



APOPKA PLANNING COMMISSION AGENDA

July 9, 2024 5:00 PM

Apopka City Hall Council Chambers

APOPKA PLANNING COMMISSION MEETING WILL BE LIVE-STREAMED ON YOUTUBE. TO WATCH, PLEASE VISIT:

<https://www.youtube.com/CityofApopkaFL>

CALL TO ORDER

OPENING AND INVOCATION

PUBLIC COMMENT PERIOD

The Public Comment Period is for City-related issues that may or may not be on today's Agenda. If you are here for a matter that requires a public hearing, please wait for that item to come up on the agenda. If you wish to address the Council, you must fill out an Intent to Speak form and provide it to the City Clerk prior to the start of the meeting. If you wish to speak during the Public Comment Period, please fill out a green-colored Intent-to-Speak form. If you wish to speak on a matter that requires a public hearing, please fill out a white-colored Intent-to-Speak form. Speaker forms may be completed up to 48 hours in advance of the Council meeting. Each speaker will have four minutes to give remarks, regardless of the number of items addressed. Please refer to Resolution No. 2016-16 for further information regarding our Public Participation Policy & Procedures for addressing the City Council.

APPROVAL OF MINUTES

PUBLIC HEARING

1. Legislative – Ordinance Number 3052 – Small-Scale Future Land Use Amendment – 1400 W Kelly Park Rd
Owner(s): Michael A. Gentles, Desmond W. Streete
Applicant(s): Jose Chaves
Location: 1400 W. Kelly Park Road
Project: Legislative – Ordinance Number 3052 – Small-Scale Future Land Use Amendment – 1400 W Kelly Park Rd
Density: 0.1 Dwelling Unit Per 1 Acre
Project Manager: Jun Sohn, Ph.D.
2. Quasi-Judicial – Ordinance Number 3053 – Change of Zoning – 1400 W Kelly Park Rd
Owner(s): Michael A. Gentles, Desmond W. Streete
Applicant(s): Jose Chaves
Location: 1400 W. Kelly Park Road
Project: Legislative – Ordinance Number 3052 – Small-Scale Future Land Use Amendment – 1400 W Kelly Park Rd
Density: 0.1 Dwelling Unit Per 1 Acre
Project Manager: Jun Sohn, Ph.D.
3. Legislative – Ordinance Number 3058– Small-Scale Future Land Use Amendment – 357 West 4th Street
Owner(s): SFL Partners, LLC and JFJ Real Investments, LLC
Applicant(s): Albert Iglesias
Location: 357 West 4th Street
Project: Amend future land use designation from County Residential Medium to City Industrial
Density: 0.60 maximum permitted
Project Manager: Jean Sanchez
4. Quasi-Judicial – Ordinance Number 3059 – Change of Zoning – 357 West 4th Street
Owner(s): SFL Partners, LLC and JFJ Real Investments, LLC
Applicant(s): Albert Iglesias
Location: 357 West 4th Street

Project: Amend zoning district designation from County R-2 (Residential) to City I-L (Light Industrial)
Project Manager: Jean Sanchez

5. Legislative - Ordinance Number 3064 - Small-Scale Future Land Use Amendment – 996 S. Orange Blossom Trail
Owner(s): Trinity Baptist Church of Apopka, Inc.
Applicant(s): Thomas Skelton
Location: 996 and 1000 S. Orange Blossom Trail
Project: Change future land use designation from Residential Medium and Commercial to Institutional/Public Use
Density: N/A
Project Manager: Jun Sohn, Ph.D.
6. Quasi-Judicial – Ordinance Number 3065 – Change of Zoning – 996 and 1000 South Orange Blossom Trail
Owner(s): Trinity Baptist Church of Apopka, Inc.
Applicant(s): Thomas Skelton
Location: 996 and 1000 South Orange Blossom Trail
Project: Change future land use designation from Residential Medium and Commercial to Institutional/Public Use
Density: N/A
Project Manager: Jun Sohn, Ph.D.

SITE PLANS

1. Quasi-Judicial - 1700 West Keene Road - Wall Variance
Owner(s): LCE 13, LLC
Applicant(s): Bryan Potts, P.E.
Location: 1700 W. Keene Road
Project: 1700 W. Keene Road wall variance
Density: N/A
Project Manager: Bobby Howell, AICP
2. Quasi-Judicial - 1700 West Keene Road - Major Development Plan
Owner(s): LCE 13, LLC
Applicant(s): Bryan Potts, P.E.
Location: 1700 West Keene Road
Project: Retail development
Density/Intensity: maximum 0.25 floor area ratio
Project Manager: Bobby Howell, AICP

OLD BUSINESS

NEW BUSINESS

ADJOURNMENT

Individuals with disabilities needing assistance to participate in any of these proceedings should contact the City Clerk at least two (2) working days in advance of the meeting date and time at (407) 703-1704. F.S. 286.0105 If a person decides to appeal any decision or recommendation made by Planning Commission with respect to any matter considered at this meeting, he will need record of the proceedings, and that for such purposes he 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.

Any opening invocation that is offered before the official start of the Planning Commission meeting shall be the voluntary offering of a private person, to and for the benefit of the Planning Commission. The views or beliefs expressed by the invocation speaker have not been previously reviewed or approved by the Planning Commission or the city staff, and the City is not allowed by law to endorse the religious or non-religious beliefs or views of such speaker. Persons in attendance at the Planning Commission meeting are invited to stand during the opening ceremony. However, such invitation shall not be construed as a demand, order, or any other type of command. No person in attendance at the meeting shall be required to participate in any opening invocation that is offered or to participate in the Pledge of Allegiance. You may remain seated within the City Council Chambers or exit the City Council Chambers and return upon completion of the opening invocation and/or Pledge of Allegiance if you do not wish to participate in or witness the opening invocation and/or the recitation of the Pledge of Allegiance.



City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 1.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Legislative – Ordinance Number 3052 – Small-Scale Future Land Use Amendment – 1400 W Kelly Park Rd

REQUEST:

Recommend approval of the Future Land Use Map Amendment from “County” Rural to “City” RVLS (Residential Very Low Suburban) for 1400 W. Kelly Park Road.

SUMMARY:

Owner(s): Michael A. Gentles, Desmond W. Streete

Applicant: Jose Chaves

Parcel Identification Number(s): 17-20-28-0000-00-008

Location: 1400 W. Kelly Park Road

Existing Future Land Use: “County” Rural

Proposed Future Land Use: “City” RVLS (Residential Very Low Suburban)

Existing Use(s): Vacant

Existing Zoning: T (Transitional)

Tract Size: 5.06 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	“County” Rural	“County” A-1	Vacant
East	“City” Residential Estate	“City” RCE (Residential Country Estate)	Agriculture (Nursery)
South	“City” Residential Estate	“City” PD (Planned Development)	Vacant
West	“City” Residential Very Low Suburban	“City” RSF-1A (Residential Single-Family Estate District)	Vacant

PROJECT SUMMARY:

The subject property, which is approximately 5.06 acres in size, is located at 1400 W. Kelly Park Road and is currently vacant. The applicant is requesting the amendment of the Future Land Use of the property for potential development of 10 single-family residential units. The applicant's proposed amendment of the Future Land Use designation allows two (2) dwelling units per acre by the Comprehensive Plan and is consistent with the proposed rezoning to RSF-1A.

The Future Land Use of RVLS will allow a maximum density of two (2) dwelling units per acre and be compatible with the surrounding areas. The property to the west has a future land use designation of RVLS, the properties to the east and the south has designations of Residential Estate. The property to the north is not within the city limits.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;

- Applicant's response: The proposed project aligns with the goals and objectives of City's Comprehensive Plan, furthering their vision for the city's development by establishing a Future Land Use and Zoning Districts that is compatible with adjacent properties. This process of establishing a Future Land Use and Zoning District is following the recent approval of this property's annexation into the City of Apopka (reference Ordinance No 3043 approved via public hearing on February 23, 2024 and March 1, 2024.)
- Staff response: Staff has no objection.

b. Is in conflict with any provisions of the LDC;

- Applicant's response: The only conflict with the LDC is regarding Section 5.16.5.B.3.d Transportation Improvements which require a right-turn lane for projects on a road with a 45 MPH speed limit. The project has a limited width fronting W. Kelly Park Road (170ft) making it impossible to construct a turn lane meeting minimum FDOT requirements. Due to the low intensity of a project being proposed (8-9 single family homes), it is being requested from the City Engineer that this requirement be omitted. The community is being designed to meet all other aspects of the City's Land Development Code (LDC)
- Staff response: If the future land use amendment is approved, a development plan will be required to be submitted to and approved by the Development Review Committee (DRC). As part of the submittal requirements for the development plan, a Traffic Impact Analysis (TIA) will be required to be submitted which will outline what transportation impact mitigation measures, if any, will be required. The development plan will be reviewed against all applicable Land Development Code (LDC) requirements, including Section 5.16.5.B.3.d, and will be evaluated by the Development Review Committee (DRC) during the development review process.

c. Addresses a demonstrated community need;

- Applicant's response: Housing is in critical shortage across the nation, especially in Central Florida. The City of Apopka has seen a lot of growth with large Planned Development communities with hundreds of homes. However, there is always a demand for smaller communities that will be met by this project. This concept is supported by the fact that the City has approved the annexation of the property with this intention clearly established.
- Staff response: Staff has no objection.

d. Is required by changed conditions;

- Applicant's response: As part of the annexation process, establishment of the Future Land Use and Zoning District is required.
- Staff response: Staff has no objection.

e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;

- Applicant's response: The project is compatible with surrounding uses and is located within the appropriate zoning district.
- Staff response: Staff has no objection.

f. Would result in a logical and orderly development pattern;

- Applicant's response: The project adheres to a logical and orderly development pattern, promoting efficient land use.

- Staff response: Staff has no objection.

g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and

- Applicant's response: The project would not result in significant adverse impacts on the natural environment.
- Staff response: Staff has no objection.

h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewerage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).

- Applicant's response: The project is designed to be adequately served by existing public facilities.
- Staff response: Staff has no objection.

SCHOOL CAPACITY REPORT:

An inquiry was sent to Orange County Public Schools (OCPS) regarding school capacity requirement for this application. OCPS determined that school capacity for the subject development is available for elementary and middle school, but not available for high school.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 31, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)

August 7, 2024 – City Council (1:30 P.M.), First Reading

August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 28, 2024 – Apopka Chief

June 7, 2024 – Mailed notices to adjacent property owners

June 14, 2024 – Posters placed on property

LAND USE REPORT:

I. Relationship of adjacent properties

Direction	Future Land Use	Zoning	Present Use
North	"County" Rural	"County" A-1	Vacant
East	"City" Residential Estate	"City" RCE (Residential Country Estate)	Agriculture (Nursery)
South	"City" Residential Estate	"City" PD (Planned Development)	Vacant
West	"City" Residential Very Low Suburban	"City" RSF-1A (Residential Single-Family Estate District)	Vacant

II. Land Use Analysis

The subject property is located in the Northern portion of the Joint Planning Area. The property is surrounded by low density residential uses. The land use of the properties on the West are Residential Very Low Suburban, which

allows 2 dwelling units per acre, and the properties on the East and the South are residential estate that allows 1 dwelling units per acres. Land use of the subject property has recommended for RVLS (Residential Very Low Suburban) for 2 dwelling units per acre to be consistent with its adjacent property, as well as the Comprehensive Plan policies, Development Design Guidelines, and the Land Development Code.

The property is approximately 5.06 acres in size and not located in the following areas:

- Wekiva Parkway Interchange Vision Plan Area: No
- Wekiva River Protection Area: No
- Area of Critical State Concern: No

JPA: The City of Apopka and Orange County entered into a Joint Planning Area (JPA) agreement on October 26, 2004. The proposed Small-Scale Future Land Use Amendment request for a change from “County” Rural to “City” RVLS (Residential Very Low Suburban) is consistent with the terms of the JPA (Second Amendment).

City of Apopka Comprehensive Plan Policies:

Future Land Use Element:

Policy 3.1.c. Very Low Density Suburban Residential

The primary use shall be residential dwelling units up to 2 dwelling units per acre, elementary schools; middle schools; supporting infrastructure of less than two acres, neighborhood parks. Special exception uses shall include: 1) Institutional uses of five acres or less, 2) High schools, 3) Supporting infrastructure and public facilities of two acres or more, and 4) Horticultural nurseries as a primary use.

Transportation Element: Policies 1.1 and 1.2 state that the City of Apopka is a Transportation Concurrency Exception Area.

Infrastructure Element: Policies 1.1.1, 2.1.1 and 5.1.2 state the minimum levels of service for the City’s wastewater and water systems as well as the City’s solid waste collection service.

Conservation Element: A habitat study will not be required as the development is less than ten (10) acres.

Land Use Calculations:

- CURRENT: Future Land Use – County Rural (1 Dwelling Unit Per 10 Acres) $0.1 \text{ DU/AC} \times 5.06 \text{ ac} = 0.506$ dwelling units
- PROPOSED: Future Land Use – City Residential Very Low Suburban (2 Dwelling Unit Per 1 Acre) $2 \text{ DU} \times 5.06 \text{ ac} = 10.12$ dwelling units

This initial review does not preclude conformance with concurrency requirements at the time of development approval.

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommends approval of the Change in Future Land Use designation from “County” Rural to “City” RVLS (Residential Very Low Suburban), finding the proposed amendment consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

Find the proposed Change in Future Land Use designation from “County” Rural to “City” RVLS (Residential Very Low Suburban), consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, recommend approval of the proposed Change of Future Land Use, based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered Legislative. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

ATTACHMENTS:

1. Ordinance Number 3052
2. Maps

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Section V. Director Authorization. The Community Development Director is hereby authorized to amend the Future Land Use to comply with this ordinance.

ORDINANCE NO. 3052

PAGE 2

1 **Section VI. Effective Date.** This Ordinance shall become effective thirty-one (31) days
2 after adoption. If challenged within thirty (30) days after adoption, the Ordinance shall become
3 effective after the state land planning agency or the Administration Commission, respectively,
4 issues a final order determining that the adopted small-scale development amendment is in
5 compliance.

6
7 ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this
8 _____ day of _____, 2024.

READ FIRST TIME: August 7, 2024

READ SECOND TIME AND
ADOPTED:

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

Approved as to form and legal sufficiency:

Cliff Shepard, City Attorney

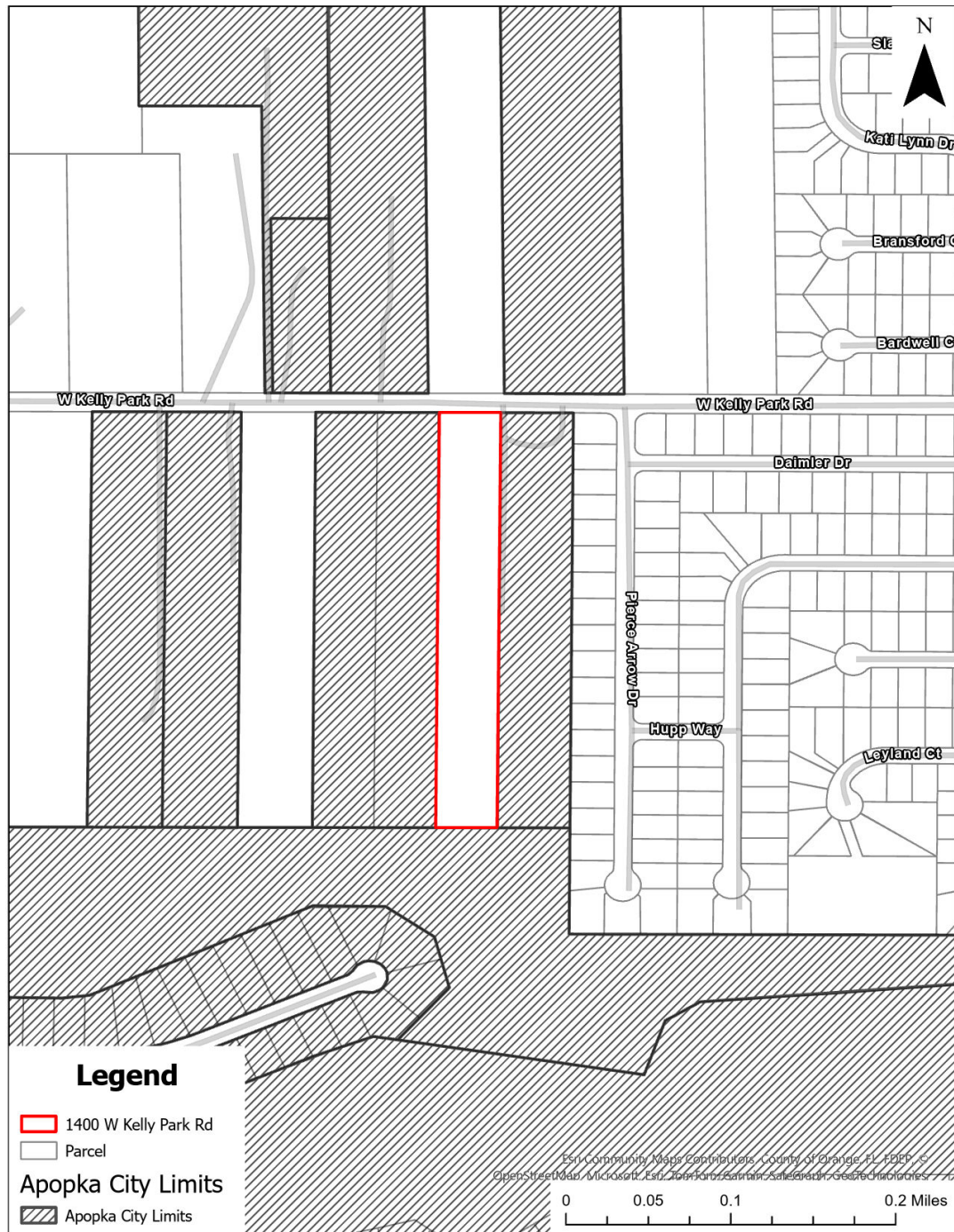
DULY ADVERTISED FOR PUBLIC HEARING: June 28, 2024

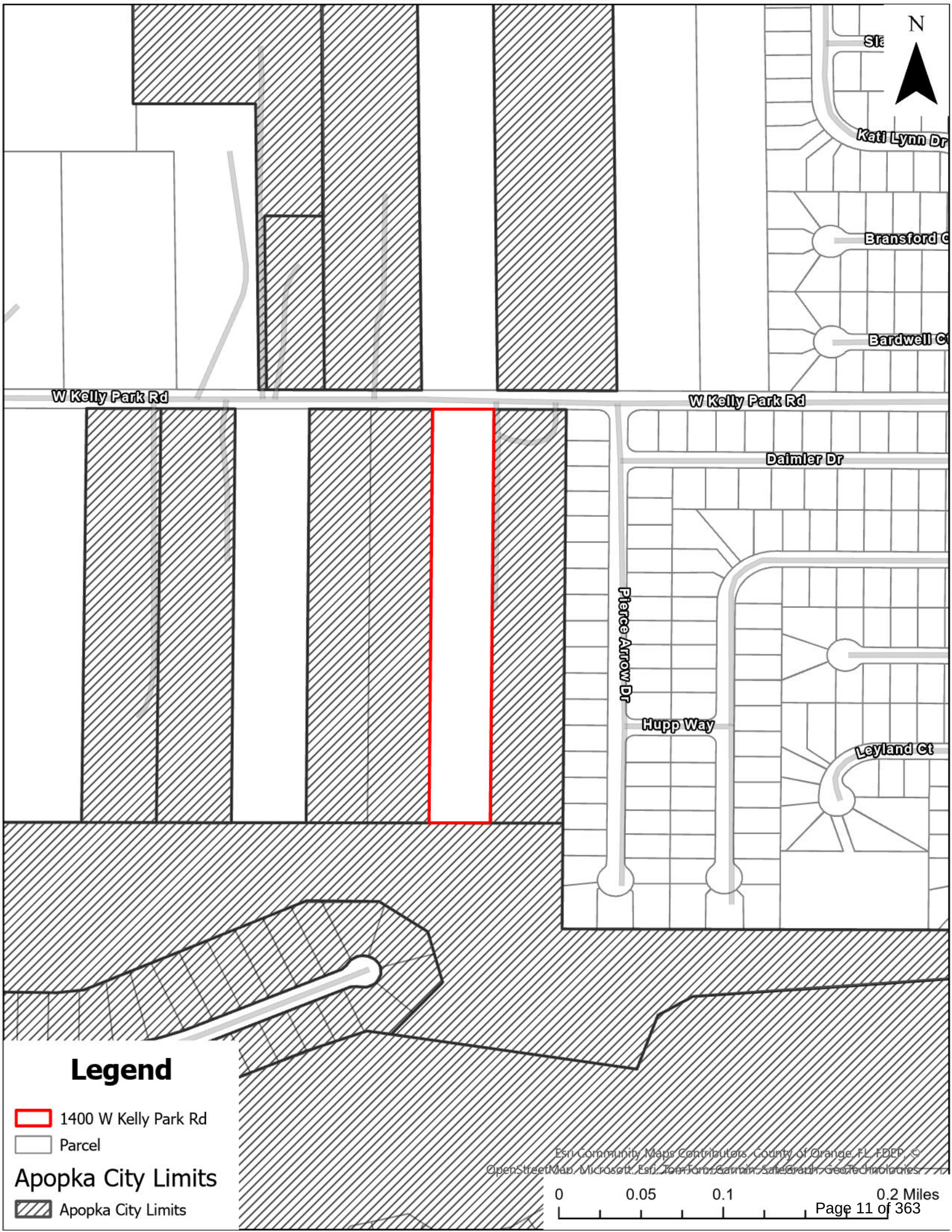
1

EXHIBIT "A"

Parcel Identification Number(s): 17-20-28-0000-00-008

Location Map





N

Sta

Kati Lynn Dr

Bransford C

Bardwell C

W Kelly Park Rd

W Kelly Park Rd

Daimler Dr

Pierce Arrow Dr

Hupp Way

Leyland Ct

Legend

 1400 W Kelly Park Rd

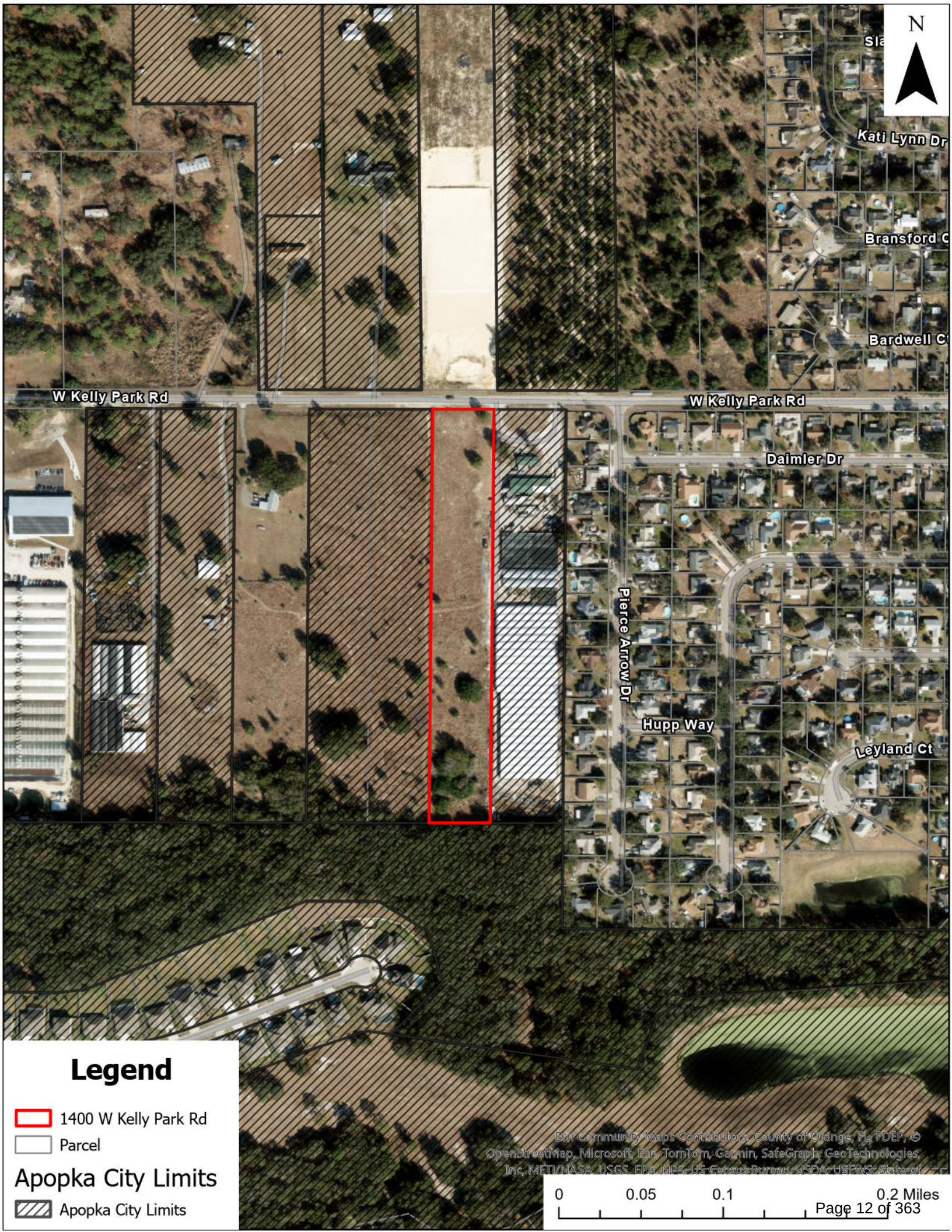
 Parcel

Apopka City Limits

 Apopka City Limits

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OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies

0 0.05 0.1 0.2 Miles
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Sta
Kati Lynn Dr
Bransford C
Bardwell C

W Kelly Park Rd

W Kelly Park Rd

Daimler Dr

Pierce Arrow Dr

Hupp Way

Leyland Ct

Legend

 1400 W Kelly Park Rd

 Parcel

Apopka City Limits

 Apopka City Limits

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OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies,
Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, State of





N

Sta

Kati Lynn Dr

Bransford C

Bardwell C

W Kelly Park Rd

W Kelly Park Rd

Daimler Dr

Pierce Arrow Dr

Hupp Way

Leyland Ct

Legend

1400 W Kelly Park Rd

Parcel

Apopka Zoning

- AG
- AIR
- C-C
- C-COR
- C-N
- C-R
- I-H
- I-L
- INST
- MHP
- MU-D
- MU-ES-GT

- MU-INT
- MU-MED
- MU-N
- MU-T
- MU-VC
- O
- PD
- PR
- RCE
- RMF
- RSF-1A
- RSF-1B
- RTF
- T

Apopka City Limits

Apopka City Limits

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OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies



City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 2.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Quasi-Judicial – Ordinance Number 3053 – Change of Zoning – 1400 W Kelly Park Rd

REQUEST:

Recommend approval of the Change of Zoning from T (Transitional) to RSF-1A (Residential Single-Family Estate District) for the Residential Development at 1400 W Kelly Park Road.

SUMMARY:

Owner(s): Michael A. Gentles, Desmond W. Streete

Applicant: Jose Chaves

Parcel Identification Number(s): 17-20-28-0000-00-008

Location: 1400 W Kelly Park Road

Existing Zoning: T (Transitional)

Proposed Zoning: RSF-1A (Residential Single-Family Estate District)

Existing Use(s): Vacant

Existing Future Land Use: "County" Rural

Tract Size: 5.06 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	"County" Rural	"County" A-1	Vacant
East	"City" Residential Estate	"City" RCE (Residential Country Estate)	Agriculture (Nursery)
South	"City" Residential Estate	"City" PD (Planned Development)	Vacant
West	"City" Residential Very Low Suburban	"City" RSF-1A (Residential Single-Family Estate District)	Vacant

PROJECT SUMMARY:

The subject property, which is approximately 5.06 acres in size, is located at 1400 W. Kelly Park Road and is currently vacant. The applicant is requesting the amendment of the Future Land Use of the property for potential development of 10 single-family residential units. The applicant's proposed use of residential development is permitted use in the RSF-1A zoning district per Land Development Code Table 4.2.2.C. Land Development Code Section 10.3.1.D.1 defines 'dwelling, single-family detached' as follows: "A dwelling designed for or occupied exclusively by one family on a lot. There shall only be one single-family detached dwelling on one individual lot."

The proposed RSF-1A zoning district allows for a maximum density of three dwelling units per acre and is compatible with the surrounding areas. The property to the west has zoning designations of RSF-1A, the property to the east has designations of RCE (Residential Country Estate), and the property to the south has designations

of PD for single-family dwellings. The property to the north is not within the city limits.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;

- Applicant's response: The proposed project aligns with the goals and objectives of City's Comprehensive Plan, furthering their vision for the city's development by establishing a Future Land Use and Zoning Districts that is compatible with adjacent properties. This process of establishing a Future Land Use and Zoning District is following the recent approval of this property's annexation into the City of Apopka (reference Ordinance No 3043 approved via public hearing on February 23, 2024 and March 1, 2024.)
- Staff response: Staff has no objection.

b. Is in conflict with any provisions of the LDC;

- Applicant's response: The only conflict with the LDC is regarding Section 5.16.5.B.3.d Transportation Improvements which require a right-turn lane for projects on a road with a 45 MPH speed limit. The project has a limited width fronting W. Kelly Park Road (170ft) making it impossible to construct a turn lane meeting minimum FDOT requirements. Due to the low intensity of a project being proposed (8-9 single family homes), it is being requested from the City Engineer that this requirement be omitted. The community is being designed to meet all other aspects of the City's Land Development Code (LDC)
- Staff response: If the future land use amendment is approved, a development plan will be required to be submitted to and approved by the Development Review Committee (DRC). As part of the submittal requirements for the development plan, a Traffic Impact Analysis (TIA) will be required to be submitted which will outline what transportation impact mitigation measures, if any, will be required. The development plan will be reviewed against all applicable Land Development Code (LDC) requirements, including Section 5.16.5.B.3.d, and will be evaluated by the Development Review Committee (DRC) during the development review process.

c. Addresses a demonstrated community need;

- Applicant's response: Housing is in critical shortage across the nation, especially in Central Florida. The City of Apopka has seen a lot of growth with large Planned Development communities with hundreds of homes. However, there is always a demand for smaller communities that will be met by this project. This concept is supported by the fact that the City has approved the annexation of the property with this intention clearly established.
- Staff response: Staff has no objection.

d. Is required by changed conditions;

- Applicant's response: As part of the annexation process, establishment of the Future Land Use and Zoning District is required.
- Staff response: Staff has no objection.

e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;

- Applicant's response: The project is compatible with surrounding uses and is located within the appropriate zoning district.
- Staff response: Staff has no objection.

f. Would result in a logical and orderly development pattern;

- Applicant's response: The project adheres to a logical and orderly development pattern, promoting efficient land use.
- Staff response: Staff has no objection.

g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and

- Applicant's response: The project would not result in significant adverse impacts on the natural environment.
- Staff response: Staff has no objection.

h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewerage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).

- Applicant's response: The project is designed to be adequately served by existing public facilities.
- Staff response: Staff has no objection.

SCHOOL CAPACITY REPORT:

An inquiry was sent to Orange County Public Schools (OCPS) regarding school capacity requirement for this application. OCPS determined that school capacity for the subject development is available for elementary and middle school, but not available for high school.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 31, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)
 August 7, 2024 – City Council (1:30 P.M.), First Reading
 August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 28, 2024 – Apopka Chief
 June 7, 2024 – Mailed notices to adjacent property owners
 June 14, 2024 – Posters placed on property

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommends approval of the Change of Zoning from T (Transitional) to RSF-1A (Residential Single-Family Estate District), finding the proposed change consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

Find the proposed Change of Zoning from T (Transitional) to RSF-1A (Residential Single-Family Estate District), consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, recommend approval of the proposed Change of Zoning, based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered quasi-judicial. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

ATTACHMENTS:

1. Ordinance Number 3053
2. Maps

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WHEREAS, to manage the growth, the City of Apopka, Florida, finds it in the best interest public health, safety and welfare of its citizens to establish zoning classifications within the and

WHEREAS, the proposed RSF-1A (Residential Single-Family Estate) District zoning has been found to be consistent with the City of Apopka Comprehensive Plan, and the City of Apopka Land Development Code.

Section I. That the zoning classification of the property described in Exhibit A, being situated in the City of Apopka, Florida, is hereby RSF-1A District, as defined in the Apopka Land Development Code, and with the following provision:

Section III. That the Community Development Director, or the Director's designee, is hereby authorized to amend, alter, and implement the official zoning maps of the City of Apopka, Florida, to include said designation.

Section V. That all ordinances or parts of ordinances in conflict herewith are hereby repealed.

ORDINANCE NO. 3053

PAGE 2

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ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this
____ day of _____, 2024.

READ FIRST TIME: August 7, 2023

READ SECOND TIME AND
ADOPTED:

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

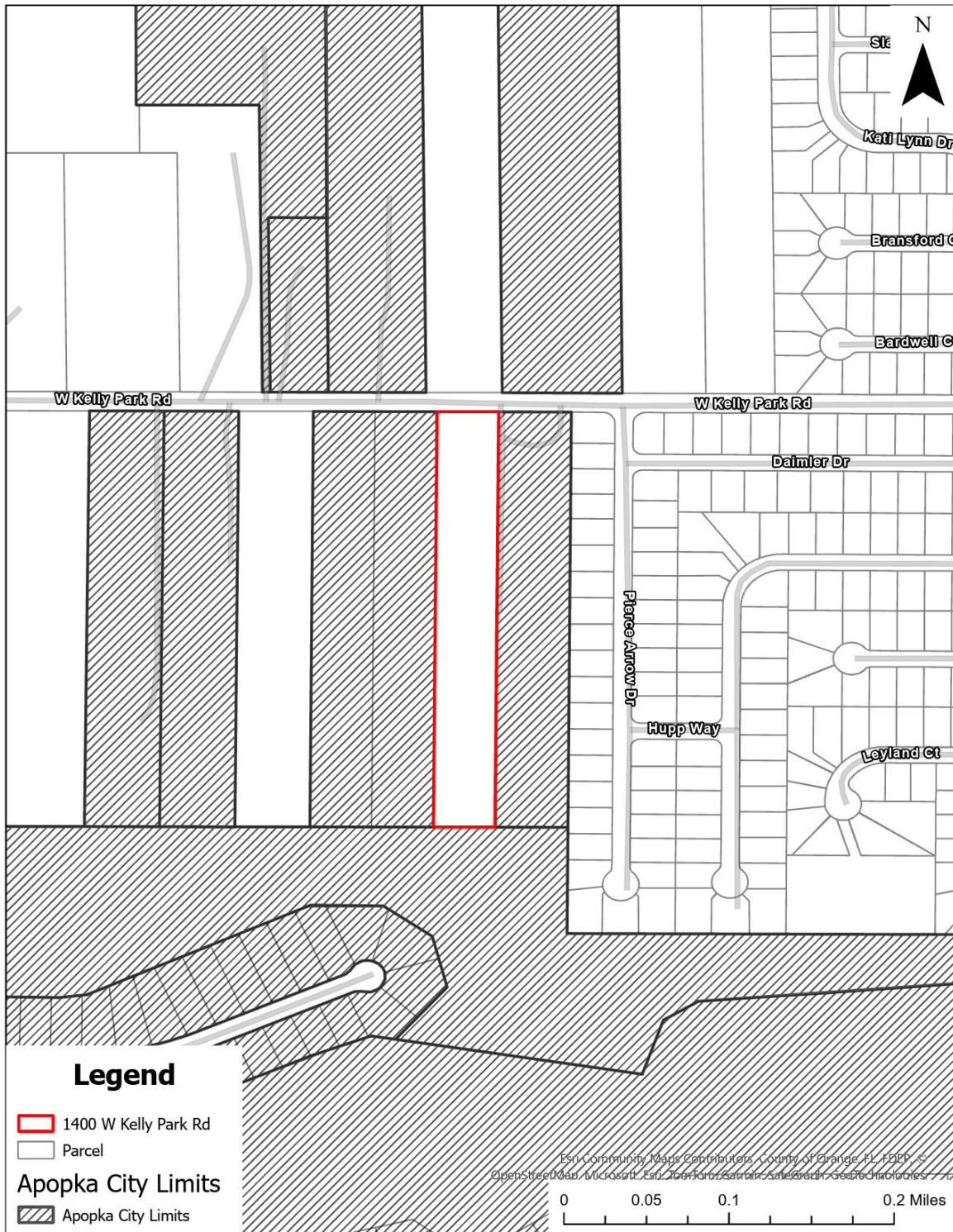
Approved as to form and legal sufficiency:

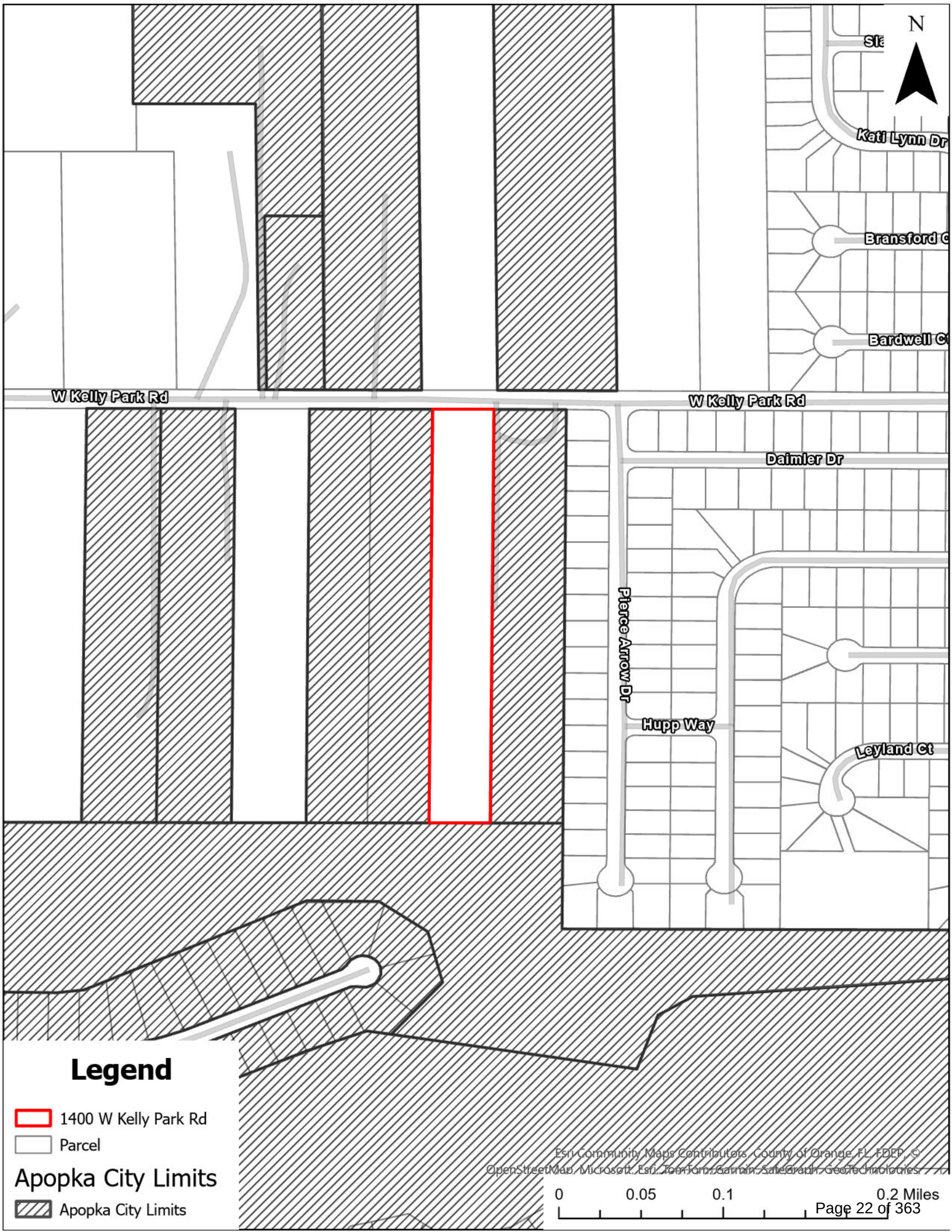
Cliff Shepard, City Attorney

DULY ADVERTISED FOR PUBLIC HEARING: June 28, 2024

EXHIBIT "A"

Parcel Identification Number(s): 17-20-28-0000-00-008





Kati Lynn Dr

Bransford C

Bardwell C

W Kelly Park Rd

W Kelly Park Rd

Daimler Dr

Pierce Arrow Dr

Hupp Way

Leyland Ct

Legend

 1400 W Kelly Park Rd

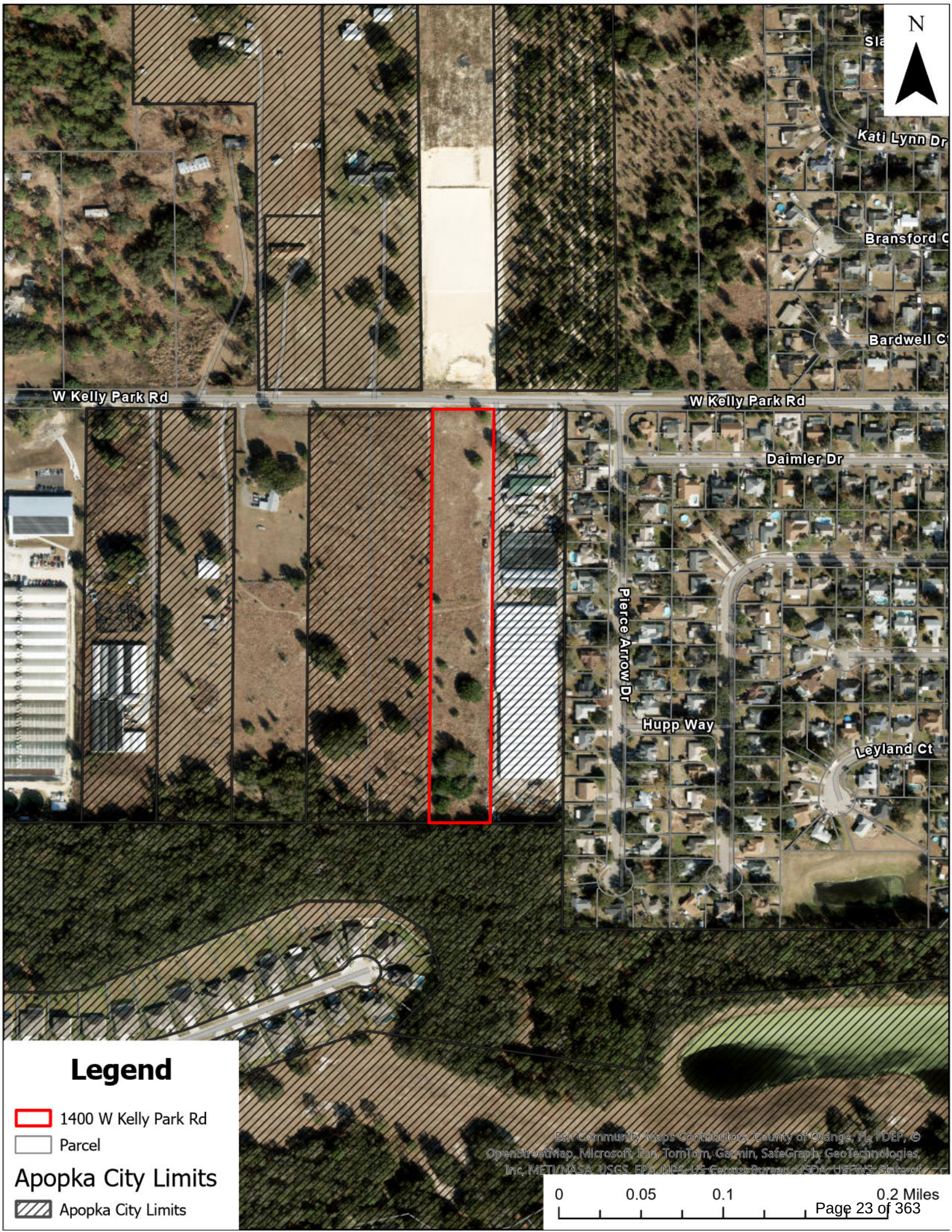
 Parcel

Apopka City Limits

 Apopka City Limits

Esri Community Maps Contributors, County of Orange, FL, FDEP, ©
OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies

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Page 22 of 363



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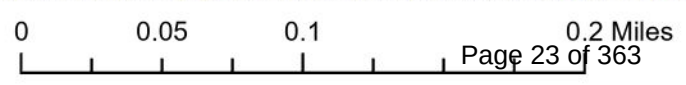
 1400 W Kelly Park Rd

 Parcel

Apopka City Limits

 Apopka City Limits

Est Community Maps Contributors, County of Orange, FL, FDEP, ©
OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies,
Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS, State of







W Kelly Park Rd

W Kelly Park Rd

Daimler Dr

Pierce Arrow Dr

Hupp Way

Leyland Ct

Legend

- 1400 W Kelly Park Rd
- Parcel
- Apopka Zoning**
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 - I-H
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- Apopka City Limits**
- Apopka City Limits



City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 3.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Legislative – Ordinance Number 3058– Small-Scale Future Land Use Amendment – 357 West 4th Street

REQUEST:

Recommend approval of the Future Land Use Map Amendment from County Low Medium to City Industrial for 357 West 4th Street.

SUMMARY:

Owner(s): SFL Partners, LLC and JFJ Real Investments, LLC

Applicant: Albert Iglesias

Parcel Identification Number(s): 17-20-28-0000-00-008

Location: 1400 W. Kelly Park Road

Existing Future Land Use: County Low Medium

Proposed Future Land Use: City Industrial

Existing Use(s): Vacant

Existing Zoning: County R-2 (Residential) District

Tract Size: 1.97 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	Industrial	I-L (Light Industrial)	Industrial warehouse
East	County Low Medium	County R-2 (Residential)	Single-family residences
South	County Low Medium	County R-2 (Residential)	Single-family residences
West	Industrial	I-L (Light Industrial)	Vacant

PROJECT SUMMARY:

The subject property, which is approximately 1.97 acres in size and currently vacant. The applicant is requesting the amendment of the Future Land Use of the property to allow light industrial development. The applicant's proposed amendment of Future Land Use designation allows a maximum floor area ratio 0.60 per acre by the Comprehensive Plan and is consistent with the proposed zoning of I-L (Light Industrial), compatible with the surrounding areas. The properties to the north and west have future land use (FLU) designations of Industrial, while the properties to the east and south are in Unincorporated Orange County with FLU designations of Low Medium.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

- a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;

- Staff response: Staff has no objection.

b. Is in conflict with any provisions of the LDC;

- Staff response: If the future land use amendment is approved, a development plan will be required to be submitted to and approved by the Development Review Committee (DRC) for the development of the property. As part of the submittal requirements for the development plan, a Traffic Impact Analysis (TIA) will be required to be submitted which will outline what transportation impact mitigation measures, if any, will be required. The development plan will be reviewed against all applicable Land Development Code (LDC) requirements, including Section 5.16.5.B.3.d, and will be evaluated by the Development Review Committee (DRC) during the development review process.

c. Addresses a demonstrated community need;

- Applicant's response: Housing is in critical shortage across the nation, especially in Central Florida. The City of Apopka has seen a lot of growth with large Planned Development communities with hundreds of homes. However, there is always a demand for smaller communities that will be met by this project. This concept is supported by the fact that the City has approved the annexation of the property with this intention clearly established.
- Staff response: Staff has no objection.

d. Is required by changed conditions;

- Staff response: Staff has no objection.

e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;

- Staff response: Staff has no objection.

f. Would result in a logical and orderly development pattern;

- Staff response: Staff has no objection.

g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and

- Staff response: Staff has no objection.

h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).

- Staff response: Staff has no objection.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 6, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)
 August 7, 2024 – City Council (1:30 P.M.), First Reading
 August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 7, 2024 and June 14, 2024 – Apopka Chief
 June 20, 2024 and June 24, 2024 – Mailed notices to adjacent property owners and posters placed on property

LAND USE REPORT:

I. Relationship of adjacent properties

Direction	Future Land Use	Zoning	Present Use
North	“County” Rural	“County” A-1	Vacant
East	“City” Residential Estate	“City” RCE (Residential Country Estate)	Agriculture (Nursery)
South	“City” Residential Estate	“City” PD (Planned Development)	Vacant
West	“City” Residential Very Low Suburban	“City” RSF-1A (Residential Single-Family Estate District)	Vacant

II. Land Use Analysis

The subject property is located in the central portion of the Joint Planning Area. The property is surrounded by industrial land uses and medium density residential uses. e properties to the north and west have future land use (FLU) designations of Industrial, while the properties to the east and south are in Unincorporated Orange County with FLU designations of Low Medium. Land use of the subject property has been recommended for Industrial to be consistent with its adjacent properties to the north and west, as well as the Comprehensive Plan policies, Development Design Guidelines, and the Land Development Code.

The property is approximately 1.97 acres in size and not located in the following areas:

- Wekiva Parkway Interchange Vision Plan Area: No
- Wekiva River Protection Area: No
- Area of Critical State Concern: No

JPA: The City of Apopka and Orange County entered into a Joint Planning Area (JPA) agreement on October 26, 2004. The proposed Small-Scale Future Land Use Amendment request for a change from County Low Medium to City Industrial is consistent with the terms of the JPA.

City of Apopka Comprehensive Plan Policies:

Future Land Use Element:

Policy 3.1.1. Industrial

The primary use shall be industrial, intensive commercial, agricultural and business/research parks. Also allowed are public facilities and supporting infrastructure. The use of the Planned Unit Development process shall be encouraged. The maximum floor area ratio shall be .60. Planned Unit Development uses may include:

- (1) All primary uses
- (2) Other uses deemed compatible with and complimentary to the other proposed master planned uses and the surrounding neighborhoods.

Transportation Element: Policies 1.1 and 1.2 state that the City of Apopka is a Transportation Concurrency Exception Area.

Infrastructure Element: Policies 1.1.1, 2.1.1 and 5.1.2 state the minimum levels of service for the City’s

wastewater and water systems as well as the City's solid waste collection service.

Conservation Element: A habitat study will not be required as the property is less than ten (10) acres.

Land Use Calculations:

- CURRENT: Future Land Use – County Low Medium (10 dwelling units per acre) 10 DU/AC X 1.97 ac = 19 dwelling units
- PROPOSED: Future Land Use – City Industrial (0.60 Per 1 Acre) X 1.97 ac = 85,813 square feet of nonresidential development

This initial review does not preclude conformance with concurrency requirements at the time of development approval.

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommends approval of the Change in Future Land Use designation from County Low Medium to Industrial, finding the proposed amendment consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

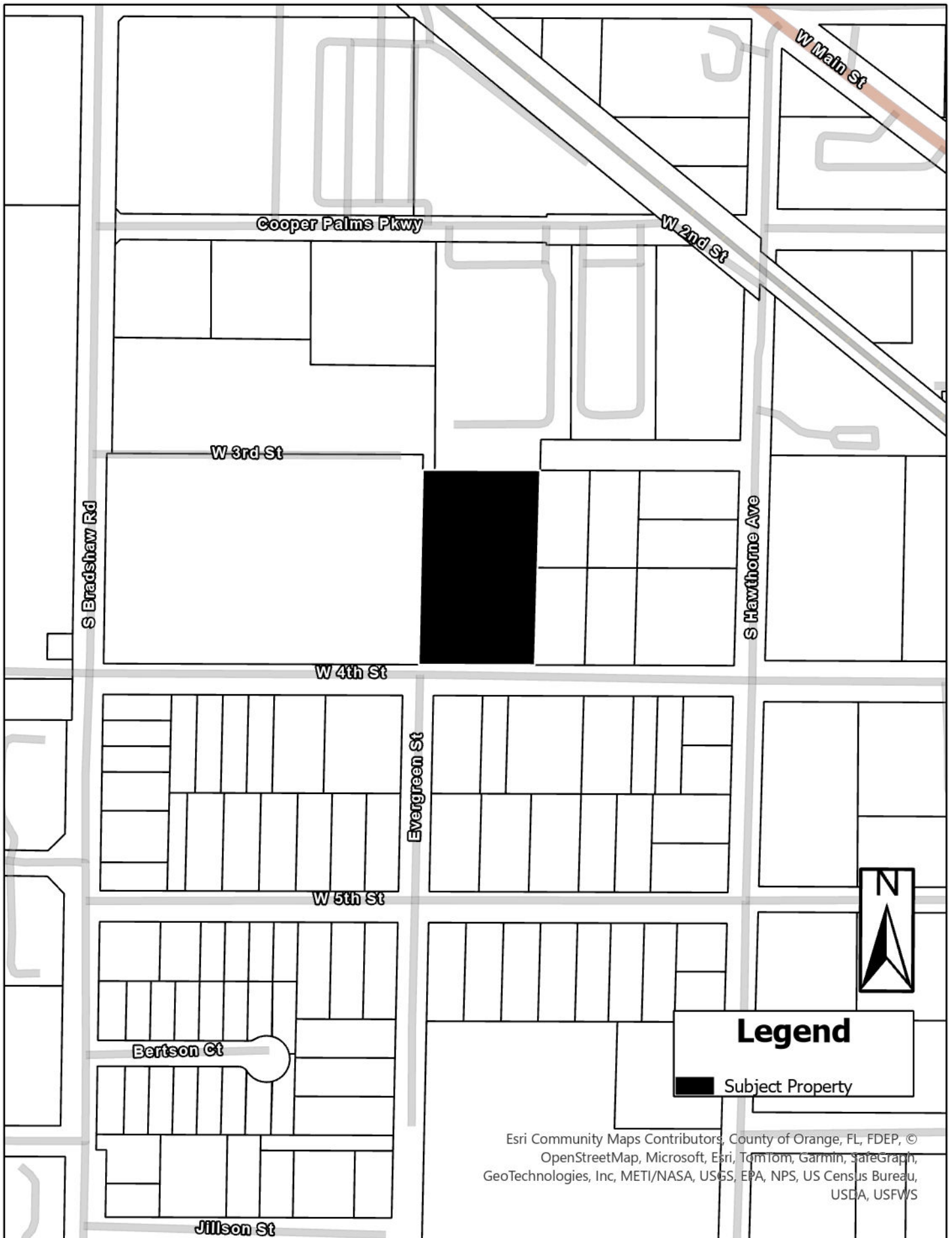
Find the proposed Change in Future Land Use designation from County Low Medium to Industrial, consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, recommend approval of the proposed Change of Future Land Use, based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered Legislative. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

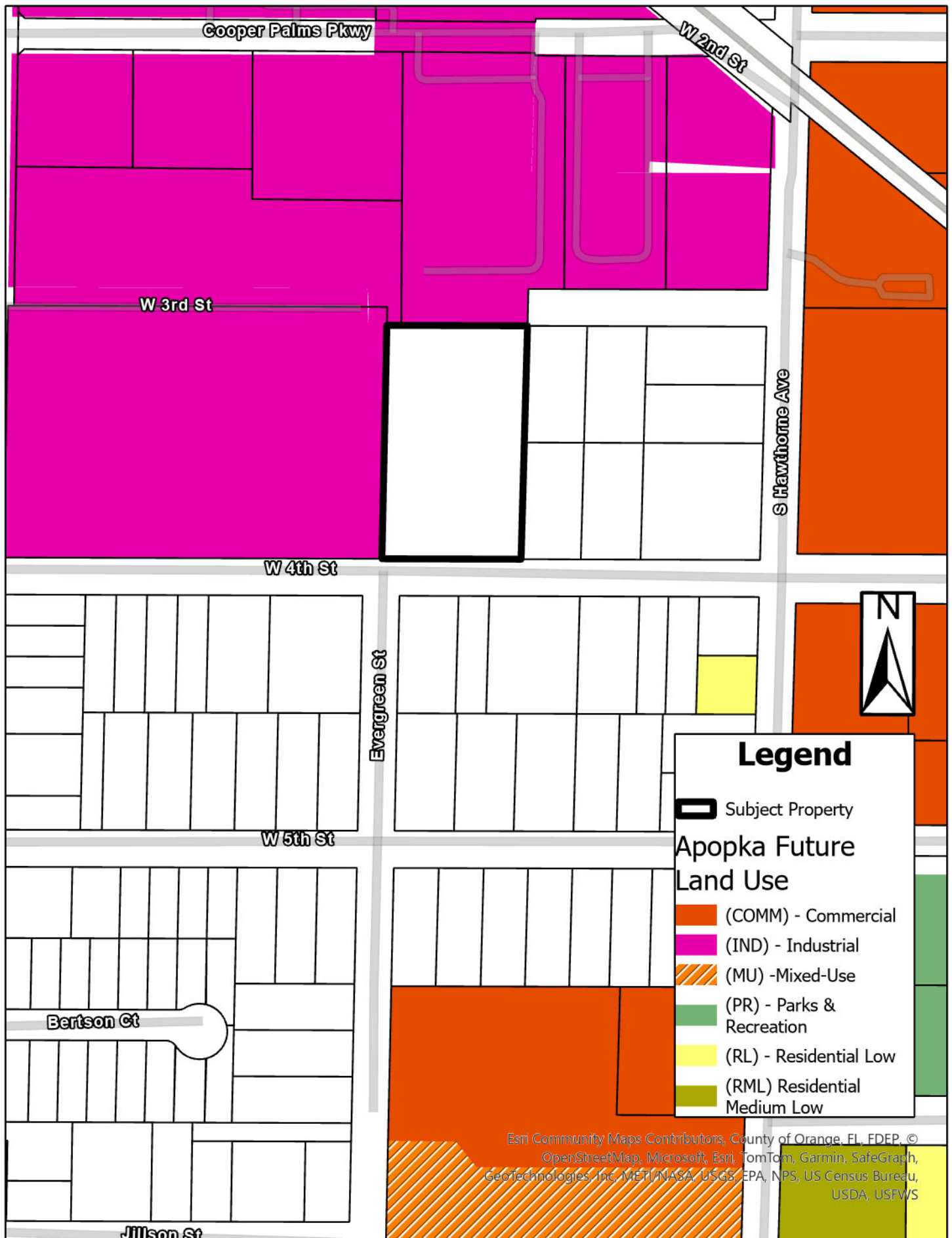
ATTACHMENTS:

1. Maps
2. Ordinance Number 3058

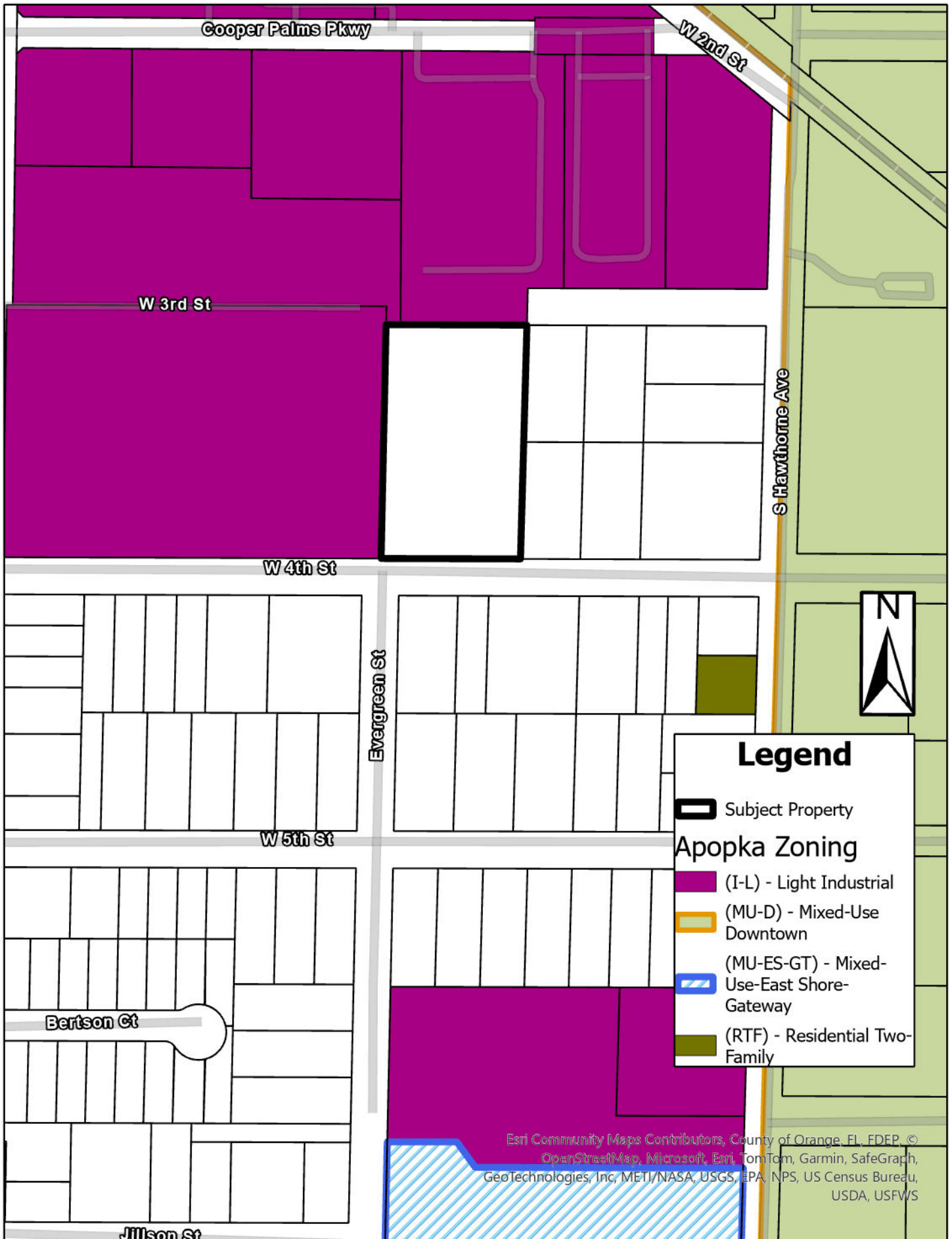
Vicinity



Future Land Use



Zoning



Aerial



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Section VI. Effective Date. This Ordinance shall become effective thirty-one (31) days

ORDINANCE NO. 3058

PAGE 2

after adoption. If challenged within thirty (30) days after adoption, the Ordinance shall become effective after the state land planning agency or the Administration Commission, respectively, issues a final order determining that the adopted small-scale development amendment is in compliance.

ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this _____ day of _____, 2024.

READ FIRST TIME: August 7, 2024

READ SECOND TIME AND
ADOPTED: August 21, 2024

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

Approved as to form and legal sufficiency:

Clifford B. Shepard, City Attorney

DULY ADVERTISED FOR PUBLIC HEARING: June 7, 2024 and July 5, 2024

EXHIBIT "A"

Parcel Identification Number(s): 09-21-28-0868-01-510

Acreage: 1.97 +/- Acres





City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 4.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Quasi-Judicial – Ordinance Number 3059 – Change of Zoning – 357 West 4th Street

REQUEST:

Recommend approval of the Change of Zoning from County R-2 (Residential) District to City I-L (Light Industrial) for 357 West 4th Street.

SUMMARY:

Owner(s): SFL Partners, LLC and JFJ Real Investments, LLC

Applicant: Albert Iglesias

Parcel Identification Number(s): 17-20-28-0000-00-008

Location: 1400 W. Kelly Park Road

Existing Future Land Use: County Low Medium

Proposed Future Land Use: City Industrial

Existing Use(s): Vacant

Existing Zoning: County R-2 (Residential) District

Tract Size: 1.97 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	Industrial	I-L (Light Industrial)	Industrial warehouse
East	County Low Medium	County R-2 (Residential)	Single-family residences
South	County Low Medium	County R-2 (Residential)	Single-family residences
West	Industrial	I-L (Light Industrial)	Vacant

PROJECT SUMMARY:

The subject property, which is approximately 1.97 acres in size and is currently vacant. The applicant is requesting to amend the zoning district of the subject property to I-L (Light Industrial) to allow light industrial uses. This request has been made by the applicant simultaneously with the request to amend the future land use designation of Industrial to ensure consistency with the Comprehensive Plan and Land Development Code. The properties to the north and west have zoning district designations of I-L, while the properties to the east and south are in Unincorporated Orange County with zoning designations of County R-2 (Residential) district.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

- a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;

- Staff response: Staff has no objection.

b. Is in conflict with any provisions of the LDC;

- Staff response: If the future land use amendment is approved, a development plan will be required to be submitted to and approved by the Development Review Committee (DRC) for the development of the property. As part of the submittal requirements for the development plan, a Traffic Impact Analysis (TIA) will be required to be submitted which will outline what transportation impact mitigation measures, if any, will be required. The development plan will be reviewed against all applicable Land Development Code (LDC) requirements, including Section 5.16.5.B.3.d, and will be evaluated by the Development Review Committee (DRC) during the development review process.

c. Addresses a demonstrated community need;

- Applicant's response: Housing is in critical shortage across the nation, especially in Central Florida. The City of Apopka has seen a lot of growth with large Planned Development communities with hundreds of homes. However, there is always a demand for smaller communities that will be met by this project. This concept is supported by the fact that the City has approved the annexation of the property with this intention clearly established.
- Staff response: Staff has no objection.

d. Is required by changed conditions;

- Staff response: Staff has no objection.

e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;

- Staff response: Staff has no objection.

f. Would result in a logical and orderly development pattern;

- Staff response: Staff has no objection.

g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and

- Staff response: Staff has no objection.

h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).

