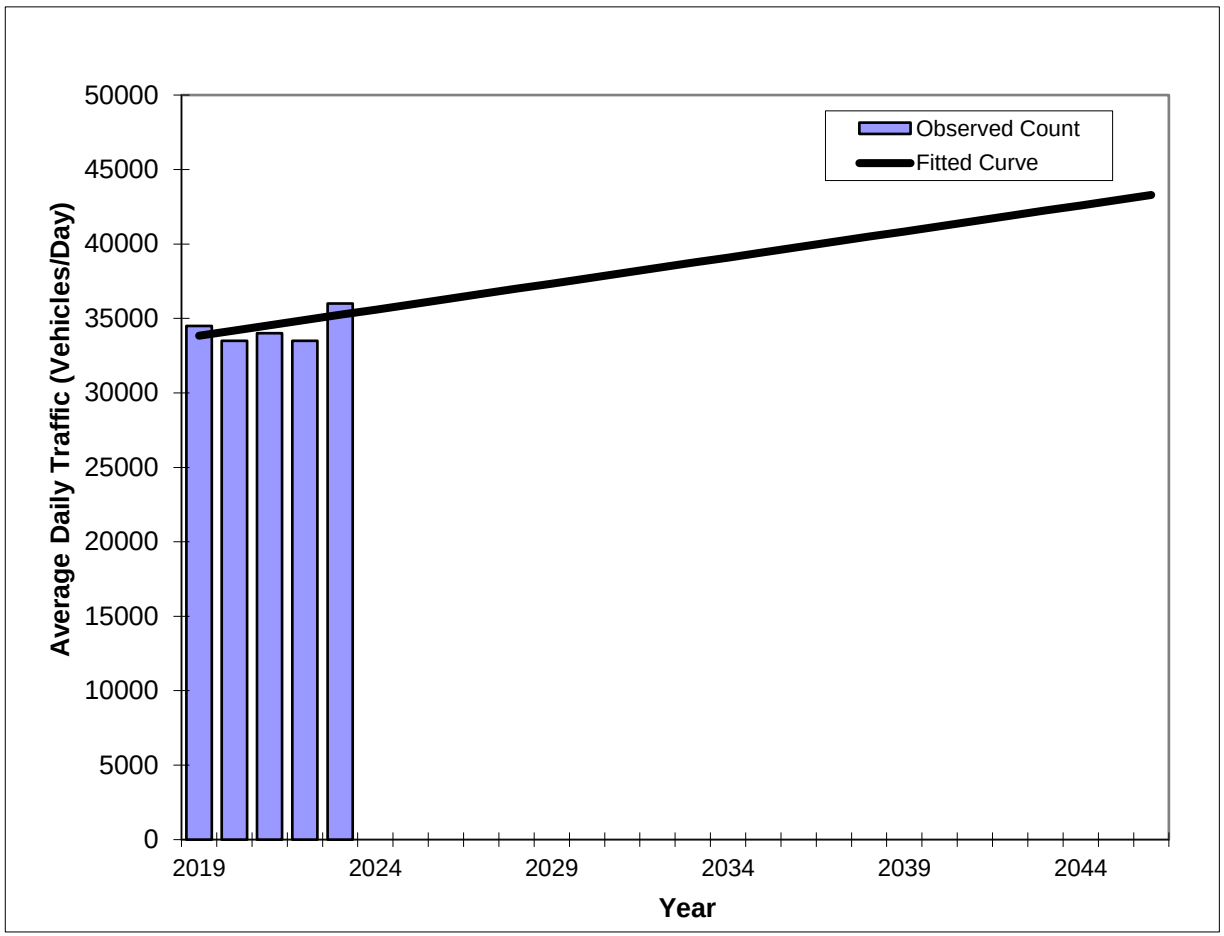
***Axle-Adjusted**

Traffic Trends - V2023

-- TUSKAWILLA RD, N OF SR-426/ALOMA AVE - OFF SYSTEM

FM #	
Location	**1**

County:	Seminole (77)
Station #:	778065
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	34,500	33,840
2020	33,500	34,190
2021	34,000	34,540
2022	33,500	34,890
2023	36,000	35,240
2026 Opening Year Trend		
2026	N/A	36,290
2036 Interim Year Trend		
2036	N/A	39,790
2046 Design Year Trend		
2046	N/A	43,290
FSUTMS Forecasts/Trends		

Annual Trend Increase:	350
Trend R-squared:	39.11%
Trend Annual Historic Growth Rate:	1.03%
Trend Growth Rate (2023 to Design Year)	0.99%
Printed:	12/5/2024

Linear Growth Option

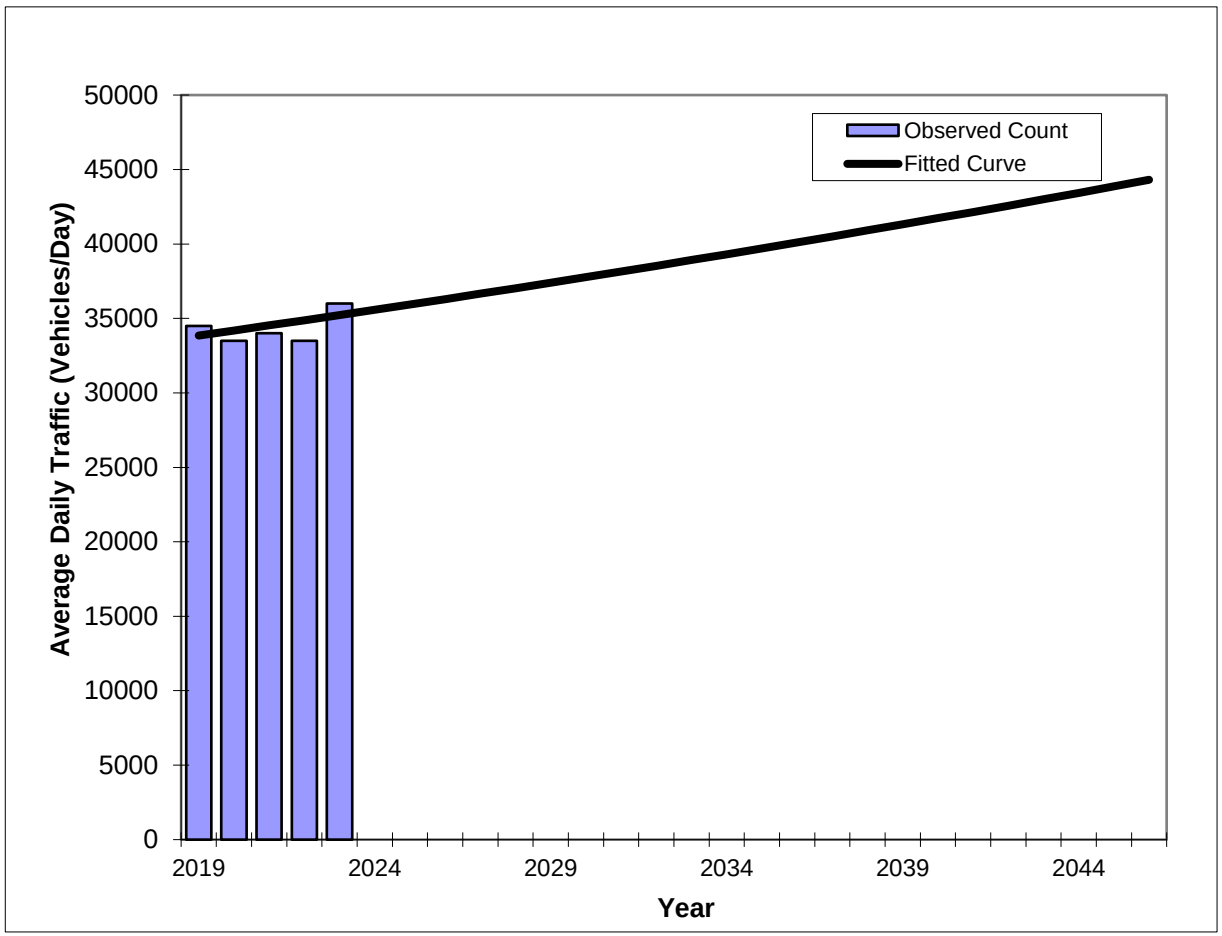
***Axle-Adjusted**

Traffic Trends - V2023

-- TUSKAWILLA RD, N OF SR-426/ALOMA AVE - OFF SYSTEM

FM #	
Location	**1**

County:	Seminole (77)
Station #:	778065
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	34,500	33,850
2020	33,500	34,190
2021	34,000	34,530
2022	33,500	34,880
2023	36,000	35,230
2026 Opening Year Trend		
2026	N/A	36,300
2036 Interim Year Trend		
2036	N/A	40,100
2046 Design Year Trend		
2046	N/A	44,310
FSUTMS Forecasts/Trends		

*Axle-Adjusted

Trend R-squared:	38.68%
Compounded Annual Historic Growth Rate:	1.00%
Compounded Growth Rate (2023 to Design Year)	1.00%
Printed:	12/5/2024

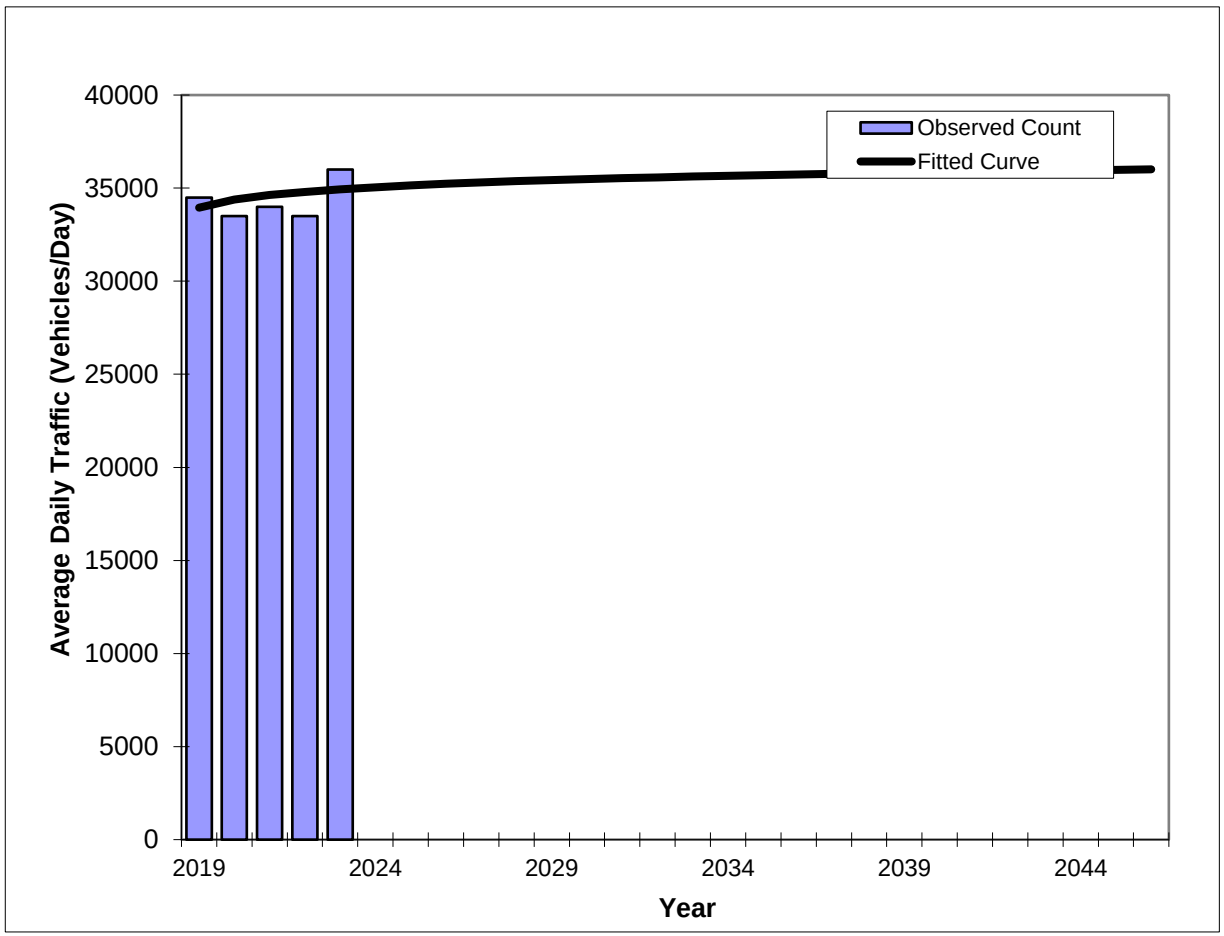
Exponential Growth Option

Traffic Trends - V2023

-- TUSKAWILLA RD, N OF SR-426/ALOMA AVE - OFF SYSTEM

FM #	
Location	**1**

County:	Seminole (77)
Station #:	778065
Roadway:	



Year	Traffic (ADT/AADT) Count*	Trend
2019	34,500	33,950
2020	33,500	34,380
2021	34,000	34,630
2022	33,500	34,800
2023	36,000	34,940
2026 Opening Year Trend		
2026	N/A	35,230
2036 Interim Year Trend		
2036	N/A	35,730
2046 Design Year Trend		
2046	N/A	36,010
FSUTMS Forecasts/Trends		

Trend R-squared:	19.65%
Compounded Annual Historic Growth Rate:	0.72%
Compounded Growth Rate (2023 to Design Year)	0.13%
Printed:	12/5/2024

Decaying Exponential Growth Option

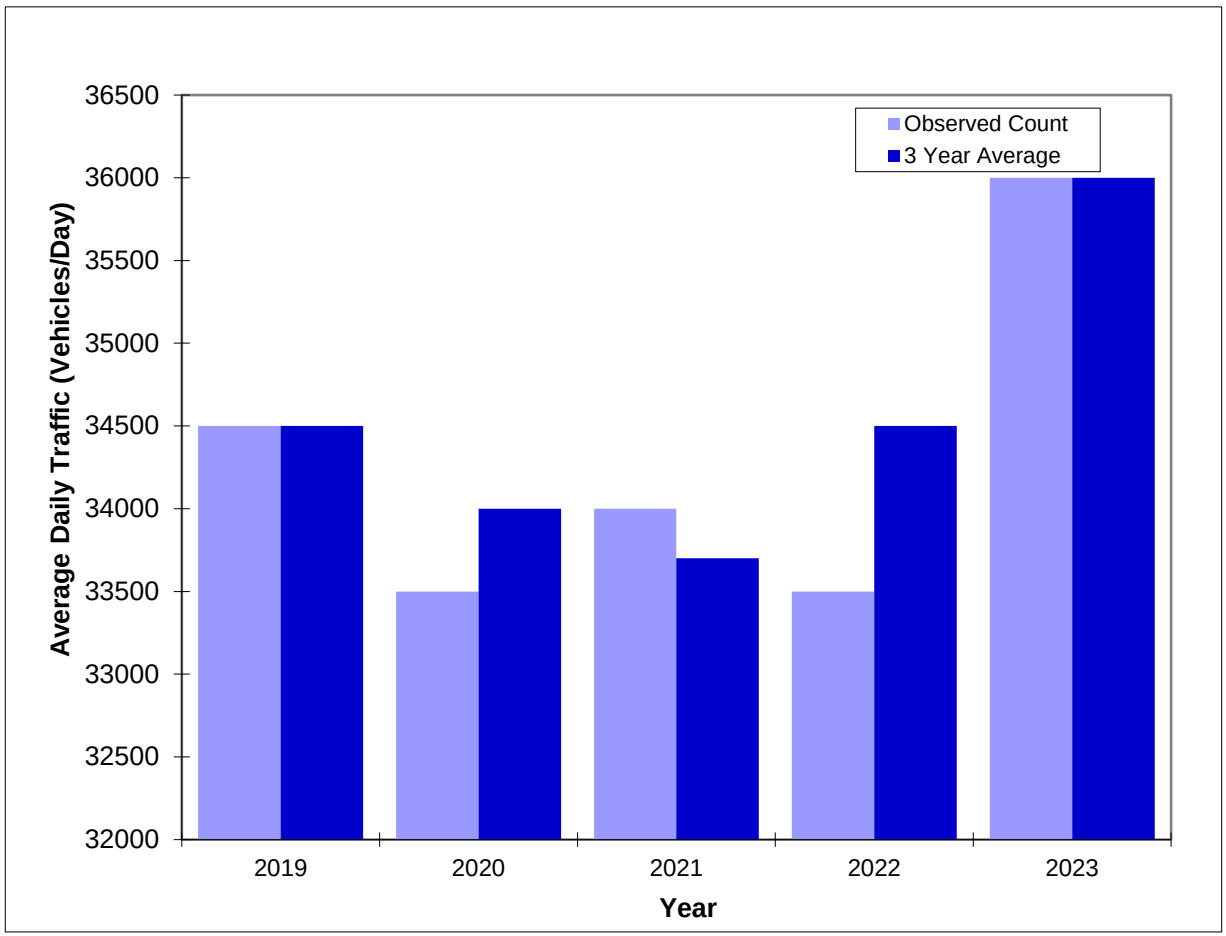
***Axle-Adjusted**

Traffic Trends - V2023

-- TUSKAWILLA RD, N OF SR-426/ALOMA AVE - OFF SYSTEM

FM #	
Location	**1**

County:	Seminole (77)
Station #:	778065
Roadway:	



Year	Traffic (ADT/AADT) Count*	3 Yr Avg
2019	34,500	34,500
2020	33,500	34,000
2021	34,000	33,700
2022	33,500	34,500
2023	36,000	36,000

Actual AADT vs 3 Year Average

***Axle-Adjusted**

Historical Trends Analysis

FDOT Site	Location	Years of Historical AADT	Historic Trend Analysis		
			Type	R Square	Annual Growth Rate
#778065	TUSKAWILLA RD, N OF SR-426/ALOMA AVE - OF	2019 to 2023	Linear	**39.11%**	**1.03%**
			Exponential	38.68%	1.00%
			Decaying Exponential	19.65%	0.72%
#770278	ON SR-434, 0.618 MI. E OF TUSKAWILA RD (UVL	2019 to 2023	Linear	**90.37%**	**-2.13%**
			Exponential	89.55%	-2.22%
			Decaying Exponential	75.24%	-1.99%
#771002	ON SR-434, 0.464 MI. E OF SR-419 (UCLP) NW	2019 to 2023	Linear	74.96%	2.70%
			Exponential	**75.07%**	**2.56%**
			Decaying Exponential	53.02%	2.20%

APPENDIX H
ITE Land Use Code

Land Use: 945
Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and pre-made sandwiches are also commonly sold at a convenience store. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

Convenience store (Land Use 851), gasoline/service station (Land Use 944), and truck stop (Land Use 950) are related uses.

Land Use Subcategory

Multiple subcategories were added to this land use to allow for multi-variable evaluation of sites with single-variable data plots. All study sites are assigned to one of three subcategories, based on the number of vehicle fueling positions (VFP) at the site: between 2 and 8 VFP, between 9 and 15 VFP, and between 16 and 24 VFP. For each VFP range subcategory, data plots are presented with GFA as the independent variable for all time periods and trip types for which data are available. The use of both GFA and VFP (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

Further, the study sites were also assigned to one of three other subcategories, based on the gross floor area (GFA) of the convenience store at the site: between 2,000 and 4,000 square feet, between 4,000 and 5,500 square feet, and between 5,500 and 10,000 square feet. For each GFA subcategory range, data plots are presented with VFP as the independent variable for all time periods and trip types for which data are available. The use of both VFP and GFA (as the independent variable and land use subcategory, respectively) provides a significant improvement in the reliability of a trip generation estimate when compared to the single-variable data plots in prior editions of *Trip Generation Manual*.

When analyzing the convenience store/gas station land use with each combination of GFA and VFP values as described above, the two sets of data plots will produce two estimates of site-generated trips. Both values can be considered when determining a site trip generation estimate.

Data plots are also provided for three additional independent variables: AM peak hour traffic on adjacent street, PM peak hour traffic on adjacent street, and employees. These independent variables are intended to be analyzed as single independent variables and do not have sub-categories associated with them. Within the data plots and within the ITETripGen web app, these plots are found under the land use subcategory "none."

Additional Data

ITE recognizes there are existing convenience store/gas station sites throughout North America that are larger than the sites presented in the data plots. However, the ITE database does not include any site with more than 24 VFP or any site with gross floor area greater than 10,000 square feet. Submission of trip generation data for larger sites is encouraged.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), Arkansas, California, Connecticut, Delaware, Florida, Indiana, Iowa, Kentucky, Maryland, Massachusetts, Minnesota, Nevada, New Hampshire, New Jersey, Pennsylvania, Rhode Island, South Dakota, Texas, Utah, Vermont, Washington, and Wisconsin.

Source Numbers

221, 245, 274, 288, 300, 340, 350, 351, 352, 355, 359, 385, 440, 617, 718, 810, 813, 844, 850, 853, 864, 865, 867, 869, 882, 883, 888, 904, 926, 927, 936, 938, 954, 960, 962, 977, 1004, 1024, 1025, 1027, 1052

Convenience Store/Gas Station - GFA (4-5.5k) (945)

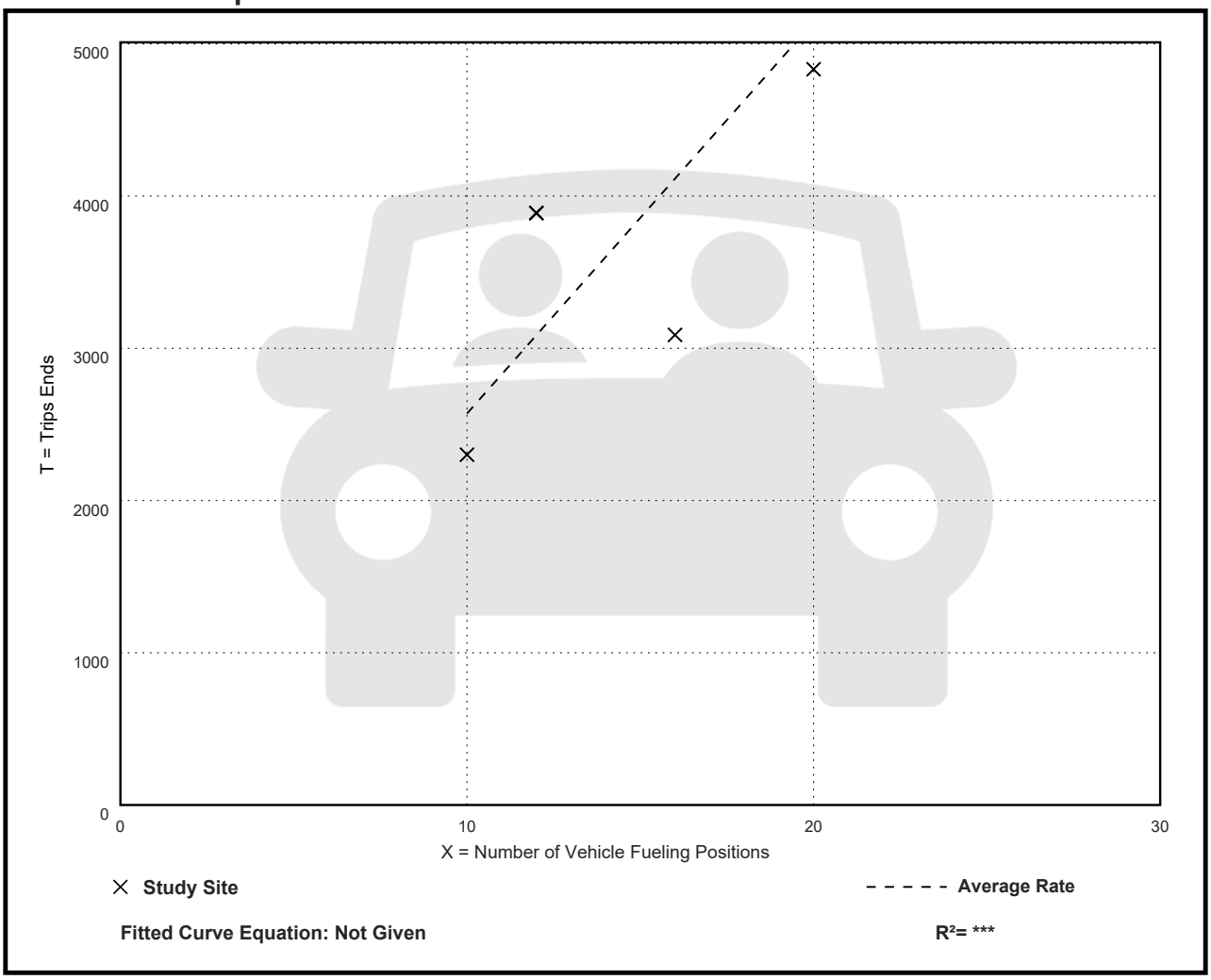
Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
257.13	193.00 - 324.17	57.53

Data Plot and Equation



Fitted Curve Equation: Not Given

R^2= ***

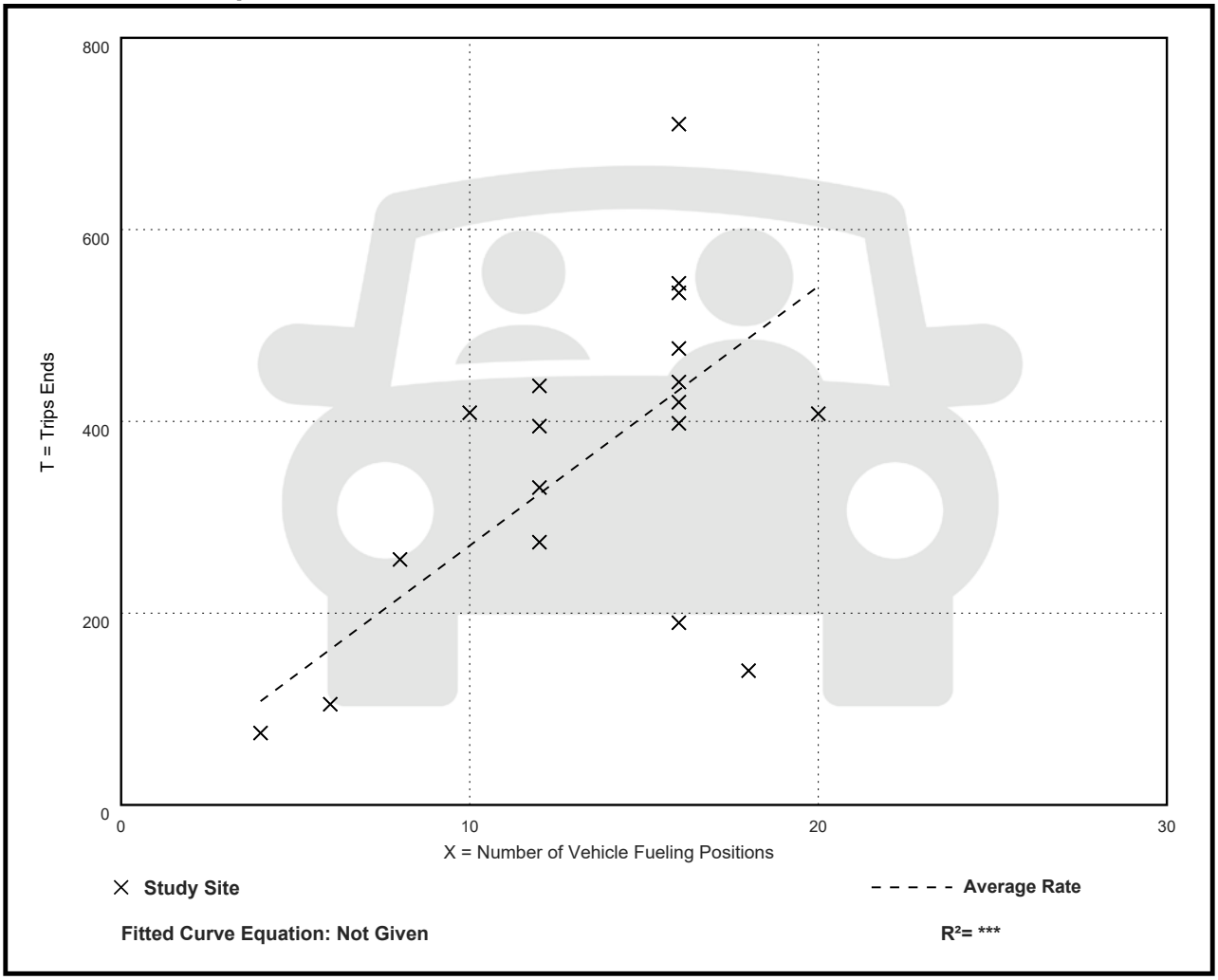
Convenience Store/Gas Station - GFA (4-5.5k) (945)

Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 18
Avg. Num. of Vehicle Fueling Positions: 13
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
27.04	7.78 - 44.38	9.88

Data Plot and Equation



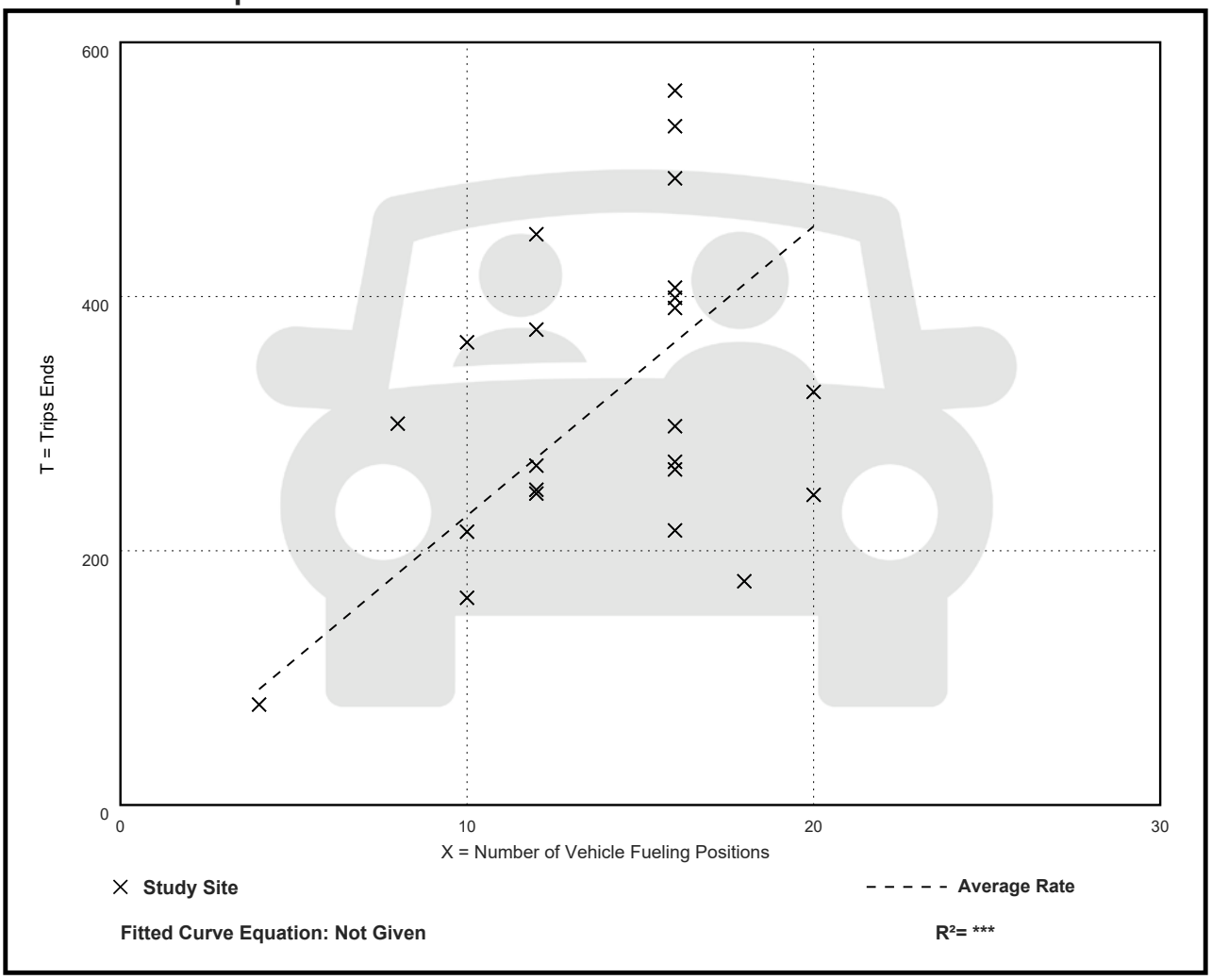
Convenience Store/Gas Station - GFA (4-5.5k) (945)

Vehicle Trip Ends vs: Vehicle Fueling Positions
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 23
Avg. Num. of Vehicle Fueling Positions: 14
Directional Distribution: 50% entering, 50% exiting

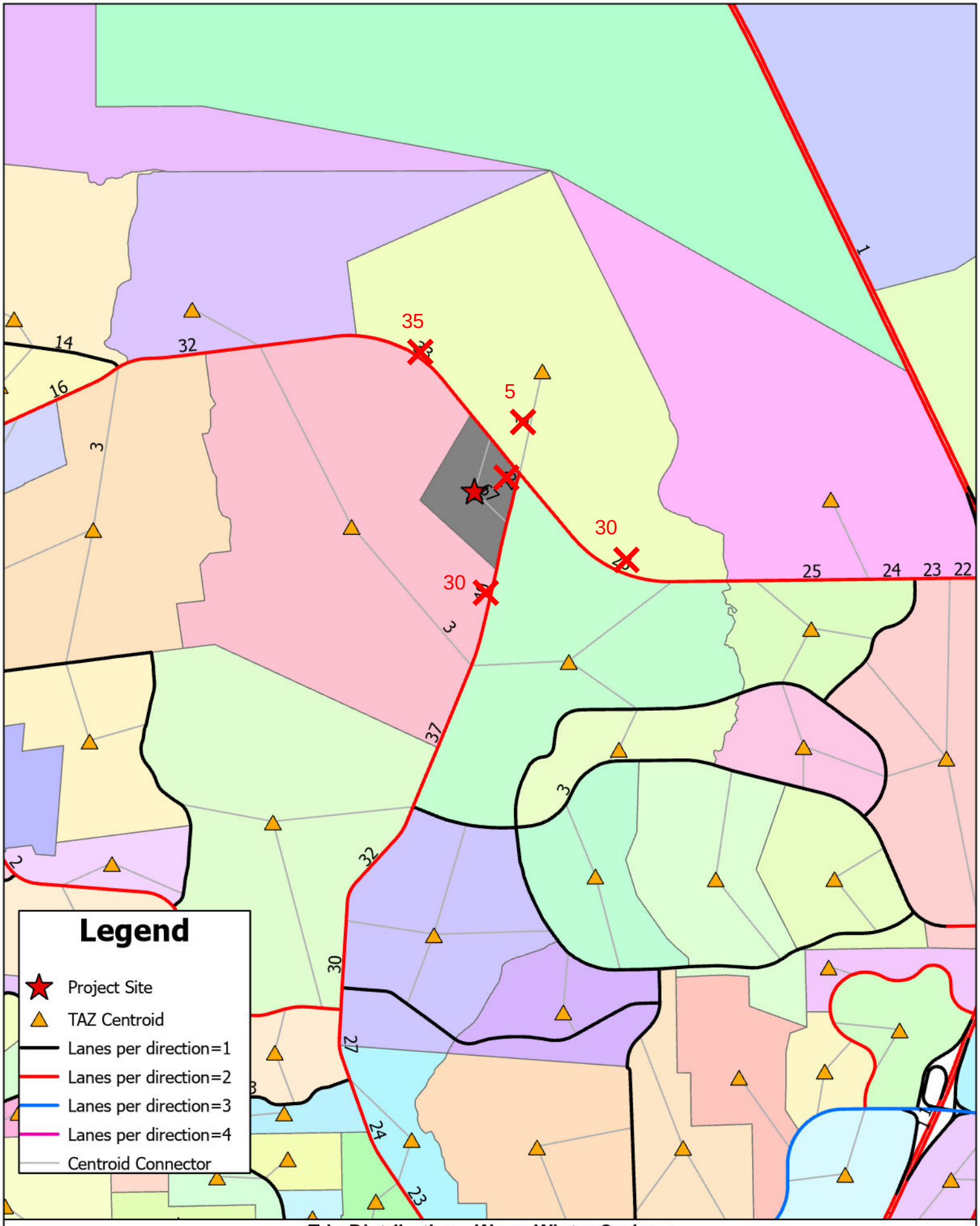
Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
22.76	9.78 - 37.50	8.49

Data Plot and Equation



APPENDIX I
CFRPMv7 Model Plot



Trip Distribution - Wawa Winter Springs
CFRPMv7 - 2025 - November 2024

APPENDIX J
Seminole County Roadway Concurrency Information

Summary of Roadway Concurrency Information

Traffic Counter ID	Roadway Name	From	To	
			Net Available Capacity	-1617
294	SR 434	DeLeon St	E-W Expressway	
			Current Traffic Count	23955
			Roadway Link Capacity	18270
			Committed Trips	293
			Net Available Capacity	-5978
295	SR 434	E-W Expressway	Springs Ave	
			Current Traffic Count	27563
			Roadway Link Capacity	48000
			Committed Trips	0
			Net Available Capacity	20437
296	SR 434	Springs Ave	Tuskawilla Rd	
			Current Traffic Count	27610
			Roadway Link Capacity	48000
			Committed Trips	293
			Net Available Capacity	20097

This information has been provided by Tony Nelson, P.E. at Seminole County Engineering and is current information as of the above referenced date.

Summary of Roadway Concurrency Information

Traffic Counter ID	Roadway Name	From	To	
297	SR 434	Tuskawilla Rd	SR 419	
			Current Traffic Count	36344
			Roadway Link Capacity	48000
			Committed Trips	0
			Net Available Capacity	11656
298	SR 434	SR 419	Belle Ave	
			Current Traffic Count	24671
			Roadway Link Capacity	48000
			Committed Trips	0
			Net Available Capacity	23329
299	SR 434	Belle Ave	US 17-92	
			Current Traffic Count	33165
			Roadway Link Capacity	48000
			Committed Trips	0
			Net Available Capacity	14835
300	SR 434	US 17-92	CR 427	
			Current Traffic Count	23146

This information has been provided by Tony Nelson, P.E. at Seminole County Engineering and is current information as of the above referenced date.