- Staff response: Staff has no objection.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 6, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)
August 7, 2024 – City Council (1:30 P.M.), First Reading
August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 7, 2024 and June 14, 2024 – Apopka Chief
June 20, 2024 and June 24, 2024 – Mailed notices to adjacent property owners and posters placed on property

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommends approval of the change in zoning district designation from County R-2 (Residential) to I-L (Light Industrial), finding the proposed amendment consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

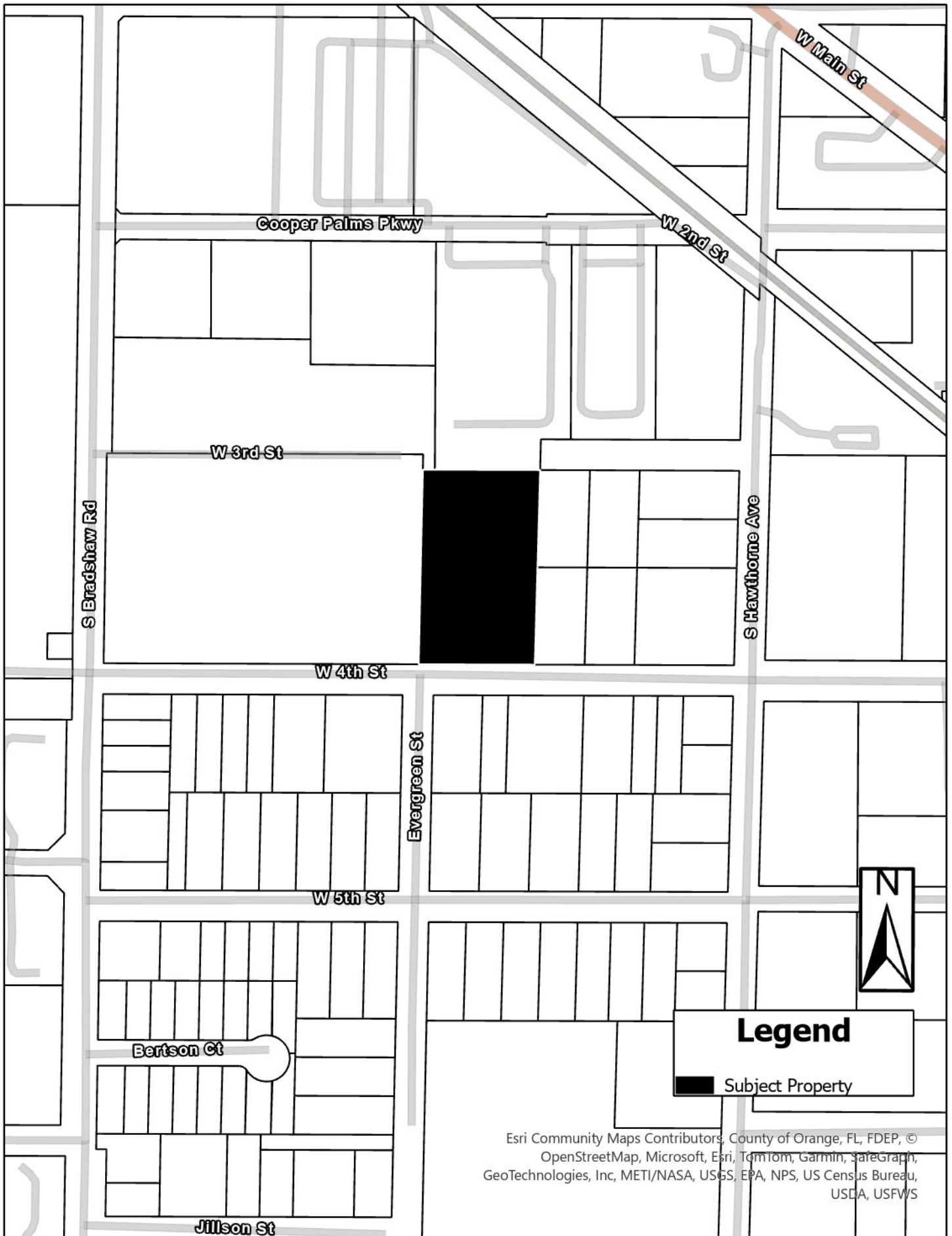
Find the proposed change in zoning district designation from County R-2 (Residential) to I-L (Light Industrial), consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, recommend approval of the proposed Change of Future Land Use, based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered quasi-judicial. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

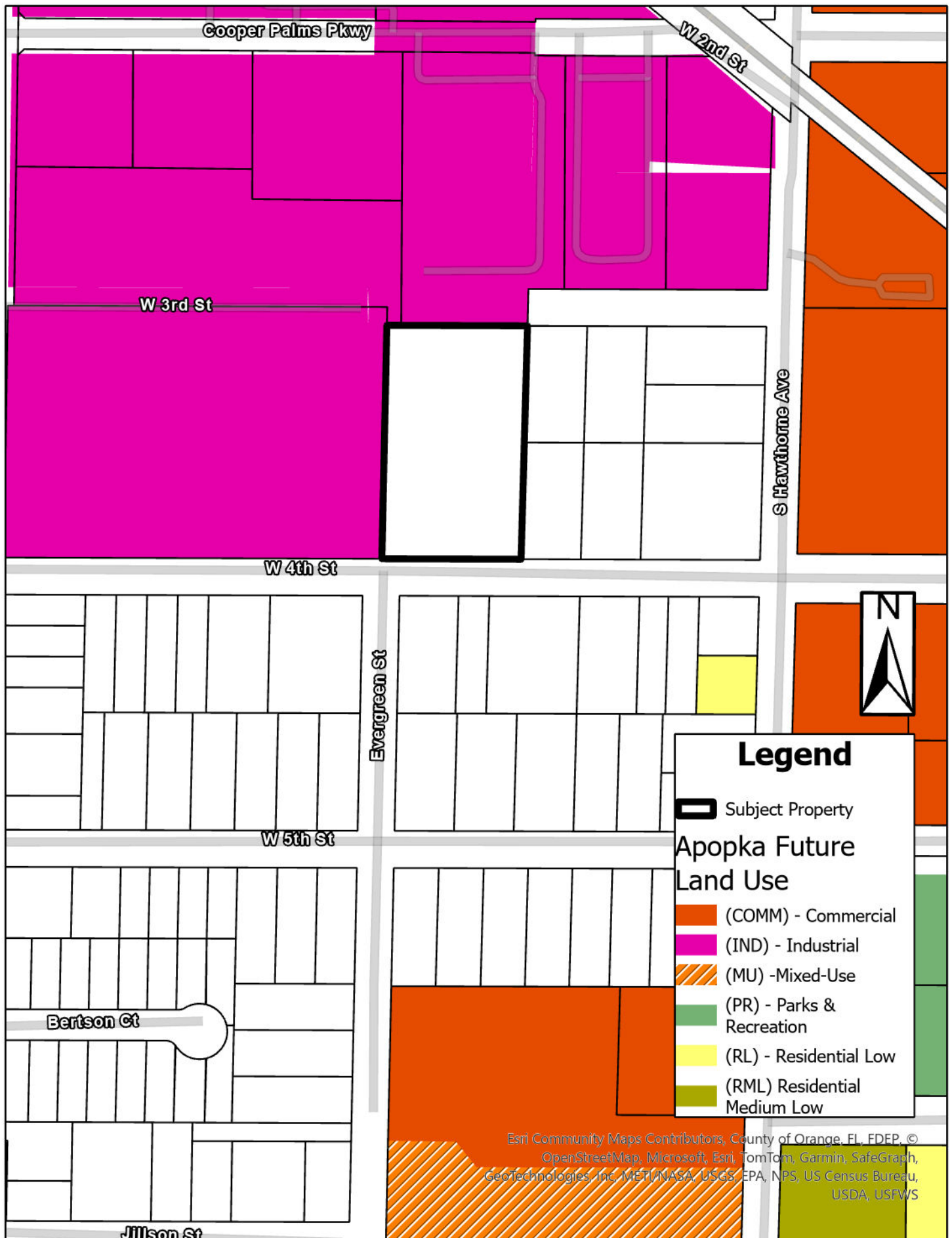
ATTACHMENTS:

1. Maps
2. Ordinance Number 3059

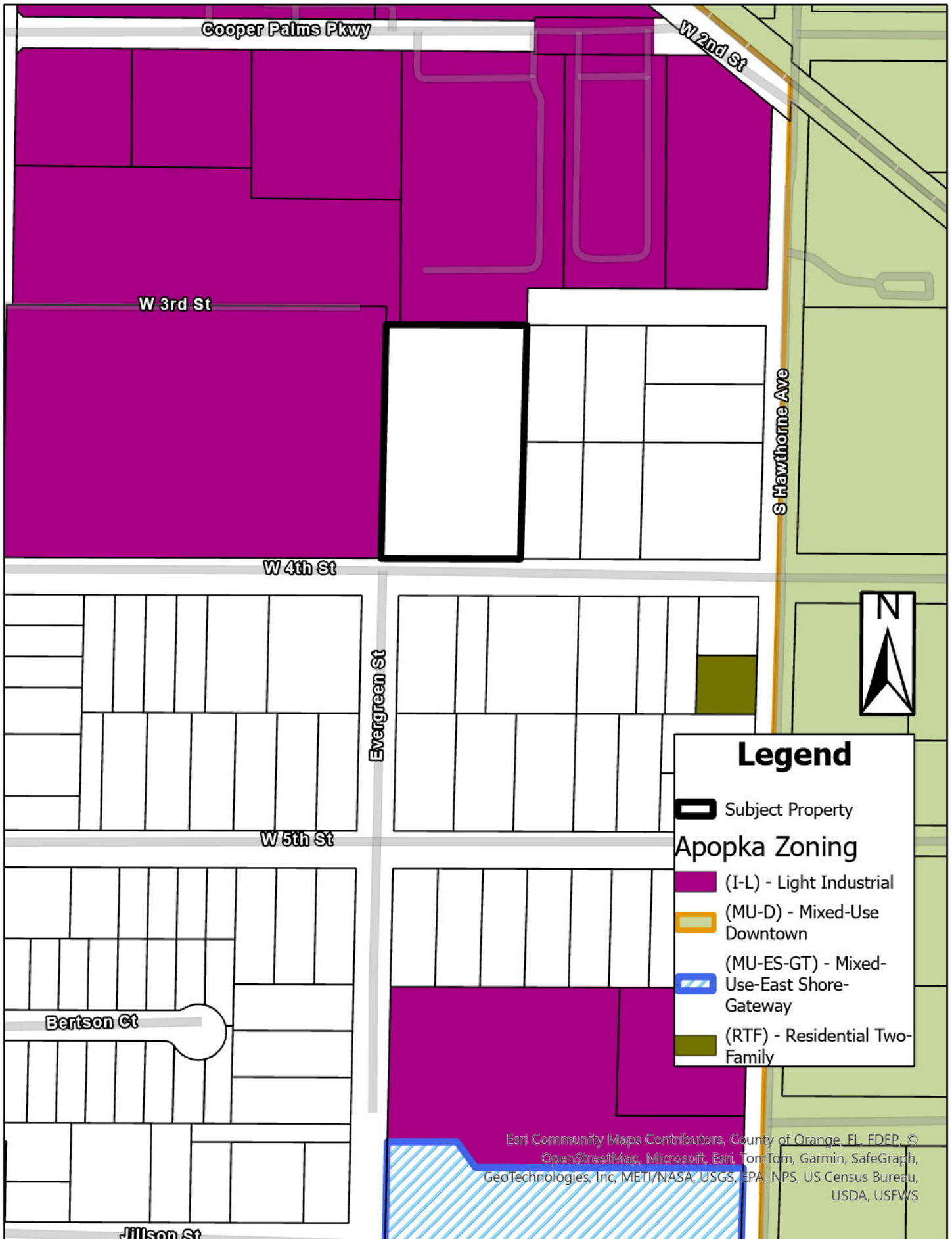
Vicinity



Future Land Use



Zoning



Aerial



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WHEREAS, to manage the growth, the City of Apopka, Florida, finds it in the best interest of the public health, safety and welfare of its citizens to establish zoning classifications within the City; and

WHEREAS, the proposed I-L (Light Industrial) District zoning has been found to be consistent with the City of Apopka Comprehensive Plan, and the City of Apopka Land Development Code.

Section I. That the zoning classification of the property described in Exhibit A, being situated in the City of Apopka, Florida, is hereby I-L (Light Industrial) Zoning District, as defined in the Apopka Land Development Code, and with the following provision:

Section III. That the Community Development Director, or the Director's designee, is hereby authorized to amend, alter, and implement the official zoning maps of the City of Apopka, Florida, to include said designation.

Section IV. That if any section or portion of a section or subsection of this Ordinance proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force or effect of any other section or portion of section or subsection or part of this ordinance.

Section V. That all ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section VI. That this Ordinance shall take effect upon the date of adoption.

ORDINANCE NO. 3059

PAGE 2

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51

ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this
____ day of _____, 2024.

READ FIRST TIME: August 7, 2024

READ SECOND TIME AND
ADOPTED: August 21, 2024

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

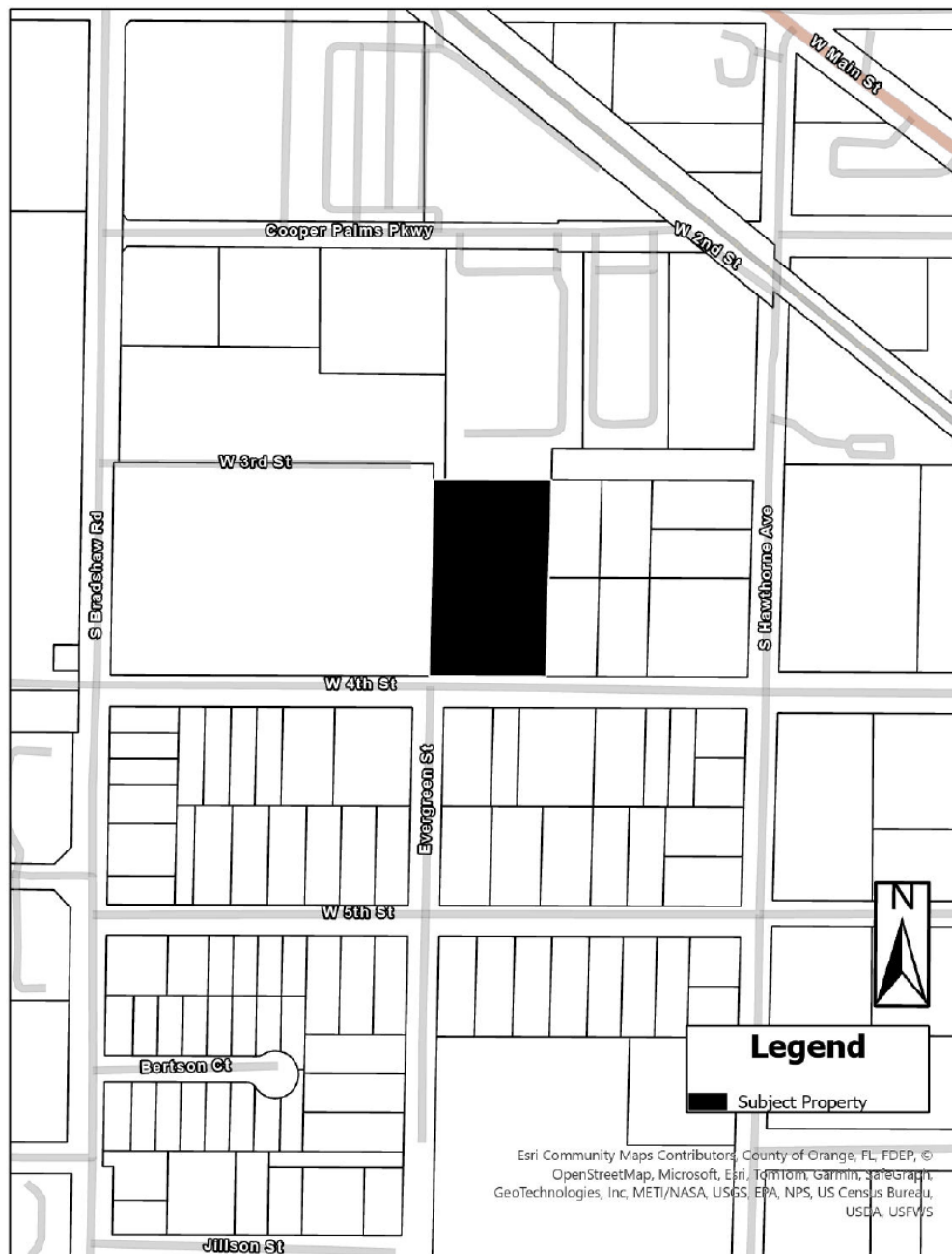
Approved as to form and legal sufficiency:

Clifford B. Shepard, City Attorney

DULY ADVERTISED FOR PUBLIC HEARING: June 7, 2024 and July 5, 2024

EXHIBIT A

Parcel Identification Number(s): 09-21-28-0868-01-510





City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 5.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Legislative - Ordinance Number 3064 - Small-Scale Future Land Use Amendment – 996 S. Orange Blossom Trail

REQUEST:

Recommend approval of the Future Land Use Map Amendment from Residential Medium and Commercial to Institutional/Public Use for 996 and 1000 S. Orange Blossom Trail.

SUMMARY:

Owner(s): Trinity Baptist Church of Apopka, Inc.

Applicant: Thomas Skelton

Parcel Identification Number(s): 14-21-28-0000-00-054, 14-21-28-0000-00-044, 14-21-28-0000-00-116

Location: 996 S. Orange Blossom Trail and 1000 S. Orange Blossom Trail

Existing Future Land Use: Residential, Medium, Commercial

Proposed Future Land Use: Institutional/Public Use

Existing Use(s): Vacant, Residential

Existing Zoning: C-C (Community Commercial), RSF-1B (Residential Single-Family-Large Lot)

Tract Size: 6.99 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	County Commercial	County C-2	Commercial
East	Institutional/Public Use	O (Office)	Place of Worship
South	Residential Low	MHP (Mobile Home Park)	Residential
West	Commercial	C-C (Community Commercial)	Place of Worship

PROJECT SUMMARY:

The subject property, which is approximately 6.99 acres in size, is located at 996 S. Orange Blossom Trail and 1000 S. Orange Blossom Trail. The applicant is requesting the amendment of the Future Land Use of these properties for the potential development of a place of worship to expand their current use of the church located at 1022 S. Orange Blossom Trail, owned by the same owner. The applicant's proposed amendment of the Future Land Use for the use of a place of worship is allowed by the Comprehensive Plan and is consistent and comparable with the uses of surrounding properties.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

- a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;
- Applicant's response: This request consists of a change in the Zoning and Future Land Use to allow the use

that is existing on the owner's property. Therefore, it is consistent with the City's Comprehensive Plan.

- Staff response: Staff has no objection.

b. Is in conflict with any provisions of the LDC;

- Applicant's response: This request will not create any conflicts with any provisions of the City's LDC. No variances or waivers are needed to allow the planned use of the property.

- Staff response: Staff has no objection.

c. Addresses a demonstrated community need;

- Applicant's response: The proposed use of the property is an expansion of the existing use and will include religious, educational, recreational and community activities.

- Staff response: Staff has no objection.

d. Is required by changed conditions;

- Applicant's response: The existing zoning and land use of the original property was previously changed to allow those uses. The property included in the application requires the same changes.

- Staff response: Staff has no objection.

e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;

- Applicant's response: The change would be more compatible with the existing use of the parent property than the present zoning and land use classifications. It is also compatible with the uses adjacent and nearby.

- Staff response: Staff has no objection.

f. Would result in a logical and orderly development pattern;

- Applicant's response: This is an expansion of the present use of the parent property.

- Staff response: Staff has no objection.

g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and

- Applicant's response: The proposed use of the property is an expansion of the present use of the parent property. This use has very low impacts on the natural environment and is more compatible to the natural environment than what the current zoning and land use classifications.

- Staff response: Staff has no objection.

h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewerage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).

- Applicant's response: This change will have a minimal impact to the current availability of public facilities. The use will have low impacts to traffic, utilities, stormwater and solid waste. The use will include on-site schools and parks.

- Staff response: Staff has no objection.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 31, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)

August 7, 2024 – City Council (1:30 P.M.), First Reading

August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 28, 2024 – Apopka Chief

June 18, 2024 – Mailed notices to adjacent property owners

June 19, 2024 – Posters placed on property

LAND USE REPORT:

I. Relationship of adjacent properties

Direction	Future Land Use	Zoning	Present Use
North	County Commercial	County C-2	Commercial
East	Institutional/Public Use	O (Office)	Place of Worship
South	Residential Low	MHP (Mobile Home Park)	Residential
West	Commercial	C-C (Community Commercial)	Place of Worship

II. Land Use Analysis

The subject property is located in the Eastern portion of the Joint Planning Area. The property is surrounded by commercial, institutional, and residential uses. The land use of the property on the East is institutional use, which is consistent with the proposed land use of the subject property. The land use of the property on the West has commercial use that is currently used for a place of worship, and the land use of the property on the South is residential for low density, which would be consistent with its adjacent property, as well as the Comprehensive Plan policies, Development Design Guidelines, and the Land Development Code.

The property is approximately 6.99 acres in size and not located in the following areas:

- Wekiva Parkway Interchange Vision Plan Area: No
- Wekiva River Protection Area: No
- Area of Critical State Concern: No

JPA: The City of Apopka and Orange County entered into a Joint Planning Area (JPA) agreement on October 26, 2004. The proposed Small-Scale Future Land Use Amendment request for a change from Residential Medium and Commercial to Office is consistent with the terms of the JPA (Second Amendment).

City of Apopka Comprehensive Plan Policies:

Future Land Use Element:

Policy 3.1.j

Office

Primary uses shall be for business and professional offices or institutional land uses with a maximum floor area ratio of .30 gross floor area. Public facilities or utilities of less than five acres shall also be primary uses.

Special exception uses shall include: 1) Commercial land uses may be permitted at a rate of 25 square feet of gross floor area ratio per 1,000 square feet of office building, 2) Elementary schools, middle schools, and high schools, supporting infrastructure and public facilities of five acres or more

Transportation Element: Policies 1.1 and 1.2 state that the City of Apopka is a Transportation Concurrency Exception Area.

Infrastructure Element: Policies 1.1.1, 2.1.1 and 5.1.2 state the minimum levels of service for the City's wastewater and water systems as well as the City's solid waste collection service.

Conservation Element: A habitat study will not be required as the development is less than ten (10) acres.

This initial review does not preclude conformance with concurrency requirements at the time of development approval.

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommend approval of the Future Land Use Map Amendment from Residential Medium and Commercial to Institutional/Public Use, finding the proposed amendment consistent with the Comprehensive Plan and Land

Development Code and compatible with the character of the surrounding areas based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

Find the proposed amendment of the Future Land Use Map from Residential Medium and Commercial to Institutional/Public Use consistent with the Comprehensive Plan and Land Development Code, compatible with the character of the surrounding areas, and recommend approval of the Future Land Use Map Amendment based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered Legislative. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

ATTACHMENTS:

1. Ordinance Number 3064
2. Maps

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Section V. Director Authorization. The Community Development Director is hereby

ORDINANCE NO. 3064

PAGE 2

1 authorized to amend the Future Land Use to comply with this ordinance.

2
3 **Section VI. Effective Date.** This Ordinance shall become effective thirty-one (31) days
4 after adoption. If challenged within thirty (30) days after adoption, the Ordinance shall become
5 effective after the state land planning agency or the Administration Commission, respectively,
6 issues a final order determining that the adopted small-scale development amendment is in
7 compliance.

8
9 ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this
10 _____ day of _____, 2024.

READ FIRST TIME: August 7, 2024

READ SECOND TIME AND
ADOPTED:

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

Approved as to form and legal sufficiency:

Clifford B. Shepard, City Attorney

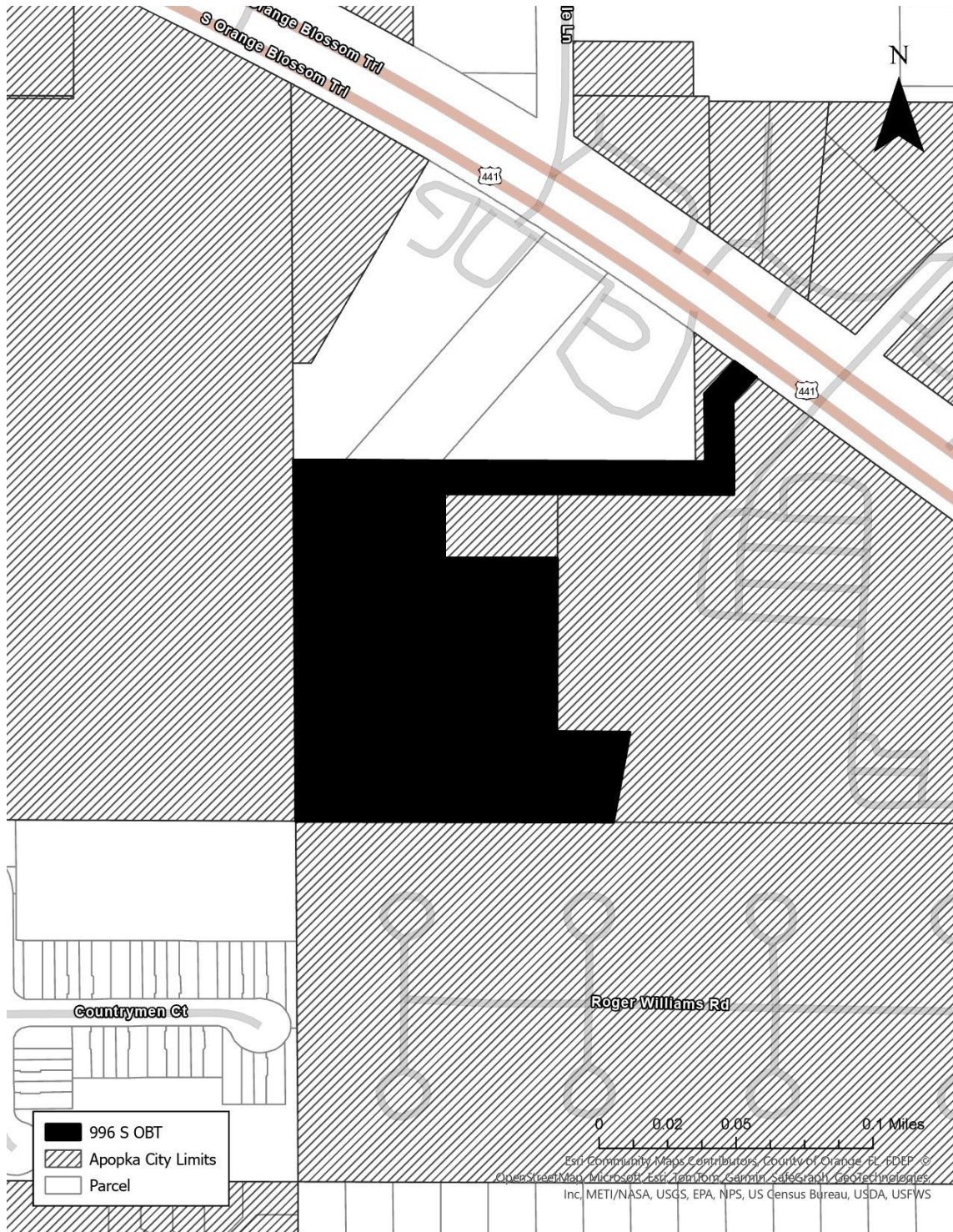
DULY ADVERTISED FOR PUBLIC HEARING: June 28, 2024

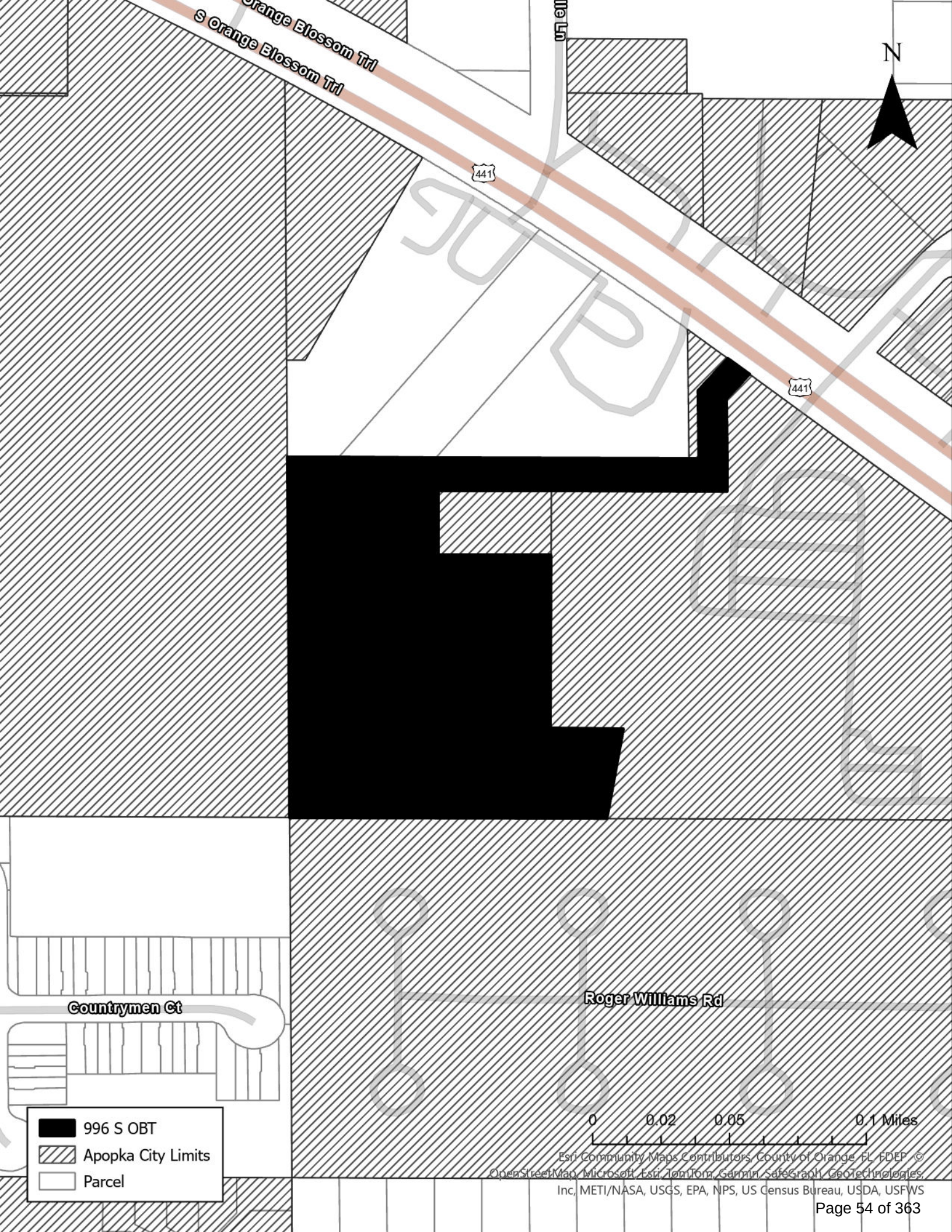
1

EXHIBIT "A"

Parcel Identification Number(s): 14-21-28-0000-00-054, 14-21-28-0000-00-044,
14-21-28-0000-00-116

Location Map





996 S OBT

Apopka City Limits

Parcel

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Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



S Orange Blossom Trl

441

441

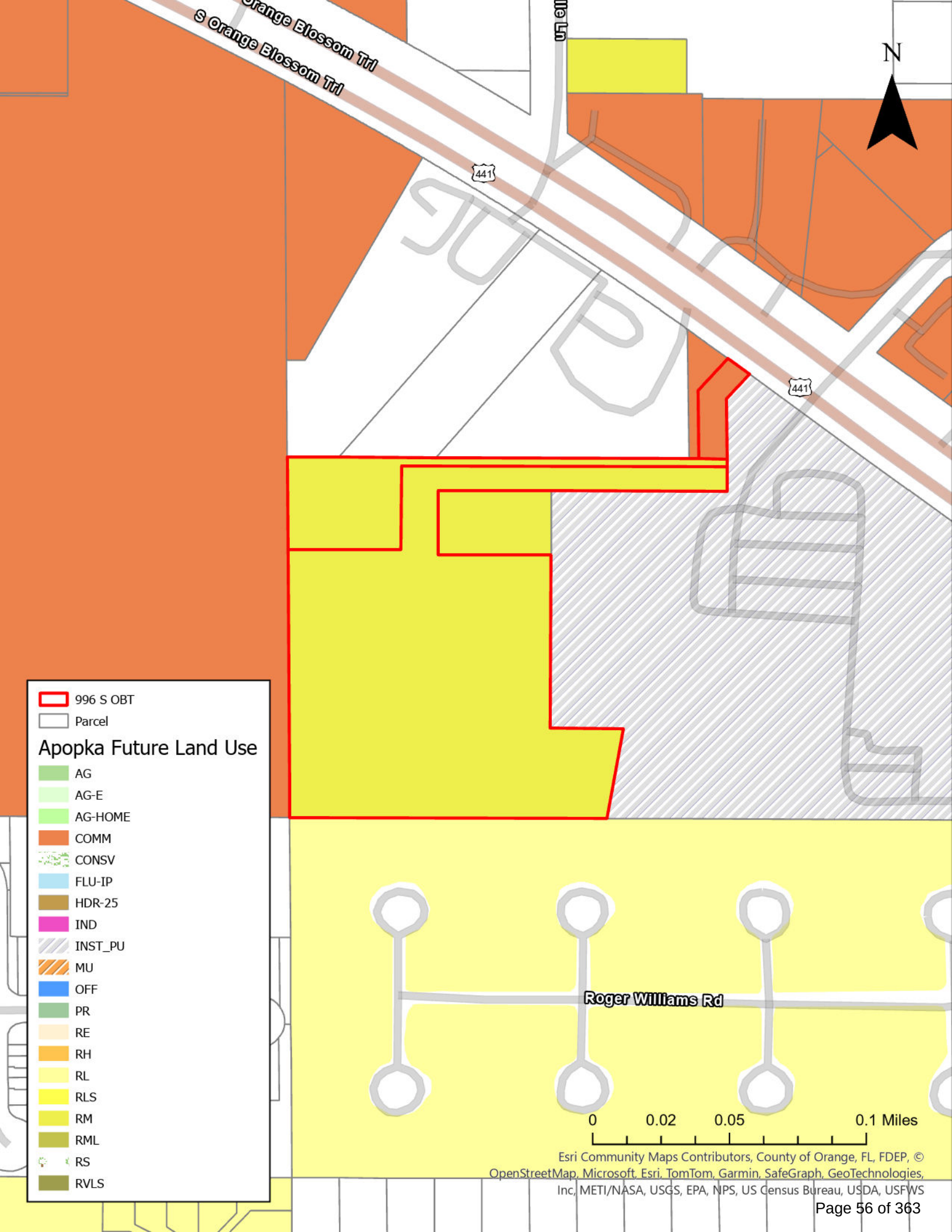
Countrymen Ct

Roger Williams Rd

996 S OBT

Parcel

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996 S OBT

Parcel

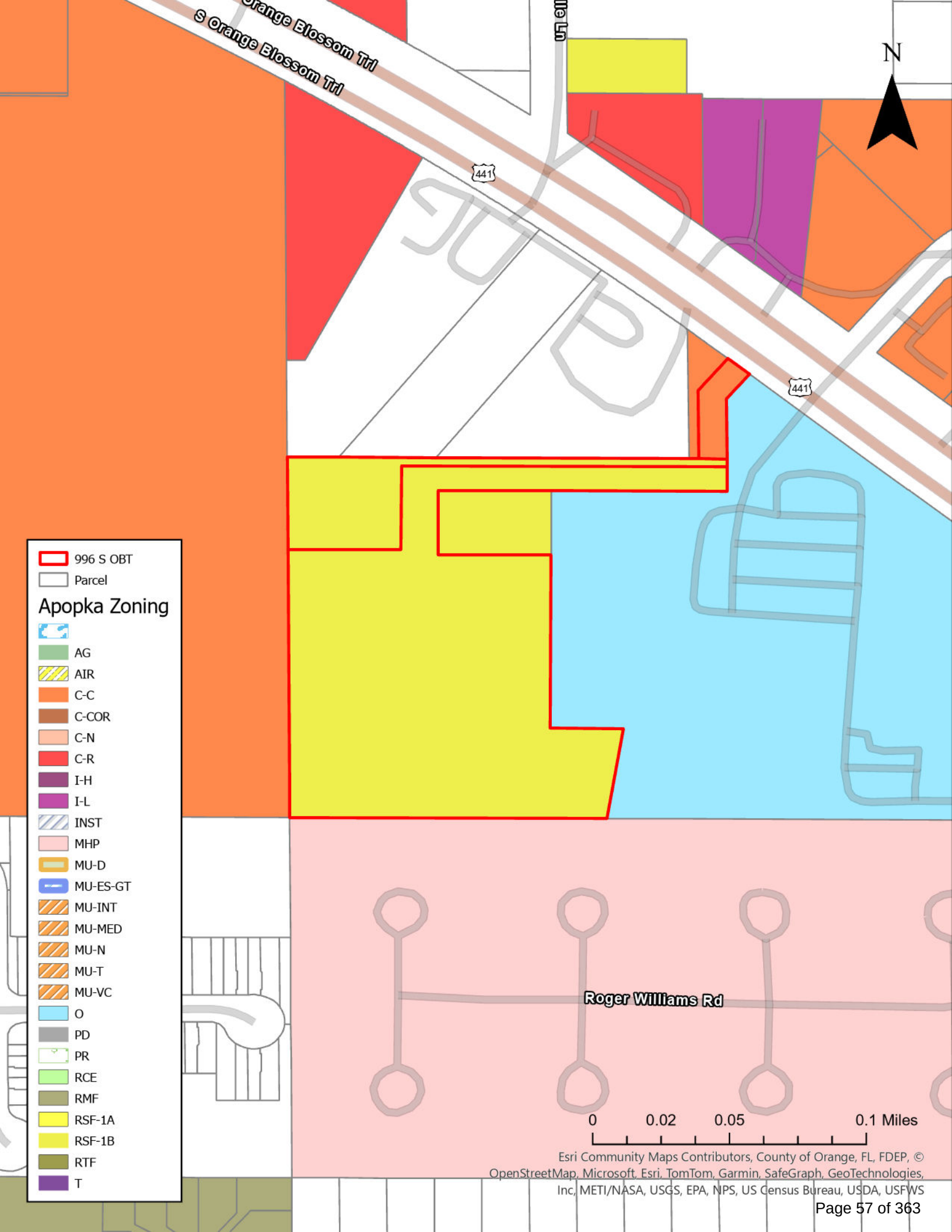
Apopka Future Land Use

- AG
- AG-E
- AG-HOME
- COMM
- CONSV
- FLU-IP
- HDR-25
- IND
- INST_PU
- MU
- OFF
- PR
- RE
- RH
- RL
- RLS
- RM
- RML
- RS
- RVLS

Roger Williams Rd

0 0.02 0.05 0.1 Miles

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Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS





City of Apopka PLANNING COMMISSION STAFF REPORT

Section: PUBLIC HEARING

Item #: 6.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Quasi-Judicial – Ordinance Number 3065 – Change of Zoning – 996 and 1000 South Orange Blossom Trail

REQUEST:

Recommend approval of the Change of Zoning from C-C (Community Commercial) and RSF-1B (Residential Single-Family-Large Lot) to O (Office) for 996 and 1000 South Orange Blossom Trail.

SUMMARY:

Owner(s): Trinity Baptist Church of Apopka, Inc.

Applicant: Thomas Skelton

Parcel Identification Number(s): 14-21-28-0000-00-054, 14-21-28-0000-00-044 and 14-21-28-0000-00-116

Location: 996 and 1000 S. Orange Blossom Trail

Existing Zoning: C-C (Community Commercial) and RSF-1B (Residential Single-Family-Large Lot)

Proposed Zoning: O (Office)

Existing Use(s): Vacant

Existing Future Land Use: Residential Medium and Commercial

Tract Size: 6.99 +/- Acres

Direction	Future Land Use	Zoning	Present Use
North	County Commercial	County C-2 (General Commercial)	Commercial
East	Institutional/Public Use	O (Office)	Place of Worship
South	Residential Low	MHP (Mobile Home Park)	Residential
West	Commercial	C-C (Community Commercial)	Place of Worship

PROJECT SUMMARY:

The subject properties, which is approximately 6.99 acres in size, are located at 996 South Orange Blossom Trail and 1000 South Orange Blossom Trail. The applicant is requesting the rezoning of the property for the potential development of a place of worship to expand their current use of the church located at 1022 South Orange Blossom Trail, owned by the same owner. The applicant's proposed use of a place of worship is permitted use in the Office zoning district per Land Development Code Table 4.2.2.C.

Land Development Code Section 10.3.1.E.2 defines 'Place of Worship' as follows: a structure, together with its accessory buildings and uses, where people regularly assemble to conduct religious worship, ceremonies, rituals, and related education. It also states that a place of worship may include other uses that generally exist as principal uses—e.g., day care center, school, or recreational facility, and such uses are treated as principal uses and subject to the standards and limitations applicable to such uses.

Land Development Code Section 2.5.1.D.3 requires the Council to weigh the relevance of and consider whether and the extent to which the proposed amendment:

- a. Is consistent with and furthers the goals, objectives and policies of the comprehensive plan and other adopted City plans;
 - Applicant's response: This request consists of a change in the Zoning and Future Land Use to allow the use that is existing on the owner's property. Therefore, it is consistent with the City's Comprehensive Plan.
 - Staff response: Staff has no objection.
- b. Is in conflict with any provisions of the LDC;
 - Applicant's response: This request will not create any conflicts with any provisions of the City's LDC. No variances or waivers are needed to allow the planned use of the property.
 - Staff response: Staff has no objection.
- c. Addresses a demonstrated community need;
 - Applicant's response: The proposed use of the property is an expansion of the existing use and will include religious, educational, recreational and community activities.
 - Staff response: Staff has no objection.
- d. Is required by changed conditions;
 - Applicant's response: The existing zoning and land use of the original property was previously changed to allow those uses. The property included in the application requires the same changes.
 - Staff response: Staff has no objection.
- e. Is compatible with existing and proposed uses surrounding the subject land, and is the appropriate zoning district for the land;
 - Applicant's response: The change would be more compatible with the existing use of the parent property than the present zoning and land use classifications. It is also compatible with the uses adjacent and nearby.
 - Staff response: Staff has no objection.
- f. Would result in a logical and orderly development pattern;
 - Applicant's response: This is an expansion of the present use of the parent property.
 - Staff response: Staff has no objection.
- g. Would not result in significant adverse impacts on the natural environment—including, but not limited to, water, air, noise, stormwater management, wildlife, vegetation, wetlands, and the natural functioning of the environment; and
 - Applicant's response: The proposed use of the property is an expansion of the present use of the parent property. This use has very low impacts on the natural environment and is more compatible to the natural environment than what the current zoning and land use classifications.
 - Staff response: Staff has no objection.
- h. Would result in development that is adequately served by public facilities (e.g., streets, potable water, sewerage, stormwater management, solid waste collection and disposal, schools, parks, police, and fire and emergency medical facilities).
 - Applicant's response: This change will have a minimal impact to the current availability of public facilities. The use will have low impacts to traffic, utilities, stormwater and solid waste. The use will include on-site schools and parks.
 - Staff response: Staff has no objection.

ORANGE COUNTY NOTIFICATION:

The JPA (Joint Planning Agreement) requires the City to notify the County 30 days before any public hearing or advisory board. The City notified Orange County on May 31, 2024.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)

August 7, 2024 – City Council (1:30 P.M.), First Reading

August 21, 2024 – City Council (7:00 P.M.), Second Reading and Adoption

DULY ADVERTISED:

June 28, 2024 – Apopka Chief

June 18, 2024 – Mailed notices to adjacent property owners

June 19, 2024 – Posters placed on property

FUNDING SOURCE:

Not applicable.

RECOMMENDED MOTION:

Development Review Committee (DRC):

Recommends approval of the Change of Zoning from C-C (Community Commercial) and RSF-1B (Residential Single-Family-Large Lot) to O (Office), finding the proposed change consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, based on the findings and facts presented in the staff report and exhibits.

Recommended Motion – Planning Commission:

Find the proposed Change of Zoning from C-C (Community Commercial) and RSF-1B (Residential Single-Family-Large Lot) to O (Office), consistent with the Comprehensive Plan and Land Development Code, and compatible with the character of the surrounding areas, recommend approval of the proposed Change of Zoning, based on the findings and facts presented in the staff report and exhibits.

Note: This item is considered quasi-judicial. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

ATTACHMENTS:

1. Ordinance Number 3065
2. Maps

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ORDINANCE NO. 3065

AN ORDINANCE OF THE CITY OF APOPKA, FLORIDA, CHANGING THE ZONING FROM C-C (COMMUNITY COMMERCIAL) AND RSF-1B (RESIDENTIAL SINGLE-FAMILY-LARGE LOT) TO O (OFFICE), FOR CERTAIN REAL PROPERTY GENERALLY LOCATED AT 996 S. ORANGE BLOSSOM TRAIL AND 1000 S. ORANGE BLOSSOM TRAIL; OWNED BY TRINITY BAPTIST CHURCH OF APOPKA, INC. COMPRISING 6.99 ACRES, MORE OR LESS; PROVIDING FOR SEVERABILITY, CONFLICTS, AND AN EFFECTIVE DATE.

WHEREAS, to manage the growth, the City of Apopka, Florida, finds it in the best interest of the public health, safety and welfare of its citizens to establish zoning classifications within the City; and

WHEREAS, Thomas Skelton has requested a change in zoning on said property as identified in Section I of this ordinance; and

WHEREAS, the proposed O (Office) District zoning has been found to be consistent with the City of Apopka Comprehensive Plan, and the City of Apopka Land Development Code.

NOW THEREFORE, BE IT ORDAINED, by the City Council of the City of Apopka, Florida, as follows:

Section I. That the zoning classification of the property described in Exhibit A, being situated in the City of Apopka, Florida, is hereby O (Office) District, as defined in the Apopka Land Development Code, and with the following provision:

Section II. That the zoning classification is consistent with the Comprehensive Plan of the City of Apopka, Florida. The applicant shall obtain all approvals as required, if any, per the Orange County Charter and the Amended Interlocal Agreement for Public School Facility Planning and Implementation of Concurrency.

Section III. That the Community Development Director, or the Director's designee, is hereby authorized to amend, alter, and implement the official zoning maps of the City of Apopka, Florida, to include said designation.

Section IV. That if any section or portion of a section or subsection of this Ordinance proves to be invalid, unlawful, or unconstitutional, it shall not be held to invalidate or impair the validity, force or effect of any other section or portion of section or subsection or part of this ordinance.

Section V. That all ordinances or parts of ordinances in conflict herewith are hereby repealed.

Section VI. That this Ordinance shall take effect upon the date of adoption.

ORDINANCE NO. 3065

PAGE 2

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ADOPTED at a regular meeting of the City Council of the City of Apopka, Florida, this
____ day of _____, 2024.

READ FIRST TIME: August 7, 2023

READ SECOND TIME AND
ADOPTED:

ATTEST:

Susan Bone, City Clerk

Bryan Nelson, Mayor

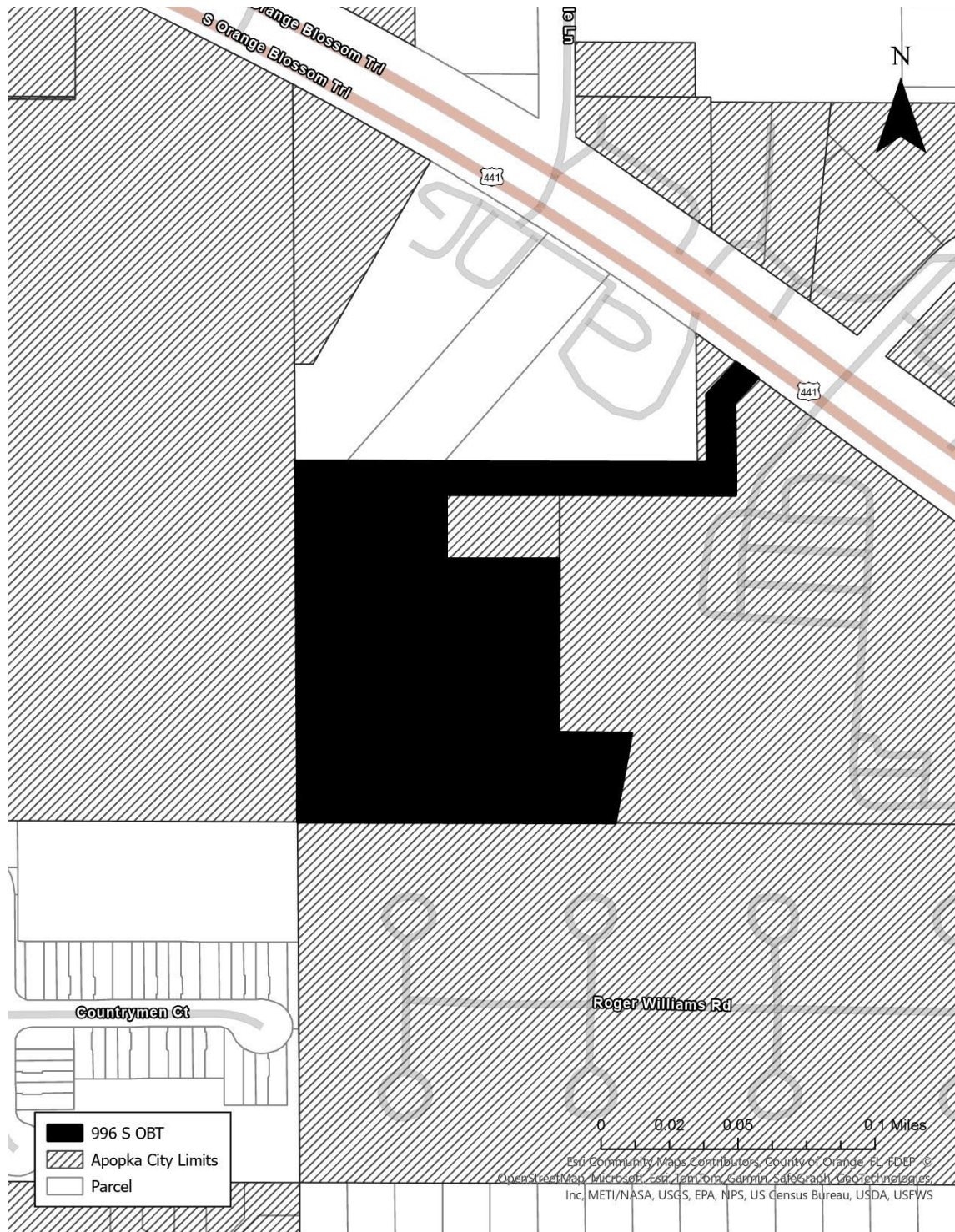
Approved as to form and legal sufficiency:

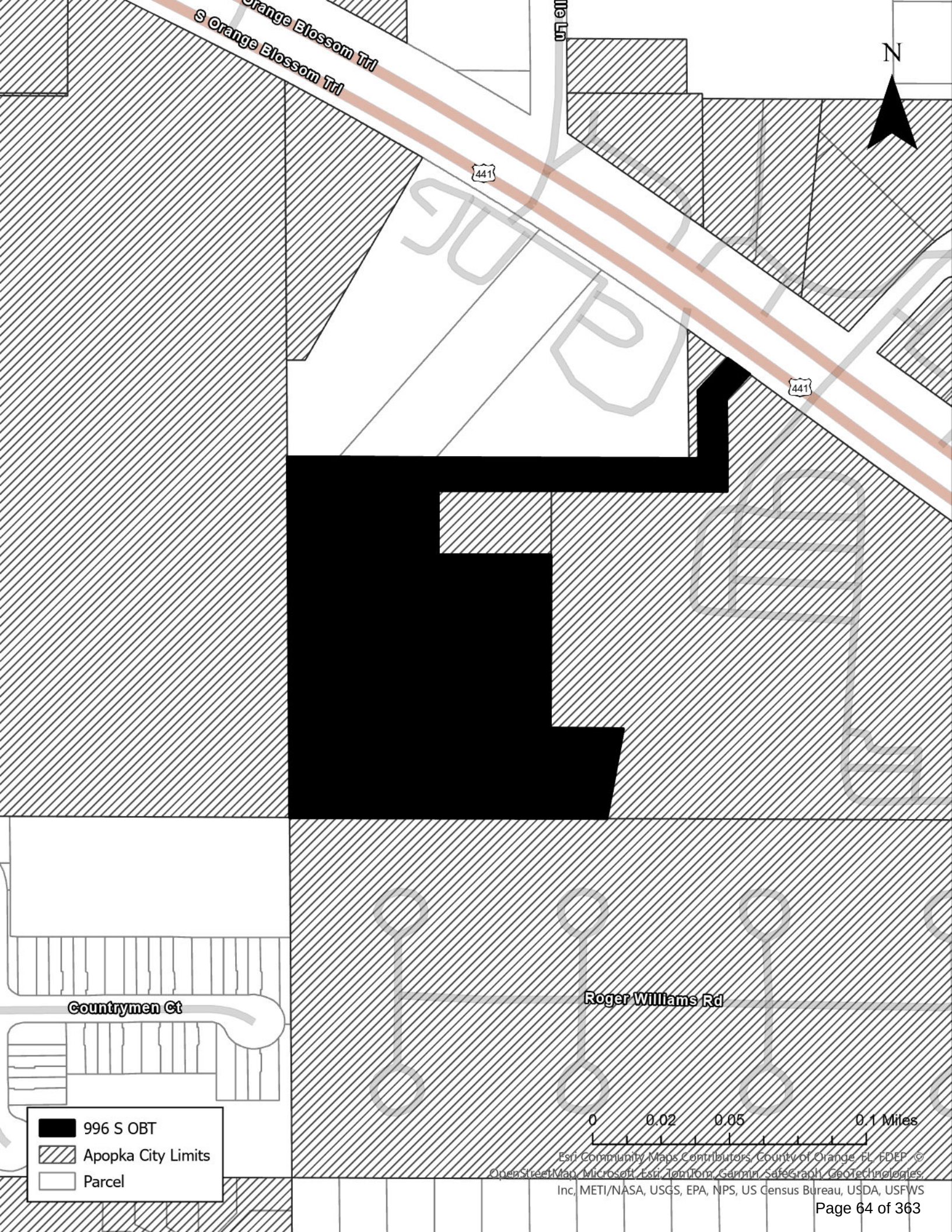
Clifford B. Shepard, City Attorney

DULY ADVERTISED FOR PUBLIC HEARING: June 28, 2024

EXHIBIT "A"

Parcel Identification Number(s): 14-21-28-0000-00-054, 14-21-28-0000-00-044,
14-21-28-0000-00-116





996 S OBT

Apopka City Limits

Parcel



S Orange Blossom Trl

441

441

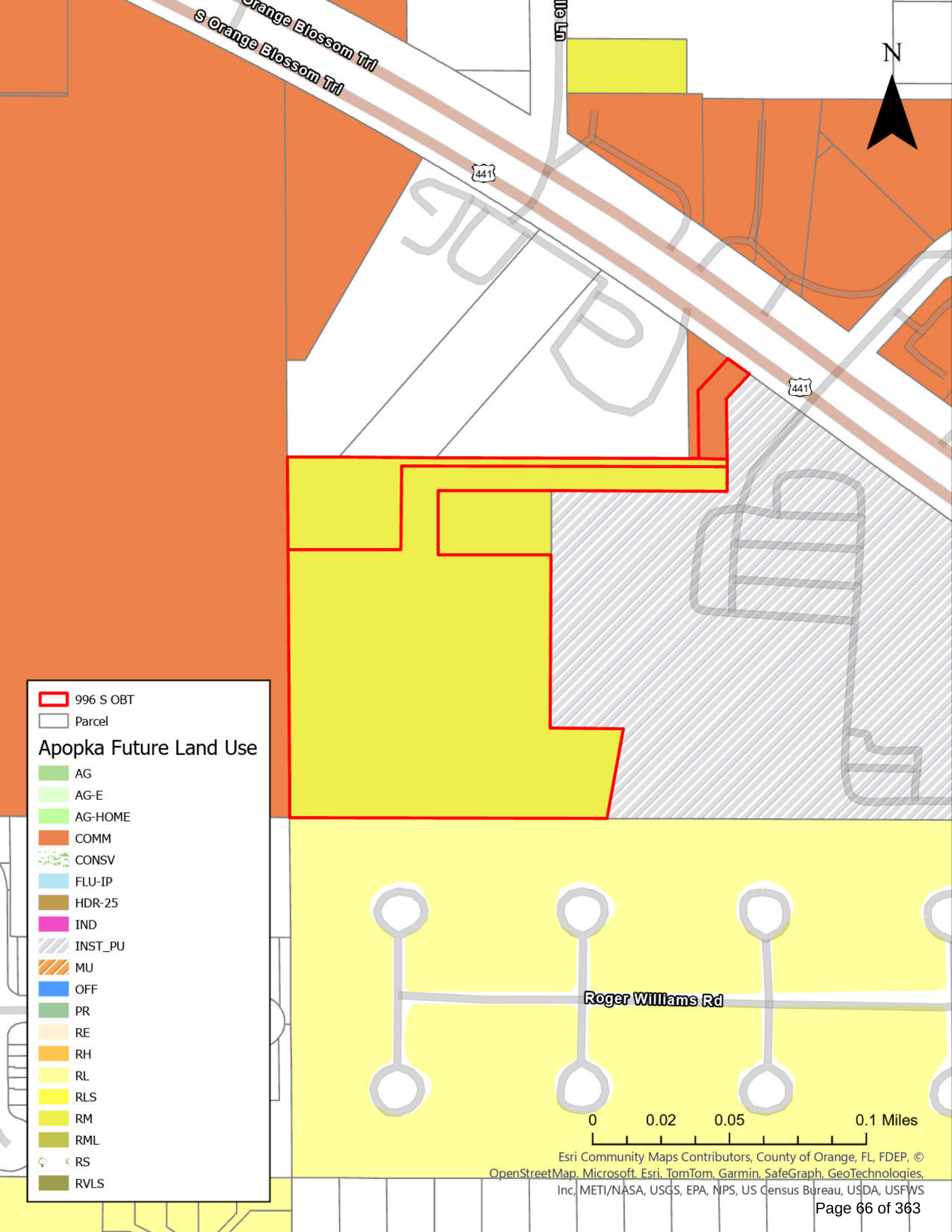
Countrymen Ct

Roger Williams Rd

996 S OBT

Parcel

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996 S OBT

Parcel

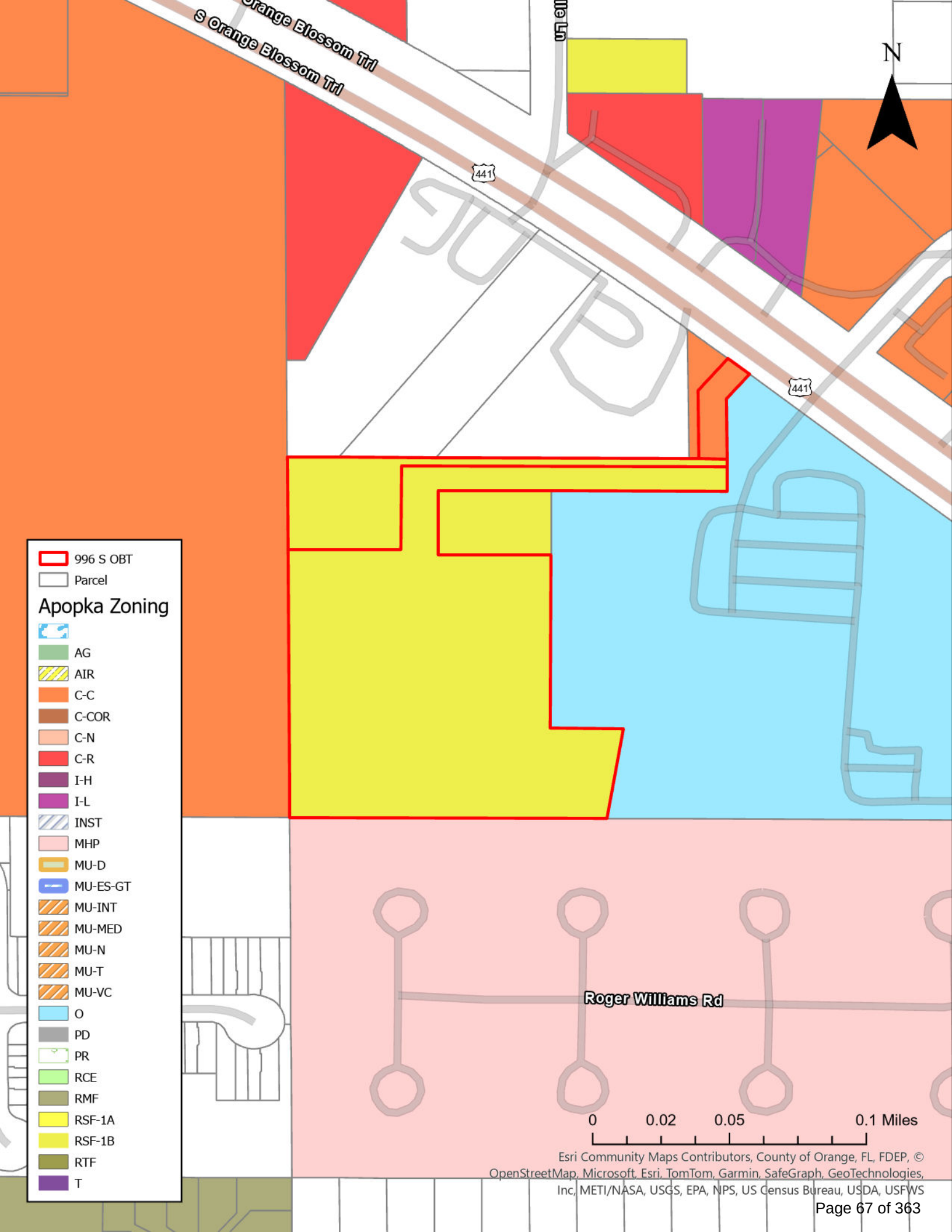
Apopka Future Land Use

- AG
- AG-E
- AG-HOME
- COMM
- CONSV
- FLU-IP
- HDR-25
- IND
- INST_PU
- MU
- OFF
- PR
- RE
- RH
- RL
- RLS
- RM
- RML
- RS
- RVLS

Roger Williams Rd

0 0.02 0.05 0.1 Miles

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Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



996 S OBT

Parcel

Apopka Zoning

- AG
- AIR
- C-C
- C-COR
- C-N
- C-R
- I-H
- I-L
- INST
- MHP
- MU-D
- MU-ES-GT
- MU-INT
- MU-MED
- MU-N
- MU-T
- MU-VC
- O
- PD
- PR
- RCE
- RMF
- RSF-1A
- RSF-1B
- RTF
- T

Roger Williams Rd

0 0.02 0.05 0.1 Miles

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Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS



City of Apopka PLANNING COMMISSION STAFF REPORT

Section: SITE PLANS

Item #: 1.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Quasi-Judicial - 1700 West Keene Road - Wall Variance

REQUEST:

Allow a variance from LDC Section 5.5.11 - Retaining Walls, to allow a maximum height for retaining walls up to twelve feet in lieu of the six-foot height maximum for a proposed non-residential development located at 1700 W. Keene Road.

SUMMARY:

Zoning Report

This chart includes the relationships to adjacent properties.

Direction	Future Land Use	Zoning	Present Use
North	Mixed-Use	PD (Planned Development)	Currently vacant - proposed grocery store with commercial outparcels and multifamily development
East	County Institutional	County A-1 (Citrus Rural)	Orange County Northwest Water Reclamation Facility
South	Mixed-Use	MU-ES-GT (Mixed-Use East Shore-Gateway)	Ascend Oakpointe apartments
West	Industrial	I-L (Light Industrial)	Industrial warehouse buildings

The applicant is requesting a variance from Land Development Code (LDC) Section 5.5.11 Retaining Walls to allow a maximum height for retaining walls up to twelve feet in lieu of the six-foot height. If the variance is approved, the wall system will be an FDOT (Florida Department of Transportation)-approved wall system, as required by the Public Services Department. According to the applicant, the site has 36-feet of fall from the northeast corner to the south end of the development. Tired 6-foot tall walls would not be safer or improve the final project. The applicant has submitted a Major Development Plan detailing site construction with this wall system.

APPLICABLE CITY CODES:

- LDC Section 5.5.11 Retaining Walls
- LDC Section 2.5.5(A) Zoning Variance

VARIANCE PROCESS:

Per Land Development Code Section 2.5.5(A)(5), the Planning Commission shall make initial determination of the

following to approve a variance (Step 1):

1. Section 2.5.5(A)(5)(1). Whether the need for the proposed variance arises out of the physical surroundings, shape, topographical condition, or other physical or environmental conditions that are unique to the specific property involved. If so, the Planning Commission shall make the findings in subsection b., below, based on the granting of the variance for that site alone.
2. Section 2.5.5(A)(5)(2). If the condition is common to numerous sites so that requests for similar variances are likely to be received, the Planning Commission shall make the required findings based on the cumulative effect of granting the variance to all who may apply.
3. Section 2.5.5(A)(5)(3). No nonconforming use of neighboring lands, structures, or buildings in other zoning districts shall be considered grounds for the authorization of a zoning variance.

Nine Variance Criteria Findings:

If the Planning Commission makes a positive determination of each item in Step 1 above, the second step is to make a finding on the nine criteria below. A zoning variance shall be approved only on a finding the applicant demonstrates there is competent substantial evidence in the record that on each of the following nine criteria and responses:

1. There are practical difficulties in carrying out the strict letter of the regulation [in] that the requested variance relates to a hardship due to characteristics of the land and not solely on the needs of the owner. There are practical difficulties in carrying out the strict letter of the relevant requirements of the LDC in that the requested variance relates to a hardship due to characteristics of the land and not solely the needs of the land owner.
Applicant's Response: There is 36' if fall from the northeast to south developable area.
Staff's Response: Staff has no objection.
2. The variance request is not based exclusively upon a desire to reduce the cost of developing the site.
Applicant's Response: The taller walls aren't cheaper, the type of wall used actually adds cost.
Staff's Response: Staff has no objection.
3. The proposed variance will not substantially increase congestion on surrounding public streets.
Applicant's Response: We are not adding more trips, as the project could have more density by code.
Staff's Response: Staff has no objection.
4. The proposed variance will not substantially diminish property values in the area surrounding the site.
Applicant's Response: The wall heights shouldn't affect neighboring property values as it is more of a design aspect.
Staff's Response: Staff has no objection.
5. The proposed variance will not substantially alter the essential character of the area surrounding the site.
Applicant's Response: The project to the south has a significantly taller wall than our proposal, so no effect on character.
Staff's Response: Staff has no objection.
6. The effect of the proposed variance is in harmony with the general intent of the LDC and the specific standards for which the variance is granted;
Applicant's Response: The wall being constructed of an FDOT approved system insures wall integrity, in keeping with intent.
Staff's Response: Staff has no objection.
7. Special conditions and circumstances do not result from the actions of the applicant.
Applicant's Response: The request is due to the topography of the site and the desire to avoid tiered retaining walls.
Staff's Response: Staff has no objection.
8. The proposed variance will not create safety hazards and other detriments to the public.
Applicant's Response: The wall will have state-required fall protection and not create a detriment to the public.
Staff's Response: Staff has no objection.
9. The variance is the minimum variance which will make possible the reasonable use of the land, building or structure.
Applicant's Response: The 12' max height request was reduced from an original as of 18' to be the minimum necessary.
Staff's Response: Staff has no objection.

Note: This item is considered quasi-judicial. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

FUNDING SOURCE:

N/A

RECOMMENDED MOTION:

Development Review Committee:

The Development Review Committee (DRC) does not have any objection to this variance request.

Planning Commission Role:

The Planning Commission shall review the application at a quasi-judicial hearing and render a decision based on the review standards in Section 2.5.5(A)(5) Standards. The Planning Commission decision shall be one of the following:

1. Approval of the variance;
2. Approval of the variance subject to modification and/or condition; or
3. Denial of the variance.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 P.M.)

DULY ADVERTISED:

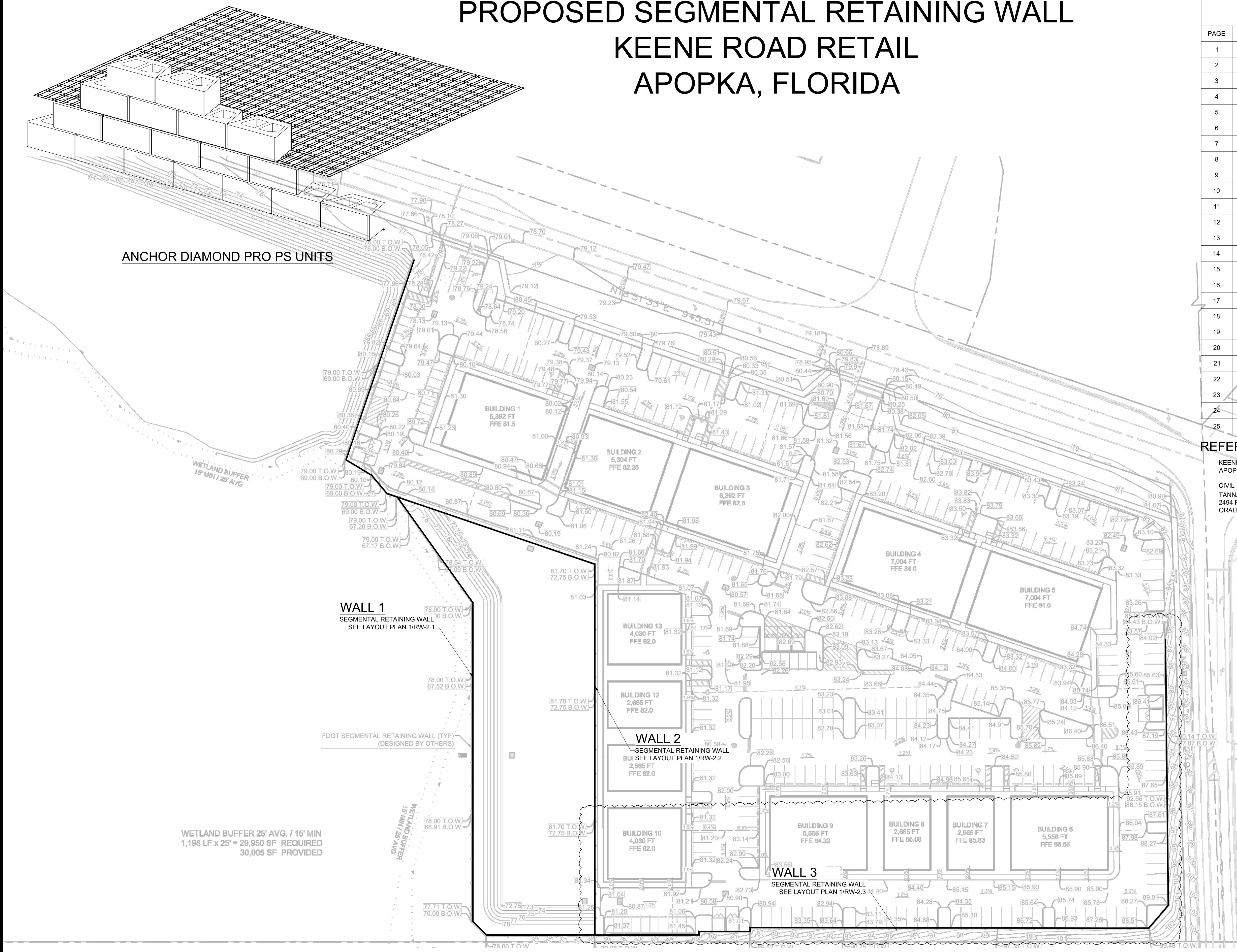
June 18, 2024 – Mailed Notices to Adjacent Property Owners

June 18, 2024 – Placards placed on Property

ATTACHMENTS:

1. Wall Plans
2. Wall Calculations
3. Civil Engineer Letter_Wall Design
4. Geotechnical Engineer Letter_Wall Design
5. Structural Engineer Letter_Wall Design
6. Map series

PROPOSED SEGMENTAL RETAINING WALL
KEENE ROAD RETAIL
APOPKA, FLORIDA



DRAWING SHEET INDEX			REV/Δ	REV/Δ	REV/Δ
PAGE	SHEET	TITLE			
1	COVER	TITLE PAGE AND SITE PLAN	•	•	•
2	RW-1.1	GENERAL NOTES	•	•	•
3	RW-2.1	WALL 1 LAYOUT PLAN	•		
4	RW-2.2	WALL 2 LAYOUT PLAN	•		
5	RW-2.3	WALL 3 LAYOUT PLAN	•		•
6	RW-3.1	WALL 1 ELEVATION	•	•	
7	RW-3.2	WALL 1 ELEVATION	•	•	
8	RW-3.3	WALL 1 ELEVATION	•	•	
9	RW-3.4	WALL 1 ELEVATION	•	•	
10	RW-3.5	WALL 1 ELEVATION & SECTIONS	•	•	
11	RW-3.6	WALL 2 ELEVATION	•		
12	RW-3.7	WALL 2 ELEVATION	•		
13	RW-3.8	WALL 2 ELEVATION	•		
14	RW-3.9	WALL 2 ELEVATION	•		
15	RW-3.10	WALL 2 ELEVATION	•		
16	RW-3.11	WALL 2 ELEVATION	•		
17	RW-3.12	WALL 2 ELEVATION & SECTIONS	•		
18	RW-3.13	WALL 3 ELEVATION	•	•	•
19	RW-3.14	WALL 3 ELEVATION	•	•	•
20	RW-3.15	WALL 3 ELEVATION	•	•	•
21	RW-3.16	WALL 3 ELEVATION	•	•	•
22	RW-3.17	WALL 3 ELEVATION	•	•	•
23	RW-3.18	WALL 3 ELEVATION	•	•	•
24	RW-3.19	WALL 3 ELEVATION & SECTIONS			•
25	RW-4.1	DETAILS	•		

REFERENCE PLANS

KEENE ROAD RETAIL
APOPKA, FLORIDA

CIVIL ENGINEER OF RECORD:
TANNATH DESIGN, INC.
2494 ROSE SPRING DRIVE
ORALNDO, FL 32825

BRYAN POTTS, P.E.
DATED 12/16/23

TCL

CONSTRUCTION CONCEPTS

DEVLEN ENGINEERING, Inc.
STRUCTURAL ENGINEERING
4021 CHURCH ST.
SANFORD, FL 32771
PHONE: (407) 324-5300
EMAIL: RON@DEVLENG.COM
WEB: WWW.DEVLENG.COM

312 E. VENCE AVE., SUITE 202
VENICE, FL 34485
(407) 324-5300

TITLE PAGE AND SITE PLAN

KEENE ROAD RETAIL
APOPKA, FLORIDA

Digitally signed
by Chad Hatcher
Date: 2024.03.22
15:37:47-04'00'

CHAD E. HATCHER
LICENSE
No. 84151
STATE OF FLORIDA
PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY CHAD E. HATCHER, P.E. ON 3-22-2024 USING A DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

REVISIONS

1 02/20/2024

2 03/22/2024

DATE: 02/08/2024

SCALE: AS NOTED

DRAWN: TBL

APPROVED: CEH

JOB NO: 24-032

SHEET

COVER

(REFERENCE SHEET: C-3.0)
RETAINING WALL SITE PLAN
SCALE: NTS

THIS DRAWING PUBLISHED: 3/22/2024 3:38:17 PM

GENERAL NOTES

- A. RETAINING WALL HAS BEEN DESIGNED IN ACCORDANCE WITH SECTIONS 1610 AND 1807.2.4 OF THE FLORIDA BUILDING CODE, 7TH EDITION (2020) AND SECTIONS 6 AND 7 OF THE NCMA "DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS", 3RD EDITION, AND AASHTO LRFD - BDS. THE WALLS HAVE NOT BEEN CHECKED FOR THE DETERMINATION AND/OR VERIFICATION OF THE BEARING CAPACITY AND STRENGTH PROPERTIES OF THE IN-SITU FOUNDATION SOILS, LONG TERM GLOBAL STABILITY OF THE WALL STRUCTURE EMBANKMENT, SETTLEMENT ESTIMATES, AND GROUND WATER AND SUBSURFACE DRAINAGE CONSIDERATIONS.
- B. THIS RETAINING WALL HAS BEEN EVALUATED FOR WINDS LOADS IN ACCORDANCE WITH CHAPTER 16 OF THE FLORIDA BUILDING CODE, 7TH EDITION (2020) AS FOLLOWS:
RISK CATEGORY: CATEGORY I
ULTIMATE DESIGN WIND SPEED 120 MPH (3-SECOND GUST)
NOMINAL DESIGN WIND SPEED 100 MPH
- C. A GEOTECHNICAL REPORT AND GLOBAL SLOPE STABILITY WAS PROVIDED FOR THIS PROJECT, PREPARED BY ANDREYEV ENGINEERING, INC. DATED 02/27/2024. THE DESIGN IS BASED UPON THE FOLLOWING SOIL PROPERTIES. THESE PROPERTIES SHALL BE SUBJECT TO REVIEW AND APPROVAL OF OWNER'S SITE ENGINEER(S):
REINFORCED SOIL
USCS CLASSIFICATION: SP
DENSITY: 110 PCF
FRICTION ANGLE: 30 DEGREES
RETAINED SOIL
USCS CLASSIFICATION: SP
DENSITY: 110 PCF
FRICTION ANGLE: 30 DEGREES
IN-SITU SOIL
USCS CLASSIFICATION: SP
DENSITY: 110 PCF
FRICTION ANGLE: 30 DEGREES
LEVELING PAD
USCS CLASSIFICATION: GW
DENSITY: 140 PCF
FRICTION ANGLE: 39 DEGREES.
MINIMUM ALLOWABLE SOIL BEARING CAPACITY = 2,000 PSF.
- D. THE CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND START OF CONSTRUCTION AND NOTIFY THE SITE ENGINEER IMMEDIATELY OF ANY SITE CONDITIONS THAT DIFFER FROM THOSE SHOWN ON THE DRAWING(S) THAT WOULD PRECLUDE THE CONSTRUCTION BEING PERFORMED IN THE MANNER SHOWN ON THESE DRAWINGS.
- E. REFER TO THE PROJECT CIVIL ENGINEER-OF-RECORD'S DRAWINGS FOR ALL DIMENSIONS NOT GIVEN OR INDICATED. ANY DIMENSION DISCREPANCIES FOUND ON THE SITE DRAWINGS SHALL BE COORDINATED WITH THE ENGINEER-OF-RECORD PRIOR TO CONSTRUCTION.
- F. SURCHARGE LIVE LOAD: 250 PSF VEHICULAR TRAFFIC AND 120 PSF ELSEWHERE
SURCHARGE DEAD LOAD: 40 PSF
1. SURCHARGE LIVE LOADS AND DEAD LOADS ARE APPLIED AT THE START OF THE GRADE BEHIND THE WALL, UNLESS NOTED OTHERWISE.
1. UNLESS NOTED OTHERWISE ON THESE PLANS, SEGMENTAL RETAINING WALLS AND GEOGRID REINFORCED ZONES SHALL NOT BE USED FOR THE SUPPORT OF SURCHARGE LIVE LOADS IN EXCESS OF THE ABOVE INDICATED VALUES. ALL BUILDING AND POOL FOUNDATIONS SHALL BE LOCATED OUTSIDE THE REINFORCED ZONE SUCH THAT A LINE DRAWN BETWEEN THE BOTTOM OF THE PROPOSED FOUNDATION AND WALL LEVELING PAD DOES NOT EXCEED 45 DEGREES (MEASURED FROM THE HORIZONTAL PLANE).
- G. THE CONTENTS OF THIS SUBMITTAL SHALL BE SUBJECT TO THE REVIEW AND APPROVAL OF THE OWNER'S SITE ENGINEER(S) PRIOR TO CONSTRUCTION OF WALL(S).
- H. BEARING CAPACITY AND STRENGTH PROPERTIES OF THE IN-SITU FOUNDATION SOILS, LONG TERM GLOBAL STABILITY OF THE WALL STRUCTURE EMBANKMENT, SETTLEMENT ESTIMATES, AND GROUND WATER AND SUBSURFACE DRAINAGE SHALL BE CONSIDERED AND EVALUATED BY THE OWNER'S SITE ENGINEER(S) PRIOR TO CONSTRUCTION.