Summary of Roadway Concurrency Information

Traffic Counter ID	Roadway Name	From	To	
				Net Available Capacity 15958
325	TRIPLET LAKE	US 17-92	N. Triplet Lake Dr	
				Current Traffic Count 2483
				Roadway Link Capacity 19360
				Committed Trips 0
				Net Available Capacity 16877
326	TUSKAWILLA RD	SR 434	Trotwood Blvd	
				Current Traffic Count 21241
				Roadway Link Capacity 42560
				Committed Trips 0
				Net Available Capacity 21319
327	TUSKAWILLA RD	Trotwood Blvd	Winter Springs Blvd	
				Current Traffic Count 20748
				Roadway Link Capacity 42560
				Committed Trips 8
				Net Available Capacity 21804

This information has been provided by Tony Nelson, P.E. at Seminole County Engineering and is current information as of the above referenced date.

PUBLIC HEARINGS AGENDA ITEM 401

PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AGENDA | SEPTEMBER 11, 2025 REGULAR MEETING

TITLE

Winter Springs Marketplace Additional Parking – Site/Final Engineering and Development Agreement.

SUMMARY

The development site consists of undeveloped land that is currently part of the Winter Springs Marketplace development. The applicant is proposing to modify the existing parking area and stormwater pond by proposing 10 additional parking spaces for the adjacent Wawa development. The existing site was permitted under the Winter Springs Marketplace (2021-00002152). This site plan was submitted simultaneously with the Wawa at Winter Springs Marketplace Site Plan (FEDP-2025-0016).

FUNDING SOURCE

RECOMMENDATION

Staff recommends that the Planning & Zoning Board recommend approval of the Site/Final Engineering and Development Agreement, subject to the following conditions of approval:

1. Execution of the Development Agreement.
2. Construction on the site shall not begin until the stormwater permit from St. Johns River Water Management District is approved.
3. All grass on the Property shall be Bahia grass. No St. Augustine grass or grass types with low drought tolerance shall be permitted.

PUBLIC HEARINGS AGENDA ITEM

PLANNING & ZONING BOARD
THURSDAY, SEPTEMBER 11, 2025
REGULAR MEETING

TITLE

Winter Springs Marketplace Additional Parking – Site/Final Engineering and Development Agreement.

SUMMARY

The Community Development Department requests that the Planning & Zoning Board hold a Public Hearing to consider Site/Final Engineering and Development Agreement regarding the applicant's request to add parking and make changes to Robert Family Lane in the Town Center District, T5 Transect.

General Information			
Applicant	Tuskawilla Property Investors, LLC		
Property Owner(s)	WINTER SPRINGS NET, LLC		
Location	180 Tuskawilla Rd		
Tract Size	1.22 Acres		
Parcel ID Number	36-20-30-502-0000-0090		
Zoning Designation	Town Center District, T-5 Transect		
FLUM Designation	Town Center District		
Adjacent Land Use	North: State Road 419/434 East: Tuskawilla Rd		South: Winter Springs Marketplace West: Winter Springs Marketplace
Height	Not applicable		
Setbacks	Front: 25 ft, minimum, 50 ft. maximum	Rear: 15 ft. minimum	Side: 5 ft. minimum, 100 ft. maximum
Development Standards	Lot Coverage 100%		
Development Permits	Not applicable		
Development Agreement	Pending		

Code Enforcement	Not applicable
City Liens	Not applicable

Background Data:

The development site consists of undeveloped land that is currently part of the Winter Springs Marketplace development. The applicant is proposing to modify the existing parking area and stormwater pond by proposing 10 additional parking spaces for the adjacent Wawa development. The existing site was permitted under the Winter Springs Marketplace (2021-00002152). This site plan was submitted simultaneously with the Wawa at Winter Springs Marketplace Site Plan (FEDP-2025-0016).

Public Notices:

Notices were mailed to all owners of real property adjacent to and within approximately five-hundred (500) feet of the subject property and all Homeowner's Associations on file with the City of Winter on July 29, 2025.

A Community Workshop was held on June 30, 2025 at 7:00 PM at The Foundry Church. There were no objections raised at the Community Workshop regarding the proposed development. Please see (Figure "1") Community Workshop Flyer and (Figure "2") Community Workshop Attendance.

Analysis of Final Engineering Plans (Sec. 20-33.1) Criteria:
The criteria for Final Engineering Plans are provided and analyzed below:

(a) Site and final engineering plans and the subdivision of land shall also be subject to the technical requirements set forth in Chapter 9 of the City Code. It is the intent of this section to apply to applications for site and final engineering plans and to any subdivision of land requiring a plat, if applicable, and does not include review and approval of a lot split application.

Please see the discussion below regarding technical requirements of Chapter 9. The Final Engineering Plans have been reviewed by the City's contract engineer, who concluded that the Plans satisfy the technical requirements. provided the conditions of approval set forth below are met.

(b) Except in situations involving one (1) single-family home, the Planning and Zoning Board shall be required to review all site and final engineering plan and subdivision of land applications and make a written recommendation to the city commission. Such recommendation shall include the reasons for the board's recommendation and show the board has considered the applicable criteria set forth in this section.

(c) Upon receipt of the planning and zoning board's recommendation, the city commission shall make a final decision on the application. If the city commission determines that the planning and zoning board has not made a recommendation on an application within a reasonable period of time, the city commission may, at its discretion, consider an application without the planning and zoning board's recommendation.

Except in situations involving one (1) single-family home, all site and final engineering plan and subdivision recommendations and final decisions shall be based on whether the site and final engineering plan and subdivision of land complies with all the technical requirements set forth in chapter 9 of the City Code and the following criteria to the extent applicable:

(1) Whether the applicant has demonstrated the site and final engineering plan and subdivision of land, including its proposed density, height, scale and intensity, hours of operation, building and lighting design, setbacks, buffers, noise, refuse, odor, particulates, smoke, fumes and other emissions, parking and traffic-generating characteristics, number of persons anticipated using, residing or working under the plan, and other off-site impacts, is compatible and harmonious with adjacent land uses, and will not adversely impact land use activities in the immediate vicinity.

Analysis: Subject to the Conditions of Approval, Staff finds that the proposed Development is compatible and harmonious with adjacent land uses and will not adversely impact land use activities in the immediate vicinity.

(2) Whether the applicant has demonstrated the size and shape of the site, the proposed access and internal circulation, and the design enhancements to be adequate to accommodate the proposed density, scale and intensity of the site and final engineering plan requested. The site shall be of sufficient size to accommodate design amenities such as screening, buffers, landscaping, open space, off-street parking, safe and convenient automobile, bicycle, and pedestrian mobility at the site, and other similar site plan improvements needed to mitigate against potential adverse impacts of the proposed use.

Analysis: Staff finds that the Applicant has demonstrated that the size and shape of the site, the proposed access and internal circulation, and the design enhancements to be adequate to accommodate the proposed density, scale, and intensity of the site and final engineering plan requested for the reasons described above.

(3) Whether the proposed site and final engineering plan and subdivision of land will have an adverse impact on the local economy, including governmental fiscal impact, employment, and property values.

Analysis: Staff finds that the proposed site and final engineering plan and subdivision of land will not have an adverse impact on the local economy, including governmental fiscal impact, employment, and property values.

(4) Whether the proposed site and final engineering plan and subdivision of land will have an adverse impact on the natural environment, including air, water, and noise pollution, vegetation and wildlife, open space, noxious and desirable vegetation, and flood hazards.

Analysis: Staff finds that the proposed site and final engineering plan will not have an adverse impact on the natural environment, including air, water, and noise pollution, vegetation and wildlife, open space, noxious and desirable vegetation, and flood hazards. The project is located outside of the special flood hazard area. Adequate stormwater detention will be provided for the project both on-site and through the stormwater system for the Winter Springs Marketplace development, of which this development is a part. Please see Figure "3", Site Plan. An Environmental Site Assessment was provided for the site that dates from 2020. As the property has since been developed, additional studies have not been conducted. Please see Figure "5", Environmental Report.

(5) Whether the proposed site and final engineering plan and subdivision of land will have an adverse impact on historic, scenic, and cultural resources, including views and vistas, and loss or degradation of cultural and historic resources.

Analysis: The proposed site and final engineering plan will have no impact on historical resources. No additional scenic or cultural resources. Including scenic views or vistas, will be impacted by this site and final engineering plan.

(6) Whether the proposed site and final engineering plan and subdivision of land will have an adverse impact on public services, including water, sewer, stormwater and surface water management, police, fire, parks and recreation, streets, public transportation, marina and waterways, and bicycle and pedestrian facilities.

Analysis: City Staff have reviewed this project from a planning and engineering perspective. Staff did not find any adverse impact on any of the public services listed above.

(7) Whether the site and final engineering plan and subdivision of land, and related traffic report and plan provided by the applicant, details safe and efficient means of ingress and egress into and out of the neighborhood and adequately addresses the impact of projected traffic on the immediate neighborhood, traffic circulation pattern for the neighborhood, and traffic flow through immediate intersections and arterials.

Analysis: Transportation questions were not considered with this site plan as they were not relevant to the addition of the ten parking spaces and changes to the stormwater pond.

(8) Whether the proposed site and final engineering plan and subdivision of land will have an adverse impact on housing and social conditions, including variety of housing unit types and prices, and neighborhood quality.

Analysis: As a commercial project, the proposed site and final engineering plan will not have an adverse impact on the variety of housing unit types and prices. As for neighborhood quality, subject to the Conditions of Approval, the proposed site and final engineering plan development will not have an adverse impact on neighborhood quality. See Figure "3", Winter Springs Marketplace Final Engineering and Development Plan.

(9) Whether the proposed site and final engineering plan and subdivision of land avoids significant adverse odor, emission, noise, glare, and vibration impacts on adjacent and surrounding lands regarding refuse collection, service delivery, parking and loading, signs, lighting, and other site elements.

Analysis: Staff finds that proposed site and final engineering plan avoids significant adverse odor, emissions, noise, glare and vibration impacts on adjacent and surrounding lands regarding refuse collection, service delivery, parking and loading, signs, lighting, and other site elements.

(10) Whether the applicant has provided an acceptable security plan for the proposed establishment to be located on the site and final engineering plan and subdivision of land that addresses the safety and security needs of the establishment and its users and employees and minimizes impacts on the neighborhood, if applicable.

Analysis: A security plan is not applicable to the addition of parking spaces and changes to a stormwater pond.

(11) Whether the applicant has provided on the site and final engineering plan and subdivision of land an acceptable plan for the mass delivery of merchandise for new large footprint buildings (greater than twenty thousand (20,000) square feet) including the hours of operation for delivery trucks to come into and exit the property and surrounding neighborhood, if applicable.

Analysis: Not applicable. The project does not involve a large footprint building.

(12) Whether the applicant has demonstrated that the site and final engineering plan and subdivision of land have been designed to incorporate mitigative techniques and plans needed to prevent adverse impacts addressed in the criteria stated herein or to adjacent and surrounding uses and properties.

Analysis: Staff finds that subject to the Conditions of Approval, the site and final engineering plans have been designed to incorporate mitigative techniques and plans needed to prevent the adverse impacts mentioned in the criteria on adjacent and surrounding uses and properties.

(13) If the proposed conditional use is a residential use, whether the elementary, middle and high schools (K—12) that will be initially assigned to the residential project by the school district at the time the city commission considers final

approval of the conditional use have both sufficient capacity, are in close proximity to the project so as to make each of the assigned schools accessible and convenient (e.g., walking distance, travel time, private and public transportation, and quality of route environment) to the majority of the school population that will be drawn from the project, and promote and support the integration of future residents of the project into the existing city of Winter Springs community in a sustainable manner.

Analysis: Not applicable. This is not a residential development.

(14) Whether the applicant has agreed to execute a binding development agreement required by city to incorporate the terms and conditions of approval deemed necessary by the city commission including, but not limited to, any mitigative techniques and plans required by City Code.

Analysis: The applicant has agreed to and is working on a binding development agreement with the City addressing terms and conditions deemed necessary by the City Commission.

Water and Sewer:
Not applicable for this project as water and sewer are not required.

Stormwater:
The applicant included a Drainage and Grading plan as part of the Final Engineering/Site Plan (Figure "3"). Staff have reviewed and approved the information necessary from this development. However, the applicant will also need to receive approval from the St Johns River Water Management District and this approval is included as part of the Conditions of Approval.

Transportation:
Not applicable for this project. A Traffic Impact Analysis was included with FEDP-2025-0016 for Wawa.

Parking:
The Town Center does not have minimum required parking standards, however, the applicant provided documentation (Figure "4") that it would provide an additional ten ("10") parking spaces to meet the needs of the Marketplace.

Reports:
The Final Engineering submittal is required to include the following reports or updates of previously prepared reports for the same property.

Reports	
August 4, 2020	Environmental Report (Figure "5")
December 15, 2020	Geotechnical Report (Figure "6")
December 6, 2024	Parking Analysis (Figure "4")

Procedural History:	
May 6, 2025	Pre-Application Meeting
June 30, 2025	Community Workshop
August 7, 2025	Planning & Zoning Board | Recommendation on Site/Final Engineering Plan and Development Agreement.
August 25, 2025	City Commission | Hearing on Final Engineering Site/Final Engineering Plan and Development Agreement.

Applicable Law, Public Policy, and Events:

Florida Statutes 163.2511-163.3246: Growth Policy; County and Municipal Planning; Land Development Regulation (Provides that land development regulations for municipal planning be consistent with the Comprehensive Plan).

Home Rule Powers

Code of Ordinances City of Winter Springs.

Section 20-1. Definitions.

Fiscal Impact:

A Fiscal Impact Statement was not required for this part of the development.

Development Agreement:

The Applicant is currently working with the City Attorney on the Development Agreement for the project. The Development Agreement shall be executed prior to any work on the project covered within this document.

STAFF RECOMMENDATION

Staff recommends that the Planning & Zoning Board recommend approval of the Site/Final Engineering and Development Agreement, subject to the following conditions of approval:

1. Execution of the Development Agreement.
2. Construction on the site shall not begin until the stormwater permit from St. Johns River Water Management District is approved.
3. All grass on the Property shall be Bahia grass. No St. Augustine grass or grass types with low drought tolerance shall be permitted.

Attachments:

Figure “1” – Community Workshop Flyer
Figure “2” – Community Workshop Attendance Sheet
Figure “3” – Site Plan
Figure “4“ – Parking Study
Figure “5 “ – Environmental Report
Figure “6” – Geotechnical Report
Figure “7” – Site Plan Application

THIS INSTRUMENT WAS PREPARED BY
AND SHOULD BE RETURNED TO:

Anthony A. Garganese
City Attorney of Winter Springs
Garganese, Weiss, D'Agresta & Salzman, P.A.
111 N. Orange Avenue, Suite 2000
Orlando, FL 32802

(407) 425-9566

FOR RECORDING DEPARTMENT USE ONLY

THIRD MODIFICATION TO

DEVELOPMENT AND PROPERTY DIVISION AGREEMENT

(Winter Springs Marketplace – Additional Parking and Modifications to Robert Family Lane)

THIS THIRD MODIFICATION TO DEVELOPMENT AND PROPERTY DIVISION AGREEMENT ("Third Modification") is made and executed this _____ day of _____, 2025, by and between the **CITY OF WINTER SPRINGS**, a Florida Municipal Corporation ("City"), whose address is 1126 East S.R. 434, Winter Springs, Florida 32708, and **THISTLEWOOD WINTER SPRINGS, LLC,** a Florida Limited Liability Company, whose address is 677 King Street, 3rd Floor, Charleston, SC 29403 and **WINTER SPRINGS NET, LLC**, a Florida Limited Liability Company, whose address is 6525 3rd Street, Suite 409, Rockledge, Florida 32955 (collectively "Owners").

WITNESSETH:

WHEREAS, Owners' predecessor in interest, Tuscawilla Property Investors, LLC, and the City entered into and executed that certain Development and Property Division Agreement for Winter Springs Marketplace, dated March 8, 2021, and recorded in the Official Records of Seminole County at Book 9887, Pages 718-751 (the "Development Agreement") as well as that certain First Modification to the Development and Property Division Agreement for Winter Springs Marketplace, dated January 30, 2023, and recorded in the Official Records of Seminole County at Book 10397, Pages 628-643 (the "First Modification"), and that certain Second Modification to the Development and Property Division Agreement for Winter Springs Marketplace, dated _____, and recorded in the Official Records of Seminole County at Book _____, Pages _____ (the "Second Modification"); and

WHEREAS, the Development Agreement governs the development of the Winter Springs Marketplace shopping center, consisting of both the Property and Trust Property, as legally described and defined therein, the Trust Property having been conveyed to Tuscawilla Property

Investors subsequent to the execution and recordation of the Development Agreement, and the Trust Property being more particularly described in Exhibit "D" of the Development Agreement; and

WHEREAS, the Property and Trust Property have been subdivided and are no longer entirely owned by Tuscawilla Property Investors, LLC; and

WHEREAS, as described in the Second Modification, Tuscawilla Property Investors, LLC, desires to construct a Wawa neighborhood convenience store with gas pumps on the Resulting Trust Property Parcel #2, as more particularly described in Exhibit "G" of the Second Modification; and

WHEREAS, Tuscawilla Property Investors, LLC, as authorized by the Owners, further desires to modify the existing parking area of the Winter Springs Marketplace development by adding an additional 10 parking spaces which will be available to service the proposed Wawa development located upon the Resulting Trust Property Parcel #2, and by remodeling a portion of Roberts Family Lane which services the Property and Trust Property, as more particularly described and depicted on **Exhibit "J,"** attached hereto and incorporated herein by this reference (hereinafter the "Parking and Access Improvements"); and

WHEREAS, the Parking and Access Improvements are located on a portion of the Property within the Winter Springs Marketplace now owned by the Owners; and

WHEREAS, Section 20-29(c) of the City Code requires that all site plans shall be binding on the use of the subject property; and

WHEREAS, this Third Modification shall be recorded against a portion of the Property described herein so that the terms and conditions of approval shall run with the land; and

NOW THEREFORE, in consideration of the mutual promises and covenants contained herein, the parties mutually agree as follows:

1.0 Recitals. The foregoing recitals are true and correct and are hereby incorporated herein by this reference.

2.0 Authority. This Third Modification is entered into pursuant to the Florida Municipal Home Rule Powers Act.

3.0 The Project Area. The real property that is the subject of this Third Modification is legally described in **EXHIBIT "I,"** attached hereto and fully incorporated herein by this reference for convenience (the "Improvements Project Area").

4.0 Project Description and Requirements; Phasing. Tuscawilla Property Investors has constructed Phases I and II of the Winter Springs Marketplace shopping center on the Property, as well as supporting infrastructure, stormwater pond, parking lots, and landscaping. Owners intend to construct certain improvements, consisting of ten (10) additional parking spaces in the

Improvements Project Area and certain improvements to Roberts Family Lane, as depicted in **Exhibit "J."**

(Hereinafter, all project description and requirements and references to the **"Parking and Access Improvements"** shall refer to the additional parking spaces and the associated improvements to Roberts Family Lane).

Owners shall construct the Parking and Access Improvements in a manner consistent with the approved Final Engineering/Site Plans that are on file with the City with the following file numbers and consistent with the requirements contained in this Third Modification:

File Nos: FEDP-2025-0017. FINAL ENGINEERING/SITE PLAN.

The overall Final Engineering/Site Plan for the Parking and Access Improvements is attached hereto as **EXHIBIT "J"** for convenience and incorporated herein by this reference.

5.0 Conditions of Approval. Specific conditions of approval for the above-referenced Final Engineering Plans include the following, which are also addressed in the staff report for the Final Engineering/Site Plans:

a. All grass areas in the Improvements Project Area shall use Bahia grass. No St. Augustine grass or any grass type with low drought tolerance shall be permitted.

b. Construction of the Parking and Access Improvements shall not commence until appropriate permitting has been obtained from the St. Johns River Water Management District, to the extent required.

6.0 Termination of Approval as to Parking and Access Improvements. In the event the Owners or their authorized agents fail to obtain the building permit and substantially commence construction of the Parking and Access Improvements within two (2) years of the Effective Date of this Third Modification, then the City shall have the right to terminate and/or void the approvals set forth herein and require the Owners to reapply to the City. The Owners may apply to the City Commission for an extension of this deadline, which may be granted upon good cause shown.

7.0 Representations of the Parties. The City and Owners hereby each represent and warrant to the other that it has the power and authority to execute, deliver and perform the terms and provisions of this Third Modification and has taken all necessary action to authorize the execution, delivery and performance of this Third Modification. The Owners further agrees and make the following representations and warranties to the City:

A. The Owners are lawfully seized of the Improvements Project Area property in fee simple and has full and lawful authority to execute this Third Modification and bind the Improvements Project Area property as set forth herein.

This Third Modification will, when duly executed and delivered by the City and Owners, constitute a legal, valid and binding obligation enforceable against the parties hereto. Upon recording of this Third Modification in the Public Records of Seminole County, Florida, the Third Modification shall be a binding obligation upon the Improvements Project Area property in accordance with the terms and conditions of this Agreement. Owners represent that it has voluntarily and willfully executed this Third Modification for purposes of binding himself and the Project Area property to the terms and conditions set forth in this Third Modification.

8.0 Successors and Assigns. This Third Modification shall automatically be binding upon and shall inure to the benefit of the City and Owners and their respective successors and assigns. The terms and conditions of this Third Modification similarly shall be binding upon the Improvements Project Area property, and shall run with title to the same upon being duly recorded against the Improvements Project Area property by the City.

9.0 Effective Date. This Third Modification shall become effective upon approval by the City Commission and execution by all parties hereto.

10.0 Recordation. Upon full execution by the Parties, this Third Modification shall be recorded in the Public Records of Seminole County, Florida by the City and shall be binding upon the Improvements Project Area property and all future owners thereof.

11.0 Effect of Modification. All other terms and conditions of the Development Agreement, First Modification, and Second Modification not in conflict with this Third Modification, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seal on the date first above written.

CITY OF WINTER SPRINGS

By: _____
Kevin McCann, Mayor

Date: _____

ATTEST:

By: _____
Christian Gowan, City Clerk

CITY SEAL

APPROVED AS TO FORM AND LEGALITY
For the use and reliance of the City of Winter Springs, Florida only.

Date: _____
By: _____
Anthony A. Garganese, City Attorney for the City of Winter Springs, Florida

STATE OF FLORIDA
COUNTY OF SEMINOLE

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by Kevin McCann, Mayor of the City of Winter Springs, Florida**,** a Florida municipal corporation, on behalf of the corporation, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

Signed, sealed and delivered in the presence of the following witnesses:

WINTER SPRINGS NET, LLC

By: _____
Print Name:_____

Date: _____

_____
Signature of Witness

_____
Printed Name of Witness

_____
Signature of Witness

_____
Printed Name of Witness

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by _____, the Manager of Winter Springs Net, LLC**,** a limited liability company, on

behalf of the company, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

Signed, sealed and delivered in the presence of the following witnesses:

THISTLEWOOD WINTER SPRINGS, LLC

By: _____
Print Name:_____

Date: _____

_____
Signature of Witness

_____
Printed Name of Witness

_____
Signature of Witness

_____
Printed Name of Witness

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by _____, the Manager of Thistlewood Winter Springs, LLC**,** a limited liability company, on behalf of the company, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

OWNERS ARE HEREBY ADVISED THAT SHOULD OWNERS FAIL TO FULLY EXECUTE, AND DELIVER TO THE CITY, THIS AGREEMENT WITHIN THIRTY (30)

DAYS FROM THE DATE THAT THE CITY COMMISSION APPROVES THIS AGREEMENT, THIS AGREEMENT, AND THE DEVELOPMENT PERMIT APPROVALS REFERENCED HEREUNDER, SHALL AUTOMATICALLY BE DEEMED NULL AND VOID.

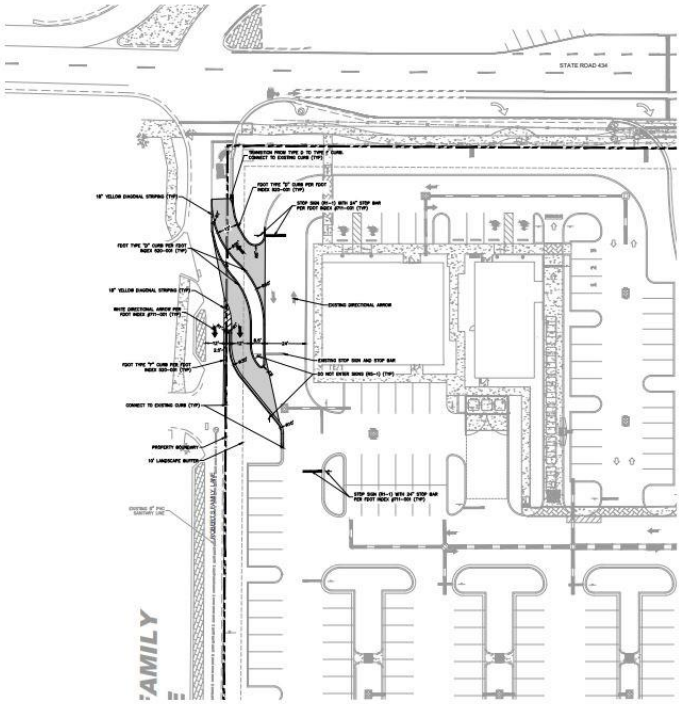
EXHIBIT I

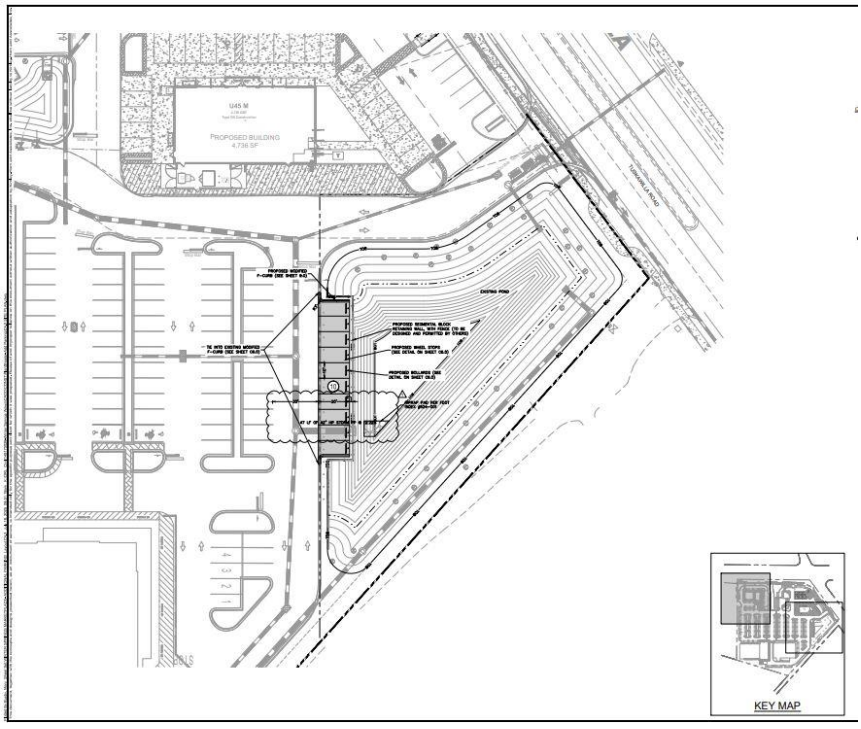
LEGAL DESCRIPTION OF IMPROVEMENTS PROJECT AREA

Lots 1, 3, and Tract C of the Winter Springs Marketplace plat, recorded in the Plat Book of Seminole County, Book 88, Page 5.

EXHIBIT J

OVERALL SITE PLAN FOR PARKING AND ACCESS IMPROVEMENTS





JOINDER AND CONSENT

For and in consideration of the mutual covenants, terms, and conditions and restrictions contained herein, together with other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, **One Florida Bank**, a Florida banking corporation, as holder of that certain Mortgage, Security Agreement, Financing statement and Assignment of Rents which is recorded in Official Records Book 10107, Page 1 of the Public Records of Seminole County, Florida, as affected by that certain Cross-Default and Cross-Collateralization Agreement recorded in Official Records Book 10108, Page 57, that certain Assignment of Rents, Leases, Profits and Contracts recorded in Official Records Book 10107, Page 20, and that certain UCC-1 Financing Statement recorded in Official Records Book 10147, Page 359; and that certain Mortgage, Security Agreement, Financing statement and Assignment of Rents which is recorded in Official Records Book 9757, Page 1364, as affected by that certain Cross-Default and Cross-Collateralization Agreement recorded in Official Records Book 10108, Page 57, that certain Assignment of Rents, Leases, Profits and Contracts recorded in Official Records Book 9757. Page 1386, and that certain UCC-1 Financing Statement recorded in Official Records Book 9757, Page 1396, all of the Public Records of Seminole County, Florida (collectively, the "Mortgage") hereby joins in and consents to the foregoing Third Modification to the Development and Property Division Agreement by and between the City of Winter Springs, a Florida municipal corporation, and Tuscawilla Property Investors, LLC, a Florida limited liability company, and further acknowledges and agrees that its Mortgage shall be subordinated to such Third Modification to the Development and Property Division Agreement and the obligations contained therein.

Dated this _____ day of _____, 2025.

Signed and sealed in the presence of:

By: _____

_____ Name: _____

Print Name: _____ Title :_____

Address: _____

_____

Print Name: _____

Address: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of (___) physical presence or (___) online notarization, this _____ day of _____, 2025, by _____, the _____ of _____, a _____, on behalf of the company, who is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Site Plan Review

The Community Development Director reserves the right to determine whether this application is complete and accurate. An incomplete application will not be processed and will be returned to the applicant. The application shall be reviewed per Florida Statue 419.001. Applications shall be reviewed for sufficiency (completeness) within thirty (30) calendar days per FL Statue 166.033. By submitting this application, you hereby grant temporary right of entry for City officials to enter upon the subject property for purposes of evaluating this application.

Site Plan Type

Type of Development: ____ Residential __X__ Non-Residential

___Preliminary Review __X__Final Review ___Combined Preliminary/Final ___Resubmittal ___ Recorded Plat

Project Name: Winter Springs Marketplace - Additional Parking Date: 5/13/2025

Applicant/Agent Information

Applicant(s): Tuscawilla Property Investors, LLC

Mailing Address: 630 South Maitland Avenue, Suite 1000, Maitland FL 32751

Email: RStahl@equinox-development.com

Phone Number: (407) 628-0077

Person Who Will Upload Plans: Cory Sitler

Email: cory.sitler@kimley-horn.com Phone#: 407-536-4440

Property Owner(s) Name (If Applicant is not the Property Owner)

Name: _____

Email: _____ Phone #: _____

Mailing Address: _____

Phone Number: _____

Site Information

Project Address: Northwest corner of FL-434 & Tuskawilla Rd

Parcel ID(s): 36-20-30-502-0000-0090

Parcel Size: 0.12 Acres

Existing Use: Commercial

Proposed Use: Commercial

Zoning District: T-5 Urban Ceneter

Future Land Use: Commercial

Is the property located in the Town Center District? _X__Yes _____No

Is the property within the S.R. 434 Corridor Overlay District? _X__Yes _____No

Is the property located in the Greeneway Interchange Zoning District? _____Yes _X__No

The Planning and Zoning Board/Local Planning Agency shall review Site Plan Applications and make a written recommendation to the City Commission. The City Commission shall render all final decisions regarding Preliminary and Final Engineering Plans and may impose reasonable conditions on any approved plans to the extent deemed necessary and relevant to ensure compliance with applicable criteria and other applicable provisions of the City Code and Comprehensive Plan. All formal decisions shall be based upon the applicable criteria as set forth in the City's Code of Ordinances Chapter 9, Land Development and Chapter 20, Zoning.

Applicants are advised, that if they decide to appeal any decisions made at the meetings or hearings, with respect to any matter considered at the meetings or hearings, they will need a record of the proceedings and, for such purposes, they will need to ensure that a verbatim record of the proceedings is made, at their cost, which includes the testimony and evidence upon which the appeal is to be based, per 286.0105, Florida Statutes.

Application Fees

Fees are as reflected on the Fee Schedule plus actual costs incurred for advertising or notification, and reimbursement for technical, and/or professional services which may be required in connection with the review, inspection, or approval of any development (based on accounting submitted by the City Consultant), payable prior to approval of the pertinent stage of development.

CITY OF WINTER SPRINGS
COMMUNITY DEVELOPMENT DEPARTMENT
1126 East State Road 434
Winter Springs, Florida 32708
customerservice@winterspringsfl.org

Application – Site Plan Review

THIS APPLICATION MUST BE SIGNED IN THE PRESENCE OF A NOTARY

This is to certify that I am the owner in simple fee of the subject property as described in this application for Site Plan Review.

Property Owner(s) Name (Print): Tuscawilla Property Investors, LLC - Ryan Stahl

Property Owner Signature: _____ Date: 5/9/25

Property Owner(s) Name (Print): _____

Property Owner Signature: _____ Date: _____

STATE OF Florida COUNTY OF Orange

The foregoing instrument was acknowledged before me this 9th day of May, 20 25, by Ryan Stahl who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

Kristin Banks Date: 5/9/25 (seal):

Notary Public Signature: Kristin Banks

My Commission Expires: June 4, 2027

KRISTIN BANKS
Commission # HH 405810
Expires June 4, 2027

Note: If the applicant is not the property owner the Property Owner shall sign and have their signature notarized below, authorizing the applicant and/or agent permission to submit the Site Plan Review application.

Property Owner's Name (Print): _____

Property Owner Signature: _____ Date _____

STATE OF_____COUNTY OF _____

The foregoing instrument was acknowledged before me this_____day of_____, 20____, by _____ who is personally known to me or who has produced _____ as identification and who did/did not take an oath.

_____ Date: _____ (seal):

Notary Public Signature: _____

My Commission Expires: _____

COMMUNITY WORKSHOP

Date: June 30, 2025 @ 6:00 P.M.

Location: The Foundry Church – Classroom 5
1491 E. State Road 434, Winter Springs, FL 32708

Community Workshop to consider Final Engineering Site Plans, Aesthetic Review and Conditional Use in order to construct a 4,736 sq. ft. gas station/convenience store in the Winter Springs Marketplace within the Town Center District on the subject site.

Project: Wawa gas station/convenient store

Location: SW corner of Tuskawilla Road and E. State Road 434
Parcel ID: 36-20-30-502-0000-0090
Acreage: ± 1.22-acre project
Zoning: Town Center District (T5)
Future Land Use: Town Center (TC)
Applicant/Presenter: Ryan Stahl, Scott Kearney, Kimley-Horn Associates

COMMUNITY WORKSHOP SIGN-IN SHEET

PROJECT NAME: Wawa gas station/convenient store

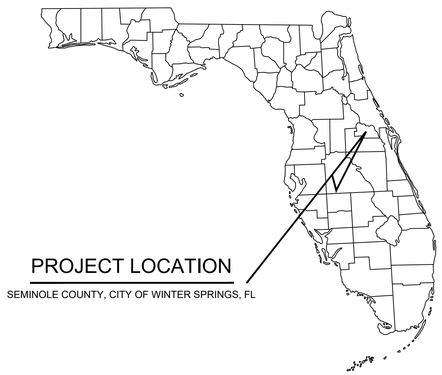
MEETING LOCATION & DATE: The Foundry Church (Classroom #5) – June 30, 2025

NAME	MAILING ADDRESS (STREET, CITY, ZIP)	E-MAIL ADDRESS
1. LOUIS ATTI	119 MCLEODS WAY WINTER SPRINGS 32708	ACCESSIBLE@MSN.COM
2. Gina + Jeff Shafer	Winter Springs Villiage	
3. Mark Caruso	1054 chokecherry Dr	mcaruso@winterspringsfl.org
4. Daina Todd	630 S. Maitland Ave, ste 100 Maitland 32751	Daina@equinox-development.com
5. Kristin Banks	630 S Maitland Ave, Ste 100 Maitland FL	kristin@equinox-development.com
6. Cory Sitler	6876 Morwick Lane, Ste 350, Orlando, FL 32827	cory.sitler@kimley-horn.com
7. Stephen Donahoe	1233 Natures Way Winter Springs FL 32708	steve@donahoe.com
8. LINDA FREESURN	1604 COUGAR CT 32708	
9. Krystal Kearney	609 Timberwilde Ct.	
10. Lalon Grago	1212 Deer Run Dr., Winter Springs, FL 32708	Lgrago@aol.com
11. Maureen Landgraf	443 Tradition Ln. WSpr.	
12. Victoria Bruce	city Hall	Vbruce@winterspringsfl.org
13. Leah Wegman	Brookshire	
14. Jennifer Garnett	City of Winter Springs	jgarnett@winterspringsfl.org
15.		
16.		
17.		
18.		
19.		
20.		

CIVIL SITE CONSTRUCTION PLANS
FOR
WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

PARCEL #01-21-30-5VK-0C00-0000
JULY 2025

CITY OF WINTER SPRINGS, FL



AERIAL PHOTOGRAPH
N.T.S.

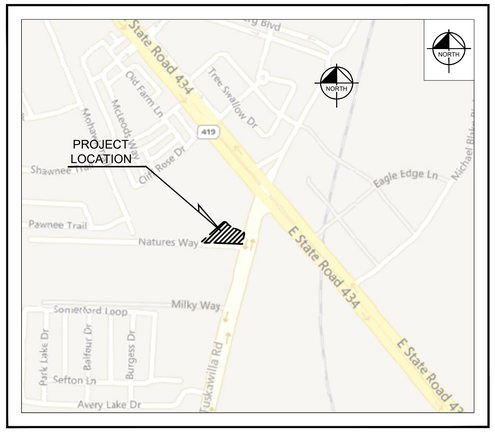
LEGAL DESCRIPTION

PARCEL 1:
LOT 7, JOE E. JOHNSTON'S SURVEY, RECORDED IN DEED BOOK 147, PAGE 221, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, AND ALSO BEING THAT PART OF THE UNPLATTED PART OF BLOCK B OF D. R. MITCHELL'S SURVEY OF THE LEVY GRANT, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 1, PAGE 5, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 186 FEET NORTH 38 DEGREES 45 MINUTES WEST OF THE MOST EASTERLY CORNER OF THAT PART OF SAID BLOCK B LYING SOUTHWEST OF THE SANFORD-OVIEDO ROAD AND RUNNING NORTH 38 DEGREES 45 MINUTES WEST, 200 FEET ALONG THE WESTERLY LINE OF THE SANFORD-OVIEDO; THENCE SOUTH 51 DEGREES 15 MINUTES WEST 650.30 FEET; THENCE SOUTH 22 DEGREES 15 MINUTES EAST 208.8 FEET; THENCE NORTH 51 DEGREES 15 MINUTES EAST 710.14 FEET TO THE POINT OF BEGINNING;
LESS AND EXCEPT THAT PART TAKEN FOR ROAD RIGHT OF WAY BY THE ORDER OF TAKING RECORDED IN OFFICIAL RECORDS BOOK 2803, PAGE 1023, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA.

PARCEL 2:
THAT PART OF THE UNPLATTED PART OF BLOCK B OF D. R. MITCHELL'S SURVEY OF THE LEVY GRANT, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 1, PAGE 5, OF THE PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT A POINT 186 FEET NORTH 38 DEGREES 45 MINUTES WEST OF THE MOST EASTERLY CORNER OF THAT PART OF SAID BLOCK B LYING SOUTHWEST OF THE SANFORD-OVIEDO HIGHWAY AND RUNNING NORTH 38 DEGREES 45 MINUTES WEST 200 FEET ALONG THE WESTERLY LINE OF THE SANFORD-OVIEDO HIGHWAY; THENCE SOUTH 51 DEGREES 15 MINUTES WEST 710.14 FEET; THENCE SOUTH 22 DEGREES 15 MINUTES EAST 208 FEET; THENCE NORTH 51 DEGREES 15 MINUTES EAST 770 FEET TO THE POINT OF BEGINNING;
LESS AND EXCEPT THAT PART TAKEN FOR ROAD RIGHT OF WAY BY THE ORDER OF TAKING RECORDED IN OFFICIAL RECORDS BOOK 2831, PAGE 1024, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA.

PARCEL 3:
THAT PART OF THE UNPLATTED PART OF BLOCK B OF D. R. MITCHELL'S SURVEY OF THE LEVY GRANT, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 1, PAGE 5, OF THE PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT THE MOST EASTERLY CORNER OF THAT PART OF SAID BLOCK B LYING SOUTHWESTERLY OF THE SANFORD-OVIEDO HIGHWAY AND RUNNING NORTH 38 DEGREES 43 MINUTES 16 SECONDS WEST 186.0 FEET ALONG THE WESTERLY LINE OF THE RIGHT OF WAY OF THE SANFORD-OVIEDO HIGHWAY; THENCE SOUTH 51 DEGREES 15 MINUTES WEST 770.0 FEET; THENCE SOUTH 22 DEGREES 15 MINUTES EAST, 13.5 FEET TO THE SOUTHWEST CORNER OF THE UNPLATTED PART OF BLOCK B; THENCE EAST ALONG THE NORTH LINE OF TUSKAWILLA, A DISTANCE OF 497.0 FEET; THENCE NORTH 30 DEGREES EAST 420.0 FEET TO THE POINT OF BEGINNING; ALSO DESCRIBED AS LOT 9, ACCORDING TO JOE E. JOHNSTON'S SURVEY AS RECORDED IN DEED BOOK 147, PAGE 221, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA.
TOGETHER WITH THE WEST HALF OF THE VACATED STREET ADJACENT ON THE EAST AS SET FORTH IN RESOLUTION RECORDED IN OFFICIAL RECORDS BOOK 2972, PAGE 373, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA;
LESS AND EXCEPT ROAD RIGHTS OF WAY AS SET FORTH IN ORDER OF TAKING RECORDED IN OFFICIAL RECORDS BOOK 2831, PAGE 1024, AND WARRANTY DEED TO SEMINOLE COUNTY, FLORIDA, RECORDED IN OFFICIAL RECORDS BOOK 8377, PAGE 27, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA.

PARCEL 4:
THAT PART OF LOT 8 BLOCK A, D. R. MITCHELL'S SURVEY OF THE LEVY GRANT, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 1, PAGE 5, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA, LYING WESTERLY FROM THE WESTERLY FIFTY FEET FROM THE CENTER LINE OF TUSKAWILLA ROAD; TOGETHER WITH THE EAST HALF OF THE VACATED STREET ADJACENT ON THE WEST AS SET FORTH IN RESOLUTION RECORDED IN OFFICIAL RECORDS BOOK 2972, PAGE 373, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA;
LESS AND EXCEPT ROAD RIGHTS OF WAY AS SET FORTH IN WARRANTY DEED TO COUNTY OF SEMINOLE RECORDED IN OFFICIAL RECORDS BOOK 1571, PAGE 707; ORDER OF TAKING RECORDED IN OFFICIAL RECORDS BOOK 2831, PAGE 1024; AND WARRANTY DEED TO SEMINOLE COUNTY, FLORIDA, RECORDED IN OFFICIAL RECORDS BOOK 8377, PAGE 27, PUBLIC RECORDS OF SEMINOLE COUNTY, FLORIDA.



SECTION 09, TOWNSHIP 22S, RANGE 26E
LOCATION MAP
N.T.S.

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
C0.0	COVER SHEET
C1.0	GENERAL NOTES
C1.1	GENERAL NOTES
C2.0	EROSION CONTROL DETAILS
C2.1	SWPPP NOTES
C3.0	OVERALL EXISTING CONDITIONS AND DEMOLITION PLAN
C3.1	EXISTING CONDITIONS AND DEMOLITION PLAN
C3.2	EXISTING CONDITIONS AND DEMOLITION PLAN
C4.0	OVERALL SITE PLAN
C4.1	SITE PLAN
C4.2	SITE PLAN
C5.0	OVERALL PAVING GRADING & DRAINAGE
C5.1	PAVING GRADING & DRAINAGE PLAN
C5.2	PAVING GRADING & DRAINAGE PLAN
C6.0	CONSTRUCTION DETAILS
L1.00	LANDSCAPE PLAN
L1.51	LANDSCAPE SPECIFICATIONS
L1.50	LANDSCAPE DETAILS

PROJECT TEAM

OWNER/DEVELOPER
TUSCAWILLA PROPERTY INVESTORS LLC.
630 S. MAITLAND AVE., SUITE 100
MAITLAND, FL 32751
CONTACT: RYAN STAHL
PHONE: (407) 628-0077
EMAIL: Rstahl@equinox-development.com

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CORY SITLER FL P.E. # 89984

WINTER SPRINGS MARKETPLACE-
ADDITIONAL PARKING
K-H PROJECT# 149170026 07/18/2025

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS #1	07/18/25	MMB

Drawing name: K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C0.0 COVER SHEET.dwg COVER SHEET Jul 18, 2025 8:49am by: MaryBusby
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Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:GENERAL NOTES July 18, 2025 08:49:45am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C1.0 GENERAL NOTES.dwg
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GENERAL

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, SUCH AS DEWATERING PERMITS, RIGHT OF WAY PERMIT(S), EXCAVATION/FILL PERMIT(S), FIRE PROTECTION PERMIT(S), OR UNDERGROUND UTILITY PERMIT(S), PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA OF APPLICABLE AGENCIES, SCHEDULING OF INSPECTIONS, AND OBTAINING REQUIRED INSPECTIONS FROM AGENCY.
2. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE EXISTING UTILITY INFORMATION SHOWN IS BASED ON THE TOPOGRAPHIC SURVEY PROVIDED BY IRELAND & ASSOCIATES AND SURVEYING, INC. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS AREA PRIOR TO CONSTRUCTION WORK. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OF THE SURVEY. SHOULD A DISCREPANCY ARISE BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, WHICH WOULD APPRECIABLY AFFECT THE EXECUTION OF THESE PLANS, THE CONTRACTOR SHALL HALT CONSTRUCTION AND NOTIFY THE OWNER, ENGINEER, AND APPLICABLE GOVERNING AGENCY IMMEDIATELY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING (HORIZONTALLY AND VERTICALLY) ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES (DURING STANDARD BUSINESS HOURS) TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISTRIBUTION SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANY (DURING STANDARD BUSINESS HOURS) DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE-CALL OF FLORIDA) BY CALLING 800-432-4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.
4. ALL DISTURBED AREAS (ON-SITE AND/OR OFF-SITE) NOT DESIGNED OR NOTED TO BE LANDSCAPED OR SODDED, SHALL BE MULCHED AND SEEDED.
5. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES, OR GRADING SECTIONS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION OR REMOVAL IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUB-CONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.
6. ALL WORK AND MATERIALS FURNISHED SHALL BE IN CONFORMITY WITH THE LINES, GRADES, GRADING SECTIONS, CROSS SECTIONS, DIMENSIONS, MATERIAL REQUIREMENTS, AND TESTING REQUIREMENTS THAT ARE SPECIFIED IN THE CONTRACT PLANS OR SPECIFICATIONS.
7. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION, AS APPLICABLE AT THE TIME ALL PERMITS HAVE BEEN OBTAINED.
8. ALL UNDERGROUND UTILITIES MUST BE IN-PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.
9. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.
10. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR REVIEW.

    SHOP DRAWINGS OF ALL DRAINAGE STRUCTURES, MATERIALS, AND COMPONENTS TO BE INSTALLED WITHIN CITY OF WINTER SPRINGS PUBLIC RIGHTS-OF-WAY, SHALL BE SUBMITTED TO THE CITY OF WINTER SPRINGS FOR REVIEW AND APPROVAL. UPON ENGINEER OR RECORD'S COMPLETION OF REVIEW AND APPROVAL OF SHOP DRAWINGS FOR WORK WITHIN THE CITY OF WINTER SPRINGS'S JURISDICTION THE ENGINEER OF RECORD SHALL COORDINATE SHOP DRAWING SUBMITTALS TO THE CITY OF WINTER SPRINGS FOR THEIR REVIEW AND APPROVAL.
11. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.
12. THE CONTRACTOR SHALL RESTORE OFF-SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.
13. THE CONTRACTOR SHALL COMPLY WITH THE LEGAL LOAD RESTRICTIONS IN HAULING OF MATERIALS IN PUBLIC ROADS BEYOND THE LIMITS OF WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR THE DAMAGE WHICH MAY RESULT FROM THE MOVING OF MATERIAL AND EQUIPMENT.
14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA.
15. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
16. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE THE LATEST EDITION OF F.D.O.T. "DESIGN STANDARD PLANS FOR ROAD CONSTRUCTION" (ED. 2025-26) FOR DETAILS AND SPECIFICATIONS OF ALL CURB AND GUTTERS CALLED FOR IN THESE PLANS WITHIN PUBLIC RIGHTS OF WAY.
17. WHERE ASPHALT PAVING MEETS CONCRETE PAVING SUCH AS AT CONCRETE CURBING, THE ASPHALT SHOULD BE FINISHED $\frac{1}{4}$" TO $\frac{1}{2}$" ABOVE THE CONCRETE SURFACE TO ALLOW FOR FURTHER TRAFFIC COMPACTION OF THE ASPHALT.
18. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE SOIL AND/OR PAVEMENT TESTING WITH THE GEOTECHNICAL ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE GEOTECHNICAL SOILS REPORT. UPON COMPLETION OF WORK, THE GEOTECHNICAL ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
19. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN OUT MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
20. ALL CONCRETE SIDEWALKS SHALL BE CONSTRUCTED PER FDOT DESIGN INDEX (ED. 2025/2026) #522-001.
21. SITEWORK SHALL COMPLY WITH 2025 FLORIDA BUILDING CODE AND FLORIDA ACCESSIBILITY CODE.
22. ANY EXISTING WELLS (I.E. ARTESIAN, IRRIGATION, DRINKING, ETC.) DISCOVERED ON-SITE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL APPLICABLE JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED AND SHALL COPY THE CITY OF WINTER SPRINGS ON ANY WELL ABANDONMENT PERMITS.
23. . ANY WELL DISCOVERED DURING EARTHWORK OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES, OWNER, AND OWNER'S ENGINEER WITHIN 24 HOURS AFTER DISCOVERY IS MADE.

TREES AND VEGETATION

1. THE CONTRACTOR IS TO MINIMIZE THE REMOVAL OF VEGETATION TO THE GREATEST EXTENT PRACTICAL. NO TREES SHALL BE REMOVED OR DAMAGED WITHOUT OWNER'S APPROVAL. TREES IN CLOSE PROXIMITY TO CONSTRUCTION SHALL BE PROTECTED BY ORANGE FENCING.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS AND RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
3. REFER TO LANDSCAPE PLANS FOR DETAILS REGARDING TREE REMOVAL AND TREE PRESERVATION.

STORM DRAINAGE SYSTEM

1. THE LATEST EDITION OF F.D.O.T. "DESIGN STANDARDS" (ED. 2025/2026) IS REFERRED TO FOR THE STRUCTURAL DESIGN OF DRAINAGE STRUCTURES SPECIFIED IN THESE PLANS, AS REFERENCED BY STANDARD INDEX. ALL SPECIALTY DRAINAGE STRUCTURES REQUIRE SEPARATE STRUCTURAL DESIGN, WHICH IS NOT INCLUDED IN THESE PLANS. STATION OFFSETS ARE TO THE CENTERLINE OF THE STRUCTURE TOP (I.E. DITCH BOTTOM INLET OR CURB INLET TOP), AS OPPOSED TO THE STRUCTURE BASE.
2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.
3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS. LENGTHS OF PIPE SHOWN WHICH TERMINATE WITH MITERED END OR FLARED END SECTIONS ARE MEASURED TO THE DOWNSTREAM INVERT OF THE MITERED END OR FLARED END SECTION.
4. ALL DRAINAGE STRUCTURE GRATES AND COVERS, EITHER EXISTING OR PROPOSED SHALL BE TRAFFIC RATED FOR H-20 LOADINGS.
5. CONSTRUCTION OF THE STORM WATER MANAGEMENT SYSTEM MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
6. STORM WATER PIPES, STRUCTURES, MINIMUM COVER, AND INSTALLATION PROCEDURES TO BE IN ACCORDANCE WITH F.D.O.T. AND THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS.
7. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE.
8. ALL DRAINAGE PIPES SHALL BE FILTER FABRIC WRAPPED PER FDOT STANDARD DESIGN INDEX (ED. 2025/2026) #430-001.
9. THE CONTRACTOR SHALL MAINTAIN AND PROTECT THE STORMWATER COLLECTION SYSTEM (INLETS, PIPES) FROM EXCESSIVE MUD, SILT, DIRT, DEBRIS, TRASH, ETC. UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE INSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL CLEAN AND FLUSH STORM PIPES AND INLETS OF ALL EXCESSIVE SILT, DEBRIS, ETC. THE CITY OF WINTER SPRINGS SHALL BE NOTIFIED OF THE FINAL INSPECTION OF THE STORMWATER SYSTEM SHOULD A REPRESENTATIVE WANT TO ATTEND.

SAFETY

1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATIONS ARE LONGER THAN DAYTIME OPERATIONS.

DEMOLITION

1. CONTRACTOR SHALL SUBMIT DEMOLITION SCHEDULE TO OWNER PRIOR TO PROCEEDING WITH DEMOLITION ACTIVITIES.
2. EXTENT OF SITE CLEARING IS SHOWN ON DRAWINGS.
3. CONTRACTOR SHALL CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
4. CONTRACTOR SHALL PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "EXISTING TO REMAIN".
5. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
6. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER.
7. CONTRACTOR SHALL DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED".
8. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.

DEWATERING NOTES

1. DURING THE EXCAVATION OF THE STORMWATER FACILITIES, AND IF GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL CONSTRUCT A SEDIMENT BASIN TO PROVIDE A DISCHARGE POINT FOR DEWATERING. THE SEDIMENT BASIN CAN BE IN THE PROPOSED EXCAVATION AREA OF A POND OR IT CAN BE A BERMED AREA ABOVE GROUND. ALL DEWATERING MUST BE HELD IN THE SEDIMENT AREA UNTIL THE WATER IS CLEAN SUCH THAT THERE WOULD BE NO TURBID DISCHARGE. AFTER THE WATER IN THE SEDIMENT BASIN IS CLEAN, THE WATER MAY BE RELEASED INTO THE ON-SITE POND PROVIDED THERE IS NO ADVERSE IMPACT TO THE EXISTING WATER QUALITY.
2. UNDER NO CIRCUMSTANCES WILL THE DISCHARGE FROM THE ON-SITE DEWATERING BE DIRECTLY DISCHARGED OFFSITE.
3. IF CONTRACTOR ENCOUNTERS SILTY/CLAY SAND, WHICH CAUSES THE WATER TO BECOME TURBID, HE/SHE SHALL TREAT THE SEDIMENT BASIN WITH CHEMICAL ADDITIVE SUCH AS ALUM IN ORDER TO PROMOTE THE COAGULATION OF THE PARTICLES WHICH ALLOW THE TO SETTLE AND THE WATER TO BECOME LESS TURBID. IF TURBID WATER ENCOUNTERED DURING EXCAVATION OF THE PONDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY TO DETERMINE THE COURSE OF ACTION THAT IS APPROPRIATE TO ELIMINATE THE TURBIDITY AND ALLOW DISCHARGE THAT MEETS WATER QUALITY STANDARDS.
4. THE CONTRACTOR SHALL SEQUENCE THE EXCAVATION OF THE STORMWATER PONDS SUCH THAT A SEDIMENT BASIN WILL BE AVAILABLE AT ALL TIMES. THE SEDIMENT BASIN CAN BE RELOCATED AS NECESSARY SUBJECT TO THE WATER WITHIN THE SEDIMENT BASIN BEING NON-TURBID AND ACCEPTABLE FOR DISCHARGE OFF-SITE.

EARTHWORK / GRADING / DEMUCKING PROCEDURES

1. A GEOTECHNICAL ENGINEERING INVESTIGATION REPORT HAS BEEN PREPARED, OF WHICH COPIES ARE AVAILABLE THROUGH THE OWNER OR THEIR SOIL TESTING COMPANY. A GEOTECHNICAL ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PROVIDE ON-SITE INSPECTIONS DURING EXCAVATION/FILL OPERATIONS AND TESTING OF THE COMPACTED FILL SO THAT PROPER DOCUMENTATION OF THE REQUIRED COMPACTING CRITERIA CAN BE PROVIDED. THE CITY OF WINTER SPRINGS SHALL BE COPIED ON ALL INSPECTION REPORTS.
2. CONTRACTOR TO FOLLOW THE GUIDANCE OF THE REFERENCED GEOTECHNICAL ENGINEERING INVESTIGATION REPORT OR INDICATE WHETHER ON-SITE GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF DEMUCKING AND/OR REMOVAL OF UNSUITABLE FILL.
3. ALL EXISTING DEBRIS (ABOVE OR BELOW GROUND), CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS IN A LEGAL MANNER.
4. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.
5. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE OWNER OR THEIR SOILS TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
7. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.
8. THE CONTRACTOR SHALL INSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR PLACEMENT OF ALL HEADWALL/ENDWALL FOOTINGS, RETAINING WALL FOOTINGS, AND IN GENERAL, ANY FOOTING SUPPORT DESCRIBED ON THESE PLANS. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SUFFICIENT SOILS TESTING HAS BEEN PERFORMED PRIOR TO FINAL INSTALLATION OF IMPROVEMENTS.
9. ANY UNSUITABLE ORGANIC SOIL SHALL BE EXCAVATED TO A MINIMUM MARGIN OF 6 FEET BEYOND ITS PERIPHERY EXCAVATED TO EXPOSE THE UNDERLYING NON-ORGANIC FINE SAND.
10. IF DETERMINED NECESSARY, DEWATERING DURING EXCAVATING/BACKFILLING OPERATIONS MAY BE ACCOMPLISHED BY DITCHING AND THE USE OF SUMP PUMPS AND/OR OTHER METHODS (WELL POINTS), AS NECESSARY. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FOR DEWATERING ACTIVITIES THAT MAY BE REQUIRED.
11. UPON APPROVAL OF THE GEOTECHNICAL ENGINEER, THE EXCAVATED AREAS MAY BE BACKFILLED WITH CLEAN FINE SAND FREE OF UNSUITABLE OR DELETERIOUS MATERIAL. HOWEVER, THE FILL SHOULD NOT BE PLACED IN MORE THAN 6 INCHES OF STANDING WATER. ONCE THE FILL IS AT LEAST 2 FEET ABOVE THE DEWATERED LEVEL, BACKFILLING MAY PROCEED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
12. SEDIMENT CONTROL MEASURES SHOULD BE EMPLOYED DURING THE CONSTRUCTION PROCESS TO KEEP THE POND FROM RECEIVING SIGNIFICANT AMOUNTS OF STORMWATER RUNOFF FROM THE SURROUNDING CONSTRUCTION SITE. THIS RUNOFF IS LIKELY TO CONTAIN SUSPENDED FINE-GRAINED SOIL PARTICLES THAT CAN IMPEDE THE INFILTRATION CAPACITY OF THE PONDS IF ALLOWED TO SETTLE OUT ON THE POND BOTTOMS. IF DEWATERING EFFLUENT OR STORMWATER RUNOFF FROM THE ACTIVE CONSTRUCTION SITE IS DISCHARGED TO THE POND, CONTRACTOR SHALL SCRAPE AND REMOVE FINE-GRAINED SEDIMENTS THAT HAVE ACCUMULATED ON THE POND BOTTOM, AND REPLACE WITH SUITABLE SOIL TO THE PLAN SPECIFIED GRADE ELEVATIONS. REQUIRED DEPTH OF SCRAPE AND REMOVAL SHALL BE DETERMINED BY GEOTECHNICAL ENGINEER.

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	MMB

Kimley»Horn

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LICENSED PROFESSIONAL
CORY N. SITLER
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE:

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

GENERAL NOTES

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C1.0

F.D.O.T. RIGHT-OF-WAY WORK GENERAL NOTES

1. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.
2. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES EXTEND INTO THE STABILIZED PORTION OF THE ROADBED AND EXTREME CAUTION WILL BE NECESSARY IN STABILIZATION OPERATIONS AT THESE LOCATIONS.
3. ALL DRAINAGE PIPES SHALL BE STEEL REINFORCED CONCRETE PIPE, CLASS III, UNLESS OTHERWISE NOTED.
4. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE ENGINEER SHOULD NOTIFY THE DISTRICT LOCATION SURVEYOR, WITHOUT DELAY, BY TELEPHONE.
5. EXISTING DRIVEWAYS WITHIN THE LIMITS OF THIS PROJECT ARE TO BE REPLACED AT THE SAME LOCATION AND WIDTH, UNLESS OTHERWISE SHOWN ON PLANS.
6. THE CONTRACTOR SHALL REMOVE ANY ORGANIC AND PLASTIC MATERIAL ENCOUNTERED IN THE FIELD IN ACCORDANCE WITH FDOT 2023/2024 STANDARD PLANS INDEX 120–002. COST OF REMOVAL OF ORGANIC AND PLASTIC MATERIAL AND BACKFILL OF SUITABLE MATERIAL IN ACCORDANCE WITH FDOT 2023/2024 STANDARD PLANS INDEX 120–001 SHALL BE INCLUDED IN THE COST OF REGULAR EXCAVATION.
7. THE LOCATION(S) OF THE UTILITIES SHOWN IN THE PLANS ARE BASED ON LIMITED INVESTIGATION TECHNIQUES AND SHOULD BE CONSIDERED APPROXIMATE ONLY. THE VERIFIED LOCATIONS/ELEVATIONS APPLY ONLY AT THE POINTS SHOWN. INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.
8. EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
9. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE–CALL OF FLORIDA) BY CALLING 800–432–4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.
10. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND SURVEYS BUT IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATIONS OF UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND PROTECT EXISTING UTILITY FACILITIES DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING UTILITY RELOCATION WITH UTILITY OWNERS.
11. ALL MAINTENANCE OF TRAFFIC (MOT) ITEMS REQUIRED IN ACCORDANCE WITH FDOT 2023/2024 STANDARD PLANS INDEX '102–' SERIES INDICES SHALL BE FURNISHED, INSTALLED, AND MAINTAINED TO PROPERLY MAINTAIN TRAFFIC AND ADDRESS DROP OFF CRITERIA IN THE WORK ZONE.
12. NO LANES CLOSED BETWEEN THE HOURS OF 6:00 AM TO 8:00 PM.
13. THE EXISTING POSTED SPEED LIMIT ON SR–434 WILL REMAIN DURING ALL PHASES OF CONSTRUCTION.
14. ANY EXISTING OR PROPOSED SIGNS THAT CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED BY THE CONTRACTOR PER INDEX 600 AND WHEN THE CONFLICT NO LONGER EXISTS THE SIGNS SHALL BE RESTORED TO THEIR ORIGINAL POSITION. COST SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC.
15. IF ONLY FDOT 2023/2024 STANDARD PLANS INDEX (SUCH AS #'S. 102–600, 102–611, 102–612, 102–613, 102–616, 102–660, ETC.) WILL BE USED, THEN THE CONTRACTOR WILL NOT BE REQUIRED TO PROVIDE SIGNED AND SEALED MAINTENANCE OF TRAFFIC (M.O.T.) PLANS. IF THE CONTRACTOR REQUIRES M.O.T. PLANS OTHER THAN THE 2023/2024 STANDARD PLANS INDICES, THEN THE CONTRACTOR WILL HAVE TO SUBMIT SIGNED AND SEALED PLANS TO FDOT FOR REVIEW AND APPROVAL.
16. MAINTENANCE OF TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH FDOT 2023/2024 STANDARD PLANS INDEX, 2023 FDOT DESIGN MANUAL (FDM), THE STANDARDS SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2019) AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) (ED. 2009 AND 2012 SUPPLEMENT) AS A MINIMUM.
17. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF TRANSPORTATION A MINIMUM OF TWO (2) BUSINESS DAYS PRIOR TO CLOSING ANY LANES OR BEGINNING ANY CONSTRUCTION WITHIN THE FDOT RIGHT–OF–WAY.
18. TEST RESULTS OF ANY TESTS TAKEN FOR OR DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE FDOT UPON REQUEST.
19. IF THE DEPARTMENT DETERMINES THAT AS–BUILT CONDITIONS VARY SIGNIFICANTLY FROM APPROVED PLANS, THE PERMITTEE OR THE PERMITTEE'S CONTRACTOR SHALL PROVIDE AS–BUILT PLANS, ALONG WITH A RECORD DRAWINGS REPORT BY PERMITTEE'S PROFESSIONAL ENGINEER, FORM 850–040–19, WITHIN 30 DAYS OF COMPLETING CONSTRUCTION.
20. ALL DISTURBED AREAS WITHIN FDOT RIGHT–OF–WAY MUST BE SODDED ONLY WITH COMMON BERMUDA SOD.
21. CONTRACTORS CERTIFICATE OF LIABILITY INSURANCE MUST BE ISSUED PRIOR TO STARTING CONSTRUCTION IN FDOT RIGHT–OF–WAY.
22. MAINTENANCE OF TRAFFIC:
    a. FOR WORK WITHIN FDOT RIGHT–OF–WAY, THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRAFFIC CONTROL PLAN PREPARED UNDER THE DIRECTION OF, AND SIGNED AND SEALED BY, A LICENSED FLORIDA PROFESSIONAL ENGINEER WHO IS EXPERIENCED IN PREPARING TRAFFIC CONTROL PLANS AND WHO IS CERTIFIED PER FDOT PROCEDURE, TOPIC NO. 625–010–010.
    b. FOR WORK WITHIN FDOT RIGHT–OF–WAY, THE FDOT REQUIRES DOCUMENTATION FOR SUCCESSFUL COMPLETION OF AN APPROVED WORK ZONE TRAFFIC CONTROL TRAINING COURSE FOR THE AGENCY, UTILITY, OR CONTRACTOR EMPLOYEE(S) DESIGNING, INSTALLING, AND/OR MAINTAINING THE APPROVED MAINTENANCE OF TRAFFIC PLAN IN ACCORDANCE WITH DEPARTMENT PROCEDURE, TOPIC NO. 625–010–010.
    c. ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR THE FOLLOWING FACILITIES SHALL BE DESIGNED AND INSTALLED TO MEET THE EXISTING POSTED SPEEDS AS STATED FOR ALL TRAFFIC CONTROL PHASES: SR–434 – 50 MPH
23. ALL WORK PERFORMED WITHIN FDOT RIGHT–OF–WAY SHALL BE IN ACCORDANCE WITH FDOT 2020 STANDARD PLANS INDEX, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2019) ND THE UTILITY ACCOMMODATION MANUAL (ED. 2017).
24. IT WILL BE THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY CONSTRUCTION OF THE PROJECT.
25. ALL SIDEWALK CLOSURES SHALL ABIDE TO THE STANDARD PROCEDURES PER FDOT 2023/2024 RD PLANS INDEX 102–660.
26. ALL CONCRETE SIDEWALKS SHALL BE CONSTRUCTED PER FDOT 2023/2024 STANDARD PLANS INDEX 522–001 & 522–002.
27. ALL ROADWAY SIGNAGE AND/OR SIGNAGE COLUMS/POSTS LOCATED WITHIN RIGHT–OF–WAY IMPACTED BY PROPOSED IMPROVEMENTS SHALL BE ADJUSTED AND/OR RE–INSTALLED IN ACCORDANCE WITH 2023/2024 STANDARD PLANS INDEX AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (ED. 2019).
28. A COPY OF THE FDOT PERMIT FOR WORK WITHIN THE SR 434 ROW SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS.

PAVING, GRADING AND DRAINAGE

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS, ETC.) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OF RECORD OR THE OWNERS ENGINEERS. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS AND PER THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.
4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED.
5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.
6. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE 2023/2024 EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.
8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.
9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER POURED)
10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #711–001.
11. THE CONTRACTOR WILL STABILIZE BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.
12. THE CONTRACTOR SHALL RESTORE OFF–SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.
13. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES.
14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A REGISTERED LAND SURVEYOR AT CONTRACTORS EXPENSE.
15. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.
16. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND JURISDICTIONAL PERMITTING AGENCIES.
17. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN–OUTS, MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.

PAVING/GRADING TESTING AND INSPECTION

1. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE SOILS REPORT. UPON COMPLETION OF WORK THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN–PLACE MATERIALS AS REQUIRED BY THESE PLANS AND GEOTECHNICAL REPORT, THE VARIOUS AGENCIES AND PERMIT CONDITIONS. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THESE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.
3. A COPY OF ALL TESTING REPORTS SHALL BE FURNISHED TO THE CITY OF WINTER SPRINGS.

CONTRACTOR'S AS-BUILT

1. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS–BUILT" INFORMATION, CERTIFIED BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA. AT A MINIMUM, THIS "AS–BUILT" INFORMATION SHALL INCLUDE: TOP OF PIPE/INVERT ELEVATIONS AND HORIZONTAL LOCATIONS OF ALL WATER, SANITARY SEWER, AND RECLAIM WATER UTILITIES INSTALLED (AS APPLICABLE); PAVEMENT GRADE BREAK LOCATIONS AND SUFFICIENT ELEVATIONS OF FINISHED GRADE SURFACES WHICH ALLOW THE ENGINEER TO DETERMINE COMPLIANCE WITH THE PROPOSED DESIGN; TOP, GRATE, & INVERT ELEVATIONS OF THE STORMWATER COLLECTION SYSTEM, INCLUDING THE POND GRADES (TOP, BANK, BOTTOM), POND CONTROL STRUCTURE, & SWALES; ANY IMPROVEMENTS WITHIN FDOT OR COUNTY RIGHT–OF–WAYS.
2. THE DIGITAL "AS–BUILT" FILE, PROVIDED IN AUTOCAD FORMAT, SHALL ALSO BE PROVIDED IN THE FLORIDA STATE PLANE COORDINATE SYSTEM. NO ENGINEER'S CERTIFICATIONS OF COMPLETION OR REQUESTS FOR FINAL ACCEPTANCE WILL BE SUBMITTED UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.
3. SURVEYOR AS–BUILT SHALL CONTAIN COMPLETED ASSET TABLE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS UTILITY STANDARDS AND SPECIFICATIONS.

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

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1	REVISED PER CITY COMMENTS	07/18/25	MMB

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WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED PROFESSIONAL
CORY N. SITLER, LICENSE No. 89984, STATE OF FLORIDA, PROFESSIONAL ENGINEER
DATE: 07/18/25

KHA PROJECT 149170026
DATE 07/18/2025
SCALE AS SHOWN
DESIGNED BY ADL
DRAWN BY JCB
CHECKED BY CNS

GENERAL NOTES

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C1.1

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:GENERAL NOTES (2) July 18, 2025 08:49:51am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C1.0 GENERAL NOTES.dwg
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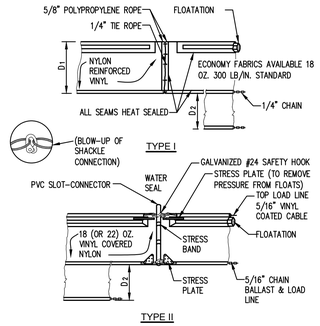
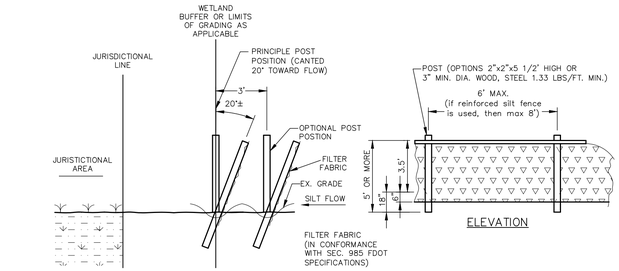


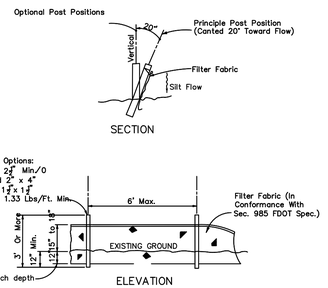
D1 = 5' STD. (SINGLE PANEL FOR DEPTHS 5' OR LESS).
D2 = 5' STD. (ADDITIONAL PANEL FOR DEPTHS 5'). CURTAIN TO REACH BOTTOM UP TO DEPTHS OF 10 FEET. TWO (2) PANELS TO BE USED FOR DEPTHS GREATER THAN 10 FEET UNLESS SPECIAL DEPTH CURTAINS SPECIFICALLY CALLED FOR IN THE PLANS OR AS DETERMINED BY THE ENGINEER.

NOTE:
COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS. ANY INFRINGEMENT ON THE PROPRIETARY RIGHTS OF THE DESIGNER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

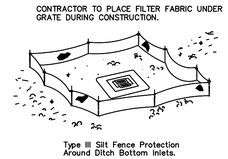
FLOATING TURBIDITY BARRIERS
NTS



DOUBLE SILT FENCE
NTS

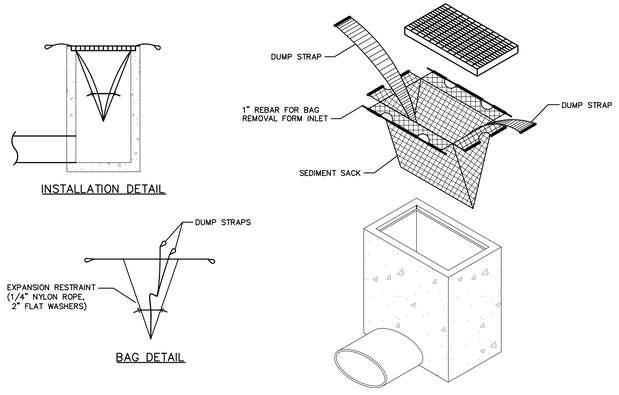


TYPE III SILT FENCE
NTS

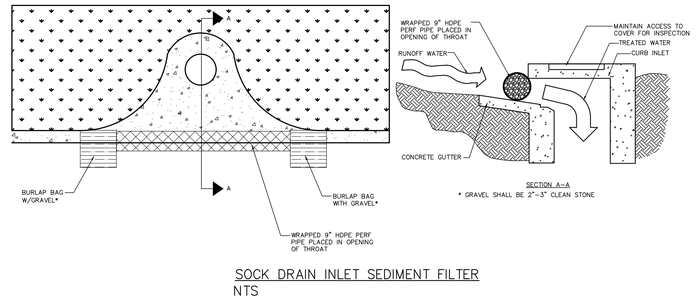


Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS
NTS

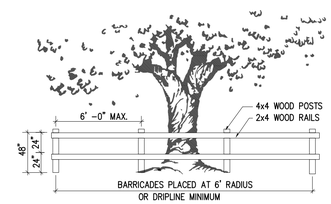


STANDARD INLET SEDIMENT CONTROL DEVICE
NTS



SOCK DRAIN INLET SEDIMENT FILTER
NTS

NOTE: THE PERFORATED PIPE MUST EXTEND AT LEAST 1' BEYOND THE CURB OPENING ON EACH SIDE AND BE ANCHORED WITH GRAVEL BAGS, OR SIMILAR, ON EACH END. A SPACER MUST BE PROVIDED FOR BETWEEN THE INLET OPENING AND THE PIPE TO ALLOW FOR OVERFLOW, PREVENT FLOODING AND TO PREVENT THE PIPE FROM FALLING INTO THE INLET.



TREE PROTECTION DETAIL
NTS

1. ORANGE CONSTRUCTION FENCING CAN BE USED IN LIEU OF WOOD FENCE PER ENGINEER'S REVIEW AND APPROVAL.
2. NO STOCKPILING OF MATERIAL, TRASH OR DEBRIS SHALL BE PERMITTED WITHIN THE BARRIER. CONTRACTOR SHALL ADJUST AND MAINTAIN BARRIER LIMITS AS NECESSARY TO ACCOMMODATE ADJACENT CONSTRUCTION AS DIRECTED BY OWNER. REMOVE PROTECTION AFTER OWNER'S FINAL ACCEPTANCE OF THE PROJECT.