STRUCTURAL NOTES

- A. WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A CONCRETE RETAINING WALL IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON THE CONSTRUCTION DRAWINGS. NO ALTERNATE WALL SYSTEMS WILL BE CONSIDERED.
- B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING A LEVELING PAD, UNIT DRAINAGE FILL, A GEOSYNTHETIC SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS AND BACKFILL TO THE LINES AND GRADES ON THE CONSTRUCTION DRAWINGS.
- C. ANCHOR CONCRETE RETAINING WALL UNITS SHALL BE DIAMOND PRO PS UNITS, LAID IN RUNNING BOND, NOMINALLY LOCATED AT THE MIDPOINT OF VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.
- D. BASE LEVELING PAD MATERIAL SHALL CONSIST OF A CRUSHED STONE BASE OR GRANULAR FILL MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D448:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
NO. 4	35 - 70
NO. 40	10 - 35
NO. 200	3 - 10

- E. UNIT DRAINAGE AGGREGATE SHALL CONSIST OF CLEAN, CRUSHED STONE OR GRANULAR FILL MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D448:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
3/4 INCH	75 - 100
NO. 4	0 - 60
NO. 40	0 - 50
NO. 200	0 - 5

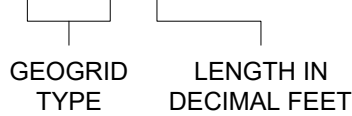
- F. PLACE 12 INCHES OF DRAINAGE FILL AGGREGATE WITHIN THE CORES OF, BETWEEN, AND BEHIND THE UNITS AS INDICATED ON THE CONSTRUCTION DRAWINGS. CAP THE DRAINAGE AGGREGATE ZONE WITH 12 INCHES OF IMPERVIOUS MATERIAL (CLAYEY SOIL OR SIMILAR MATERIAL WHICH WILL PREVENT PERCOLATION INTO THE DRAINAGE ZONE BEHIND THE WALL).
- G. REINFORCED BACKFILL SHALL BE FREE OF ORGANICS AND DEBRIS AND CONSISTING OF SP TYPE CLASSIFIED SOIL IN ACCORDANCE WITH ASTM D2487 AND THE UCS CLASSIFICATION SYSTEM AND COMPACTED IN ACCORDANCE WITH ASTM D1556 OR ASTM D2922. MAXIMUM PARTICLE SIZE IS 4 INCHES.
- H. GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE STRATAGRID SGU-60 OR BETTER AS MANUFACTURED BY STRATA SYSTEMS, INC.
- I. GEOTEXTILE FILTER FABRIC SHALL BE N-SERIES FILTER FABRIC AS MANUFACTURED BY TENCATE GEOSYNTHETICS OR BETTER.
- J. THE CONTRACTOR SHALL EXCAVATE AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. IT IS ASSUMED THAT ALL PROBLEMATIC SOILS (ORGANIC, EXPANSIVE, ETC.) WILL BE REMOVED AND REPLACED WITH SUITABLE STRUCTURAL FILL.
- K. ANY FILL REQUIRED TO BACKFILL EXCAVATED AREA OR ACHIEVE FINISH GRADE IN STRUCTURAL AREAS SHALL BE AS INDICATED BY THE GEOTECHNICAL ENGINEER.
- L. SOIL COMPACTION, UNLESS NOTED OTHERWISE IN THE GEOTECHNICAL REPORT, SHALL ADHERE TO THE FOLLOWING MINIMUM REQUIREMENTS:
1. 2'-0" MINIMUM LEVELING PAD TRENCH: SHALL BE COMPACTED TO A MINIMUM DEPTH OF ONE (1) FOOT BELOW STRIPPED GRADE. ANY LOOSE, SOFT OR UNDESIRABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL IN LEVEL LIFTS NOT TO EXCEED 12 INCHES LOOSE THICKNESS, AND COMPACTED TO A MINIMUM OF 95% OF THE SOIL'S MODIFIED PROCTOR MAXIMUM DRY DENSITY AS DETERMINED BY ASTM SPECIFICATION D-1557.
- M. BASE LEVELING PAD MATERIAL SHALL BE PLACED ON COMPACTED SOIL TO THE DEPTHS, WIDTHS, LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES AND EXTEND LATERALLY A MINIMUM OF 6" IN FRONT AND BEHIND THE RETAINING WALL.
- N. BASE LEVELING PAD MATERIAL SHALL BE COMPACTED AND PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE RETAINING WALL CONCRETE UNITS.

BLOCK UNIT INSTALLATION

- A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.
- B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- C. INSTALL EACH SUCCEEDING COURSE. BACKFILL AS EACH COURSE IS COMPLETED. PULL THE UNITS FORWARD UNTIL THE LOCATING SURFACE OF THE UNITS CONTACT THE LOCATING SURFACE OF THE UNITS IN THE PRECEDING COURSE. INTERLOCK WALL SEGMENTS THAT MEET AT CORNERS BY OVERLAPPING SUCCESSIVE COURSE. ATTACH CONCRETE RETAINING WALL UNITS AT EXTERIOR CORNERS WITH SPECIFIED ADHESIVE.
- D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH STRUCTURAL BACKFILL.
- E. GEOTEXTILE FILTER FABRIC SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTALLATION INSTRUCTION AS THE WALL IS LAID UP AND THE DRAINAGE FILL MATERIAL IS PLACED AND COMPACTED.
- F. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED ONE COURSE.

STRUCTURAL GEOGRID INSTALLATION

- A. INSTALL GEOSYNTHETIC SOIL REINFORCEMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. ORIENT THE GEOSYNTHETIC SOIL REINFORCEMENT WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL FACE.
- B. GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS AND ELEVATIONS SHOWN ON THESE CONSTRUCTION DESIGN DRAWINGS.
- C. THE GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE LAID HORIZONTALLY ON TOP OF THE CONCRETE BLOCK UNITS AND THE COMPACTED BACKFILL SOILS. PLACE THE GEOSYNTHETIC SOIL REINFORCEMENT TO WITHIN ONE INCH OF THE FACE OF THE CONCRETE RETAINING WALL UNITS. PLACE THE NEXT COURSE OF CONCRETE RETAINING WALL UNITS ON TOP OF THE GEOSYNTHETIC SOIL REINFORCEMENT.
- D. THE GEOSYNTHETIC SOIL REINFORCEMENT SHALL BE IN TENSION AND FREE FROM WRINKLES PRIOR TO PLACEMENT OF BACKFILL SOILS ON TOP OF THE GEOSYNTHETIC SOIL REINFORCEMENT.
- E. GEOSYNTHETIC SOIL REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOSYNTHETIC SOIL REINFORCEMENT OR GAPS BETWEEN ADJACENT PIECES OF GEOSYNTHETIC SOIL REINFORCEMENT ARE NOT PERMITTED.
- F. GEOGRID NOMENCLATURE: SGU60 - 6.00



REINFORCED BACKFILL PLACEMENT

- A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOSYNTHETIC SOIL REINFORCEMENT AND INSTALLATION DAMAGE.
- B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES WHERE HAND COMPACTION IS USED, OR 8 TO 10 INCHES WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.
- C. REINFORCED BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY PER ASTM D698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE WITHIN 2 PERCENTAGE POINTS OF THE OPTIMUM MOISTURE CONTENT FOR ALL WALL HEIGHTS.
- D. ONLY LIGHTWEIGHT HAND-OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 4 FEET FROM THE BACK OF THE RETAINING WALL.
- E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOSYNTHETIC SOIL REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOSYNTHETIC SOIL REINFORCEMENT. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOSYNTHETIC SOIL REINFORCEMENT.
- F. RUBBER Tired EQUIPMENT MAY PASS OVER GEOSYNTHETIC SOIL REINFORCEMENT AT SLOW SPEEDS, LESS THAN 5 MPH. SUDDEN BRAKING AND SHARP TURNING ON THE GEOSYNTHETIC SOIL REINFORCEMENT SHALL NOT BE ALLOWED.
- G. AT THE END OF EACH DAYS OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCEMENT BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM THE WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.
- H. COMPACTION TESTING SHALL BE DONE IN ACCORDANCE WITH ASTM D1556 OR ASTM D2922. TESTING FREQUENCY SHALL BE ONE TEST FOR EVERY 2 FEET (VERTICAL) OF FILL PLACED AND COMPACTED AND FOR EVERY 50 LINEAL FEET OF RETAINING WALL.

CAP UNITS

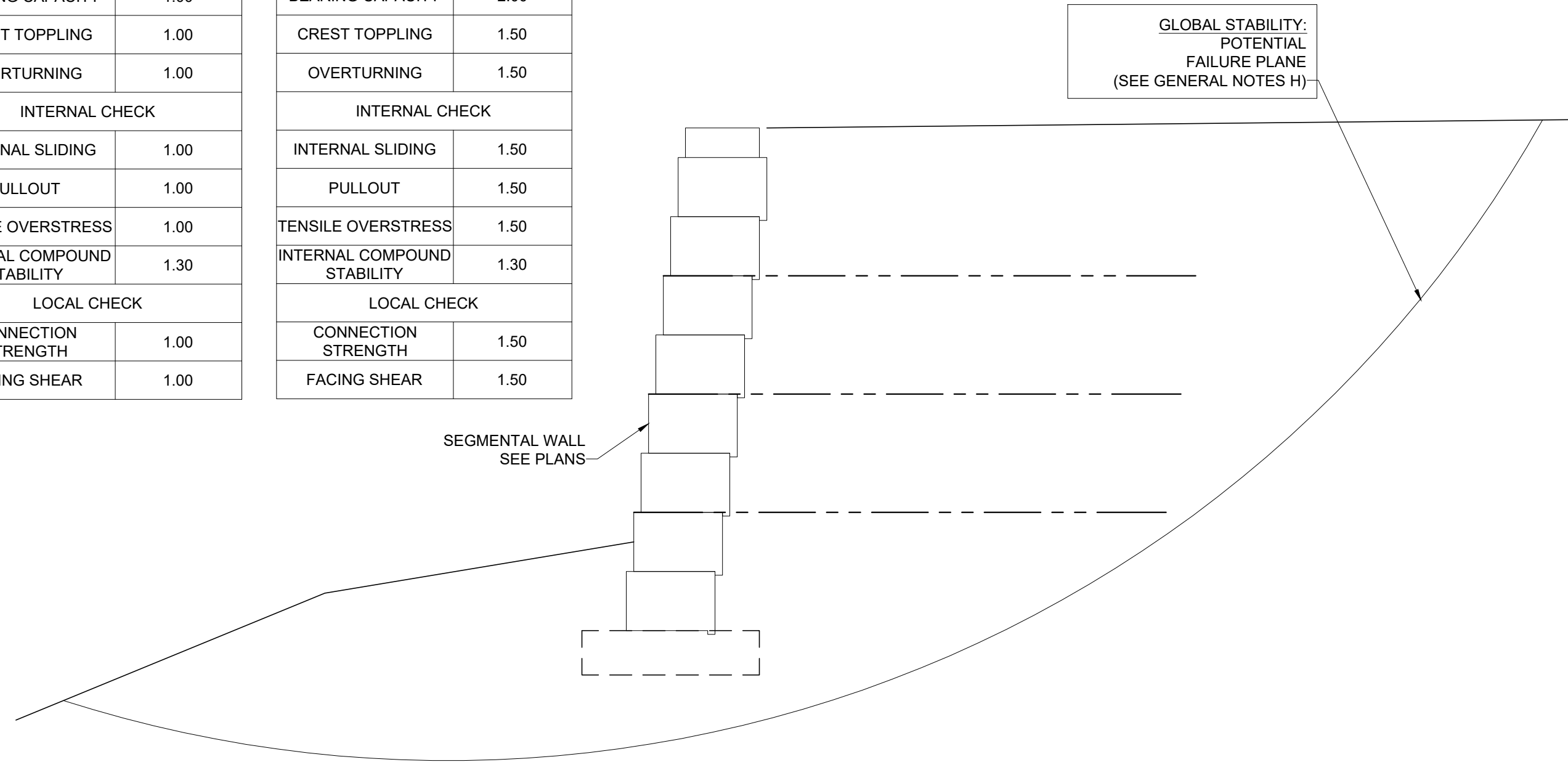
- A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.

AS-BUILT CONSTRUCTION TOLERANCES

- A. VERTICAL ALIGNMENT: 1.5" OVER ANY 10' DISTANCE WITH A MAXIMUM DIFFERENTIAL OF 3 INCHES OVER THE LENGTH OF THE WALL.
- B. IMMEDIATE POST CONSTRUCTION BATTER: WITHIN 2 DEGREES OF DESIGN BATTER OF THE CONCRETE RETAINING WALL UNITS.
- C. HORIZONTAL LOCATION CONTROL FROM GRADING PLAN:
STRAIGHT LINES, (+/-) 1 1/2 INCHES OVER ANY 10 FOOT DISTANCE.
CORNER AND RADIUS LOCATIONS, (+/-) 12 INCHES.
CURVES AND SERPENTINE RADII, (+/-) 2 FEET.

WALL STABILITY (AASHTO - LRFD)	
PARAMETERS	REQUIREMENT (MIN.)
EXTERNAL CHECK	
BASE SLIDING	1.00
BEARING CAPACITY	1.00
CREST TOPPLING	1.00
OVERTURNING	1.00
INTERNAL CHECK	
INTERNAL SLIDING	1.00
PULLOUT	1.00
TENSILE OVERSTRESS	1.00
INTERNAL COMPOUND STABILITY	1.30
LOCAL CHECK	
CONNECTION STRENGTH	1.00
FACING SHEAR	1.00

WALL STABILITY (NMCA)	
PARAMETERS	FACTORS OF SAFETY (MIN.)
EXTERNAL CHECK	
BASE SLIDING	1.50
BEARING CAPACITY	2.00
CREST TOPPLING	1.50
OVERTURNING	1.50
INTERNAL CHECK	
INTERNAL SLIDING	1.50
PULLOUT	1.50
TENSILE OVERSTRESS	1.50
INTERNAL COMPOUND STABILITY	1.30
LOCAL CHECK	
CONNECTION STRENGTH	1.50
FACING SHEAR	1.50

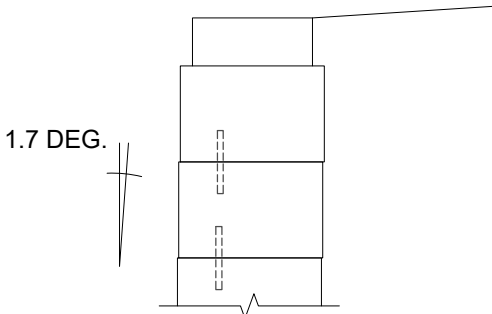


WALL DESIGN PARAMETERS

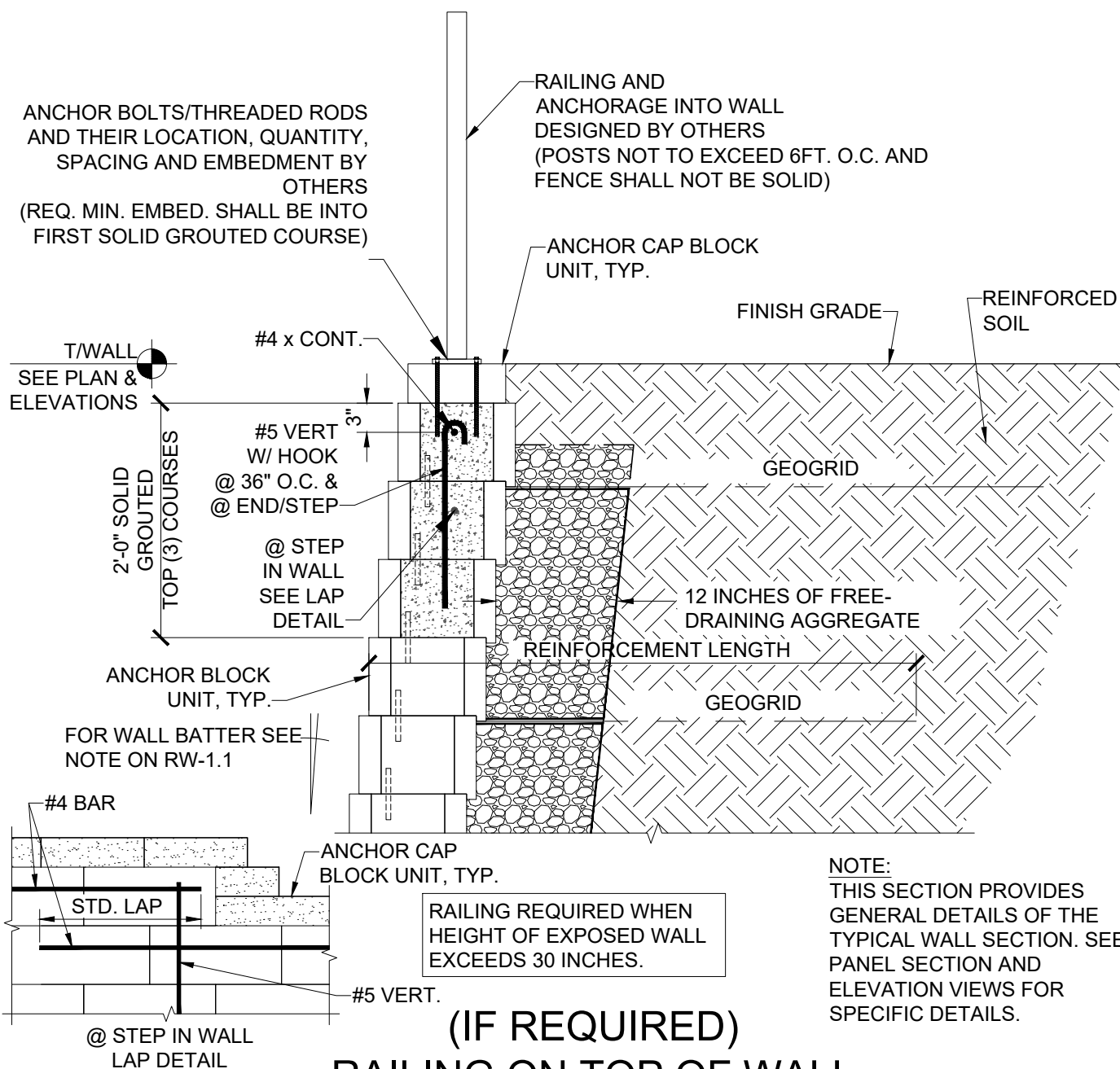
N.T.S.

WALL BATTER

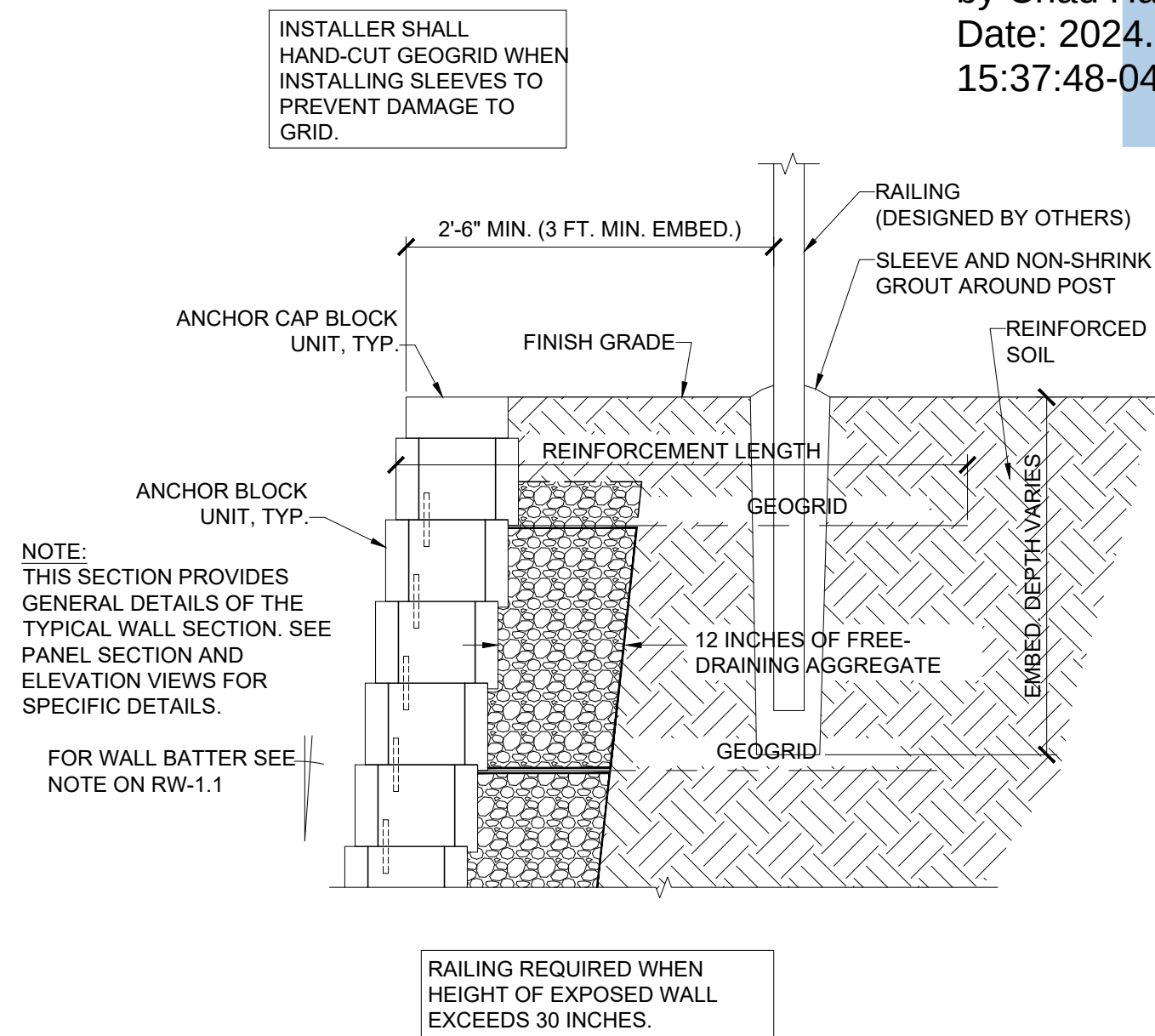
- WALL CONTRACTOR SHALL VERIFY W/ OWNER WALL PRODUCT AND WALL BATTER.
- SEGMENTAL RETAINING WALL(S) INDICATED HAVE BEEN DESIGNED FOR THE FOLLOWING BATTER - WORST CASE (PIN SYSTEM ALLOWS FOR MULTIPLE BATTER OPTIONS):



NOTE: WALL BATTER AFFECTS THE DESIGN LENGTHS OF GEOGRID.



(IF REQUIRED)
RAILING ON TOP OF WALL
SCALE: N.T.S.

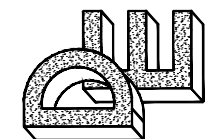


(IF REQUIRED)
RAILING BEHIND WALL
SCALE: N.T.S.

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Date: 2024.03.22 15:37:48-04'00'

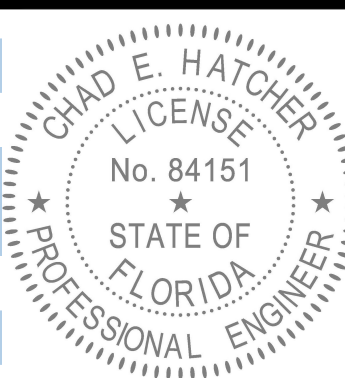


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WEB: WWW.DEVLENG.COM



GENERAL NOTES

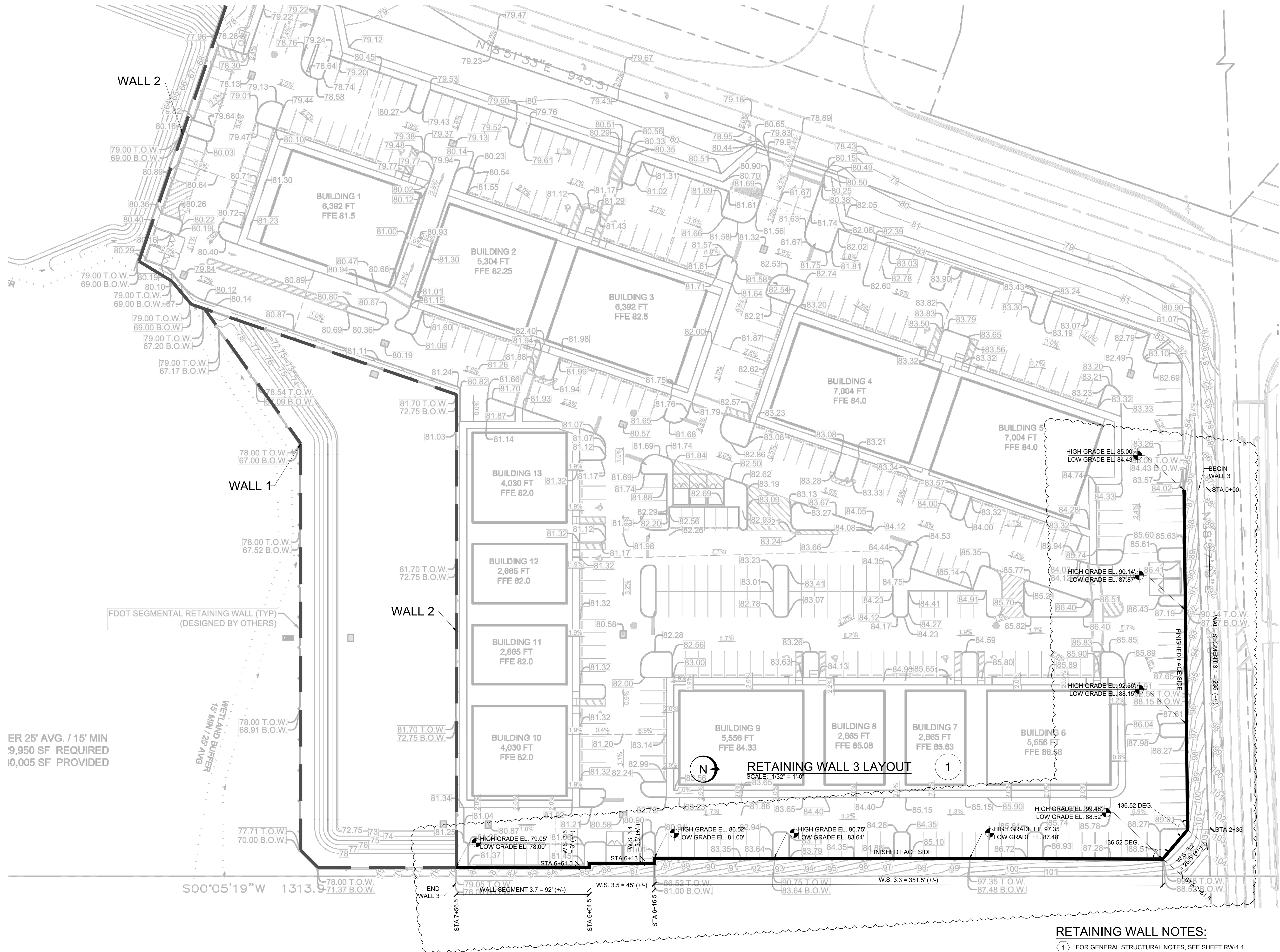
**KEENE ROAD RETAIL
APOPKA, FLORIDA**



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REVISIONS	
1	02/20/2024
DATE:	02/08/2024
SCALE:	AS NOTED
DRAWN:	TBL
APPROVED:	CEH
JOB NO:	24-032
SHEET	

RW-1.1



ER 25' AVG. / 15' MIN
9,950 SF REQUIRED
10,005 SF PROVIDED

FDOT SEGMENTAL RETAINING WALL (TYP)
(DESIGNED BY OTHERS)

WETLAND BUFFER
15' MIN / 25' AVG

RETAINING WALL 3 LAYOUT
SCALE: 1/32" = 1'-0"

RETAINING WALL NOTES:

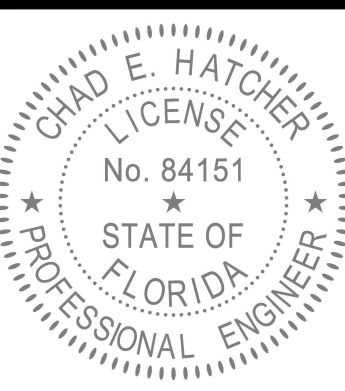
- 1 FOR GENERAL STRUCTURAL NOTES, SEE SHEET RW-1.1.
- 2 RETAINING WALL SHOWN SHALL BE CONSTRUCTED OF CONCRETE SEGMENTAL UNITS WITH GEOGRID REINFORCEMENT AS DETAILED IN THESE PLANS AND GENERAL NOTES.
- 3 WALL ALIGNMENT (INCLUDING LOT LINE, EASEMENT AND BUFFER REQUIREMENTS FOR THIS SITE), DIMENSIONS, ELEVATIONS, ETC. SHALL BE REVIEWED AND APPROVED BY THE REFERENCED CIVIL ENGINEER OF RECORD PRIOR TO START OF CONSTRUCTION.

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WALL 2 LAYOUT PLAN
KEENE ROAD RETAIL
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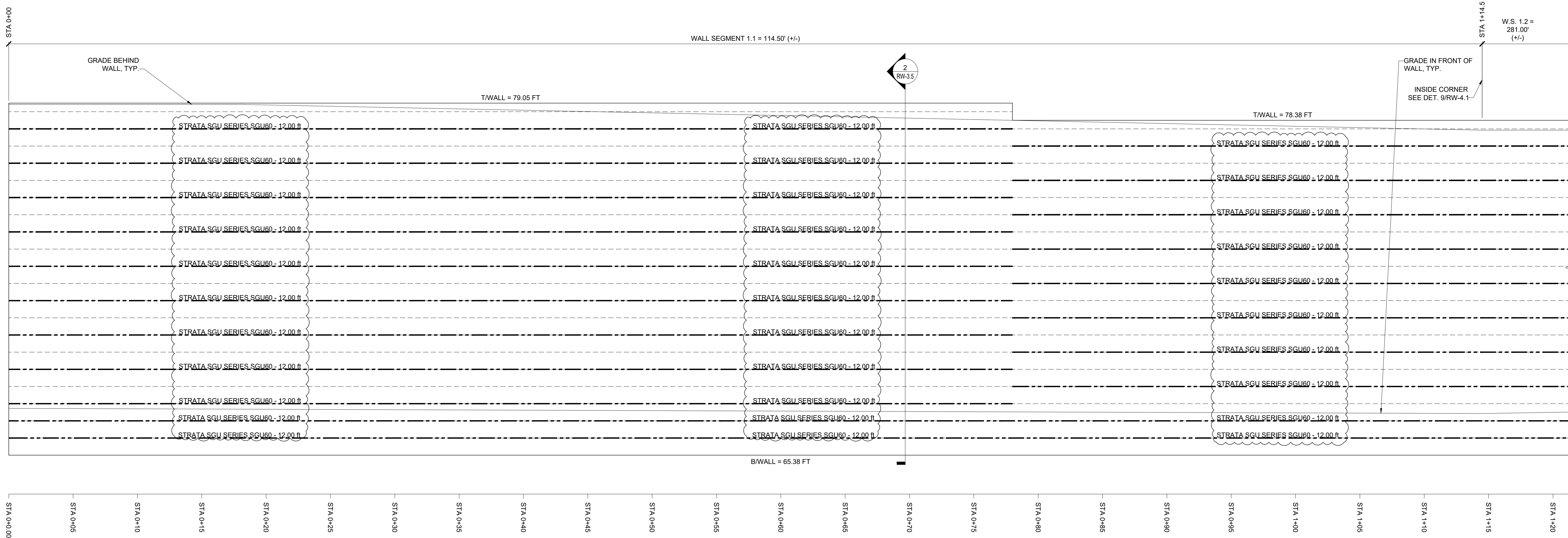


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RW-2.3

THIS DRAWING PUBLISHED: 5/22/2024 3:38:41 PM



DIMENSIONS ARE IMPERIAL (2H:1V)
WALL 1 ELEVATION
SCALE: 1/2" = 1'-0"

1

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15:37:53-04'00'

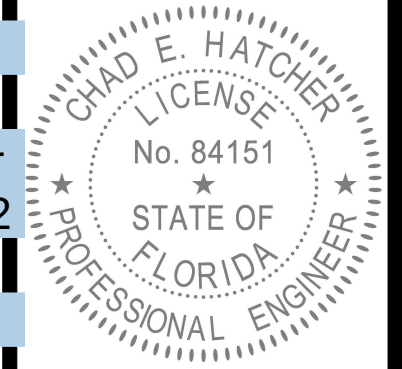
NOTES:

- FOR GENERAL STRUCTURAL NOTES, SEE SHEET RW-1.1.
- WALL ELEVATIONS ARE VIEWED FROM FINISHED FACE U.N.O.
- WALL SECTIONS ARE SHOWN WITH BATTER, FOR WALL BATTER DETAIL, SEE SHEET RW-1.1.
- FOR ADDITIONAL INFORMATION NOT SHOWN ON WALL SECTIONS SEE DET. 4/RW-4.1.



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WALL 1 ELEVATION
KEENE ROAD RETAIL
APOPKA, FLORIDA



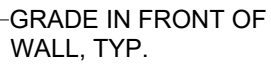
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DRAWN:	TBL
APPROVED:	CEH
JOB NO:	24-032
SHEET	

RW-3.1

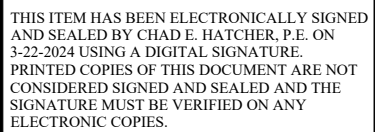
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SCALE: 1/2" = 1'-0"

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1 02/20/2024

SCALE: AS NOTED

DRAWN: TBL

APPROVED: **CEH**

JOB NO: 24-032

SHEET

RW-3.2

1 FOR GENERAL STRUCTURAL NOTES,
SEE SHEET RW-1.1.

2 WALL ELEVATIONS ARE VIEWED FROM FINISHED FACE U.N.O.

3 WALL SECTIONS ARE SHOWN WITH BATTER, FOR WALL BATTER DETAIL, SEE SHEET RW-1.1.

4 FOR ADDITIONAL INFORMATION NOT SHOWN ON WALL SECTIONS SEE DET. 4/RW-4.1.

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1

A circular professional engineer seal for Chad E. Hatcher. The outer ring contains the text "CHAD E. HATCHER" at the top and "PROFESSIONAL ENGINEER" at the bottom, separated by two stars. The inner circle contains the text "LICENSE" at the top, "No. 84151" in the center, and "STATE OF FLORIDA" at the bottom, also separated by two stars. The seal is surrounded by a dashed border.

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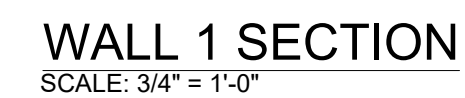
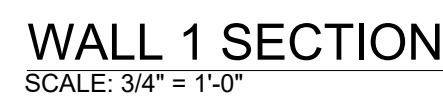
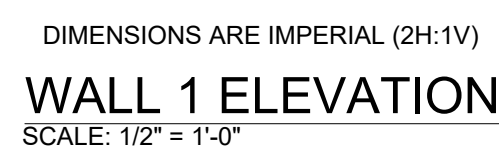
RW-3.4

- 1 FOR GENERAL STRUCTURAL NOTES, SEE SHEET RW-1.1.
- 2 WALL ELEVATIONS ARE VIEWED FROM FINISHED FACE U.N.O.
- 3 WALL SECTIONS ARE SHOWN WITH BATTER, FOR WALL BATTER DETAIL, SEE SHEET RW-1.1.
- 4 FOR ADDITIONAL INFORMATION NOT SHOWN ON WALL SECTIONS SEE DET. 4/RW-4.1.

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WALL 1 ELEVATION

KEENE ROAD RETAIL
APOPKA, FLORIDA



Digitally signed
by Chad Hatcher
Date: 2024.03.22
15:37:58-04'00'

WALL 1 ELEVATION & SECTIONS

**KEENE ROAD RETAIL
APOPKA, FLORIDA**

DEVLEN ENGINEERING, Inc.
STRUCTURAL ENGINEERING CO. A 9459

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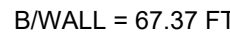


TCL
CONSTRUCTION CONCEPTS

CONVECTIVE HEAT EXCHANGE IN

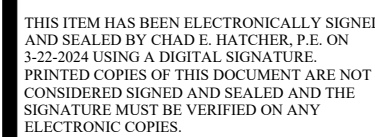
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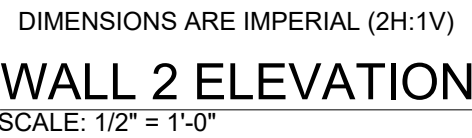
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JOB NO:	24-032
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RW-3.7

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EMAIL: RON@DEVLENG.COM
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WALL 2 ELEVATION

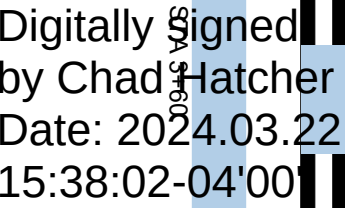
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APOPKA, FLORIDA



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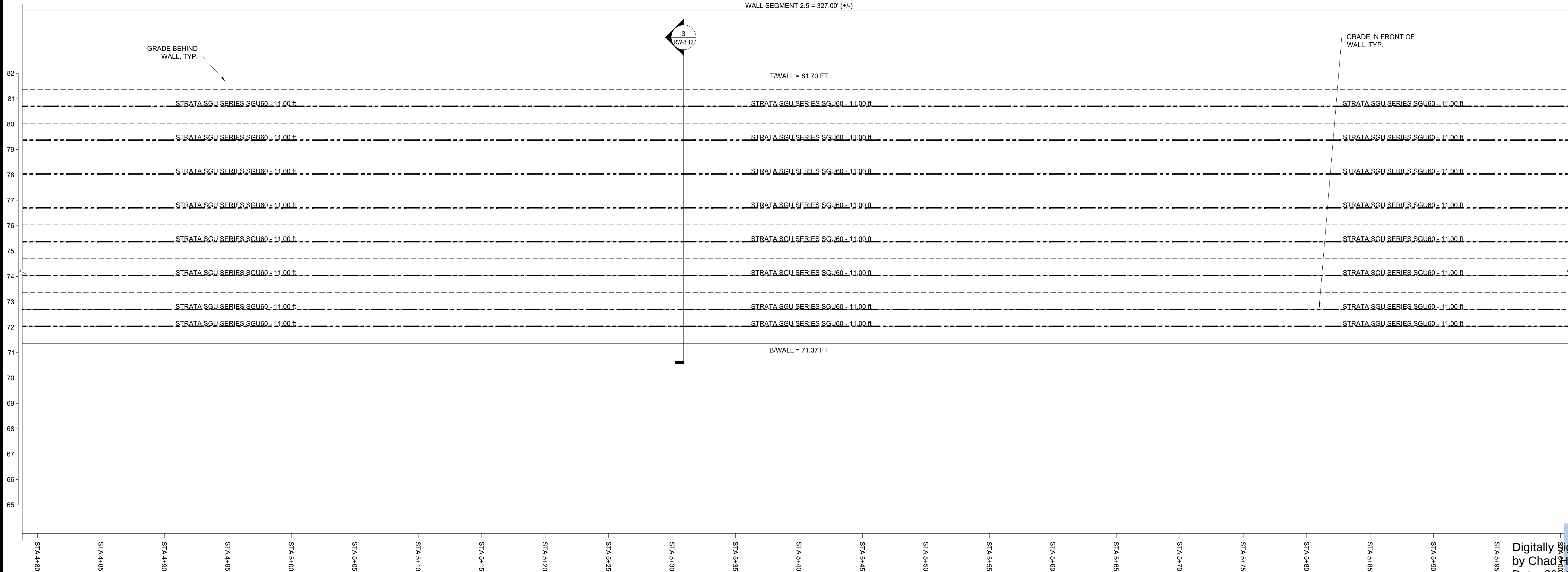
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RW-3.8

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DIMENSIONS ARE IMPERIAL (2H:1V)
WALL 2 ELEVATION
SCALE: 1/2" = 1'-0"

1

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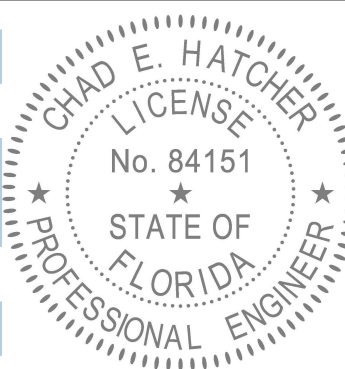
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WALL 2 ELEVATION
KEENE ROAD RETAIL
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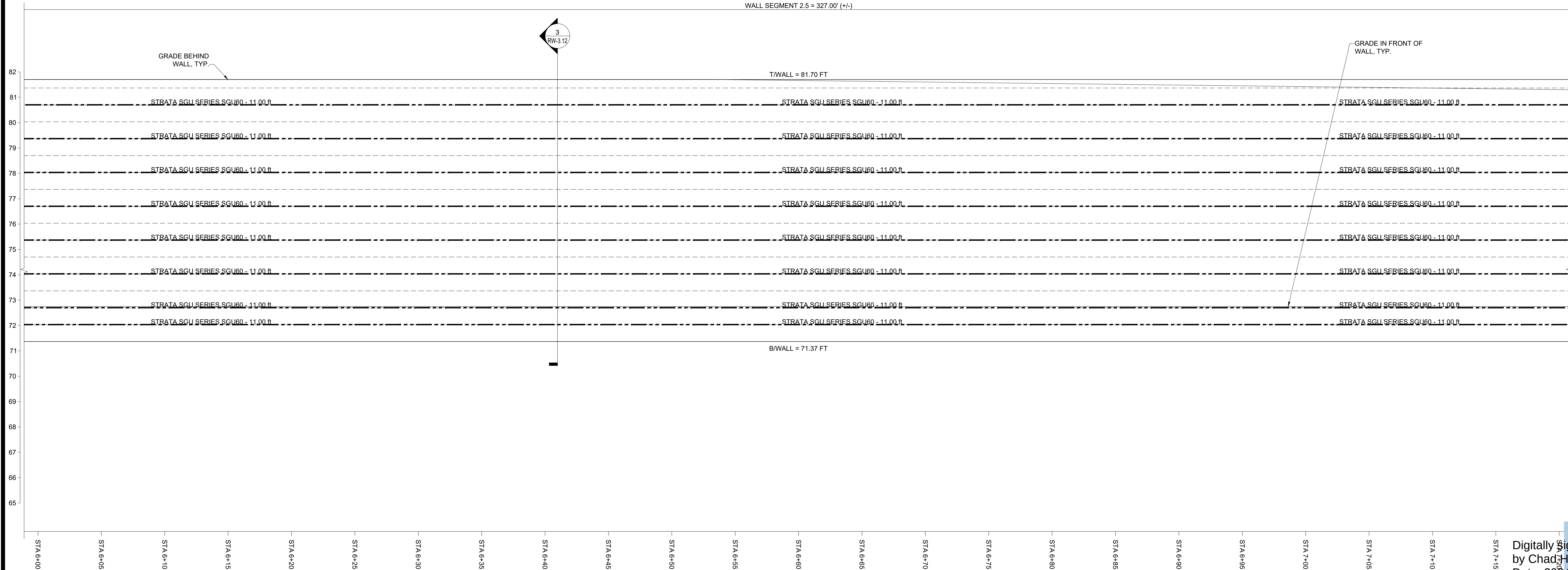
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WALL 2 ELEVATION

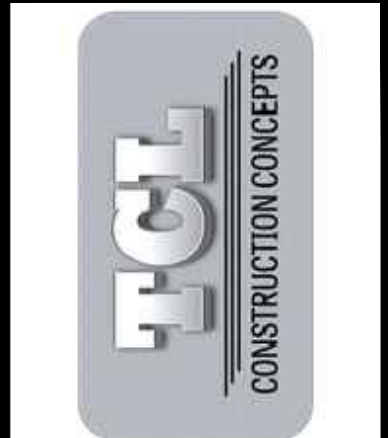
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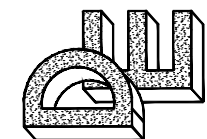
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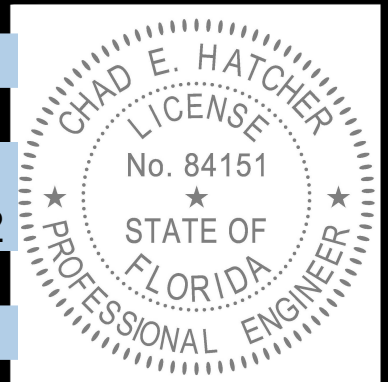


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WALL 2 ELEVATION

KEENE ROAD RETAIL
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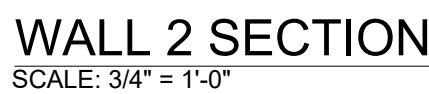
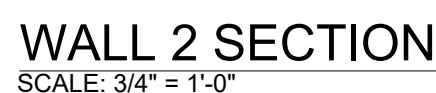
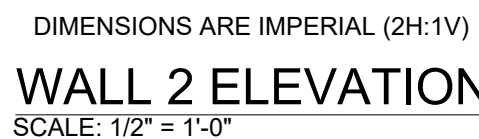
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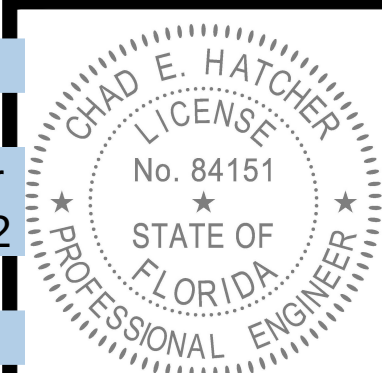
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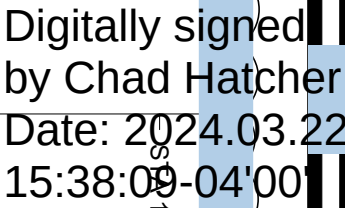
WALL 2 ELEVATION & SECTIONS

**KEENE ROAD RETAIL
APOPKA, FLORIDA**



A COMMITTEE REPORT ON ENGINEERING THE

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APOPKA, FLORIDA**

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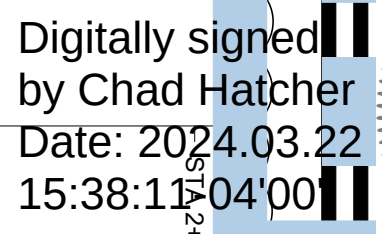
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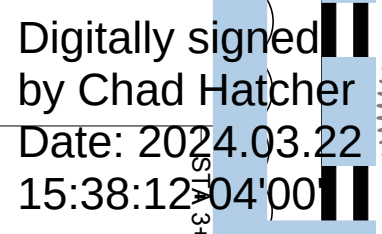
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DRAWN:	
TBL	
APPROVED:	
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JOB NO:	
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RW-3.13

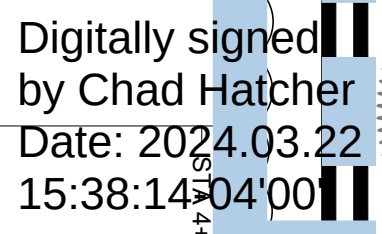
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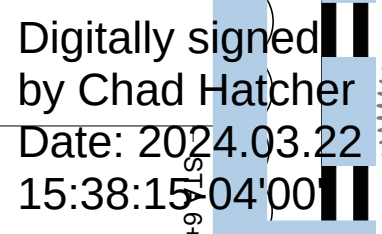
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RW-3.15



RW-3.16



RW-3.17

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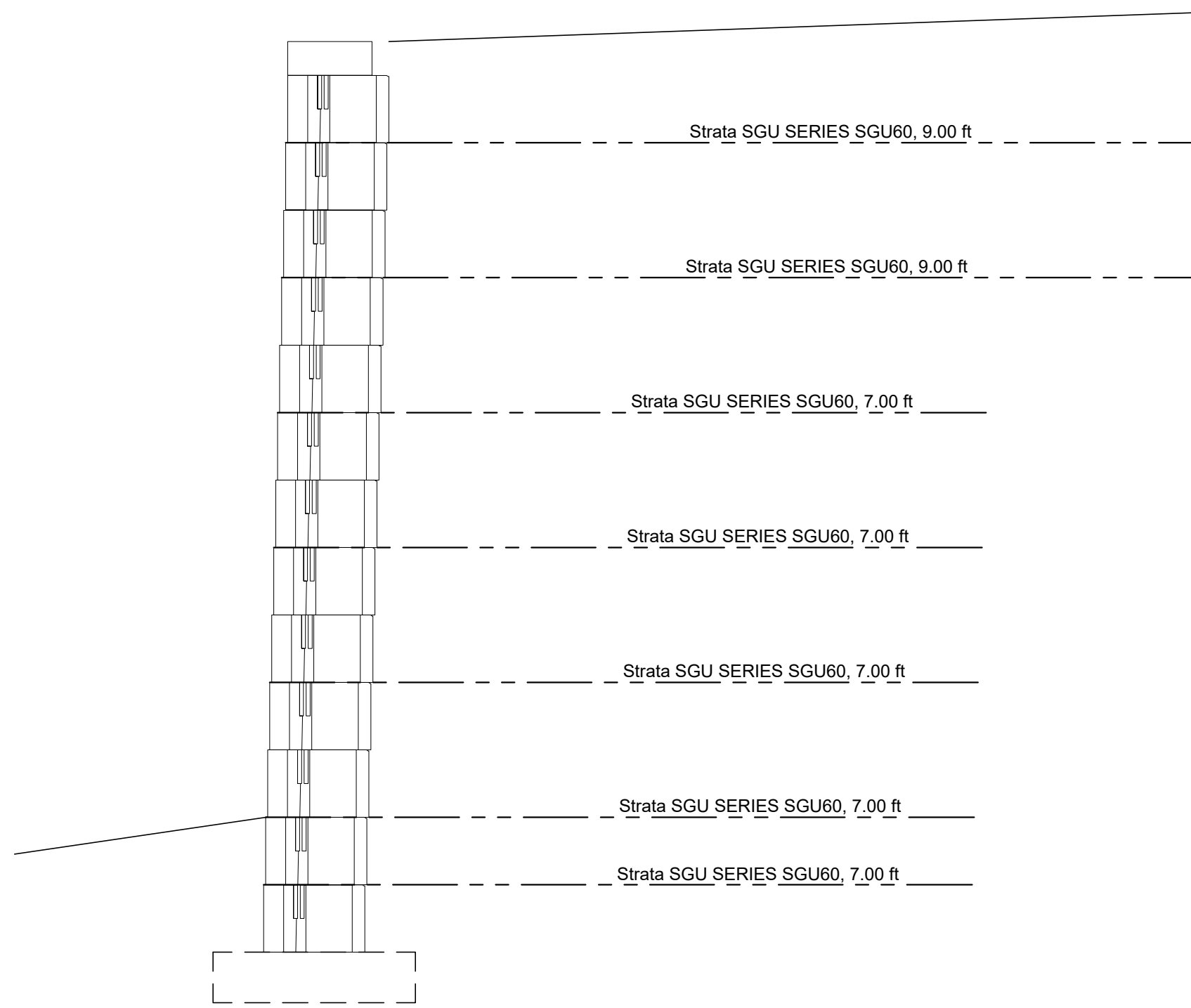
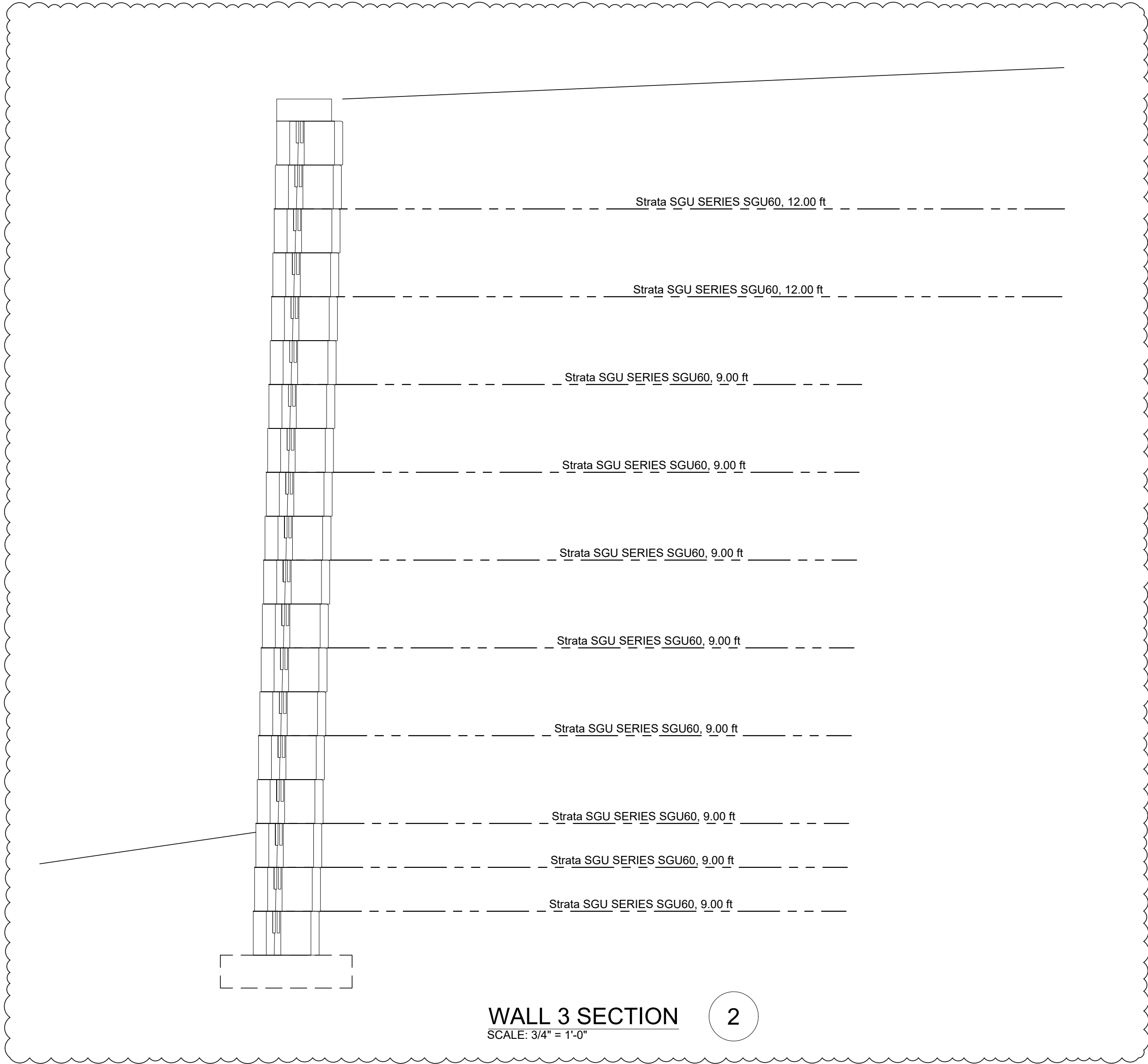
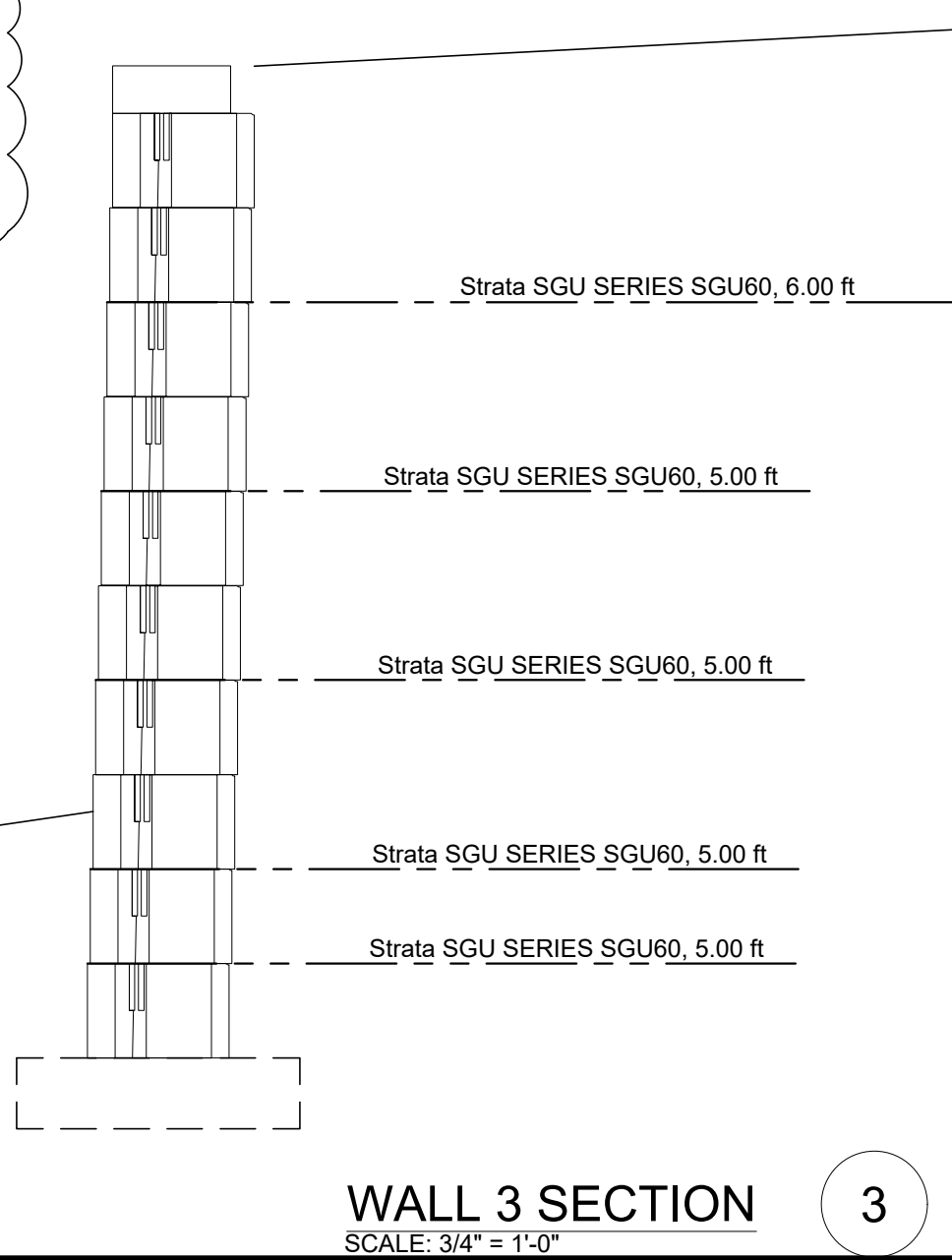
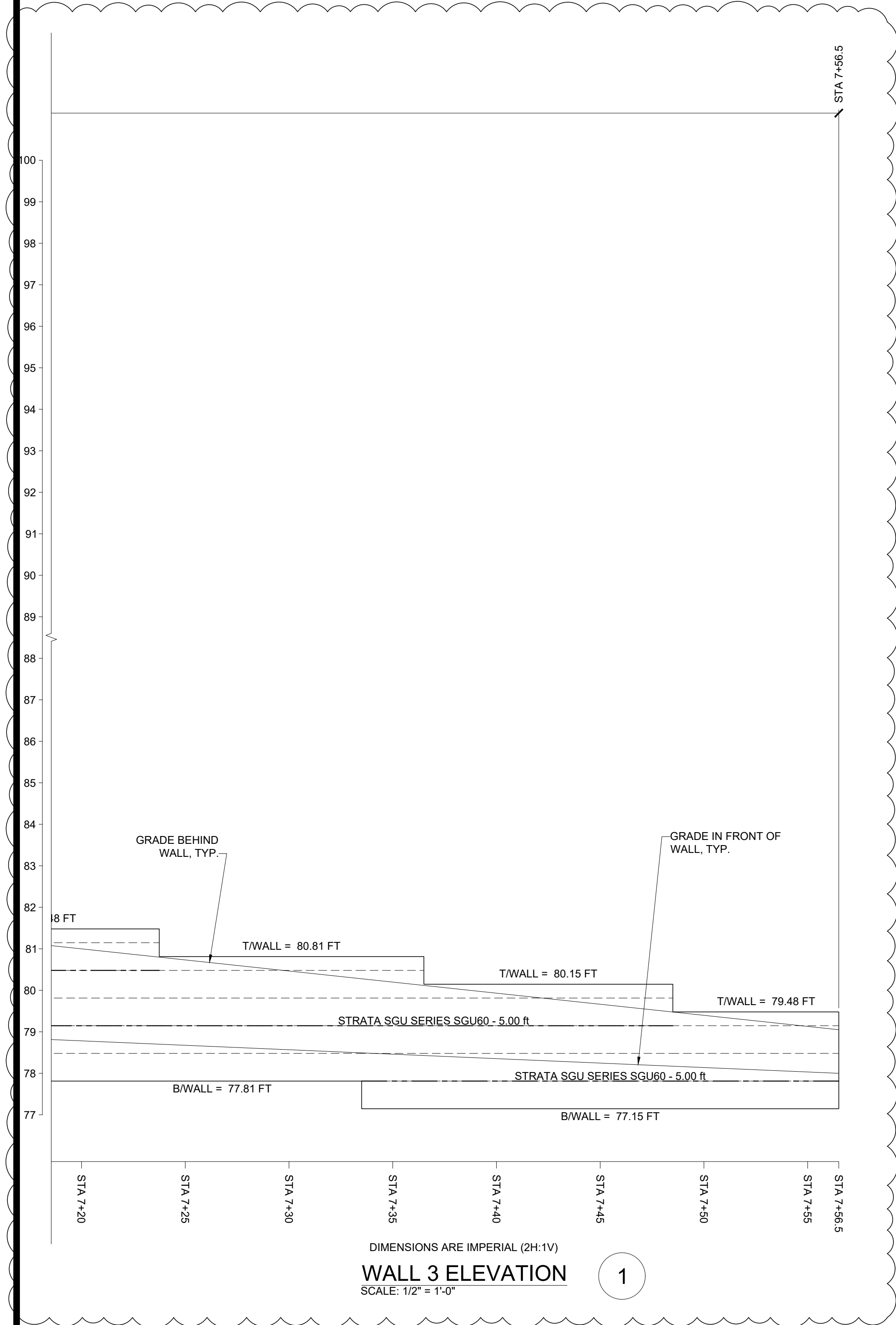


WALL 3 ELEVATION

KEENE ROAD RETAIL

APOPKA, FLORIDA

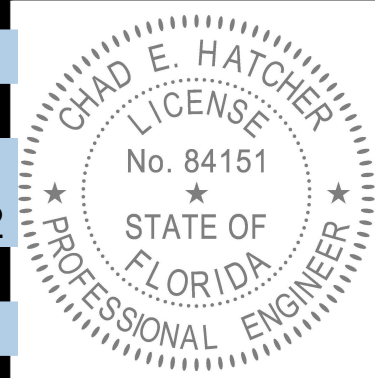
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312 E. VENICE AVE., SUITE 202
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WALL 3 ELEVATION & SECTIONS

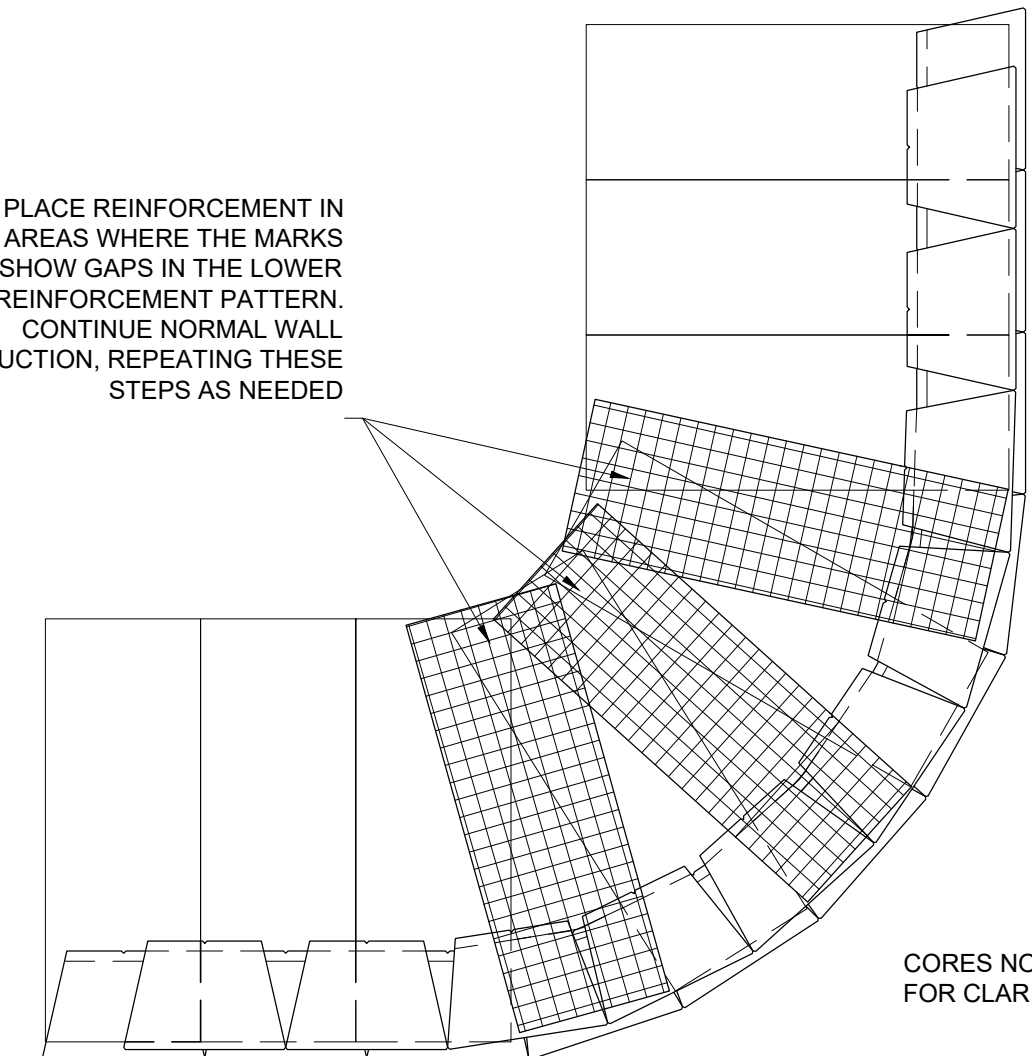
KEENE ROAD RETAIL
APOPKA, FLORIDA



3



TYPICAL INSIDE CURVE
SCALE: N.T.S.