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	MMB

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LICENSED LANDSCAPE ARCHITECT CORY N. STELLEN 0001703 STATE OF FLORIDA * PROFESSIONAL ENGINEER * DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

EROSION CONTROL DETAILS

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C2.0

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:EROSION CONTROL DETAILS July 18, 2025 08:50:00am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C2.0 SWPPP NOTES.dwg
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STORMWATER POLLUTION PREVENTION PLAN

SITE DESCRIPTION

PROJECT NAME AND LOCATION
WINTER SPRINGS MARKETPLACE
TAX PARCEL: 36-20-30-502-0000-0090
CITY OF WINTER SPRINGS, FL

*SEE COVER SHEET FOR LOCATION MAP

DEVELOPER NAME AND ADDRESS

TUSCAWILLA PROPERTY INVESTORS, LLC
630 SOUTH MAITLAND AVE., SUITE 100
MAITLAND, FL 32751
CONTACT: RYAN STAHL
PHONE: (407) 628-0277
EMAIL: RSTAHL@EQUINOX-DEVELOPMENT.COM

PROJECT DESCRIPTION

THIS PROJECT IS TO DEVELOP ADDITIONAL PARKING WITHIN THE WINTER SPRINGS MARKETPLACE COMMERCIAL PROPERTY. THIS SITE IS LOCATED AT SOUTHWEST CORNER OF INTERSECTION OF TUSKAWILLA RD AND SR-434 IN WINTER SPRINGS, SEMINOLE COUNTY, FL.

PROJECT AREA: 0.12 ACRES
CONTRIBUTING DRAINAGE AREA: 1.22 ACRES

CONTROL STRUCTURE :

CS-A

LONGITUDE : 81°15'47.71"W LATITUDE: 28°41'44.80"N

CS-B

LONGITUDE : 81°15'49.48"W LATITUDE: 28°41'44.89"N

CS-C

LONGITUDE : 81°15'51.87"W LATITUDE: 28°41'44.90"N

ULTIMATE RECEIVING WATERS: LAKE JESSUP via MASTER SYSTEM

ACTIVITIES THAT REQUIRE EROSION CONTROL

SITE CLEARING AND GRUBBING; PROVIDING A STABILIZED CONSTRUCTION ENTRANCE, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; EXCAVATION FOR THE RETENTION POND; SITE GRADING; INSTALLATION OF STORM WATER, SANITARY SEWER, AND WATER STRUCTURES; CURB, ROADWAYS, AND PARKING FACILITIES.

*SEE PLANS FOR THE LOCATION OF TEMPORARY SEDIMENT BARRIERS AND OTHER EROSION CONTROL METHODS.

SOIL PARAMETERS

SOIL TYPES:

SERIES NAME	HYDROLOGIC GROUP
MYAKKA AND EAUGALLIE FINE SANDS	A/D
PAOLA–ST. LUCIE SANDS, 0 TO 5 PERCENT SLOPES	A
TAVARES–MILLHOPPER FINE SANDS, 0 TO 5 PERCENT SLOPES	A

SEQUENCE OF MAJOR ACTIVITIES

THE ORDER OF CONSTRUCTION IS AS FOLLOWS:

1. PROVIDE STABILIZED CONSTRUCTION ENTRANCE
2. INSTALL SILT FENCES AND OTHER EROSION CONTROL METHODS
3. CLEAR AND GRUB FOR SEDIMENT BASIN AND EARTH DIKE
4. CONSTRUCT EARTH DIKE AND SEDIMENT BASIN
5. FINISH CLEARING AND GRUBBING
6. REMOVE AND STORE TOPSOIL
7. PROVIDE INITIAL GRADING AS REQUIRED
8. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE
9. INSTALL UTILITIES, STORM SEWER, CURB AND GUTTER
10. INSTALL BASE TO ROAD AND PARKING AREA
11. FINISH GRADING ENTIRE SITE
12. CONSTRUCT FINAL PAVING
13. REMOVE ACCUMULATED SEDIMENT
14. REMOVE ANY ITEMS THAT ARE NOT REQUIRED

TIMING OF CONTROL MEASURES

THE INSTALLATION OF SILT FENCE (AND OTHER EROSION CONTROL MEASURES), A STABILIZED ENTRANCE AND SEDIMENT BASIN SHALL OCCUR PRIOR TO CLEARING AND GRUBBING ACTIVITY. AFTER CONSTRUCTION IS COMPLETE, THE ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE AREAS SHALL BE REGRADED AND PERMANENTLY STABILIZED AS SHOWN ON THE PLANS.

EROSION AND SEDIMENT CONTROLS

BEST MANAGEMENT PRACTICES SHALL BE USED FOR THIS PROJECT TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN-OFF. THE LOCATION AND DETAILS OF EROSION CONTROL METHODS ARE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING THESE CONTROL METHODS AS SHOWN ON THE PLANS OR AS REQUIRED. HE/SHE SHALL ALSO PROVIDE THE REQUIRED EROSION PROTECTION AS REQUIRED BY LOCAL, STATE AND FEDERAL LAW.

STORM WATER MANAGEMENT

STORM WATER COLLECTION SHALL BE MANAGED BY AN EXISTING WET POND SYSTEM, AS WELL AS AN EXISTING EXFILTRATION SYSTEM. THE POND SYSTEM HAS BEEN DESIGNED TO MEET OR EXCEED ALL THE REQUIREMENTS OF ST. JOHNS RIVER WATER MANAGEMENT DISTRICT AND CITY OF WINTER SPRINGS, FL.

STABILIZATION PRACTICES:

TEMPORARY STABILIZATION - TOPSOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE, SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THE TEMPORARY SEED REQUIRED CAN BE FOUND IN TABLE 1.65 A OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, WHERE SOILS ARE ACIDIC 2 TONS OF PULVERIZED AGRICULTURAL LIMESTONE SHOULD BE ADDED PER ACRE AND 450 POUNDS OF 10-20-20 FERTILIZER SHALL BE APPLIED TO EACH ACRE. AFTER SEEDING, EACH AREA SHALL BE IMMEDIATELY MULCHED WITH STRAW OR EQUIVALENT EQUAL. AREAS OF THE SITE WHICH ARE TO BE PAVED SHALL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILE AND STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE APPROPRIATE PERMANENT SEED MIX CAN BE FOUND IN TABLES 1.66A, 1.66B AND 1.66C OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, 2 TONS/ACRE OF FINELY GROUND AGRICULTURAL LIMESTONE AND THE PROPER FERTILIZER BASED ON THE TYPE OF SEEDING SHALL BE APPLIED TO EACH ACRE TO PROVIDE PLANT NUTRIENTS. AFTER SEEDING, EACH AREA SHALL BE MULCHED IMMEDIATELY. ALL RETENTION/DETENTION BASINS SHALL BE SODDED AT LEAST TO THE NORMAL WATER LINE. ALL EXPOSED AREAS WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE SOLID SODDED, OTHER AREAS WITH SLOPES STEEPER THAN 4:1 SHALL BE SODDED.

STRUCTURAL PRACTICES:

EARTH DIKE - IF REQUIRED, AN EARTH DIKE SHALL BE CONSTRUCTED ALONG THE SITE PERIMETER. A PORTION OF THE DIKE SHALL DIVERT RUN-ON AROUND THE CONSTRUCTION SITE. THE REMAINING PORTION OF THE DIKE SHALL COLLECT RUNOFF FROM THE DISTURBED AREA AND DIRECT THE RUNOFF TO THE SEDIMENT BASIN.

SEDIMENT BASIN - A SEDIMENT BASIN SHALL BE CONSTRUCTED IN THE COMMON DRAINAGE AREA FOR THE SITE. ALL SEDIMENT COLLECTED IN THE BASIN MUST BE REMOVED FROM THE BASIN UPON COMPLETION OF CONSTRUCTION. SEDIMENT FROM THE BASIN MAY BE USED AS FILL ON THE SITE IF IT IS SUITABLE SOIL.

WASTE DISPOSAL

WASTE MATERIALS - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER WITH A SECURE LID IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITIES TO HAVE THE DUMPSTER EMPTIED AT LEAST TWICE A WEEK AND THE WASTE TAKEN TO AN APPROPRIATE LANDFILL. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE SUPERINTENDENT SHALL ORGANIZE TRAINING FOR THE EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH WASTE MATERIALS. THE SUPERINTENDENT SHALL BE RESPONSIBLE FOR POSTING AND ENFORCING WASTE MATERIAL PROCEDURES.

HAZARDOUS WASTE - HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS OR AS DIRECTED BY THE MANUFACTURER. THE SUPERINTENDENT SHALL ORGANIZE THE PROPER TRAINING FOR EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH HAZARDOUS WASTE MATERIALS. THESE PROCEDURES SHALL BE POSTED ON THE SITE. THE PERSON WHO MANAGES THE SITE SHALL BE RESPONSIBLE FOR ENFORCING THE PROCEDURES.

SANITARY WASTE - SANITARY WASTE SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITY FOR COLLECTION OF THE SANITARY WASTE AT LEAST THREE TIMES A WEEK TO PREVENT SPILLAGE ONTO THE SITE.

OFF-SITE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE SEDIMENT TRACKING OFFSITE. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT, OR OTHER MATERIALS TRACKED OR SPILLED ONTO EXISTING PUBLIC ROADS AND FACILITIES, DUE TO CONSTRUCTION. ALL TRUCKS HAULING MATERIALS OFFSITE SHALL BE COVERED WITH A TARPAULIN.

DUST & DEBRIS CONTROL
THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL WITHIN THE CONSTRUCTION LIMITS AS WELL AS ALONG HAUL ROUTES AND ROADWAYS USED BY THE EQUIPMENT AND VEHICLES. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE DUST IS NOT TRANSPORTED BEYOND THE LIMITS OF CONSTRUCTION IN POPULATED AREAS. THE CONTRACTOR MAY CONTROL DUST FOR EMBANKMENTS OR OTHER CLEARED OR UNSURFACED AREAS BY APPLYING WATER. INSTALL MULCH, SEED, SOD, OR TEMPORARY PAVING AS EARLY AS PRACTICAL. CONTROL DUST DURING STORAGE AND HANDLING OF DUSTY MATERIALS BY WETTING, COVERING, OR OTHER MEANS AS APPROVED BY THE ENGINEER.
DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE PROJECT SITE.

ITEMS REQUIRING POLLUTION PREVENTION

THE FOLLOWING ITEMS ARE EXPECTED TO BE PRESENT ON THE PROJECT SITE:

-ASPHALT
-CONCRETE
-FERTILIZERS
-METAL PIECES
-PETROLEUM BASED PRODUCTS
-TAR
-CLEANING SUPPLIES
-DETERGENTS
-MASONARY BLOCK/BRICKS
-PAINT
-WOOD

THE FOLLOWING ARE NON-STORM WATER SOURCES THAT WILL BE ENCOUNTERED AT THE SITE AND SHOULD BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE:

-UNCONTAMINATED GROUNDWATER EXPOSED DURING EXCAVATION
-WATER FROM WATER LINE FLUSHING
-PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).

SPILL PREVENTION AND CONTROL

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

-SUPERINTENDENT SHALL INSPECT PROJECT AREA DAILY FOR PROPER STORAGE, USE, AND DISPOSAL OF CONSTRUCTION MATERIALS.

-STORE ONLY ENOUGH MATERIAL ON SITE FOR PROJECT COMPLETION.

-ALL SUBSTANCES SHOULD BE USED BEFORE DISPOSAL OF CONTAINER.

-ALL CONSTRUCTION MATERIALS STORED SHALL BE ORGANIZED AND IN THE PROPER CONTAINER AND IF POSSIBLE, STORED UNDER A ROOF OR PROTECTIVE COVER.

-PRODUCTS SHALL NOT BE MIXED UNLESS DIRECTED BY THE MANUFACTURER.

-ALL PRODUCTS SHALL BE USED AND DISPOSED OF ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

HAZARDOUS PRODUCTS

-MATERIALS SHOULD BE KEPT IN ORIGINAL CONTAINER WITH LABELS UNLESS THE ORIGINAL CONTAINERS CANNOT BE RESEALED. IF ORIGINAL CONTAINERS CANNOT BE USED, LABELS AND PRODUCT INFORMATION SHALL BE SAVED.

-PROPER DISPOSAL PRACTICES SHALL ALWAYS BE FOLLOWED IN ACCORDANCE WITH MANUFACTURER AND LOCAL/STATE REGULATIONS.

PRODUCT SPECIFIC PRACTICES

-PETROLEUM PRODUCTS MUST BE STORED IN PROPER CONTAINERS AND CLEARLY LABELED. VEHICLES CONTAINING PETROLEUM PRODUCTS SHALL BE PERIODICALLY INSPECTED FOR LEAKS. PRECAUTIONS SHALL BE TAKEN TO AVOID LEAKAGE OF PETROLEUM PRODUCTS ON SITE.

-THE MINIMUM AMOUNT OF FERTILIZER SHALL BE USED AND MIXED INTO THE SOIL IN ORDER TO LIMIT EXPOSURE TO STORM WATER. FERTILIZERS SHALL BE STORED IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

-PAINT CONTAINERS SHALL BE SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT MUST BE DISPOSED OF IN AN APPROVED MANNER.

-CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

-SPILL CLEANUP INFORMATION SHALL BE POSTED ON SITE TO INFORM EMPLOYEES ABOUT CLEANUP PROCEDURES AND RESOURCES.

-THE FOLLOWING CLEAN-UP EQUIPMENT MUST BE KEPT ON-SITE NEAR THE MATERIAL STORAGE AREA: GLOVES, MOPS, RAGS, BROOMS, DUST PANS, SAND, SAWDUST, LIQUID ABSORBER, GOGGLES, AND TRASH CONTAINERS.

-ALL SPILLS SHALL BE CLEANED UP AS SOON AS POSSIBLE.

-WHEN CLEANING A SPILL, THE AREA SHOULD BE WELL VENTILATED AND THE EMPLOYEE SHALL WEAR PROPER PROTECTIVE COVERING TO PREVENT INJURY.

-TOXIC SPILLS MUST BE REPORTED TO THE PROPER AUTHORITY REGARDLESS OF THE SIZE OF THE SPILL.

-AFTER A SPILL, THE PREVENTION PLAN SHALL BE REVIEWED AND CHANGED TO PREVENT FURTHER SIMILAR SPILLS FROM OCCURRING. THE CAUSE OF THE SPILL, MEASURES TO PREVENT IT, AND HOW TO CLEAN THE SPILL UP SHALL BE RECORDED.

-THE SUPERINTENDENT SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR AND IS RESPONSIBLE FOR THE DAY TO DAY SITE OPERATIONS. THE SUPERINTENDENT ALSO OVERSEES THE SPILL PREVENTION PLAN AND SHALL BE RESPONSIBLE FOR EDUCATING THE EMPLOYEES ABOUT SPILL PREVENTION AND CLEANUP PROCEDURES.

MAINTENANCE AND INSPECTION PRACTICES

THE FOLLOWING ARE MAINTENANCE AND INSPECTION PRACTICES THAT SHALL BE COMPLETED BY THE CONTRACTOR:

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE CHECKED DAILY AND AFTER EACH 0.5 INCH OR GREATER RAINFALL BY THE SUPERINTENDENT OR SOMEONE UNDER HIS/HER DIRECT SUPERVISION.

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE KEPT IN GOOD CONDITION. REPAIRS MUST BE MADE WITHIN 24 HOURS OF REPORT.

-THE SILT FENCE SHALL BE INSPECTED PERIODICALLY FOR HEIGHT OF SEDIMENT AND CONDITION OF FENCE.

-THE SILT FENCE SHALL BE CLEARED OF SEDIMENT WHEN SEDIMENT MEASURES ONE-THIRD THE HEIGHT OF THE FENCE.

-THE SEDIMENT BASINS/DITCHES SHALL BE CHECKED MONTHLY FOR DEPTH OF SEDIMENT. THEY SHALL BE CLEANED WHEN SEDIMENT REACHES 10% OF TOTAL CAPACITY AND AFTER CONSTRUCTION IS COMPLETE.

-DIVERSION DIKES SHALL BE INSPECTED MONTHLY. ANY BREACHES SHALL BE PROMPTLY REPAIRED.

-ALL SEEDING SHALL BE CHECKED FOR PROPER GROWTH AND UNIFORMITY. UNSTABALIZED AREAS SHALL BE RE-SODDED.

-A MAINTENANCE REPORT SHALL BE COMPLETED DAILY AFTER EACH INSPECTION OF THE SEDIMENT AND EROSION CONTROL METHODS. THE REPORTS SHALL BE FILED IN AN ORGANIZED MANNER AND RETAINED ON-SITE DURING CONSTRUCTION. AFTER CONSTRUCTION IS COMPLETED, THE REPORTS SHALL BE SAVED FOR AT LEAST THREE YEARS. THE REPORTS SHALL BE AVAILABLE FOR ANY AGENCY THAT HAS JURISDICTION OVER EROSION CONTROL.

-THE SUPERINTENDENT SHALL ORGANIZE THE TRAINING FOR INSPECTION PROCEDURES AND PROPER EROSION CONTROL METHODS FOR EMPLOYEES THAT COMPLETE INSPECTIONS AND REPORTS.

ADDITIONAL CONTRACTOR RESPONSIBILITIES

-C.O.R. IS REQUIRED TO SUBMIT A SWPPP TO THE CITY FOR REVIEW AND APPROVAL PRIOR TO MOBILIZING TO THE SITE AND INSTALLING ANY BMPS.

-C.O.R. IS REQUIRED TO COMPLY WITH THE REGULATIONS OF THE CITY, WATER MANAGEMENT DISTRICT, AND FDEP IN MANAGING STORMWATER RUNOFF FROM CONSTRUCTION SITES.

-C.O.R. IS REQUIRED TO SUBMIT AND OBTAIN A NOTICE OF INTENT FROM FDEP FOR THIS PROJECT.

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED: _____ DATE:_____

CORY SITLER
FLORIDA REGISTRATION NUMBER: 89984
PROFESSIONAL ENGINEER

CONTRACTOR'S CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND, SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FORM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER.

SIGNATURE AND DATE	NAME AND TITLE, COMPANY / ADDRESS AND TELEPHONE NUMBER	RESPONSIBILITY

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	MMB

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WWW.KIMLEY-HORN.COM REGISTRY No. 35105

LICENSED PROFESSIONAL ENGINEER CORY R. SITLER STATE OF FLORIDA 89984 PROFESSIONAL ENGINEER

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

SWPPP NOTES

WINTER SPRINGS MARKETPLACE-ADDITIONAL PARKING
CITY OF WINTER SPRINGS FL

SHEET NUMBER
C2.1

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:SWPPP NOTES July 18, 2025 08:50:08am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C2.0 SWPPP NOTES.dwg
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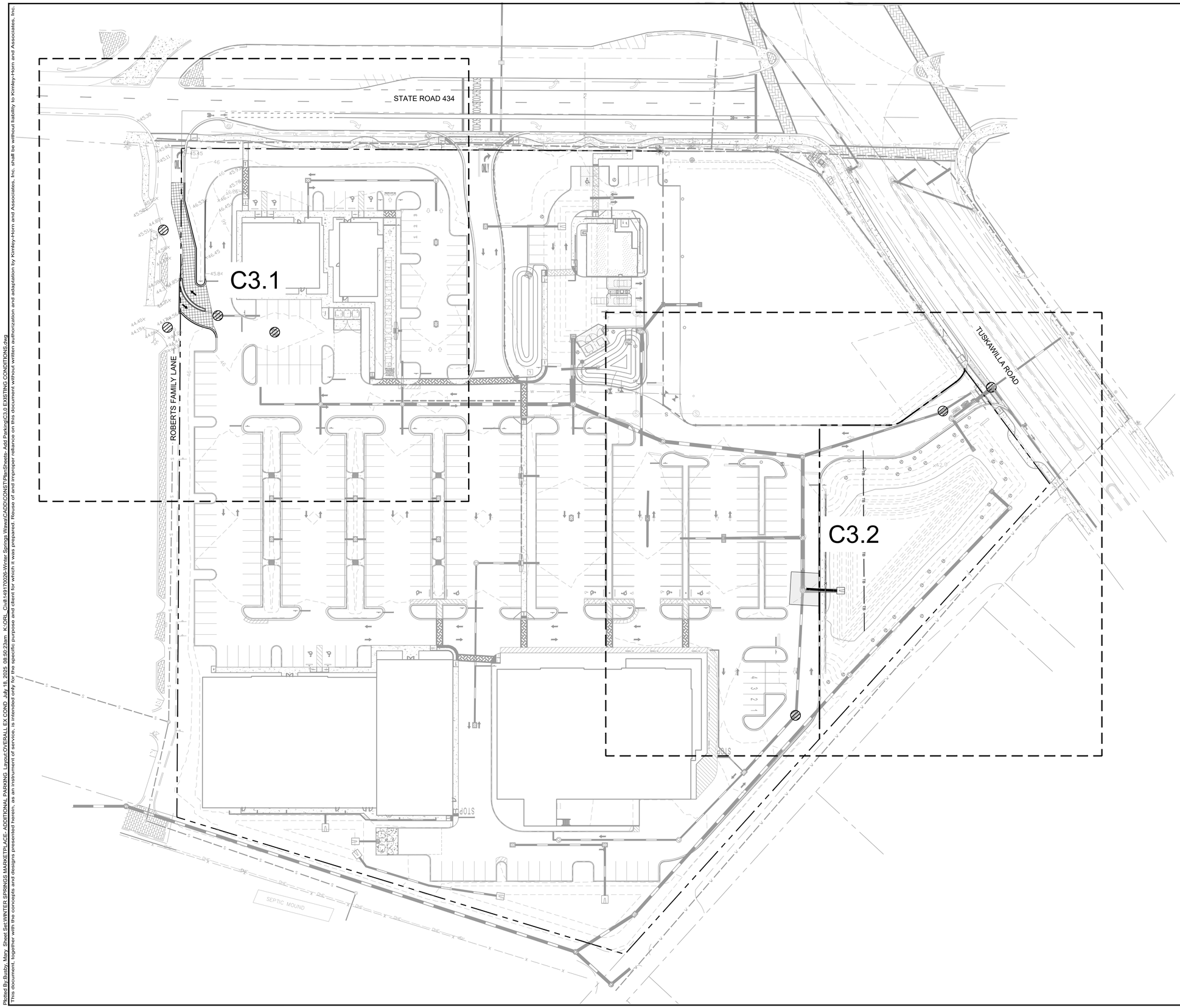

SIDEWALK NOTES:

1. ALL SIDEWALK CLOSURES SHALL BE IN ACCORDANCE WITH FDOT DESIGN INDEX #102-600. (PROVIDE TEMPORARY ASPHALT SIDEWALKS AS NEEDED)

DATUM/BENCHMARK NOTE:

1. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE RELATIVE TO OSCEOLA COUNTY BENCHMARK #1189, BEING A 2" BRASS DISK, STAMPED "OC 1189", AND HAVING RECORD ELEVATION OF 81.32 FEET.

EXISTING UTILITY NOTE:

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GEOTECH NOTE:

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BEARING NOTE:

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LEGEND

- PROPERTY LINE
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- INLET PROTECTION (FOR DETAIL, SEE SHEET C2.0)
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Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
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LICENSED LANDSCAPE ARCHITECT CORY K. BUTLER — STATE OF FLORIDA — REGISTERED PROFESSIONAL ENGINEER — DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

OVERALL EXISTING CONDITIONS AND DEMOLITION PLAN

WINTER SPRINGS MARKETPLACE-ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER C3.0

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE ADDITIONAL PARKING Layout:OVERALL EX COND July 18, 2025 08:50:23am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C3.0 EXISTING CONDITIONS.dwg
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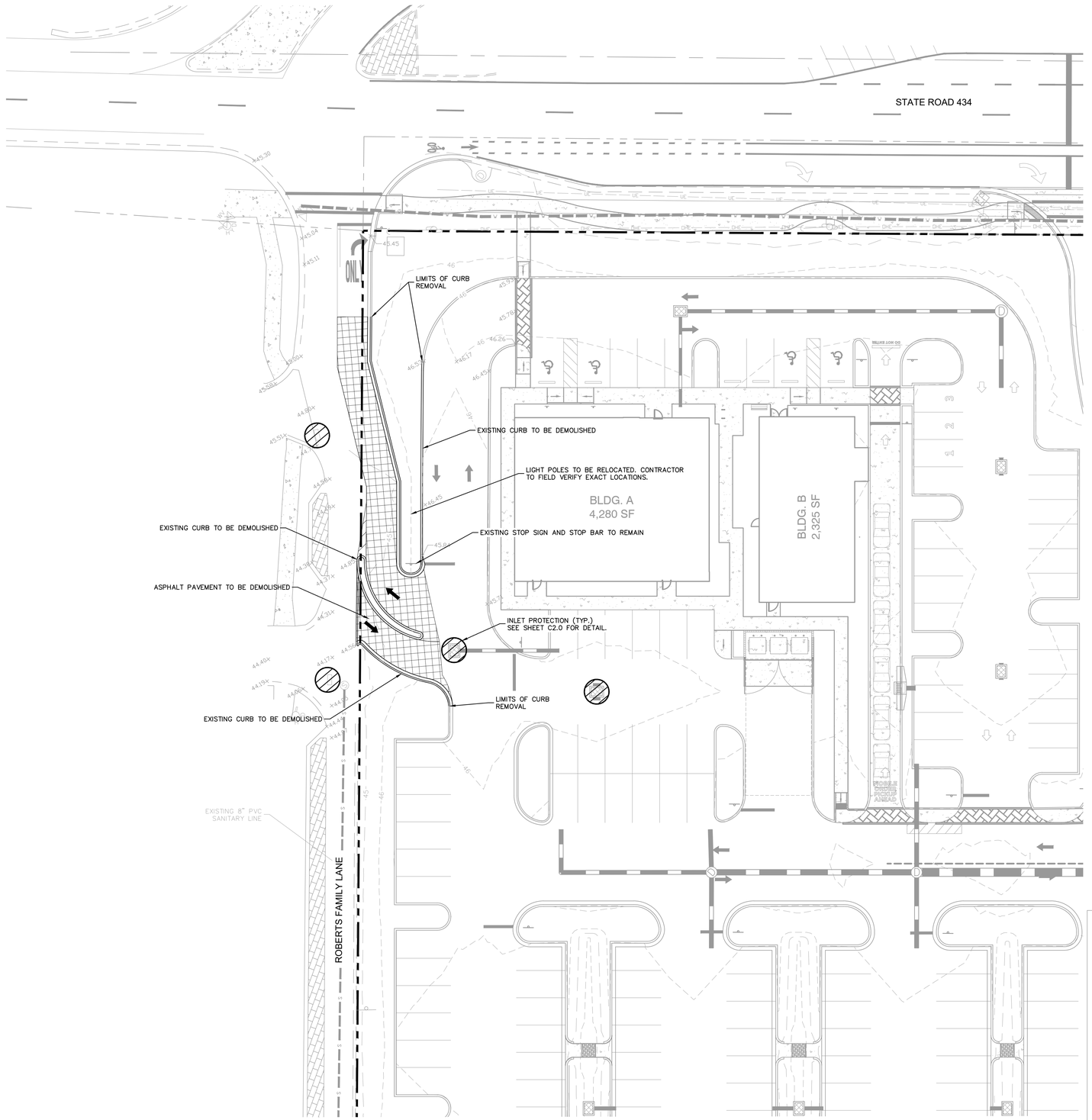

GRAPHIC SCALE IN FEET
0 10 20 40

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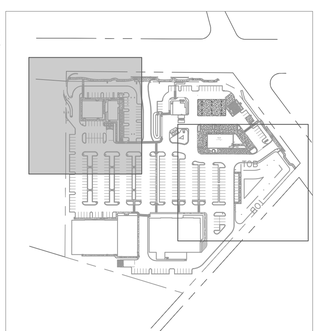

KEY MAP

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No.	REVISIONS	DATE	BY
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LICENSED LANDSCAPE ARCHITECT CHRISTY N. SITLER 0001696 STATE OF FLORIDA

LICENSED PROFESSIONAL ENGINEER CORY N. SMITH 0093687 STATE OF FLORIDA

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

EXISTING CONDITIONS AND DEMOLITION PLAN

WINTER SPRINGS MARKETPLACE-ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C3.1

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:C3.1 July 18, 2025 08:50:34am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C3.0 EXISTING CONDITIONS.dwg
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Plotted By: Busby, Mary Sheet Set: WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout: C3.2 July 18, 2025 08:50:44am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C3.0 EXISTING CONDITIONS.dwg
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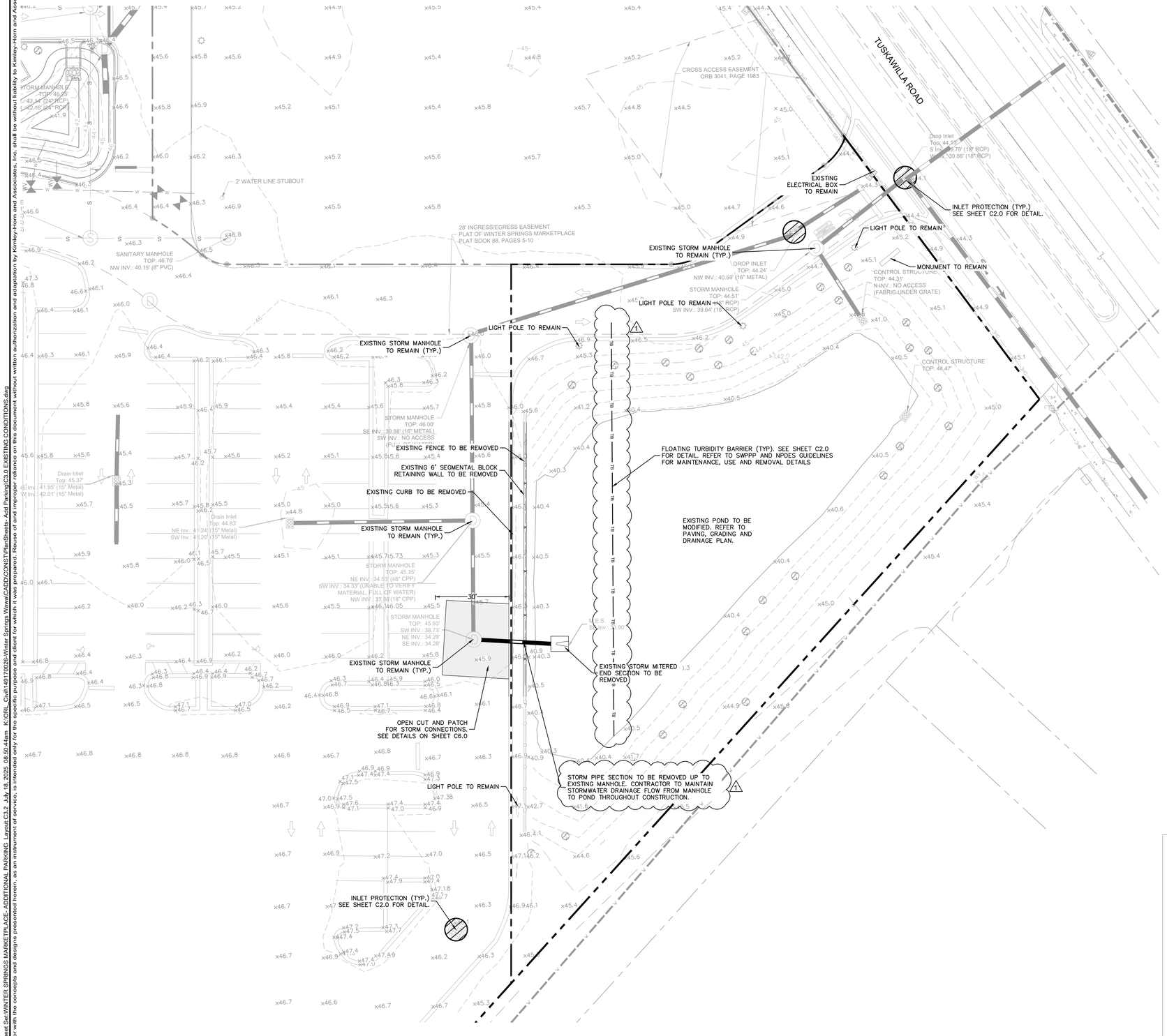
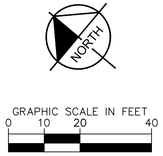




SIDEWALK NOTES:

1. ALL SIDEWALK CLOSURES SHALL BE IN ACCORDANCE WITH FDOT DESIGN INDEX #102-600. (PROVIDE TEMPORARY ASPHALT SIDEWALKS AS NEEDED)

DATUM/BENCHMARK NOTE:

1. THE ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88) AND ARE RELATIVE TO OSCEOLA COUNTY BENCHMARK #1189, BEING A 2" BRASS DISK, STAMPED "OC 1189", AND HAVING RECORD ELEVATION OF 81.32 FEET.

EXISTING UTILITY NOTE:

1. THERE MAY BE ON-SITE UNDERGROUND UTILITIES (INCLUDING BUT NOT LIMITED TO IRRIGATION, SANITARY SEWER, POTABLE WATER LINES, NATURAL GAS LINES, ELECTRIC, TELEPHONE AND CABLE LINES) THAT WERE NOT LOCATED OR IDENTIFIED BY THE PROJECT SURVEYOR. PRIOR TO CONSTRUCTION START, CONTRACTOR SHALL FIELD VERIFY ALL EXISTING ON-SITE UTILITIES AND RIGHT-OF-WAY UTILITIES.
2. FLORIDA LAW (F.S. 556) UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT MANDATES THAT EXCAVATORS/CONTRACTORS SHALL CONTACT SUNSHINE 811 (FKA: SUNSHINE STATE ONE-CALL OF FLORIDA) BY CALLING 800-432-4770 OR 811 AT LEAST 2 FULL BUSINESS DAYS PRIOR TO BEGINNING ANY EXCAVATION OR DEMOLITION TO ALLOW MEMBER OPERATORS AN OPPORTUNITY TO IDENTIFY AND MARK THEIR UNDERGROUND FACILITIES AND APPROPRIATELY RESPONSE TO THE POSITIVE RESPONSE SYSTEM.

DEMOLITION NOTES:

1. SEE ADDITIONAL NOTES, SHEET C1.0 AND C1.1.
2. ANY EXISTING WELLS (I.E. ARTESIAN, IRRIGATION, DRINKING, ETC.) DISCOVERED ON-SITE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL APPLICABLE JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED. ANY WELL DISCOVERED DURING EARTHWORK OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES, OWNER, AND OWNER'S ENGINEER WITHIN 24 HOURS AFTER DISCOVERY IS MADE. C.O.R. SHALL PROVIDE A COPY OF ANY WELL ABANDONMENT PERMITS TO THE CITY.

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS, FLORIDA, LLC. DATED NOV. 15, 2018.

EROSION CONTROL NOTE:

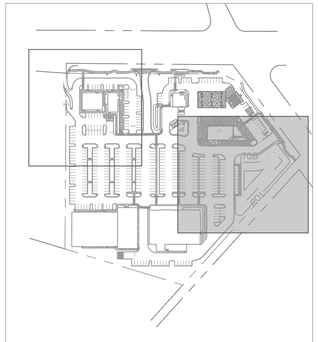
1. REFER TO SWPPP SHEETS C2.0 FOR ADDITIONAL NOTES & DETAILS.
2. PROVIDE STABILIZED CONSTRUCTION ENTRANCE AT ALL CONSTRUCTION ACCESS POINTS.
3. UTILIZE PERFORATED SOCK DRAIN (OR EQUIVALENT) IN FRONT OF EXISTING/PROPOSED CURB INLETS ADJACENT TO CONSTRUCTION ACTIVITIES. ALONG ALL ROADWAYS.
4. INSTALL AND MAINTAIN FILTER FABRIC UNDER GRATES OF ALL EXISTING/PROPOSED INLETS.
5. PROVIDE TREE PROTECTION BARRIERS AROUND ALL EXISTING TREES LOCATED ON-SITE WHICH ARE DESIGNATED TO BE PRESERVED. REFER TO LANDSCAPE PLANS FOR TREES TO REMAIN AND TREE PROTECTION DETAILS/NOTES.

BEARING NOTE:

1. BEARINGS SHOWN HEREON ARE BASED ON THE WEST LINE OF LOT 1, KISSIMMEE ELEMENTARY SCHOOL, AS SHOWN ON PLAT BOOK 12, PAGE 162 OF THE PUBLIC RECORDS OF OSCEOLA COUNTY, FLORIDA. AS HAVING AN ASSUMED BEARING OF N00°04'22"W.

LEGEND

- PROPERTY LINE
- TURBIDITY BARRIER
- INLET PROTECTION (FOR DETAIL, SEE SHEET C2.0)
- EXISTING LANDSCAPE
- EXISTING LIGHT POLE
- EXISTING FENCE TO BE REMOVED
- EXISTING STORM PIPE TO REMAIN
- EXISTING STORM PIPE TO BE REMOVED
- EXISTING STORM INLET TO REMAIN
- ASPHALT PAVEMENT TO BE DEMOLISHED



KEY MAP

Always call 811 two full business days before you dig to have underground utilities located and marked.

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No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	MMB

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WWW.KIMLEY-HORN.COM REGISTRY No. 35106

LICENSED LANDSCAPE ARCHITECTURAL CONSTRUCTION PROFESSIONAL ENGINEER STATE OF FLORIDA CORY S. SITTLER 75962 REGISTERED 07/18/2025 DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

EXISTING CONDITIONS AND DEMOLITION PLAN

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER C3.2

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:OVERALL SITE PLAN July 18, 2025 08:51:02am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C4.0 SITE PLAN.dwg
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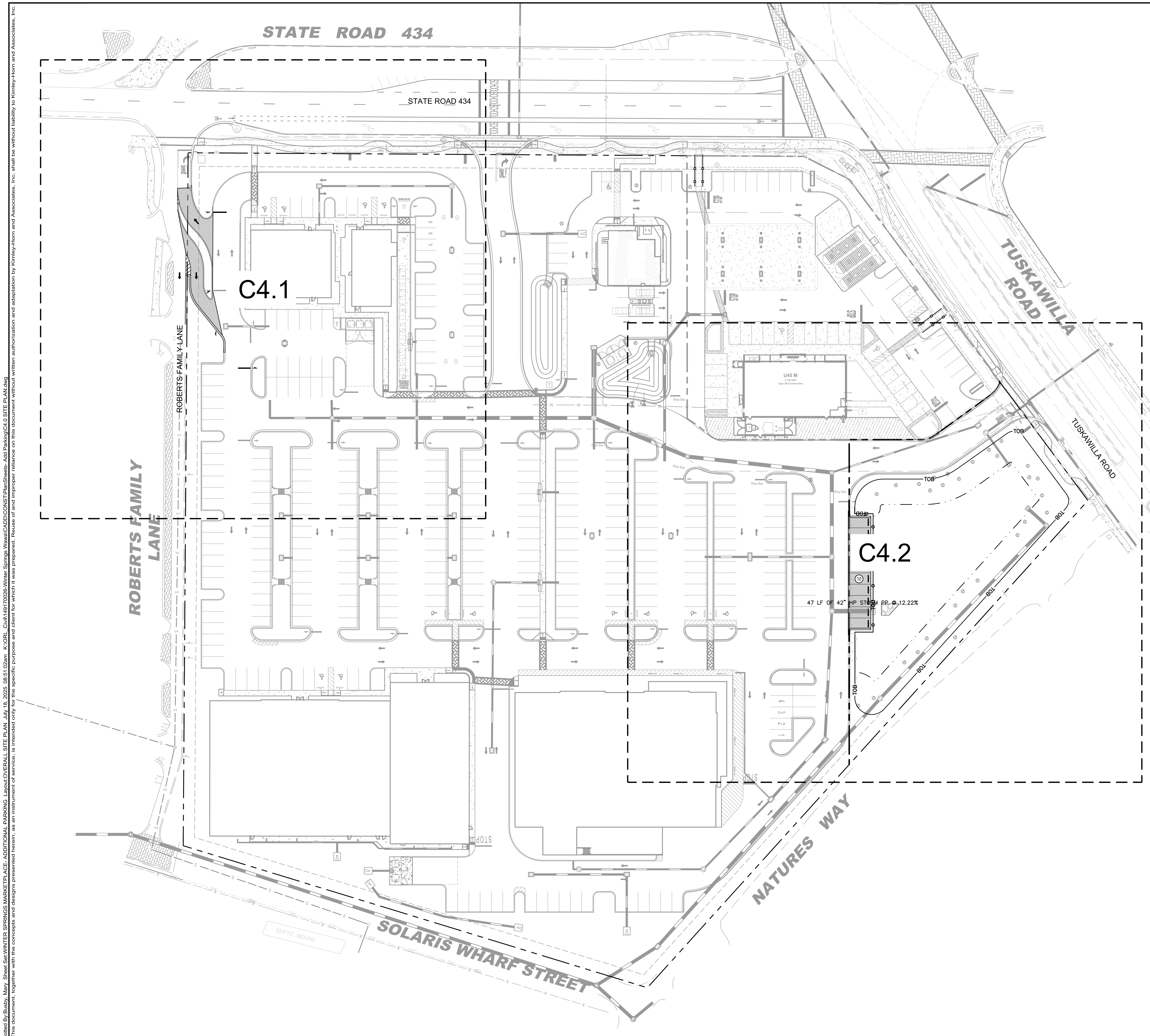

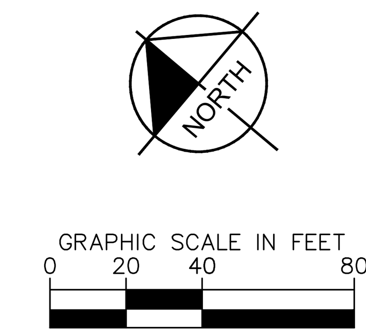

OVERALL SITE DATA:

PROJECT AREA:	5,227 SQ. FT (0.12 AC)
ZONING:	T–5 URBAN CENTER ZONE
FUTURE LAND USE:	COMMERCIAL
PROPOSED USE:	COMMERCIAL

OVERALL IMPERVIOUS CALCULATIONS

MAXIMUM ALLOWABLE IMPERVIOUS AREA (100%):	0.12 AC
ASPHALT AREA:	0.05 AC (41.7%)
CONCRETE AREA:	0.02 AC (16.7%)
TOTAL IMPERVIOUS AREA:	0.07 AC (58.4%)
TOTAL OPEN SPACE:	0.05 AC (41.7%)

REQUIRED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
SIDE:	10 FT
REAR:	10 FT

PROVIDED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
SIDE:	0 FT
REAR:	0 FT

PROVIDED PARKING:

REGULAR SPACES (10'X20'):	10 SPACES
ADA SPACES (ALL VAN ACCESSIBLE, 0 REQUIRED):	0 SPACES
TOTAL PARKING SPACES PROVIDED:	10 SPACES

LANDSCAPING

ALL LANDSCAPING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE

SITE SIGNAGE

PERMANENT SITE SIGNAGE WILL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS LAND DEVELOPMENT CODE.

REGULATORY SIGNAGE AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH MUTCD (2009 ED.) AND FDOT DESIGN STANDARDS (LATEST ED.)

STORMWATER MANAGEMENT

STORMWATER RUNOFF FOR THE PROPOSED ONSITE IMPROVEMENTS WILL BE MANAGED THROUGH THE EXISTING WET DETENTION, DRY DETENTION, AND EXFILTRATION STORMWATER MANAGEMENT SYSTEM WHICH HAS BEEN DESIGNED TO MEET THE CITY OF WINTER SPRINGS CODE AND THE REQUIREMENTS OF THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD).

100-YEAR FLOOD PLAIN

THE PROPERTY IS LOCATED OUTSIDE THE FLOODPLAIN WITHIN "ZONE X" – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN – PER FEMA FIRM, MAP NUMBER 12117C0160F, REVISED ON SEPTEMBER 28, 2007.

PHASING

ALL SITE WORK AND INFRASTRUCTURE WILL BE COMPLETED IN ONE (1) PHASE

LEGEND

Symbol	Description
— · —	PROPERTY LINE
—o—o—	PROPOSED FENCE
(11)	PARKING SPACE COUNT
(stippled box)	PROPOSED CONCRETE, SEE SHEET C6.0 FOR DETAILS
(grey box)	PROPOSED LIGHT DUTY ASPHALT, SEE SHEET C6.0 FOR DETAILS

No.	REVISIONS	DATE	BY
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LICENSED PROFESSIONAL
CORY N. SITLER
LICENSE
STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE: 07/18/2025

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

OVERALL SITE PLAN

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C4.0

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:C4.1 July 18, 2025 08:51:09am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C4.0 SITE PLAN.dwg
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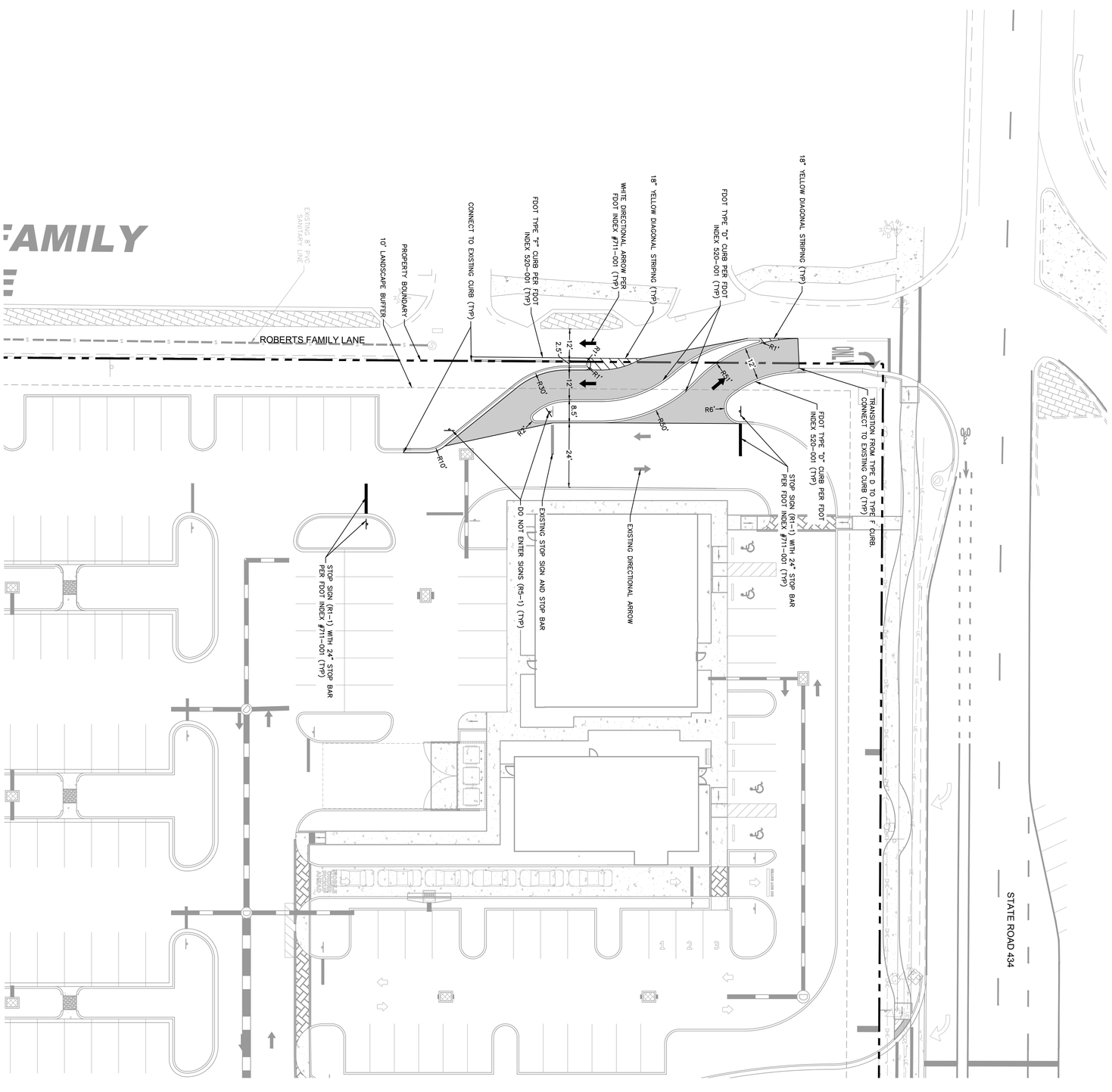


LEGEND

PROPERTY LINE

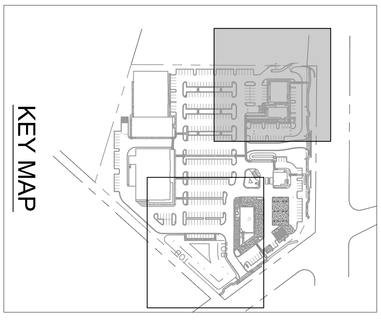
PROPOSED FENCE

11 PARKING SPACE COUNT

PROPOSED CONCRETE, SEE SHEET C4.0 FOR DETAILS

PROPOSED LIGHT DUTY ASPHALT, SEE SHEET C4.0 FOR DETAILS

KEY MAP



GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

SHEET NUMBER C4.1	WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING CITY OF WINTER SPRINGS FL	SITE PLAN

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

LICENSED PROFESSIONAL ENGINEER
CORY N. SITLER
LICENSE NUMBER 73393
STATE OF FLORIDA
DATE:

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Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:C4.2 July 18, 2025 08:51:18am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONSTPlanSheets- Add Parking\C4.0 SITE PLAN.dwg
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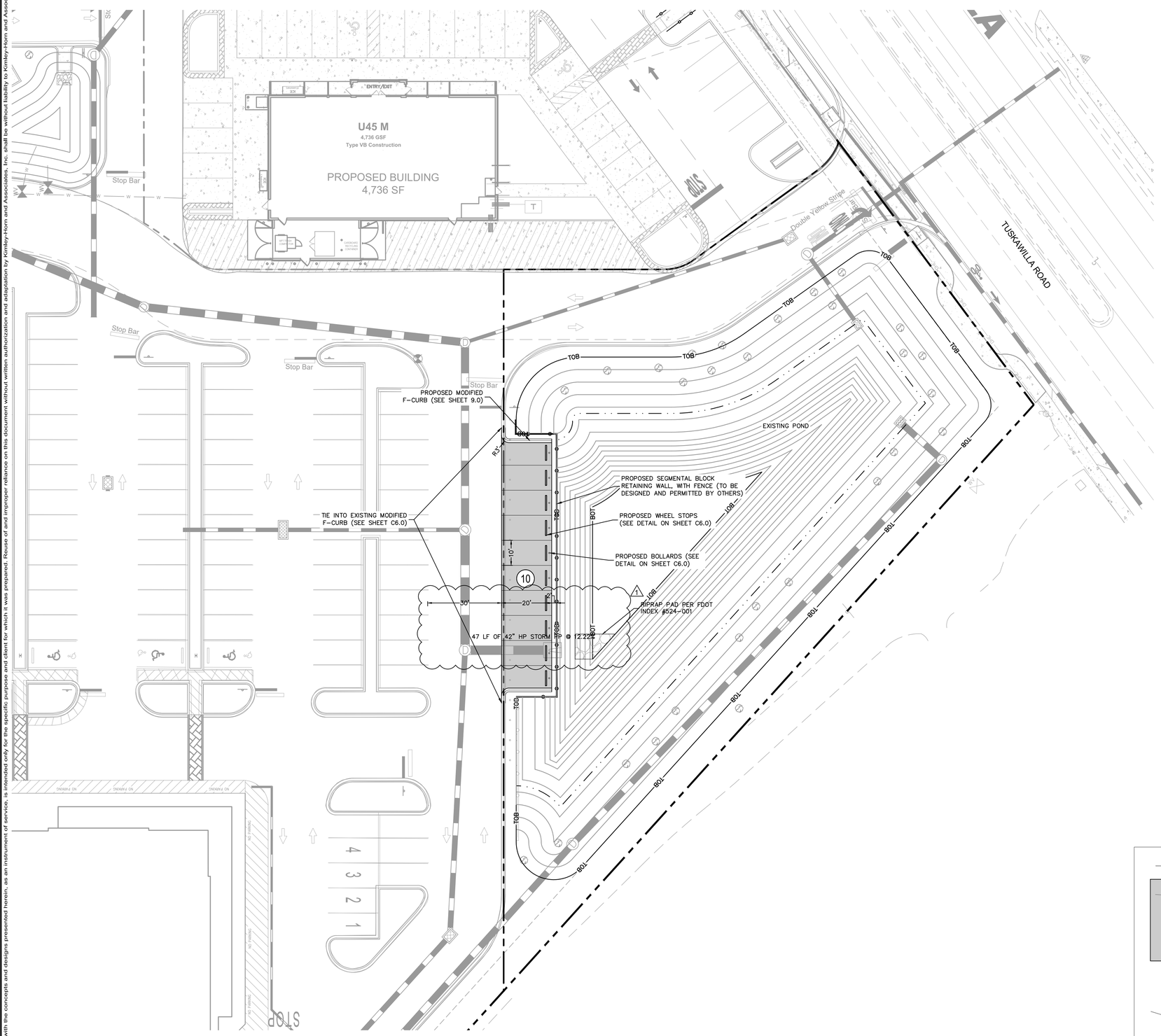

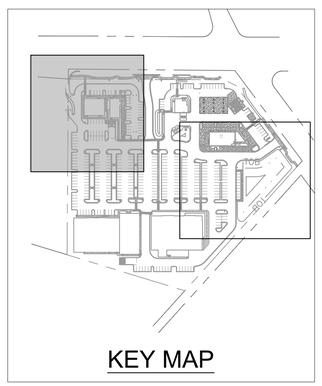

LEGEND

- PROPERTY LINE
- PROPOSED FENCE
- (11) PARKING SPACE COUNT
- PROPOSED CONCRETE, SEE SHEET C6.0 FOR DETAILS
- PROPOSED LIGHT DUTY ASPHALT, SEE SHEET C6.0 FOR DETAILS

GRAPHIC SCALE IN FEET
0 10 20 40

OVERALL SITE DATA:

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FUTURE LAND USE:	COMMERCIAL
PROPOSED USE:	COMMERCIAL

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ASPHALT AREA:	0.05 AC (41.7%)
CONCRETE AREA:	0.02 AC (16.7%)
TOTAL IMPERVIOUS AREA:	0.07 AC (58.4%)
TOTAL OPEN SPACE:	0.05 AC (41.7%)

REQUIRED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
SIDE:	10 FT
REAR:	10 FT

PROVIDED YARD/LANDSCAPE SETBACKS

FRONT (TUSKAWILLA RD):	12 FT
SIDE:	0 FT
REAR:	0 FT

PROVIDED PARKING: 1

REGULAR SPACES (10'X20'):	10 SPACES
ADA SPACES (ALL VAN ACCESSIBLE, 0 REQUIRED):	0 SPACES
TOTAL PARKING SPACES PROVIDED:	10 SPACES

LANDSCAPING

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THE PROPERTY IS LOCATED OUTSIDE THE FLOODPLAIN WITHIN "ZONE X" – AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN – PER FEMA FIRM, MAP NUMBER 12117C0160F, REVISED ON SEPTEMBER 28, 2007.

PHASING

ALL SITE WORK AND INFRASTRUCTURE WILL BE COMPLETED IN ONE (1) PHASE

No.	REVISIONS	DATE	BY
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LICENSED LANDSCAPE ARCHITECT CHRISTY N. SITLER STATE OF FLORIDA LICENSE NO. 0001234 DATE

LICENSED PROFESSIONAL ENGINEER CORY N. SMITH STATE OF FLORIDA LICENSE NO. 0000000 DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

SITE PLAN

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C4.2

Plotted By:Bixby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE ADDITIONAL PARKING Layout:OVERALL PGD July 18, 2025 09:31:10am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets: Add Parking\C5.0 PAVING GRADING & DRAINAGE.dwg
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STATE ROAD 434

ROBERTS FAMILY LANE

TUSKAWILLA ROAD

C5.1

C5.2

U45 M
4,736 GSF
Type VB Construction

SEPTIC MOUND

GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

LEGEND

x44.00	EXISTING SPOT ELEVATION
93.50	PROPOSED ELEVATION
94.00 / 93.50	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
	PROPOSED MITERED END
	PROPERTY LINE
44	EXISTING CONTOUR
44	PROPOSED CONTOUR
	PROPOSED STORM PIPE
	PROPOSED STORM INLET
D	PROPOSED STORM MANHOLE
	EXISTING STORM PIPE
	EXISTING GRATE INLET
	PROPOSED DIRECTION OF SURFACE WATER RUNOFF
	PROPOSED YARD DRAIN

DRAINAGE NOTES:

1. ALL STORM SEWER PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS.
2. FOR EROSION CONTROL NOTES AND DETAILS, REFER TO GENERAL NOTES SHEETS C1.0 AND SWPPP SHEETS C2.0 – C2.1.
6. ALL PEDESTRIAN SIDEWALKS, PATHWAYS, AND CROSSWALKS SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 1:48 CROSS SLOPE (2.0%), MAX. 1:20 RUNNING SLOPE (5.0%).
7. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 2.0% CROSS

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS DATED NOVEMBER 15, 2018.

DATUM/BENCHMARK:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR ADDITIONAL DETAILS AND BENCHMARKS.

Always call 811 two full business days before you dig to have underground utilities located and marked.
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BY	DATE	REVISIONS	No.
MMB	07/18/25	REVISED PER CITY COMMENTS	1

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LICENSED LANDSCAPE ARCHITECT CORY R. SITLER LICENSE NO. LA0001811 STATE OF FLORIDA
LICENSED PROFESSIONAL ENGINEER CORY SITLER LICENSE NO. 0073657 STATE OF FLORIDA
PROFESSIONAL ENGINEER
DATE: 7/18/2025

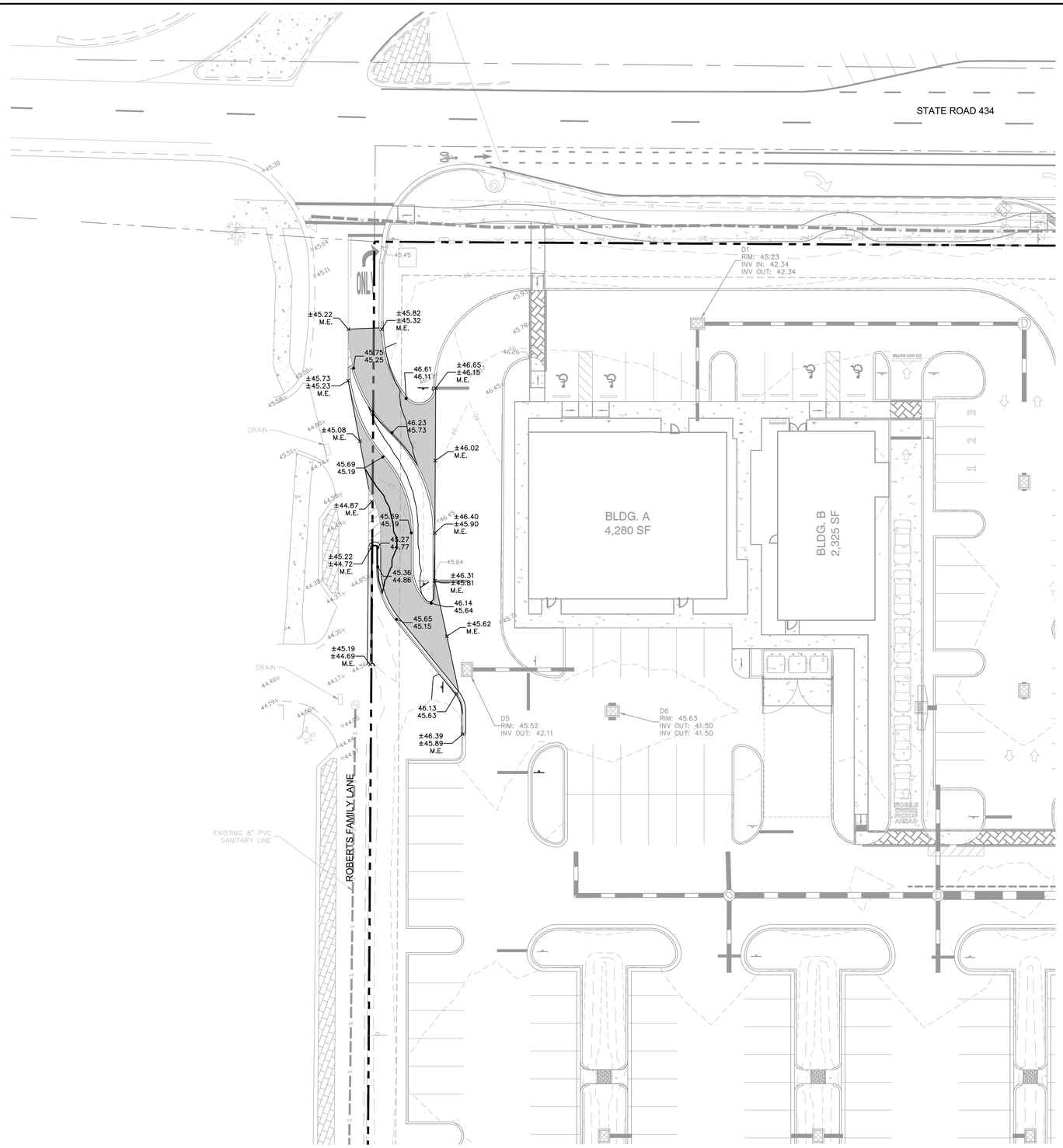
KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

OVERALL PAVING GRADING & DRAINAGE

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C5.0



LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED ELEVATION
- PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
- PROPOSED MITERED END
- PROPERTY LINE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED STORM PIPE
- PROPOSED STORM INLET
- PROPOSED STORM MANHOLE
- EXISTING STORM PIPE
- EXISTING GRATE INLET
- PROPOSED DIRECTION OF SURFACE WATER RUNOFF
- PROPOSED YARD DRAIN

DRAINAGE NOTES:

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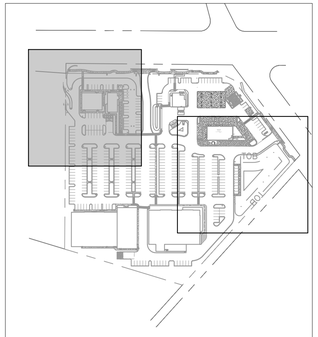
2. FOR EROSION CONTROL NOTES AND DETAILS, REFER TO GENERAL NOTES SHEETS C1.0 AND SWPPP SHEETS C2.0 – C2.1.
6. ALL PEDESTRIAN SIDEWALKS, PATHWAYS, AND CROSSWALKS SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 1:48 CROSS SLOPE (2.0%), MAX. 1:20 RUNNING SLOPE (5.0%).
7. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 2.0% CROSS

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS DATED NOVEMBER 15, 2018.

DATUM/BENCHMARK:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR ADDITIONAL DETAILS AND BENCHMARKS.



KEY MAP

Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	NMB

Kimley»Horn

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

LICENSED PROFESSIONAL ENGINEER — CORY N. SMITH — STATE OF FLORIDA — No. 73908 — DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

PAVING GRADING & DRAINAGE PLAN

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C5.1

Plotted By:Busby, Mary Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:C5.1 July 18, 2025 09:09:41am K:\ORL_Civil\149170026-Winter Springs Wawa\CADD\CONST\PlanSheets- Add Parking\C5.0 PAVING GRADING & DRAINAGE.dwg
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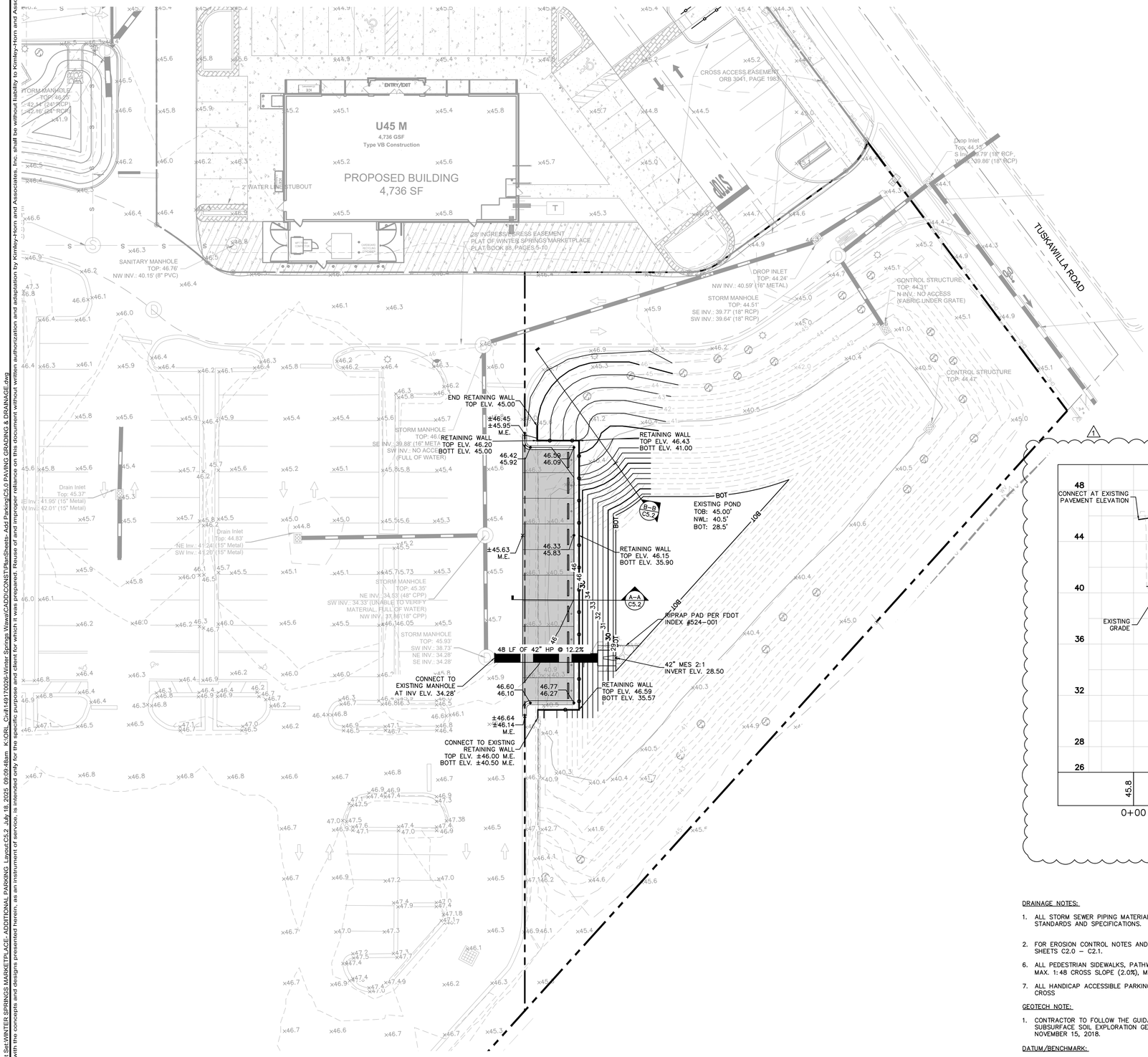
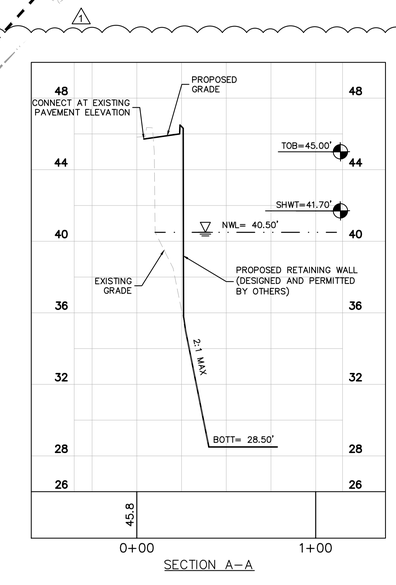
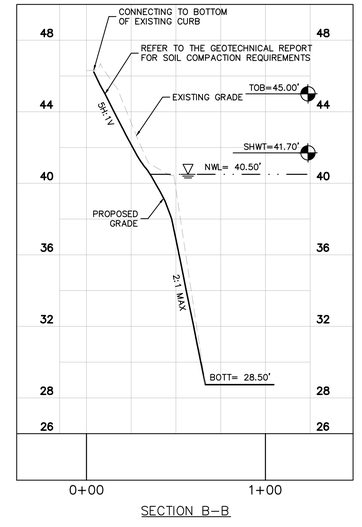




SECTION A–A



SECTION B–B

DRAINAGE NOTES:

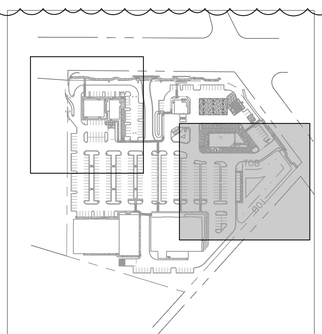
1. ALL STORM SEWER PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF WINTER SPRINGS STANDARDS AND SPECIFICATIONS.
2. FOR EROSION CONTROL NOTES AND DETAILS, REFER TO GENERAL NOTES SHEETS C1.0 AND SWPPP SHEETS C2.0 – C2.1.
6. ALL PEDESTRIAN SIDEWALKS, PATHWAYS, AND CROSSWALKS SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 1:48 CROSS SLOPE (2.0%), MAX. 1:20 RUNNING SLOPE (5.0%).
7. ALL HANDICAP ACCESSIBLE PARKING SPACES SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 2.0% CROSS

GEOTECH NOTE:

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT PERFORMED BY ECS DATED NOVEMBER 15, 2018.

DATUM/BENCHMARK:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR ADDITIONAL DETAILS AND BENCHMARKS.



KEY MAP

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

LEGEND

×44.00	EXISTING SPOT ELEVATION
93.50	PROPOSED ELEVATION
94.00 / 93.50	PROPOSED TOP OF CURB/ PAVEMENT ELEVATION
	PROPOSED MITERED END
	PROPERTY LINE
44	EXISTING CONTOUR
44	PROPOSED CONTOUR
	PROPOSED STORM PIPE
	PROPOSED STORM INLET
D	PROPOSED STORM MANHOLE
	EXISTING STORM PIPE
	EXISTING GRATE INLET
	PROPOSED DIRECTION OF SURFACE WATER RUNOFF
	PROPOSED YARD DRAIN

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/18/25	MMB

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CORY S. MILLER
LICENSED PROFESSIONAL ENGINEER
STATE OF FLORIDA
CORY S. MILLER
PE 84906
REGISTERED
PROFESSIONAL ENGINEER
DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

PAVING GRADING & DRAINAGE PLAN

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C5.2

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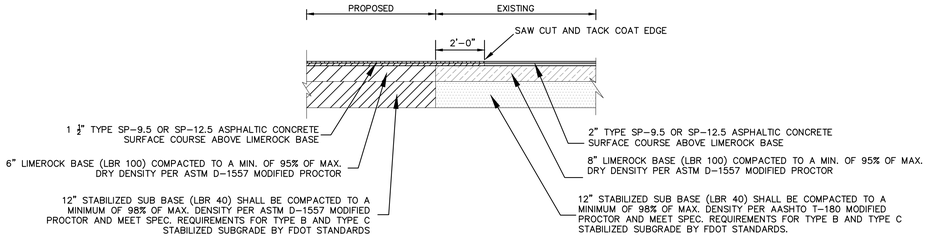
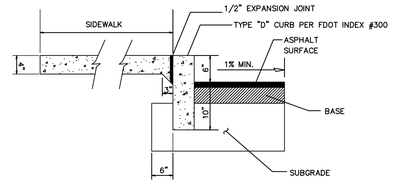
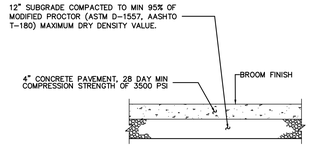


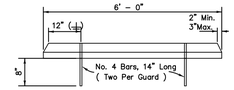
CONNECT TO EXISTING ASPHALT PAVEMENT SECTION
NTS



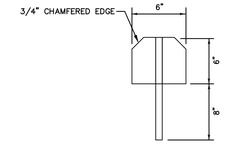
SIDEWALK INTEGRAL CURB DETAIL
NTS



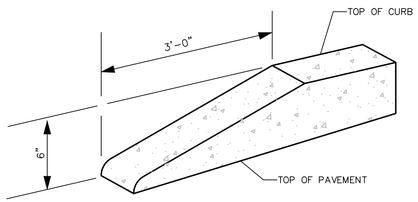
CONCRETE SIDEWALK DETAIL
NTS



WHEEL STOP FRONT VIEW
NTS

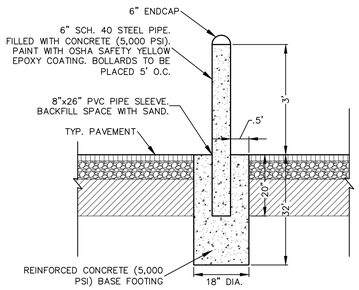


WHEEL STOP PROFILE (TYP.)
NTS

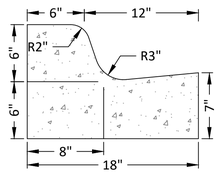


CURB TERMINUS TRANSITION DETAIL
NTS

NOTE:
ALL CURBS TO HAVE STANDARD 3' TRANSITION FROM 6" HEIGHT TO FLUSH (0" HEIGHT). A STANDARD TEMPLATE SHALL BE USED AT ALL LOCATIONS TO PROVIDE UNIFORM CURB TRANSITION THROUGHOUT THE PROJECT.