TYPICAL OUTSIDE CURVE
SCALE: N.T.S.

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LICENSE
No. 84151
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

RW-4.1

Segmental Wall Calculations

Keene Road Retail
Lake Carter
Apopka, Florida

D.E. Project 2024-032

Prepared For:

TCL Construction Concepts
5451 S Sanford Ave
Sanford, FL 32773

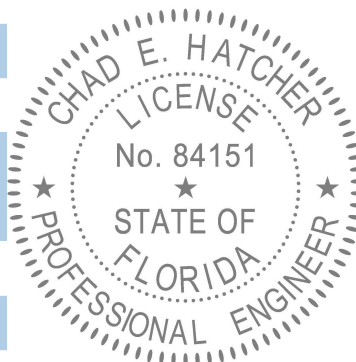
02-08-2024

Revised 02-20-2024

By:

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4021 Church St.
Sanford, FL 32771
www.devleneng.com

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Chad E. Hatcher, P.E.
Florida Reg. No. 84151

Table of Contents

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IV.	Wall 3 Calculations	
	A. Wall 3 Panel Results	page 123
	B. Wall 3 Summary & Design Inputs	page 126



Project Information

Client	TCL Construction Concepts		
Name	#24-032 Keene Road Retail - Lake Carter		
Site	Apopka, FL		
Revision	2	Created	2/19/2024
Standard	AASHTO 2010 (LRFD)		
Seismic As Comments	N/A		
Selected Facing Unit			
Licensors/Product Line:	Anchor Wall Systems, Inc.		
Name:	Diamond Pro PS		
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AnchorWall[®]

7.0 SOFTWARE

Number

Designer

Modified

CEH

2/20/2024

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Project Design Inputs

Design Standard AASHTO 2010 (LRFD)

Conventional/Common Load and Resistance Factors - Static

Term	Description	Minimum (as appl.)	Maximum (as appl.)
LFDC	Load - Dead Load (Structure)	0.90	1.25
LFES	Load - Earth Surcharge Load	0.75	1.50
LFEH	Load - Horz. Pressure of earth fill	0.90	1.50
LFLL	Load - Vehicular Live Load	0.00	1.75
LFEV	Load - Vert. Pressure of earth fill	1.00	1.35
BEARING	Resistance - Bearing	0.55	0.00
SLIDING	Resistance - Sliding	0.90	0.00

Reinforced Load and Resistance Factors - Static

Term	Description	Minimum (as appl.)	Maximum (as appl.)
LFDC	Load - Dead Load (Structure)	0.90	1.25
LFES	Load - Earth Surcharge Load	0.75	1.50
LFEH	Load - Horz. Pressure of earth fill	0.90	1.50
LFCT	Load - Vehicular Collision Force (Extreme Event 2)	0.00	1.00
LFLL	Load - Vehicular Live Load	0.00	1.75
LFEV	Load - Vert. Pressure of earth fill	1.00	1.35
BEARING	Resistance - Bearing	0.65	0.00
TCNN	Resistance - Connection	0.90	0.00
PULLOUT	Resistance - Pullout	0.90	0.00
SLIDING	Resistance - Sliding	1.00	0.00
TAL	Resistance - Tensile	0.90	0.00

Design Factors

Term	Description	Minimum (as appl.)	Maximum (as appl.)
RC	Reinforced coverage ratio	1.00	0.00

Selected Facing Unit

Licenser/Product Line: Anchor Wall Systems, Inc.

Name: Diamond Pro PS

Facing Height	Hu	0.67 ft
Facing Width	Lu	1.50 ft
Facing Depth	Wu	1.00 ft
Facing Weight	Xu	120 lb/ft ³
Center of Gravity	Gu	0.50 ft
Setback	Δu	0.02 ft
Batter	ω	1.70 °
Cap Height	Hcu	0.33 ft
Initial Shear Capacity	au	740.36 lb/ft
Apparent Shear Angle	λu	36.00 °
Maximum Shear Capacity	Vu(max)	3889.65 lb/ft

Selected Reinforcement Types

Reinforcements

SGU60 - Strata SGU SERIES SGU(Supplier: Strata SGU SERIES, Fill Type: Sands

Tult	4,111.31 lb/ft	RFcr	1.47	RFid	1.10	RFd	1.15
LTDS	2,210.92 lb/ft	Cds	0.80	Ci	0.80	α Correction	0.80

Connection/Shear Properties

αcs1	1,198.00 lb/ft	IP-1	1,983.00 lb/ft	αcs2	1,850.00 lb/ft	IP-2	4,000.00 lb/ft
αcs max	2,319.00 lb/ft	au	740.36 lb/ft	λu	36.00 lb/ft	Vu(max)	3,889.65 lb/ft
TLot Reduct.	1.00	cn RFcr	1.43	cn RFd	1.15		

Selected Soil Types

Soil Zone	Soil Type	Friction Angle ϕ	In Situ	
			Density γ [lb/ft ³]	Cohesion C_f [lb/ft ²]
Infill (i)	SP	30°	110.00	n/a
Retained (r)	SP	30°	110.00	n/a
Foundation (f)	SP	30°	110.00	0.00
Base (b)	GW	39°	140.00	n/a
Drainage (d)	GW	39°	140.00	n/a

Soil Glossary

CH:	Inorganic clays, high plasticity
CL:	Inorganic clays, low to medium plasticity, gravelly, sandy, silty, lean clays
GC:	Clayey gravels, poorly graded gravel-sand-clay mixtures
GM:	Silty gravels, poorly graded gravel-sand-silt mixtures
GP:	1/2"-3/4" clean crushed stone or crushed gravel
GW:	Well-graded gravels, gravel-sand. Little or no fines.
MH:	Inorganic clayey silts, elastic silts
ML:	Inorganic silts, very fine sands, silty or clayey, slight plasticity
SC:	Clayey sands, poorly graded sand-clay mixtures
SM:	Silty sands, poorly graded sand-silt mixtures
SP:	Poorly-graded sands, gravelly sands. Little or no fines.
SW:	Well-graded sands, gravelly sands. Little or no fines.

Analysis Summary**Lowest Values - Reinforced****Static Analysis**

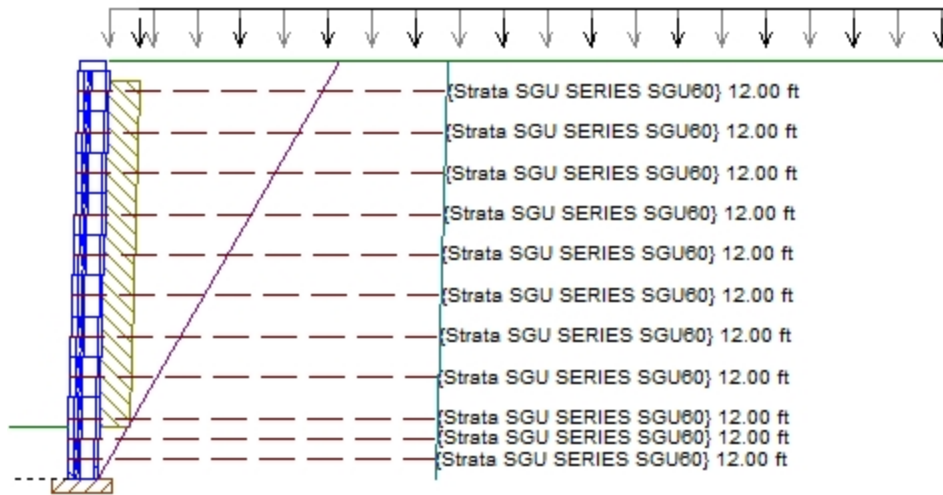
Test	Description	Section	Layer/ Course	Minimum Requirement	Result	Status
emax	Max Eccentricity	20		0.0000	5.5300	Pass
Rs	Max. Reinforcement Separation	20		0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	4		0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	6		0.0000	1.5000	Pass
Le	Min. Anchorage Length	5		3.0000	3.2264	Pass
L/H Ratio	Min. L/H Ratio	1		0.7000	0.9000	Pass
L	Min. Reinforcement Length	10		8.0000	9.0000	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	20		30.00	30.00	Pass
CDRsl	Base Sliding	5		1.00	1.67	Pass
CDRbc	Bearing Capacity	1		1.00	2.49	Pass
CDRct	Crest Toppling	13	9	1.00	1.47	Pass
CDRot	Overturning	1		1.00	3.42	Pass
CDRsl	Internal Sliding	1	1	1.00	1.80	Pass
CDRpo	Pullout	5	8	1.00	1.47	Pass
CDRto	Tensile Overstress	3	1	1.00	2.24	Pass
CDRcs	Connection Strength	3	1	1.00	1.02	Pass

Below Standard Values

None

Section 1 Details

Section 1 Cross-section



Section 1 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		67.06 ft
Base of Section		65.38 ft
Design Height	H	13.67 ft
Embedment Depth	Hemb	1.68 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.0200	Pass
L	Min. Reinforcement Length	8.0000	12.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	0.9000	Pass
Le	Min. Anchorage Length	3.0000	3.6870	Pass
MinHemb	Minimum Embedment	1.3300	1.6804	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	15.4000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.49	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.42	Pass
CDRsl	Base Sliding	1.00	1.68	Pass

Internal and Local Checks

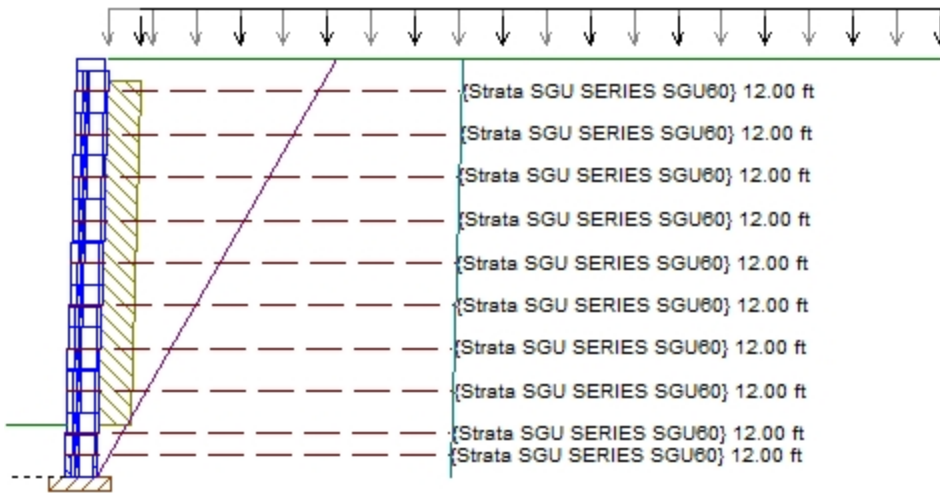
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.05	1.80	1.26	13.99	2.68

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	66.72		1.97	20.35	4.26
3	67.38		1.38	13.14	3.02
4	68.72		1.10	8.86	2.48
5	70.05		1.19	7.97	2.79
6	71.38		1.31	7.07	3.18
7	72.72		1.47	6.16	3.70
8	74.05		1.70	5.23	4.42
9	75.38		2.03	4.26	5.50
10	76.72		2.58	3.21	7.26
11	78.05		3.10	1.68	9.10

Section 2 Details

Section 2 Cross-section



Section 2 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		67.00 ft
Base of Section		65.38 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.62 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.2000	Pass
L	Min. Reinforcement Length	8.0000	12.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	0.9474	Pass
Le	Min. Anchorage Length	3.0000	4.0719	Pass
MinHemb	Minimum Embedment	1.3300	1.6168	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.2400	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.72	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.73	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

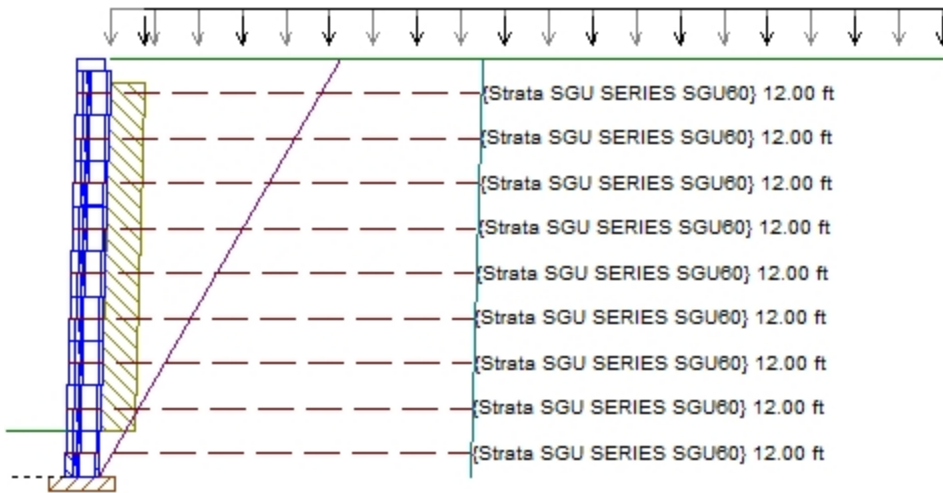
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.05	1.89	1.30	13.91	2.68

Elevation					
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	66.72	1.80	1.26	13.99	2.81
3	68.05		1.38	20.35	3.02
4	69.38		1.97	13.66	4.26
5	70.72		1.38	13.14	3.02
6	72.05		1.10	9.23	2.48
7	73.38		1.10	8.86	2.48
8	74.72		1.19	8.34	2.79
9	76.05		1.19	7.97	2.79
10	77.38		1.31	7.43	3.18

Section 3 Details

Section 3 Cross-section



Section 3 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		67.39 ft
Base of Section		66.05 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.1500	Pass
L	Min. Reinforcement Length	8.0000	12.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0000	Pass
Le	Min. Anchorage Length	3.0000	4.4567	Pass
MinHemb	Minimum Embedment	1.3300	1.3360	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.1300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.97	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	4.08	Pass
CDRsl	Base Sliding	1.00	1.83	Pass

Internal and Local Checks

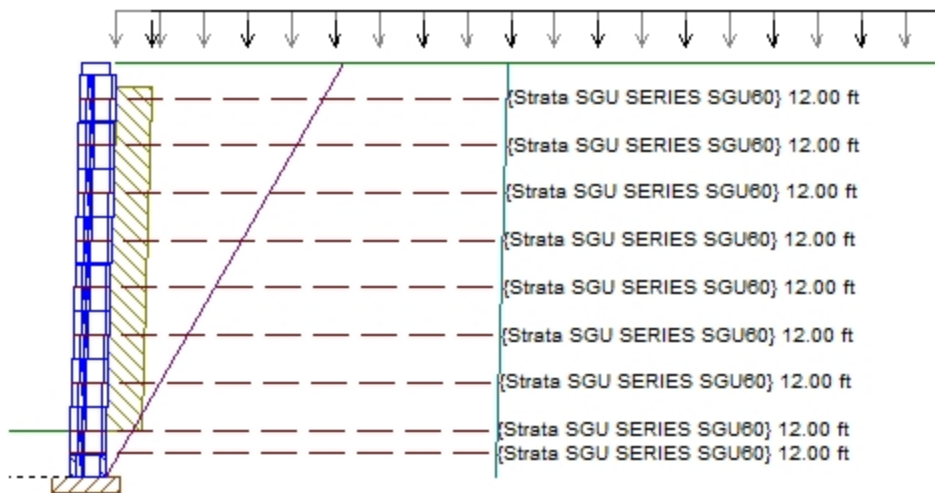
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.72	1.99	1.02	10.50	2.24

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.05	1.80	1.30	13.91	2.81
3	69.38	1.89	1.26	13.99	2.68
4	70.72		1.97	13.66	3.02
5	72.05		1.38	20.35	4.26
6	73.38		1.10	9.61	2.48
7	74.72		1.38	13.14	3.02
8	76.05		1.10	9.23	2.48
9	77.38		1.19	8.71	2.79

Section 4 Details

Section 4 Cross-section



Section 4 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		68.05 ft
Base of Section		66.72 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.9300	Pass
L	Min. Reinforcement Length	8.0000	12.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0588	Pass
Le	Min. Anchorage Length	3.0000	4.8415	Pass
MinHemb	Minimum Embedment	1.3300	1.3363	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.0800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.23	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	4.49	Pass
CDRsl	Base Sliding	1.00	1.91	Pass

Internal and Local Checks

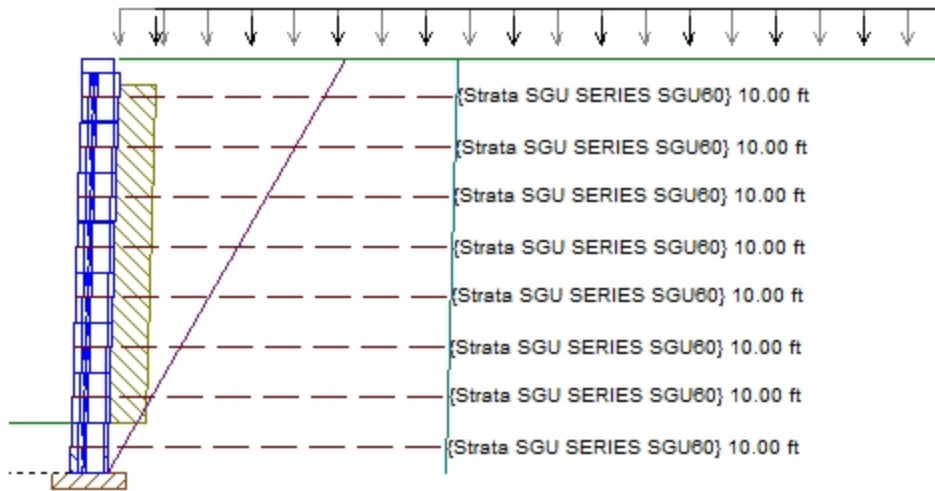
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	67.38	1.89	1.39	13.73	3.10

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.05	2.10	1.26	13.91	2.81
3	69.38	1.99	1.02	10.50	2.68
4	70.72	1.80	1.30	13.99	2.24
5	72.05		1.38	20.35	3.35
6	73.38		1.48	13.66	4.26
7	74.72		1.97	13.50	3.02
8	76.05		1.10	9.61	2.48
9	77.38		1.38	13.14	3.02

Section 5 Details

Section 5 Cross-section



Section 5 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		68.71 ft
Base of Section		67.38 ft
Design Height	H	11.00 ft
Embedment Depth	Hemb	1.33 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.7500	Pass
L	Min. Reinforcement Length	8.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	0.9375	Pass
Le	Min. Anchorage Length	3.0000	3.2264	Pass
MinHemb	Minimum Embedment	1.3300	1.3301	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	15.4000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.52	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.45	Pass
CDRsl	Base Sliding	1.00	1.67	Pass

Internal and Local Checks

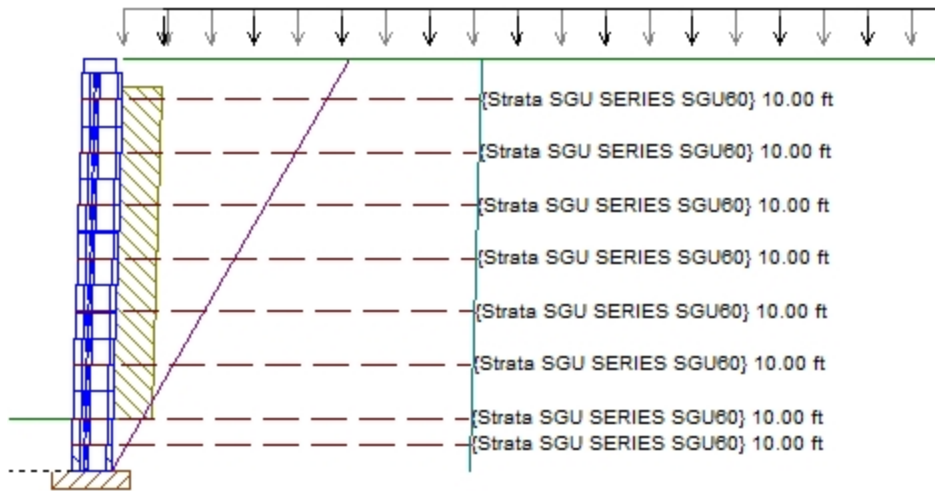
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.05	1.80	1.30	8.41	2.48

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.38	1.92	1.10	13.99	2.68
3	70.72	1.99	1.26	13.73	2.81
4	72.05	1.89	1.39	13.91	3.10
5	73.38	2.10	1.02	10.50	2.24
6	74.72		1.38	20.35	4.26
7	76.05		1.48	13.66	3.35
8	77.38		1.97	13.50	3.02

Section 6 Details

Section 6 Cross-section



Section 6 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		69.38 ft
Base of Section		68.05 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.33 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.8000	Pass
L	Min. Reinforcement Length	8.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0000	Pass
Le	Min. Anchorage Length	3.0000	3.6115	Pass
MinHemb	Minimum Embedment	1.3300	1.3323	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.0200	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.80	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.83	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

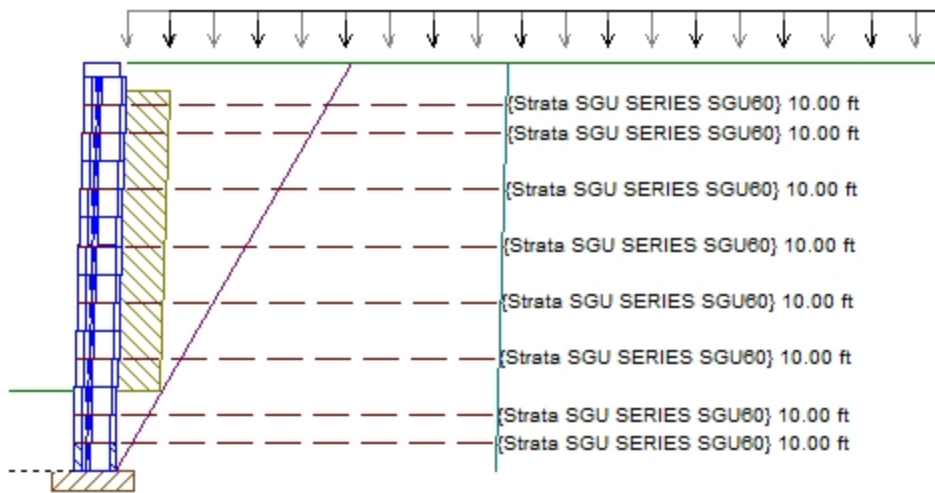
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.72	1.89	1.02	10.50	3.45

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.38	2.10	1.50	10.96	2.24
3	70.72	2.04	1.39	13.99	3.10
4	72.05	1.80	1.10	8.41	2.48
5	73.38	1.92	1.30	13.91	2.68
6	74.72	1.99	1.26	13.73	2.81
7	76.05		1.48	13.66	3.35
8	77.38		1.38	20.35	4.26

Section 7 Details

Section 7 Cross-section



Section 7 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		77.72 ft
Bottom Grade		69.98 ft
Base of Section		68.05 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.93 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	24.9600	Pass
L	Min. Reinforcement Length	8.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0714	Pass
Le	Min. Anchorage Length	3.0000	3.9964	Pass
MinHemb	Minimum Embedment	1.3300	1.9311	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.11	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	4.28	Pass
CDRsl	Base Sliding	1.00	1.85	Pass

Internal and Local Checks

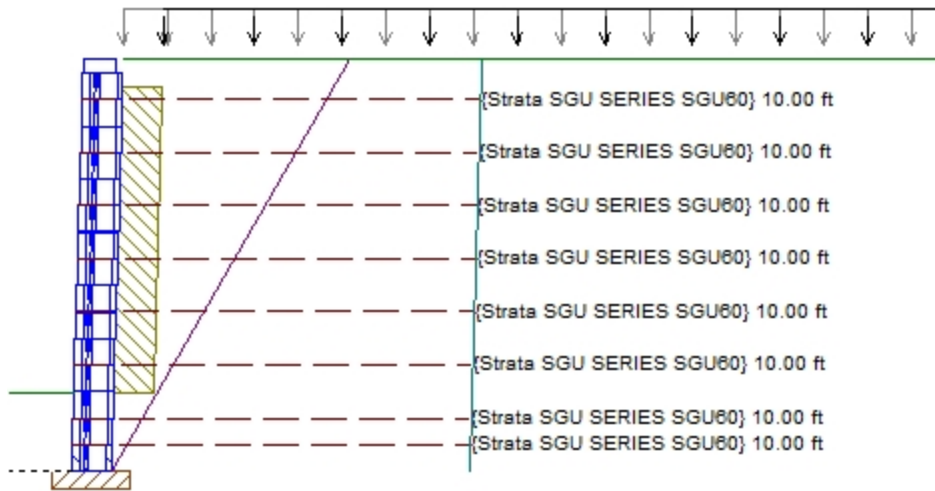
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.72	1.92	1.30	13.73	2.81

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.38	1.99	1.26	10.85	3.66
3	70.72	2.18	1.56	13.91	2.24
4	72.05	1.80	1.02	10.96	3.45
5	73.38	1.89	1.50	10.50	2.48
6	74.72	2.10	1.10	8.41	3.10
7	76.05	2.04	1.39	13.99	2.68
8	76.72		1.48	10.60	4.03

Section 8 Details

Section 8 Cross-section



Section 8 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		70.00 ft
Base of Section		68.05 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.95 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	23.2200	Pass
L	Min. Reinforcement Length	8.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0000	Pass
Le	Min. Anchorage Length	3.0000	3.6115	Pass
MinHemb	Minimum Embedment	1.3300	1.9475	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.0200	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.80	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.83	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

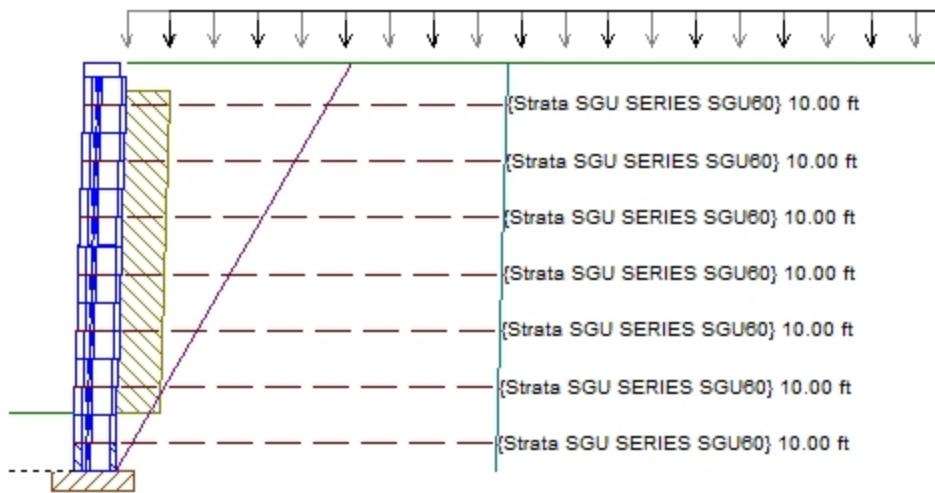
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.72	2.10	1.10	8.41	2.68

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.38	1.89	1.39	13.99	3.45
3	70.72	2.04	1.50	10.96	3.10
4	72.05	2.04	1.50	10.85	3.66
5	73.38	1.99	1.26	13.73	2.81
6	74.72	1.92	1.30	13.91	2.24
7	76.05	1.80	1.02	10.50	2.48
8	77.38	2.18	1.56	10.96	3.45

Section 9 Details

Section 9 Cross-section



Section 9 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		70.10 ft
Base of Section		68.72 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	16.7100	Pass
L	Min. Reinforcement Length	8.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0714	Pass
Le	Min. Anchorage Length	3.0000	3.9964	Pass
MinHemb	Minimum Embedment	1.3300	1.3842	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.11	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	4.28	Pass
CDRsl	Base Sliding	1.00	1.85	Pass

Internal and Local Checks

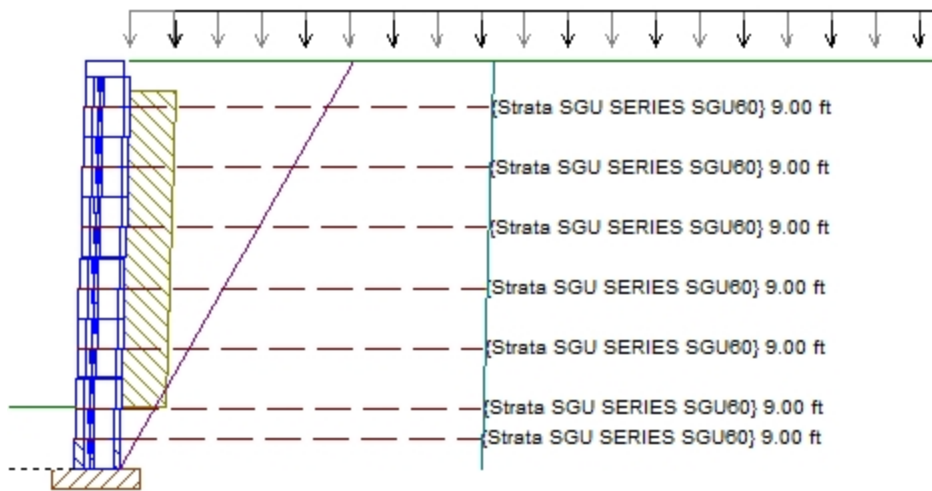
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	69.38	1.80	1.02	10.50	2.48

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	70.72	1.92	1.30	10.96	3.45
3	72.05	2.18	1.19	8.27	2.79
4	73.38	2.18	1.56	13.91	3.10
5	74.72	1.99	1.39	13.99	3.45
6	76.05	1.89	1.10	10.96	2.68
7	77.38	2.10	1.50	8.41	2.24

Section 10 Details

Section 10 Cross-section



Section 10 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		70.77 ft
Base of Section		69.38 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	18.1500	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0385	Pass
Le	Min. Anchorage Length	3.0000	3.3812	Pass
MinHemb	Minimum Embedment	1.3300	1.3825	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.8600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.86	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	3.91	Pass
CDRsl	Base Sliding	1.00	1.76	Pass

Internal and Local Checks

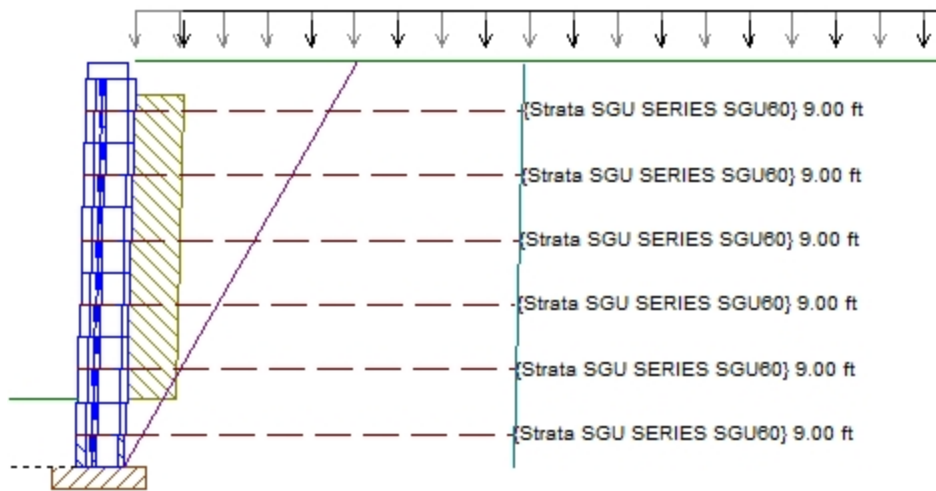
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.05	2.10	1.26	13.73	2.81

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	70.72	1.89	1.50	8.41	3.66
3	72.05	2.04	1.64	9.49	3.90
4	73.38	2.16	1.50	10.85	2.24
5	74.72	2.04	1.10	10.50	2.79
6	76.05	1.92	1.30	10.96	3.45
7	77.38	1.80	1.02	8.27	2.48

Section 11 Details

Section 11 Cross-section



Section 11 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		71.42 ft
Base of Section		70.05 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.37 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.7100	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1250	Pass
Le	Min. Anchorage Length	3.0000	3.7661	Pass
MinHemb	Minimum Embedment	1.3300	1.3724	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.4500	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.21	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	4.44	Pass
CDRsl	Base Sliding	1.00	1.86	Pass

Internal and Local Checks

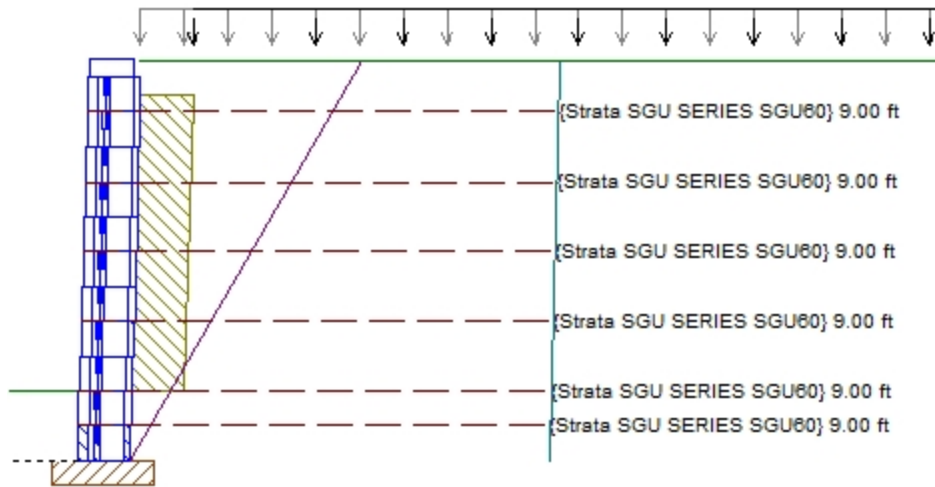
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.72	2.18	1.19	13.99	2.68

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.05	1.80	1.02	10.96	3.10
3	73.38	1.99	1.39	7.15	3.18
4	74.72	2.34	1.31	13.91	3.45
5	76.05	2.18	1.56	8.27	3.66
6	77.38	1.92	1.64	9.49	3.90

Section 12 Details

Section 12 Cross-section



Section 12 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		72.05 ft
Base of Section		70.72 ft
Design Height	H	7.67 ft
Embedment Depth	Hemb	1.33 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	20.9900	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2273	Pass
Le	Min. Anchorage Length	3.0000	4.1509	Pass
MinHemb	Minimum Embedment	1.3300	1.3304	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.1300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.60	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	5.08	Pass
CDRsl	Base Sliding	1.00	1.98	Pass

Internal and Local Checks

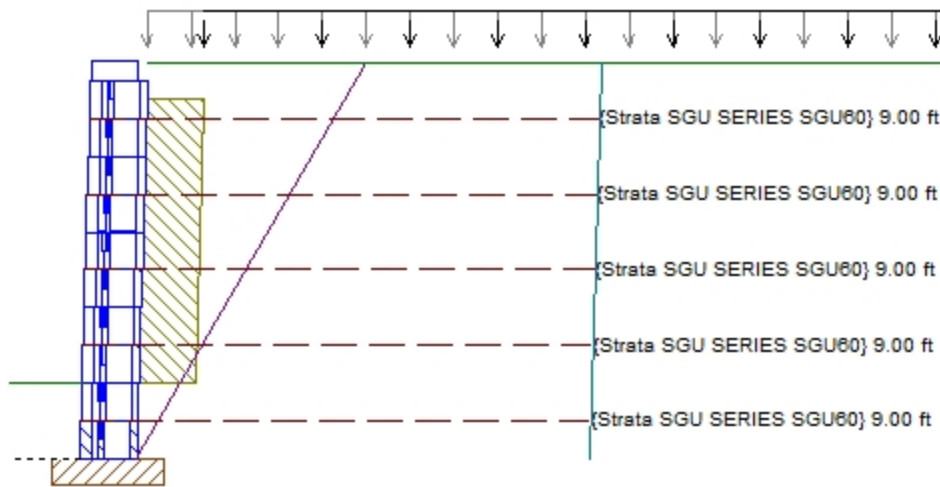
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	71.38	2.04	1.10	10.50	3.45

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.05	2.10	1.50	13.73	2.48
3	73.38	1.89	1.30	10.96	4.47
4	74.72	2.54	1.81	9.22	2.79
5	76.05	2.16	1.50	10.85	2.81
6	77.38	2.04	1.26	7.15	3.10

Section 13 Details

Section 13 Cross-section



Section 13 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.38 ft
Bottom Grade		72.72 ft
Base of Section		71.38 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	23.6800	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3500	Pass
Le	Min. Anchorage Length	3.0000	4.5358	Pass
MinHemb	Minimum Embedment	1.3300	1.3406	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	9.9300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.04	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	5.88	Pass
CDRsl	Base Sliding	1.00	2.11	Pass

Internal and Local Checks

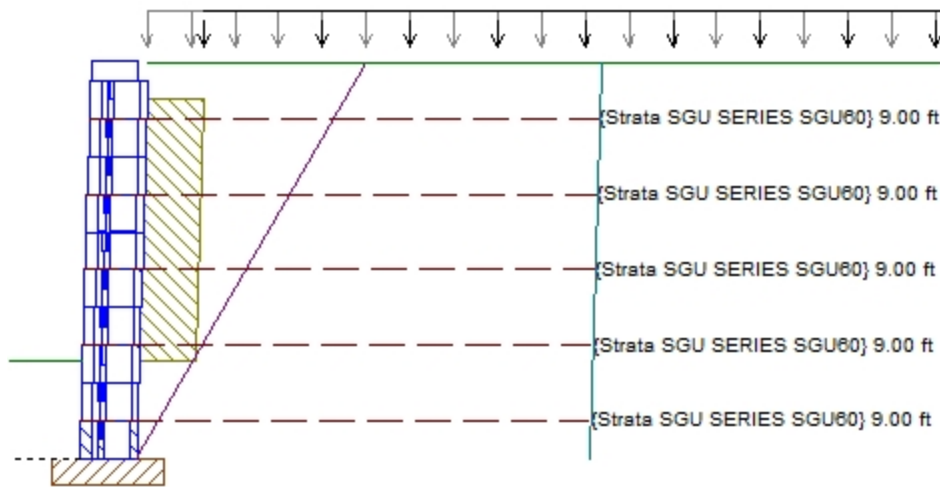
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.05	1.92	1.56	9.49	3.90

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	73.38	2.18	1.02	13.91	3.18
3	74.72	1.80	1.19	8.41	2.24
4	76.05	2.78	1.47	6.94	3.70
5	77.38	2.34	1.31	8.27	3.66

Section 14 Details

Section 14 Cross-section



Section 14 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		73.77 ft
Base of Section		72.05 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.72 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	32.4500	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3500	Pass
Le	Min. Anchorage Length	3.0000	4.5358	Pass
MinHemb	Minimum Embedment	1.3300	1.7152	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	9.9300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.04	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	5.88	Pass
CDRsl	Base Sliding	1.00	2.11	Pass

Internal and Local Checks

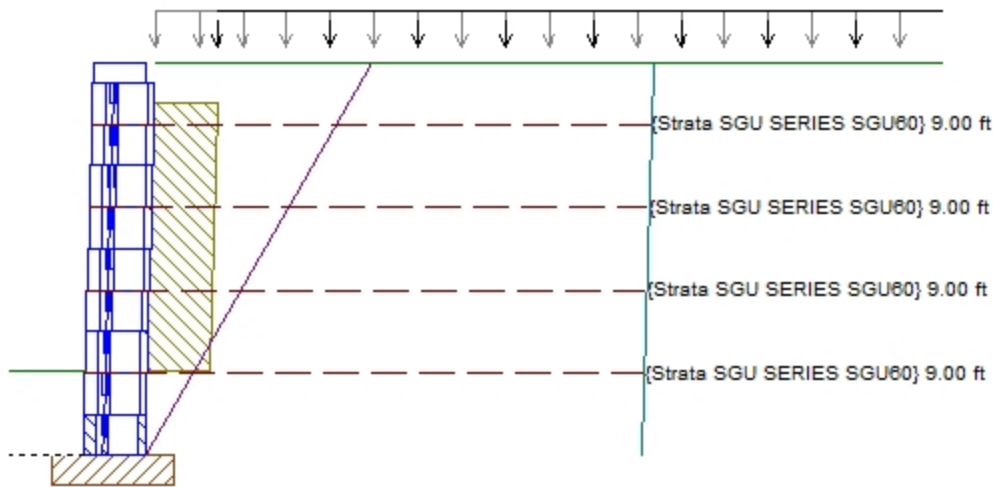
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.72	2.04	1.26	7.15	3.45

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	74.05	2.10	1.81	9.22	2.68
3	75.38	1.89	1.50	10.50	2.81
4	76.72	2.04	1.47	6.94	3.70
5	78.05	2.78	1.50	10.85	3.10

Section 15 Details

Section 15 Cross-section



Section 15 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		74.08 ft
Base of Section		72.72 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	27.3700	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.5000	Pass
Le	Min. Anchorage Length	3.0000	4.9209	Pass
MinHemb	Minimum Embedment	1.3300	1.3609	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	8.8400	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.54	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	6.89	Pass
CDRsl	Base Sliding	1.00	2.27	Pass

Internal and Local Checks

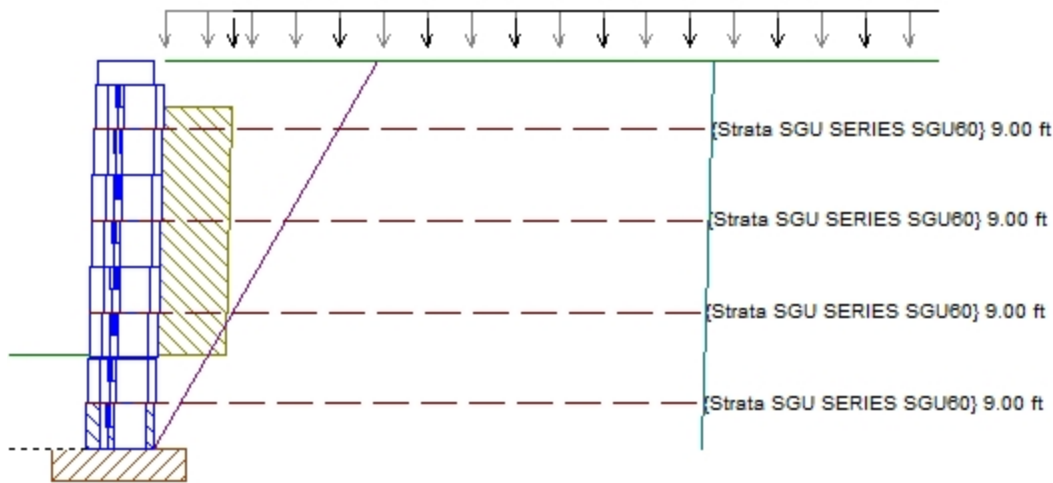
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.05	1.92	1.47	13.73	3.45

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	75.38	2.18	1.02	13.91	2.24
3	76.72	1.80	1.56	9.49	3.70
4	78.05	2.78	1.31	13.99	2.48

Section 16 Details

Section 16 Cross-section



Section 16 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		74.75 ft
Base of Section		73.38 ft
Design Height	H	5.67 ft
Embedment Depth	Hemb	1.37 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	31.9200	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.6875	Pass
Le	Min. Anchorage Length	3.0000	5.3058	Pass
MinHemb	Minimum Embedment	1.3300	1.3714	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	7.8600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	5.10	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	8.20	Pass
CDRsl	Base Sliding	1.00	2.45	Pass

Internal and Local Checks

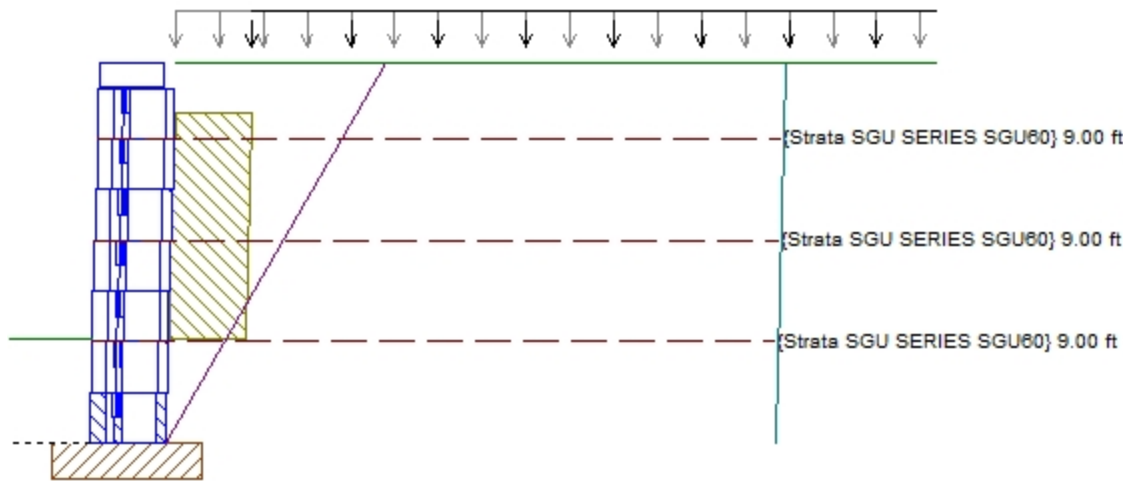
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.05	2.04	1.47	8.41	3.18

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	75.38	2.04	1.26	6.94	3.70
3	76.72	2.10	1.81	7.15	3.45
4	78.05	2.16	1.10	6.64	4.42

Section 17 Details

Section 17 Cross-section



Section 17 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		75.43 ft
Base of Section		74.05 ft
Design Height	H	5.00 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	38.1800	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.9286	Pass
Le	Min. Anchorage Length	3.0000	5.6906	Pass
MinHemb	Minimum Embedment	1.3300	1.3816	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	7.0200	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	5.76	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	9.93	Pass
CDRsl	Base Sliding	1.00	2.66	Pass

Internal and Local Checks

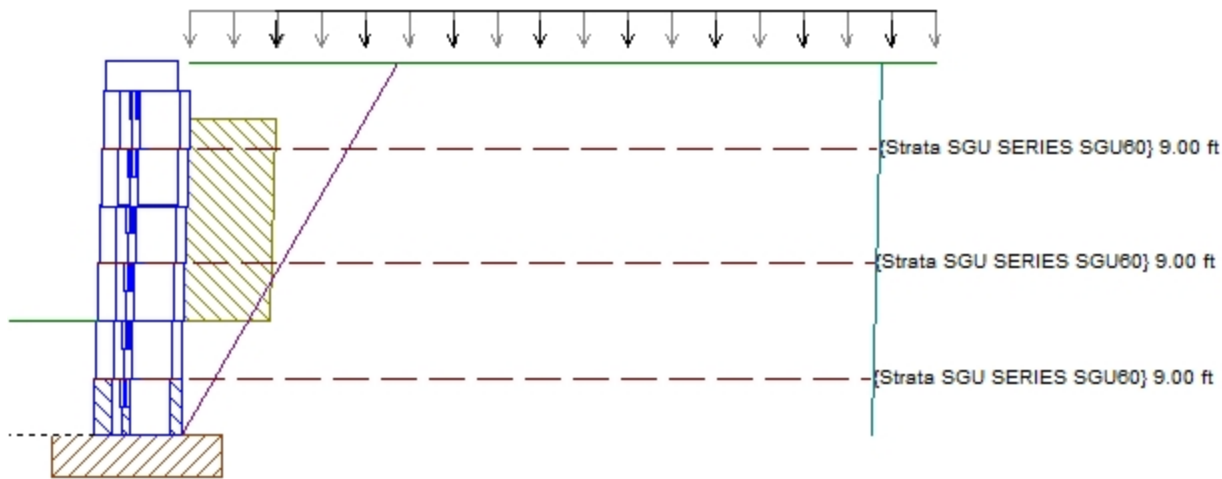
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	75.38	1.92	1.47	13.91	3.66

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	76.72	2.18	1.02	13.73	2.48
3	78.05	1.80	1.31	13.99	3.70

Section 18 Details

Section 18 Cross-section



Section 18 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		76.06 ft
Base of Section		74.72 ft
Design Height	H	4.33 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	44.7400	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.2500	Pass
Le	Min. Anchorage Length	3.0000	6.0755	Pass
MinHemb	Minimum Embedment	1.3300	1.3396	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	6.3300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	6.52	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	12.30	Pass
CDRsl	Base Sliding	1.00	2.91	Pass

Internal and Local Checks

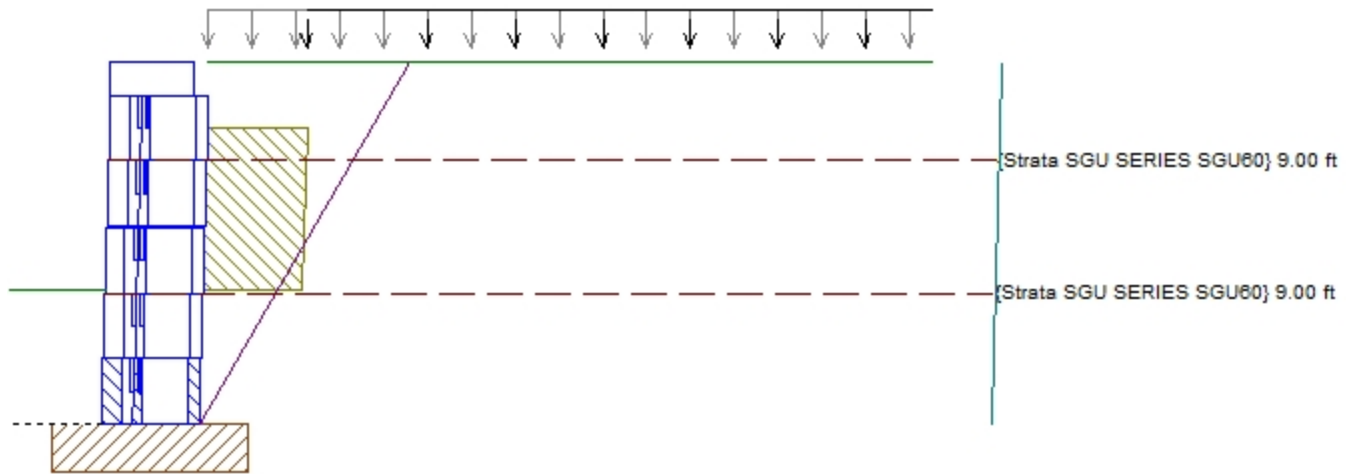
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	75.38	2.04	1.39	9.22	3.45

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	76.72	2.16	1.26	6.94	2.24
3	78.05	2.10	1.47	8.41	3.70

Section 19 Details

Section 19 Cross-section



Section 19 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		76.73 ft
Base of Section		75.38 ft
Design Height	H	3.67 ft
Embedment Depth	Hemb	1.35 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	58.2500	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.7000	Pass
Le	Min. Anchorage Length	3.0000	6.4603	Pass
MinHemb	Minimum Embedment	1.3300	1.3497	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	5.8100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	7.41	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	15.70	Pass
CDRsl	Base Sliding	1.00	3.22	Pass

Internal and Local Checks

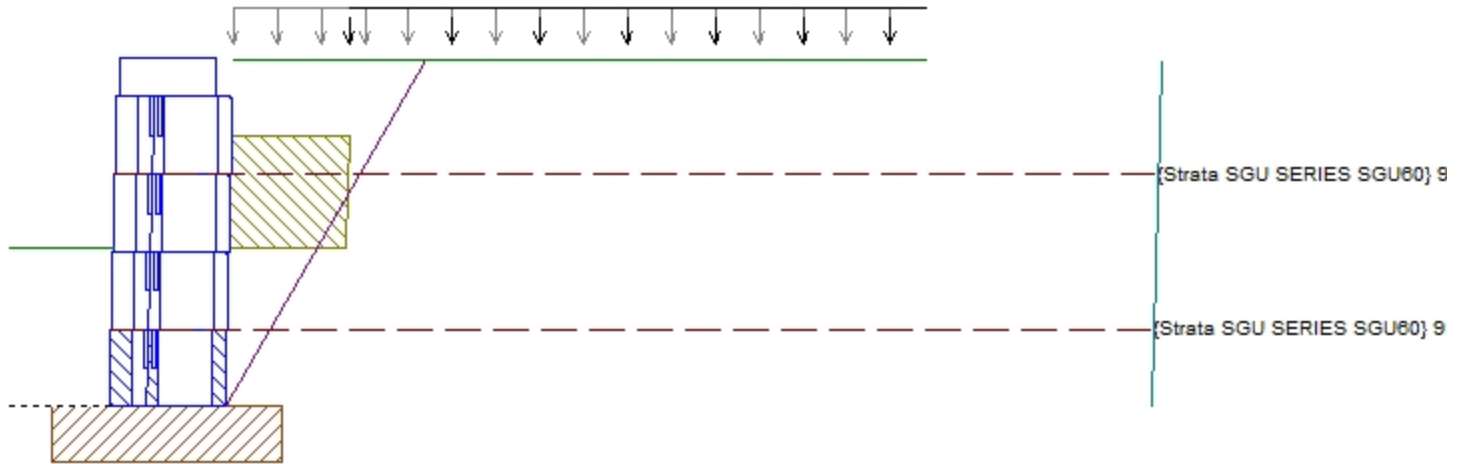
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	76.72	1.92	1.47	10.96	2.79

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
2	78.05	2.18	1.02	13.73	3.66

Section 20 Details

Section 20 Cross-section



Section 20 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	1.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.05 ft
Bottom Grade		77.41 ft
Base of Section		76.05 ft
Design Height	H	3.00 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	82.9000	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	3.3750	Pass
Le	Min. Anchorage Length	3.0000	6.8451	Pass
MinHemb	Minimum Embedment	1.3300	1.3599	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	5.5300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	8.48	Pass
CDRct	Crest Toppling	1.00	1.47	Pass
CDRot	Overturning	1.00	20.87	Pass
CDRsl	Base Sliding	1.00	3.61	Pass

Internal and Local Checks

Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	76.72	2.16	1.26	10.85	3.18

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	78.05	2.54	1.70	6.94	2.24

Project Design Inputs

Design Standard AASHTO 2010 (LRFD)

Conventional/Common Load and Resistance Factors - Static

Term	Description	Minimum (as appl.)	Maximum (as appl.)
LFDC	Load - Dead Load (Structure)	0.90	1.25
LFES	Load - Earth Surcharge Load	0.75	1.50
LFEH	Load - Horz. Pressure of earth fill	0.90	1.50
LFLL	Load - Vehicular Live Load	0.00	1.75
LFEV	Load - Vert. Pressure of earth fill	1.00	1.35
BEARING	Resistance - Bearing	0.55	0.00
SLIDING	Resistance - Sliding	0.90	0.00

Reinforced Load and Resistance Factors - Static

Term	Description	Minimum (as appl.)	Maximum (as appl.)
LFDC	Load - Dead Load (Structure)	0.90	1.25
LFES	Load - Earth Surcharge Load	0.75	1.50
LFEH	Load - Horz. Pressure of earth fill	0.90	1.50
LFCT	Load - Vehicular Collision Force (Extreme Event 2)	0.00	1.00
LFLL	Load - Vehicular Live Load	0.00	1.75
LFEV	Load - Vert. Pressure of earth fill	1.00	1.35
BEARING	Resistance - Bearing	0.65	0.00
TCNN	Resistance - Connection	0.90	0.00
PULLOUT	Resistance - Pullout	0.90	0.00
SLIDING	Resistance - Sliding	1.00	0.00
TAL	Resistance - Tensile	0.90	0.00

Design Factors

Term	Description	Minimum (as appl.)	Maximum (as appl.)
RC	Reinforced coverage ratio	1.00	0.00

Selected Facing Unit

Licensors/Product Line: Anchor Wall Systems, Inc.

Name: Diamond Pro PS

Facing Height	Hu	0.67 ft
Facing Width	Lu	1.50 ft
Facing Depth	Wu	1.00 ft
Facing Weight	Xu	120 lb/ft ³
Center of Gravity	Gu	0.50 ft
Setback	Δu	0.02 ft
Batter	ω	1.70 °
Cap Height	Hcu	0.33 ft
Initial Shear Capacity	au	740.36 lb/ft
Apparent Shear Angle	λu	36.00 °
Maximum Shear Capacity	Vu(max)	3889.65 lb/ft

Selected Reinforcement Types

Reinforcements

SGU60 - Strata SGU SERIES SGU(Supplier: Strata SGU SERIES, Fill Type: Sands

Tult	4,111.31 lb/ft	RFcr	1.47	RFid	1.10	RFd	1.15
LTDS	2,210.92 lb/ft	Cds	0.80	Ci	0.80	α Correction	0.80

Connection/Shear Properties

αcs1	1,198.00 lb/ft	IP-1	1,983.00 lb/ft	αcs2	1,850.00 lb/ft	IP-2	4,000.00 lb/ft
αcs max	2,319.00 lb/ft	au	740.36 lb/ft	λu	36.00 lb/ft	Vu(max)	3,889.65 lb/ft
TLot Reduct.	1.00	cn RFcr	1.43	cn RFd	1.15		

SGU80 - Strata SGU SERIES SGU(Supplier: Strata SGU SERIES, Fill Type: Sands

Tult	5,481.74 lb/ft	RFcr	1.47	RFid	1.10	RFd	1.15
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LTDS	2,947.89 lb/ft	Cds	0.80	Ci	0.80	α Correction	0.80
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Connection/Shear Properties

α cs1	1,098.00 lb/ft	IP-1	2,196.00 lb/ft	α cs2	2,111.00 lb/ft	IP-2	4,000.00 lb/ft
α cs max	2,536.00 lb/ft	au	740.36 lb/ft	λ u	36.00 lb/ft	Vu(max)	3,889.65 lb/ft
TLot Reduct.	1.00	cn RFcr	1.43	cn RFd	1.15		

Selected Soil Types

Soil Zone	Soil Type	Friction Angle ϕ	In Situ	
			Density γ [lb/ft ³]	Cohesion C_f [lb/ft ²]
Infill (i)	SP	30°	110.00	n/a
Retained (r)	SP	30°	110.00	n/a
Foundation (f)	SP	30°	110.00	0.00
Base (b)	GW	39°	140.00	n/a
Drainage (d)	GP	38°	125.00	n/a

Soil Glossary

CH:	Inorganic clays, high plasticity
CL:	Inorganic clays, low to medium plasticity, gravelly, sandy, silty, lean clays
GC:	Clayey gravels, poorly graded gravel-sand-clay mixtures
GM:	Silty gravels, poorly graded gravel-sand-silt mixtures
GP:	1/2"-3/4" clean crushed stone or crushed gravel
GW:	Well-graded gravels, gravel-sand. Little or no fines.
MH:	Inorganic clayey silts, elastic silts
ML:	Inorganic silts, very fine sands, silty or clayey, slight plasticity
SC:	Clayey sands, poorly graded sand-clay mixtures
SM:	Silty sands, poorly graded sand-silt mixtures
SP:	Poorly-graded sands, gravelly sands. Little or no fines.
SW:	Well-graded sands, gravelly sands. Little or no fines.

Analysis Summary

Lowest Values - Reinforced

Static Analysis

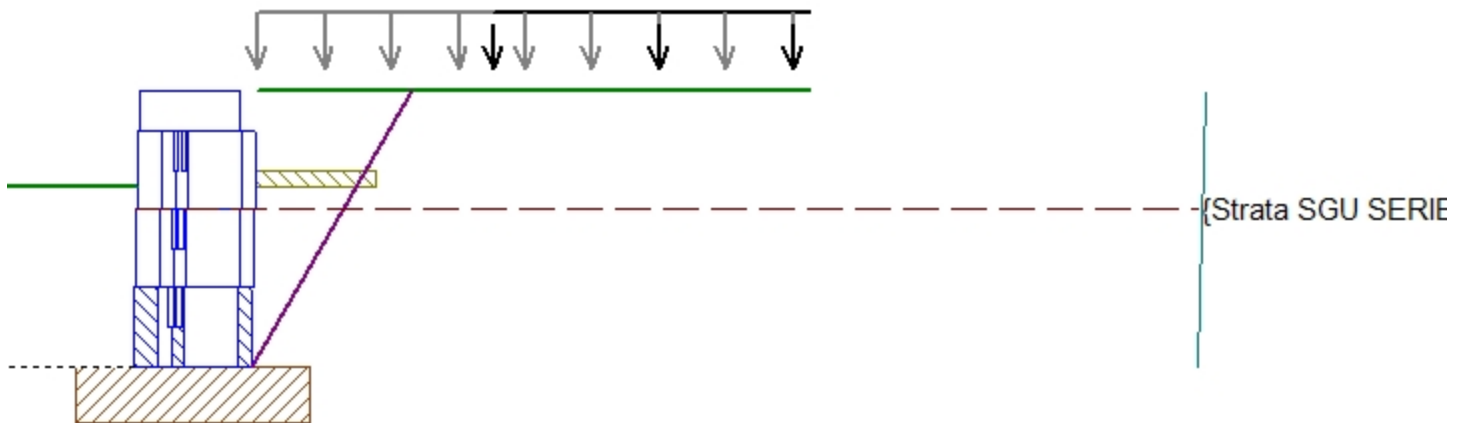
Test	Description	Section	Layer/ Course	Minimum Requirement	Result	Status
emax	Max Eccentricity	1		0.0000	6.4800	Pass
Rs	Max. Reinforcement Separation	2		0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	28		0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	35		0.0000	1.5000	Pass
Le	Min. Anchorage Length	32		3.0000	4.5358	Pass
L/H Ratio	Min. L/H Ratio	14		0.7000	0.9750	Pass
L	Min. Reinforcement Length	32		8.0000	9.0000	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	9		30.00	30.00	Pass
CDRsl	Base Sliding	14		1.00	1.56	Pass
CDRbc	Bearing Capacity	14		1.00	2.46	Pass
CDRct	Crest Toppling	36	5	1.00	2.82	Pass
CDRot	Overturning	14		1.00	3.28	Pass
CDRsl	Internal Sliding	14	1	1.00	1.64	Pass
CDRpo	Pullout	32	5	1.00	1.31	Pass
CDRto	Tensile Overstress	14	1	1.00	2.43	Pass
CDRcs	Connection Strength	35	1	1.00	1.01	Pass

Below Standard Values

None

Section 1 Details

Section 1 Cross-section



Section 1 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		76.37 ft
Bottom Grade		75.56 ft
Base of Section		74.03 ft
Design Height	H	2.33 ft
Embedment Depth	Hemb	1.53 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	190.2100	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	4.5000	Pass
Le	Min. Anchorage Length	3.0000	7.2303	Pass
MinHemb	Minimum Embedment	1.3300	1.5292	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	6.4800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	6.77	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	18.75	Pass
CDRsl	Base Sliding	1.00	2.77	Pass

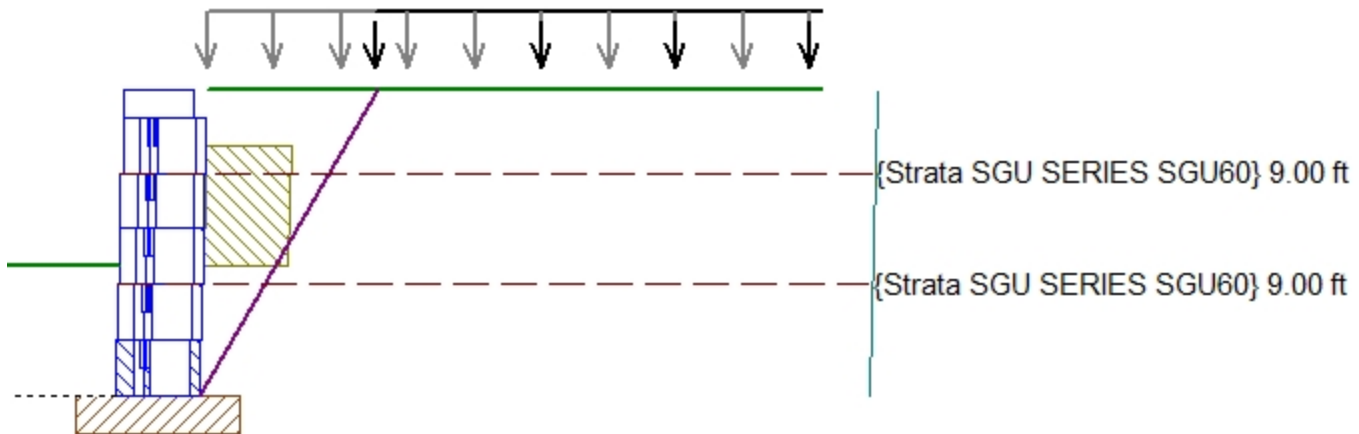
Internal and Local Checks

Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	75.37	10.54	1.30	1.38	3.81

Section 2 Details

Section 2 Cross-section



Section 2 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	250 lb/ft ²
Live Offset	q_{lofs}	2.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		77.03 ft
Bottom Grade		74.91 ft
Base of Section		73.37 ft
Design Height	H	3.67 ft
Embedment Depth	H _{emb}	1.54 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	72.3700	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.7000	Pass
Le	Min. Anchorage Length	3.0000	6.4603	Pass
MinHemb	Minimum Embedment	1.3300	1.5394	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	7.2600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	6.06	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	10.59	Pass
CDRsl	Base Sliding	1.00	2.31	Pass

Internal and Local Checks

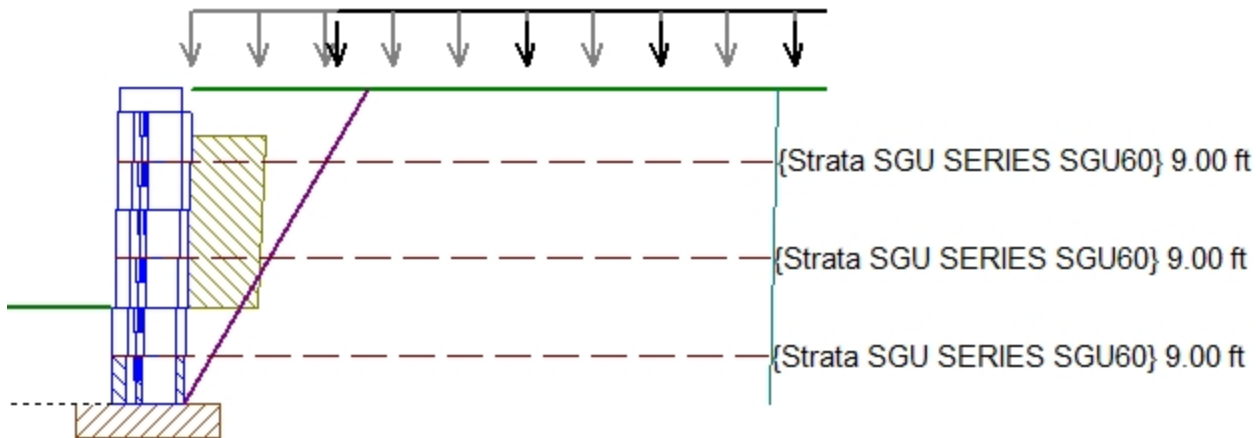
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.70	5.16	1.19	2.40	3.34

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	76.03	10.54	1.30	1.38	3.81

Section 3 Details

Section 3 Cross-section



Section 3 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		77.03 ft
Bottom Grade		74.03 ft
Base of Section		72.70 ft
Design Height	H	4.33 ft
Embedment Depth	Hemb	1.33 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	44.3400	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.2500	Pass
Le	Min. Anchorage Length	3.0000	6.0755	Pass
MinHemb	Minimum Embedment	1.3300	1.3310	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	8.0600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	5.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	8.50	Pass
CDRsl	Base Sliding	1.00	2.14	Pass

Internal and Local Checks

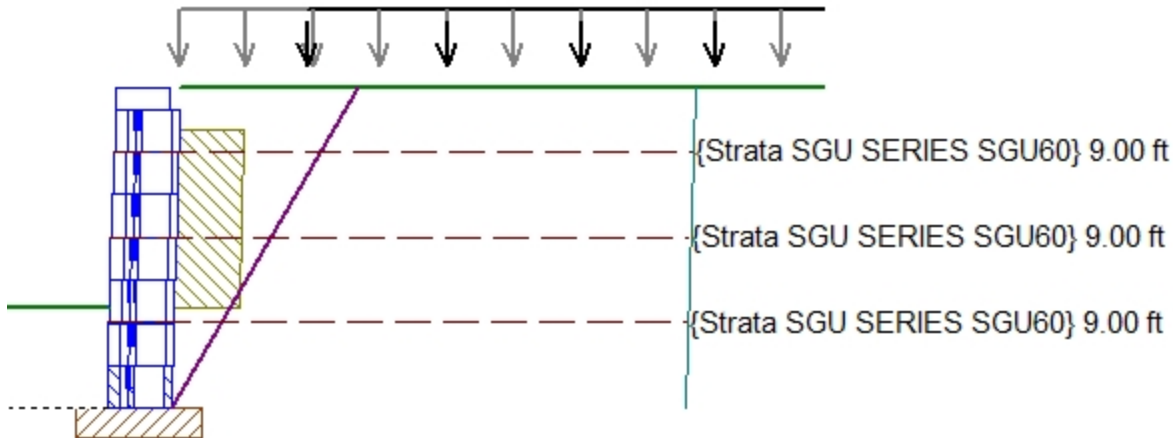
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	73.37	3.27	1.59	4.85	4.30

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	74.70	10.54	1.19	2.40	3.81
3	76.03	5.16	1.30	1.38	3.34

Section 4 Details

Section 4 Cross-section



Section 4 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		77.03 ft
Bottom Grade		73.59 ft
Base of Section		72.03 ft
Design Height	H	5.00 ft
Embedment Depth	Hemb	1.56 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	45.3700	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.9286	Pass
Le	Min. Anchorage Length	3.0000	5.6906	Pass
MinHemb	Minimum Embedment	1.3300	1.5604	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	9.0300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.75	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	7.00	Pass
CDRsl	Base Sliding	1.00	1.99	Pass