TYP. BOLLARD DETAIL
NTS



MODIFIED TYPE F CURB
NTS

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LICENSED LANDSCAPE ARCHITECT CORY N. STELLER LICENSE NUMBER 6667890 STATE OF FLORIDA * PROFESSIONAL ENGINEER * DATE

KHA PROJECT	149170026
DATE	07/18/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

CONSTRUCTION DETAILS

WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING

CITY OF WINTER SPRINGS FL

SHEET NUMBER
C6.0

Plotted By: Busby, Mary Sheet Set: WINTER SPRINGS MARKETPLACE - ADDITIONAL PARKING Layout: C6.0 CONSTRUCTION DETAILS July 18, 2025 08:52:06am K:\ORL_Civil\149170026 - Winter Springs Wawa\CAD\CONST\PlanSheets- Add Parking\C6.0 DETAILS.dwg
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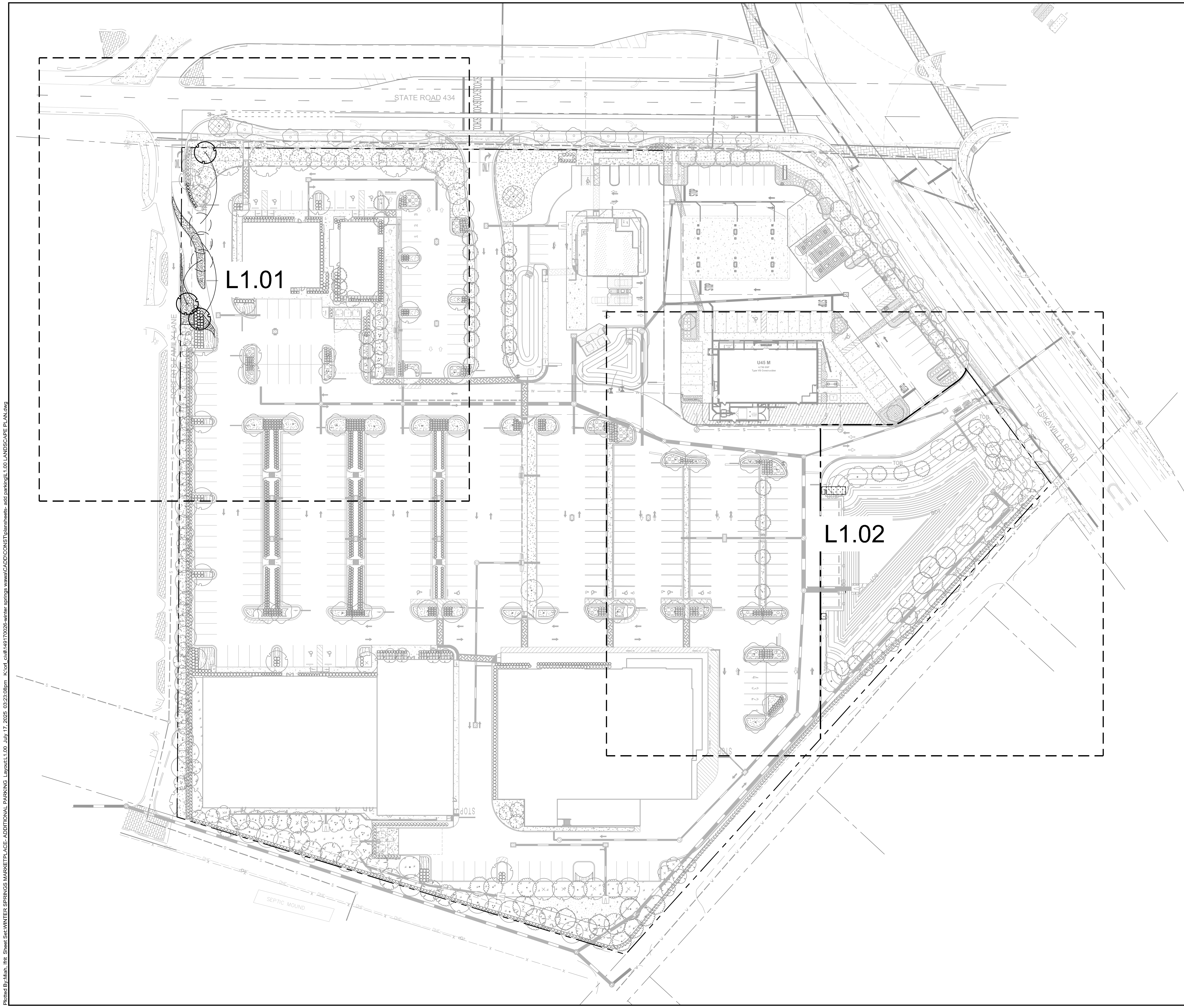

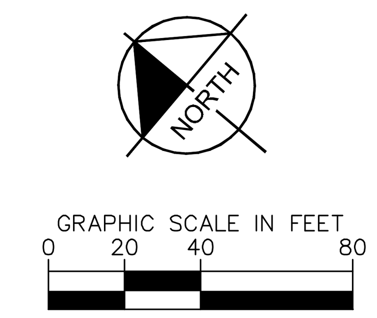

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PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT
MATTHEW TAYLOR FRANKO
LA6667292
STATE OF FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, dnQualifier=A01410D000001936A5201180002618F, O=KIMLEY-HORN AND ASSOCIATES INC., C=US
Date: 2025.07.17 16:27:08-04'00'

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DATE: 07/17/2025

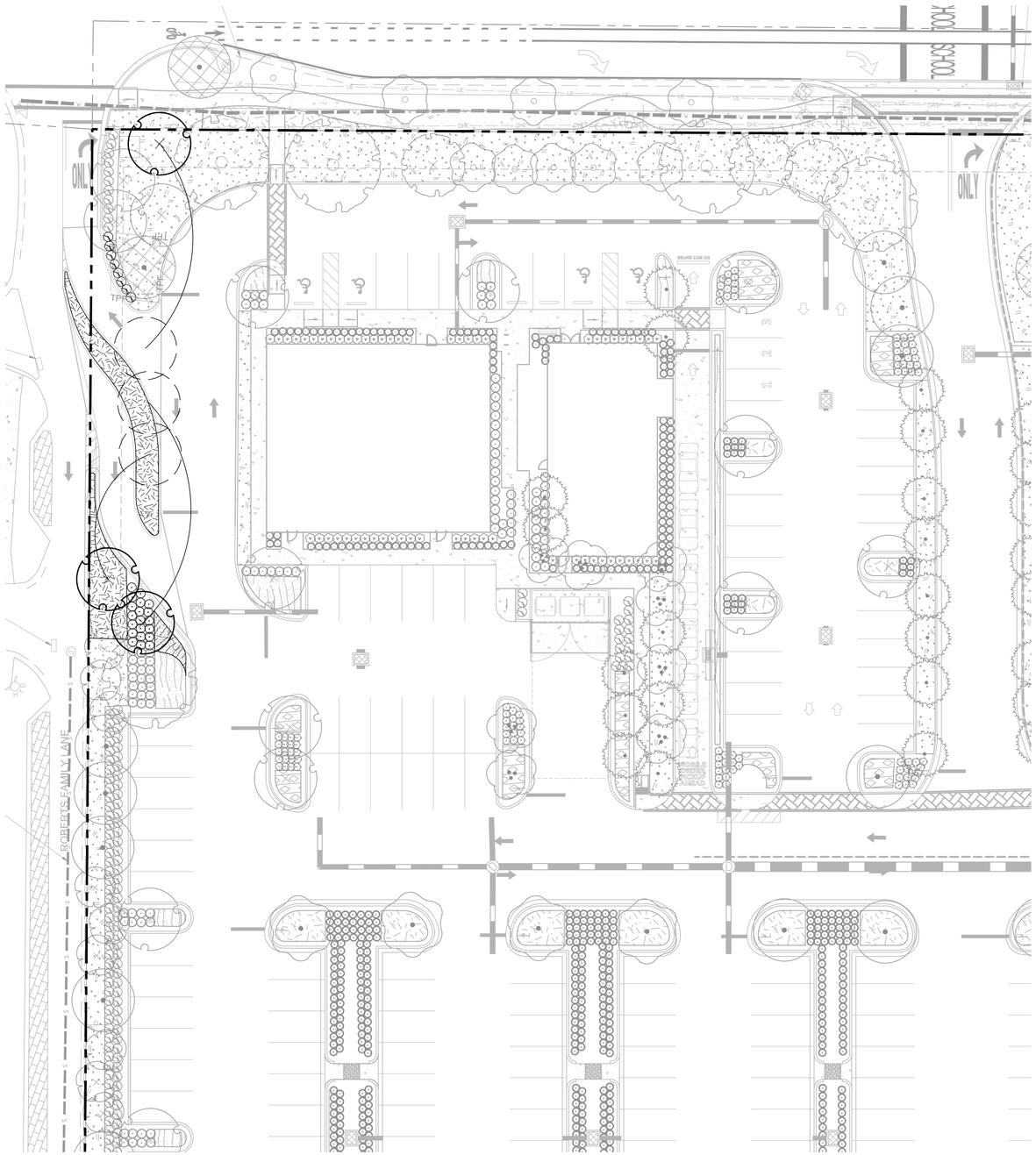
KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

OVERALL LANDSCAPE PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.00



PLANT SCHEDULE TURN ADJUST

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE
CANOPY TREE							
	AF	3	FLORIDA FLAME RED MAPLE STRAIGHT, SINGLE LEADER, FL#1, FULL	ACER RUBRUM 'FLORIDA FLAME'	FG	3" CAL MIN	14` HT., 4` SPR.

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	SPACING
SHRUBS							
	VD	20	DWARF WALTER`S VIBURNUM FULL	VIBURNUM OBOVATUM `DWARF WALTER`S`	7 GAL	36" OC	30" FULL
	VO	8	SWEET VIBURNUM FULL	VIBURNUM ODORATISSIMUM	7 GAL	36" OC	30" FULL
GROUND COVERS							
	BF	86	BULBINE FL #1, FULL	BULBINE FRUTESCENS	3 GAL	14" FULL	12" OC
SOD							
	SA	923 SF	FLORATAM ST, AUGUSTINE GRASS ROLLED TIGHT, 100% INSECT, WEED, DIEASE, DEBRIS FREE	STENOTAPHRUM SECUNDATUM 'FLORATAM'	SOD	-	-

MISC.	QTY	BOTANICAL/COMMON NAME	SPECIFICATIONS
MULCH	TBD	DESIGNER BROWN HARDWOOD MULCH	3" DEPTH MINIMUM, SHREDDED, FREE OF WEEDS/INVASIVE PLANT MATERIAL

GRAPHIC SCALE IN FEET
0 10 20 40

NORTH

LANDSCAPE NOTES:

1. ALL LANDSCAPE MATERIAL TO BE FLORIDA GRADE #1 OR BETTER QUALITY
2. ALL LANDSCAPED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
3. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
4. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE, DURING, AND AFTER INSTALLATION.
5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
6. ALL PLANTING AREAS SHALL BE COMPLETELY MULCHED AS SPECIFIED.
7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES ADJACENT TO THE WORK AREA 2) TO PROTECT ALL UTILITY LINES CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH O RESULT OF THE CONSTRUCTION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WO
9. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAI HEALTHY PLANT CONDITIONS.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR THE WARRANTY PERIOD.
11. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
12. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR WARRANTY PERIOD. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
13. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
14. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES, AND SHALL BE FLORIDA NO. 1 OR BETTER AS GIVEN IN "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE.
15. ALL INVASIVE / EXOTIC SPECIES AND PROHIBITED TREE SPECIES SHALL BE REMOVED FROM SITE, INCLUDING ROOT BALLS TO THE EXTENT POSSIBLE WITH NO DAMAGE TO ADJACENT EXISTING TREES.
16. ALL LANDSCAPE AREAS WILL BE PROVIDED WITH PERMANENT AUTOMATIC IRRIGATION SYSTEM.
17. TREE SUPPORT MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS "ESTABLISHED" (AS APPROVED BY THE LANDSCAPE ARCHITECT).
18. ALL PLANT SPECIFICATIONS IN THE PLANT SCHEDULE SHALL BE CONSIDERED THE MINIMUM ALLOWABLE SPECIFICATIONS. CONTRACTOR SHALL PROCURE PLANT MATERIALS AND UPSIZE AS NECESSARY TO MEET THE MOST STRINGENT SPECIFICATION.
19. ALL PLANTED LANDSCAPE AREAS TO HAVE 3" DEEP DESIGNER BROWN HARDWOOD MULCH TO FULLY COVER DRIP IRRIGATION & AMENDED SOILS. REPAIR AS NEEDED DURING CONSTRUCTION. SUBMIT ALTERNATIVE MULCH SPECIFICATION FOR LANDSCAPE ARCHITECT APPROVAL.

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, serialNumber=A01410D000001936A5ZNA000061BF, O=KIMLEY-HORN AND ASSOCIATES, INC., C=US
Date: 2025.07.17 16:28:43-04'00'

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PHONE: (407) 539-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

DATE: 07/17/2025

KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

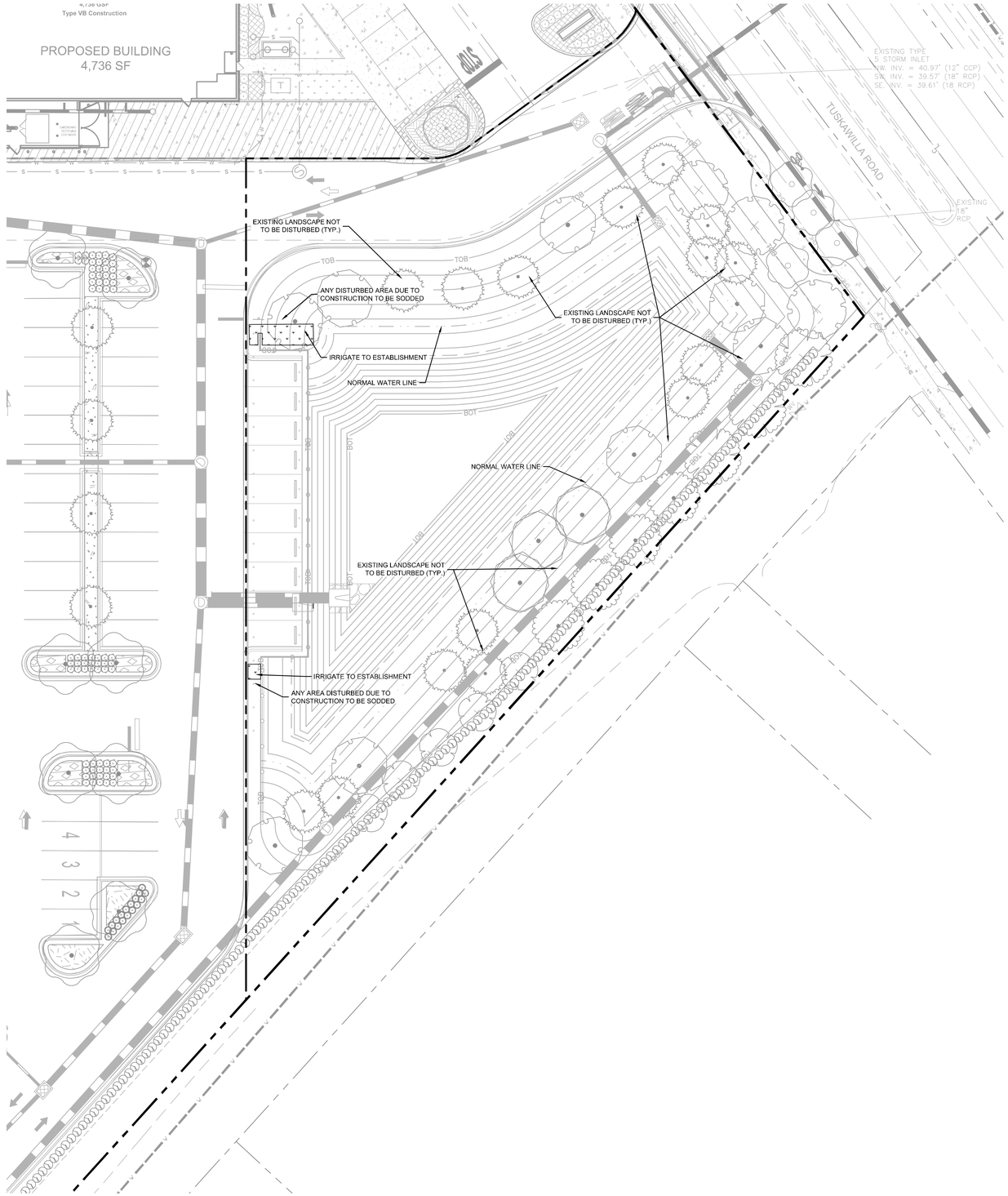
LANDSCAPE PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.01

Plotted By:Mah, Imt Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:L1.01 July 17, 2025 03:23:38pm K:\orl_civil\149170026-winter springs wawa\CAD\CONSTplansheets- add parking\L1.01 LANDSCAPE PLAN.dwg



PLANT SCHEDULE ADDITIONAL PARKING

SYMBOL	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	SPACING
SOD							
	PA	178 SF	ARGENTINE BAHIAGRASS ROLLED TIGHT, 100% INSECT, WEED, DIEASE, DEBRIS FREE	PASPALUM NOTATUM 'ARGENTINE'	SOD	-	-

MISC.	QTY	BOTANICAL/COMMON NAME	SPECIFICATIONS
MULCH	TBD	DESIGNER BROWN HARDWOOD MULCH	3" DEPTH MINIMUM, SHREDDED, FREE OF WEEDS/INVASIVE PLANT MATERIAL

NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

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REGISTERED LANDSCAPE ARCHITECT
MATTHEW TAYLOR FRANKS
LA6667292
STATE OF FLORIDA

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DN: CN=Matthew T Franks, oid=0.9.2342.19200300.100.1.1=000026188F, OU=KIMLEY-HORN AND ASSOCIATES INC., C=US
Date: 2025.07.17 16:27:41 -04'00'

DATE 07/17/25

KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

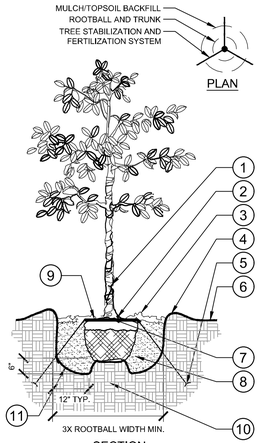
LANDSCAPE PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.02

Plotted By:Mah, Jiht Sheet Set:WINTER SPRINGS (MARKETPLACE- ADDITIONAL PARKING Layout:L1.02 July 17, 2025 03:23:21pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\plansheets- add parking\L1.01 LANDSCAPE PLAN.dwg



1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3" MINIMUM MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
4. 4" HIGH BERM, FIRMLY COMPACTED.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. TOP OF ROOTBALL SHALL BE 1" ABOVE FINISHED GRADE. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.

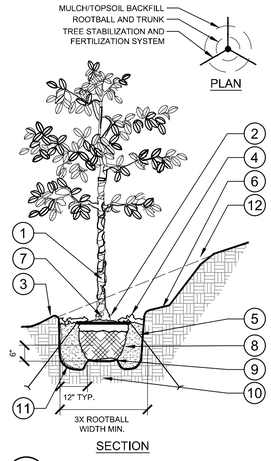
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

1 L1.50 TREE PLANTING
SECTION / PLAN NTS



1. TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.
2. 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.
3. 3. 4" HIGH BERM, FIRMLY COMPACTED.
4. 3" MINIMUM OF HARDWOOD BARK MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.
5. TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.
6. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE. (SEE GRADING PLAN)
7. TOP OF ROOTBALL MIN. 1" ABOVE FINISHED GRADE.
8. PREPARED PLANTING SOIL AS SPECIFIED.
9. ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.
10. UNDISTURBED NATIVE SOIL.
11. SCARIFY BOTTOM AND SIDES OF PLANTING PIT.
12. CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

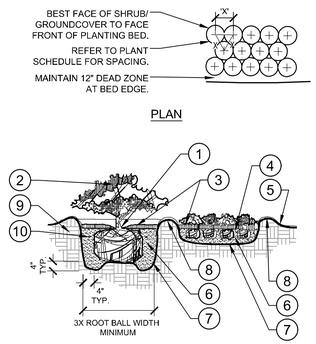
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI A-300.

2 L1.50 TREE PLANTING ON A SLOPE
SECTION / PLAN NTS



1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MULCH LAYER AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED.
7. SCARIFY OF PLANTING PIT SIDES AND BOTTOM.
8. 4" HIGH BERM FIRMLY COMPACTED.
9. UNDISTURBED NATIVE SOIL.
10. FERTILIZER TABLETS (MAX 3" DEEP)

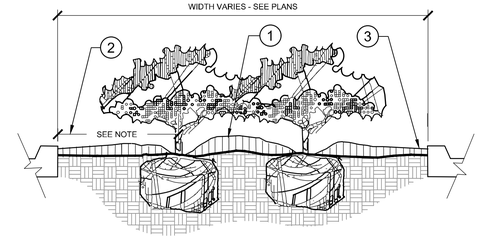
NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

3 L1.50 SHRUB/GROUNDCOVER PLANTING
SECTION / PLAN NTS



1. CROWN ISLANDS @ 5:1 SLOPES (OR AS SPECIFIED ON THE LANDSCAPE PLANS).
2. CLEAR ZONE: 36" MIN. FROM BACK OF CURB TO CENTER OF NEAREST SHRUB. CLEAR ZONE SHALL CONTAIN 3" CONTINUOUS MULCH OR TURF, SEE PLANS.
3. 2" MIN VERTICAL CLEARANCE, TOP OF CURB TO TOP OF MULCH.

NOTES:

A. EXCAVATE A CONTINUOUS 24" DEEP PIT (FROM TOP OF CURB) FOR ENTIRE LENGTH AND WIDTH OF ISLAND & BACKFILL WITH APPROVED PLANTING MIX.

B. PROTECT AND RETAIN ALL CURBS AND BASE. COMPACTED SUBGRADE TO REMAIN FOR STRUCTURAL SUPPORT OF CURB SYSTEM (TYP).

C. ALL ISLANDS SHALL UTILIZE POOR DRAINAGE DETAIL WHEN PERCOLATION RATES ARE 2" PER HOUR OR LESS.

4 L1.50 PLANTED PARKING LOT ISLANDS/MEDIANS
SECTION NTS

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. PRUNE SHRUBS AS DIRECTED BY OWNER'S REPRESENTATIVE.
3. 3" MINIMUM OF MULCH AS SPECIFIED. WHERE SHRUBS ARE PLACED IN MASSES, MULCH SHALL BE SPREAD IN A CONTINUOUS BED.
4. SOIL BERM TO HOLD WATER, TOP OF PLANTING PIT 'BERM' TO BE LEVEL ACROSS PIT. SLOPE DOWNHILL PORTION OF BERM AS REQUIRED TO MEET EXISTING GRADE. MULCH OVER EXPOSED TOPSOIL.
5. FINISHED GRADE (SEE GRADING PLAN)
6. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).
7. SCARIFY SIDES AND BOTTOM OF PLANTING PIT.
8. FERTILIZER TABLETS (MAX 3" DEEP).
9. UNDISTURBED NATIVE SOIL

NOTES:

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

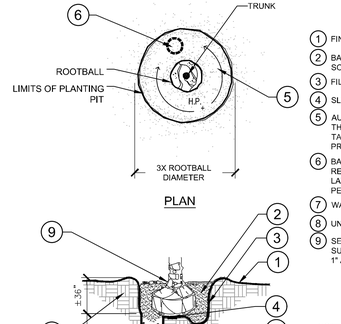
5 L1.50 SHRUB/GROUNDCOVER PLANTING ON A SLOPE
SECTION NTS

6 L1.50 PLANTINGS ADJACENT TO BUILDINGS
SECTION NTS

7 L1.50 PARKING SPACE/CURB PLANTING
SECTION NTS

1. FIRE HYDRANT.
2. NO PLANT EXCEED: MATURE HEIGHT MATERIAL SHALL BE PLACED WITHIN SHOWN RADIUS OF ALL PROPOSED OR EXISTING FIRE HYDRANTS. CONTRACTOR SHALL ADJUST PLANT MATERIAL SO THAT NO CONFLICTS WITH FIRE HYDRANTS OCCUR ON SITE.
3. FRONT OF HYDRANT (TOWARD CURB)

8 L1.50 SHRUB PLANTING AT FIRE HYDRANT
SECTION / PLAN NTS



1. FINISH GRADE (SEE GRADING PLANS).
2. BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED.
3. FILTER CLOTH, MIRAFI 500X OR BETTER.
4. SLOPE BOTTOM TO DRAIN.
5. AUGURED HOLE Ø ±18" PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION.
6. BACKFILL WITH 1/2" - 3/4" GRAVEL TO REQUIRED DEPTH THROUGH OCCLUDING LAYER TO ASSURE PROPER PERCOLATION.
7. WATER TABLE. (DEPTH VARIES)
8. UNDISTURBED NATIVE SOIL.
9. SET ROOTBALL ON UNDISTURBED STABLE SUBSOIL SO THAT TOP OF ROOT BALL IS 1" ABOVE FINISHED GRADE.

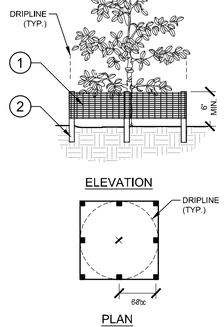
NOTES:

A. THIS DETAIL SHALL BE IMPLEMENTED WHERE PERCOLATION RATES ARE 2" PER HOUR OR LESS.

B. CONTRACTOR TO PERFORM PERCOLATION TEST AS REQUIRED. AND NOTIFY OWNER/LANDSCAPE ARCHITECT.

C. SEE TYPICAL TREE PLANTING DETAIL THIS SHEET FOR PLANT STAKING.

9 L1.50 POOR DRAINAGE CONDITION
SECTION / PLAN NTS



1. 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.
2. 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

INSTALLATION NOTES:

A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS. METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.

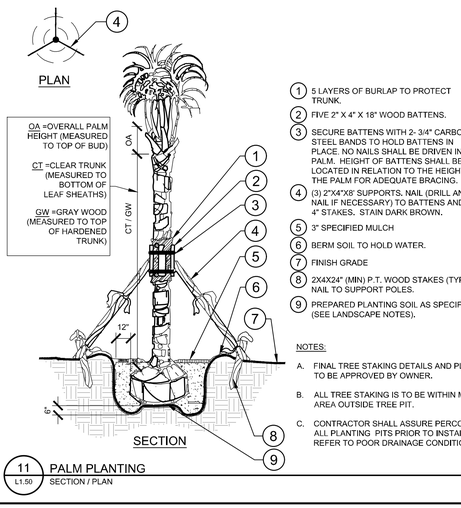
B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.

10 L1.50 TREE PROTECTION FENCING
ELEVATION / PLAN NTS



1. 5 LAYERS OF BURLAP TO PROTECT TRUNK.
2. FIVE 2" X 4" X 18" WOOD BATTENS.
3. SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING.
4. (3) 2"X4"X8' SUPPORTS, NAIL (DRILL AN NAIL IF NECESSARY) TO BATTENS AND 2" 4" STAKES. STAIN DARK BROWN.
5. 3" SPECIFIED MULCH
6. BERM SOIL TO HOLD WATER.
7. FINISH GRADE
8. 2X4X24" (MIN) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES.
9. PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES).

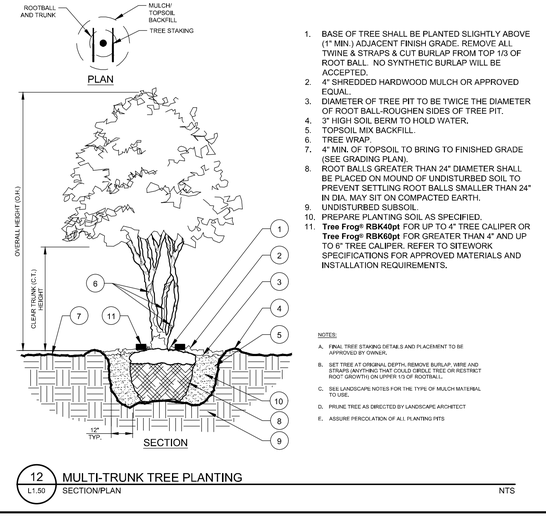
NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. ALL TREE STAKING IS TO BE WITHIN MULCH BED AREA OUTSIDE TREE PIT.

C. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION. REFER TO POOR DRAINAGE CONDITION DETAIL.

11 L1.50 PALM PLANTING
SECTION / PLAN NTS



1. BASE OF TREE SHALL BE PLANTED SLIGHTLY ABOVE (1" MIN.) ADJACENT FINISH GRADE. REMOVE ALL TWINE & STRAPS & CUT BURLAP FROM TOP 1/3 OF ROOT BALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.
2. 4" SHREDDED HARDWOOD MULCH OR APPROVED EQUAL.
3. DIAMETER OF TREE PIT TO BE TWICE THE DIAMETER OF ROOT BALL-ROUGHEN SIDES OF TREE PIT.
4. 3" HIGH SOIL BERM TO HOLD WATER.
5. TOPSOIL MIX BACKFILL.
6. TREE WRAP.
7. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
8. ROOT BALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING ROOT BALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH.
9. UNDISTURBED SUBSOIL.
10. PREPARE PLANTING SOIL AS SPECIFIED.
11. **Tree Frog® RBK40pt** FOR UP TO 4" TREE CALIPER OR **Tree Frog® RBK60pt** FOR GREATER THAN 4" AND UP TO 6" TREE CALIPER. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS.

NOTES:

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO USE.

D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT

E. ASSURE PERCOLATION OF ALL PLANTING PITS

12 L1.50 MULTI-TRUNK TREE PLANTING
SECTION/PLAN NTS

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	NMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 539-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKS LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franks
DN: CN=Matthew T Franks, O=Kimley-Horn and Associates, Inc., OU=Kimley-Horn, E=matthew.franks@kimley-horn.com, C=US
Date: 2025.07.17 16:26:52 -04'00'

DATE 07/17/2025

KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

LANDSCAPE DETAILS

WINTER SPRINGS
WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.50

Plotted By:Mah, Itm Sheet Set:WINTER SPRINGS MARKETPLACE ADDITIONAL PARKING Layout:L1.50 July 17, 2025 03:23:48pm K:\cvl_civil\149170026-winter springs wawa\CAD\CONST\plansheets and parking\L1.00 LANDSCAPE PLAN.dwg

GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

A. SCOPE OF WORK

1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS SPECIFIED HEREIN.

2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER.

B. PROTECTION OF EXISTING STRUCTURES

1. ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE OWNER.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL NECESSARY BMP DEVICES ACCORDING TO ALL REGULATORY AGENCY'S STANDARDS THROUGH THE DURATION OF ALL CONSTRUCTION ACTIVITIES.

3. THE CONTRACTOR SHALL SUBMIT A DETAILED PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN UNLESS THE WORK REQUIRES NOTHING MORE THAN A DIRECT APPLICATION OF FDOT DESIGN STANDARDS, INDEX 600. IF A DIRECT APPLICATION OF INDEX 600 IS PROPOSED, THE CONTRACTOR SHALL SUBMIT IN WRITING A STATEMENT INDICATING THE STANDARD INDEX AND PAGE NUMBER NO LESS THAN 10 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION. WHEN A DIRECT APPLICATION OF FDOT STANDARD INDEX 600 IS NOT ACCEPTABLE A PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY A FLORIDA PROFESSIONAL ENGINEER WHO HAS SUCCESSFULLY COMPLETED ADVANCED TRAINING IN MAINTENANCE OF TRAFFIC, AS DEFINED BY FDOT FOR APPROVAL BY THE COUNTY ENGINEER'S REPRESENTATIVE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNER OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR; REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UNDERGROUND FACILITIES DURING CONSTRUCTION; THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

C. PROTECTION OF EXISTING PLANT MATERIALS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETC... THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF THREE HUNDRED DOLLARS ($300) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

2. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE.

D. MATERIALS

1. GENERAL

MATERIAL SAMPLES LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER. UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATERIAL	SAMPLE SIZE
MULCH	ONE (1) CUBIC FOOT
TOPSOIL MIX	ONE (1) CUBIC FOOT
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NURSERY)

2. PLANT MATERIALS

a. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, SOUND, WELL-BRANCHED, AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY WITH APPROVAL FROM OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE.

b. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.

c. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

E. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

1. CONTRACTOR SHALL TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:

2. SOIL MIXTURE (PLANTING MEDIUM FOR PLANT PITS) SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. CONTRACTOR TO SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.

a. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT PITS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND HAVE A PH BETWEEN 5.5 AND 7.0.

b. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.

c. SOIL AMENDMENT (IF NEEDED PER SOIL TESTING) THE CONTRACTOR SHALL FURNISH AND INSTALL A 3" LAYER OF AMENDED PLANTING SOIL IN ALL PLANTING BEDS, EXCLUDING SOD AREAS. THE AMENDED PLANTING SOIL SHALL BE COMPOSED OF 35% FERTICOMP 20% FLORIDA PEAT 45% SANDY LOAM. THE AMENDED PLANTING SOIL SHALL BE MIXED INTO THE BEDS UPON PLANTING.

2. TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE - AT WHICH POINT THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING (SUBMIT SOIL TESTING RESULTS AFTER INCORPORATING AMENDMENTS TO DEMNSTRATE COMPLIANCE WITH SOIL QUALITY REQUIREMENTS .

F. WATER

1. WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC.... IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

* WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

G. FERTILIZER

CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED.

* FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

H. MULCH

1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES. CLEAR MULCH FROM EACH PLANT'S CROWN (BASE). MULCH SHALL BE "FLORIMULCH," EUCALYPTUS MULCH, OR SIMILAR SUSTAINABLY HARVESTED MULCH UNLESS SPECIFIED OTHERWISE.

2. PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT (6' MINIMUM) PLANTED UNDER THIS CONTRACT.

I. DIGGING AND HANDLING

1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO THE SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.

2. BALLED AND BURLAPPED (B&B), AND FIELD GROWN (FG) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS SHALL NOT BE HANDLED BY STEMS.

3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT DURING TRANSPORTATION AND PRIOR TO PLANTING.

4. PROTECTION OF PALMS: ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER PALM PLANTING DETAIL.

5. EXCAVATION OF TREE PITS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

J. CONTAINER GROWN STOCK

1. ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

2. AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.

3. ROOT BOUND PLANTS ARE NOT ACCEPTABLE AND WILL BE REJECTED.

4. RPG= "ROOTS PLUS GROWER" CONTAINER PRODUCTS SHALL BE USED WHERE SPECIFIED.

K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY RE-ESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO BIDDING OR INSTALLATION. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

N. FINE GRADING

1. FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE NOTED.

2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

O. PLANTING PROCEDURES

1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.

3. SUBGRADE EXCAVATION: CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE POOR DRAINAGE CONDITION PLANTING DETAIL.

4. FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS SPECIFIED HEREIN. INSPECT AND SELECT PLANT MATERIALS BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.

5. COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ONSITE SHALL NOT REMAIN UNPLANTED OR APPROPRIATELY HEALED IN FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.

6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE PLANTING WITH IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION APPURTENANCES AND PLANTS.

7. ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACK FILLED WITH THE PREPARED PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.

8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.

9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS.

10. TREES AND SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).

11. AMEND PINE AND OAK PLANT PITS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT PITS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL PRIOR TO INOCULATION.

12. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET, ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE. ALL BURLAP, ROPE, WIRES, BASKETS, ETC.., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

13. TREES SHALL BE PRUNED, AT THE DIRECTION OF THE OWNER OR OWNER'S REPRESENTATIVE, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY CERTIFIED ARBORIST, IN ACCORDANCE WITH ANSI A-300.

14. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. MATERIALS INSTALLED SHALL MEET MINIMUM SPECIMEN REQUIREMENTS OR QUANTITIES SHOW ON PLANS, WHICHEVER IS GREATER. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. MIX TOP 4" THE PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.

15. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE PROJECT LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY.

16. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

P. LAWN SODDING

1. THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.

2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS BY MEANS OF A SOD CUTTER TO A DEPTH OF THREE (3) INCHES, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.

3. PREPARE LOOSE BED FOUR (4) INCHES DEEP. HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

4. SODDING

a. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.

b. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND.

c. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. ADJACENT TO BUILDINGS, A 24 INCH STONE MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.

5. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

6. LAWN MAINTENANCE

a. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).

b. CONTRACTOR RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PRIOR TO AND UPON ACCEPTANCE, CONTRACTOR TO PROVIDE WATERING/IRRIGATION SCHEDULE TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

Q. CLEANUP

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY PLANT CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

S. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE WARRANTY PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR WARRANTY (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

T. WARRANTY

1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED (INCLUDING SOD) BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE PROJECT SITE INCLUDING BUT NOT LIMITED TO WATERING OF LANDSCAPE MOWING, BLOWING, EDGING, TRIMMING, PRUNING, WEEDING, SPRAYING OF PESTICIDES, FUNGICIDES AND HERBICIDES, FROM CONSTRUCTION START THROUGH OWNER FINAL PROJECT ACCEPTANCE.

4. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE AND IRRIGATION MAINTENANCE, THE CONTRACTOR SHOULD VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE (1) YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTHY PLANT GROWTH. SITE VISITS SHALL BE CONDUCTED A MINIMUM OF ONCE PER MONTH FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE.

5. PALM INOCULATION: ALL PHOENIX GENUS AND BISMARKIA GENUS PALMS SHALL BE INOCULATED AGAINST LETHAL BRONZING PRIOR TO LEAVING THE TREE FARM/NURSERY. CONTRACTOR SHALL PROVIDE PROOF OF INOCULATION AND CERTIFICATION THAT THE PALMS ARE HEALTHY AND FREE OF ALL DISEASE. THE CONTRACTOR IS RESPONSIBLE FOR INOCULATION OF THE PALMS, ONCE PLANTED, TO THE END OF THE WARRANTY PERIOD.

1 / L1.51 TYPICAL LANDSCAPE SPECIFICATIONS (FLORIDA)

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, dnQualifier=A01410D000001936A520118000261BF, O=KIMLEY-HORN AND ASSOCIATES INC., C=US
Date: 2025.07.17 16:27:27-04'00'

THIS DRAWING HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY MATTHEW TAYLOR FRANKO, PLA USING A DIGITAL SIGNATURE.
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DATE: 07/17/2025

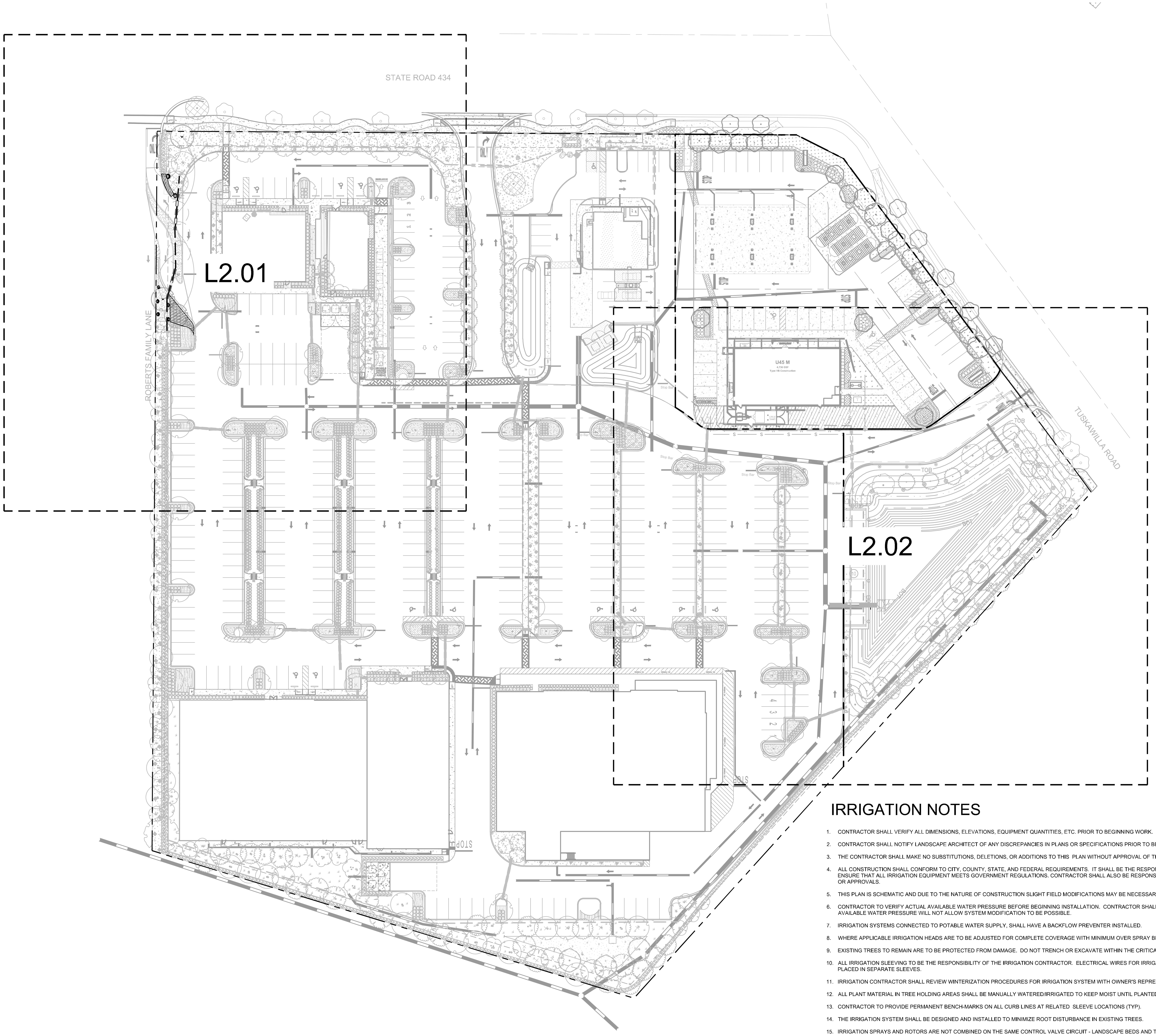
KHA PROJECT 149170026
DATE 07/17/2025
SCALE AS SHOWN
DESIGNED BY ADL
DRAWN BY JCB
CHECKED BY CNS

LANDSCAPE SPECIFICATIONS

WINTER SPRINGS WAWA
CITY OF WINTER SPRINGS FL

SHEET NUMBER
L1.51

Plotted By:Miah, Ifrit Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:L1.51 July 17, 2025 03:23:43pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\plansheets- add parking\L1.00 LANDSCAPE PLAN.dwg



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.

NOTE: IF SOURCE TO BE RECLAIMED (NON-POTABLE) ALL EQUIPMENT TO BE INDICATED AS SUCH AND PURPLE IN COLOR. FOLLOW ALL LOCAL JURISDICTION STANDARDS FOR RECLAIMED IRRIGATION SYSTEMS.

CONTRACTOR TO PERMANENTLY MARK ALL SLEEVE CROSSINGS AT ASSOCIATED TOPS OF CURB (TYP).

CONTRACTOR TO ADJUST ALL OVERHEAD SPRAY HEADS TO ENSURE MINIMAL OVER-SPRAY OCCURS ON ANY HARDSCAPE SURFACE (TYP).

COORDINATE/DISCUSS PROJECT LIMITS WITH GENERAL CONTRACTOR TO ENSURE ALL IRRIGATION EQUIPMENT IS INSTALLED WITHIN PROJECT AREA.

NOT ALL NECESSARY SLEEVES SHOWN. INSTALL WHERE NECESSARY AND COORDINATE WITH OTHER DISCIPLINES TO AVOID CONFLICTS AND FACILITATE THE CONSTRUCTION PROCESS.

CONTRACTOR RESPONSIBLE FOR EVALUATING/ CONNECTING TO EXISTING SYSTEM AND ZONING (POTENTIALLY ADDING NEW VALVES) AS NECESSARY. FIELD LOCATE ALL EQUIPMENT NEEDED FOR IRRIGATION MODIFICATION/EXPANSION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE P.O.C FOR INCLUSION INTO THE SYSTEM (INCLUDES ALL NECESSARY BORING, TRENCHING, ETC.)

IRRIGATION NOTES

1. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, EQUIPMENT QUANTITIES, ETC. PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANS OR SPECIFICATIONS PRIOR TO BEGINNING OR CONTINUING WORK.
3. THE CONTRACTOR SHALL MAKE NO SUBSTITUTIONS, DELETIONS, OR ADDITIONS TO THIS PLAN WITHOUT APPROVAL OF THE LANDSCAPE ARCHITECT.
4. ALL CONSTRUCTION SHALL CONFORM TO CITY, COUNTY, STATE, AND FEDERAL REQUIREMENTS. IT SHALL BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO ENSURE THAT ALL IRRIGATION EQUIPMENT MEETS GOVERNMENT REGULATIONS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ANY NECESSARY PERMITS OR APPROVALS.
5. THIS PLAN IS SCHEMATIC AND DUE TO THE NATURE OF CONSTRUCTION SLIGHT FIELD MODIFICATIONS MAY BE NECESSARY TO IMPLEMENT PLAN.
6. CONTRACTOR TO VERIFY ACTUAL AVAILABLE WATER PRESSURE BEFORE BEGINNING INSTALLATION. CONTRACTOR SHALL NOTIFY LANDSCAPE ARCHITECT IF AVAILABLE WATER PRESSURE WILL NOT ALLOW SYSTEM MODIFICATION TO BE POSSIBLE.
7. IRRIGATION SYSTEMS CONNECTED TO POTABLE WATER SUPPLY, SHALL HAVE A BACKFLOW PREVENTER INSTALLED.
8. WHERE APPLICABLE IRRIGATION HEADS ARE TO BE ADJUSTED FOR COMPLETE COVERAGE WITH MINIMUM OVER SPRAY BEYOND LANDSCAPE AREAS.
9. EXISTING TREES TO REMAIN ARE TO BE PROTECTED FROM DAMAGE. DO NOT TRENCH OR EXCAVATE WITHIN THE CRITICAL ROOT ZONE OF ANY TREE.
10. ALL IRRIGATION SLEEVING TO BE THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR. ELECTRICAL WIRES FOR IRRIGATION VALVES AND IRRIGATION LINES ARE TO BE PLACED IN SEPARATE SLEEVES.
11. IRRIGATION CONTRACTOR SHALL REVIEW WINTERIZATION PROCEDURES FOR IRRIGATION SYSTEM WITH OWNER'S REPRESENTATIVE.
12. ALL PLANT MATERIAL IN TREE HOLDING AREAS SHALL BE MANUALLY WATERED/IRRIGATED TO KEEP MOIST UNTIL PLANTED.
13. CONTRACTOR TO PROVIDE PERMANENT BENCH-MARKS ON ALL CURB LINES AT RELATED SLEEVE LOCATIONS (TYP).
14. THE IRRIGATION SYSTEM SHALL BE DESIGNED AND INSTALLED TO MINIMIZE ROOT DISTURBANCE IN EXISTING TREES.
15. IRRIGATION SPRAYS AND ROTORS ARE NOT COMBINED ON THE SAME CONTROL VALVE CIRCUIT - LANDSCAPE BEDS AND TURF ON SEPARATE CIRCUITS.
16. MATCH PRECIPITATION RATES WITH ANY HEADS THAT ARE REPLACED.

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No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35106

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

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Date: 2025.07.17 16:28:28-04'00'

DATE: 07/17/2025

KHA PROJECT 149170026
DATE 07/17/2025
SCALE AS SHOWN
DESIGNED BY ADL
DRAWN BY JCB
CHECKED BY CNS

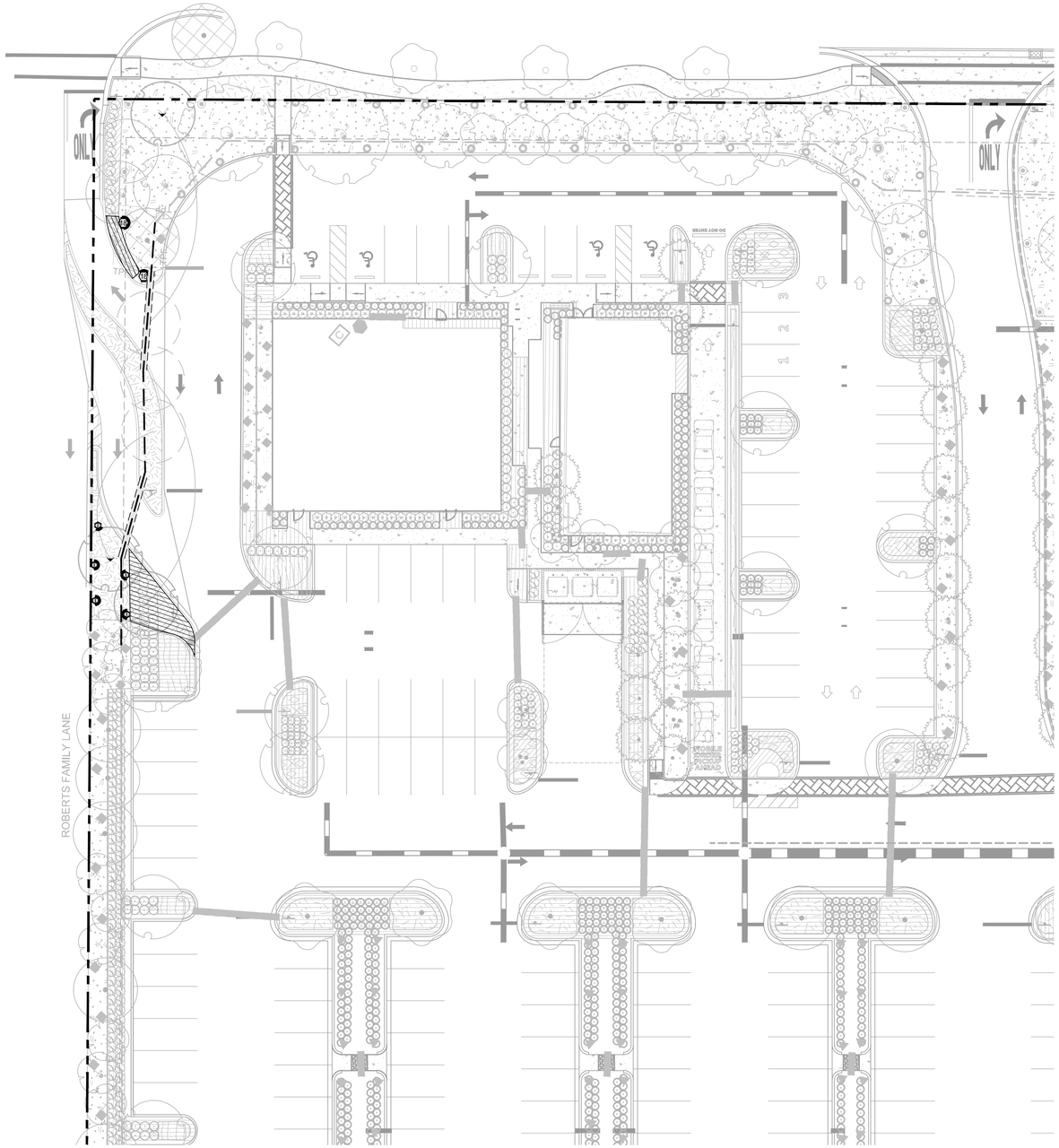
IRRIGATION OVERALL

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L2.00

Plotted By:Miah, Ifrit Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:L2.00 July 17, 2025 03:24:25pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\plansheets- add parking\L2.00 IRRIGATION PLAN.dwg



IRRIGATION SCHEDULE TURN MODIFICATION

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI
14 ADJ 14 F	RAIN BIRD R-VAN14 RD-06-S-P45-F TURF ROTARY, 8FT.-14FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR, FLOW-SHIELD TECHNOLOGY, 1/2IN. NPT FEMALE THREADED INLET.	5	30
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-06-S-P45-F TURF ROTARY, 13FT.-18FT. 45-270 DEGREES AND 360 DEGREES. HAND ADJUSTABLE MULTI-STREAM ROTARY W/RD1800 TURF SPRAY BODY ON 6IN. POP-UP, WITH CHECK VALVE AND 45 PSI IN-STEM PRESSURE REGULATOR, FLOW-SHIELD TECHNOLOGY, 1/2IN. NPT FEMALE THREADED INLET.	2	30
1401 1402 1404	RAIN BIRD 1806-SAM-NP-1400 FLOOD FLOOD BUBBLER 6IN. POPUP WITH CHECK VALVE, AND NON-POTABLE PURPLE CAP. INSTALL W/ PA-80 ADAPTER.	2	20

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	AREA TO RECEIVE DRIPLINE RAIN BIRD XFDEP-09-12 XFDE ON-SURFACE PRESSURE COMPENSATING LANDSCAPE DRIPLINE. 0.9 GPH EMITTERS AT 12" O.C. DRIPLINE LATERALS SPACED AT 12" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV & KINK RESISTANT. USE XF INSERT FITTINGS.	345.2 LF

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	IRRIGATION MAINLINE: PVC SCHEDULE 40	132.5 LF
	PIPE SLEEVE: PVC SCHEDULE 40 - MAINLINE	57.0 LF

FLOW TOTALS TURN MODIFICATION

Area for Dripline:	5.2
Bubbler:	0.5
Turf Rotary:	3.3
Total:	9.0 GPM

NOTE: IF SOURCE TO BE RECLAIMED (NON-POTABLE) ALL EQUIPMENT TO BE INDICATED AS SUCH AND PURPLE IN COLOR. FOLLOW ALL LOCAL JURISDICTION STANDARDS FOR RECLAIMED IRRIGATION SYSTEMS.

CONTRACTOR TO PERMANENTLY MARK ALL SLEEVE CROSSINGS AT ASSOCIATED TOPS OF CURB (TYP).

CONTRACTOR TO ADJUST ALL OVERHEAD SPRAY HEADS TO ENSURE MINIMAL OVER-SPRAY OCCURS ON ANY HARDSCAPE SURFACE (TYP).

COORDINATE/DISCUSS PROJECT LIMITS WITH GENERAL CONTRACTOR TO ENSURE ALL IRRIGATION EQUIPMENT IS INSTALLED WITHIN PROJECT AREA.

NOT ALL NECESSARY SLEEVES SHOWN. INSTALL WHERE NECESSARY AND COORDINATE WITH OTHER DISCIPLINES TO AVOID CONFLICTS AND FACILITATE THE CONSTRUCTION PROCESS.

CONTRACTOR RESPONSIBLE FOR EVALUATING/ CONNECTING TO EXISTING SYSTEM AND ZONING (POTENTIALLY ADDING NEW VALVES) AS NECESSARY. FIELD LOCATE ALL EQUIPMENT NEEDED FOR IRRIGATION MODIFICATION/EXPANSION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE P.O.C FOR INCLUSION INTO THE SYSTEM (INCLUDES ALL NECESSARY BORING, TRENCHING, ETC.)

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NORTH

GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	NMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 539-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT
MATTHEW TAYLOR FRANKO
LA6667292
STATE OF
FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, E=Matthew.Franko@KimleyHorn.com, C=US
Date: 2025.07.17 17:17:48-04'00'

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LICENSED PROFESSIONAL

DATE: 07/17/2025

KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

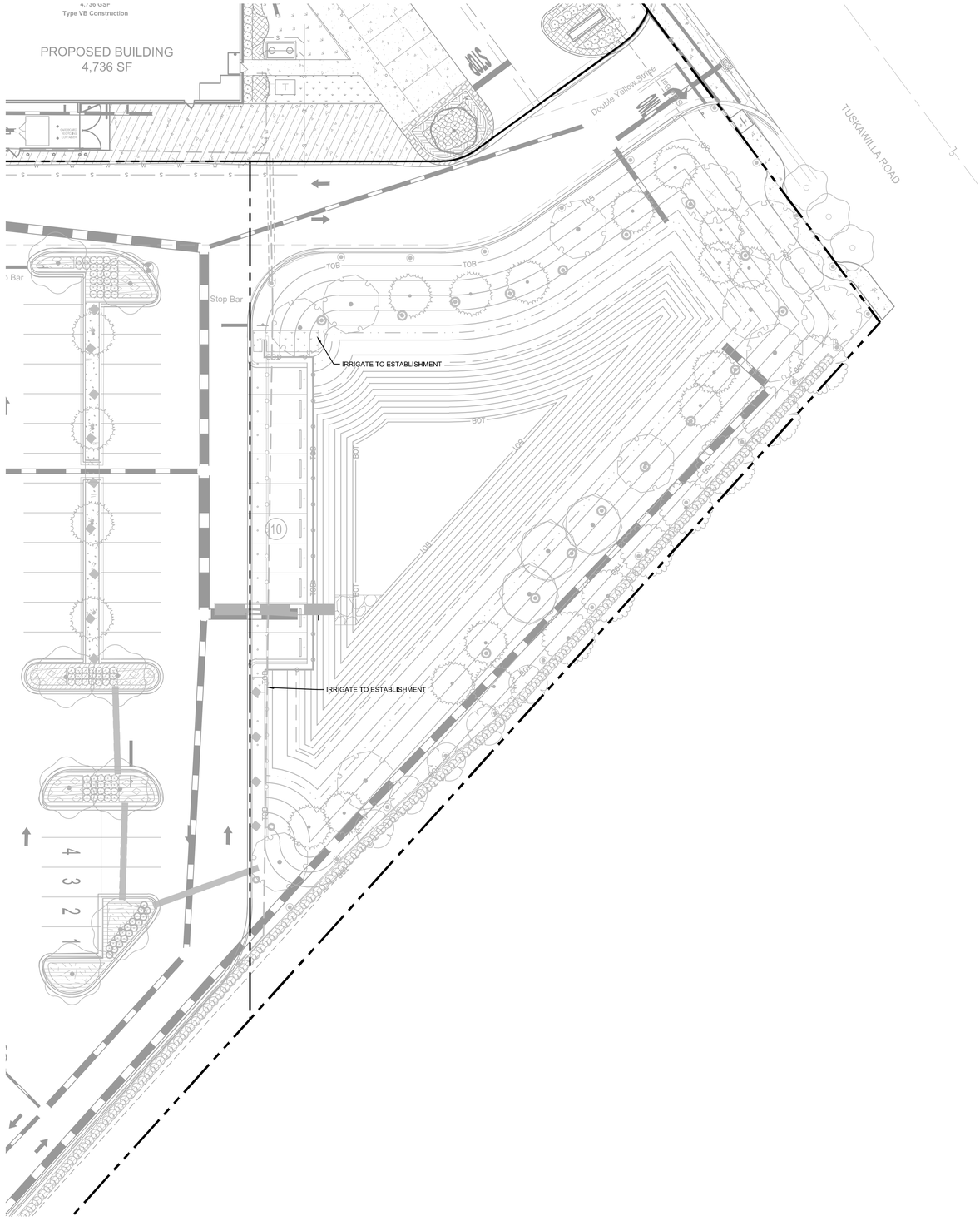
IRRIGATION PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L2.01

Plotted By:Matt, Iffit Sheet Set:WINTER SPRINGS MARKETPLACE- ADDITIONAL PARKING Layout:L2.01 July 17, 2025 04:37:01pm K:\orl_civil\149170026-winter springs wawa\CADD\CONST\plansheets- add parking\L2.01 IRRIGATION PLAN.dwg



NOTE: IF SOURCE TO BE RECLAIMED (NON-POTABLE) ALL EQUIPMENT TO BE INDICATED AS SUCH AND PURPLE IN COLOR. FOLLOW ALL LOCAL JURISDICTION STANDARDS FOR RECLAIMED IRRIGATION SYSTEMS.

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GRAPHIC SCALE IN FEET
0 10 20 40

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	NMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 536-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

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KHA PROJECT	149170026
DATE	07/17/2025
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IRRIGATION PLAN

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER
L2.02

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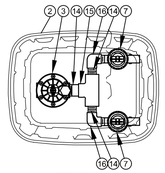
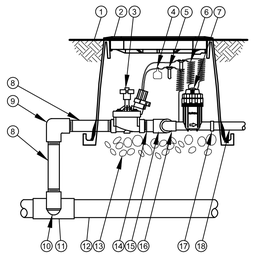


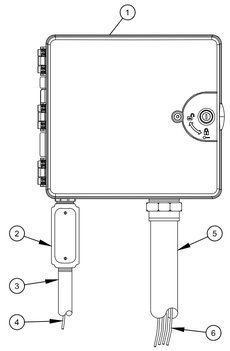
TOP VIEW



SIDE VIEW

1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. REMOTE CONTROL VALVE:
4. ID TAG
5. WATERPROOF CONNECTION:
6. 30-INCH LINEAR LENGTH OF WIRE, COILED
7. PRESSURE REGULATING QUICK CHECK BASKET FILTER:
8. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
9. PVC SCH 40 ELL
10. PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
11. PVC SCH 40 TEE OR ELL
12. MAINLINE PIPE
13. 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
14. PVC SCH 80 NIPPLE, CLOSE
15. PVC SCH 40 TEE
16. PVC SCH 40 ELL
17. PVC SCH 40 FEMALE ADAPTOR
18. LATERAL PIPE

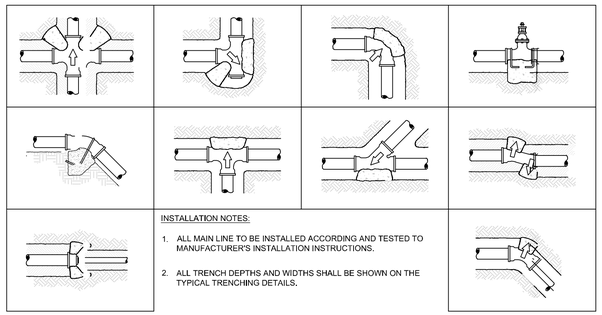
1 COMMERCIAL CONTROL DRIP ZONE VALVE KIT
L2.50 SECTION / PLAN — NTS



1. IRRIGATION CONTROLLER: CONTROLLER (OWNER TO SPECIFY WALL MOUNT OR STAINLESS STEEL PEDESTAL MOUNT). INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. JUNCTION BOX
3. 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY
4. POWER SUPPLY WIRE
5. 2-INCH CONDUIT AND FITTINGS FOR STATION WIRES
6. WIRES TO REMOTE CONTROL VALVES

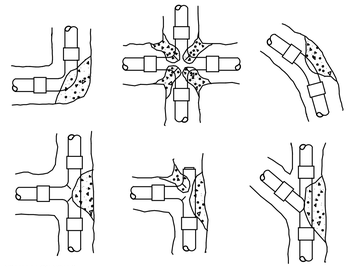
NOTES:
1. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

2 TYPICAL CONTROLLER
L2.50 ELEVATION — NTS



INSTALLATION NOTES:
1. ALL MAIN LINE TO BE INSTALLED ACCORDING AND TESTED TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
2. ALL TRENCH DEPTHS AND WIDTHS SHALL BE SHOWN ON THE TYPICAL TRENCHING DETAILS.

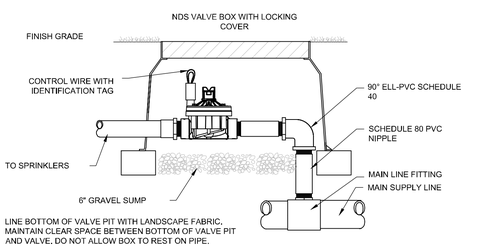
3 TYPICAL THRUST BLOCK
L2.50 SECTION — NTS



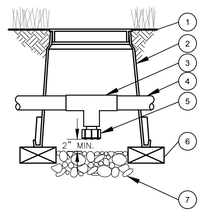
INSTALLATION NOTES
1. 3000 PSI CONCRETE OR BETTER IS TO BE USED FOR THRUST BLOCKS.
2. FOR 45°/90° FITTINGS, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED.
3. FOR 22-1/2° FITTINGS, MINIMUM OF 0.5 CUBIC FEET OF CONCRETE TO BE USED.
4. FOR TEES, MINIMUM OF 2 CUBIC FEET OF CONCRETE TO BE USED. THRUST

BLOCKS REQUIRED FOR IRRIGATION MAINLINE 2 1/2" AND LARGER.

4 THRUST BLOCK REINFORCEMENT
L2.50 SECTION — NTS

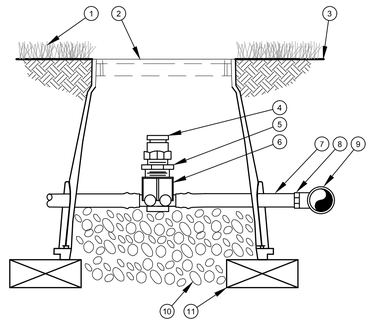


5 TYPICAL CONTROL VALVE
L2.50 SECTION — NTS



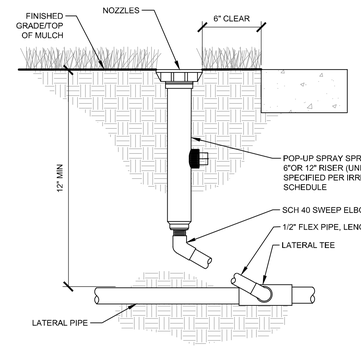
1. FINISH GRADE/TOP OF MULCH
2. VALVE BOX WITH COVER:
3. PVC SCH 40 TEE
4. PVC LATERAL PIPE
5. FILTERED DRAIN VALVE:
6. BRICK (1 OF 2)
7. 6-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

6 DRAIN VALVE
L2.50 SECTION — NTS

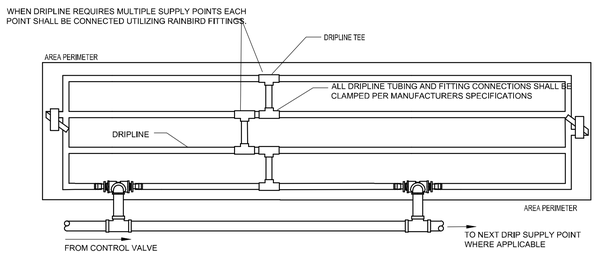


1. TURF GRASS
2. VALVE BOX LID
3. FINISH GRADE
4. ½" AIR RELIEF VALVE: TO BE INSTALLED AT HIGH POINTS IN DRIP ZONE
5. ½" X ¾" PVC REDUCER BUSHING
6. BARB X FEMALE THREAD CONNECTOR:
7. ½" BLANK DRIPLINE TUBING:
8. BARB X MALE THREAD CONNECTOR:
9. PVC TEE CONNECTED TO PVC HEADER PIPE
10. 3" MINIMUM DEPTH OF ¾" WASHED GRAVEL
11. BRICK (1 OF 2)

7 AIR RELIEF VALVE IN XFS DRIP LINE
L2.50 SECTION — NTS



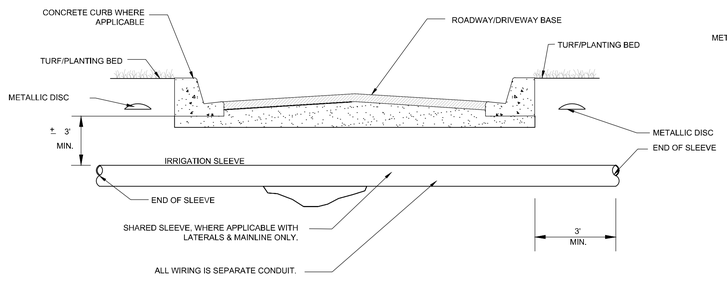
8 TYPICAL IRRIGATION HEAD
L2.50 SECTION — NTS



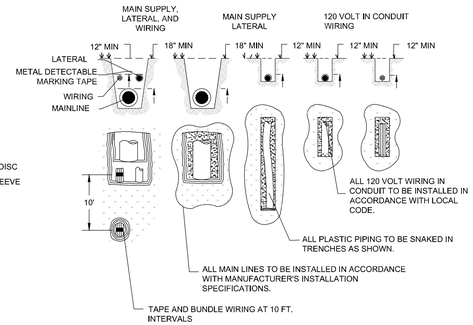
CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS. IF NOT SHOWN, INSTALL WITHIN ADJACENT GREEN AREA NOT IN A HIGHLY VISIBLE AREA.

NOTE:
1. DRIP TUBING TO BE ROUTED IN THE PLANT MATERIAL BED WITH AT MAXIMUM LATERAL SPACING OF 16 INCHES.
2. DRIP TUBING TO BE INSTALLED IN A GRID PATTERN. DRIP TUBING SHALL NOT BE INSTALLED IN A LONG CONTINUOUS RUN.
3. CONTRACTOR TO REFER TO IRRIGATION PLAN FOR LOCATION OF CONTROL VALVES THAT UTILIZE MULTIPLE DRIPLINE SUPPLY CONNECTIONS (IF SHOWN).

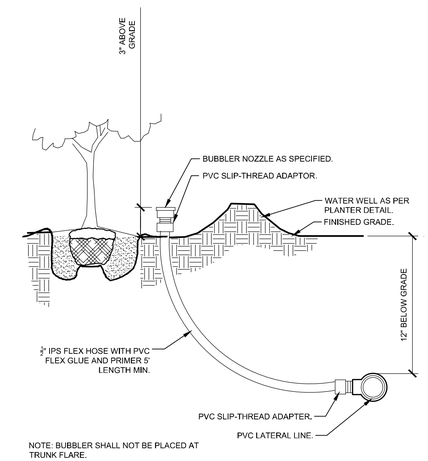
9 TYPICAL DRIP LINE
L2.50 PLAN — NTS



10 TYPICAL SLEEVING
L2.50 SECTION — NTS



11 TYPICAL TRENCHING
L2.50 SECTION / PLAN — NTS



NOTE: BUBBLER SHALL NOT BE PLACED AT TRUNK FLARE.

12 TYPICAL BUBBLER
L2.50 SECTION — NTS

No.	REVISIONS	DATE	BY
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Kimley»Horn
6876 MARKWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 539-4440
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REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, OU=Client=A01410D000001936A52011800002B3F, O=KIMLEY-HORN AND ASSOCIATES INC., C=US
Date: 2025.07.17 16:26:35-04'00'

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KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

IRRIGAITON DETAILS

WINTER SPRINGS WAWA

CITY OF WINTER SPRINGS FL

SHEET NUMBER L2.50

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IRRIGATION SYSTEM NOTES:

1. THE IRRIGATION MAINLINE LAYOUT IS DIAGRAMMATIC. ANY CHANGES MADE IN THE IRRIGATION MAINLINE DUE TO FIELD CONDITIONS OR CONTRACTOR'S SUBMITTED DESIGN SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
2. SET SPRAY HEADS 6" AND ROTORS 12" IN FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
3. IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SCHEMATIC INTENT OF THESE PLANS PRIOR TO SUBMITTING PROPOSAL. THESE PLANS OUTLINE THE OVERALL LAYOUT THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.
4. CONTRACTOR TO PROVIDE NEW AUTOMATIC CONTROLLER FOR PROPOSED SYSTEM (NO BATTERY OPERATED CONTROLLERS ALLOWED). COORDINATE LOCATION WITH OWNER.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AUTOMATIC RAIN SENSOR. COORDINATE LOCATION W/ OWNER.
6. IRRIGATION SHALL NOT BE COMBINED ON A SINGLE ZONE AND SHALL BE ZONED ACCORDING TO IRRIGATION TYPE, PRECIPITATION RATE, AND THE SYSTEM'S AVAILABLE WATER / PRESSURE. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW PRIOR TO INSTALLATION.
7. VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL FIELD VERIFY.
8. CONTRACTOR TO FIELD VERIFY ALL POINT OF CONNECTION SOURCE INFORMATION INCLUDING PSI AND GPM PRIOR TO CONSTRUCTION.
9. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON-SITE.
10. CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN FOR PLANTER BED AND TREE LOCATIONS TO ENSURE ALL PLANT MATERIAL IS COVERED BY 100% HEAD-TO-HEAD IRRIGATION.
11. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.
12. PRODUCTS SHALL BE AS SPECIFIED OR APPROVED EQUAL.

PRE-APPROVED MANUFACTURERS:
1. TORO
2. HUNTER
3. RAINBIRD

13. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE JURISDICTION.
14. LOCATE ALL IRRIGATION LINES WITHIN LANDSCAPED AREAS WHENEVER POSSIBLE. ALL LINES UNDER PAVEMENT MUST BE SLEEVED WITHIN SCH. 40 PVC 2x SIZE OF PIPE AND FREE OF STONES/DEBRIS. ALL VALVES SHALL BE LOCATED WITHIN LANDSCAPED AREAS.
15. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
16. THE IRRIGATION CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR SLEEVING AND DIRECTIONAL BORES.
17. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF THE SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES ON PLAN FOR WALL PENETRATIONS AND UNDER SIDEWALKS SHALL BE SIZED TWO PIPE SIZES GREATER THAN THE PIPE IT CARRIES.
18. ALL PRESSURIZED MAINLINES AND LATERALS UNDER PAVEMENT SHALL BE WITHIN SCH. 40 PVC SLEEVES. WHERE ELECTRIC OR HYDRAULIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
19. NUMBER THE TOP OF ALL VALVE BOX LIDS WITH MINIMUM 1" HEIGHT BLACK LETTERS TO CORRESPOND TO AUTOMATIC AND GATE VALVE DESIGNATIONS. ALL HOSE BIBB VALVE BOXES SHALL BE LABELED IN A SIMILAR MANNER WITH THE DESIGNATION "HB". LETTER OUTSIDE OF TIME CLOCK CABINETS TO CORRESPOND WITH IRRIGATION CLOCK PROGRAM DESIGNATION.
20. THE IRRIGATION CONTRACTOR SHALL INSTALL A COLOR CODED METAL DETECTABLE MARKING TAPE WHICH CLEARLY NOTES: "CAUTION: IRRIGATION LINE BURIED BELOW." THE TAPE SHALL BE INSTALLED THE FULL LENGTH OF THE IRRIGATION MAINLINE.
21. ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.
22. ALL 24 VAC WIRING FROM DECODER TO VALVE SHALL BE OF DIRECT BURIAL COPPER WIRE. MAXIMUM LENGTH OF WIRE FROM DECODER TO VALVE SHALL NOT EXCEED 400 FEET. AS FOLLOWS:
    CONTROL WIRES - #14
    COMMON WIRES - #14
23. ALL VALVES, SPLICES WITHIN CONTROL LINES, AND QUICK COUPLERS SHALL BE LOCATED WITHIN NDS VALVE BOXES AS FOLLOWS:
    -RECTANGULAR 12"X17" HEAVY DUTY BOX. (PURPLE COVER FOR REUSE TO BE PROVIDED WHERE APPROPRIATE).
24. ALL IRRIGATION HEADS/DRIP TUBING SHALL BE LOCATED ONE (1) FOOT FROM BACK OF CURB WHEN NEXT TO A ROADWAY, (THIS SHALL NOT INCLUDE PARKING AREAS OR DRIVE AISLES).
25. HEADS, LATERALS, EMITTERS, AND VALVES ARE NOT SHOWN, BUT ARE NECESSARY FOR A FULLY FUNCTIONING IRRIGATION SYSTEM.
26. LOCATE ALL VALVES IN PLANTING BEDS WITH A MINIMUM OF 3'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. PIPE SIZES ON EITHER SIDE OF SECTION VALVES CONNECTING MAINLINE TO SECTION LATERAL SHALL BE ONE (1) PIPE SIZE LARGER THAN VALVE SIZE. WHERE MAINLINES RUN PARALLEL TO PAVEMENT OR CURBING, THE MAINLINE SHALL BE OFFSET 2'-0" FROM THE EDGE OF PAVEMENT OR CURB.
27. IRRIGATION ZONES SHALL BE SEPARATED FOR HIGH AND LOW WATER USE REQUIREMENTS AND OPERATED ON DIFFERENT WATERING CYCLES. BUBBLERS, DRIPLINE, AND SPRAY HEADS SHALL BE SEPARATED ON DIFFERENT VALVES. AT NO TIME SHALL MULTIPLE IRRIGATION HEAD TYPES BE LOCATED ON THE SAME VALVE.
28. ALL DRIP ZONES SHALL BE INSTALLED WITH A FLUSH VALVE AND AIR RELIEF VALVE. IN THE EVENT THAT A DRIP ZONE HAS MORE THAN ONE HIGH OR LOW POINT, MORE THAN ONE AIR RELIEF VALVE OR FLUSH VALVE WILL BE REQUIRED FOR THAT ZONE. DRIPLINE SHALL PROVIDE 0.9 GPH EMITTERS, 12" O.C. WITH 12" LINE SPACING AT A MINIMUM.
29. ALL WIRING FOR CONNECTION OF THE VALVES TO THE CONTROLLER SHALL FOLLOW MANUFACTURERS SPECIFICATIONS. IF REQUIRED, ALL WIRING FOR A TWO WIRE PATH SHALL BE WITH RED/BLUE TWISTED PAIR 14 AWG. ELECTRIC CONTROL LINES FROM THE DECODER TO THE SOLENOID VALVES SHALL BE TWISTED PAIR 18 AWG. ALL DECODERS SHALL BE GROUNDED EVERY 1,000 L.F. OR EVERY 10 DEVICES. ALL WIRE SHALL BE FURNISHED IN MINIMUM 2,500' REELS AND SPLICING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE DONE IN ACCORDANCE WITH EXISTING CODES. SPLICING SHALL BE IN VALVE BOXES OR CONTROLLERS ONLY. IRRIGATION SYSTEM CONTROL SHALL BE TWO WIRE PATH. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR THIS INSTALLATION. TWO WIRE SYSTEM SHALL HAVE 2-WAY COMMUNICATIONS FIELD PROGRAMMABILITY, STATION SPECIFICATIONS AND INTEGRATED SURGE PROTECTION.
30. ALL CONTROL WIRE SHALL BE INSTALLED IN A 1 ½" ELECTRICAL CONDUIT.
31. SMALLEST DIAMETER LATERAL PIPE SHALL BE 3/4".
32. IRRIGATION SYSTEM SHALL BE CAPABLE OF SUPPLYING AN AVERAGE OF 1.05" OF WATER PER WEEK WITHIN WATERING RESTRICTIONS AS APPLICABLE.
33. IRRIGATION SYSTEM SHALL NOT BE INSTALLED THROUGH EXISTING, OR PRESERVED PLANT COMMUNITIES. DO NOT TRENCH THROUGH EXISTING ROOT SYSTEMS OF ANY VEGETATION INTENDED TO BE PRESERVED.
34. CONTRACTOR TO MINIMIZE IRRIGATION OVERTHROW TO IMPERVIOUS AND NATURAL AREAS THROUGH FIELD ADJUSTMENTS TO INDIVIDUAL HEADS.
35. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THE CONDITION DENOTED ON THE LANDSCAPE PLAN.
36. IRRIGATION PIPING INSTALLED UNDER ROADS AND SIDEWALKS SHALL BE IN SCHEDULE 40 PVC SLEEVING AT 2X THE PIPE SIZE. ALL SLEEVING SHALL BE FREE OF STONES AND DEBRIS.
37. IRRIGATION SOURCE TO BE EITHER WELL, POTABLE, OR NON-POTABLE WATER. IRRIGATION CONTRACTOR TO VERIFY SOURCE PRIOR TO DESIGN.
38. POINT OF CONNECTION TO BE DETERMINED BY OWNER. IRRIGATION SYSTEM CONNECTIONS TO THE LOCAL JURISDICTION SERVICE SHALL COMPLY WITH ALL APPLICABLE CODES.
39. IRRIGATION CONNECTION MAY REQUIRE BACKFLOW PREVENTION, VERIFY WITH LOCAL JURISDICTION.
40. IRRIGATION SYSTEM SHALL COMPLY WITH THE LOCAL JURISDICTION LAND DEVELOPMENT CODE.