Internal and Local Checks

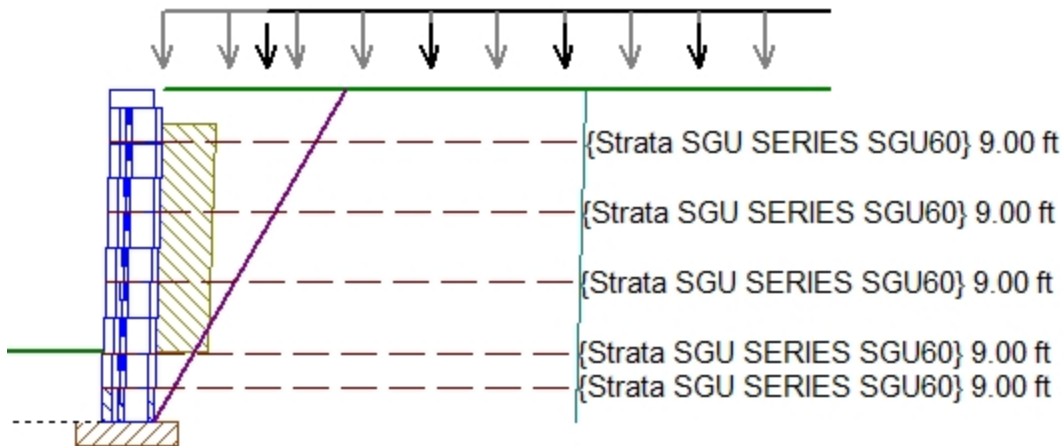
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	73.37	3.27	1.59	4.85	4.30

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	74.70	3.58	1.01	2.93	3.81
3	76.03	5.16	1.19	1.38	2.73

Section 5 Details

Section 5 Cross-section



Section 5 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		77.70 ft
Bottom Grade		72.72 ft
Base of Section		71.37 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	1.35 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	27.1500	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.5000	Pass
Le	Min. Anchorage Length	3.0000	4.9209	Pass
MinHemb	Minimum Embedment	1.3300	1.3520	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.4100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.74	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.04	Pass
CDRsl	Base Sliding	1.00	1.76	Pass

Internal and Local Checks

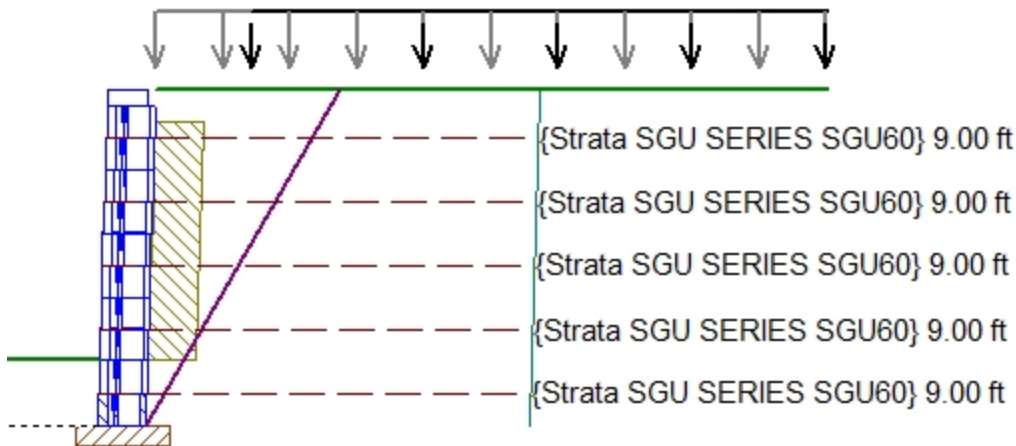
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	2.36	1.71	7.39	4.30

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	3.27	1.59	4.85	4.38
3	74.03	10.54	1.30	1.38	3.34
4	75.37	3.58	1.19	2.40	2.73
5	76.70	5.16	1.01	2.93	3.81

Section 6 Details

Section 6 Cross-section



Section 6 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		77.70 ft
Bottom Grade		72.06 ft
Base of Section		70.70 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	24.1700	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3500	Pass
Le	Min. Anchorage Length	3.0000	4.5358	Pass
MinHemb	Minimum Embedment	1.3300	1.3625	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.32	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.37	Pass
CDRsl	Base Sliding	1.00	1.67	Pass

Internal and Local Checks

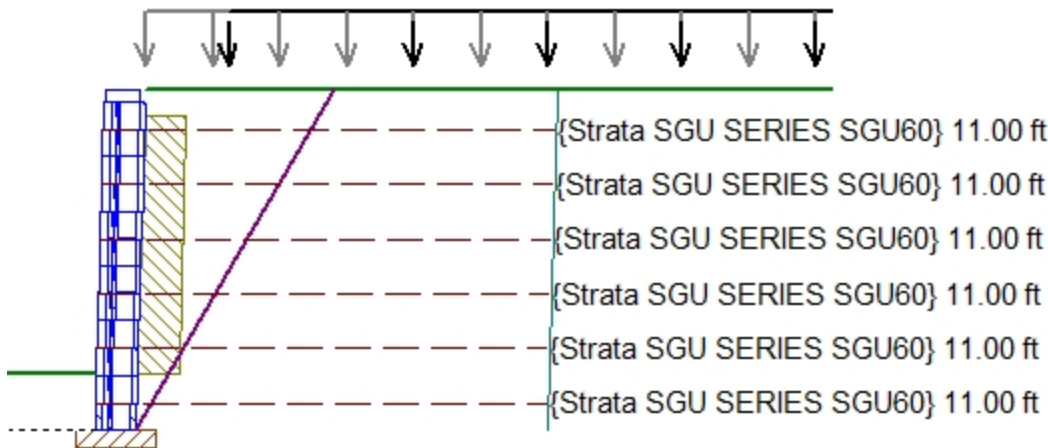
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	71.37	2.16	1.24	7.39	3.11

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	3.27	1.59	5.84	4.38
3	74.03	2.36	1.71	4.85	4.30
4	75.37	5.16	1.19	1.38	2.73
5	76.70	10.54	1.30	2.40	3.81

Section 7 Details

Section 7 Cross-section



Section 7 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.37 ft
Bottom Grade		71.41 ft
Base of Section		70.03 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.37 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.7200	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3750	Pass
Le	Min. Anchorage Length	3.0000	5.7661	Pass
MinHemb	Minimum Embedment	1.3300	1.3727	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.1400	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.70	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.04	Pass
CDRsl	Base Sliding	1.00	1.84	Pass

Internal and Local Checks

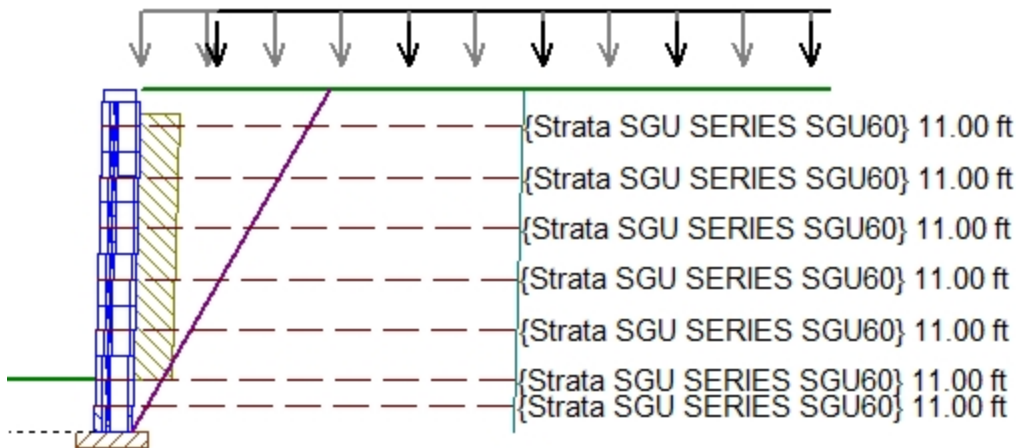
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.70	2.36	1.13	7.77	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.03	2.17	1.71	7.39	4.38
3	73.37	2.16	1.59	4.85	4.30
4	74.70	3.27	1.24	5.84	3.11
5	76.03	3.58	1.19	1.38	3.34
6	77.37	5.16	1.30	2.40	3.81

Section 8 Details

Section 8 Cross-section



Section 8 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		78.37 ft
Bottom Grade		70.75 ft
Base of Section		69.37 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	18.1600	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2692	Pass
Le	Min. Anchorage Length	3.0000	5.3812	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.2500	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.50	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

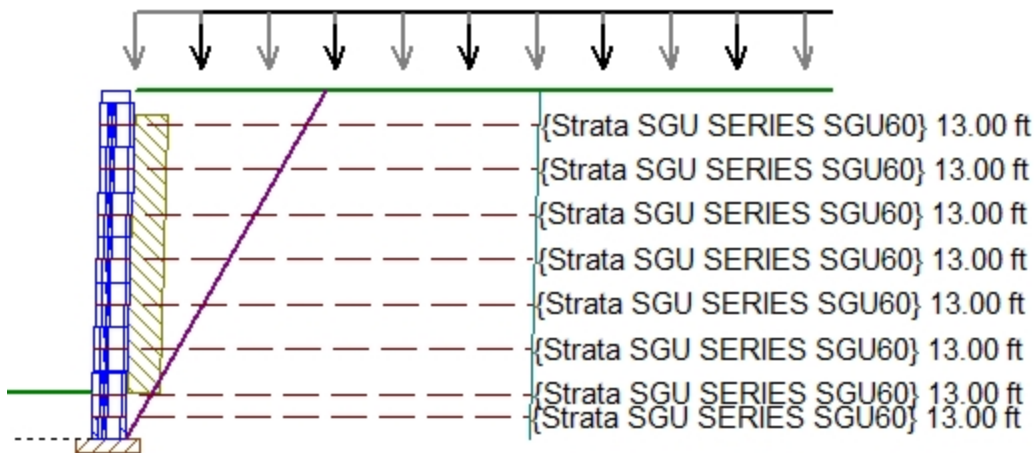
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.03	3.27	1.24	10.43	3.39

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	70.70	2.04	1.42	5.84	4.30
3	72.03	2.16	1.13	7.39	4.38
4	73.37	2.36	1.71	7.77	2.74
5	74.70	2.17	1.59	4.85	3.11
6	76.03	10.54	1.19	1.38	3.81
7	77.37	3.58	1.30	2.40	3.34

Section 9 Details

Section 9 Cross-section



Section 9 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		70.09 ft
Base of Section		68.70 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.39 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	15.5900	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3000	Pass
Le	Min. Anchorage Length	3.0000	6.6115	Pass
MinHemb	Minimum Embedment	1.3300	1.3937	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	10.8900	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.71	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.09	Pass
CDRsl	Base Sliding	1.00	1.89	Pass

Internal and Local Checks

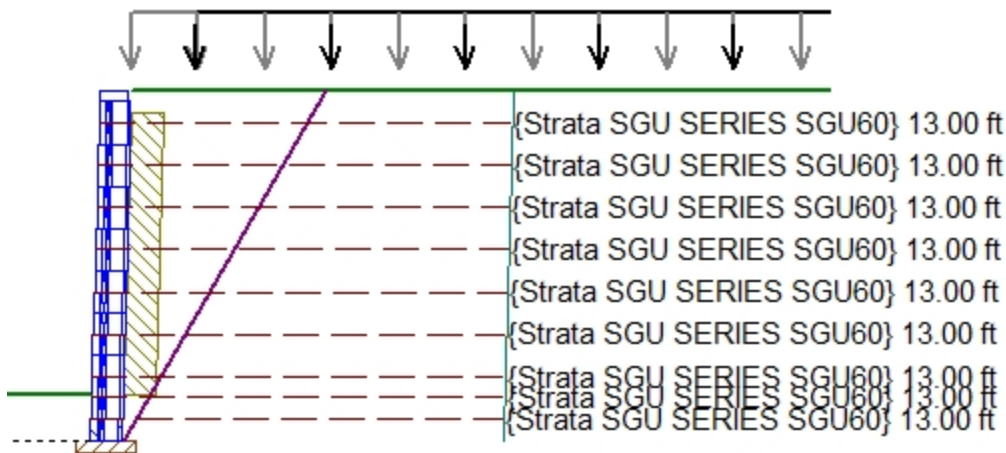
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	69.37	2.36	1.59	4.85	3.05

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	70.03	2.17	1.32	13.06	3.11
3	71.37	2.07	1.71	10.43	4.38
4	72.70	3.27	1.24	5.84	4.30
5	74.03	2.04	1.42	7.77	3.39
6	75.37	2.16	1.13	7.39	2.74
7	76.70	5.16	1.19	1.38	2.73
8	78.03	10.54	1.30	2.40	3.34

Section 10 Details

Section 10 Cross-section



Section 10 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		69.44 ft
Base of Section		68.03 ft
Design Height	H	11.00 ft
Embedment Depth	Hemb	1.40 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.6400	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2188	Pass
Le	Min. Anchorage Length	3.0000	6.2264	Pass
MinHemb	Minimum Embedment	1.3300	1.4042	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.8100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.42	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.62	Pass
CDRsl	Base Sliding	1.00	1.82	Pass

Internal and Local Checks

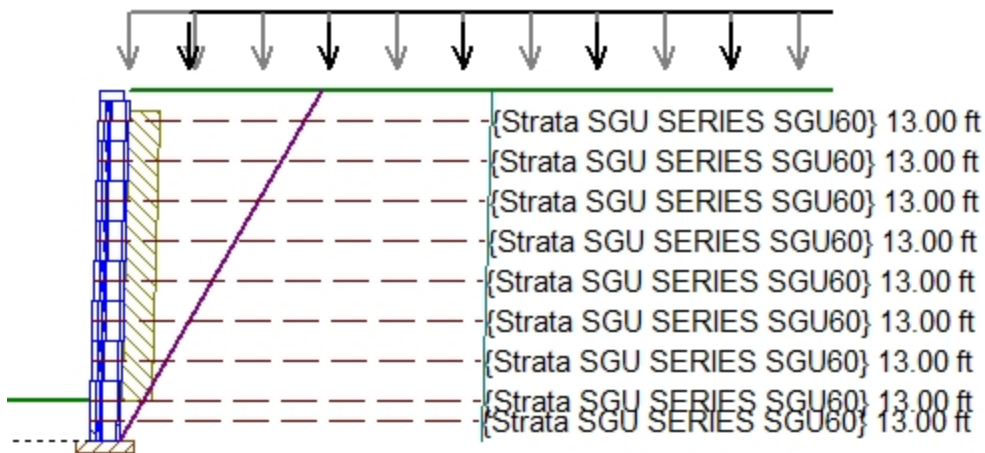
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.70	2.04	1.42	7.39	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.37	2.16	1.13	13.26	2.90
3	70.03	1.97	1.28	7.77	3.11
4	71.37	3.27	1.32	4.85	3.05
5	72.70	2.36	1.59	13.06	4.38
6	74.03	2.17	1.24	5.84	3.39
7	75.37	2.07	1.71	10.43	4.30
8	76.70	3.58	1.19	1.38	3.34
9	78.03	5.16	1.30	2.40	2.73

Section 11 Details

Section 11 Cross-section



Section 11 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		68.72 ft
Base of Section		67.37 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.35 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.0800	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1471	Pass
Le	Min. Anchorage Length	3.0000	5.8415	Pass
MinHemb	Minimum Embedment	1.3300	1.3491	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7900	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.15	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.21	Pass
CDRsl	Base Sliding	1.00	1.74	Pass

Internal and Local Checks

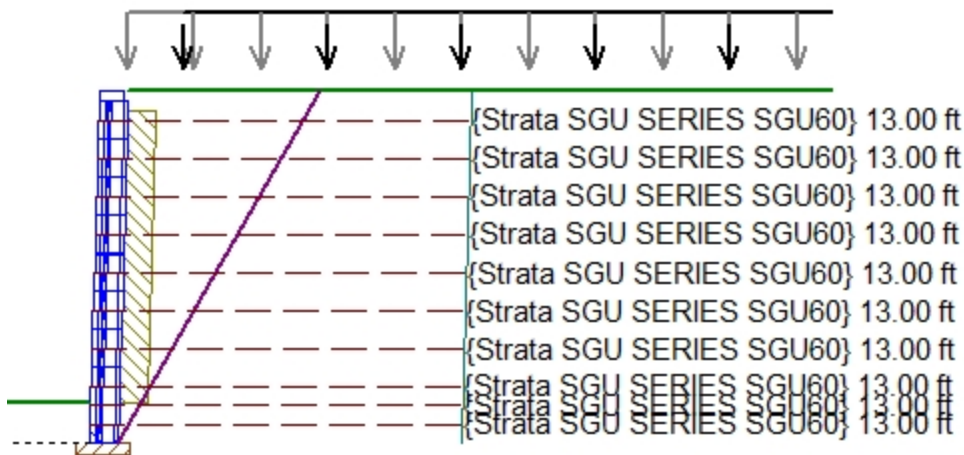
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.03	2.17	1.24	5.84	4.30

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.70	2.36	1.71	10.43	2.77
3	70.03	1.87	1.24	13.44	3.39
4	71.37	2.07	1.59	13.26	2.90
5	72.70	2.16	1.42	7.39	2.74
6	74.03	2.04	1.13	7.77	3.11
7	75.37	3.27	1.32	13.06	4.38
8	76.70	1.97	1.28	4.85	3.05
9	78.03	10.54	1.19	1.38	2.73

Section 12 Details

Section 12 Cross-section



Section 12 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		68.15 ft
Base of Section		66.70 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.45 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.3000	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0833	Pass
Le	Min. Anchorage Length	3.0000	5.4567	Pass
MinHemb	Minimum Embedment	1.3300	1.4472	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.8100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.90	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.86	Pass
CDRsl	Base Sliding	1.00	1.68	Pass

Internal and Local Checks

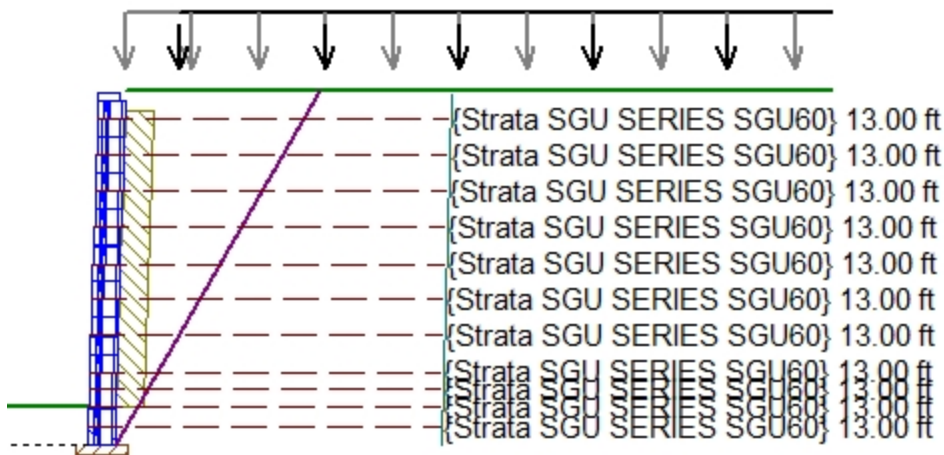
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	67.37	3.27	1.32	13.06	4.38

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.03	2.04	1.13	4.85	3.05
3	68.70	1.79	1.21	13.60	2.65
4	70.03	1.97	1.28	7.77	2.77
5	71.37	2.16	1.24	10.43	3.39
6	72.70	2.36	1.71	5.84	2.90
7	74.03	2.17	1.24	13.44	3.11
8	75.37	2.07	1.42	7.39	2.74
9	76.70	1.87	1.59	13.26	4.30
10	78.03	5.16	1.19	2.93	2.73

Section 13 Details

Section 13 Cross-section



Section 13 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		67.44 ft
Base of Section		66.03 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.40 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.1000	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0263	Pass
Le	Min. Anchorage Length	3.0000	5.0719	Pass
MinHemb	Minimum Embedment	1.3300	1.4035	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.8800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.67	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.55	Pass
CDRsl	Base Sliding	1.00	1.62	Pass

Internal and Local Checks

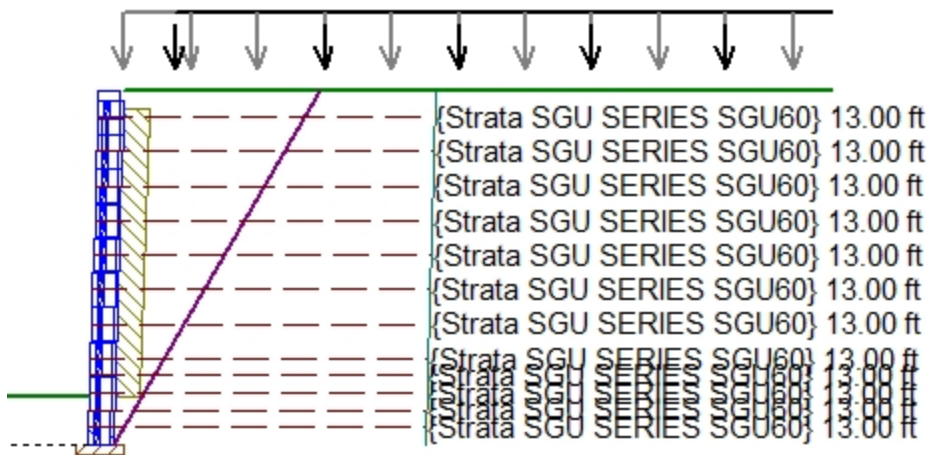
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.70	2.17	1.42	7.39	2.74

Elevation					
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	67.37	2.36	1.24	13.44	4.30
3	68.03	2.07	1.18	13.75	2.54
4	68.70	1.71	1.59	13.26	3.11
5	70.03	1.87	1.71	13.60	2.65
6	71.37	2.04	1.32	4.85	3.05
7	72.70	3.27	1.13	13.06	4.38
8	74.03	1.79	1.21	10.43	2.90
9	75.37	2.16	1.24	5.84	3.39
10	76.70	1.97	1.28	7.77	2.77
11	78.03	3.58	1.19	1.38	3.34

Section 14 Details

Section 14 Cross-section



Section 14 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		67.20 ft
Base of Section		65.37 ft
Design Height	H	13.67 ft
Embedment Depth	Hemb	1.83 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	15.4900	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	0.9750	Pass
Le	Min. Anchorage Length	3.0000	4.6870	Pass
MinHemb	Minimum Embedment	1.3300	1.8333	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	16.0000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.46	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.28	Pass
CDRsl	Base Sliding	1.00	1.56	Pass

Internal and Local Checks

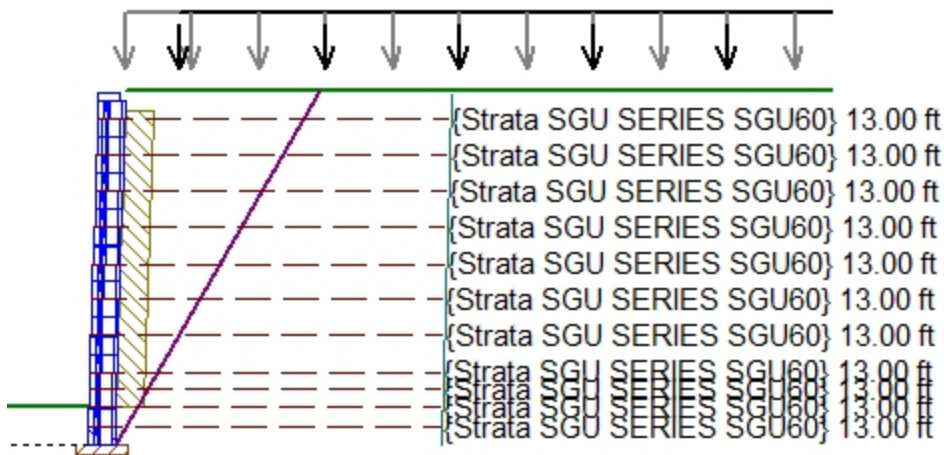
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.03	1.79	1.21	5.84	3.39

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	66.70	3.27	1.13	10.43	2.90
3	67.37	2.16	1.24	13.89	2.43
4	68.03	1.64	1.15	7.77	2.77
5	68.70	1.97	1.28	13.06	2.54
6	70.03	2.04	1.18	13.75	4.30
7	71.37	2.36	1.42	13.44	2.74
8	72.70	2.17	1.24	7.39	3.11
9	74.03	2.07	1.71	13.60	4.38
10	75.37	1.87	1.32	4.85	3.05
11	76.70	1.71	1.59	13.26	2.65
12	78.03	10.54	1.19	2.93	3.81

Section 15 Details

Section 15 Cross-section



Section 15 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		67.41 ft
Base of Section		66.03 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.8600	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0263	Pass
Le	Min. Anchorage Length	3.0000	5.0719	Pass
MinHemb	Minimum Embedment	1.3300	1.3780	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.8800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.67	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.55	Pass
CDRsl	Base Sliding	1.00	1.62	Pass

Internal and Local Checks

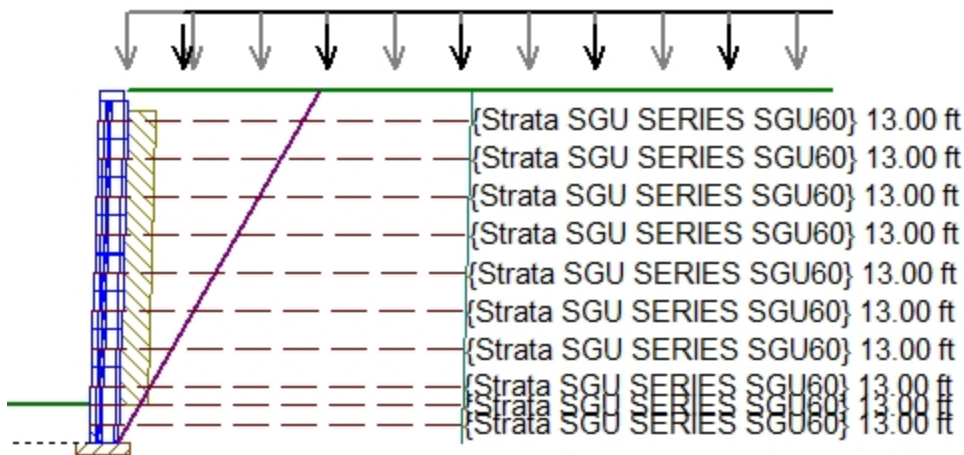
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	66.70	2.07	1.71	13.60	3.05

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	67.37	2.17	1.24	7.39	4.38
3	68.03	2.36	1.32	4.85	2.54
4	68.70	1.71	1.18	13.75	2.65
5	70.03	1.71	1.59	13.26	3.11
6	71.37	1.87	1.42	13.89	2.43
7	72.70	2.16	1.24	10.43	2.90
8	74.03	3.27	1.21	5.84	3.39
9	75.37	1.79	1.13	7.77	2.77
10	76.70	2.04	1.28	13.75	2.74
11	78.03	1.97	1.18	13.44	4.30

Section 16 Details

Section 16 Cross-section



Section 16 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		68.04 ft
Base of Section		66.70 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.2400	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.0833	Pass
Le	Min. Anchorage Length	3.0000	5.4567	Pass
MinHemb	Minimum Embedment	1.3300	1.3445	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.8100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.90	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.86	Pass
CDRsl	Base Sliding	1.00	1.68	Pass

Internal and Local Checks

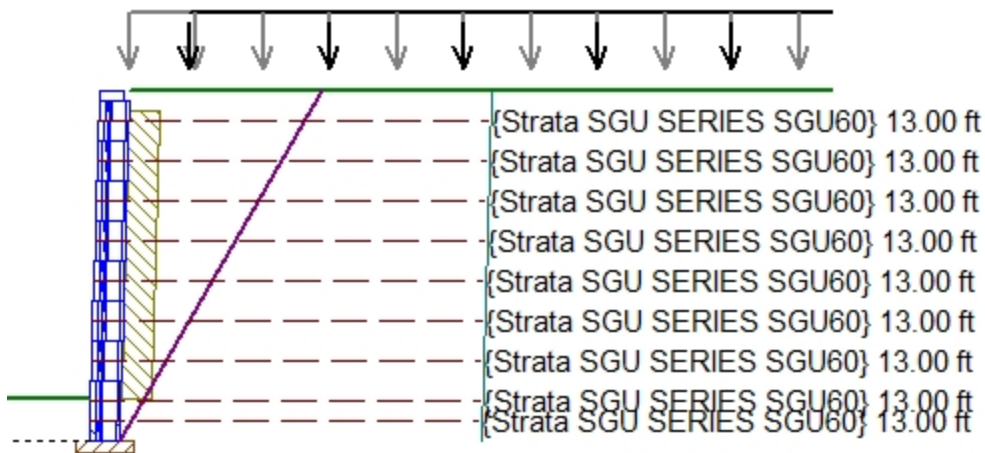
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	67.37	2.04	1.28	13.75	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.03	1.79	1.13	7.77	2.77
3	68.70	3.27	1.21	13.44	4.30
4	70.03	1.79	1.21	13.60	2.65
5	71.37	1.64	1.15	13.06	2.54
6	72.70	1.97	1.18	5.84	2.54
7	74.03	2.16	1.32	4.85	2.65
8	75.37	2.36	1.71	7.39	3.05
9	76.70	2.17	1.24	13.60	4.38
10	78.03	2.07	1.18	13.75	2.90

Section 17 Details

Section 17 Cross-section



Section 17 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		68.77 ft
Base of Section		67.37 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.40 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.6600	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1471	Pass
Le	Min. Anchorage Length	3.0000	5.8415	Pass
MinHemb	Minimum Embedment	1.3300	1.4019	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7900	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.15	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.21	Pass
CDRsl	Base Sliding	1.00	1.74	Pass

Internal and Local Checks

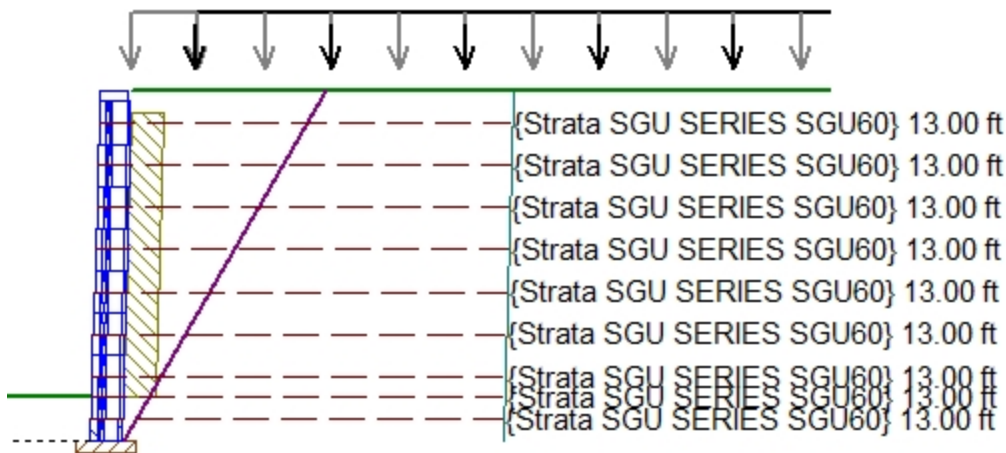
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.03	2.07	1.42	13.89	3.39

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	68.70	2.17	1.18	13.75	2.90
3	70.03	2.36	1.24	13.60	3.11
4	71.37	1.87	1.24	13.44	2.77
5	72.70	1.87	1.59	13.26	2.43
6	74.03	1.71	1.24	10.43	4.38
7	75.37	1.71	1.71	13.44	4.30
8	76.70	3.27	1.21	13.60	2.65
9	78.03	1.79	1.28	13.75	2.74

Section 18 Details

Section 18 Cross-section



Section 18 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		69.40 ft
Base of Section		68.03 ft
Design Height	H	11.00 ft
Embedment Depth	Hemb	1.37 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.2100	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2188	Pass
Le	Min. Anchorage Length	3.0000	6.2264	Pass
MinHemb	Minimum Embedment	1.3300	1.3684	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.8100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.42	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.62	Pass
CDRsl	Base Sliding	1.00	1.82	Pass

Internal and Local Checks

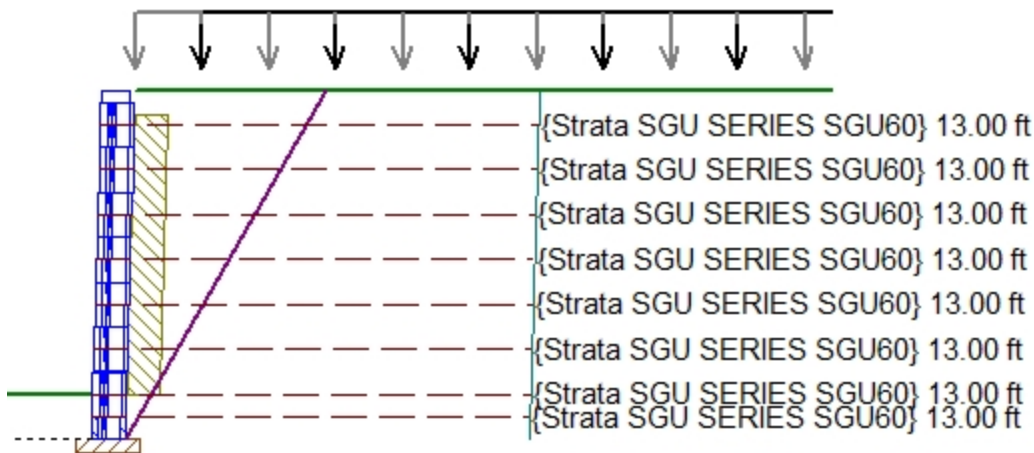
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	68.70	1.79	1.21	4.85	3.05

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	69.37	2.04	1.13	7.39	2.65
3	70.03	1.79	1.28	7.77	2.77
4	71.37	2.16	1.18	13.26	2.90
5	72.70	1.97	1.28	5.84	2.54
6	74.03	1.64	1.15	13.06	2.54
7	75.37	1.97	1.32	13.75	3.11
8	76.70	3.27	1.24	13.60	2.77
9	78.03	2.36	1.24	13.44	3.39

Section 19 Details

Section 19 Cross-section



Section 19 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		70.04 ft
Base of Section		68.70 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.34 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.8400	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3000	Pass
Le	Min. Anchorage Length	3.0000	6.6115	Pass
MinHemb	Minimum Embedment	1.3300	1.3353	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	10.8900	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.71	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.09	Pass
CDRsl	Base Sliding	1.00	1.89	Pass

Internal and Local Checks

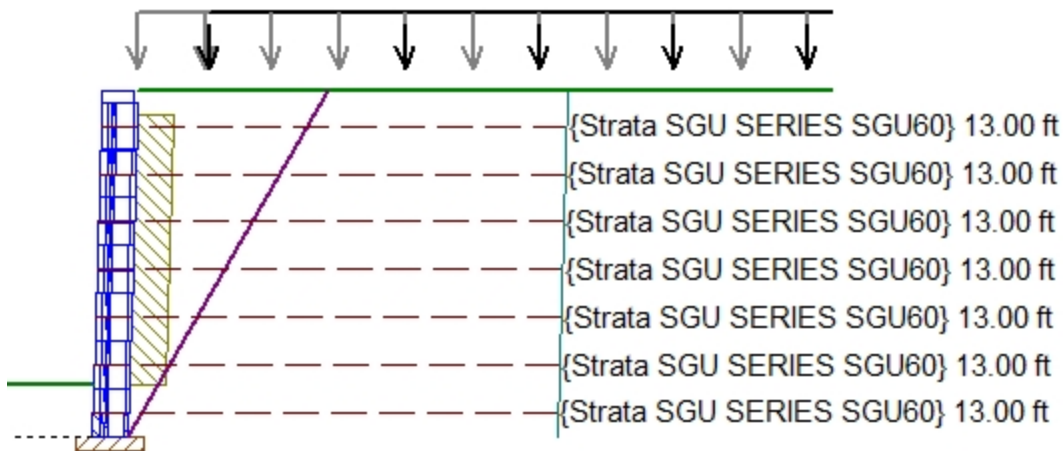
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	69.37	2.07	1.71	13.44	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	70.03	1.87	1.42	13.75	2.65
3	71.37	2.36	1.18	13.89	2.43
4	72.70	2.17	1.21	13.60	3.05
5	74.03	1.87	1.32	13.06	4.30
6	75.37	2.07	1.24	10.43	4.38
7	76.70	1.71	1.59	13.26	2.90
8	78.03	1.71	1.24	7.77	2.77

Section 20 Details

Section 20 Cross-section



Section 20 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	q_l	250 lb/ft²
Live Offset	q_{lofs}	2.00 ft
Dead Load	q_d	40 lb/ft²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		79.03 ft
Bottom Grade		70.76 ft
Base of Section		69.37 ft
Design Height	H	9.67 ft
Embedment Depth	H _{emb}	1.39 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	16.8300	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3929	Pass
Le	Min. Anchorage Length	3.0000	6.9964	Pass
MinHemb	Minimum Embedment	1.3300	1.3924	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	10.0100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.02	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.63	Pass
CDRsl	Base Sliding	1.00	1.98	Pass

Internal and Local Checks

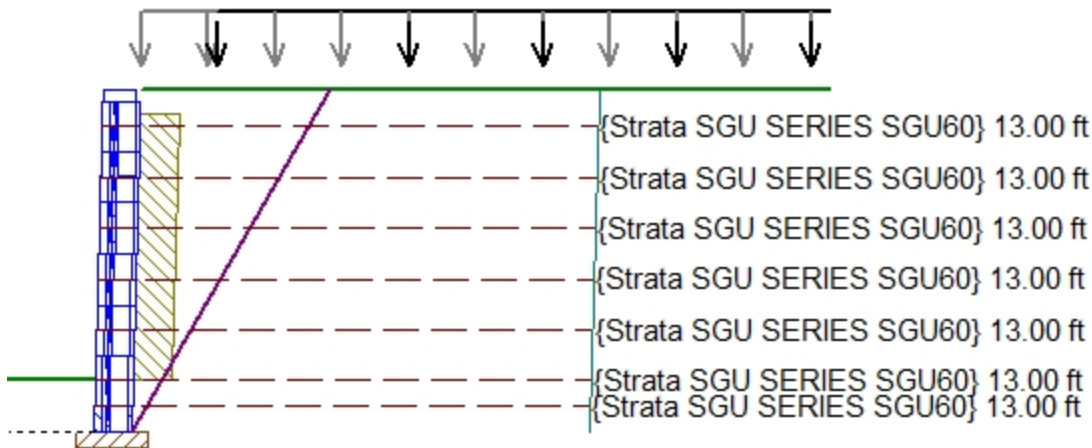
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.03	2.04	1.21	13.60	2.77

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	71.37	1.97	1.32	5.84	2.54
3	72.70	2.16	1.18	7.39	2.65
4	74.03	1.79	1.13	13.44	3.39
5	75.37	1.64	1.15	9.76	2.44
6	76.70	2.19	1.04	13.75	3.11
7	78.03	3.27	1.24	13.06	2.54

Section 21 Details

Section 21 Cross-section



Section 21 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		71.39 ft
Base of Section		70.03 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	17.7900	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.5000	Pass
Le	Min. Anchorage Length	3.0000	7.3812	Pass
MinHemb	Minimum Embedment	1.3300	1.3593	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	9.1900	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	6.27	Pass
CDRsl	Base Sliding	1.00	2.07	Pass

Internal and Local Checks

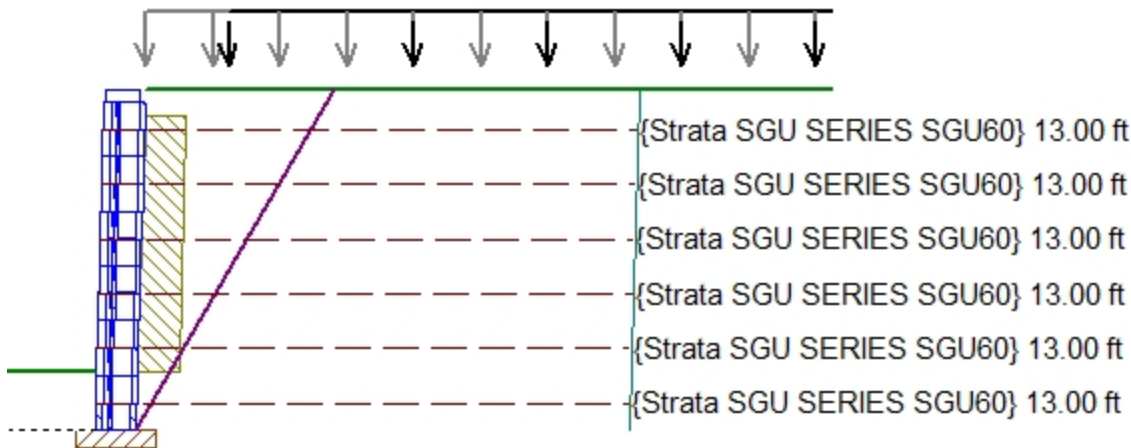
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	70.70	2.07	1.32	13.06	3.05

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	71.37	1.87	1.24	7.77	2.90
3	72.70	2.36	1.42	13.44	2.65
4	74.03	2.17	1.71	13.75	2.77
5	75.37	1.71	1.59	13.26	3.39
6	76.70	2.07	1.42	12.60	2.90
7	78.03	2.32	1.28	13.26	4.38

Section 22 Details

Section 22 Cross-section



Section 22 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		72.12 ft
Base of Section		70.70 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.42 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	20.4800	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.6250	Pass
Le	Min. Anchorage Length	3.0000	7.7661	Pass
MinHemb	Minimum Embedment	1.3300	1.4163	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	8.4300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.74	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	7.04	Pass
CDRsl	Base Sliding	1.00	2.17	Pass

Internal and Local Checks

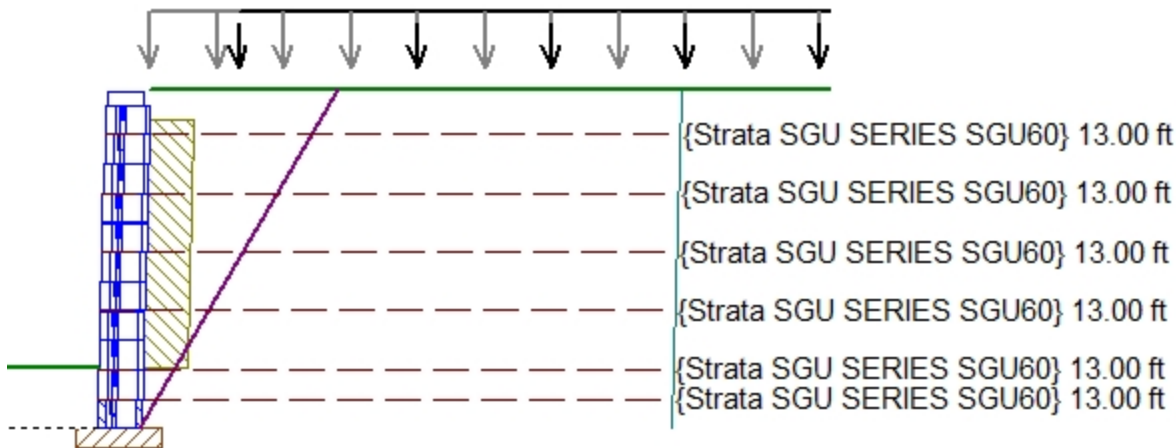
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	71.37	1.97	1.21	13.89	4.30

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	1.64	1.15	13.60	2.43
3	74.03	1.79	1.13	13.60	2.77
4	75.37	2.04	1.32	5.84	2.54
5	76.70	1.97	1.28	13.06	2.54
6	78.03	3.27	1.24	9.39	2.74

Section 23 Details

Section 23 Cross-section



Section 23 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.03 ft
Bottom Grade		72.75 ft
Base of Section		71.37 ft
Design Height	H	7.67 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	22.0200	Pass
L	Min. Reinforcement Length	8.0000	13.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.7727	Pass
Le	Min. Anchorage Length	3.0000	8.1509	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	7.7200	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	5.15	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	7.96	Pass
CDRsl	Base Sliding	1.00	2.28	Pass

Internal and Local Checks

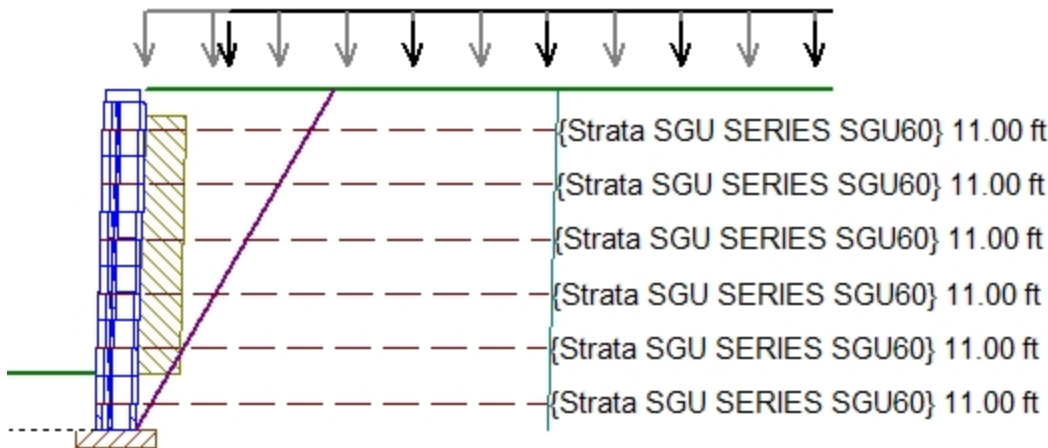
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	1.87	1.32	7.77	3.39

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	1.71	1.21	13.44	2.74
3	74.03	2.07	1.42	13.44	2.65
4	75.37	2.36	1.24	13.06	2.90
5	76.70	2.17	1.18	9.76	2.65
6	78.03	2.32	1.28	13.26	3.82

Section 24 Details

Section 24 Cross-section



Section 24 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		79.70 ft
Bottom Grade		72.75 ft
Base of Section		71.37 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.9000	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3750	Pass
Le	Min. Anchorage Length	3.0000	5.7661	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.1400	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.70	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.04	Pass
CDRsl	Base Sliding	1.00	1.84	Pass

Internal and Local Checks

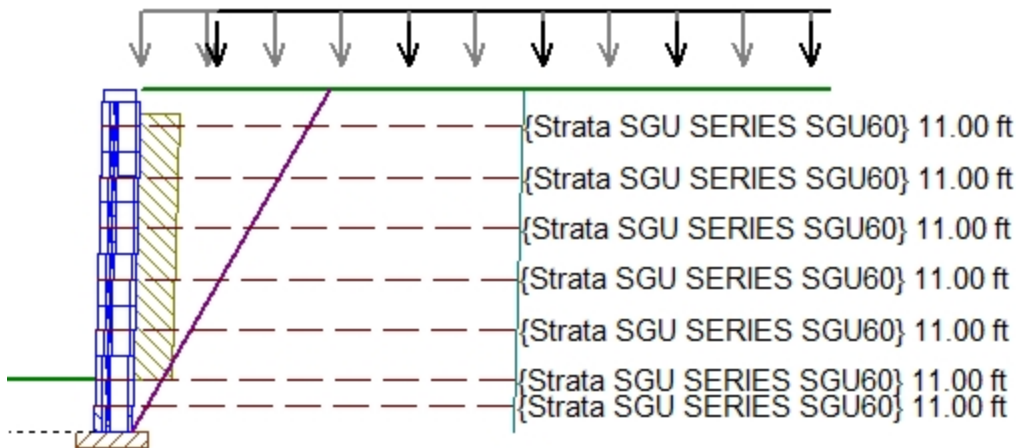
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	1.64	1.21	9.39	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	73.37	2.19	1.04	13.75	3.05
3	74.70	1.97	1.15	13.89	2.54
4	76.03	1.97	1.28	13.60	2.77
5	77.37	1.79	1.13	13.26	3.11
6	78.70	2.48	1.13	13.75	2.90

Section 25 Details

Section 25 Cross-section



Section 25 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		80.37 ft
Bottom Grade		72.75 ft
Base of Section		71.37 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	18.1600	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2692	Pass
Le	Min. Anchorage Length	3.0000	5.3812	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.2500	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.50	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

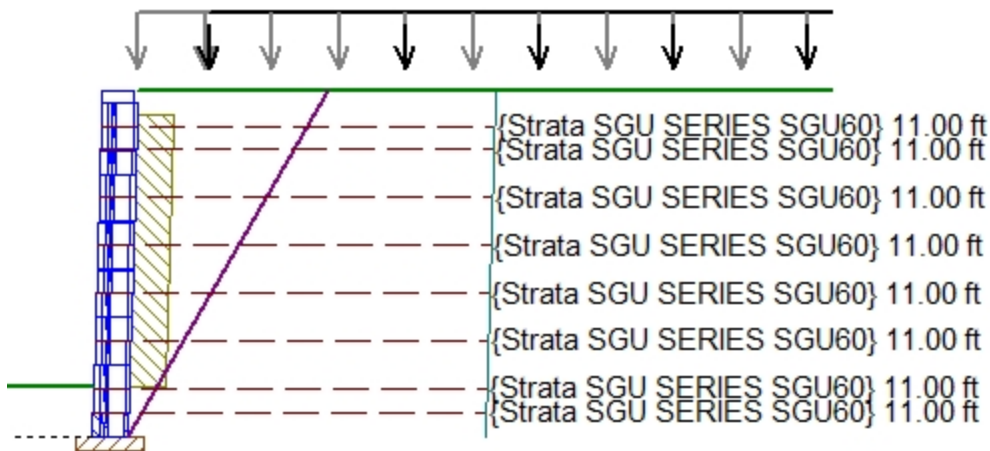
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	1.87	1.28	13.26	2.54

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	1.71	1.59	5.84	4.30
3	74.03	2.07	1.32	13.44	2.65
4	75.37	2.36	1.42	13.44	2.74
5	76.70	2.17	1.21	7.77	2.77
6	78.03	1.71	1.24	10.43	2.43
7	79.37	2.65	1.42	10.43	3.39

Section 26 Details

Section 26 Cross-section



Section 26 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		81.03 ft
Bottom Grade		72.75 ft
Base of Section		71.37 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	16.7000	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1786	Pass
Le	Min. Anchorage Length	3.0000	4.9964	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.4300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.05	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.04	Pass
CDRsl	Base Sliding	1.00	1.67	Pass

Internal and Local Checks

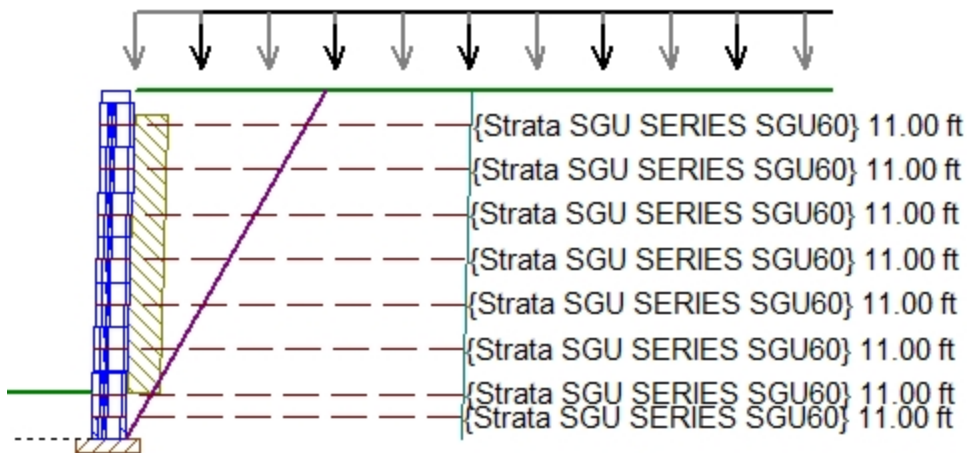
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	2.19	1.21	13.60	2.65

Layer	Elevation	CDRsl	CDRcs	CDRpo	CDRto
	(ft)				
2	72.70	2.48	1.13	13.06	3.39
3	74.03	1.64	1.04	13.89	3.05
4	75.37	1.79	1.13	9.39	2.77
5	76.70	1.97	1.15	13.75	2.54
6	78.03	1.79	1.18	4.85	3.82
7	79.37	3.27	1.24	10.63	3.21
8	80.03	1.92	1.37	7.77	3.39

Section 27 Details

Section 27 Cross-section



Section 27 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		81.70 ft
Bottom Grade		72.75 ft
Base of Section		71.37 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.38 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	15.4600	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1000	Pass
Le	Min. Anchorage Length	3.0000	4.6115	Pass
MinHemb	Minimum Embedment	1.3300	1.3832	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	14.6700	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	2.77	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	3.64	Pass
CDRsl	Base Sliding	1.00	1.60	Pass

Internal and Local Checks

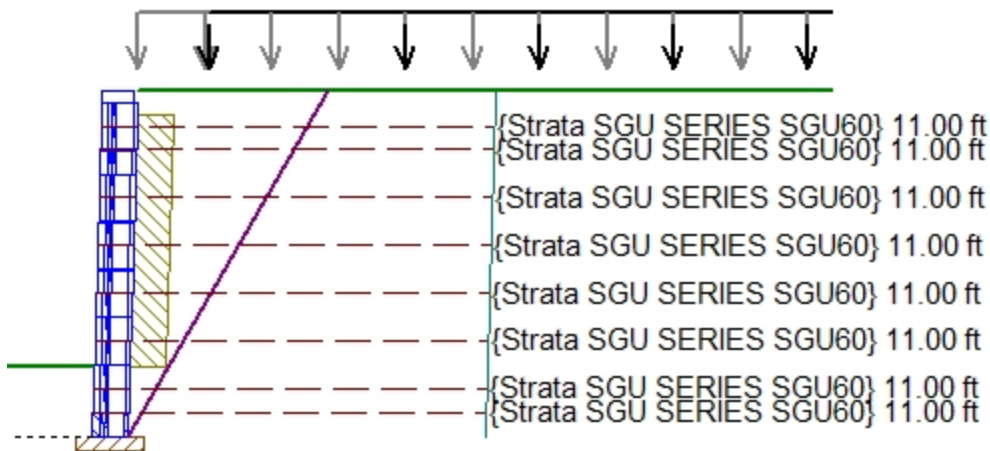
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	1.87	1.32	13.44	3.11

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	1.71	1.42	12.60	2.74
3	74.03	1.71	1.28	5.84	3.39
4	75.37	2.36	1.24	10.43	2.65
5	76.70	2.17	1.59	13.26	4.30
6	78.03	2.07	1.18	13.60	2.90
7	79.37	2.65	1.32	13.06	3.05
8	80.70	2.04	1.32	10.81	4.38

Section 28 Details

Section 28 Cross-section



Section 28 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		81.03 ft
Bottom Grade		73.31 ft
Base of Section		71.37 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.94 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	25.0900	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.1786	Pass
Le	Min. Anchorage Length	3.0000	4.9964	Pass
MinHemb	Minimum Embedment	1.3300	1.9386	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	13.4300	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.05	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.04	Pass
CDRsl	Base Sliding	1.00	1.67	Pass

Internal and Local Checks

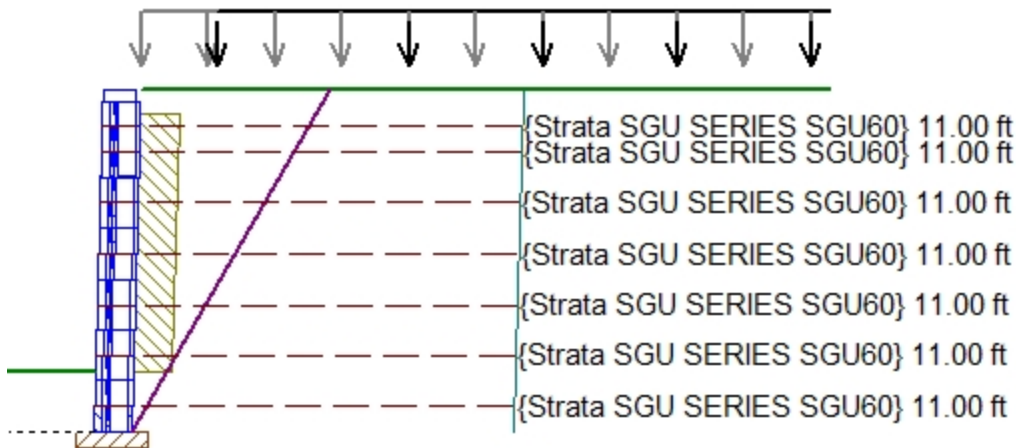
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.03	2.48	1.21	10.63	3.21

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	72.70	1.64	1.04	13.75	2.77
3	74.03	2.04	1.24	13.89	3.39
4	75.37	1.97	1.15	13.60	2.77
5	76.70	1.79	1.18	13.06	3.05
6	78.03	2.19	1.13	13.44	2.54
7	79.37	1.92	1.24	7.39	2.43
8	80.03	2.17	1.13	10.63	3.21

Section 29 Details

Section 29 Cross-section



Section 29 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		81.03 ft
Bottom Grade		73.61 ft
Base of Section		72.03 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.57 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	21.2100	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.2692	Pass
Le	Min. Anchorage Length	3.0000	5.3812	Pass
MinHemb	Minimum Embedment	1.3300	1.5748	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.2500	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.50	Pass
CDRsl	Base Sliding	1.00	1.75	Pass

Internal and Local Checks

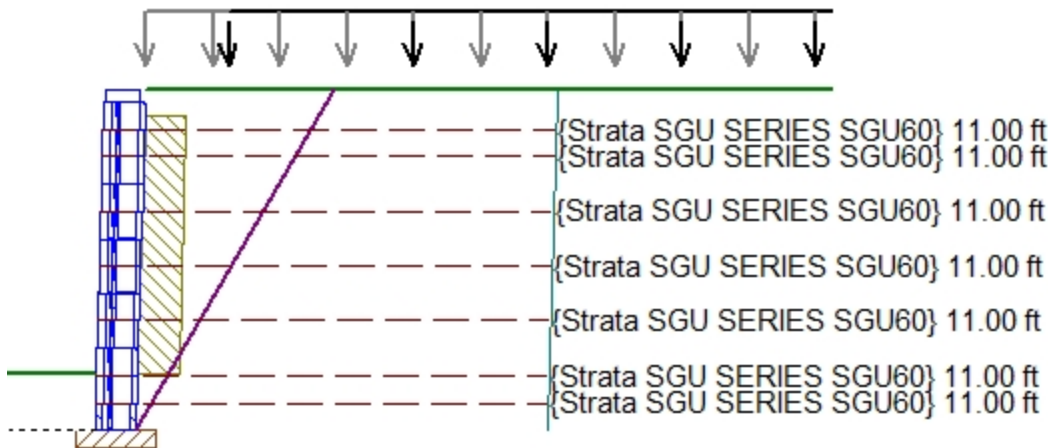
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	72.70	1.87	1.28	5.84	2.54

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	74.03	1.71	1.32	13.06	2.65
3	75.37	1.71	1.55	12.02	2.74
4	76.70	2.36	1.18	13.60	2.65
5	78.03	2.17	1.42	13.44	3.39
6	79.37	2.07	1.32	12.60	2.74
7	80.03	1.87	1.32	10.81	2.44

Section 30 Details

Section 30 Cross-section



Section 30 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		81.03 ft
Bottom Grade		74.06 ft
Base of Section		72.70 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.5400	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3750	Pass
Le	Min. Anchorage Length	3.0000	5.7661	Pass
MinHemb	Minimum Embedment	1.3300	1.3622	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.1400	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.70	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.04	Pass
CDRsl	Base Sliding	1.00	1.84	Pass

Internal and Local Checks

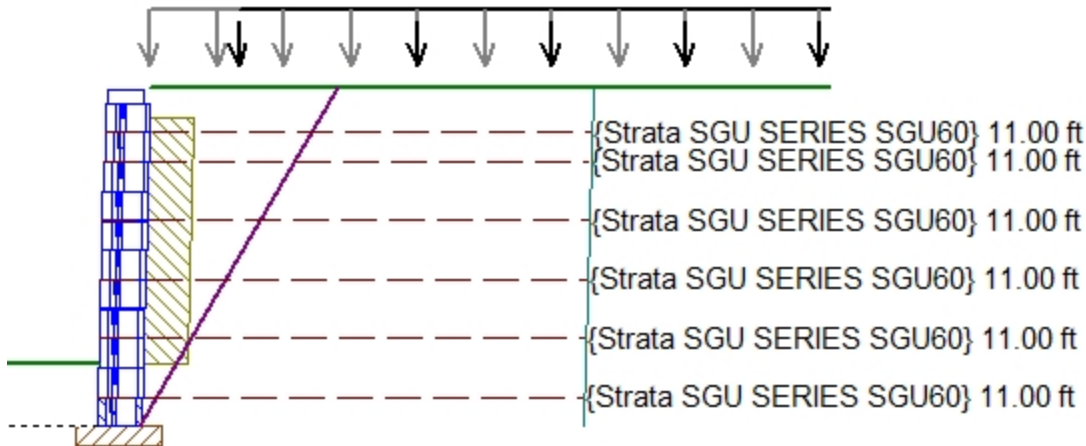
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	73.37	1.64	1.21	13.89	3.39

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	74.03	2.04	1.24	4.85	2.90
3	75.37	1.92	1.24	10.43	4.30
4	76.70	1.79	1.18	13.60	2.77
5	78.03	2.19	1.13	10.63	3.21
6	79.37	2.48	1.04	13.75	2.77
7	80.03	1.97	1.42	10.63	3.05

Section 31 Details

Section 31 Cross-section



Section 31 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		81.03 ft
Bottom Grade		74.82 ft
Base of Section		73.37 ft
Design Height	H	7.67 ft
Embedment Depth	Hemb	1.45 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	23.3800	Pass
L	Min. Reinforcement Length	8.0000	11.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.5000	Pass
Le	Min. Anchorage Length	3.0000	6.1509	Pass
MinHemb	Minimum Embedment	1.3300	1.4528	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	10.1100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.08	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.70	Pass
CDRsl	Base Sliding	1.00	1.93	Pass

Internal and Local Checks

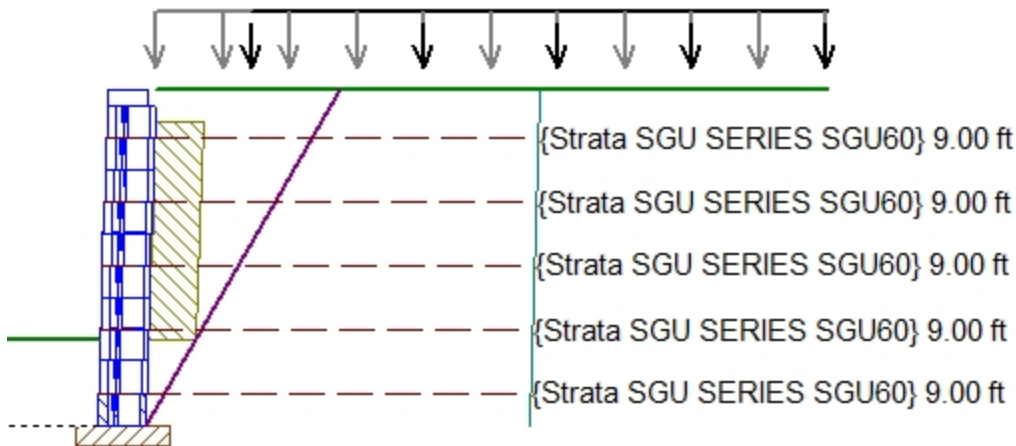
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Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.03	1.71	1.28	13.06	2.58

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	75.37	1.71	1.55	12.02	2.54
3	76.70	1.87	1.42	10.43	3.05
4	78.03	1.87	1.32	10.81	2.54
5	79.37	2.36	1.18	13.60	2.65
6	80.03	2.17	1.32	5.84	2.74

Section 32 Details

Section 32 Cross-section



Section 32 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		80.37 ft
Bottom Grade		75.12 ft
Base of Section		73.37 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.76 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	33.4900	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.3500	Pass
Le	Min. Anchorage Length	3.0000	4.5358	Pass
MinHemb	Minimum Embedment	1.3300	1.7559	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	12.7800	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.32	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	4.37	Pass
CDRsl	Base Sliding	1.00	1.67	Pass

Internal and Local Checks

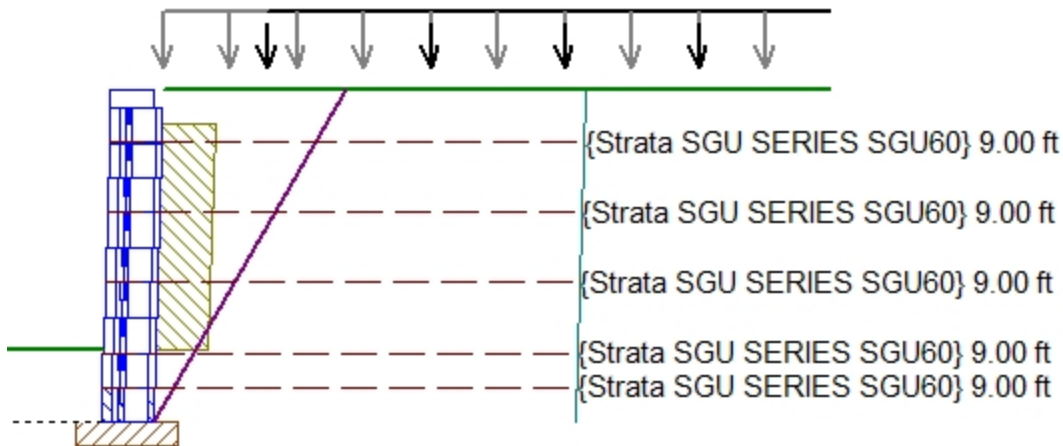
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.03	2.04	1.21	10.43	4.30

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	75.37	1.92	1.24	7.77	2.74
3	76.70	1.79	1.24	7.39	2.74
4	78.03	1.64	1.24	13.60	2.77
5	79.37	2.48	1.04	13.89	3.39

Section 33 Details

Section 33 Cross-section



Section 33 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		80.37 ft
Bottom Grade		75.43 ft
Base of Section		74.03 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	1.39 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	28.1800	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.5000	Pass
Le	Min. Anchorage Length	3.0000	4.9209	Pass
MinHemb	Minimum Embedment	1.3300	1.3921	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	11.4100	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	3.74	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.04	Pass
CDRsl	Base Sliding	1.00	1.76	Pass

Internal and Local Checks

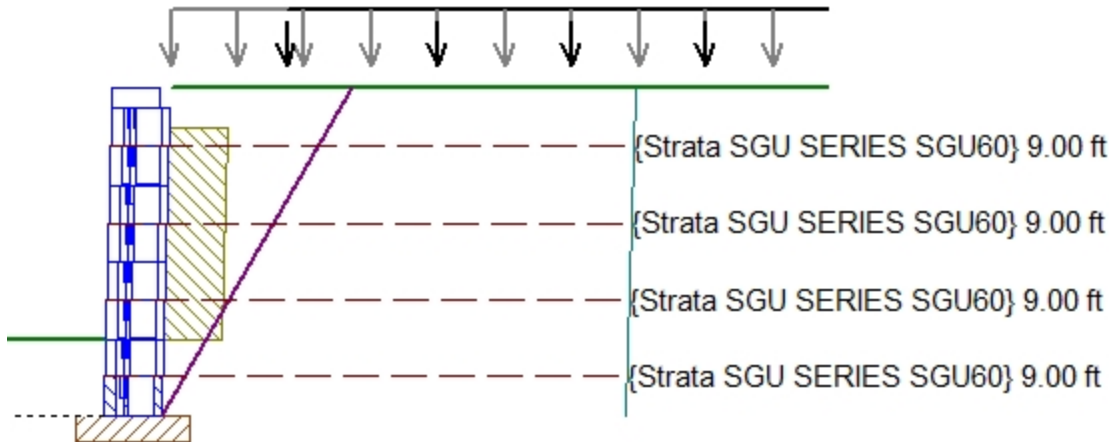
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	74.70	1.71	1.42	10.43	3.05

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	75.37	1.71	1.28	13.26	2.77
3	76.70	1.87	1.08	7.93	3.05
4	78.03	1.87	1.28	12.02	2.54
5	79.37	2.36	1.59	13.06	2.58

Section 34 Details

Section 34 Cross-section



Section 34 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		80.37 ft
Bottom Grade		76.03 ft
Base of Section		74.70 ft
Design Height	H	5.67 ft
Embedment Depth	Hemb	1.33 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	30.7000	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	1.6875	Pass
Le	Min. Anchorage Length	3.0000	5.3058	Pass
MinHemb	Minimum Embedment	1.3300	1.3310	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	10.1500	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	4.21	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	5.89	Pass
CDRsl	Base Sliding	1.00	1.87	Pass

Internal and Local Checks

Static

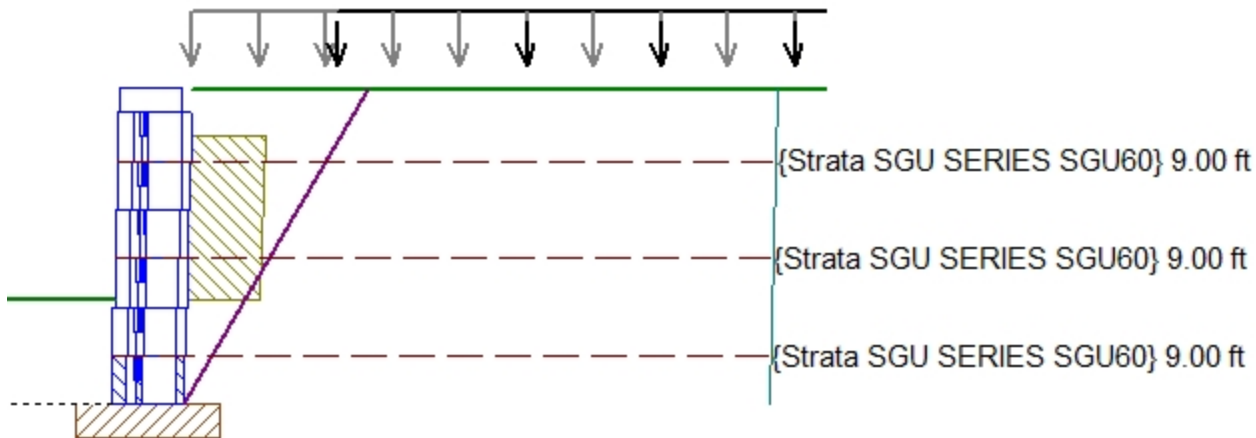
Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	75.37	1.92	1.21	7.39	2.74

Elevation		CDRsl	CDRcs	CDRpo	CDRto
Layer	(ft)				
2	76.70	1.79	1.24	10.63	2.65
3	78.03	2.16	1.13	13.26	4.38
4	79.37	2.04	1.24	13.60	2.77

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	77.37	1.71	1.28	12.02	2.77
3	78.70	1.87	1.08	7.93	2.43

Section 36 Details

Section 36 Cross-section



Section 36 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.70 ft
Bottom Grade		76.79 ft
Base of Section		75.37 ft
Design Height	H	4.33 ft
Embedment Depth	Hemb	1.42 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	48.8300	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.2500	Pass
Le	Min. Anchorage Length	3.0000	6.0755	Pass
MinHemb	Minimum Embedment	1.3300	1.4216	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	8.0600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	5.36	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	8.50	Pass
CDRsl	Base Sliding	1.00	2.14	Pass

Internal and Local Checks

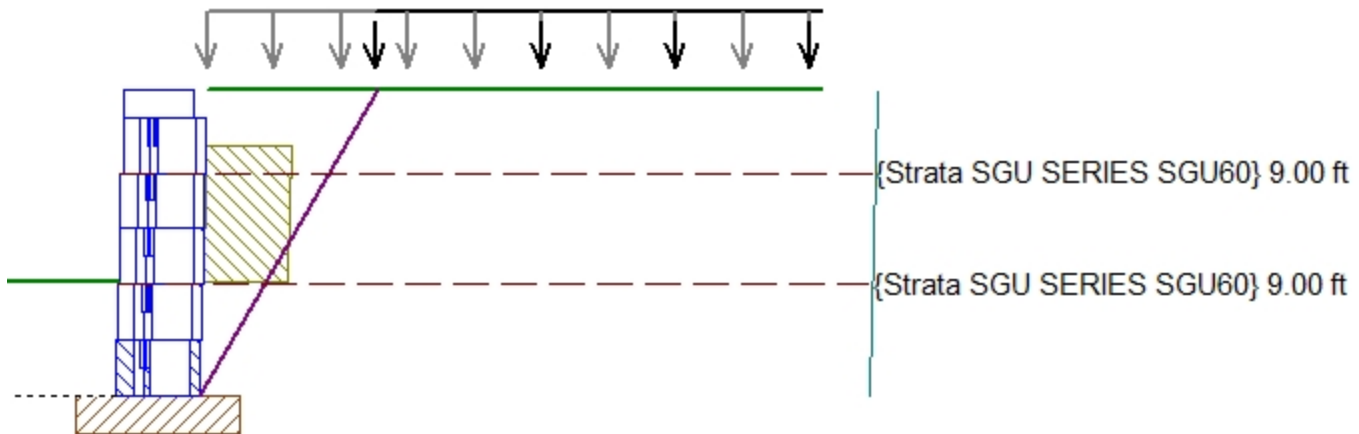
Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	76.03	1.79	1.24	13.60	4.38

	Elevation				
Layer	(ft)	CDRsl	CDRcs	CDRpo	CDRto
2	77.37	1.92	1.13	13.26	3.11
3	78.70	1.97	1.18	5.84	2.74

Section 37 Details

Section 37 Cross-section



Section 37 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	250 lb/ft ²
Live Offset	qlofs	2.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.70 ft
Bottom Grade		77.39 ft
Base of Section		76.03 ft
Design Height	H	3.67 ft
Embedment Depth	Hemb	1.36 ft

* Embedment is not included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	59.0300	Pass
L	Min. Reinforcement Length	8.0000	9.0000	Pass
L/H Ratio	Min. L/H Ratio	0.7000	2.7000	Pass
Le	Min. Anchorage Length	3.0000	6.4603	Pass
MinHemb	Minimum Embedment	1.3300	1.3609	Pass
RSA	Min. Soil Friction Angle for Rein. Zone	30.00	30.00	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass
emax	Max Eccentricity	0.0000	7.2600	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
CDRbc	Bearing Capacity	1.00	6.06	Pass
CDRct	Crest Toppling	1.00	2.82	Pass
CDRot	Overturning	1.00	10.59	Pass
CDRsl	Base Sliding	1.00	2.31	Pass

Internal and Local Checks

Static

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
1	77.37	1.71	1.42	13.26	2.54

Layer	Elevation (ft)	CDRsl	CDRcs	CDRpo	CDRto
2	78.70	1.71	1.28	7.93	2.43

Project Design Inputs

Design Standard National Concrete Masonry Association 3rd Edition

Minimum Factors of Safety

Conventional

External		Value	Internal		Value	Facing	Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50		
FSbc	Bearing Capacity	2.00	FSsc	Shear Capacity	1.50		
FSot	Overturning	1.50					

MultiDepth

External		Value	Internal		Value	Facing	Value
FSSl	Base Sliding	1.50					
FSbc	Bearing Capacity	2.00					
FSSH	Interface Shear	1.50					
FSot	Overturning	1.50					

No Fines

External		Value	Internal		Value	Facing	Value
FSSl	Base Sliding	1.50					
FSbc	Bearing Capacity	2.00					
FSot	Overturning	1.50					

Reinforced

External		Value	Internal		Value	Facing	Value
FSSl	Base Sliding	1.50	FSSl	Internal Sliding	1.50	FSCS	Connection Strength 1.50
FSbc	Bearing Capacity	2.00	FSpO	Pullout	1.50	FSsc	Facing Shear 1.50
FSct	Crest Toppling	1.50	FSto	Tensile Overstress	1.50		
FSot	Overturning	1.50					

Design Factors

Term	Description	Minimum (as appl.)	Maximum (as appl.)
RC	Reinforced coverage ratio	1.00	0.00

Selected Facing Unit

Licensior/Product Line: Anchor Wall Systems, Inc.