1 / L2.51 TYPICAL SCHEMATIC IRRIGATION NOTES

No.	REVISIONS	DATE	BY
1	REVISED PER CITY COMMENTS	07/17/25	MMB

Kimley»Horn
6876 MARWICK LANE, SUITE 350, ORLANDO, FL 32827
PHONE: (407) 539-4440
WWW.KIMLEY-HORN.COM REGISTRY No. 35105

REGISTERED LANDSCAPE ARCHITECT MATTHEW TAYLOR FRANKO LA6667292 STATE OF FLORIDA

Digitally signed by Matthew T Franko
DN: CN=Matthew T Franko, serialNumber=A01410D000001936A0201BNZ00198F, O=KIMLEY-HORN AND ASSOCIATES, INC., C=US
Date: 2025.07.17 10:28:35-04'00'

DATE 07/17/2025

THIS DRAWING AND WITH ELECTRONIC FILE(S) HAS BEEN SIGNED AND SEALED BY MATTHEW TAYLOR FRANKO, PLA USING A DIGITAL SIGNATURE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

KHA PROJECT	149170026
DATE	07/17/2025
SCALE	AS SHOWN
DESIGNED BY	ADL
DRAWN BY	JCB
CHECKED BY	CNS

IRRIGATION NOTES

WINTER SPRINGS WAWA

FL

CITY OF WINTER SPRINGS

SHEET NUMBER
L2.51

Plotted By:Mah, Ifht Sheet Set:WINTER SPRINGS (MARKETPLACE- ADDITIONAL PARKING Layout:L2.51 July 17, 2025 03:24:57pm K:\cal_civil\149170026-winter springs wawa\CADD\CONST\plansheets- add parking\L2.0) IRRIGATION PLAN.dwg

Kimley»Horn

MEMORANDUM

To: Terrilyn Rolle, MPA, AICP
Director of Community Development, Winter Springs

From: Emanuelle D Rodríguez Muñiz, P.E., IMSA[1]
Kimley-Horn and Associates, Inc.

Date: December 6, 2024

Subject: Wawa Winter Springs
Parking Demand Study

This document has been digitally signed and sealed by Emanuelle D Rodriguez Muñiz, P.E. on the date adjacent to the seal

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Emanuelle D Rodriguez

Digitally signed by Emanuelle D Rodriguez
DN: CN=Emanuelle D Rodriguez, dnQualifier=A01410C00000193411684510002EF49, O=KIMLEY-HORN AND ASSOCIATES INC, C=US
Date: 2024.12.06 10:35:24-05'00'

Introduction

Kimley-Horn and Associates, Inc. has undertaken the following review and analysis to evaluate the anticipated parking needs for the proposed Wawa convenience store/gas station to be located south of SR 434 and west of Tuskawilla Road in the City of Winter Springs, Florida.

The site is zoned as (T-C) Town Center District. As stated in Section 20-324 of the City's Land Development Code (LDC), there are no minimum parking requirements for T-C; instead, a parking analysis shall be performed justifying the proposed parking solution. This study provides a comparison between the City's code-required parking for the most similar land use, Institute of Transportation Engineers (ITE) *Parking Generation Manual 6th Edition*, and Urban Land Institute (ULI) *Shared Parking 3rd Edition*. The study also includes the required bicycle parking for the site based on the Association of Pedestrian and Bicyclist Professionals (APBP).

The proposed Wawa development will consist of the following uses, as shown in the site plan provided in **Attachment A**:

- 4,736 square feet of convenience store
- 12 vehicle fueling positions (VFP)

Code Parking Requirements

Section 9-277 of the City's LDC defines the off-street parking requirements for specific land uses. The LDC does not have a specific land use for convenience store/gas station therefore “General business and retail commercial” was reviewed:

- General business and retail commercial. One (1) parking space for each three hundred (300) square feet of floor space in the building exclusive of storage space.

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As shown in **Table 1,** a total parking supply of 16 spaces (rounded to nearest integer) at a parking ratio of 3.38 spaces per a thousand square feet would potentially be required depending on interpretation of the City's LDC.

Table 1: City Code Parking Requirement

City LDC		Proposed Development		Required Parking
Land Use	Min. Requirement	Size	Units	
General business and retail commercial	1 space per 300 SF	4,736	SF	16

ITE's Parking Generation Manual, 6th Edition Evaluation

A calculation of the anticipated parking demand was undertaken using data published by the Institute of Transportation Engineers (ITE) *Parking Generation Manual 6th Edition*. Empirical data collected on sites throughout the country are compiled to develop parking demand ratios for similar land uses. The 85th percentile peak parking demand was utilized in accordance with industry-accepted standards.

As shown in **Table 2,** a total parking supply of 50 spaces (rounded to nearest integer) at a parking ratio of 10.56 spaces per a thousand square feet would be needed to serve the proposed convenience store/gas station as an isolated and stand-alone establishment.

Table 2: ITE Parking Demand Summary

ITE ParkGen			Proposed Development		Required Parking
Land Use	LUC	85th Percentile	Size	Units	
Convenience Store/Gas Station	945	10.65 per KSF	4.736	KSF	50

ULI Shared Parking, 3rd Edition Evaluation

Parking within mixed-use developments means patrons can "park once" though are able to visit multiple establishments essentially reducing overall parking demand. The Urban Land Institute (ULI) *Shared Parking 3rd Edition* provides a methodology to calculate the parking demand reduction based on the mix of land uses. The proposed Wawa is within a mixed-use development as shown in **Table 3.** Properties were identified through a desktop search as well as using data from the Seminole County Property Appraiser. Building configuration of the development is shown as **Attachment C**.

Table 3: ULI Land Uses by Existing Tenants

Bldg.	Existing Tenant	ULI Land Use	Sq. Ft.
A	Lake Jesup Dental Care	Medical/Dental Office	4,280
B	Chipotle	Fast Casual/Fast Food	2,325
C	Fifth Third Bank	Bank (Drive In Branch)	2,065
D	Crunch Fitness	Health Club	19,200
E	Dollar Tree	Discount Stores/Superstores	10,000
F	Aldi	Supermarket/Grocery	19,209
G	Wawa	Retail (over 2KSF)	4,736
		Total	**61,815**

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The ULI Shared Parking provides monthly adjustment factors and weekend time-of-day adjustment factors, which show the peak season and peak time-of-day, respectively. The parking ratio applied is the highest demand period which potentially generates demand for 311 spaces (rounded to the nearest integer). The results of ULI's Shared Parking analysis are shown in **Attachment D.**

As shown in **Table 4**, the mixed-use development *without* Wawa currently provides 344 parking spaces. ULI estimates even including Wawa's parking demand, 307 spaces would be sufficient. Therefore, a 33-parking space surplus exists prior to adding parking by Wawa.

Table 4: Parking Ratio Determination

ULI Peak Demand Estimate	Existing Spaces	Surplus/Deficit
311	344	+33

Bicycle Parking

According to the Association of Pedestrian and Bicyclist Professionals (APBP), bicycle parking can be measured by commercial activity including retail. Long-term bicycle parking is considered utilized by employees demanding less spaces per square foot. Short-term bicycle parking is considered utilized by patrons who routinely generate demand and require more spaces per square foot. Therefore, the short-term bicycle parking recommendation of 2 spaces is applied to the Wawa as shown in **Table 5**:

Table 5: Bicycle Parking Spaces Summary

Commercial Activity	Long-Term Bicycle Parking Requirement	Short-Term Bicycle Parking Requirement
General Retail	1 space for each 12,000 sf of floor area. Minimum requirement is 2 spaces	1 space for each 5,000 sf of floor area. Minimum requirement is 2 spaces

Conclusion

Upon review of the ITE parking ratio for a stand-alone convenience store/gas station, 10.65 spaces per KSF could be recommended. However, Wawa is within a mixed-use development which ULI measures would have shared parking capacity. The mixed-use development including the Wawa would generate demand for a total of 311 spaces. The mixed-use development currently supplies 344 parking spaces which *does not* reflect potential future parking from Wawa. Therefore, the existing 344 spaces is considered sufficient to address both the mixed-use development and Wawa's peak parking demand. Additional parking by Wawa will only serve to increase the existing 33 space surplus.

Additionally, it is recommended that 2 bicycle parking spaces be provided at the Wawa location based on the Association of Pedestrian and Bicyclist Professionals (APBP) guidelines.

ATTACHMENT A

Site Plan

S.R. 434 & TUSCAWILLA RD.

WINTER SPRINGS, FLORIDA

SP-47

PROPOSED SITE LAYOUT

06/2052024 - CONTACT JONATHAN A. MARTIN, P.E. (407) 427-1686

EQUINOX DEVELOPMENT

GRAPHIC SCALE IN FEET 0 20 40 80

NORTH

Kimley»Horn

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ATTACHMENT B

ITE Parking Generation Manual

Land Use: 945 Convenience Store/Gas Station

Description

A convenience store/gas station is a facility with a co-located convenience store and gas station. The convenience store sells grocery and other everyday items that a person may need or want as a matter of convenience. The gas station sells automotive fuels such as gasoline and diesel. The sites in this land use include both self-pump and attendant-pumped fueling positions and both pre-pay and post-pay operations.

A convenience store/gas station is typically located along a major thoroughfare to optimize motorist convenience. Extended hours of operation (with many open 24 hours, 7 days a week) are common at these facilities.

The convenience store product mix typically includes pre-packaged grocery items, beverages, dairy products, snack foods, confectionary, tobacco products, over-the-counter drugs, and toiletries. A convenience store may sell alcohol, often limited to beer and wine. Coffee and premade sandwiches are also commonly sold. Made-to-order food orders are sometimes offered. Some stores offer limited seating.

Convenience Store (Land Use 851) is a related use.

Time-of-Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a weekday at five study sites in a general urban/suburban setting.

Hour Beginning	Percent of Weekday Peak Parking Demand
12:00–4:00 a.m.	-
5:00 a.m.	-
6:00 a.m.	-
7:00 a.m.	54
8:00 a.m.	73
9:00 a.m.	65
10:00 a.m.	72
11:00 a.m.	80
12:00 p.m.	100
1:00 p.m.	89
2:00 p.m.	69
3:00 p.m.	63
4:00 p.m.	54
5:00 p.m.	54
6:00 p.m.	49
7:00 p.m.	-
8:00 p.m.	-
9:00 p.m.	-
10:00 p.m.	-
11:00 p.m.	-

Additional Data

The reported parking demand does not include any vehicles parked at fueling pump spaces even though some motorists may leave their vehicle at the fueling pump while inside the convenience store.

The average parking supply ratio for the 15 study sites in a general urban/suburban setting with parking supply information is 12 spaces per 1,000 square feet GFA. The average peak parking occupancy at these sites is 69 percent.

The sites were surveyed in the 1990s, the 2000s, and the 2020s in California, New Jersey, Pennsylvania, Texas, and Virginia.

Source Numbers

417, 433, 443, 444, 626, 637

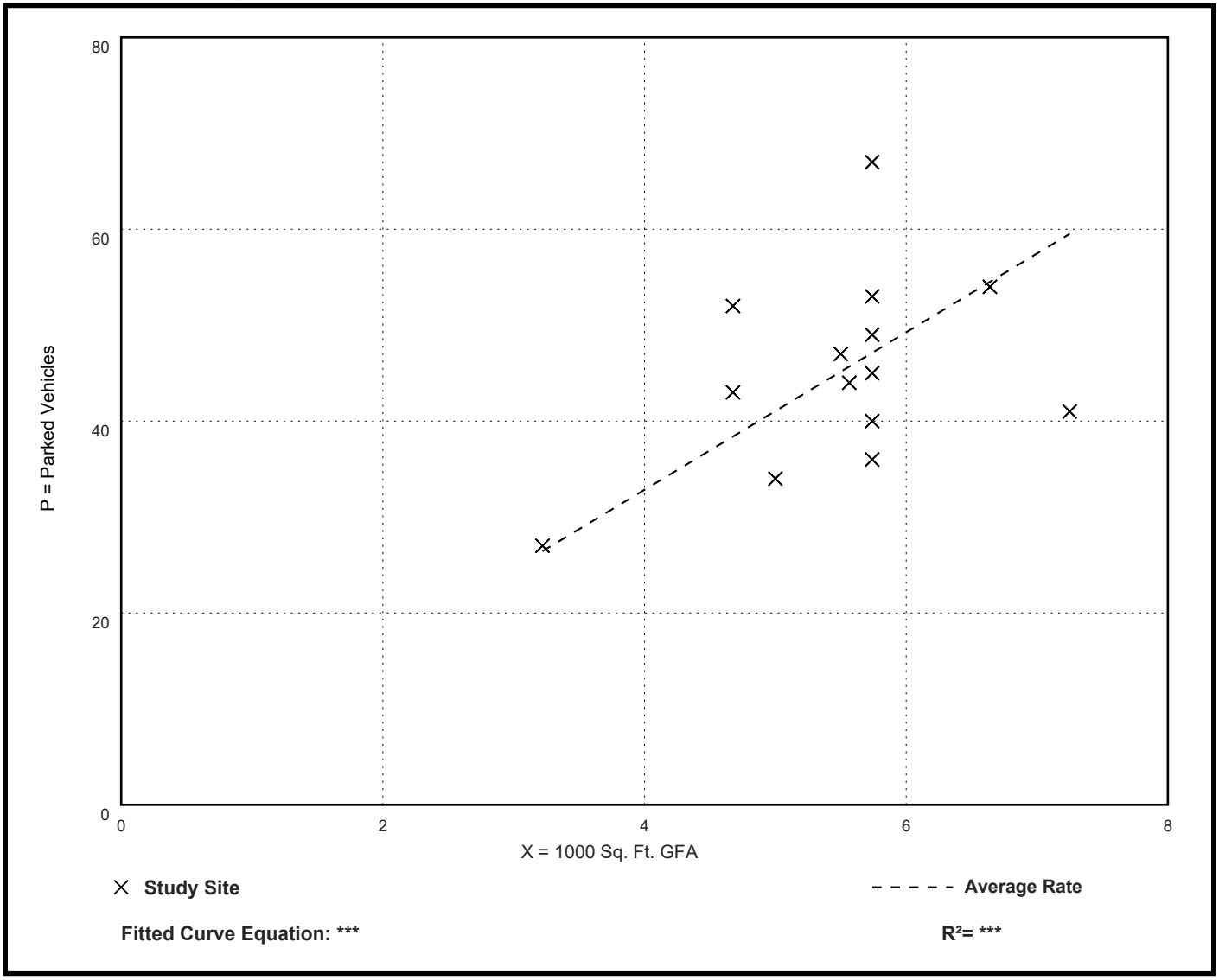
Convenience Store/Gas Station (945)

Peak Period Parking Demand vs: 1000 Sq. Ft. GFA
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Number of Studies: 14
Avg. 1000 Sq. Ft. GFA: 5.5

Peak Period Parking Demand per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
8.21	5.66 - 11.67	7.80 / 10.65	***	1.71 (21%)

Data Plot and Equation

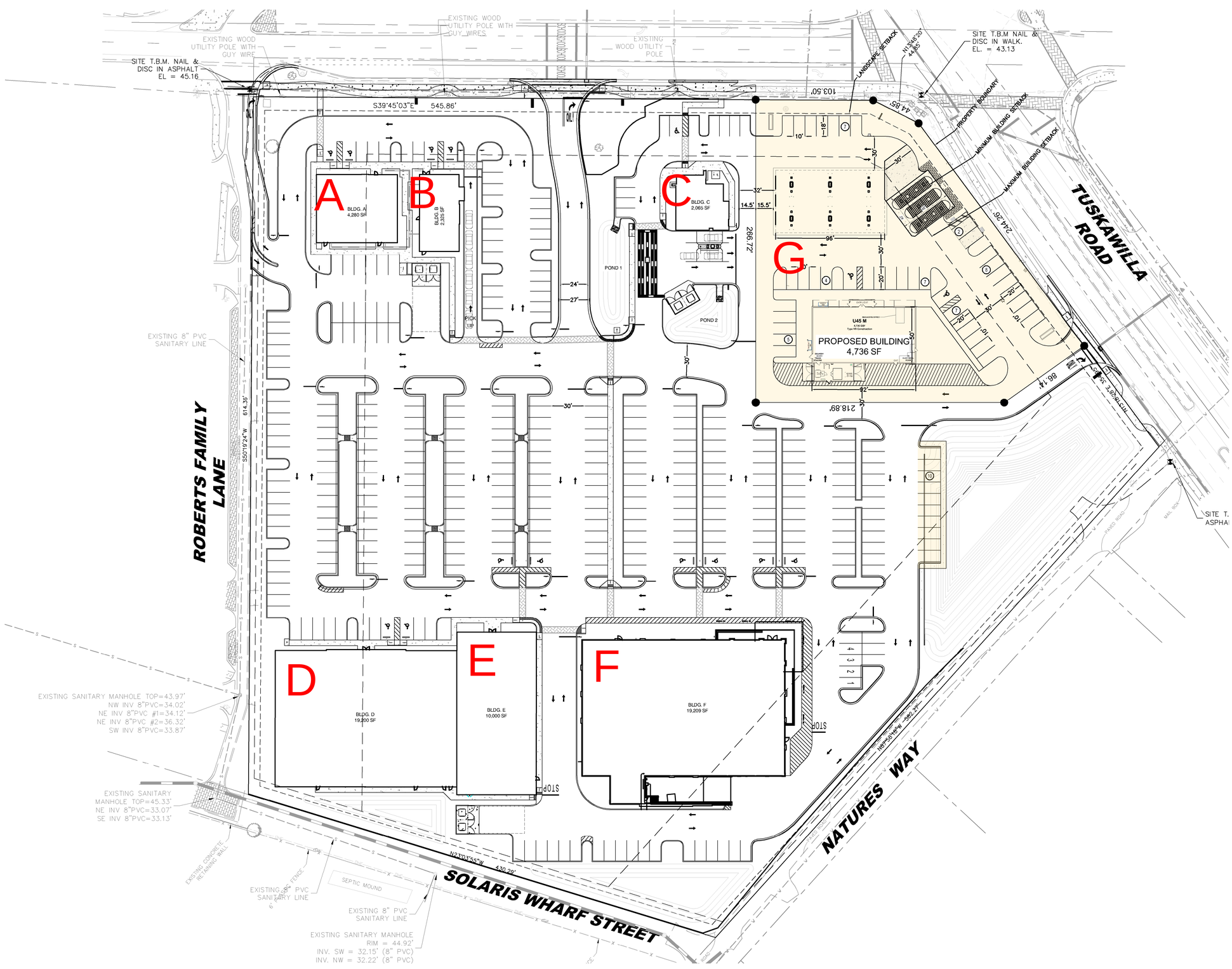


Fitted Curve Equation: *

R^2= *

ATTACHMENT C

Mixed-Use Development Layout



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EQUINOX DEVELOPMENT

GRAPHIC SCALE IN FEET
0 20 40 80

NORTH

Kimley»Horn

SP-47

S.R. 434 & TUSCAWILLA RD.

WINTER SPRINGS, FLORIDA

PROPOSED SITE LAYOUT

06/2052024 - CONTACT JONATHAN A. MARTIN, P.E. (407) 427-1686

ATTACHMENT D

ULI Shared Parking Results

Copyright © 2020 All rights reserved. The Urban Land Institute, International Council of Shopping Centers, and National Parking Association.

Project: Winter Spring
Description: Wawa

Shared Parking Demand Summary

Peak Month: DECEMBER -- Peak Period: 5 PM, WEEKDAY

Land Use	Project Data		Weekday					Weekend					Weekday			Weekend		
	Quantity	Unit	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Base Ratio	Driving Adj	Non-Captive Ratio	Project Ratio	Unit For Ratio	Peak Hr Adj 5 PM	Peak Mo Adj December	Estimated Parking Demand	Peak Hr Adj 5 PM	Peak Mo Adj December	Estimated Parking Demand
Retail																		
Retail (over 2,000 ksf)	4,736	sf GLA	2.90	100%	100%	2.89	ksf GLA	3.20	100%	100%	3.20	ksf GLA	85%	100%	12	80%	100%	13
Employee			0.70	99%	100%	0.69		0.80	99%	100%	0.79		100%	100%	4	55%	100%	2
Supermarket/Grocery	19,209	sf GLA	4.00	100%	100%	3.99	ksf GLA	4.00	100%	100%	3.99	ksf GLA	100%	100%	77	90%	100%	69
Employee			0.75	99%	100%	0.74		0.75	99%	100%	0.74		100%	100%	15	55%	100%	8
Discount Stores/Superstores	10,000	sf GLA	3.40	100%	100%	3.39	ksf GLA	3.80	100%	100%	3.80	ksf GLA	85%	100%	29	95%	100%	36
Employee			0.85	99%	100%	0.84		0.95	99%	100%	0.94		95%	100%	8	100%	100%	10
Food and Beverage																		
Fast Casual/Fast Food	2,325	sf GLA	12.40	100%	50%	6.16	ksf GLA	12.70	100%	57%	7.26	ksf GLA	60%	96%	10	60%	96%	13
Employee			2.00	99%	100%	1.98		2.00	99%	100%	1.98		70%	100%	3	70%	100%	3
Entertainment and Institutions																		
Health Club	19,200	sf GLA	6.60	100%	99%	6.54	ksf GLA	5.50	100%	99%	5.47	ksf GLA	90%	100%	114	100%	100%	106
Employee			0.40	99%	100%	0.40		0.25	99%	100%	0.25		100%	100%	8	100%	100%	5
Hotel and Residential																		
Office																		
Medical/Dental Office	4,280	sf GFA	3.00	100%	100%	2.99	ksf GFA	0.00	100%	100%	0.00	ksf GFA	80%	100%	10	0%	100%	-
Employee			1.60	100%	100%	1.60		0.00	100%	100%	0.00		100%	100%	7	0%	100%	-
Bank (Drive In Branch)	2,065	sf GFA	3.50	100%	95%	3.34	ksf GFA	3.00	100%	100%	3.00	ksf GFA	100%	100%	8	0%	100%	-
Employee			2.50	100%	100%	2.50		1.75	100%	100%	1.75		100%	100%	6	0%	100%	-
Additional Land Uses																		
													Customer/Visitor		260	Customer/Visitor		237
													Employee/Resident		51	Employee/Resident		28
													Reserved		-	Reserved		-
													Total		311	Total		265
													Shared Parking Reduction		13%			16%

August 4, 2020

Ms. Kirsten Davis
Equinox Development
630 S. Maitland Avenue
Suite 100
Maitland, Florida 32751

ECS Project No. 55:3210

SUBJECT: Listed Wildlife Species Survey
± 10.25 - Acre Winter Springs Property
Winter Springs, Seminole County, Florida

Dear Ms. Davis:

As requested, ECS Florida, LLC (ECS) is pleased to present the following Listed Wildlife Species Survey for the ± 10.25 - Acre Winter Springs Property located in Winter Springs, Seminole County, Florida. Work was provided by our sub-consultant, Thomson Environmental Consulting (Thomson). We have attached Thomson's report. Thank you for this opportunity to offer our services. Please call the undersigned with questions or comments at (407) 859-8378.

Respectfully submitted,

ECS FLORIDA, LLC

Ivona Minossora
Environmental Group Manager

James (Cliff) Hendrickson, P.G.
Florida Professional Geologist 2226
Environmental Principal

Attachment: Thomson's Listed Wildlife Species Survey

2324 Leu Road
ORLANDO, FLORIDA 32803
407.374.3681 – tel
407.405.8725 – cell

October 22, 2018

Ivona Minossora
ECS Florida, LLC
2815 Directors Row, Suite 500
Orlando, Florida 32809

RE: Listed Wildlife Species Survey
±10.25-Acre Winter Springs Property
Winter Springs, Seminole County, Florida
Thomson Project No. 18-650

Ms. Minossora:

Thomson Environmental Consulting, LLC (Thomson) completed a Listed Wildlife Species Survey of the ±10.25-Acre Winter Springs Property (the property) generally located in the southwest corner of the intersection of State Road 434 and Tuskawilla Road. The field portion of the survey was conducted on October 9, 2018. The purpose of the field visit was to evaluate the subject property for the occurrence and/or potential for occurrence of protected wildlife species (and their habitat). The following report (and referenced exhibits) describes relevant ecological conditions observed on the site during the field investigation and the results of documented literature regarding the presence of protected wildlife species and/or habit on the site and its relevant surroundings.

SITE DESCRIPTION AND LOCATION

The property is generally located in the southwest corner of the intersection of State Road 434 and Tuskawilla Road in Winter Springs, Seminole County, Florida. The property measures ±10.25 acres using the Seminole County Geographic Information System (GIS) coverages, but only ±9.9 acres according to the Seminole County Property Appraiser (SCPA). Per the SCPA, the property comprises 4 legal parcels identified as follows:

- SCPA PID 36-20-30-502-0000-0070 (±2.82 acres)
- SCPA PID 36-20-30-502-0000-0080 (±3.03 acres)
- SCPA PID 26-20-30-5AR-0A00-008F (±0.26 acre)
- SCPA PID 36-20-30-502-0000-0090 (±3.79 acres)

thomson
ENVIRONMENTAL CONSULTING

2324 Leu Road
ORLANDO, FLORIDA 32803
407.374.3681 – tel
407.405.8725 – cell

Figure 1 is a location map showing the entirety of the property, including internal named streets.

Figure 2 is a true-color rectified aerial (circa 2017) of the property and its immediate surroundings.

Figure 3 is a topographic quadrangle map showing the topographic relief on the property and in the local region surrounding the site.

SOILS

Soils were identified using the Natural Resource Conservation Service's *Soil Survey of Seminole County, Florida*. The following soil units and descriptions were mapped by the soil survey on the property:

Myakka and EauGallie Fine Sands (Map Unit 20) – This soil represented approximately 2.66 acres of the property. The soils in this map unit are nearly level and poorly drained. These soils are on broad plains on the flatwoods. The slopes are dominantly less than 2 percent. During most years, the soils in this map unit have a seasonal high water table within 12 inches of the surface for 1 month to 4 months. The permeability of Myakka soil is rapid in the surface and subsurface layers and substratum and moderate or moderately rapid in the subsoil. The permeability of EauGallie soil is rapid in the surface and subsurface layers, moderate or moderately rapid in the sandy part of the subsoil, and moderately slow in the loamy part of the subsoil.

Paola-St. Lucie Sands, 0 to 5 percent slopes (Map Unit 24) – This soil represented approximately 6.33 acres of the property. The soils in this map unit are nearly level to gently sloping and excessively drained. These soils are on upland ridges. The slopes are 0 to 5 percent. The soils in this map unit have a seasonal high water table at a depth of 80 inches or more.

Tavares-Millhopper Fine Sands, 0 to 5 percent slopes (Map Unit 31) – This soil represented approximately 1.26 acres of the property. The soils in this map unit are nearly level to gently sloping and moderately well drained. These soils are on low ridges and knolls on the uplands. The slopes are nearly smooth to slightly convex. The soils in this map unit have a seasonal high water table at a depth of 36 to 60 inches for 2 to 6 months.

Figure 4 shows the property and soils as mapped by the Soil Survey.

Soils observed during the site visit seemed to generally match those as described in the Soil Survey. No indications of hydric soils were observed.

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VEGETATIVE COMMUNITIES AND LAND USES

Prior to the field visit, Geographic Information System (GIS) data from the St. Johns River Water Management District (SJRWMD) was reviewed to identify documented vegetative communities and land uses on the property. These site conditions are documented using the Florida Land Use, Cover and Forms Classification System (FLUCCS, Florida Department of Transportation, 1999). FLUCCS classifications for the land covers and uses (as adapted from SJRWMD coverages) on the property are as follows:

Commercial and Services - Abandoned (FLUCFCS code 0140) – This classification represented approximately 1.24 acres of the property. It is the eastern portion of the property that was formerly a Pinch a Penny pool supply store accessible from both Tuskawilla Road and SR 434.

Hardwood-Conifer Mixed (FLUCFCS code 434) – This classification represented approximately 9.01 acres and the majority of the property. This upland, undeveloped area was dominated by slash and sand pine, with a dense subcanopy of xeric oaks in the central portion of the property.

Figure 5 is a FLUCFCS map that depicts the land cover classification described above.

PROTECTED WILDLIFE SPECIES SURVEY

Protected wildlife species are defined as those listed as Threatened, Endangered, or Species of Special Concern by the U.S. Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission (FWC). The survey consisted of both a search of documented literature and a field reconnaissance.

Documented Literature Search

Prior to the field investigation, documented literature resources were consulted regarding known occurrences of protected wildlife species on or in the vicinity of the project site. These included the FWC's Bald Eagle (*Haliaeetus leucocephalus*) Nest Locator (*https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx*) and Waterbird Colony Locator (*http://atoll.floridamarine.org/waterBirds/*) online locator sites. A query of both databases (from the center of the site extending outward a radius of one mile) revealed no documented occurrences of waterbird colonies within 1 mile of the property. The closest documented bald eagle nest (Nest ID SE087) was documented approximately 2,250 feet east of the property, which is well outside of any applicable buffer zones.

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The NRCS Web Soil Survey (*https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx*) was used to identify soils suitable for the burrowing needs of gopher tortoises (*Gopherus polyphemus*, state-Threatened). The areas identified as Paola-St. Lucie Sands and Tavares-Millhopper Complex were rated as "Highly Suited" soils for gopher tortoises, while the area identified as Myakka and EauGallie Fine Sands are rated as "Less Suited".

The property was mapped within the USFWS Consultation Area for the following federally-listed species: Audubon's Crested Caracara (*Polyborus plancus audubonii*, Threatened), Red-Cockaded Woodpecker (*Picoides borealis*, Endangered), Florida Scrub-Jay (*Aphelocoma coerulescens*, Threatened), the Everglades Snail Kite (*Rostrhamus sociabilis plumbeus*, Endangered), and the Florida Wood Stork (*Mycteria americana*, Endangered).

Field Reconnaissance and Observations

A protected wildlife species survey and habitat assessment was conducted over the entire property on October 9, 2018. Protected wildlife species are defined as those listed as Threatened, Endangered, or Species of Special Concern by the U.S. Fish and Wildlife Service (USFWS) and/or the Florida Fish and Wildlife Conservation Commission (FWC).

No indication of bald eagle foraging was observed. No nests or juveniles were observed on the property.

A survey for gopher tortoises and/or occupied habitat was conducted over 100% of the suitable soils on the property by Mr. Joel Thomson of Thomson Environmental Consulting, LLC (an Authorized Agent for surveying by FWC). The results of the survey yielded no potentially-occupied gopher tortoise burrows, and no indication of gopher tortoise presence. Based on the quality of habitat, it is recommended that an additional survey of the property be performed within 90 days of intended construction, per the FWC's guidelines.

The presence of some scrub oaks on the property often represents potential habitat for the Florida Scrub-Jay. The habitat was determined to be too overgrown to represent viable habitat, likely the result of fire exclusion and other factors related to the surrounding development. No indications of Florida Scrub-Jays was observed during the survey.

No other protected wildlife species concerns were observed during the course of the field survey. The numerous species with Consultation Areas covering the property have unique, individualized habitat needs that are not offered on the property due to developed nature of much of the property and the lack of natural habitat.

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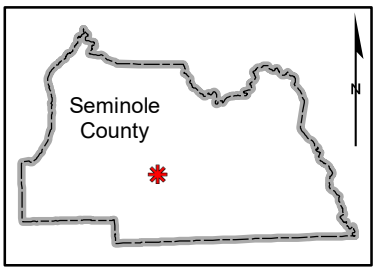
LIMITATIONS OF THIS REPORT

It is important to note that the conclusions of this report are necessarily based on the conditions observed on the day of the field investigation, as well as our scientific judgment of the site's potential to support protected species (based on each species' optimal habitat requirements). Due to this "snapshot" view of the site, the results presented in this report may not accurately reflect changing site conditions and/or wildlife species' temporal and spatial movements.

Thomson appreciates the opportunity to provide these services to you. If there are questions regarding this report, or a need for further information, please contact the undersigned at your convenience.

Respectfully,
Thomson Environmental Consulting, LLC

Joel A. Thomson
President



General Location

0 500 1,000

1" = 1,000'

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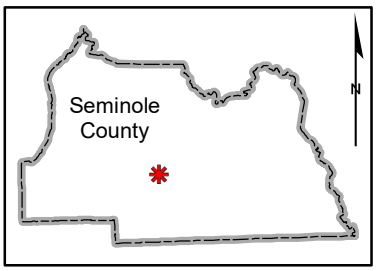
Figure 1
Location Map
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018



General Location

0 75 150

1" = 150'

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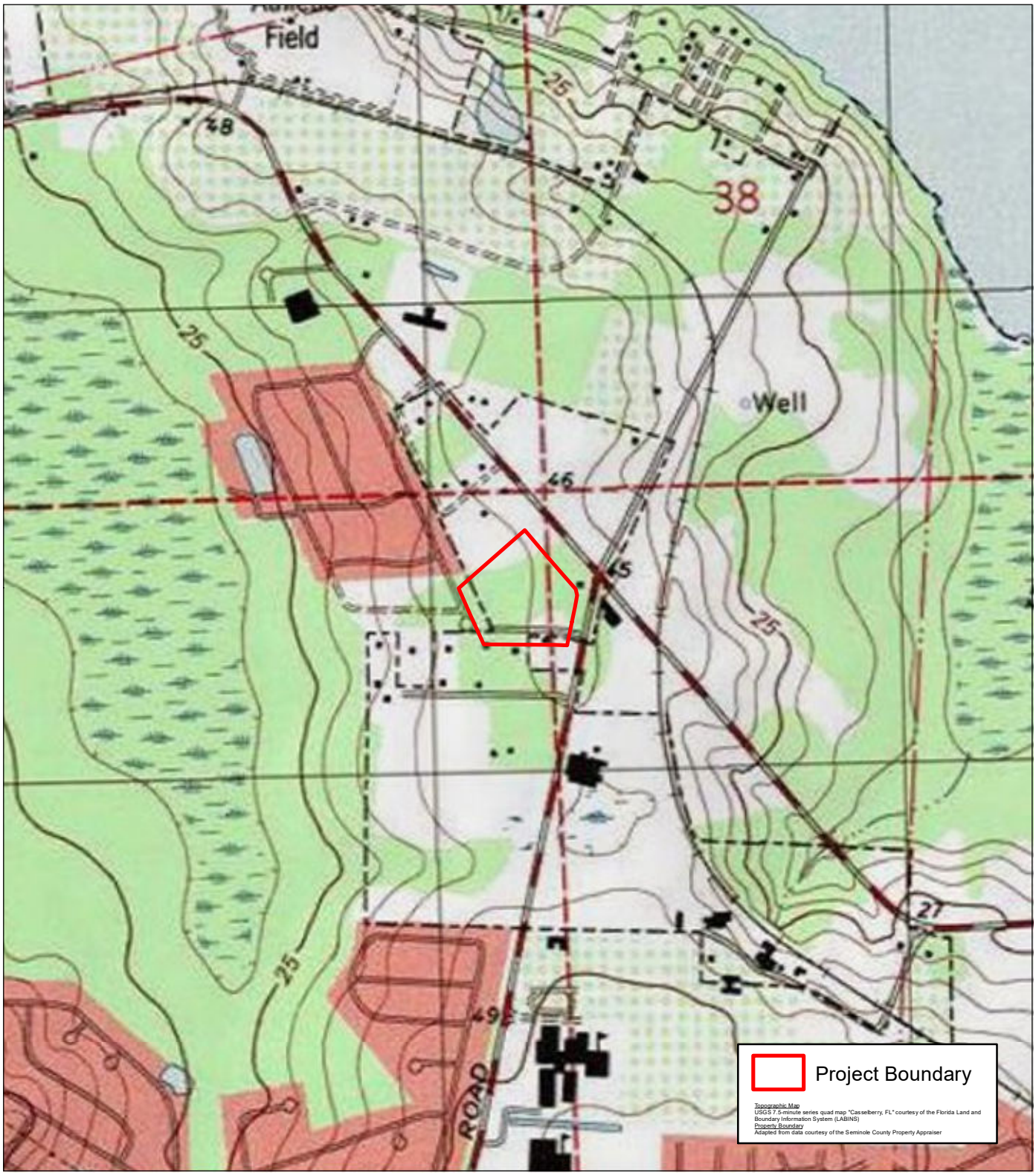
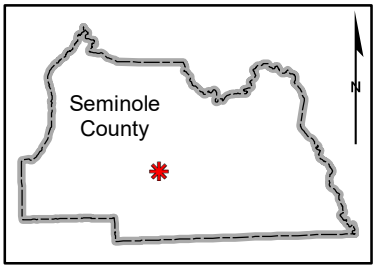
Figure 2
Aerial Photograph
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

Thomson Project No. 18-650
October 2018





General Location

0 500 1,000

1" = 1,000'

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Figure 3
Topographic Map
Winter Springs Property
Winter Springs, Seminole County, Florida
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Section 6, Township 21 S, Range 31 E

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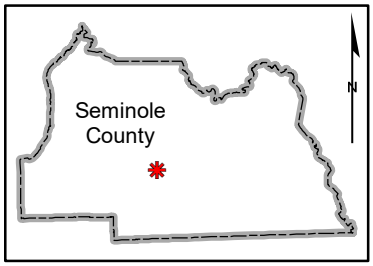
October 2018



General Location

0 75 150
1" = 150'

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Figure 4
Soils Map

Winter Springs Property
Winter Springs, Seminole County, Florida

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Section 6, Township 21 S, Range 31 E

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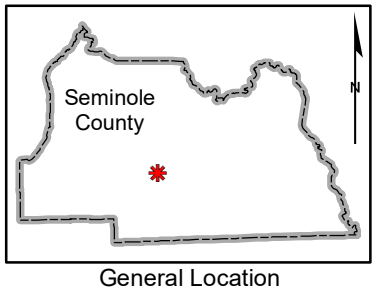

General Location

0 75 150

1" = 150'

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Figure 5
FLUCCS Map
Winter Springs Property
Winter Springs, Seminole County, Florida
Section 1, Township 21 S, Range 30 E and
Section 6, Township 21 S, Range 31 E

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