Name: Diamond Pro PS

Facing Height	Hu	0.67 ft
Facing Width	Lu	1.50 ft
Facing Depth	Wu	1.00 ft
Facing Weight	Xu	120 lb/ft ³
Center of Gravity	Gu	0.50 ft
Setback	Δu	0.02 ft
Batter	ω	1.70 °
Cap Height	Hcu	0.33 ft
Initial Shear Capacity	au	740.36 lb/ft
Apparent Shear Angle	λu	36.00 °
Maximum Shear Capacity	Vu(max)	3889.65 lb/ft

Selected Reinforcement Types

Reinforcements

SGU60 - Strata SGU SERIES SGU(Supplier: Strata SGU SERIES, Fill Type: Sands

Tult	4,111.31 lb/ft	RFcr	1.47	RFd	1.10	LTDS	2,311.41 lb/ft
RFid	1.10	Cds	0.80	Ci	0.80		

Connection/Shear Properties

acs1	1,198.00 lb/ft	IP-1	1,983.00 lb/ft	acs2	1,850.00 lb/ft	IP-2	4,000.00 lb/ft
acs max	2,319.00 lb/ft	au	740.36 lb/ft	λu	36.00 lb/ft	Vu(max)	3,889.65 lb/ft

SGU80 - Strata SGU SERIES SGU(Supplier: Strata SGU SERIES, Fill Type: Sands

Tult	5,481.74 lb/ft	RFcr	1.47	RFd	1.10	LTDS	3,081.88 lb/ft
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RFid	1.10	Cds	0.80	Ci	0.80
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Connection/Shear Properties

acs1	1,098.00 lb/ft	IP-1	2,196.00 lb/ft	acs2	2,111.00 lb/ft	IP-2	4,000.00 lb/ft
acs max	2,536.00 lb/ft	au	740.36 lb/ft	λu	36.00 lb/ft	Vu(max)	3,889.65 lb/ft

Selected Soil Types

Soil Zone	Soil Type	Friction Angle ϕ	In Situ	
			Density γ [lb/ft ³]	Cohesion C_f [lb/ft ²]
Infill (i)	SP	30°	110.00	n/a
Retained (r)	SP	30°	110.00	n/a
Foundation (f)	SP	30°	110.00	0.00
Base (b)	GW	39°	140.00	n/a
Drainage (d)	GP	38°	125.00	n/a

Soil Glossary

CH: Inorganic clays, high plasticity

CL: Inorganic clays, low to medium plasticity, gravelly, sandy, silty, lean clays

GC: Clayey gravels, poorly graded gravel-sand-clay mixtures

GM: Silty gravels, poorly graded gravel-sand-silt mixtures

GP: 1/2"-3/4" clean crushed stone or crushed gravel

GW: Well-graded gravels, gravel-sand. Little or no fines.

MH: Inorganic clayey silts, elastic silts

ML: Inorganic silts, very fine sands, silty or clayey, slight plasticity

SC: Clayey sands, poorly graded sand-clay mixtures

SM: Silty sands, poorly graded sand-silt mixtures

SP: Poorly-graded sands, gravelly sands. Little or no fines.

SW: Well-graded sands, gravelly sands. Little or no fines.

Analysis Summary**Lowest Values - Reinforced****Static Analysis**

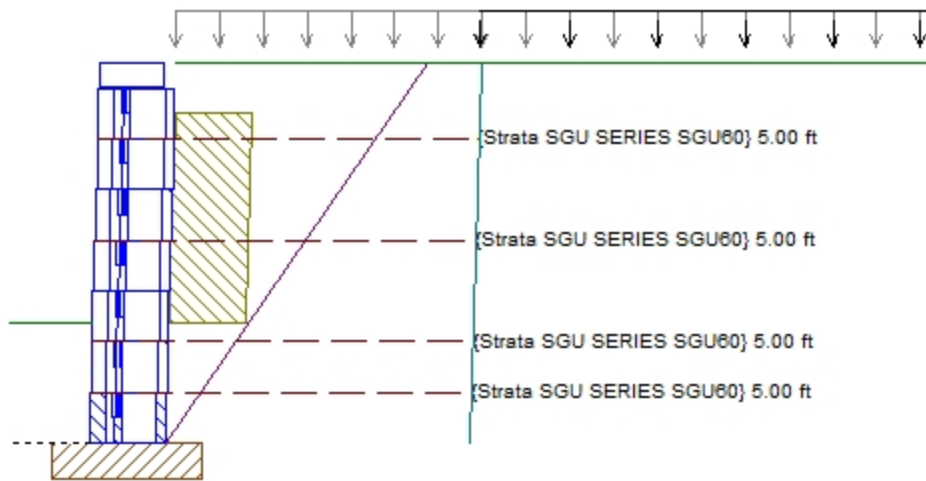
Test	Description	Section	Layer/ Course	Minimum Requirement	Result	Status
FSl	Base Sliding	42		1.50	2.66	Pass
FSbc	Bearing Capacity	19		2.00	7.64	Pass
FSct	Crest Toppling	27	15	1.50	3.24	Pass
FSot	Overturning	42		1.50	4.90	Pass
FSl	Internal Sliding	19	1	1.50	2.89	Pass
FSpO	Pullout	2	4	1.50	1.53	Pass
FSto	Tensile Overstress	17	1	1.50	5.07	Pass
FScs	Connection Strength	28	3	1.50	3.57	Pass
Rs	Max. Reinforcement Separation	44		0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	18		0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	7		0.0000	1.5000	Pass
La	Min. Anchorage Length	42		1.0000	1.3547	Pass
L/H Ratio	Min. L/H Ratio	19		0.5000	0.7143	Pass
L	Min. Reinforcement Length	2		3.0000	5.0000	Pass

Below Standard Values

None

Section 1 Details

Section 1 Cross-section



Section 1 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		91.62 ft
Bottom Grade		88.19 ft
Base of Section		86.62 ft
Design Height	H	5.00 ft
Embedment Depth	Hemb	1.57 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	45.8400	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0714	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	18.8583	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	13.86	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	8.03	Pass
Fssl	Base Sliding	1.50	3.31	Pass

Internal and Local Checks

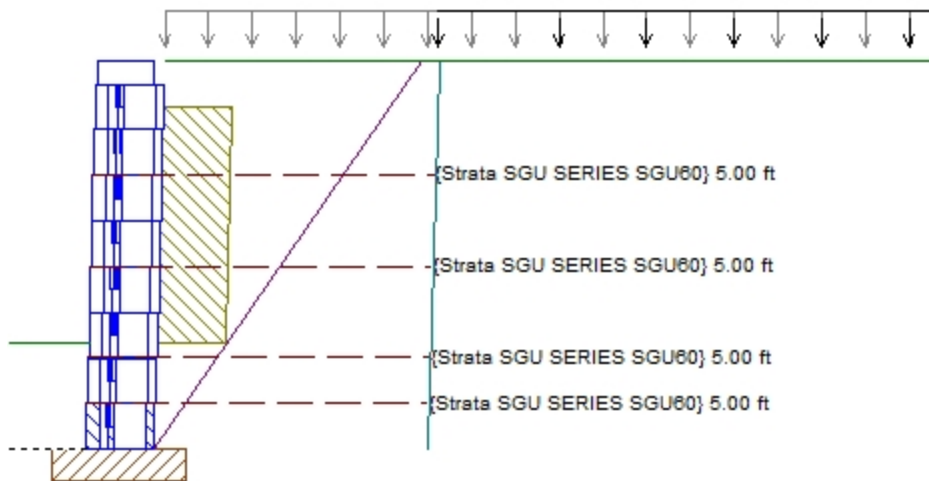
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	9.44	9.57	4.97	13.03
2	87.95	11.66	8.65	5.82	15.65

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	12.04	4.07	8.99	15.36
4	90.62	20.81	1.65	20.59	20.34

Section 2 Details

Section 2 Cross-section



Section 2 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		92.29 ft
Bottom Grade		88.18 ft
Base of Section		86.62 ft
Design Height	H	5.67 ft
Embedment Depth	H_{emb}	1.56 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	38.0800	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9375	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	18.7520	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.79	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.69	Pass
Fssl	Base Sliding	1.50	3.05	Pass

Internal and Local Checks

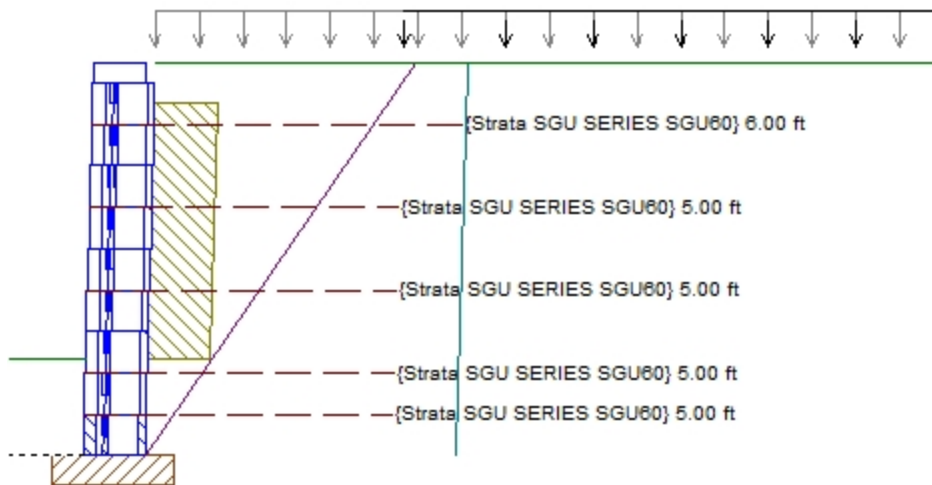
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	8.47	9.83	4.34	11.71
2	87.95	9.44	9.57	4.97	13.03

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	10.14	8.65	5.82	15.65
4	90.62	11.66	8.88	4.96	13.80

Section 3 Details

Section 3 Cross-section



Section 3 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		92.95 ft
Bottom Grade		88.17 ft
Base of Section		86.62 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	1.55 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	32.5000	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	18.6417	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.12	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	5.68	Pass
Fssl	Base Sliding	1.50	2.84	Pass

Internal and Local Checks

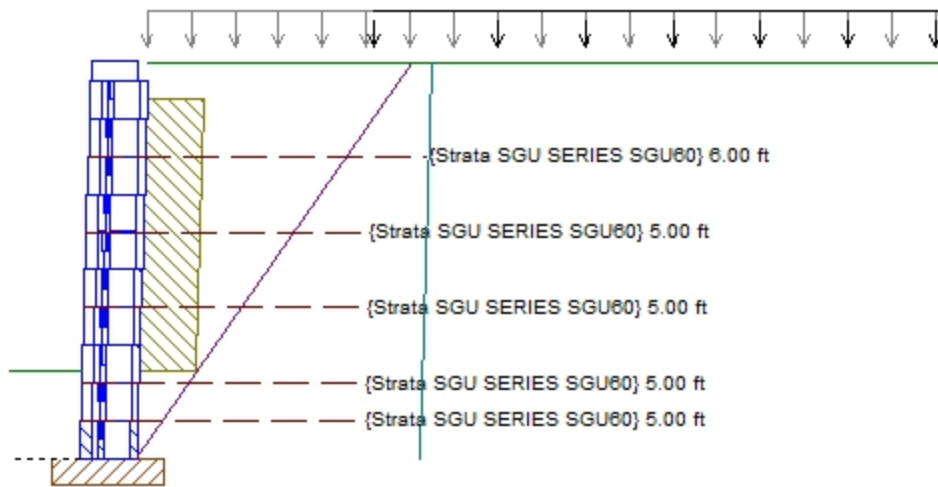
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	7.70	10.04	3.86	10.64
2	87.95	9.44	9.83	4.34	11.71

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	8.47	9.57	4.97	13.03
4	90.62	9.01	8.88	4.34	15.65
5	91.95	11.66	9.07	4.96	12.33

Section 4 Details

Section 4 Cross-section



Section 4 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		93.62 ft
Bottom Grade		88.16 ft
Base of Section		86.62 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.54 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	28.3200	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	18.5354	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.73	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	4.90	Pass
Fssl	Base Sliding	1.50	2.66	Pass

Internal and Local Checks

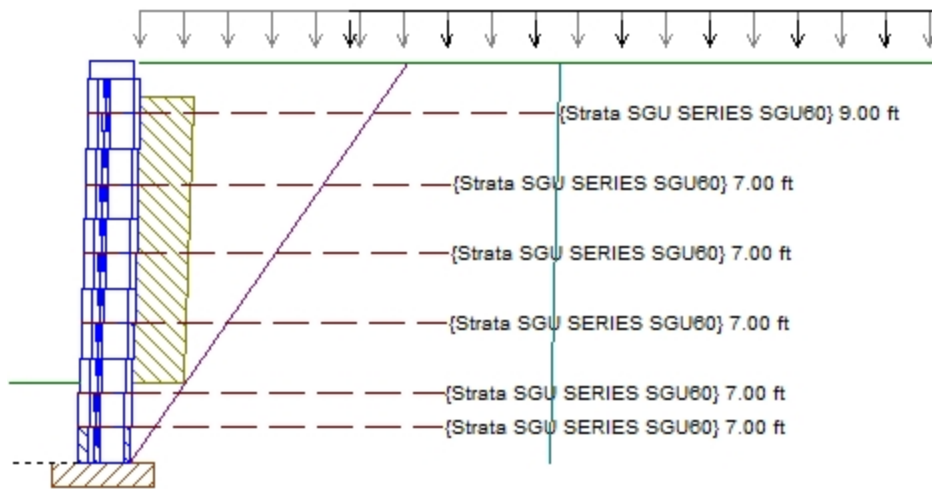
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	8.47	10.22	3.48	9.75
2	87.95	7.08	9.57	3.86	10.64

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	7.70	10.04	4.97	13.03
4	90.62	9.44	9.83	4.34	11.71
5	91.95	8.14	9.22	4.34	11.15

Section 5 Details

Section 5 Cross-section



Section 5 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		94.29 ft
Bottom Grade		88.16 ft
Base of Section		86.62 ft
Design Height	H	7.67 ft
Embedment Depth	H_{emb}	1.54 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	25.0400	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9545	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	18.4213	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.18	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.42	Pass

Internal and Local Checks

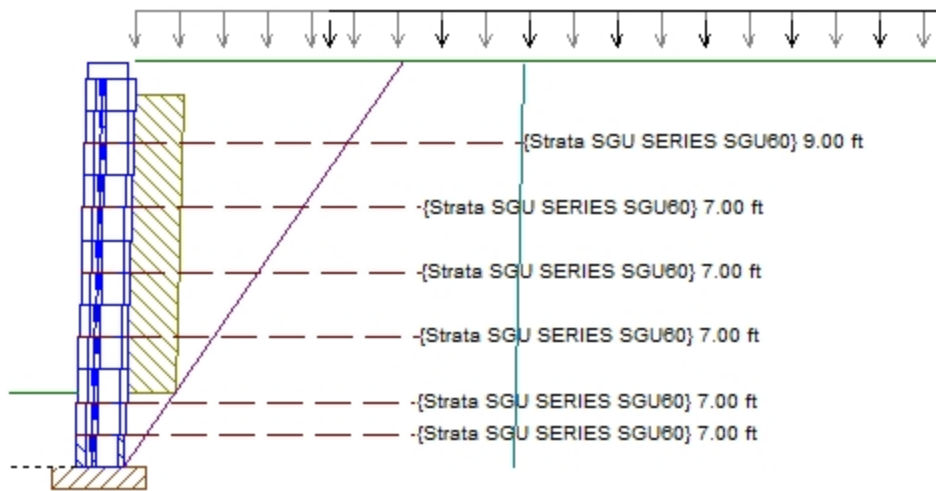
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	9.44	9.83	3.96	9.00
2	87.95	6.57	16.19	4.34	10.64

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	7.70	9.57	3.86	9.75
4	90.62	8.47	10.22	3.48	11.71
5	91.95	7.08	10.04	4.97	13.03
6	93.29	7.44	15.33	4.32	12.33

Section 6 Details

Section 6 Cross-section



Section 6 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		94.95 ft
Bottom Grade		88.15 ft
Base of Section		86.62 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	1.53 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	22.4900	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8750	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	18.3622	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.05	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.96	Pass
FSl	Base Sliding	1.50	3.23	Pass

Internal and Local Checks

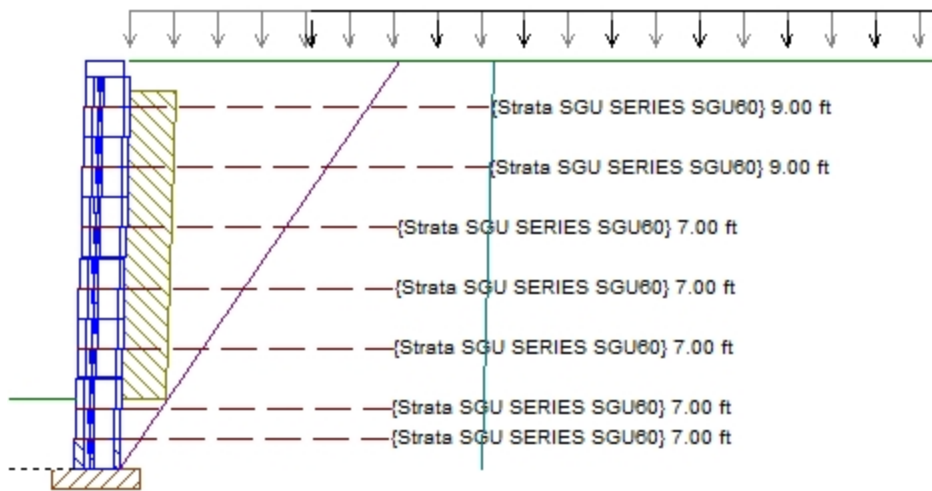
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Layer	Elevation (ft)	FScs	FSpO	FSl	FSto
1	87.29	8.47	10.04	4.97	8.35
2	87.95	7.08	16.39	3.65	13.03

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	6.14	10.22	3.96	10.64
4	90.62	9.44	16.19	4.34	9.00
5	91.95	6.57	9.83	3.48	11.71
6	93.29	7.70	9.57	3.86	9.75

Section 7 Details

Section 7 Cross-section



Section 7 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		95.62 ft
Bottom Grade		88.17 ft
Base of Section		86.62 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.55 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	20.8100	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8077	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	18.6024	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.11	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	6.19	Pass
Fssl	Base Sliding	1.50	3.06	Pass

Internal and Local Checks

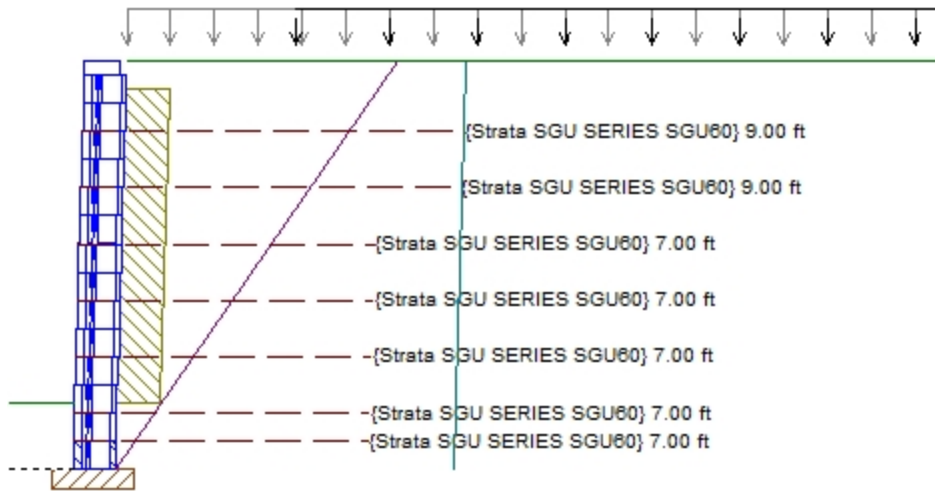
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	6.57	9.83	3.86	9.75
2	87.95	7.70	9.57	3.39	7.79

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	5.78	16.56	3.48	10.64
4	90.62	9.44	16.39	3.65	13.03
5	91.95	8.47	10.04	3.96	8.35
6	93.29	7.08	16.19	4.34	11.71
7	94.62	6.14	10.22	4.97	9.00

Section 8 Details

Section 8 Cross-section



Section 8 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		96.29 ft
Bottom Grade		88.22 ft
Base of Section		86.62 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.60 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.8400	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	19.2008	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.32	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	5.54	Pass
Fssl	Base Sliding	1.50	2.90	Pass

Internal and Local Checks

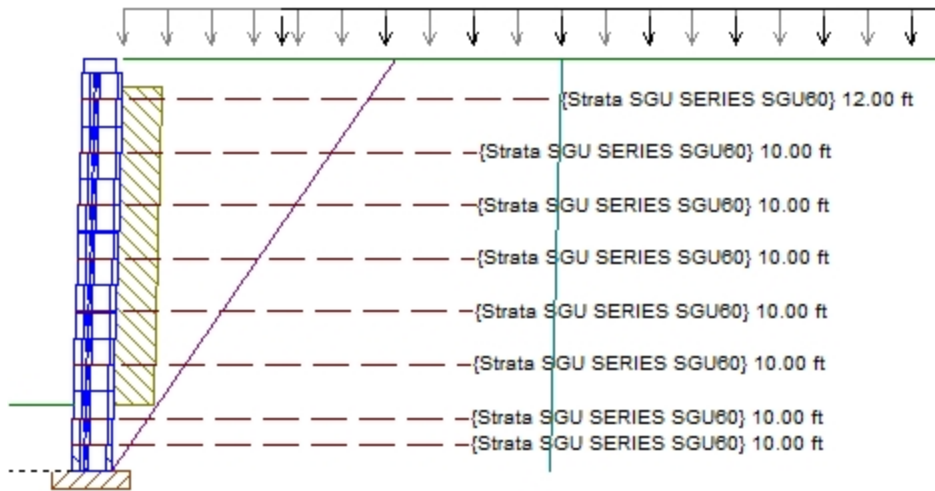
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	7.08	16.19	4.34	9.00
2	87.95	8.47	10.22	4.97	7.30

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	4.91	16.71	3.17	11.71
4	90.62	6.14	10.04	3.39	7.79
5	91.95	7.70	9.83	3.86	9.75
6	93.29	6.57	9.57	3.48	10.64
7	94.62	9.44	16.39	3.96	8.35

Section 9 Details

Section 9 Cross-section



Section 9 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		96.95 ft
Bottom Grade		88.27 ft
Base of Section		86.62 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.65 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.0100	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0000	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	19.8032	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.48	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	9.60	Pass
Fssl	Base Sliding	1.50	3.85	Pass

Internal and Local Checks

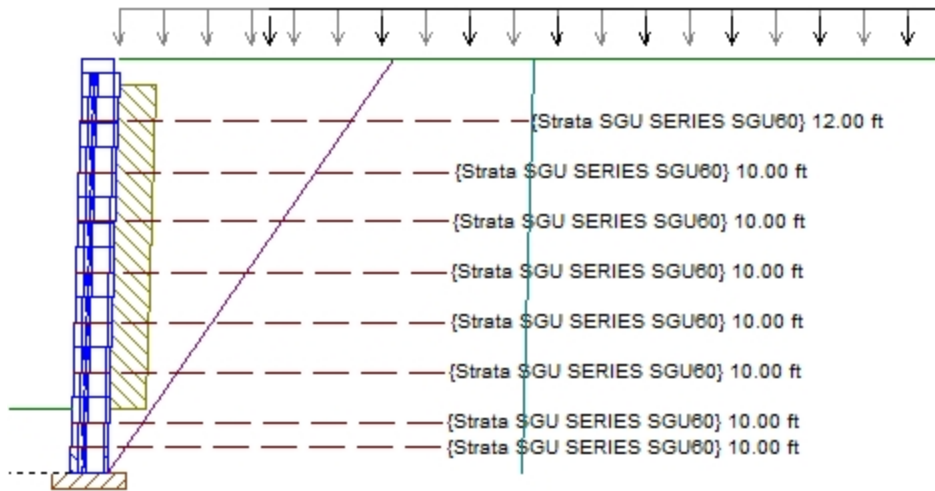
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	9.44	16.39	3.96	8.35
2	87.95	6.57	9.57	3.65	13.03

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	4.70	25.93	3.89	6.87
4	90.62	5.78	16.56	3.48	11.71
5	91.95	7.70	16.19	4.97	7.30
6	93.29	8.47	10.22	4.34	9.00
7	94.62	7.08	16.71	3.17	10.64
8	95.95	6.14	9.83	3.86	9.75

Section 10 Details

Section 10 Cross-section



Section 10 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		97.62 ft
Bottom Grade		88.32 ft
Base of Section		86.62 ft
Design Height	H	11.00 ft
Embedment Depth	H_{emb}	1.70 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	18.2800	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9375	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	20.4016	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.72	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	8.69	Pass
Fssl	Base Sliding	1.50	3.67	Pass

Internal and Local Checks

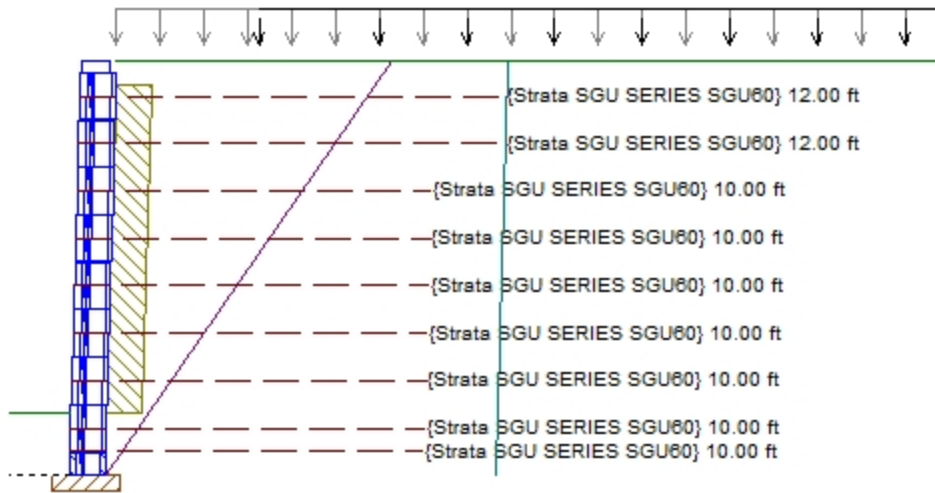
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	7.08	9.83	3.86	9.75
2	87.95	8.47	16.71	3.17	7.79

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	6.14	26.11	3.67	6.49
4	90.62	4.51	10.04	3.39	10.64
5	91.95	4.91	10.22	3.89	6.87
6	93.29	6.57	16.39	3.65	13.03
7	94.62	9.44	9.57	3.96	8.35
8	95.95	4.70	25.93	4.97	9.00

Section 11 Details

Section 11 Cross-section



Section 11 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		98.29 ft
Bottom Grade		88.37 ft
Base of Section		86.62 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.75 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	17.6500	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8824	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	21.0000	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.04	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.52	Pass

Internal and Local Checks

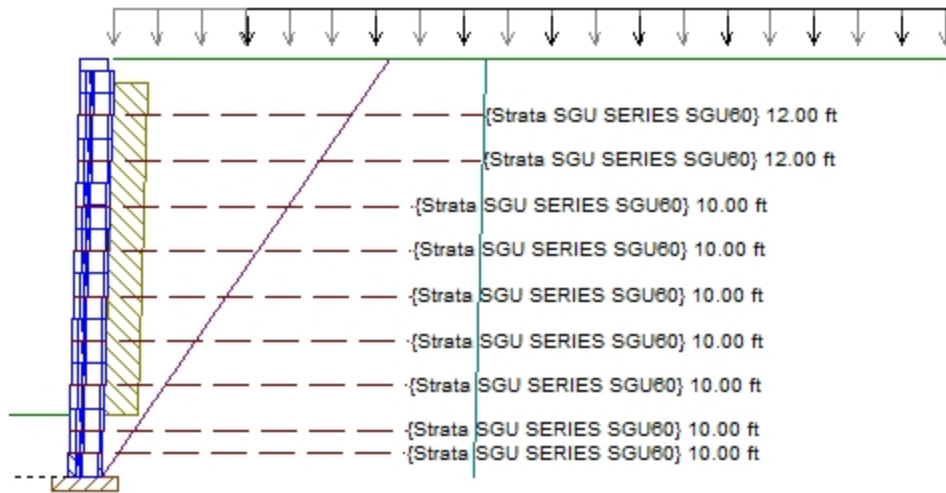
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	4.70	25.93	4.34	7.30
2	87.95	9.44	9.57	4.97	9.00

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	7.70	16.19	3.48	6.15
4	90.62	4.34	26.28	3.48	11.71
5	91.95	5.78	16.56	3.96	6.49
6	93.29	6.57	26.11	3.67	7.79
7	94.62	8.47	9.83	3.17	9.75
8	95.95	7.08	16.71	3.86	10.64
9	97.29	6.14	16.39	3.89	8.35

Section 12 Details

Section 12 Cross-section



Section 12 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		98.95 ft
Bottom Grade		88.42 ft
Base of Section		86.62 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.80 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	17.0900	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	21.5984	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.41	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	7.24	Pass
Fssl	Base Sliding	1.50	3.37	Pass

Internal and Local Checks

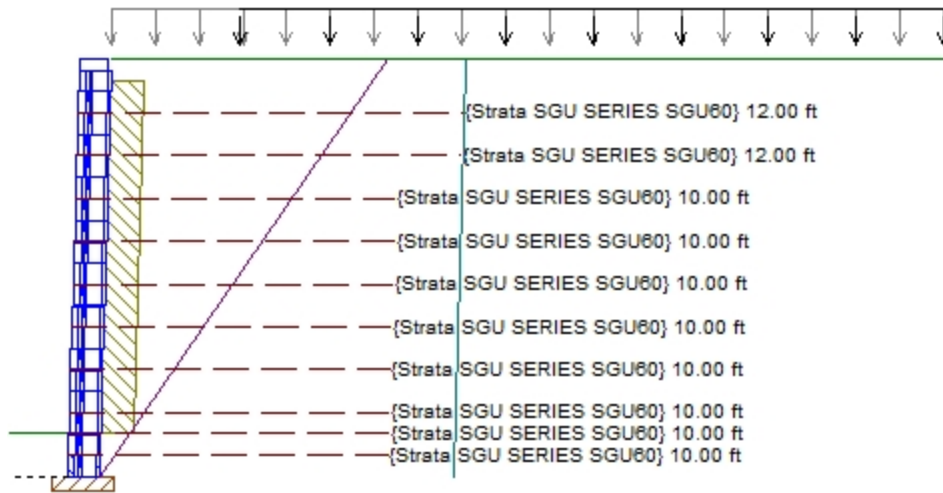
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	6.14	16.39	3.89	13.03
2	87.95	7.08	16.71	3.86	8.35

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	89.29	8.47	10.22	3.65	5.84
4	90.62	4.19	26.42	3.31	6.87
5	91.95	4.51	10.04	3.39	10.64
6	93.29	4.91	9.83	3.48	6.15
7	94.62	7.70	16.19	4.97	9.00
8	95.95	9.44	25.93	4.34	7.30
9	97.29	4.70	9.57	3.48	11.71

Section 13 Details

Section 13 Cross-section



Section 13 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		99.62 ft
Bottom Grade		87.96 ft
Base of Section		86.62 ft
Design Height	H	13.00 ft
Embedment Depth	H _{emb}	1.34 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.5200	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7895	Pass
La	Min. Anchorage Length	1.0000	3.2684	Pass
MinHemb	Minimum Embedment	4.0000	16.1142	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.25	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.66	Pass
Fssl	Base Sliding	1.50	3.24	Pass

Internal and Local Checks

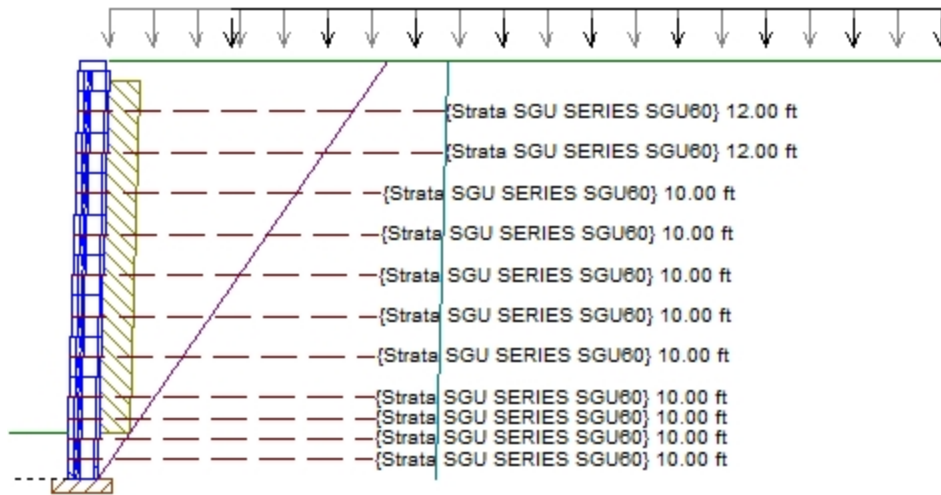
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	87.29	6.57	26.11	3.67	9.75
2	87.95	4.70	9.57	3.48	11.71

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	88.62	9.44	25.93	3.17	7.79
4	89.95	4.05	26.55	3.16	5.56
5	91.29	4.34	26.28	3.96	6.49
6	92.62	5.78	16.56	4.34	5.84
7	93.95	7.70	10.22	3.65	6.87
8	95.29	8.47	16.39	3.86	13.03
9	96.62	7.08	16.71	3.89	8.35
10	97.95	6.14	26.42	3.31	9.00

Section 14 Details

Section 14 Cross-section



Section 14 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		99.62 ft
Bottom Grade		87.50 ft
Base of Section		85.95 ft
Design Height	H	13.67 ft
Embedment Depth	H _{emb}	1.54 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.7200	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	18.5118	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.92	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.14	Pass
Fssl	Base Sliding	1.50	3.12	Pass

Internal and Local Checks

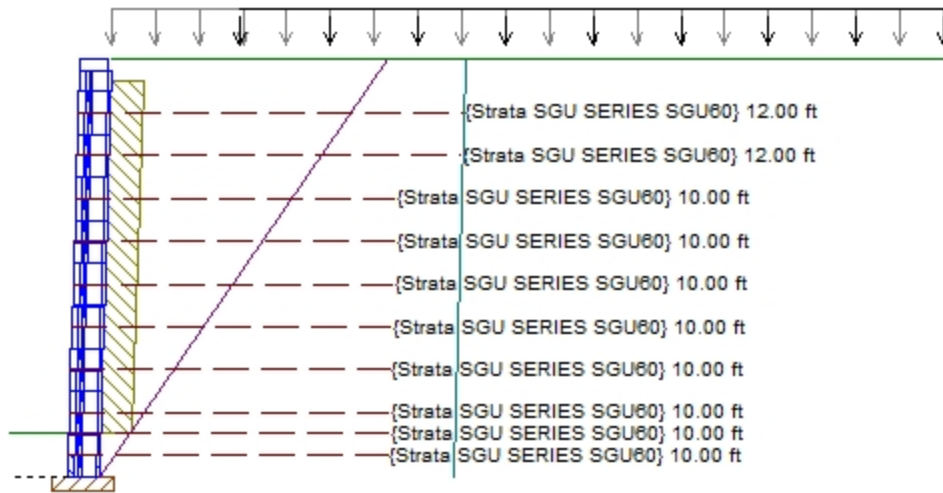
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	86.62	6.14	16.19	3.48	7.30
2	87.29	7.08	26.42	3.31	9.00

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	87.95	8.47	16.71	3.89	10.64
4	88.62	4.91	26.67	3.02	5.30
5	89.95	3.93	10.04	3.39	6.15
6	91.29	4.19	9.83	4.97	8.35
7	92.62	4.51	16.39	3.67	7.79
8	93.95	9.44	25.93	3.16	5.56
9	95.29	4.70	9.57	3.17	9.75
10	96.62	6.57	26.11	3.48	11.71
11	97.95	4.05	26.55	3.65	6.87

Section 15 Details

Section 15 Cross-section



Section 15 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		98.95 ft
Bottom Grade		87.29 ft
Base of Section		85.95 ft
Design Height	H	13.00 ft
Embedment Depth	H _{emb}	1.33 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.4200	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7895	Pass
La	Min. Anchorage Length	1.0000	3.2684	Pass
MinHemb	Minimum Embedment	4.0000	15.9843	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.24	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.66	Pass
Fssl	Base Sliding	1.50	3.24	Pass

Internal and Local Checks

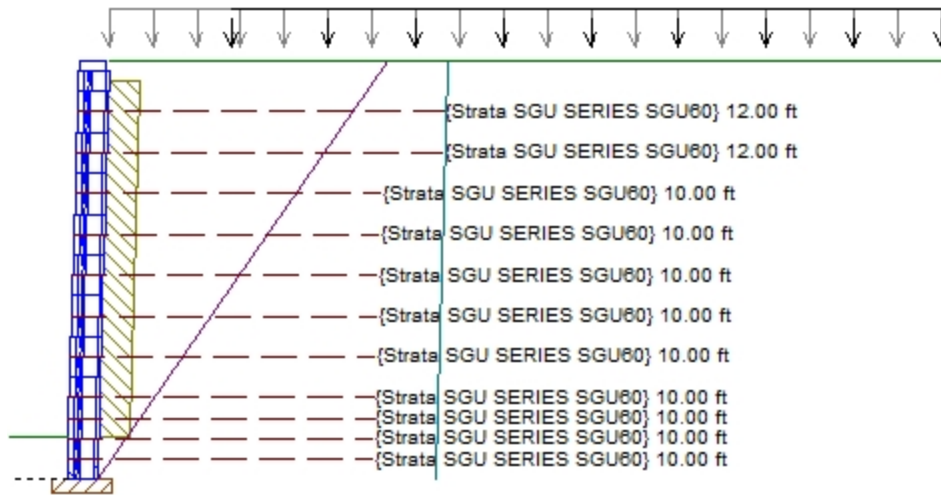
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	86.62	4.05	26.55	3.86	13.03
2	87.29	6.57	26.11	3.65	6.87

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	87.95	4.70	9.57	3.48	11.71
4	89.29	7.70	10.22	3.16	5.56
5	90.62	4.05	26.55	4.34	6.49
6	91.95	4.34	26.28	3.96	5.84
7	93.29	5.78	16.56	3.17	10.64
8	94.62	9.44	16.71	3.48	5.30
9	95.95	8.47	26.67	3.02	7.30
10	97.29	7.08	16.19	3.89	9.00

Section 16 Details

Section 16 Cross-section



Section 16 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		98.95 ft
Bottom Grade		86.67 ft
Base of Section		85.29 ft
Design Height	H	13.67 ft
Embedment Depth	H _{emb}	1.38 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.2400	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	16.5748	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.74	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.14	Pass
Fssl	Base Sliding	1.50	3.12	Pass

Internal and Local Checks

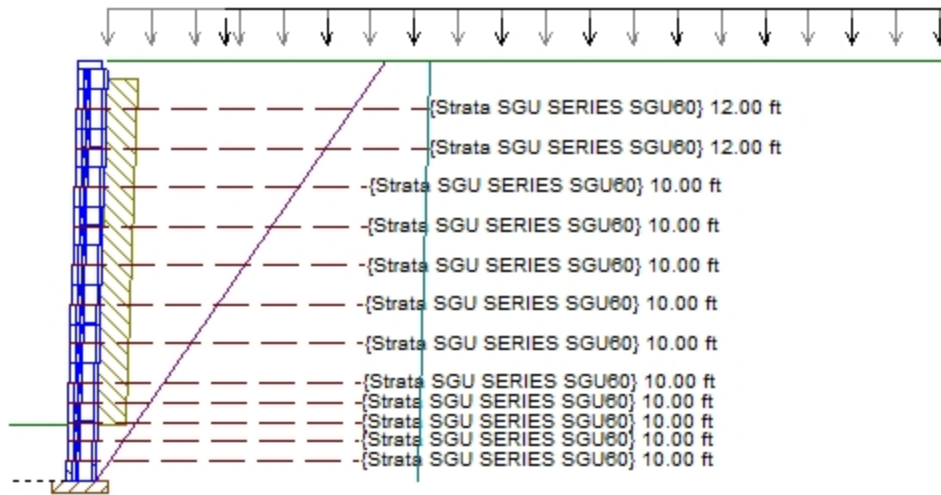
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	85.95	6.14	16.39	3.67	9.75
2	86.62	4.91	26.42	3.31	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	87.29	8.47	16.19	3.89	6.15
4	87.95	7.08	25.93	3.16	5.30
5	89.29	3.93	26.67	3.02	8.35
6	90.62	3.93	9.83	4.97	7.79
7	91.95	4.51	10.04	3.39	9.00
8	93.29	4.19	26.67	3.86	11.71
9	94.62	4.70	9.57	3.16	5.56
10	95.95	7.70	10.22	3.48	13.03
11	97.29	4.05	26.55	3.65	6.87

Section 17 Details

Section 17 Cross-section



Section 17 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		98.95 ft
Bottom Grade		86.49 ft
Base of Section		84.62 ft
Design Height	H	14.33 ft
Embedment Depth	Hemb	1.87 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.9800	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7143	Pass
La	Min. Anchorage Length	1.0000	2.3865	Pass
MinHemb	Minimum Embedment	4.0000	22.4094	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.73	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	5.69	Pass
Fssl	Base Sliding	1.50	3.01	Pass

Internal and Local Checks

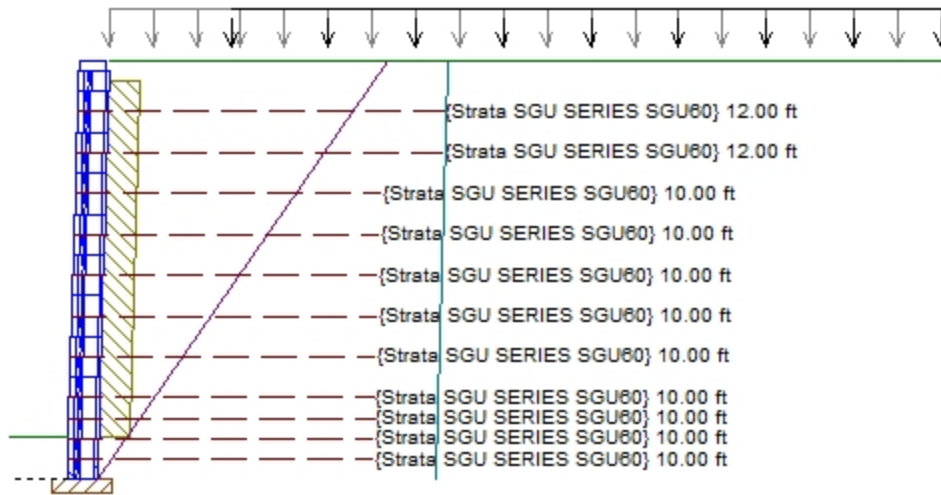
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	85.29	6.57	26.11	3.48	5.30
2	85.95	5.78	16.56	4.34	6.49

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	86.62	7.70	10.22	3.65	6.87
4	87.29	4.05	26.55	3.02	7.30
5	87.95	4.34	26.28	2.89	5.07
6	89.29	3.81	26.78	3.17	5.84
7	90.62	9.44	16.71	3.96	10.64
8	91.95	4.05	26.55	3.48	5.30
9	93.29	4.70	16.19	3.67	8.35
10	94.62	8.47	25.93	3.16	6.15
11	95.95	7.08	16.39	3.89	9.75
12	97.29	6.14	26.42	3.31	5.56

Section 18 Details

Section 18 Cross-section



Section 18 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		98.29 ft
Bottom Grade		85.99 ft
Base of Section		84.62 ft
Design Height	H	13.67 ft
Embedment Depth	H_{emb}	1.37 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.1500	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	16.4449	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.73	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.14	Pass
Fssl	Base Sliding	1.50	3.12	Pass

Internal and Local Checks

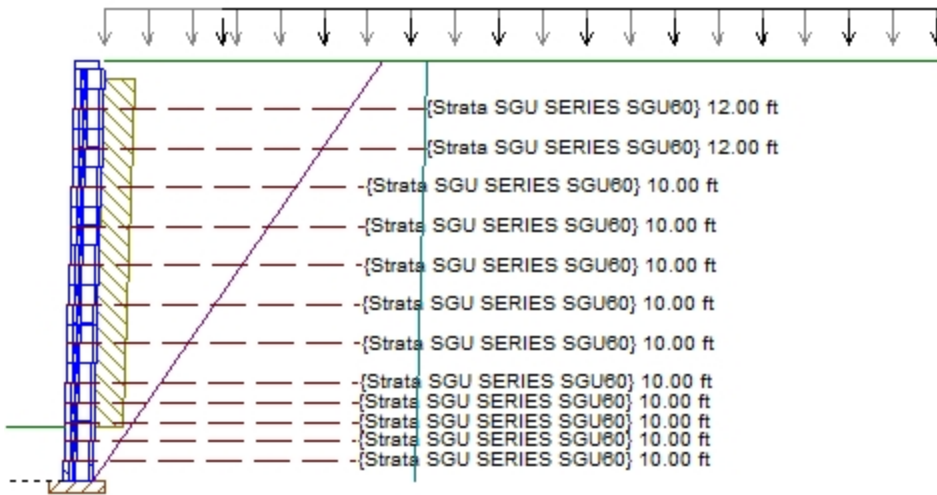
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	85.29	6.14	26.67	3.02	5.56
2	85.95	4.91	26.67	3.86	11.71

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	86.62	8.47	16.39	3.89	5.56
4	87.29	7.08	26.42	3.31	13.03
5	88.62	4.51	10.04	3.39	5.30
6	89.95	3.93	26.67	3.02	9.00
7	91.29	3.93	9.57	3.16	7.79
8	92.62	4.19	9.83	4.97	9.75
9	93.95	3.93	25.93	3.02	7.30
10	95.29	7.70	10.22	2.89	5.07
11	96.62	4.05	26.55	3.48	6.87

Section 19 Details

Section 19 Cross-section



Section 19 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		98.29 ft
Bottom Grade		85.73 ft
Base of Section		83.95 ft
Design Height	H	14.33 ft
Embedment Depth	Hemb	1.78 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.1600	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7143	Pass
La	Min. Anchorage Length	1.0000	2.3865	Pass
MinHemb	Minimum Embedment	4.0000	21.3346	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.64	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	5.69	Pass
Fssl	Base Sliding	1.50	3.01	Pass

Internal and Local Checks

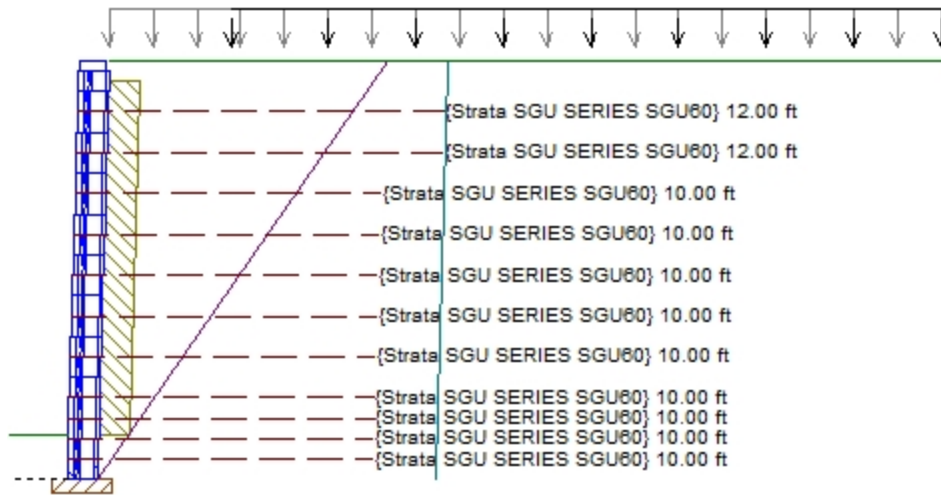
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	84.62	5.78	16.56	3.67	5.30
2	85.29	4.34	26.28	3.16	8.35

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.95	4.05	26.55	3.65	5.30
4	86.62	6.57	26.11	4.34	6.49
5	87.29	4.05	26.55	3.96	10.64
6	88.62	9.44	16.71	2.89	5.07
7	89.95	3.81	26.78	3.48	6.15
8	91.29	4.70	16.19	3.17	5.84
9	92.62	3.81	26.78	3.48	13.03
10	93.95	7.70	26.42	3.31	5.30
11	95.29	8.47	10.04	3.39	5.56
12	96.62	7.08	16.39	3.02	5.56

Section 20 Details

Section 20 Cross-section



Section 20 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		97.62 ft
Bottom Grade		85.40 ft
Base of Section		83.95 ft
Design Height	H	13.67 ft
Embedment Depth	Hemb	1.45 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.8700	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	17.4016	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	7.82	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.14	Pass
Fssl	Base Sliding	1.50	3.12	Pass

Internal and Local Checks

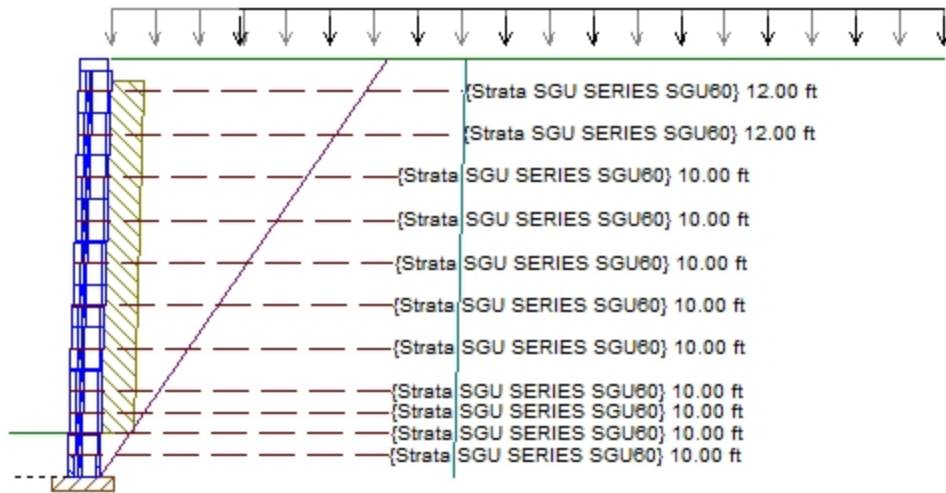
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	84.62	4.91	26.67	3.86	7.30
2	85.29	4.51	25.93	3.02	5.07

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.95	6.14	16.39	3.02	11.71
4	86.62	8.47	26.67	3.89	9.00
5	87.95	7.08	10.22	2.89	9.75
6	89.29	3.93	9.57	3.16	5.30
7	90.62	3.93	26.67	3.02	6.87
8	91.95	3.93	9.83	4.97	7.79
9	93.29	4.19	26.67	3.02	5.56
10	94.62	3.93	10.04	4.34	6.49
11	95.95	6.57	26.11	3.96	10.64

Section 21 Details

Section 21 Cross-section



Section 21 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		96.95 ft
Bottom Grade		85.29 ft
Base of Section		83.95 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.34 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	11.4600	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7895	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	16.0394	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.24	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	6.66	Pass
Fssl	Base Sliding	1.50	3.24	Pass

Internal and Local Checks

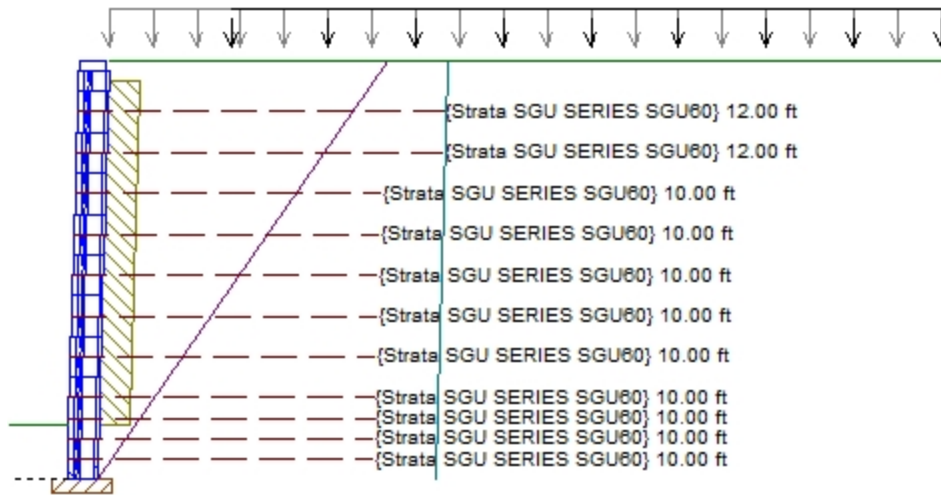
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	84.62	4.34	26.28	2.89	5.07
2	85.29	3.81	26.78	3.31	13.03

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.95	5.78	16.56	3.65	5.30
4	86.62	4.05	26.55	3.16	8.35
5	87.95	4.05	26.55	3.39	5.30
6	89.29	3.81	26.78	3.17	5.84
7	90.62	4.05	26.55	3.16	5.56
8	91.95	9.44	16.71	3.48	5.56
9	93.29	7.70	26.42	3.48	6.15
10	94.62	4.70	16.19	3.67	9.00
11	95.95	6.57	26.67	3.89	9.75

Section 22 Details

Section 22 Cross-section



Section 22 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		96.95 ft
Bottom Grade		85.08 ft
Base of Section		83.29 ft
Design Height	H	13.67 ft
Embedment Depth	Hemb	1.79 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	15.0600	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	21.4646	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.18	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.14	Pass
Fssl	Base Sliding	1.50	3.12	Pass

Internal and Local Checks

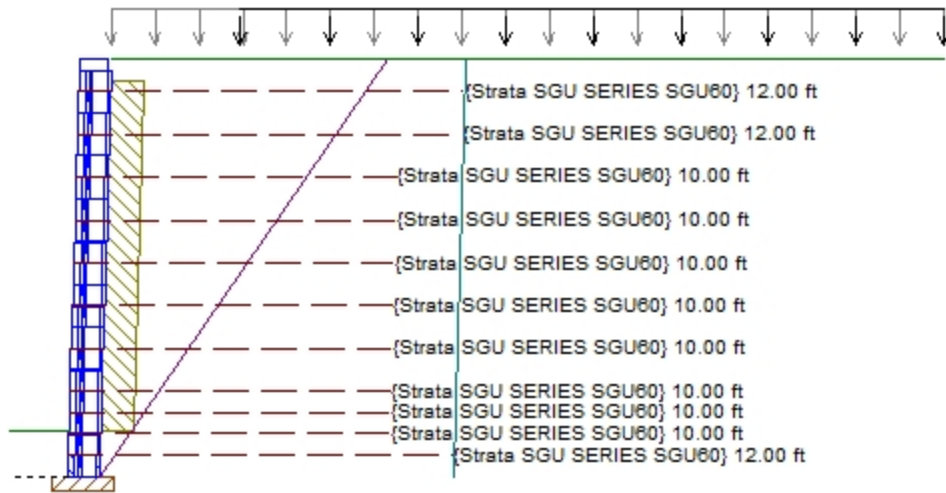
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	83.95	4.91	9.57	3.16	6.49
2	84.62	4.51	10.04	4.34	10.64

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.29	6.14	25.93	3.02	5.07
4	85.95	8.47	16.39	3.86	11.71
5	87.29	7.08	26.67	3.02	5.30
6	88.62	4.19	9.83	4.97	7.79
7	89.95	3.93	26.67	3.02	5.30
8	91.29	3.93	26.67	3.02	5.56
9	92.62	3.93	26.11	3.96	6.87
10	93.95	3.93	26.67	3.02	7.30
11	95.29	3.93	10.22	3.16	8.35

Section 23 Details

Section 23 Cross-section



Section 23 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		96.29 ft
Bottom Grade		84.75 ft
Base of Section		83.29 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.46 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.6600	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7895	Pass
La	Min. Anchorage Length	1.0000	2.8274	Pass
MinHemb	Minimum Embedment	4.0000	17.5315	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.39	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	9.30	Pass
Fssl	Base Sliding	1.50	3.83	Pass

Internal and Local Checks

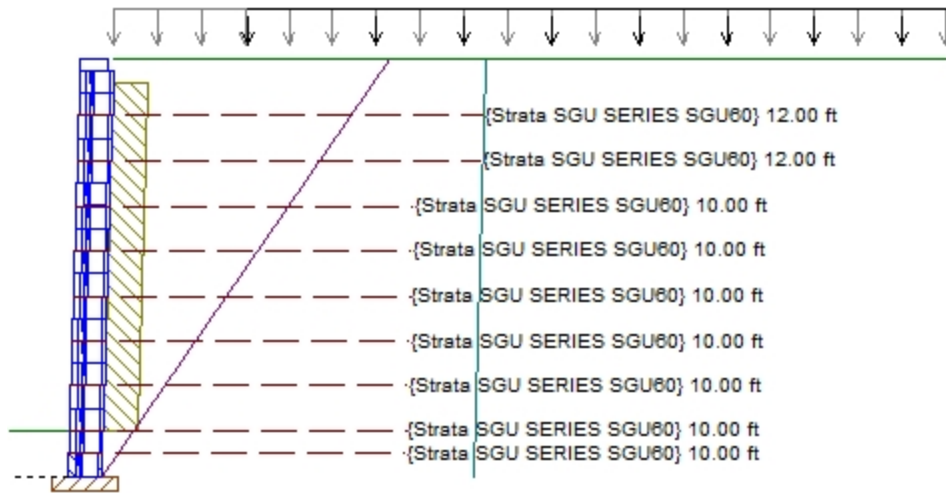
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	83.95	3.81	26.78	3.67	9.00
2	84.62	3.81	26.78	3.89	9.75

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.29	4.34	26.28	2.89	5.30
4	85.95	4.05	26.55	3.65	5.07
5	87.29	5.78	16.56	3.31	13.03
6	88.62	4.70	16.19	3.48	5.56
7	89.95	9.44	16.71	3.65	5.56
8	91.29	4.05	32.76	3.48	5.56
9	92.62	4.05	26.55	2.89	5.30
10	93.95	6.57	26.67	3.16	6.15
11	95.29	7.70	26.42	3.17	11.71

Section 24 Details

Section 24 Cross-section



Section 24 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		95.62 ft
Bottom Grade		84.62 ft
Base of Section		83.29 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.34 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.1400	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	16.0197	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.84	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	7.24	Pass
Fssl	Base Sliding	1.50	3.37	Pass

Internal and Local Checks

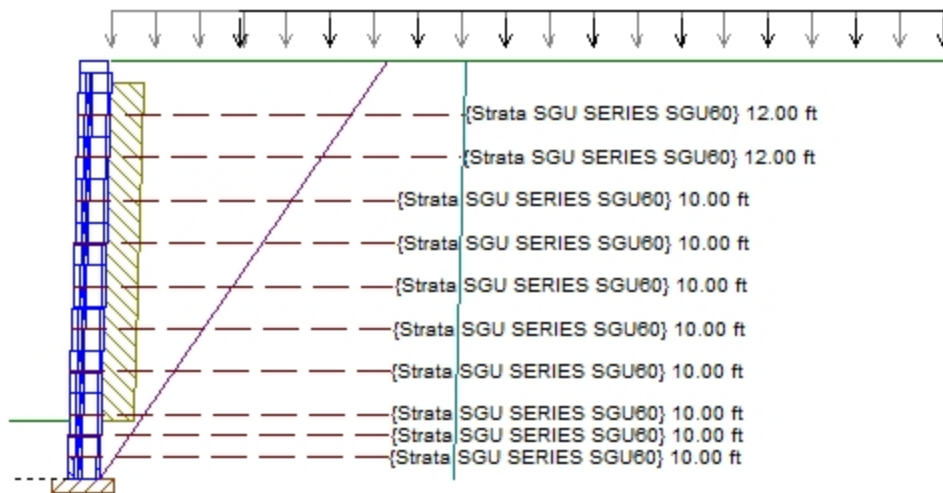
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	83.95	4.91	25.93	3.16	8.35
2	84.62	4.51	26.67	3.02	5.30

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	85.95	4.19	10.04	4.34	5.30
4	87.29	8.47	9.83	4.97	10.64
5	88.62	7.08	9.57	3.02	5.07
6	89.95	6.14	10.22	3.16	6.87
7	91.29	3.93	26.11	3.96	5.84
8	92.62	3.93	26.42	3.31	5.56
9	93.95	4.19	26.67	3.02	5.84

Section 25 Details

Section 25 Cross-section



Section 25 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		95.62 ft
Bottom Grade		84.42 ft
Base of Section		82.62 ft
Design Height	H	13.00 ft
Embedment Depth	Hemb	1.80 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	16.0700	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7895	Pass
La	Min. Anchorage Length	1.0000	3.2684	Pass
MinHemb	Minimum Embedment	4.0000	21.5984	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.78	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.66	Pass
Fssl	Base Sliding	1.50	3.24	Pass

Internal and Local Checks

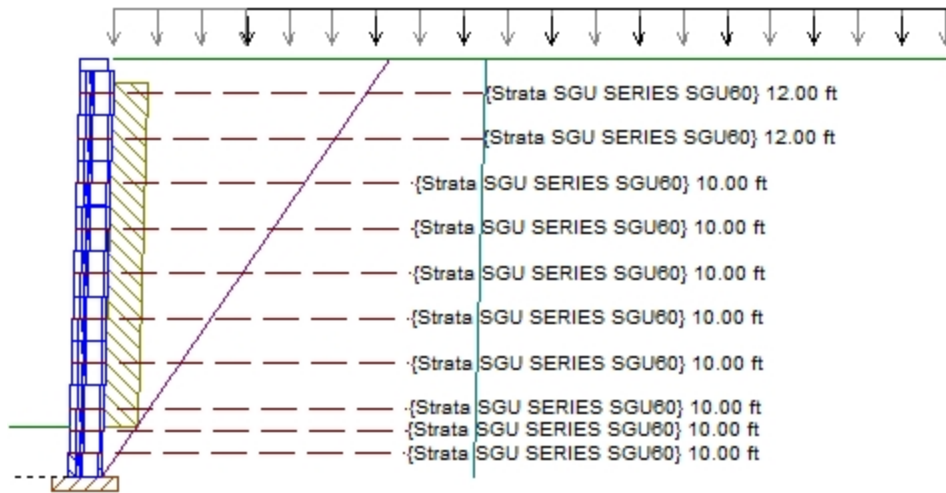
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Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	83.29	3.81	26.78	3.65	5.56
2	83.95	4.34	26.28	3.17	11.71

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	6.57	26.67	3.67	5.30
4	85.95	5.78	16.56	2.89	9.00
5	87.29	4.70	16.19	3.89	9.75
6	88.62	3.81	26.78	3.86	5.30
7	89.95	4.05	32.76	3.16	5.30
8	91.29	4.05	26.55	3.16	5.56
9	92.62	4.05	26.55	2.89	5.56
10	93.95	7.70	26.42	3.02	7.79

Section 26 Details

Section 26 Cross-section



Section 26 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		94.95 ft
Bottom Grade		84.09 ft
Base of Section		82.62 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.47 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.5500	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	3.2684	Pass
MinHemb	Minimum Embedment	4.0000	17.6614	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.01	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.24	Pass
FSl	Base Sliding	1.50	3.37	Pass

Internal and Local Checks

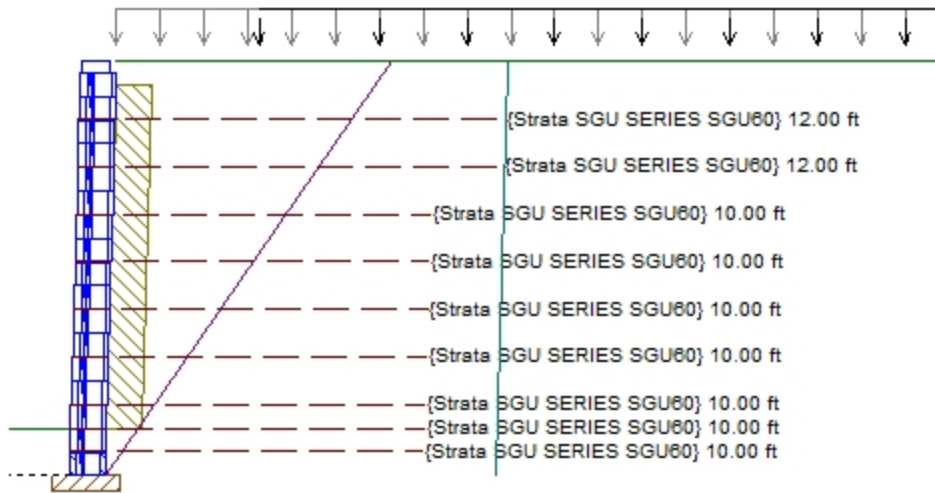
Static

Layer	Elevation (ft)	FScs	FSpO	FSl	FSto
1	83.29	4.91	10.04	3.16	5.07
2	83.95	4.51	26.11	3.96	6.49

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	4.19	26.67	3.02	5.30
4	85.95	8.47	10.22	3.16	8.35
5	87.29	7.08	25.93	4.34	5.30
6	88.62	6.14	26.67	3.02	5.56
7	89.95	3.93	26.67	3.02	7.30
8	91.29	3.93	26.55	3.39	5.84
9	92.62	4.19	26.42	3.31	5.56
10	93.95	4.19	26.67	3.65	13.03

Section 27 Details

Section 27 Cross-section



Section 27 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		94.29 ft
Bottom Grade		83.95 ft
Base of Section		82.62 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.33 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	12.9000	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8824	Pass
La	Min. Anchorage Length	1.0000	4.1499	Pass
MinHemb	Minimum Embedment	4.0000	15.9961	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.49	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.52	Pass

Internal and Local Checks

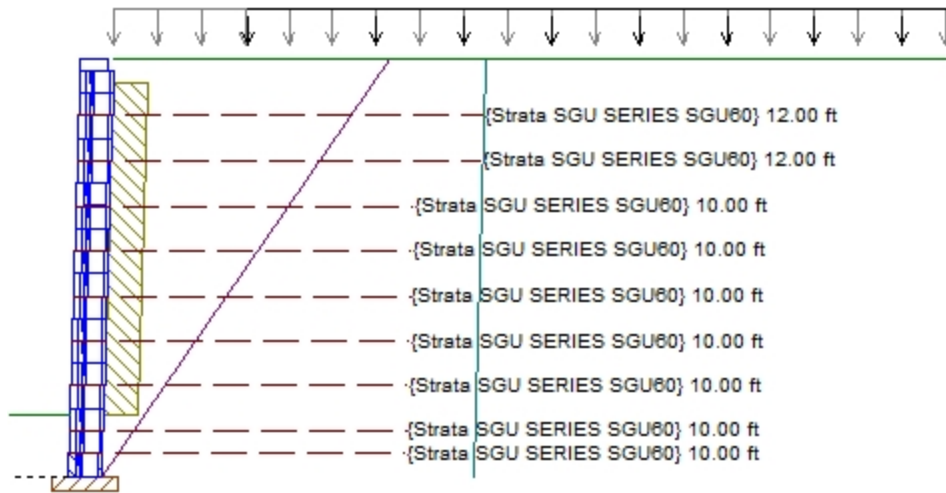
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	83.29	4.34	26.28	3.65	5.30
2	83.95	6.57	26.67	3.48	5.07

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	4.05	32.76	4.97	6.15
4	85.95	4.70	16.19	2.89	9.00
5	87.29	3.81	26.78	3.67	5.56
6	88.62	3.81	26.78	3.17	11.71
7	89.95	4.05	16.39	2.89	5.56
8	91.29	4.05	26.55	3.02	7.79
9	92.62	7.70	26.42	3.48	6.15

Section 28 Details

Section 28 Cross-section



Section 28 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		94.29 ft
Bottom Grade		83.76 ft
Base of Section		81.95 ft
Design Height	H	12.33 ft
Embedment Depth	Hemb	1.81 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	17.2100	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	21.7283	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.42	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	7.24	Pass
Fssl	Base Sliding	1.50	3.37	Pass

Internal and Local Checks

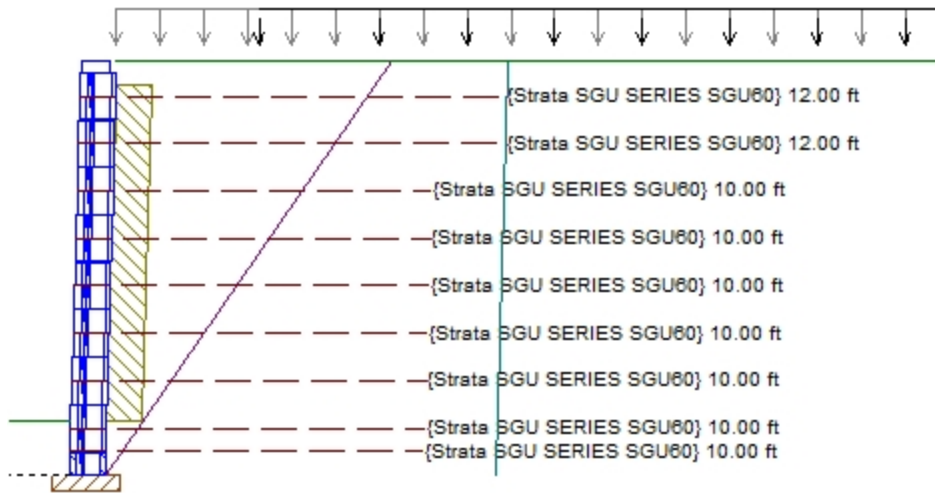
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	82.62	4.51	26.11	3.96	5.84
2	83.29	4.19	26.67	3.16	9.75

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	3.93	26.42	3.31	10.64
4	85.95	4.91	26.67	3.02	5.07
5	87.29	8.47	10.22	3.16	6.49
6	88.62	7.08	10.04	3.02	5.30
7	89.95	6.14	9.57	3.89	5.56
8	91.29	4.19	26.42	3.31	5.84
9	92.62	4.19	26.67	3.65	5.84

Section 29 Details

Section 29 Cross-section



Section 29 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		93.62 ft
Bottom Grade		83.47 ft
Base of Section		81.95 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.52 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	14.9700	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8824	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	18.2283	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.73	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.52	Pass

Internal and Local Checks

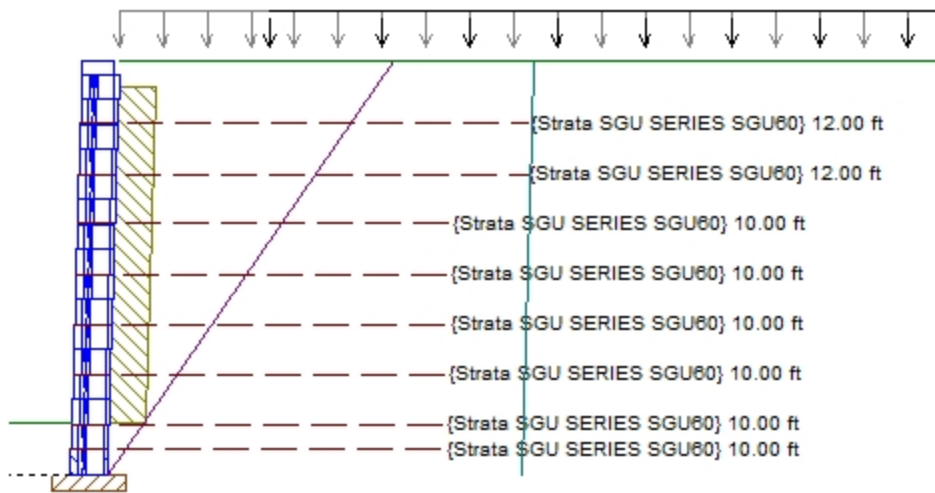
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	82.62	6.57	26.67	3.65	6.15
2	83.29	4.05	32.76	3.02	7.79

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	4.05	9.83	3.16	5.30
4	85.95	4.34	26.28	2.89	9.00
5	87.29	3.81	26.78	4.97	5.30
6	88.62	4.05	16.39	3.48	5.07
7	89.95	4.70	16.19	4.34	5.56
8	91.29	7.70	26.42	3.02	6.15
9	92.62	4.34	26.28	3.48	6.87

Section 30 Details

Section 30 Cross-section



Section 30 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		92.95 ft
Bottom Grade		83.30 ft
Base of Section		81.95 ft
Design Height	H	11.00 ft
Embedment Depth	Hemb	1.34 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	13.9100	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9375	Pass
La	Min. Anchorage Length	1.0000	4.5909	Pass
MinHemb	Minimum Embedment	4.0000	16.1220	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.22	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	8.69	Pass
Fssl	Base Sliding	1.50	3.67	Pass

Internal and Local Checks

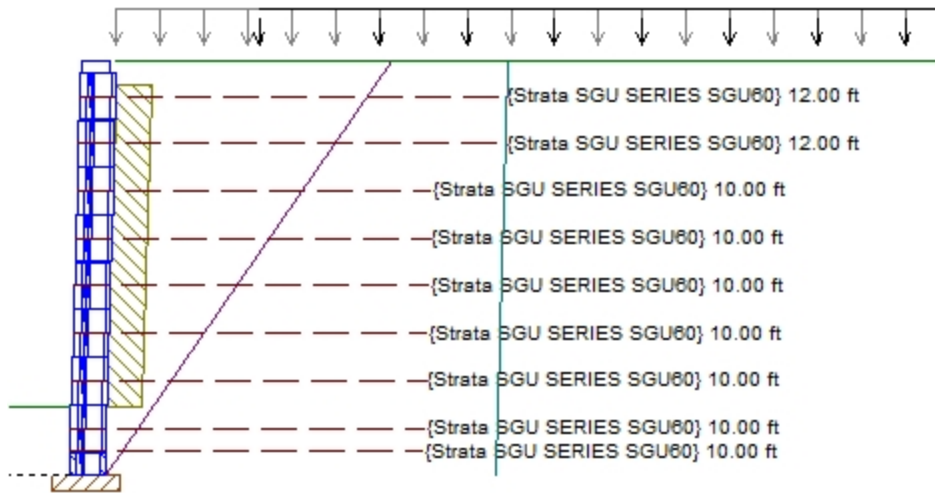
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	82.62	4.51	26.42	3.96	10.64
2	83.29	4.19	26.42	3.31	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	84.62	3.93	26.55	3.39	8.35
4	85.95	4.91	26.67	3.16	9.75
5	87.29	8.47	9.57	3.89	5.84
6	88.62	7.08	26.67	3.02	5.07
7	89.95	6.14	26.11	3.31	5.56
8	91.29	3.93	26.42	3.31	5.30

Section 31 Details

Section 31 Cross-section



Section 31 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		92.95 ft
Bottom Grade		83.22 ft
Base of Section		81.29 ft
Design Height	H	11.67 ft
Embedment Depth	Hemb	1.93 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.8300	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8824	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	23.1654	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.27	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.52	Pass

Internal and Local Checks

Static

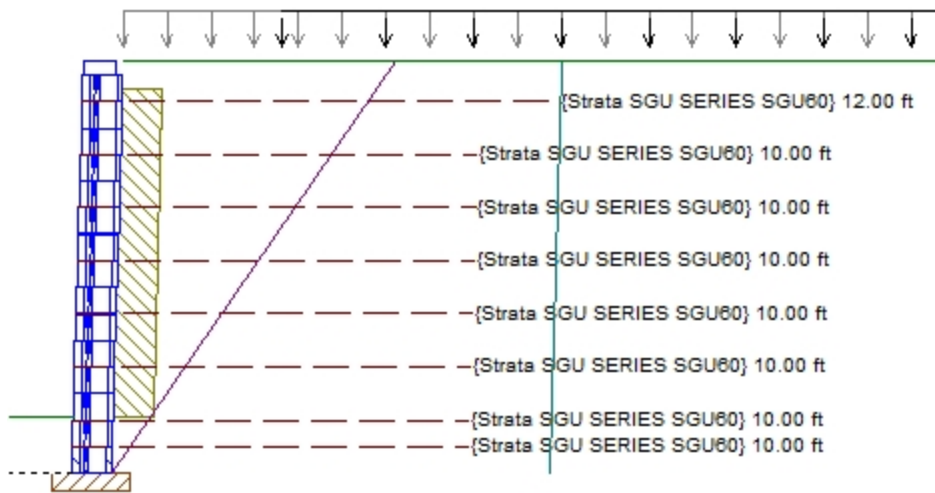
Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	81.95	4.05	32.76	3.65	5.30
2	82.62	4.05	9.83	2.89	5.30

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.95	7.70	26.42	3.48	5.84
4	85.29	6.57	26.67	2.89	9.00
5	86.62	4.05	16.39	4.34	5.56
6	87.95	4.70	16.19	3.02	7.79
7	89.29	4.34	26.28	3.16	6.15
8	90.62	5.78	25.93	3.16	7.30
9	91.95	4.34	26.28	3.02	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.95	3.93	26.55	3.31	5.56
4	85.29	3.93	26.42	3.39	8.35
5	86.62	7.08	26.42	3.31	5.56
6	87.95	8.47	26.11	3.31	10.64
7	89.29	4.91	26.42	3.31	9.75
8	90.62	6.14	26.78	3.17	5.30

Section 33 Details

Section 33 Cross-section



Section 33 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		91.62 ft
Bottom Grade		82.71 ft
Base of Section		81.29 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	1.42 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	15.9300	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0000	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	17.0354	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.13	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	9.60	Pass
Fssl	Base Sliding	1.50	3.85	Pass

Internal and Local Checks

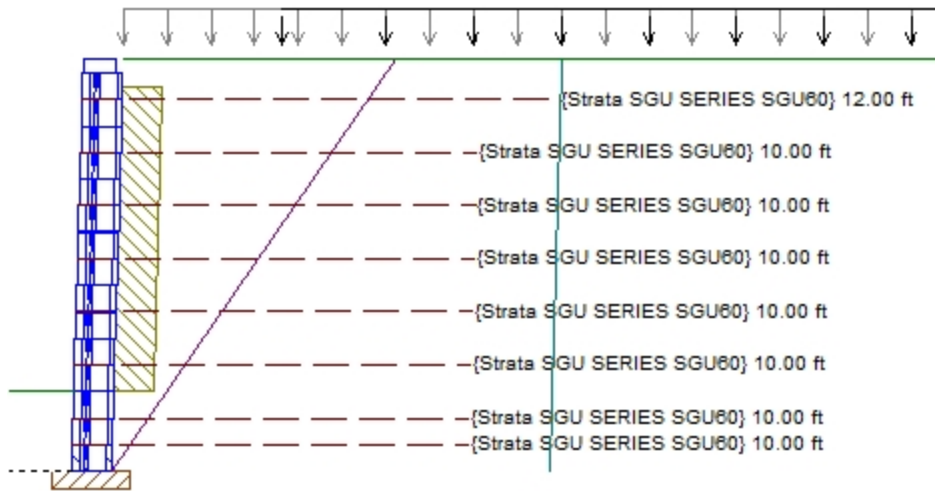
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	81.95	6.57	26.67	3.65	5.84
2	82.62	4.05	32.76	3.02	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.95	3.81	10.22	3.02	5.07
4	85.29	7.70	26.42	2.89	9.00
5	86.62	5.78	25.93	3.16	6.15
6	87.95	4.05	16.39	2.89	5.30
7	89.29	4.05	9.83	3.48	5.30
8	90.62	4.34	26.28	3.48	6.15

Section 34 Details

Section 34 Cross-section



Section 34 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		90.95 ft
Bottom Grade		82.63 ft
Base of Section		80.62 ft
Design Height	H	10.33 ft
Embedment Depth	Hemb	2.01 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	24.1000	Pass
L	Min. Reinforcement Length	3.0000	10.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0000	Pass
La	Min. Anchorage Length	1.0000	3.7093	Pass
MinHemb	Minimum Embedment	4.0000	24.0787	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	12.01	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	9.60	Pass
Fssl	Base Sliding	1.50	3.85	Pass

Internal and Local Checks

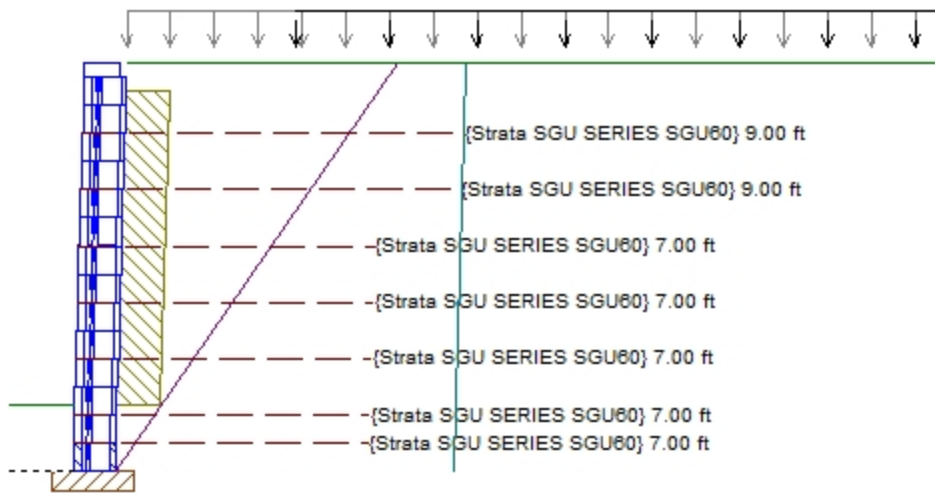
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	81.29	4.19	26.55	3.16	5.56
2	81.95	4.51	26.42	3.39	7.79

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.29	3.93	26.11	3.67	5.56
4	84.62	3.93	26.67	3.67	8.35
5	85.95	7.08	26.42	3.31	5.56
6	87.29	8.47	26.78	3.17	5.07
7	88.62	4.91	26.67	3.31	13.03
8	89.95	6.14	26.55	3.96	7.30

Section 35 Details

Section 35 Cross-section



Section 35 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		90.29 ft
Bottom Grade		82.20 ft
Base of Section		80.62 ft
Design Height	H	9.67 ft
Embedment Depth	Hemb	1.58 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	19.4800	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	18.9094	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.28	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	5.54	Pass
Fssl	Base Sliding	1.50	2.90	Pass

Internal and Local Checks

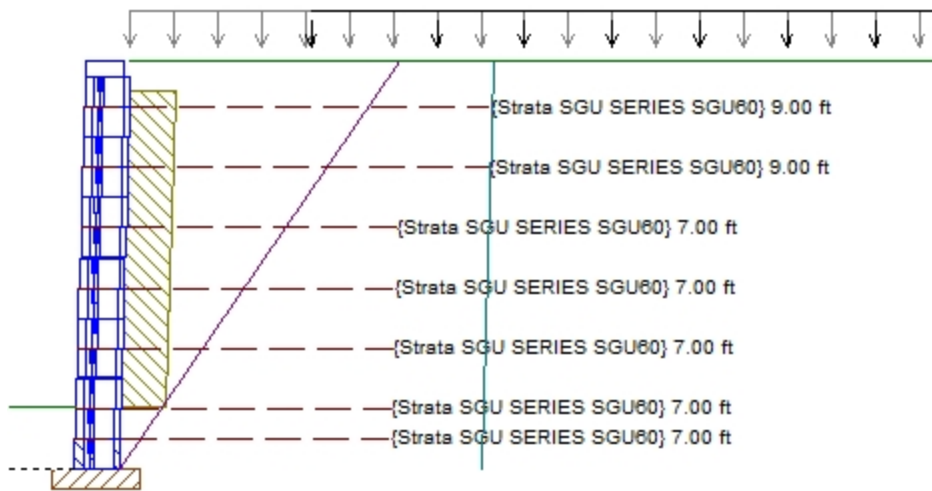
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	81.29	7.70	26.42	3.65	5.07
2	81.95	6.57	26.67	2.89	9.00

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.29	4.34	26.28	3.48	6.87
4	84.62	3.81	10.22	3.16	9.75
5	85.95	4.34	26.28	3.16	6.15
6	87.29	5.78	25.93	3.48	6.15
7	88.62	4.05	32.76	3.02	5.84

Section 36 Details

Section 36 Cross-section



Section 36 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		89.62 ft
Bottom Grade		81.96 ft
Base of Section		80.62 ft
Design Height	H	9.00 ft
Embedment Depth	Hemb	1.34 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	17.4400	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8077	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	16.0354	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.76	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	6.19	Pass
Fssl	Base Sliding	1.50	3.06	Pass

Internal and Local Checks

Static

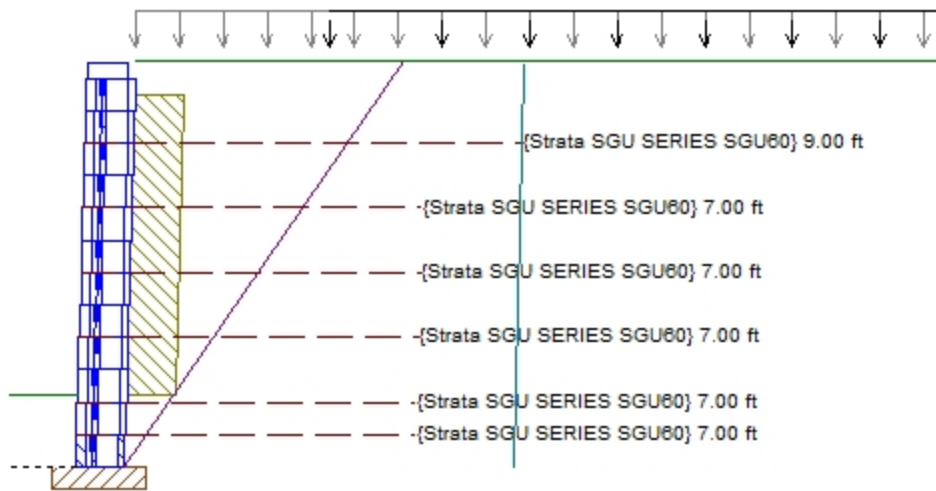
Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	81.29	3.93	26.67	3.67	5.30
2	81.95	4.19	26.55	3.67	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	83.29	3.93	9.57	3.02	5.30
4	84.62	3.93	26.11	3.16	5.30
5	85.95	4.51	26.55	3.96	7.79
6	87.29	7.08	26.78	4.97	5.56
7	88.62	8.47	26.42	3.39	8.35

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	82.62	4.70	25.93	3.16	13.03
4	83.95	4.34	26.28	3.02	6.49
5	85.29	6.57	26.67	3.16	6.15
6	86.62	4.05	26.55	3.02	5.56
7	87.95	5.78	25.93	3.48	5.07

Section 38 Details

Section 38 Cross-section



Section 38 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		88.29 ft
Bottom Grade		81.44 ft
Base of Section		79.95 ft
Design Height	H	8.33 ft
Embedment Depth	H_{emb}	1.48 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	21.6300	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8750	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	17.7795	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.97	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.96	Pass
Fssl	Base Sliding	1.50	3.23	Pass

Internal and Local Checks

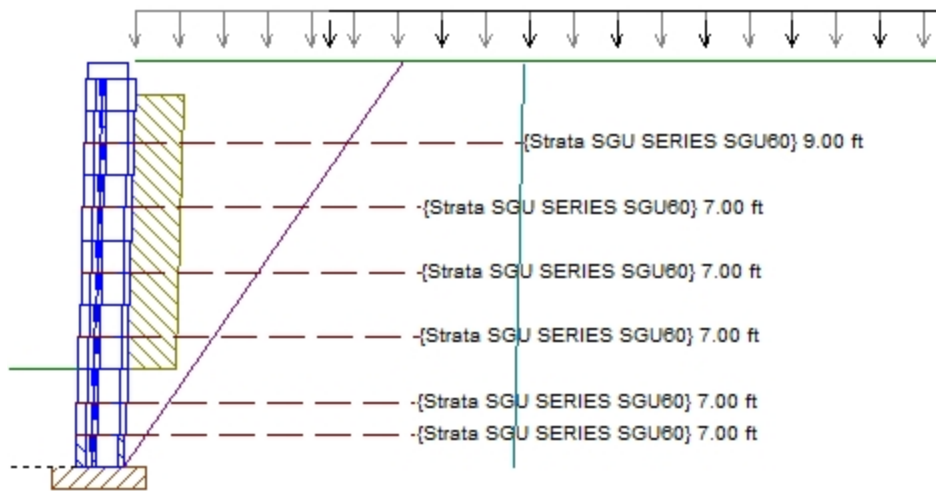
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	80.62	3.93	9.57	3.67	5.30
2	81.29	4.19	26.11	3.16	7.79

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	82.62	3.93	10.04	3.48	6.49
4	83.95	3.93	16.19	4.34	7.30
5	85.29	4.51	26.67	3.02	5.56
6	86.62	7.08	26.42	3.31	5.56

Section 39 Details

Section 39 Cross-section



Section 39 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		87.62 ft
Bottom Grade		81.28 ft
Base of Section		79.29 ft
Design Height	H	8.33 ft
Embedment Depth	Hemb	2.00 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	31.5300	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8750	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	23.9724	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	10.89	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	6.96	Pass
Fssl	Base Sliding	1.50	3.23	Pass

Internal and Local Checks

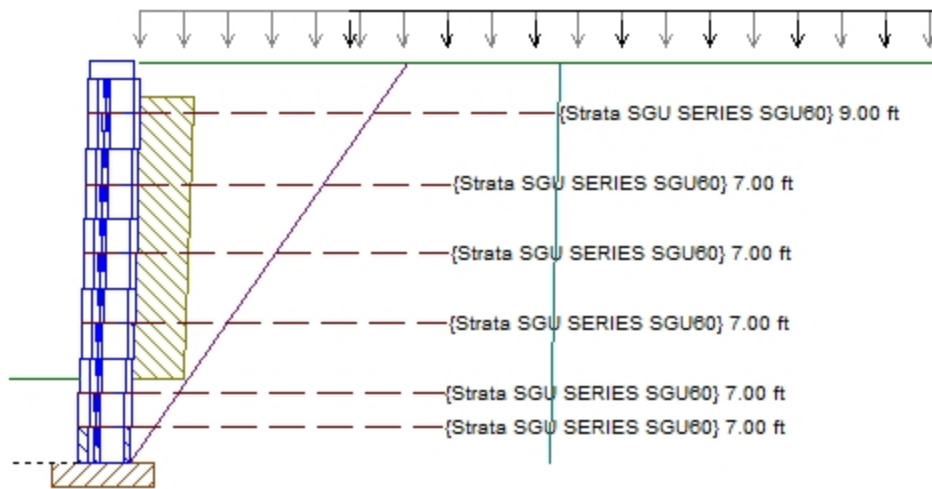
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	79.95	4.34	26.28	3.02	6.49
2	80.62	3.81	10.22	3.16	6.15

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.95	4.34	26.28	3.48	5.30
4	83.29	4.70	25.93	3.89	6.87
5	84.62	7.70	26.42	3.65	13.03
6	85.95	4.05	9.83	3.02	5.84

Section 40 Details

Section 40 Cross-section



Section 40 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		86.95 ft
Bottom Grade		80.90 ft
Base of Section		79.29 ft
Design Height	H	7.67 ft
Embedment Depth	H _{emb}	1.61 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	26.6000	Pass
L	Min. Reinforcement Length	3.0000	7.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9545	Pass
La	Min. Anchorage Length	1.0000	2.4728	Pass
MinHemb	Minimum Embedment	4.0000	19.3268	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.33	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	7.91	Pass
Fssl	Base Sliding	1.50	3.42	Pass

Internal and Local Checks

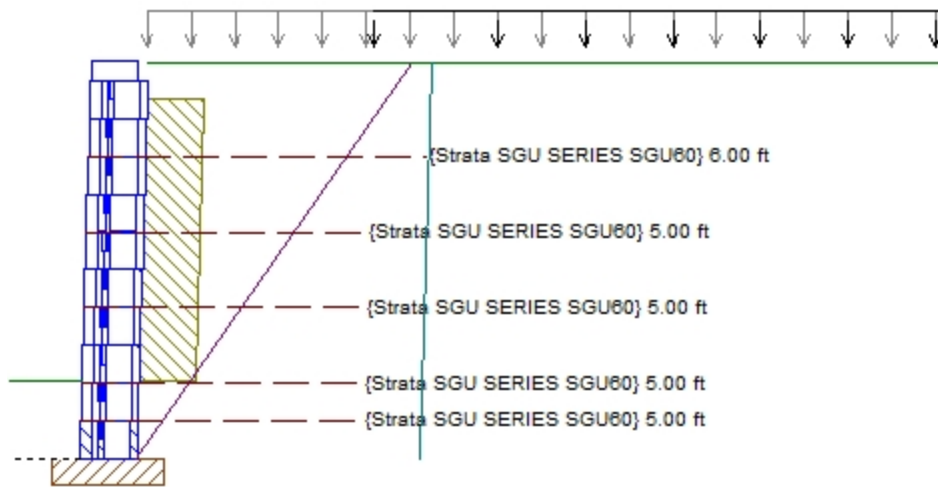
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	79.95	3.93	26.67	3.02	7.79
2	80.62	4.19	10.04	3.67	7.30

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.95	3.93	16.39	2.89	5.30
4	83.29	3.93	16.19	4.34	6.87
5	84.62	3.93	9.57	3.48	5.56
6	85.95	7.08	26.42	3.48	7.79

Section 41 Details

Section 41 Cross-section



Section 41 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		86.29 ft
Bottom Grade		80.64 ft
Base of Section		79.29 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.35 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	23.9500	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	16.2283	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	8.34	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	4.90	Pass
Fssl	Base Sliding	1.50	2.66	Pass

Internal and Local Checks

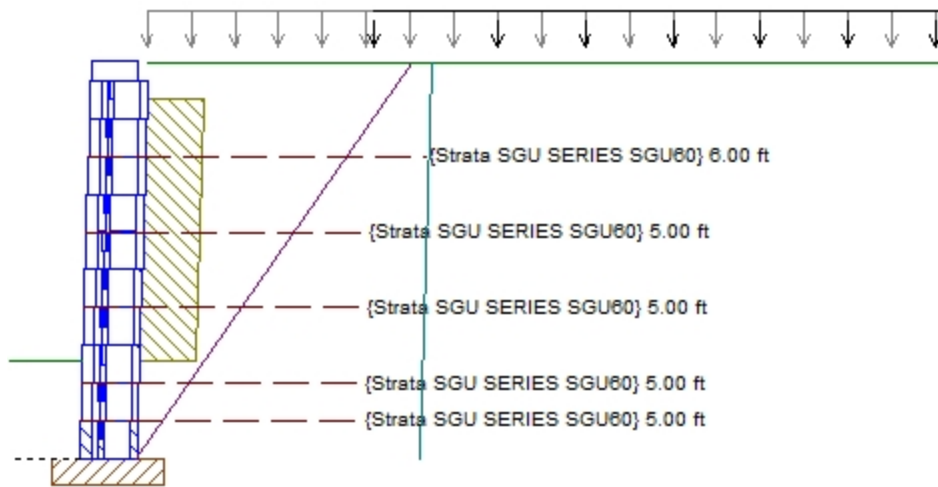
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	79.95	4.34	26.28	3.89	6.87
2	80.62	4.34	26.28	3.65	13.03

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.95	7.70	26.42	3.39	5.56
4	83.29	9.44	16.71	3.31	7.30
5	84.62	4.70	25.93	3.02	5.30

Section 42 Details

Section 42 Cross-section



Section 42 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		85.62 ft
Bottom Grade		80.36 ft
Base of Section		78.62 ft
Design Height	H	7.00 ft
Embedment Depth	Hemb	1.74 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	33.0600	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.7500	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	20.8701	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.12	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	4.90	Pass
Fssl	Base Sliding	1.50	2.66	Pass

Internal and Local Checks

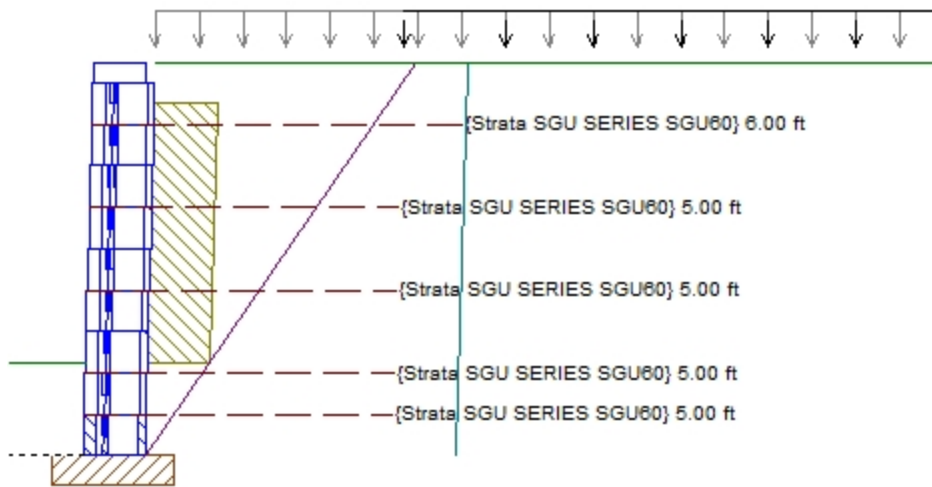
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	79.29	3.93	9.57	3.48	6.87
2	79.95	4.19	16.39	3.02	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.29	3.93	16.19	4.34	5.56
4	82.62	3.93	16.39	3.65	6.49
5	83.95	3.93	32.76	3.48	5.30

Section 43 Details

Section 43 Cross-section



Section 43 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft²
Dead Offset	qdofs	0.00 ft
Top of Section		84.95 ft
Bottom Grade		80.10 ft
Base of Section		78.62 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	1.48 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	30.5300	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	1.3547	Pass
MinHemb	Minimum Embedment	4.0000	17.7756	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	9.95	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	5.68	Pass
Fssl	Base Sliding	1.50	2.84	Pass

Internal and Local Checks

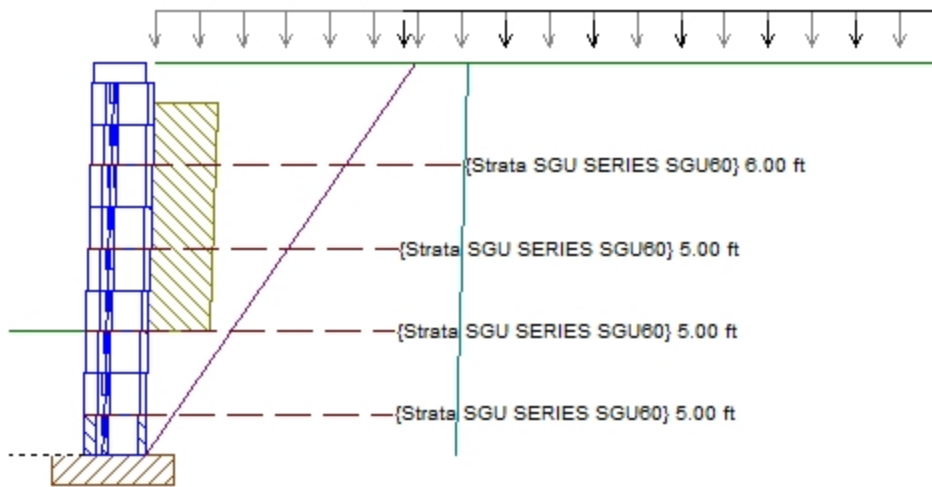
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	79.29	7.70	26.42	3.02	5.30
2	79.95	4.34	26.28	3.89	5.56

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.29	4.70	25.93	3.31	7.30
4	82.62	6.14	16.39	3.31	7.79
5	83.95	9.44	16.71	3.67	5.56

Section 44 Details

Section 44 Cross-section



Section 44 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		84.29 ft
Bottom Grade		79.95 ft
Base of Section		77.95 ft
Design Height	H	6.33 ft
Embedment Depth	Hemb	2.00 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	46.0700	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.8333	Pass
La	Min. Anchorage Length	1.0000	1.7956	Pass
MinHemb	Minimum Embedment	4.0000	23.9685	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.14	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	5.68	Pass
Fssl	Base Sliding	1.50	2.84	Pass

Internal and Local Checks

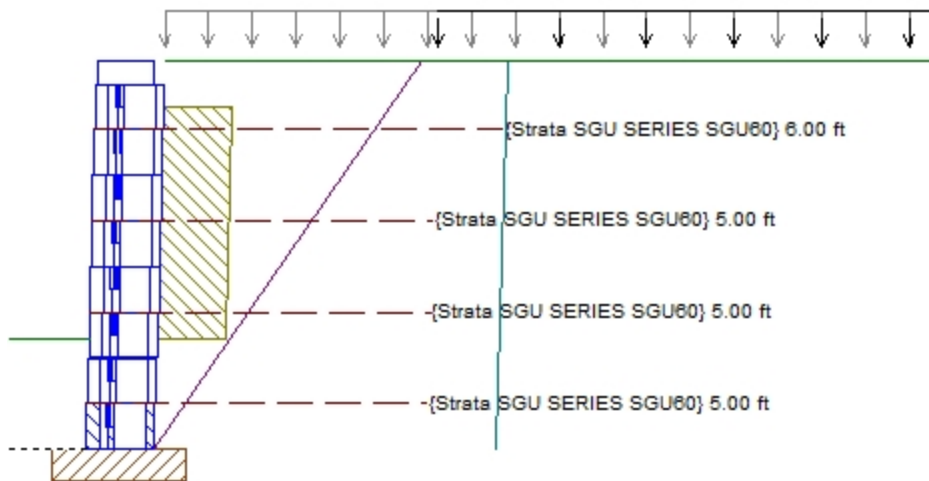
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	78.62	3.93	16.19	3.48	6.49
2	79.95	3.93	9.57	4.34	5.30

	Elevation				
Layer	(ft)	FScs	FSpO	FSsl	FSto
3	81.29	3.93	32.76	3.48	9.00
4	82.62	3.93	16.19	3.96	6.15

Section 45 Details

Section 45 Cross-section



Section 45 Cross-section Details

Upper Slope Angle	β	0.00°
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		83.62 ft
Bottom Grade		79.56 ft
Base of Section		77.95 ft
Design Height	H	5.67 ft
Embedment Depth	Hemb	1.61 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	39.6900	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	0.9375	Pass
La	Min. Anchorage Length	1.0000	1.7956	Pass
MinHemb	Minimum Embedment	4.0000	19.3189	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	11.92	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	6.69	Pass
Fssl	Base Sliding	1.50	3.05	Pass

Internal and Local Checks

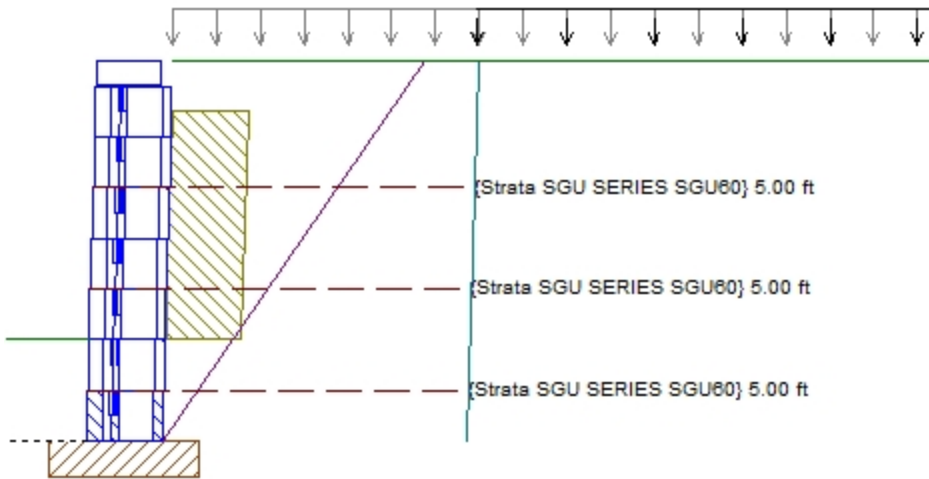
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Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	78.62	4.70	25.93	3.67	5.56
2	79.95	7.70	26.42	3.02	7.30

Elevation		FScs	FSpo	FSsl	FSto
Layer	(ft)				
3	81.29	9.44	16.71	3.31	7.79
4	82.62	4.05	26.55	2.89	5.30

Section 46 Details

Section 46 Cross-section



Section 46 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		82.95 ft
Bottom Grade		79.28 ft
Base of Section		77.95 ft
Design Height	H	5.00 ft
Embedment Depth	Hemb	1.33 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	36.2600	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0714	Pass
La	Min. Anchorage Length	1.0000	1.7956	Pass
MinHemb	Minimum Embedment	4.0000	15.9646	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	13.12	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	8.03	Pass
Fssl	Base Sliding	1.50	3.31	Pass

Internal and Local Checks

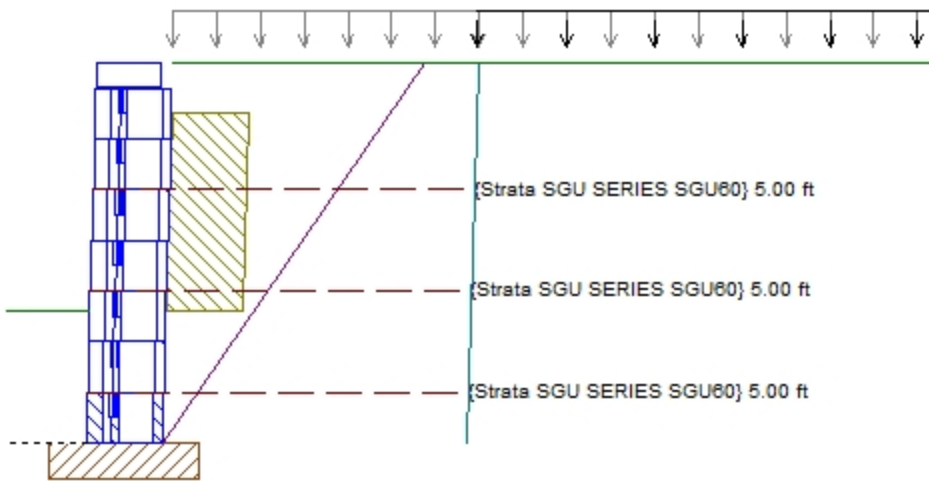
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	78.62	3.93	16.39	3.65	8.35
2	79.95	3.93	32.76	3.48	7.79

Layer	Elevation (ft)	FScs	FSpO	FSsl	FSto
3	81.29	3.93	16.19	3.96	6.15

Section 47 Details

Section 47 Cross-section



Section 47 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		82.29 ft
Bottom Grade		79.03 ft
Base of Section		77.29 ft
Design Height	H	5.00 ft
Embedment Depth	Hemb	1.74 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	53.3200	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.0714	Pass
La	Min. Anchorage Length	1.0000	1.7956	Pass
MinHemb	Minimum Embedment	4.0000	20.8661	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	14.37	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	8.03	Pass
Fssl	Base Sliding	1.50	3.31	Pass

Internal and Local Checks

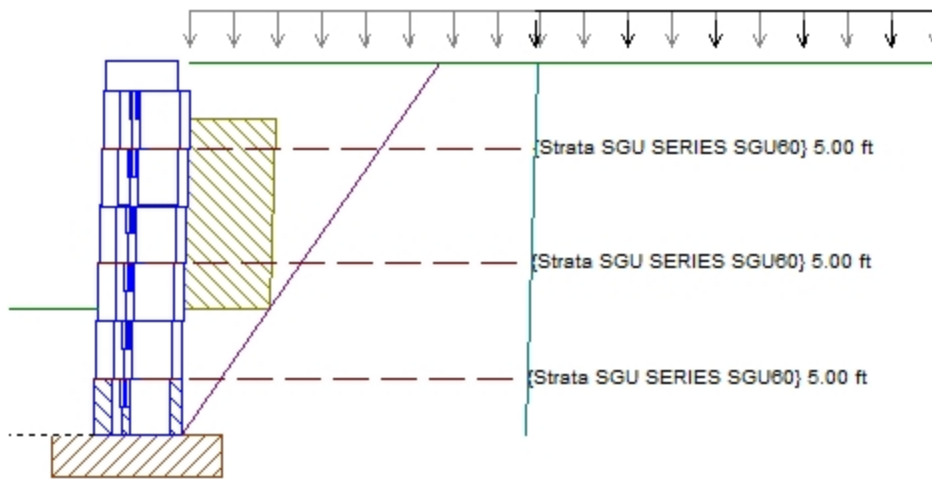
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Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	77.95	9.44	16.71	3.17	9.75
2	79.29	4.70	25.93	3.65	13.03

	Elevation				
Layer	(ft)	FScs	FSpa	FSsl	FSto
3	80.62	6.14	16.39	2.89	5.30

Section 48 Details

Section 48 Cross-section



Section 48 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		81.62 ft
Bottom Grade		78.75 ft
Base of Section		77.29 ft
Design Height	H	4.33 ft
Embedment Depth	H _{emb}	1.46 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	50.7600	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.2500	Pass
La	Min. Anchorage Length	1.0000	1.7956	Pass
MinHemb	Minimum Embedment	4.0000	17.5079	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	1.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	16.05	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	9.88	Pass
Fssl	Base Sliding	1.50	3.61	Pass

Internal and Local Checks

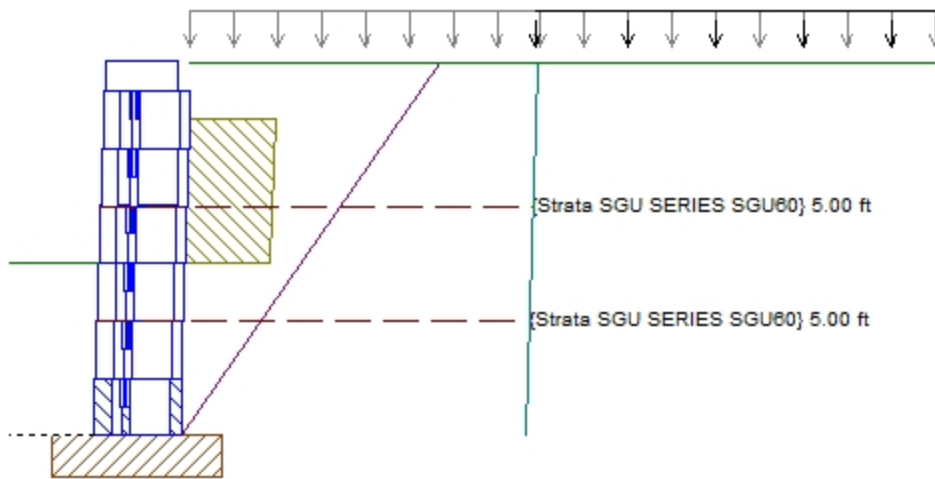
Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	77.95	3.93	16.19	3.48	5.84
2	79.29	3.93	16.39	3.96	5.07

Layer	Elevation (ft)	FScs	FSpO	FSsl	FSto
3	80.62	3.93	10.22	3.48	6.87

Section 49 Details

Section 49 Cross-section



Section 49 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		80.95 ft
Bottom Grade		78.62 ft
Base of Section		76.62 ft
Design Height	H	4.33 ft
Embedment Depth	H _{emb}	2.00 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	85.4600	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.2500	Pass
La	Min. Anchorage Length	1.0000	2.2365	Pass
MinHemb	Minimum Embedment	4.0000	23.9606	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H _u at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of H _u at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	17.98	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	9.88	Pass
Fssl	Base Sliding	1.50	3.61	Pass

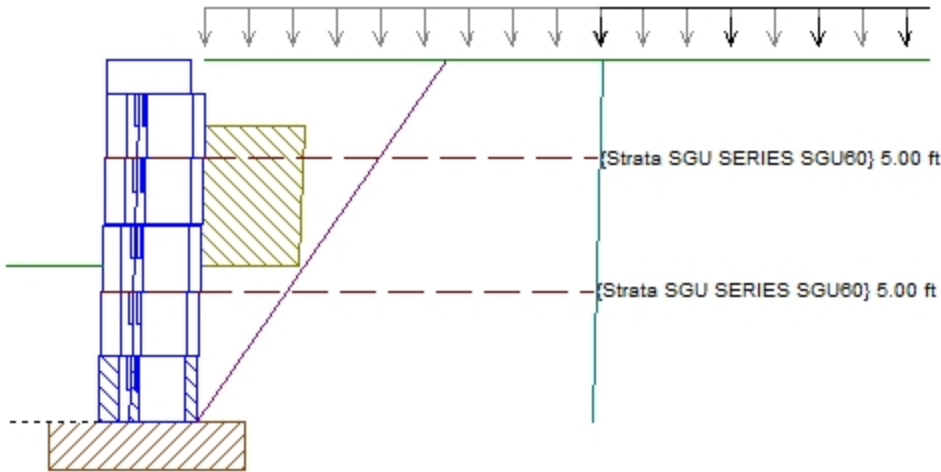
Internal and Local Checks

Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	77.95	9.44	25.93	3.31	5.56
2	79.29	4.70	16.71	3.17	9.75

Section 50 Details

Section 50 Cross-section



Section 50 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	q_l	120 lb/ft ²
Live Offset	q_{lofs}	4.00 ft
Dead Load	q_d	40 lb/ft ²
Dead Offset	q_{dofs}	0.00 ft
Top of Section		80.29 ft
Bottom Grade		78.21 ft
Base of Section		76.62 ft
Design Height	H	3.67 ft
Embedment Depth	H_{emb}	1.59 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	76.4000	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.5000	Pass
La	Min. Anchorage Length	1.0000	2.2365	Pass
MinHemb	Minimum Embedment	4.0000	19.0551	Pass
Rs	Max. Reinforcement Separation	0.0000	1.3333	Pass
RsBottom	Max. multiple of H_u at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of H_u at top	0.0000	1.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	19.94	Pass
FSct	Crest Toppling	1.50	6.69	Pass
FSot	Overturning	1.50	12.57	Pass
Fssl	Base Sliding	1.50	3.99	Pass

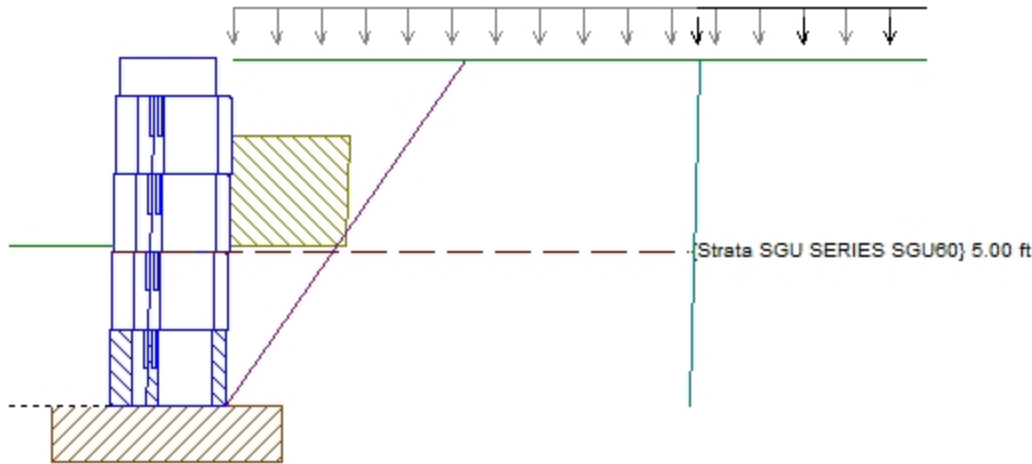
Internal and Local Checks

Static

Layer	Elevation (ft)	FScs	FSpO	Fssl	FSto
1	77.95	3.93	16.19	3.48	5.84
2	79.29	3.93	16.39	3.96	5.07

Section 51 Details

Section 51 Cross-section



Section 51 Cross-section Details

Upper Slope Angle	β	0.00 °
Crest Offset		0.00 ft
Live Load	ql	120 lb/ft ²
Live Offset	qlofs	4.00 ft
Dead Load	qd	40 lb/ft ²
Dead Offset	qdofs	0.00 ft
Top of Section		79.62 ft
Bottom Grade		78.00 ft
Base of Section		76.62 ft
Design Height	H	3.00 ft
Embedment Depth	Hemb	1.38 ft

* Analysis includes Vertical Forces

* Embedment is included in Bearing Capacity

Empirical Checks

Check	Description	Min. Requirement	Result	Status
Hemb	Minimum Embedment %	10.0000	85.1900	Pass
L	Min. Reinforcement Length	3.0000	5.0000	Pass
L/H Ratio	Min. L/H Ratio	0.5000	1.8750	Pass
La	Min. Anchorage Length	1.0000	3.1181	Pass
MinHemb	Minimum Embedment	4.0000	16.5591	Pass
RsBottom	Max. multiple of Hu at bottom	0.0000	2.0000	Pass
RsTop	Max. multiple of Hu at top	0.0000	2.5000	Pass

External Checks

Static

Check	Description	Min. Requirement	Result	Status
FSbc	Bearing Capacity	2.00	23.10	Pass
FSct	Crest Toppling	1.50	3.24	Pass
FSot	Overturning	1.50	16.74	Pass
FSSI	Base Sliding	1.50	4.47	Pass

Internal and Local Checks

Static

Layer	Elevation (ft)	FSCs	FSpO	FSSI	FSto
1	77.95	9.44	25.93	3.31	5.56



Tannath Design, Inc.

2494 Rose Spring Dr.
Orlando, FL 32825
(407) 982-9878

www.tannathdesign.com

112-001 Keene Road Mixed Use MDP

April 22, 2024

To: LCE 13, LLC
15690 W. Colonial Drive
Winter Garden, Florida 34787
Attention: Mr. Wayne King

Subject: Wall Design Collaboration
Segmented Retaining Wall,
1700 W. Keene Road
Apopka, Florida

As requested, Tannath Design, Inc. has collaborated with the Geotechnical and Structural Engineers involved in the retaining wall design for this project. We have reviewed the data provided is their investigation and design, we reviewed the a global slope stability analysis, geotechnical report and retaining wall design. We take no exceptions to the geotechnical analysis and structural design with the design assumptions, the proposed grading and the wall configurations.

Tannath Design, Inc. appreciates the opportunity to participate in this project and we trust that the information provided herein is sufficient for your immediate needs. If you have any questions or comments, please do not hesitate to contact the undersigned.

Sincerely,

Bryan Potts, P.E.
President
Tannath Design, Inc.

This item has been Digitally signed and sealed by Bryan Potts 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.



Digitally signed by Bryan
Potts
DN: c=US, o=Tannath
Design Inc.,
dnQualifier=A01410D00
00017BC06A20080000A1
55, cn=Bryan Potts
Date: 2024.04.22
10:28:54 -04'00'
Adobe Acrobat version:
2024.002.20687



April 17, 2024
Project No.: CPGT-23-160

To: LCE 13, LLC
15690 W. Colonial Drive
Winter Garden, Florida 34787

Attention: Mr. Wayne King

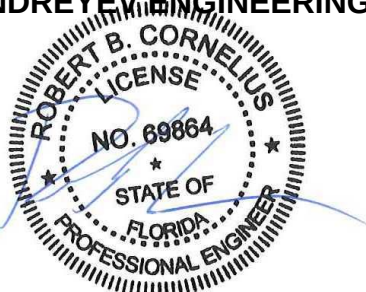
Subject: Wall Design Collaboration
Segmented Retaining Wall, 1700 W. Keene Road
Apopka, Orange County, Florida

As requested, Andreyev Engineering, Inc. (AEI) has collaborated with the Civil and Structural Engineers involved in the retaining wall design for this project. We have performed a geotechnical investigation, a global slope stability analysis as well as reviewed the civil plans and retaining wall design. We take no exceptions to the civil and structural design with the design assumptions, the proposed grading and the wall configurations.

AEI appreciates the opportunity to participate in this project and we trust that the information provided herein is sufficient for your immediate needs. If you have any questions or comments, please do not hesitate to contact the undersigned.

Sincerely,

ANDREYEV ENGINEERING, INC.



Robert B. Cornelius, P.E.
Vice President
Florida Registration No.69864

DEVLEN ENGINEERING, Inc.

Structural Engineering
www.devleneng.com

4021 Church Street
Sanford, FL 32771
(407) 324-5300
chad@devleneng.com

312 Venice Ave. #202
Venice, FL 34285
(407) 324-5300
ron@devleneng.com

April 17, 2024
DE Project No. 2024-032

TCL Construction Concepts, Inc.
Chad Lane
5451 S Sanford Ave.
Sanford, FL 32773

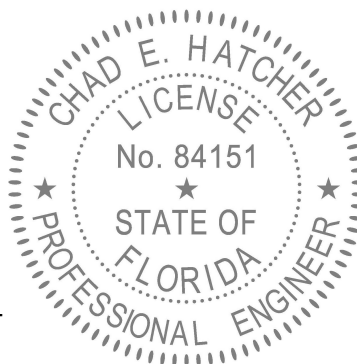
Attention: **Apopka City Building Division**
 120 E Main St, Apopka FL 32703
Subject: Structural Response Letter
Project: Keene Road Retail (Lake Carter Exchange)
 Apopka, Florida

Dear Chad and whom it may concern:

Devlen Engineering, Inc. provided structural design drawings and calculations for three (3) proposed Segmental Retaining Walls (SRW) at the subject project in Apopka, FL (latest set dated 03/22/2024 – Rev 2). These drawings were prepared upon thorough review and collaboration with the site Geotechnical Engineer (Andreyev Engineering, Inc.) and Civil Design Engineer (Tannath Design, Inc.). Review included designs, design assumptions, proposed grading, soil parameters, groundwater, and wall configurations.

If you have any questions, or if we may be of further assistance at this point, please do not hesitate to contact me.

Sincerely,



04-17-2024

Chad E. Hatcher, PE
Director of Engineering
FL Reg. No. 84151

Digitally signed
by Chad Hatcher
Date: 2024.04.17
10:32:33-04'00'



W Keene Rd

Ocoee Apopka Rd

Medicine Lake

Lake Carter

Daniel Webster Western Beltway

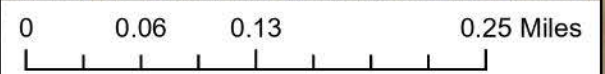
Magnolia Park Estates

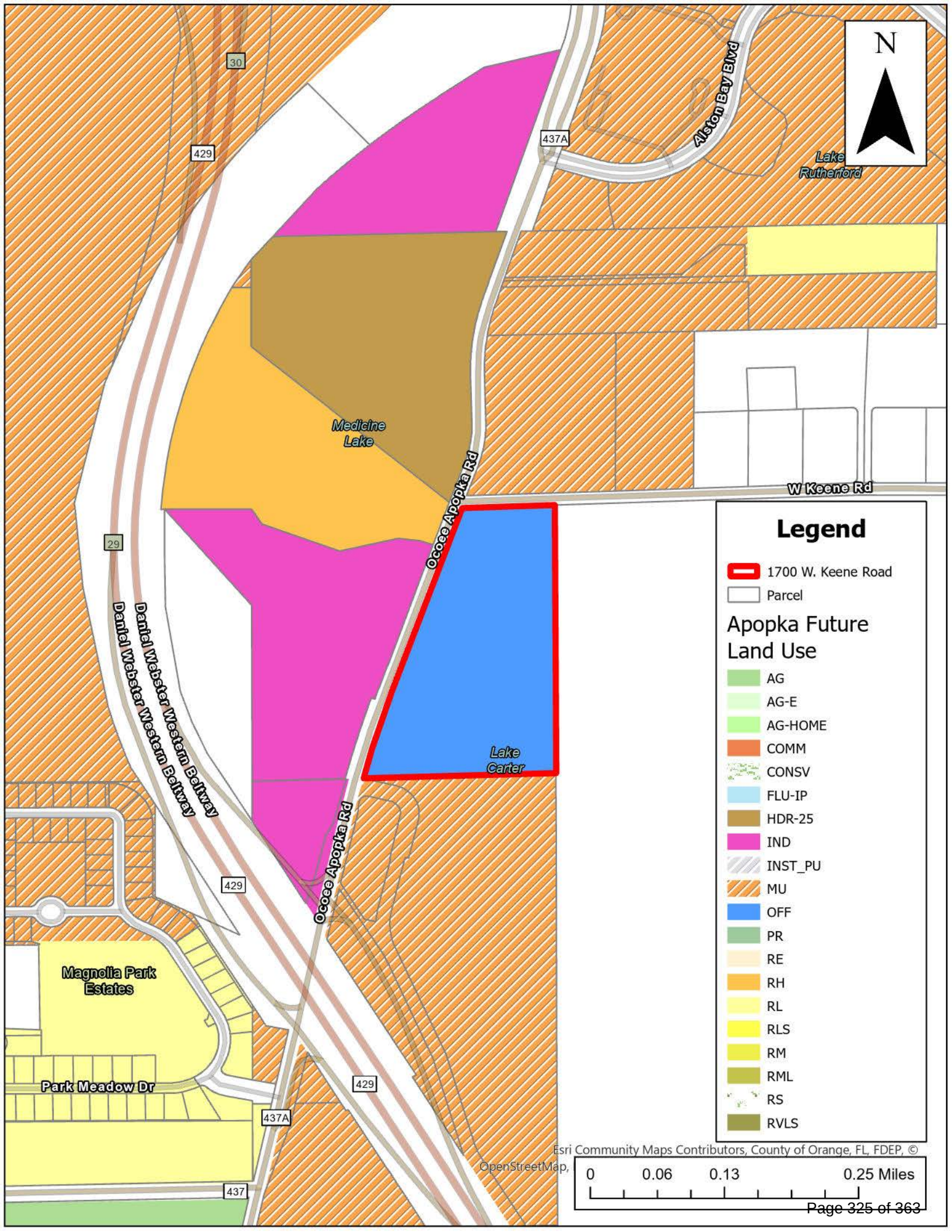
Park Meadow Dr

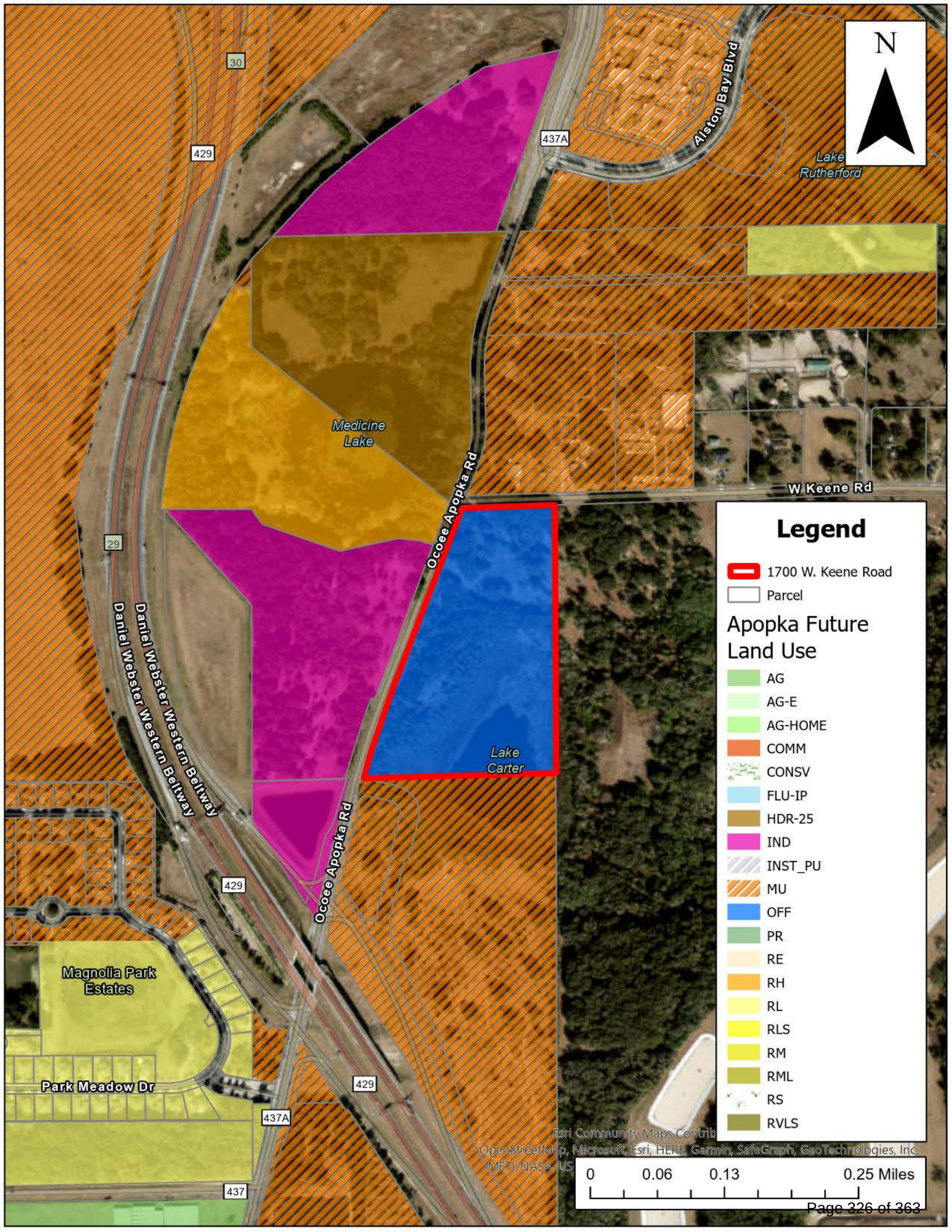
Legend

 1700 W. Keene Road

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METI/NASA, US







Lake
Rutherford

W Keene Rd

Legend

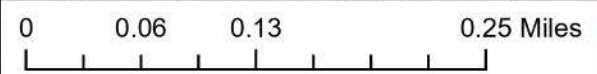
 1700 W. Keene Road

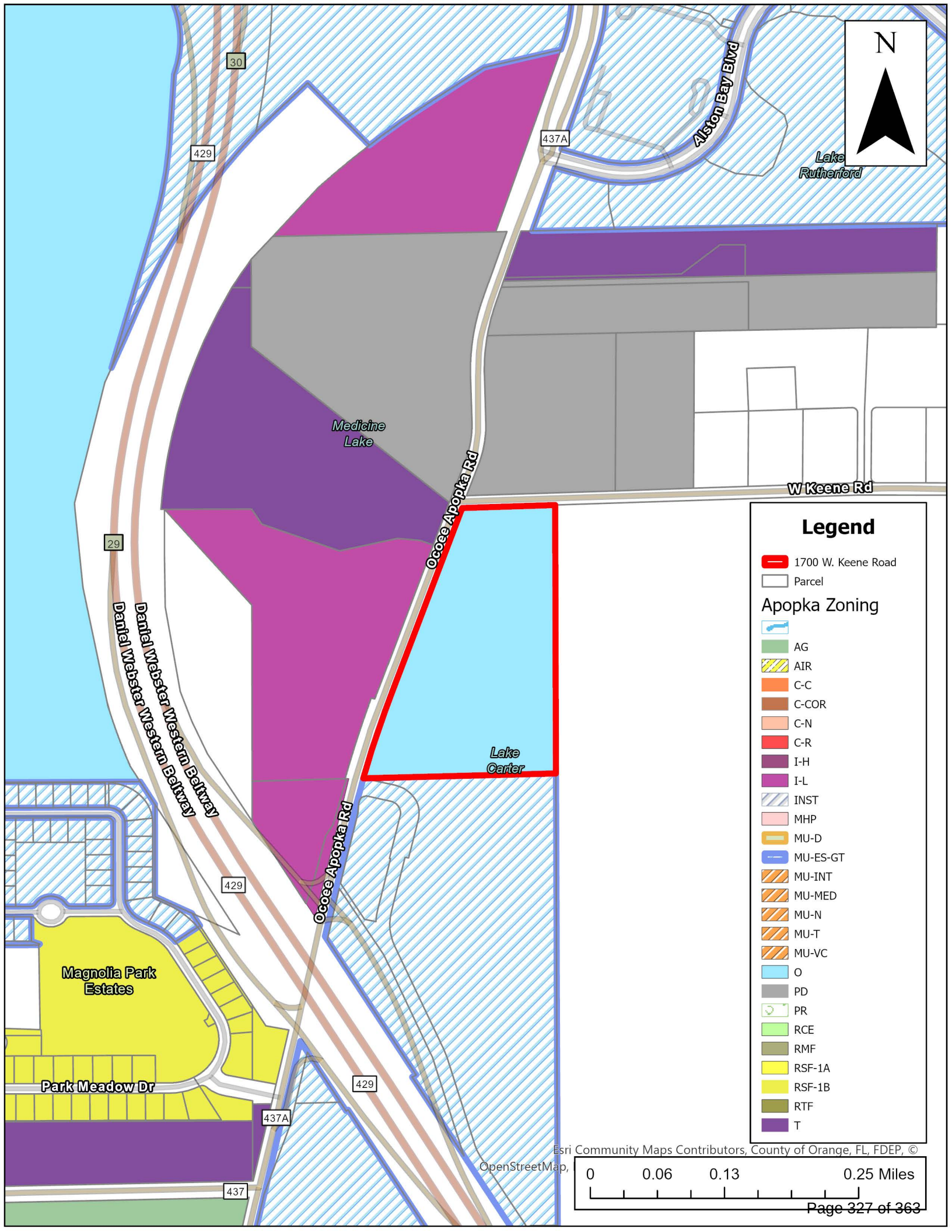
 Parcel

Apopka Future Land Use

-  AG
-  AG-E
-  AG-HOME
-  COMM
-  CONSV
-  FLU-IP
-  HDR-25
-  IND
-  INST_PU
-  MU
-  OFF
-  PR
-  RE
-  RH
-  RL
-  RLS
-  RM
-  RML
-  RS
-  RVLS

Esri Community Maps Contrib
OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc.
METI/NASA, US





Lake Rutherford

W Keene Rd

Legend

1700 W. Keene Road

Parcel

Apopka Zoning



AG



AIR



C-C



C-COR



C-N



C-R



I-H



I-L



INST



MHP



MU-D



MU-ES-GT



MU-INT



MU-MED



MU-N



MU-T



MU-VC



O



PD



PR



RCE



RMF



RSF-1A



RSF-1B



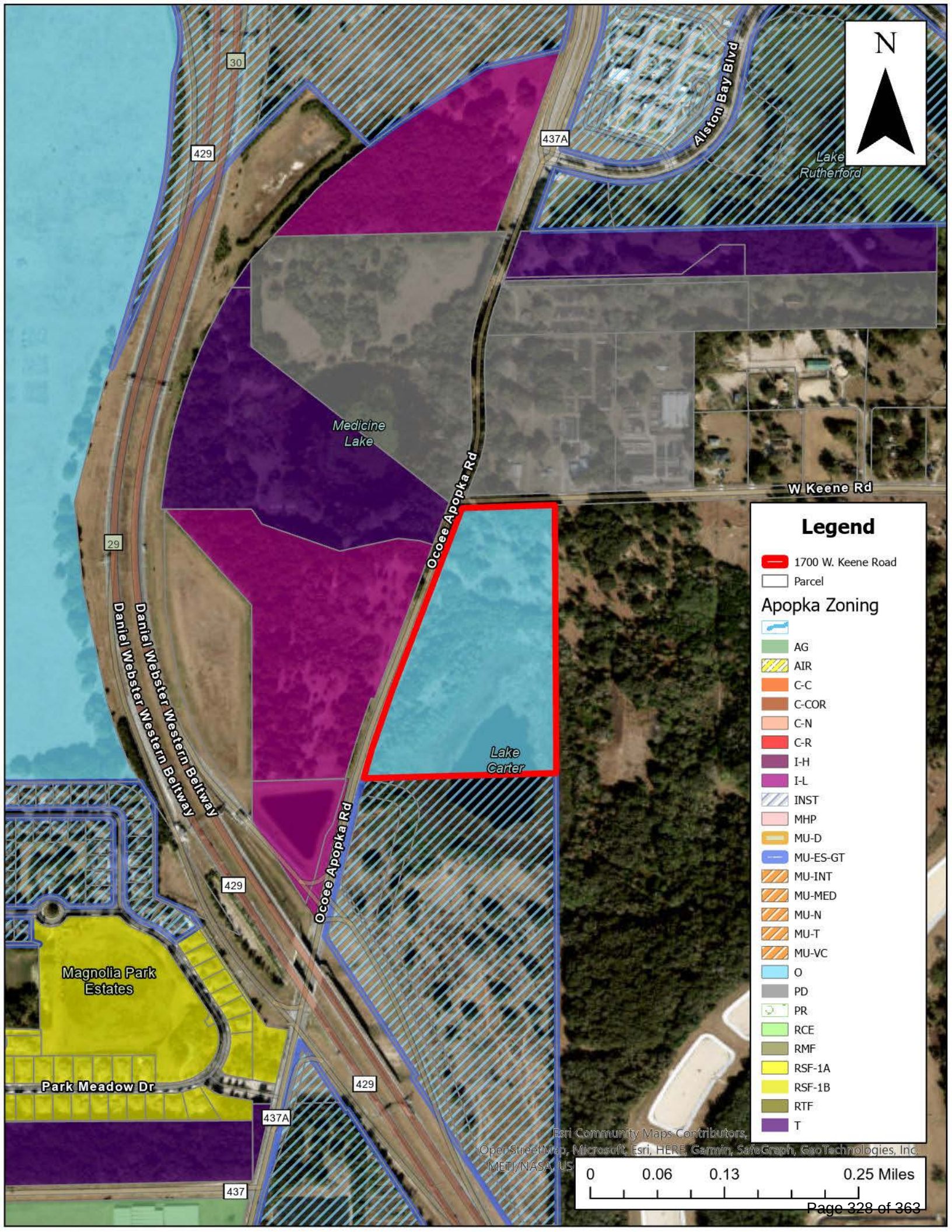
RTF

T

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OpenStreetMap,

0 0.06 0.13 0.25 Miles



Lake Rutherford

W Keene Rd

Legend

1700 W. Keene Road

Parcel

Apopka Zoning



AG

AIR

C-C

C-COR

C-N

C-R

I-H

I-L

INST

MHP

MU-D

MU-ES-GT

MU-INT

MU-MED

MU-N

MU-T

MU-VC

O

PD

PR

RCE

RMF

RSF-1A

RSF-1B

RTF

T

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0 0.06 0.13 0.25 Miles



City of Apopka PLANNING COMMISSION STAFF REPORT

Section: SITE PLANS

Item #: 2.

Meeting Date: July 9, 2024

Department: Community Development

SUBJECT:

Quasi-Judicial - 1700 West Keene Road - Major Development Plan

REQUEST:

Recommend approval of the 1700 West Keene Road Major Development Plan

SUMMARY:

Zoning Report

This chart includes the relationships to adjacent properties:

Direction	Future Land Use	Zoning	Present Use
North	Mixed-Use	PD (Planned Development)	Currently vacant – proposed grocery store with commercial outparcels and multifamily development
East	“County” Institutional	“County” A-1	Orange County Northwest Water Reclamation Facility
South	Mixed-Use	MU-ES-GT (Mixed-Use East Shore-Gateway)	Ascend Oakpointe apartments
West	Industrial	I-L (Light Industrial)	Industrial warehouse buildings

PROJECT SUMMARY: The applicant has submitted a Major Development Plan for consideration for a development consisting of 13 buildings totaling 61,928 square feet in area that are comprised of Retail, Commercial, Office and Medical uses. The property is located at located at 1700 W. Keene Road. The subject property has a Commercial future land use designation and a zoning designation of C-C (Community Commercial). The subject property is 18.8 acres in size, of which 25% of the site is set aside as open space. Approximately 7.99 acres of the site consists of wetlands and Lake Carter. Development is not proposed in this area of the site and is not permitted per the Comprehensive Plan.

The Development Review Committee finds that the applicant demonstrates there is competent substantial evidence in the record that all of the following standards are met:

- The proposed development and use(s) in the development plan comply with Article 3: Zoning Districts, and Article 4: Use Regulations;
- The development proposed in the development plan and its general layout and design comply with all the standards in Article 5: Development Standards, and Article 6: Environmental Standards;
- The development proposed in the development plan complies with all conditions of approval in any

development approval or permit to which the plan is subject;

d. The development proposed in the development plan complies with all other applicable standards in this LDC and all other City regulations.

ACCESS/PARKING: Access is proposed via two full access points located on Ocoee-Apopka Road. A 5-foot wide sidewalk will be constructed along the portion of the site that is located along Ocoee-Apopka Road and W. Keene Road. A 30-foot right-of-way dedication is reserved along the portion of property abutting Ocoee-Apopka Road for future road widening. A total of 350 parking spaces are provided on site. Of the 350, 12 are accessible spaces. LDC Table 5.1.5.J requires 8 accessible spaces. 16 bicycle parking spaces are provided.

STORMWATER: Stormwater retention and compensating storage are proposed on the southern portion of the site.

LANDSCAPING/OPEN SPACE: Landscape buffers are provided along Ocoee-Apopka Road and W. Keene Road, and the eastern property line. Plant materials such as Southern Magnolia, Southern Live Oak, Cabbage Palm, Winged Elm, and Viburnum are provided. Grass will consist of Bahia which is a drought tolerant specie. A total of 4.77 acres, or 20-percent of the site is reserved as open space. Per LDC Section 5.4.4, 5-percent open space is required. The open space set asides consist of the stormwater retention area, site landscaping, and the preserved wetland area. An upland buffer with a 15-foot minimum, 25-foot average is provided adjacent to the wetland system.

COMPREHENSIVE PLAN COMPLIANCE: The proposed use of the property as depicted on the Major Development Plan is consistent with the Commercial Future Land Use designation as detailed within the Future Land Use Element of the Comprehensive Plan.

ORANGE COUNTY NOTIFICATION: The County was notified through the DRC agenda distribution.

PUBLIC HEARING SCHEDULE:

July 9, 2024 – Planning Commission (5:00 pm)

August 7, 2024 – City Council (1:30 pm)

Note: This item is considered quasi-judicial. The staff report and its findings are to be incorporated into and made a part of the minutes of this meeting.

FUNDING SOURCE:

N/A

RECOMMENDED MOTION:

DEVELOPMENT REVIEW COMMITTEE (DRC):

The Development Review Committee recommends approval of the 1700 West Keene Road - Major Development Plan.

RECOMMENDED MOTION - PLANNING COMMISSION:

Recommend approval of the 1700 West Keene Road - Major Development Plan.

ATTACHMENTS:

1. Major Development Plan
2. Landscape Plans
3. Elevations
4. Map series

29-21-28-0000-00-003

DATE	07/27/23
SCALE	NTS
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-0.0	
SHEET NO.	

1. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE & LOCAL CODES, ORDINANCES & REGULATIONS GOVERNING POLLUTION OF THE ENVIRONMENT & SHALL IMPLEMENT ALL MEASURES NEEDED TO ENSURE ADEQUATE EROSION & SEDIMENT CONTROL DURING THE ENTIRE DURATION OF CONSTRUCTION. EROSION & SEDIMENT CONTROL MEASURES SHALL CONFORM TO THE CITY, ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT, FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, & FLORIDA DEPARTMENT OF TRANSPORTATION REQUIREMENTS. INSTALLATION OF SILT FENCES & TURBIDITY BARRIERS SHALL BE IN ACCORDANCE WITH FDOT ROADWAY & TRAFFIC DESIGN STANDARDS & STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, LATEST EDITION.

3. EROSION & SEDIMENT CONTROL MEASURES ARE TO BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION. EROSION & SEDIMENT CONTROL MEASURES ARE TO BE APPLIED AS A PERIMETER DEFENSE AGAINST THE TRANSPORTATION OF SILT & SEDIMENTS OFF THE PROJECT SITE OR INTO ADJACENT WATER BODIES OR WETLANDS.

4. THE CONTRACTOR SHALL PREPARE & IMPLEMENT AN EROSION CONTROL PLAN AS PART OF THE SCOPE OF WORK COVERED BY THESE PLANS. THE CONTRACTOR SHALL USE THE BEST MANAGEMENT PRACTICES IN CONTROLLING EROSION & SEDIMENT TRANSPORT DURING CONSTRUCTION. THE FLORIDA DEVELOPMENT MANUAL "A GUIDE TO SOUND LAND & WATER MANAGEMENT" MAY BE USED AS REFERENCE FOR RECOMMENDED BEST MANAGEMENT PRACTICES RELATED TO EROSION & SEDIMENT CONTROL.

5. THE CONTRACTOR SHALL SUBMIT THE EROSION CONTROL PLAN TO THE OWNER FOR APPROVAL PRIOR TO THE PRE-CONSTRUCTION MEETING.

6. THE SITE SHALL BE GRADED SUCH THAT ALL STORMWATER WILL BE DIRECTED INTO THE ON-SITE RETENTION POND(S). SYNTHETIC BALES SHALL BE STAKED IN LOCATIONS WHERE WATER ENTERS THE POND(S) TO FILTER OUT ERODED SOILS AND CONSTRUCTION FINES. CONTRACTOR SHALL MAKE PROVISIONS TO AVOID TRACKING DIRT AND CONSTRUCTION DEBRIS TO THE ROADWAY VIA TRUCK AND EQUIPMENT TIRES.

7. ALL SURFACE WATER DISCHARGE FROM THIS SITE, INCLUDING DEWATERING DISCHARGE, SHALL MEET STATE WATER QUALITY STANDARDS (LESS THAN 29 NTU ABOVE NATURAL BACKGROUND CONDITIONS) PRIOR TO REACHING ANY WATERS OF THE STATE INCLUDING WETLANDS.

8. IN THE EVENT THAT THE EROSION PREVENTION AND CONTROL DEVICES SHOWN IN THESE PLANS DO NOT PROVE TO BE EFFECTIVE, ALTERNATE METHODS FOR MAINTAINING STATE WATER QUALITY

ALL EROSION & SEDIMENT CONTROL MEASURES WHICH ARE NECESSARY TO LIMIT THE TRANSPORT OF SILTS & SEDIMENTS TO OUTSIDE THE LIMITS OF THE WORK AREA OR TO WATER BODIES OR WETLANDS ARE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE BEST MANAGEMENT PRACTICES & IMPLEMENT STRUCTURAL MEASURES AS NEEDED TO PREVENT EROSION & SEDIMENT TRANSPORT FROM THE WORK AREAS. THE FOLLOWING ARE MINIMUM RECOMMENDED GUIDELINES TO BE IMPLEMENTED DURING THE CONSTRUCTION AS PART OF THE EROSION & SEDIMENT CONTROL PLAN:

A. STOCKPILING OF MATERIAL
NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE OR INTO ANY ADJACENT WATER BODY OR STORMWATER COLLECTION FACILITY.

B. EXPOSED AREA LIMITATION & PROTECTION
THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING & GRUBBING OPERATIONS OR EXCAVATION & FILLING OPERATIONS SHALL BE LIMITED AS NEEDED TO MINIMIZE THE POTENTIAL OF OFF-SITE SEDIMENT TRANSPORT. ALL EXPOSED AREAS SHALL BE PROTECTED BY INSTALLING EFFECTIVE EROSION & SEDIMENT CONTROL MEASURES SUCH AS SILT SCREENS, SYNTHETIC BALES, TURBIDITY BARRIERS, SWALES, OR A COMBINATION OF THESE & OTHER MEASURES AS WARRANTED.

C. INLET PROTECTION
INLETS & CATCH BASINS SHALL BE PROTECTED DURING CONSTRUCTION FROM SEDIMENT LADEN STORMWATER RUNOFF BY PROVIDING A COMBINATION OF SILT SCREENS, SYNTHETIC BALES, FILTER FABRIC COVERS OR OTHER MEASURES AS NECESSARY TO CONTROL THE TRANSPORT OF SEDIMENT.

D. TEMPORARY GRASSING

AREAS OPENED BY CONSTRUCTION OPERATIONS THAT ARE NOT ANTICIPATED TO BE DRESSED OR RECEIVE FINAL GRASSING TREATMENT WITHIN THIRTY DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED. TEMPORARY SEEDING SHALL BE CONTROLLED AS TO NOT ALTER OR COMPLETELY PERMANENT GRASSING. SLOPES STEEPER THAN 6:1 SHALL ADDITIONALLY RECEIVE MULCHING OF AREAS OF LOOSE MATERIAL OF MILD MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA TO A DEPTH OF 4 INCHES. THE SEEDED OR SEEDED & MULCHED AREAS SHALL BE BILLED & WATERED AS NEEDED TO ENSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER. IF AFTER 14 DAYS, THE TEMPORARY GRASSED AREA HAVE NOT ATTAINED A MINIMUM OF 75% OF GOOD GRASS COVER, THE AREAS WILL BE REWORKED

cost.

E. MAINTENANCE

EROSION & SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED DURING THE ENTIRE DURATION OF CONSTRUCTION. THE CONTRACTOR SHALL INSPECT THE EROSION & CONTROL MEASURES ON A WEEKLY BASIS & 24 HOURS FOLLOWING RAINFALL EVENTS (0.5" OR GREATER) & IMMEDIATELY REPAIR ANY OBSERVED DAMAGED CONTROLS. ALL EROSION & SEDIMENT CONTROLS SHALL BE MAINTAINED AS TO FUNCTION PROPERLY WITHOUT THE TRANSPORT OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT.

ALL STORMWATER MANAGEMENT FACILITIES SHALL BE STABILIZED WITH EITHER GRASS OR SAND-BASED SOD. THE FOLLOWING MINIMUM REQUIREMENTS SHALL BE MET:

A. ALL DRY BASIN BOTTOMS MUST BE SEEDDED. THE SEEDING MIX MUST PROVIDED BOTH LONG-TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. A TOPSOIL MIXTURE MAY BE REQUIRED IN EXCESSIVELY DRAINED SANDY SOILS. SIDE SLOPES STEEPER THAN 3:1 MUST HAVE THE SOIL STAPLED OR PEGGED. BASIN SIDE SLOPES FLATTER THAN 3:1 MAY BE SEEDDED AND MULCHED OR SODDED.

B. EROSION PROTECTION AT THE OUTLET OF ALL DRAINAGE STRUCTURES MUST BE PROVIDED. FOR OUTLET VELOCITIES LESS THAN THREE FEET PER SECOND, PEGGED OR STAPLED SOD MUST BE PROVIDED. FOR VELOCITIES IN EXCESS OF THREE FEET PER SECOND, AN ENERGY DISSIPATION DEVICE MUST BE INSTALLED, SUCH AS RIPRAP, BAFFLES, OR STILLING BASINS.

C. A 12-INCH STRIP OF SOD SHALL BE PLACED AROUND THE FULL PERIMETER OF ALL HEAD WALLS, END WALLS, AND MITERED END INSTALLATIONS.

D. DURING CONSTRUCTION, PROVISIONS MUST BE MADE TO MINIMIZE DISTURBANCE TO AND COMPACTION OF SOILS IN THE BASIN BOTTOM.

APPROXIMATE SLOPES AFTER MAJOR GRADING VARIES BETWEEN 0.8% TO 2%; MAXIMUM SLOPES ARE FOUND AT THE DRIVEWAY & THEY RANGE BETWEEN 1% TO 6%.

AREAS OF SOILS DISTURBANCE IS LIMITED TO THE AREA WITHIN THE SILT FENCE LIMITS AS SHOWN ON THIS PLAN.

ALL PVIOUS AREAS WILL BE SEEDED & SODDED, UNLESS OTHERWISE NOTED.

NO WETLANDS & SURFACE WATERS EXIST ON THIS PROJECT.

A) WASTE DISPOSAL

WASTE MATERIAL: ALL WASTE MATERIAL WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL BE MAINTAINED BY A LICENSED SOLID WASTE MANAGEMENT COMPANY IN CITY/COUNTY. THE DUMPSTER WILL MEET ALL LOCAL, STATE AND FEDERAL REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AT LEAST TWICE A WEEK OR MORE OFTEN IF NECESSARY. THE TRASH WILL BE REMOVED BY AN APPROPRIATELY LICENSED TRASH REMOVAL COMPANY. ALL PERSONNEL ON-SITE, ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE SUPERINTENDENT'S OFFICE. THE INDIVIDUAL RESPONSIBLE FOR MANAGING THIS TASK WILL BE IDENTIFIED BY THE CONTRACTOR.

HAZARDOUS WASTE:
ALL HAZARDOUS WASTE MATERIALS WILL BE MANAGED AND DISPOSED OF IN ACCORDANCE WITH THE APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR HAZARDOUS WASTE MANAGEMENT AND DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE SUPERINTENDENT CONSTRUCTION TRAILER. THE INDIVIDUAL RESPONSIBLE FOR MANAGING THIS TASK WILL BE IDENTIFIED BY THE CONTRACTOR.

SANITARY WASTE:
ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF THREE TIMES PER WEEK BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR AS REQUIRED BY LOCAL REGULATION.

B) OFFSITE VEHICLE TRACKING:

A GRAVEL CONSTRUCTION ENTRANCE HAS BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREET ADJACENT TO THE SITE ENTRANCE WILL BE SWEEPED DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPULIN.

GOOD HOUSEKEEPING: THE

CONSTRUCTION:

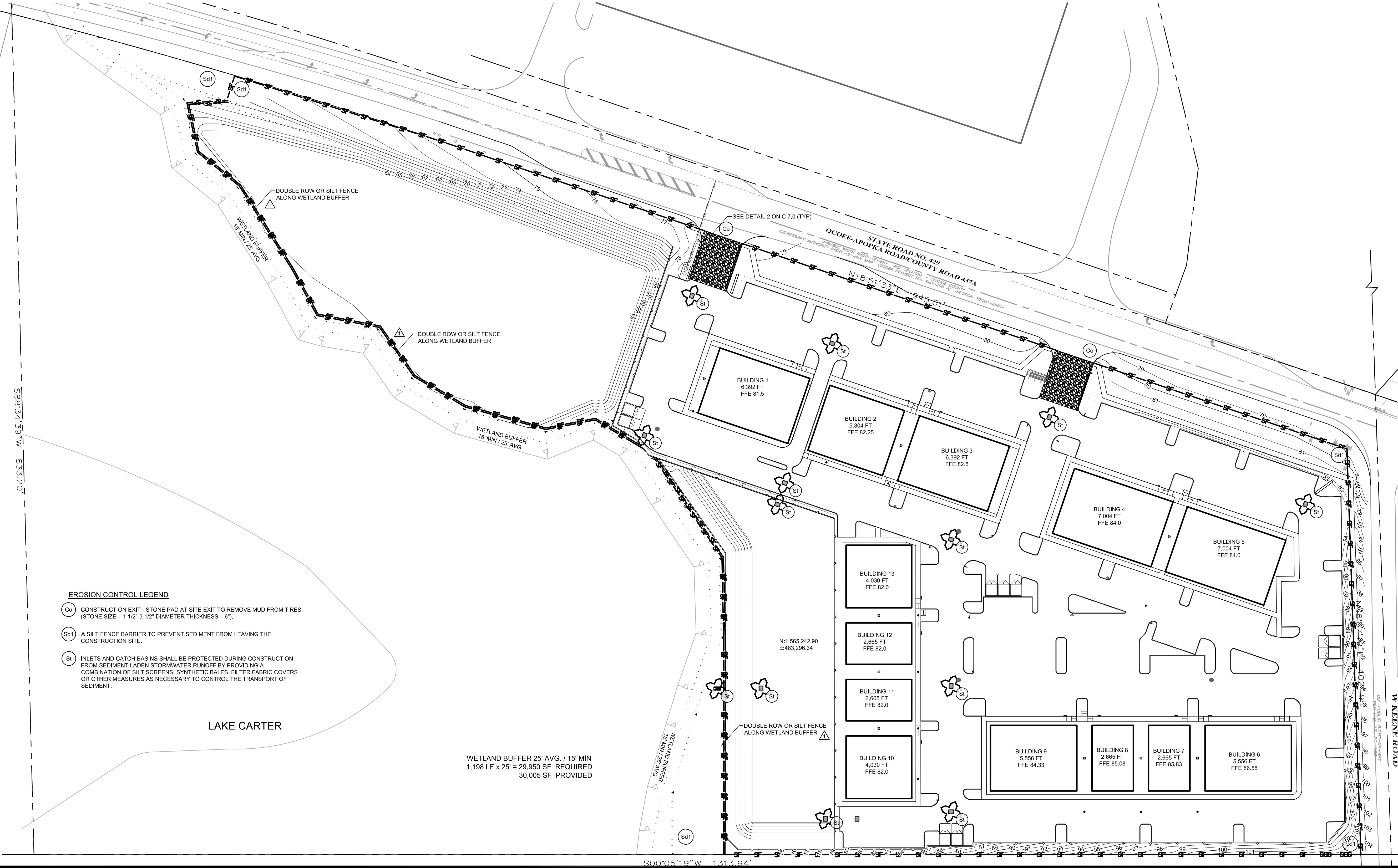
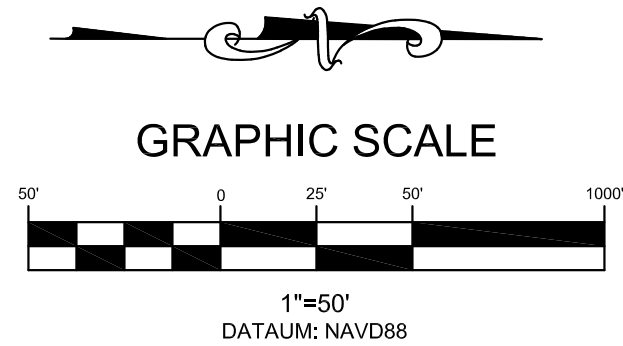
- ALL FERTILIZER IS TO BE MADE TO STORE ONLY UNDER PROTECTION REQUIRED TO DO THE JOB.
- ALL MATERIALS ON-SITE WILL BE STORED IN A HEAT AND ORDERLY MANNER, IN APPROPRIATE CONTAINERS, AND UNDER A ROOF OR COVER IF POSSIBLE.
- ALL FERTILIZERS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THEIR ORIGINAL LABELS.
- SUBSTANCES WILL NOT BE MIXED UNLESS RECOMMENDED BY THE MANUFACTURERS.
- WHENEVER POSSIBLE, PRODUCTS WILL BE COMPLETELY USED BEFORE DISCARDING THE CONTAINERS.
- WHEN DISCARDING RECOMMENDED BY THE MANUFACTURER, THE DISPOSAL WILL BE FOLLOWED AND MATERIAL DATA SHEETS (MDS) WILL BE MAINTAINED ON-SITE.
- THE SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR ENSURING ADHERENCE TO GOOD HOUSEKEEPING.

PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES AND EQUIPMENT WILL BE MONITORED FOR LEAKS. PETROLEUM PRODUCTS WILL BE STORED PROPERLY ON-SITE. ASPHALT SUBSTANCES WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS. ALL EQUIPMENT AND VEHICLES ON-SITE WILL BE MINIMIZED AND EXTRAORDINARY CARE WILL BE UTILIZED IF REFUELING IS NECESSARY.

IN ADDITION TO GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES, THE FOLLOWING SPILL CONTROL MEASURES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP.

- MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE KEPT IN ANY MATERIAL STORAGE AREAS OR ON-SITE CONSTRUCTION OFFICES OR TRAILERS. THE SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR MAKING ON-SITE PERSONNEL AND SUBCONTRACTORS AWARE OF THE MANUFACTURER'S LITERATURE AND ALL OF THE SPILL CONTROL PRACTICES;

- ALL SPILLS FROM EQUIPMENT, TOOLS, OR MATERIALS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY;
- THE SPILL AREAS WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY;
- ALL SPILL TOXIC OR HAZARDOUS MATERIALS WILL BE REPORTED TO THE APPROPRIATE STATE OR CITY GOVERNMENT AGENCY;
- THE SPILL PREVENTION PLAN SHALL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT SPILLS FROM OCCURRING, A DESCRIPTION OF SPILLS WHICH DO OCCUR WILL INCLUDE WHAT CAUSED THE SPILL, WHEN IT OCCURRED, THE NATURE OF THE SPILL, AND HOW IT WAS CLEANED UP.



Co CONSTRUCTION EXIT - STONE PAD AT SITE EXIT TO REMOVE MUD FROM TIRES (STONE SIZE = 1 1/2"-3 1/2" DIAMETER THICKNESS = 6").

Sd1 A SILT FENCE BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE.

(S) INLETS AND CATCH BASINS SHALL BE PROTECTED DURING CONSTRUCTION FROM SEDIMENT LADEN STORMWATER RUNOFF BY PROVIDING A COMBINATION OF SILT SCREENS, SYNTHETIC BALES, FILTER FABRIC COVERS OR OTHER MEASURES AS NECESSARY TO CONTROL THE TRANSPORT OF SEDIMENT.

LAKE CARTER

WETLAND BUFFER 25' AVG. / 15' MIN
1,198 LF x 25' = 29,950 SF REQUIRED
30,005 SF PROVIDED

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY
BRYAN POTTS ON THE DATE AND TIME SHOWN USING A
DIGITAL SIGNATURE. PRINTED COPIES OF THIS DOCUMENT
ARE NOT CONSIDERED SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

EROSION CONTROL PLAN

LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

[illegible]

TANNATH DESIGN, INC.
22494 ROSE SPRING DRIVE
ORLANDO, FLORIDA 32825
(407) 982-9878
www.tannathdesign.com
FL. CERT. OF AUTH. #27199



DATE	06/05/14
SCALE	1"=50'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-1.0	
SHEET NO.	

STORMWATER MANAGEMENT:
STORMWATER FACILITIES SHALL BE DESIGNED AND PERMITTED IN ACCORDANCE WITH THE CITY OF APOPKA AND ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.

FLOOD ZONE
THE SITE IS LOCATED IN FLOOD ZONE X, NOT A SPECIAL FLOOD AREA, PER FEMA F.I.R.M. PANEL 12069C0385 D, DATED JULY 3, 2023 LAKE COUNTY, FLORIDA.

WETLANDS
THERE ARE WETLANDS LOCATED ON THE SOUTH SIDE OF PROJECT SITE.

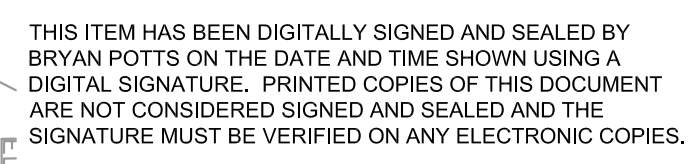
 LAKE:	1.90 ACRES	NO IMPACT
WETLAND:	6.09 ACRES	NO IMPACT

VEGETATION
THE SITE IS CURRENTLY A WOODED FIELD.

5. ALL PUBLIC IMPROVEMENTS, INCLUDING ADJACENT SIDEWALKS, WILL BE CHECKED AT FINAL INSPECTION, ANY DAMAGED, BROKEN, OR CRACKED SECTIONS SHALL BE REPLACED PRIOR TO ISSUANCE OF CERTIFICATIONS OF OCCUPANCY.
6. ALL CONSTRUCTION SHALL MEET CITY REQUIREMENTS.
7. ALL SITE IMPROVEMENTS SHALL CONFORM TO A.D.A AND FLORIDA ACCESSIBILITY CODE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE NOTIFICATION, LOCATION AND PROTECTION OF ALL UTILITIES THAT MAY BE WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL NOTIFY SUNSHINE LOCATORS FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING CONSTRUCTION AT 1-800-432-4770, MONDAY THROUGH FRIDAY 7:30 AM TO 4:30 PM.
9. ALL CONSTRUCTION MATERIAL AND METHODS, SHALL MEET THE CURRENT EDITIONS OF THE DESIGN STANDARDS, THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND THE UTILITY ACCOMMODATION MANUAL.
10. EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED, OR RELOCATED PER PLANS. ALL COST SHALL BE INCLUDED IN BASE BID.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS AND POLES, ETC. AS REQUIRED PER PLANS.
12. CONTRACTOR SHALL MATCH EXISTING PAVEMENT IN GRADE AND ALIGNMENT.
13. ALL DISTURBED AREAS WITHIN THE FDOT RIGHT OF WAY SHALL BE GRADED AND SODDED WITH ARGENTINE BAHIA SOD.
14. ALL STRIPING WITHIN THE FDOT RIGHT OF WAY SHALL BE LEAD-FREE THERMOPLASTIC.
15. ALL MAINTENANCE OF TRAFFIC SHALL ADHERE TO THE REQUIREMENTS OF THE DESIGN STANDARDS 102-600 INDEXES.



USES: 
FINAL USES FOR EACH BUILDING HAVE NOT BEEN DETERMINED.
USES ALLOWED WILL BE RETAIL, COMMERCIAL, OFFICE, & MEDICAL
OFFICE.

[illegible]

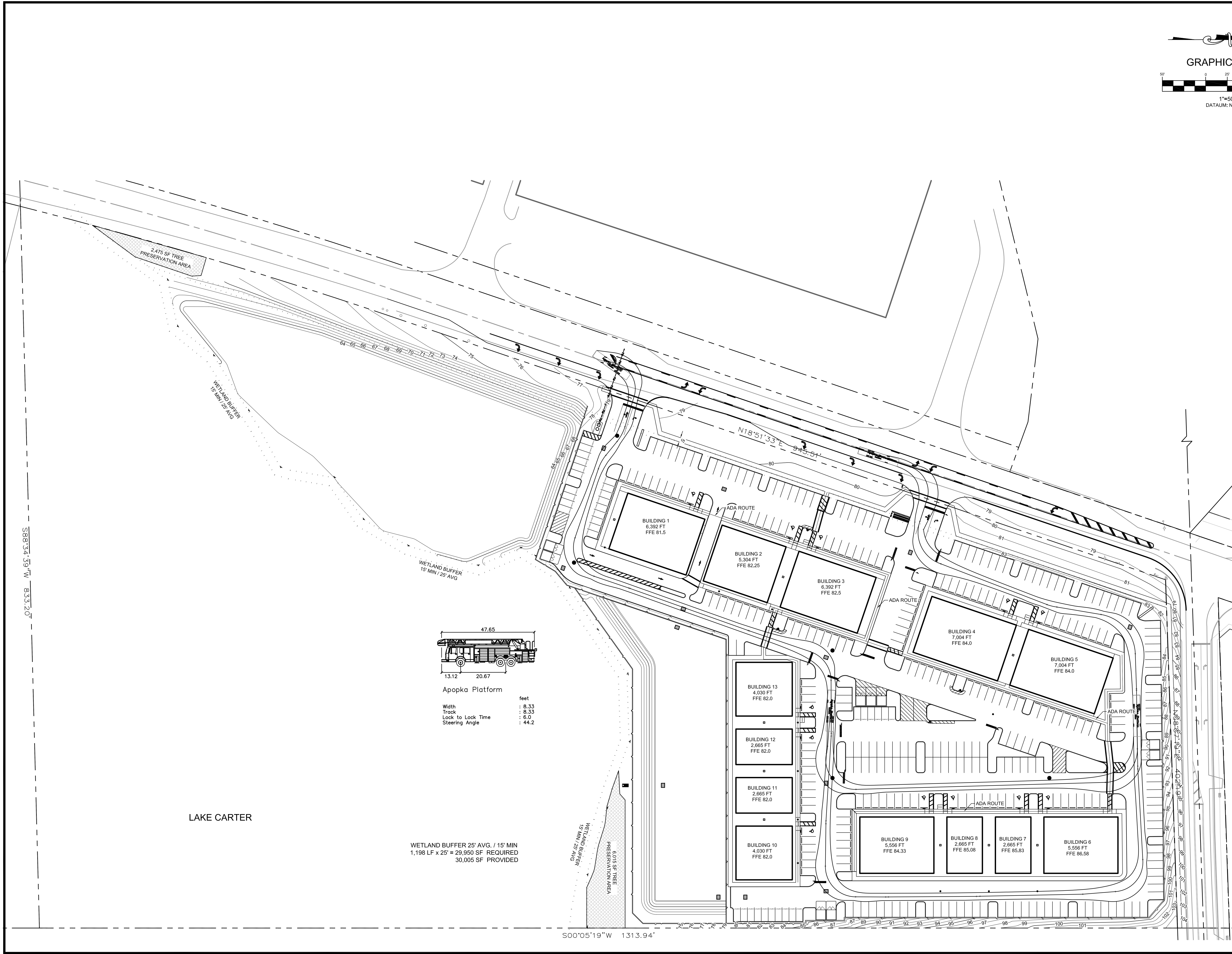
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SITE PLAN

LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE	07/04/23
SCALE	1"=50'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-2.0	
SHEET NO.	



△		
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△		
△		
△	REVISED PER CLIENT MARK-UPS	DDP 03/18/24
△	ISSUED FOR PERMITTING	BRP 07/04/23
△	NO.	BY DATE
	REVISIONS	



AUTOTURN PLAN

LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE	07/04/23
SCALE	1"=50'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
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SHEET NO.	

1. THE ENTITY THAT WILL OWN, OPERATE, AND MAINTAIN THE STORM SEWER SHOWN ON THESE PLANS IS LCE 13 LLC. THE CONTRACTOR SHALL BE EXPECTED TO MEET ALL THE REQUIREMENTS OF THE PERMITS OBTAINED.

2. THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS AND CALCULATIONS AS NECESSARY TO ASSURE HIMSELF OF EARTHWORK QUANTITIES. THERE IS NO IMPLICATION THAT EARTHWORK BALANCES OR THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IMPORT FILL NEEDED, OR FOR REMOVAL AND DISPOSAL OF EXCESS MATERIAL.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE NECESSARY TESTING TO ASSURE THAT THE PROPER COMPACTION HAS BEEN ACHIEVED ON THE SUBGRADE, BASE, AND ALL OTHER PERTINENT AREAS THAT HAVE BEEN COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS ASSOCIATED WITH TESTING AND SHALL PROVIDE THE OWNER AND THE ENGINEER WITH COPIES OF THE CERTIFICATION OF COMPACTION FROM THE TESTING COMPANY.
4. PRIOR TO BID PREPARATION, THE CONTRACTOR MUST BECOME FAMILIAR WITH THE OVERALL SITE CONDITIONS AND PERFORM ADDITIONAL INVESTIGATIONS AS DETERMINED NECESSARY TO UNDERSTAND THE DEPTH OF EXISTING EXCAVATED ORGANIC SOIL, PLANT, AND ADEQUACY OF EXISTING MATERIALS AS FILL. DEWATERING REQUIREMENTS, CLEAN FILL REQUIRED FROM OFF-SITE AND MATERIALS TO BE DISPOSED OF OFF-SITE, ALL OF WHICH WILL AFFECT HIS PRICING, ANY DELAY, AND THE PRICE OF THE CONTRACT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROOF OF EXISTING CONDITIONS SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED. THE MATERIALS ANTICIPATED TO BE ENCOUNTERED DURING CONSTRUCTION MAY REQUIRE DRYING PRIOR TO USE AS BACKFILL, AND THE CONTRACTOR MAY HAVE TO IMPORT MATERIALS AT NO EXTRA COST, FROM OFF-SITE TO MEET THE REQUIREMENTS FOR COMPACTION AND PROPER FILL.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXISTING SITE CONDITIONS OF SOIL PRIOR TO THE ORDERING OF ANY OFF-SITE MATERIALS WILL NEED TO BE IMPORTED TO ACHIEVE THE GRADES SPECIFIED ON THE PLANS.

6. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER WHEN ALL WORK IS LAID OUT (SURVEY STAKED), SO THAT A DETERMINATION MAY BE MADE OF SPECIFIC TREES TO BE REMOVED. A TREE REMOVAL PERMIT IS REQUIRED TO BE OBTAINED BY THE CONTRACTOR.
7. ALL FILL MATERIALS SHALL BE FREE OF MUCK, STUMPS, ROOTS, BRUSH, VEGETATIVE MATTER, RUBBISH, OR OTHER UNSUITABLE MATTER.
8. ALL MATERIALS EXCAVATED SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STOCKPILED AT ON-SITE LOCATIONS AS SPECIFIED BY THE OWNER. MATERIALS SHALL BE STOCKPILED SEPARATELY AS FILL (NON-ORGANIC) FILL STOCKPILES AND ORGANIC (MUCK) STOCKPILES IF MUCK IS ENCOUNTERED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UNSUITABLE FILL MATERIALS FROM THE SITE.
9. FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MINIMUM OF 15" LIFT. THE CONTRACTOR SHALL SUBMIT A PROPOSED GRADING PLAN TO THE ENGINEER. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND THE OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL.
10. GRADING SHOWN ON THESE PLANS IS PROVIDED TO THE CONTRACTOR TO EXPRESS THE GENERAL INTENT OF THE PROJECT. THE CONTRACTOR SHALL GRADE THE ENTIRE SITE TO PROVIDE POSITIVE DRAINAGE IN ALL AREAS. SMOOTH TRANSITIONS SHALL BE PROVIDED BETWEEN CONTOURS OR SPOT ELEVATIONS AS SHOWN ON THE PLANS TO ACCOMPLISH THE GRADING INTENT. ALL SLOPES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING HAS BEEN COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE AND ANCHOR FOR THE PROTECTION AND MAINTENANCE OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MOBILIZATION OF GRADING EQUIPMENT TO DETERMINE THAT THE GRADING INTENT HAS BEEN ACHIEVED.

11. REINFORCED CONCRETE PIPE (RCP) SHALL BE CLASS III WITH RUBBER GASKET JOINTS. RCP SHALL CONFORM TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 941. RUBBER GASKETS SHALL CONFORM TO SECTION 942.
12. ALL OTHER RELATED ITEMS REQUIRED FOR THE CONSTRUCTION OF THE STORM SEWER (OUTFALL PROTECTION, POLLUTION CONTROL, ETC.) ARE TO BE IN ACCORDANCE WITH DETAILS SHOWN ON THE CONSTRUCTION PLANS, FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, AND FDOT STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION (LATEST EDITION).
13. ALL PIPE CALL OUTS ARE MEASURED CENTERLINE TO CENTERLINE FOR MANHOLES AND INLETS.
14. ALL ON-SITE AREAS DISTURBED BY THE CONSTRUCTION SHALL BE STABILIZED WITH A SEED AND MULCH MIXTURE UNLESS OTHERWISE NOTED.
15. ALL OFF-SITE AREAS DISTURBED BY CONSTRUCTION SHALL BE SODED WITH BAHIA.
16. NO HARD WOOD TREES MAY BE PLANTED OVER OR WITHIN 5' OF UTILITY LINES OR STORM PIPES. ONLY SOD OR SOFT WOOD SHRUBS MAY BE PLANTED OVER UTILITY LINES
17. ALL MITERED END SECTIONS TO BE CONSTRUCTED IN ACCORDANCE WITH FDOT INLET 430-022.
18. DISTURBED AREAS TO BE SODED WITH BAHIA SOD, WITH THE EXCEPTION OF THE POND BOTTOM AND THE COMPENSATING STORAGE AREA.

STS 2	STORM STRUCTURE I.D.		DRAINAGE SURFACE FLOW
	MITERED END SECTION		DRAINAGE FLOWLINE
	STORM CATCH BASIN		DRAINAGE RIDGE
T.O.W.=77.50 B.O.W.=76.50	TOP OF WALL BOTTOM OF WALL		PROPOSED GRADES
			EXISTING SPOT ELEV.

ASPHALT PAVEMENT
(SEE DETAIL 1 ON C-6.0)

HD CONCRETE PAVEMENT
(SEE DETAIL 1 ON C-6.0)

4" CONCRETE SIDEWALK
(SEE DETAIL 2 ON C-6.0)

50' 0 25' 50' 100'

1"=50'

DATAUM: NAVD88

STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
STS 1	TYPE D' INLET RIM ELEV. 78.16		INV. 76.41 E 18" HDPE
STS 2	TYPE D' INLET RIM ELEV. 79.13	INV. 76.80 N 18" HDPE	INV. 76.80 E 18" HDPE
STS 3	TYPE D' INLET RIM ELEV. 81.32	INV. 77.37 N 18" HDPE	INV. 77.37 S 18" HDPE
STS 4	TYPE D' INLET RIM ELEV. 82.49		INV. 79.86 S 18" HDPE
STS 5	TYPE D' INLET RIM ELEV. 79.84	INV. 75.68 W 18" HDPE INV. 76.00 NW 12" HDPE	INV. 75.68 N 18" HDPE
STS 6	TYPE D' INLET RIM ELEV. 80.19	INV. 76.65 W 18" HDPE INV. 74.95 S 18" HDPE INV. 76.90 N 18" HDPE INV. 77.15 NW 12" HDPE	INV. 70.76 E 30" HDPE
STS 7	TYPE D' INLET RIM ELEV. 81.32	INV. 80.07 N 12" HDPE	INV. 76.70 S 18" HDPE
STS 10	BUBBLE UP STRUCTURE TYPE D' INLET RIM ELEV. 72.75	INV. 68.96 W 30" HDPE	
STS 11	TYPE D' INLET RIM ELEV. 80.66		INV. 78.41 E 18" HDPE
STS 12	TYPE D' INLET RIM ELEV. 80.58	INV. 78.00 N 12" HDPE INV. 77.79 W 18" HDPE INV. 77.80 SW 12" HDPE	INV. 77.54 S 24" HDPE
STS 14	BUBBLE UP STRUCTURE TYPE D' INLET RIM ELEV. 73.25	INV. 71.00 N 24" HDPE	
STS 17	EMERGENCY OVERTFLOW TYPE D' INLET RIM ELEV. 76.50		INV. 66.14 S 24" HDPE

WETLAND BUFFER 25' AVG. / 15' MIN
1,198 LF x 25' = 29,950 SF REQUIRED
30,005 SF PROVIDED

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SANITARY WASTEWATER AND WATER SYSTEM NOTES:

- CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITIES AT ALL POINTS OF CONNECTION, AND AT ALL AREAS OF CONFLICT.
- IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO ENSURE THAT ALL REQUIRED PERMITS ARE IN HAND BEFORE BEGINNING ANY CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING & VERIFYING ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION & FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISRUPTION OF 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. ALL UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANIES & THE CONTRACTOR SHALL COOPERATE WITH THEM DURING THE RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT & NO EXTRA COMPENSATION WILL BE ALLOWED.
- ALL CONSTRUCTION OF THE SEWER COLLECTION AND WATER DISTRIBUTION SYSTEMS SHALL MEET THE CITY OF APOPKA SPECIFICATIONS FOR WASTEWATER & WATER MAIN CONSTRUCTION.
- CROSS CONNECTION CONTROL SHALL BE IN ACCORDANCE WITH RULES & REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENTAL PROTECTION-CHAPTER 62-555 "PERMITTING & CONSTRUCTION OF PUBLIC WATER SYSTEMS."
- CONTRACTOR SHALL COORDINATE ALL WATER SYSTEM TEST SCHEDULING TO ALLOW ENGINEER'S ATTENDANCE & PROVIDE FIVE (5) WORKING DAYS NOTICE OF WATER TESTS. CONTRACTOR'S FAILURE TO PROPERLY NOTIFY ENGINEER MAY RESULT IN RETESTING AT ENGINEER'S OPTION & AT CONTRACTOR'S EXPENSE.

- ENGINEER RESERVES THE RIGHT TO WITHHOLD APPROVAL FOR ANY PORTION OF THE WATER OR SEWER PIPE WORK WHICH HAS NOT BEEN TESTED (OBSERVED BY ENGINEER) & REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.
- SITE CONTRACTOR SHALL COORDINATE & VERIFY ALL UTILITY SERVICES WITH FINAL ARCHITECTURAL DRAWINGS & BUILDING CONTRACTOR.
- CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS MARKED UP WITH HORIZONTAL & VERTICAL AS-BUILT INFORMATION ON LOCATION OF WATER MAINS, FITTINGS & WATER SERVICES LOCATED FROM CENTERLINE OF NEAREST FIRE HYDRANT OR NEAREST MANHOLE.
- SITE UTILITY WORK SHALL TERMINATE 5 FEET FROM BUILDINGS UNLESS OTHERWISE STATED.
- CONTRACTOR SHALL NOT ACTIVATE WATER SERVICE UNTIL THE FDEP HAS CLEARED THE SYSTEM FOR USE & THE CLEARANCE LETTER HAS BEEN RECEIVED BY THE OWNER.
- EXISTING WATER MAINS SHALL BE PROTECTED FROM CONTAMINATION DURING THE FILLING, FLUSHING, & TESTING OF NEW LINES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA C651.92.
- THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE WATER DISTRIBUTION SYSTEM IN ACCORDANCE WITH THE FDEP WATER PERMIT, & RECEIVE APPROVAL THEREOF FROM THE LOCAL WATER UTILITY, ENGINEER OF RECORD, & FDEP, PRIOR TO PLACING IN SERVICE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF THE FDEP WATER & SEWER PERMITS FROM THE OWNER & MAINTAIN THEM ON THE JOB SITE AT ALL TIMES. DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE AWWA 651 "DISINFECTING WATER MAINS."
- THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, INCLUDING THE FLORIDA TRENCH SAFETY ACT (90-96, LAWS OF FLORIDA). ANY MATERIAL, CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT.

UTILITY SEPARATION NOTE:

HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE (3) FEET AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, NEW UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE (3) FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX (6) INCHES ABOVE THE TOP OF THE SEWER. UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN (10) FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

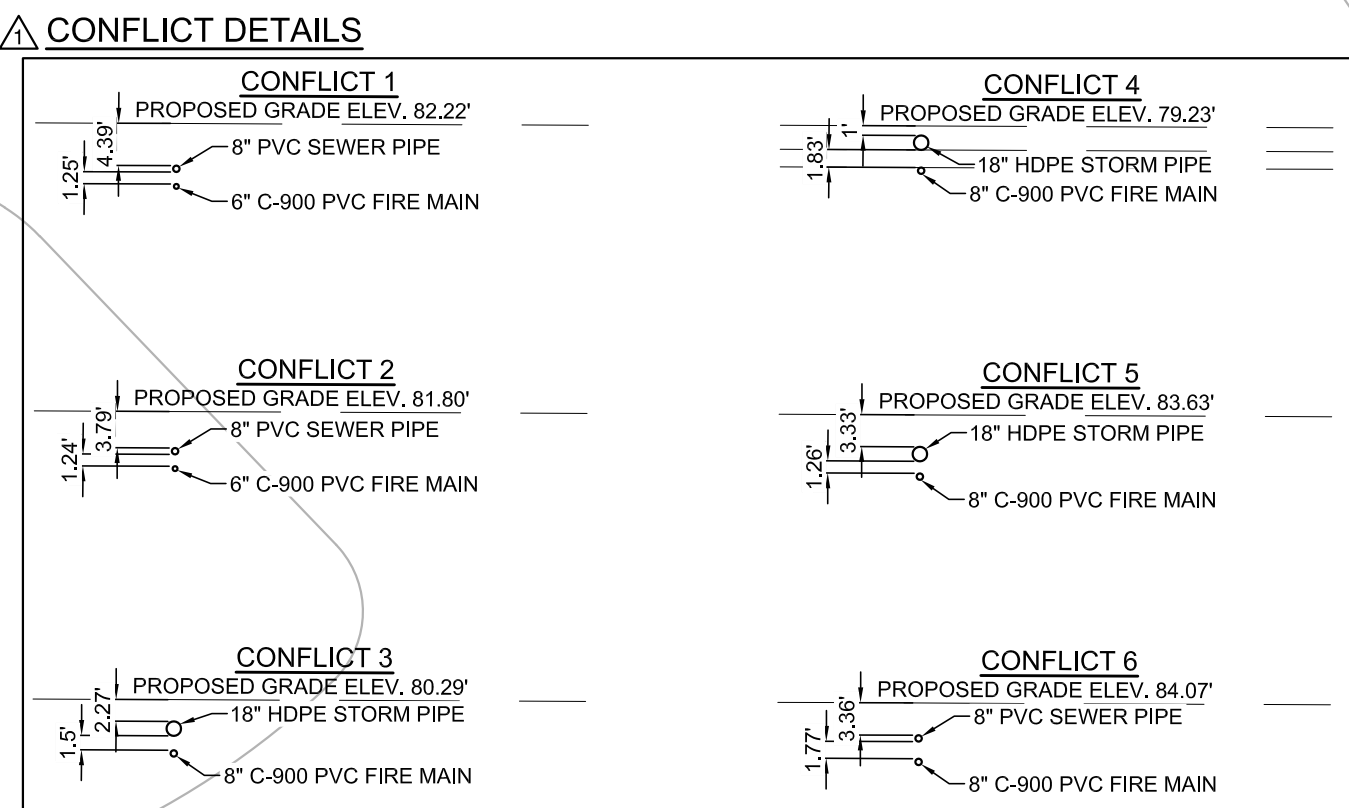
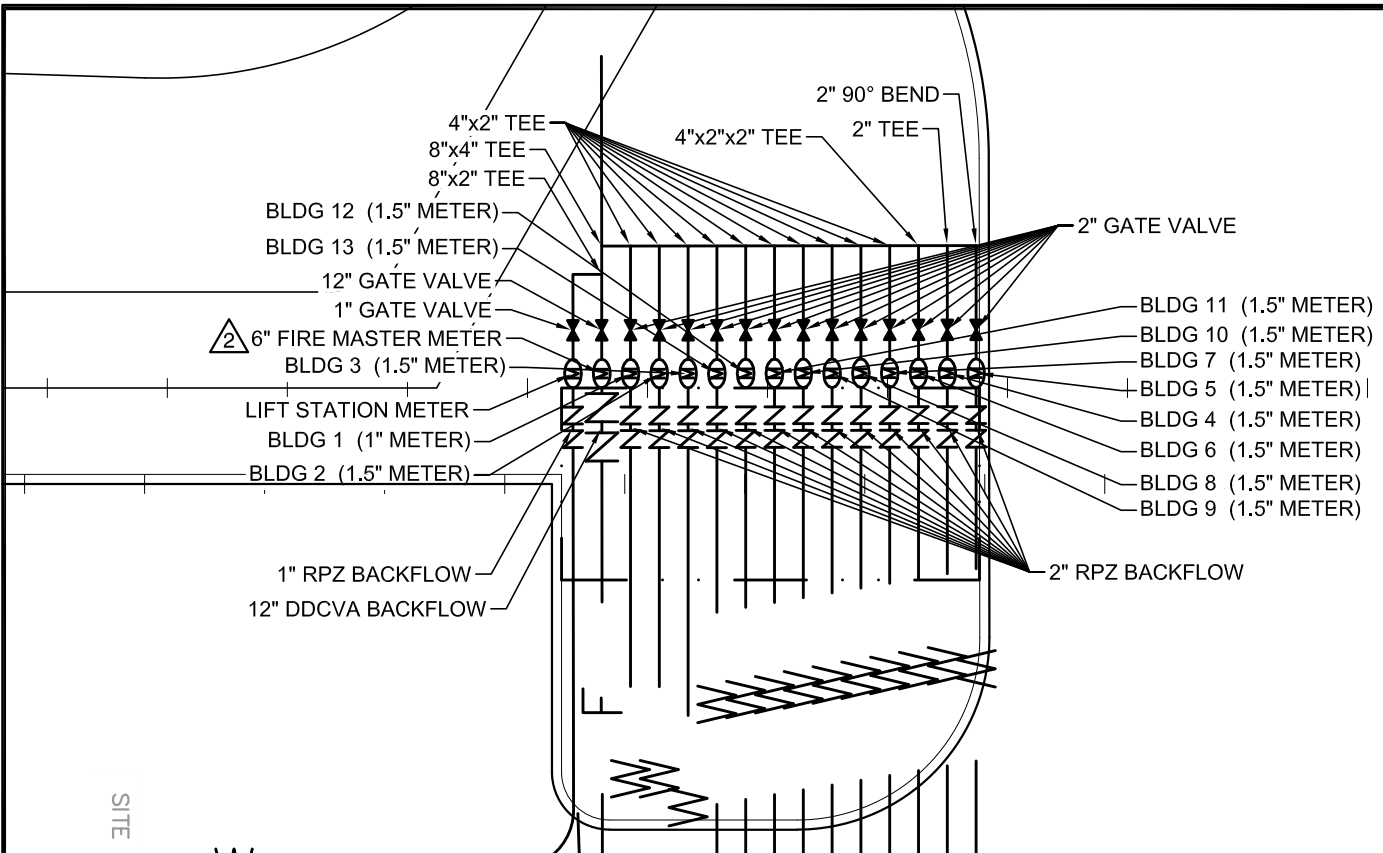
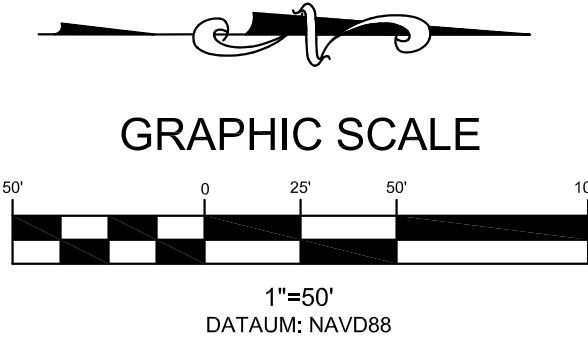
VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUM TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR

PIPELINES CONVEYING RECLAIMED WATER, AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER.

SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE. EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST (3) THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER, AT LEAST THREE (3) FEET, AND PREFERABLY TEN (10) FEET FROM ANY EXISTING OR PROPOSED VACUUM TYPE SANITARY SEWER, AT LEAST SIX (6) FEET, AND PREFERABLY TEN (10) FEET FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER, AND AT LEAST TEN (10) FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

STRUCTURE TABLE			
STRUCTURE NAME:	DETAILS:	PIPES IN:	PIPES OUT:
SST 1	SANITARY MANHOLE RIM ELEV. 85.07	INV. 82.44 E 6" PVC	INV. 82.42 S 8" PVC
SST 2	SANITARY MANHOLE RIM ELEV. 80.85	INV. 77.21 E 6" PVC INV. 77.11 N 8" PVC	INV. 77.01 W 8" PVC
SST 3	SANITARY MANHOLE RIM ELEV. 80.97	INV. 76.83 E 8" PVC INV. 77.61 N 6" PVC	INV. 76.73 S 8" PVC
SST 4	SANITARY MANHOLE RIM ELEV. 79.99	INV. 75.72 N 8" PVC	INV. 75.62 W 8" PVC
SST 5	SANITARY MANHOLE RIM ELEV. 78.57	INV. 75.08 E 8" PVC	INV. 75.08 S 8" PVC



WETLAND BUFFER 25' AVG. / 15' MIN
1,198 LF x 25' = 29,950 SF REQUIRED
30,005 SF PROVIDED

UTILITY PLAN

LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE

08/25/23

SCALE

1"=50'

DRAWN-BY

DDP

PROJECT NUMBER:

112-001

C-4.0

SHEET NO.

REVISIONS

NO.	REVISIONS	BY	DATE
1	ISSUED FOR PERMITTING	BRP	09/05/23
2	REVISED PER CITY COMMENTS & CLIENT MARK-UPS	DDP	01/04/24
3	REVISED PER CITY COMMENTS	DDP	04/22/24

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Sunshine 811

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6. CONTRACTOR SHALL COORDINATE ALL WATER SYSTEM TEST SCHEDULING TO ALLOW ENGINEER'S ATTENDANCE & PROVIDE FIVE (5) WORKING DAYS NOTICE OF WATER TESTS. CONTRACTOR'S FAILURE TO PROPERLY NOTIFY ENGINEER MAY RESULT IN RETESTING AT ENGINEER'S OPTION & AT CONTRACTOR'S EXPENSE.

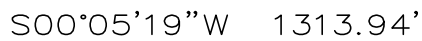
7. ENGINEER RESERVES THE RIGHT TO WITHHOLD APPROVAL FOR ANY PORTION OF THE WATER OR SEWER PIPE WORK WHICH HAS NOT BEEN TESTED (OBSERVED BY ENGINEER) & REPORTED TO CONFORM TO PROJECT SPECIFICATIONS.
8. SITE CONTRACTOR SHALL COORDINATE & VERIFY ALL UTILITY SERVICES WITH FINAL ARCHITECTURAL DRAWINGS & BUILDING CONTRACTOR.
9. CONTRACTOR SHALL MAINTAIN A SET OF RECORD DRAWINGS MARKED UP WITH HORIZONTAL & VERTICAL AS-BUILT INFORMATION ON LOCATION OF WATER MAINS, FITTINGS & WATER SERVICES LOCATED FROM CENTERLINE OF NEAREST FIRE HYDRANT OR NEAREST MANHOLE.
10. SITE UTILITY WORK SHALL TERMINATE 5 FEET FROM BUILDINGS UNLESS OTHERWISE STATED.
11. CONTRACTOR SHALL NOT ACTIVATE WATER SERVICE UNTIL THE FDPH HAS CLEARED THE SYSTEM FOR USE & THE CLEARANCE LETTER HAS BEEN RECEIVED BY THE OWNER.
12. EXISTING WATER MAINS SHALL BE PROTECTED FROM CONTAMINATION DURING THE FILLING, FLUSHING, & TESTING OF NEW LINES IN ACCORDANCE WITH THE APPLICABLE PROVISIONS OF AWWA C651 92.
13. THE CONTRACTOR SHALL DISINFECT ALL SECTIONS OF THE WATER DISTRIBUTION SYSTEM IN ACCORDANCE WITH THE FDPH WATER PERMIT, & RECEIVE APPROVAL THEREOF FROM THE LOCAL WATER UTILITY. ENGINEER RESERVES THE RIGHT PRIOR TO PLACING IN SERVICE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN COPIES OF THE FDPH WATER & SEWER PERMITS FROM THE OWNER & MAINTAIN THEM ON THE JOB SITE AT ALL TIMES. DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE AWWA 651 "DISINFECTING WATER MAINS."
14. THE CONTRACTOR SHALL RECOGNIZE AND ABIDE BY ALL OSHA EXCAVATION SAFETY STANDARDS, THE FEDERAL SAFETY ACT (FSA), AND ANY MATERIAL CONSTRUCTION METHODS, OR MATERIAL COST TO COMPLY WITH THESE LAWS SHALL BE INCIDENTAL TO THE CONTRACT,

VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS. WASTEWATER OR STORMWATER FORCE MAINS AND RECLAIMED WATER PIPELINES

EXISTING OR PROPOSED GRAVITY OR VACUUM TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT THE SAME ELEVATION AS THE TOP OF THE OTHER PIPELINE. UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID, SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX (6) INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT THE SAME ELEVATION AS THE TOP OF THE WATER MAIN ABOVE THE OTHER PIPELINE. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. THE MINIMUM VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR RECLAIMED WATER PIPELINES SHALL BE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR

SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAIN, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS

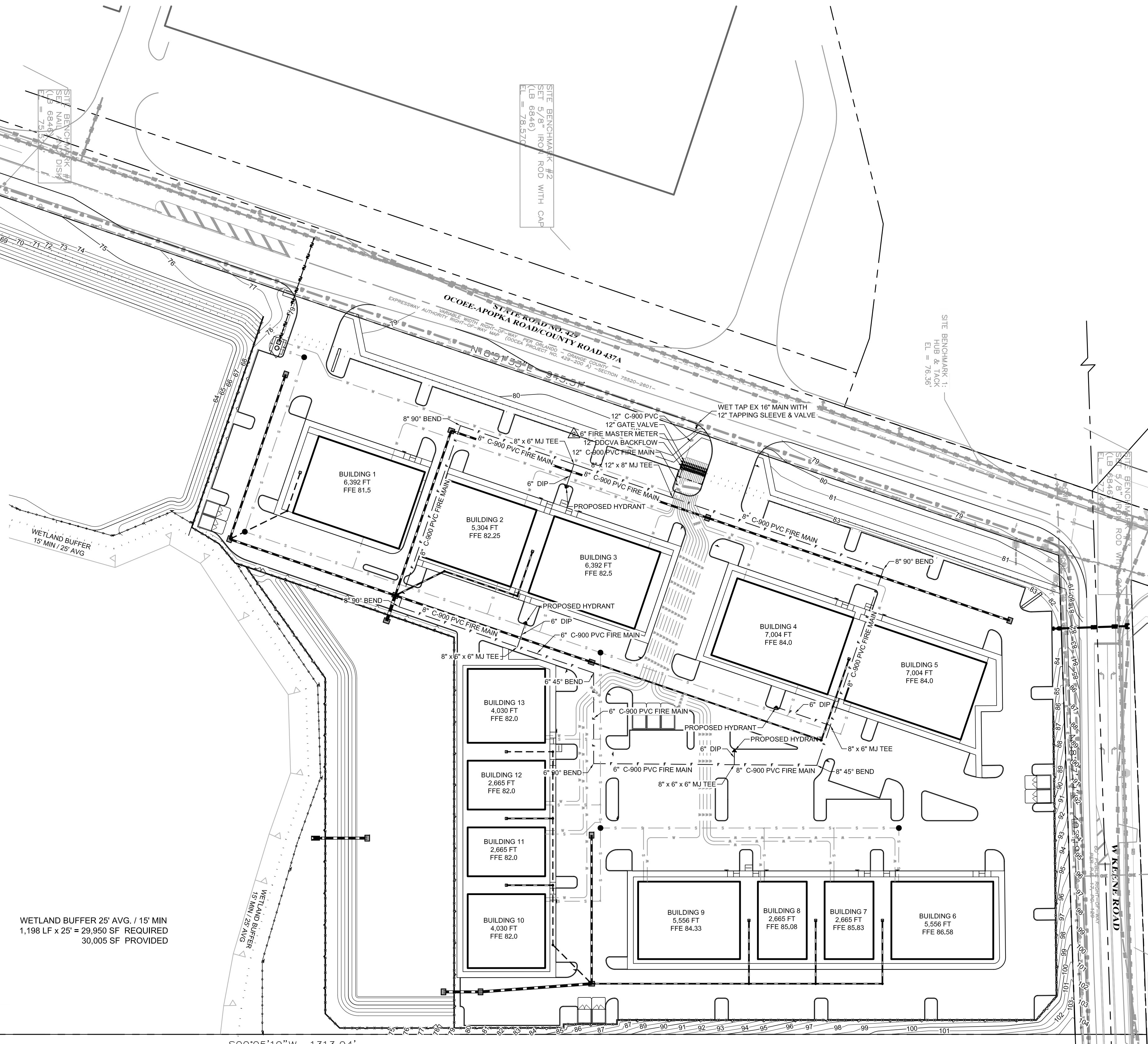
SEPARATION SHALL BE MAINTAINED AT LEAST (3) FEET FROM ANY EXISTING OR PROPOSED STORM, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER, AT LEAST 18 FEET, AND PREFERABLY TEN (10) FEET FROM ANY EXISTING OR PROPOSED VACUUM TYPE SANITARY SEWER; AT LEAST SIX (6) FEET PREFERABLY TEN (10) FEET FROM ANY EXISTING OR PROPOSED GRAVITY OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, RECLAIMED WATER PIPELINE, AND AT LEAST TEN (10) FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."



PROVIDED FLOW - 3,200 GPM

PROVIDED FLOW - 4,000 GPM

WETLAND BUFFER 25' AVG. / 15' MIN
1,198 LF x 25' = 29,950 SF REQUIRED
30,005 SF PROVIDED



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LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE	08/25/23
SCALE	1"=50'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-4.1	
SHEET NO.	

[illegible]

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SITE CROSS SECTIONS

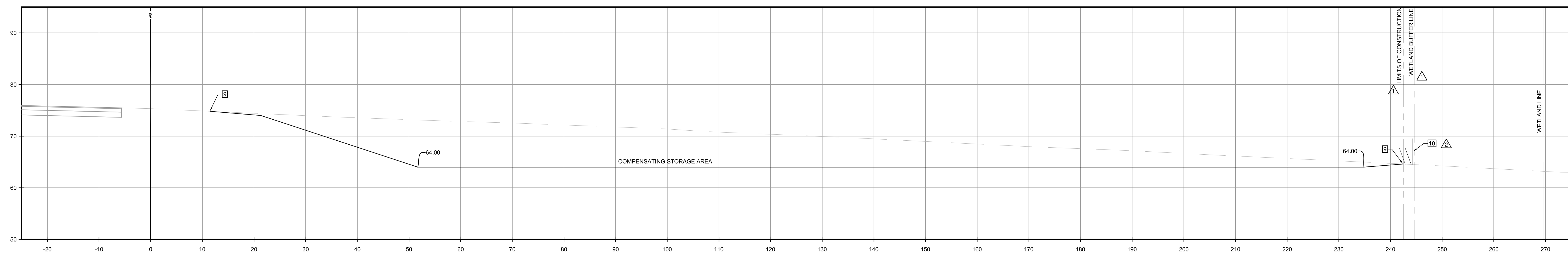
LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE	08/30/23
SCALE	1"=10'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-5.1	
SHEET NO.	

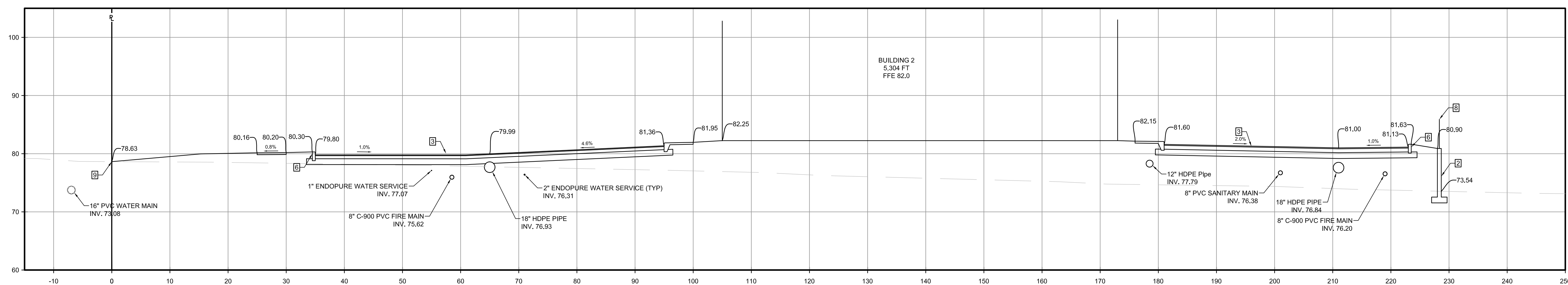
SECTION NOTE LEGEND

- 1 SAW CUT AND REMOVE EXISTING SHOULDER OR CURB
- 2 RETAINING WALL (TO BE DESIGNED UNDER SEPARATE PERMIT)
- 3 ASPHALT PAVEMENT (SEE DETAIL 2 ON C-6.0)
- 4 6" HD CONCRETE PAVEMENT (SEE DETAIL 2 ON C-6.0)
- 5 4" SIDEWALK (SEE DETAIL 3 ON C-6.0)
- 6 TYPE 1' CURB (SEE DETAIL 1 ON C-6.0)
- 7 PAVED RATIO (SEE DETAIL 2 ON C-6.0)
- 8 48" ALUMINUM PICKET FENCE POSTS @ 6' O.C. SET IN CONCRETE PER APPROVED DETAIL
- 9 MEET EXISTING GRADE
- 10 PROPOSED WESTLAND FENCE

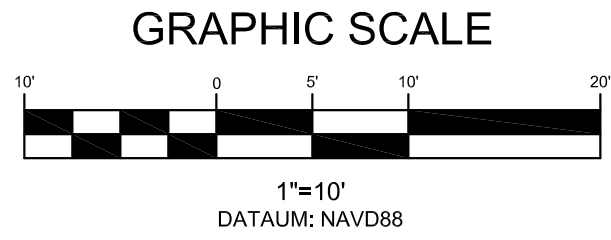
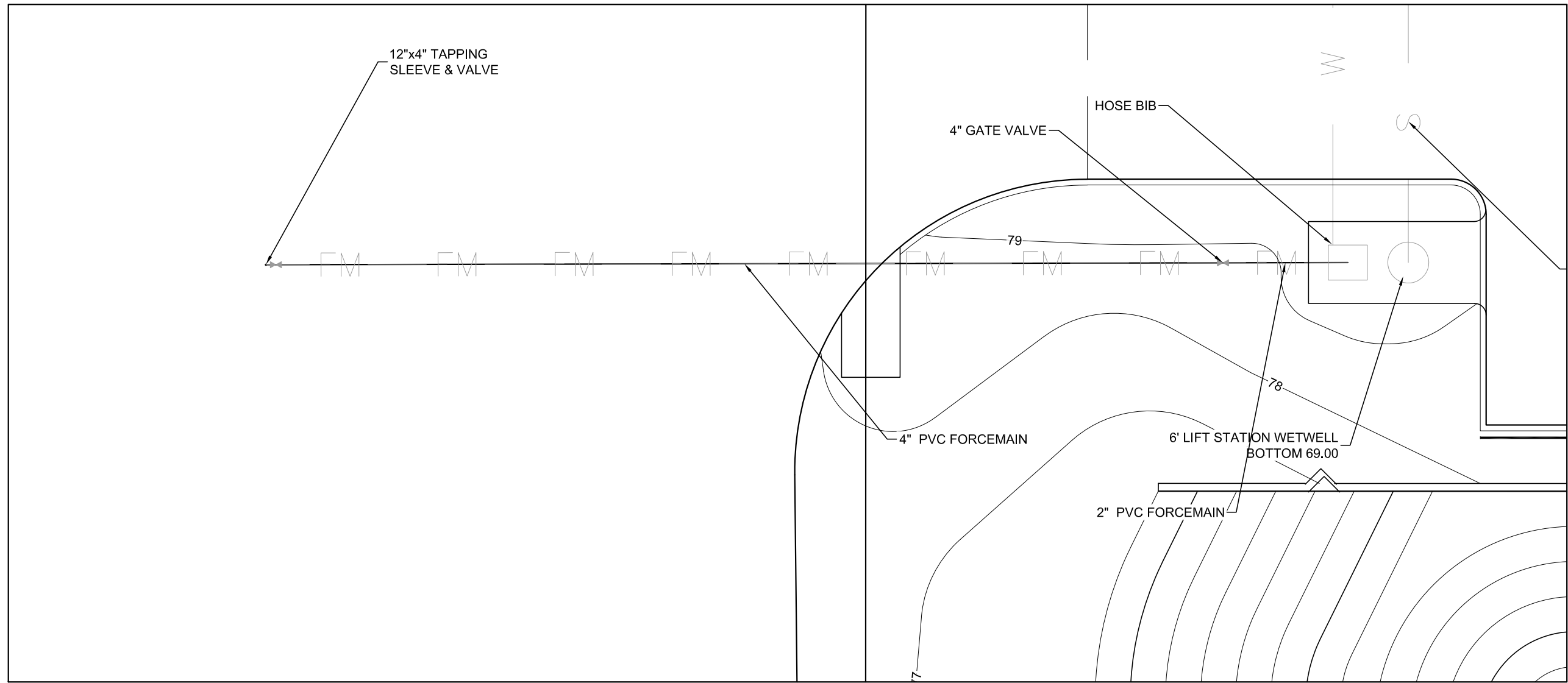
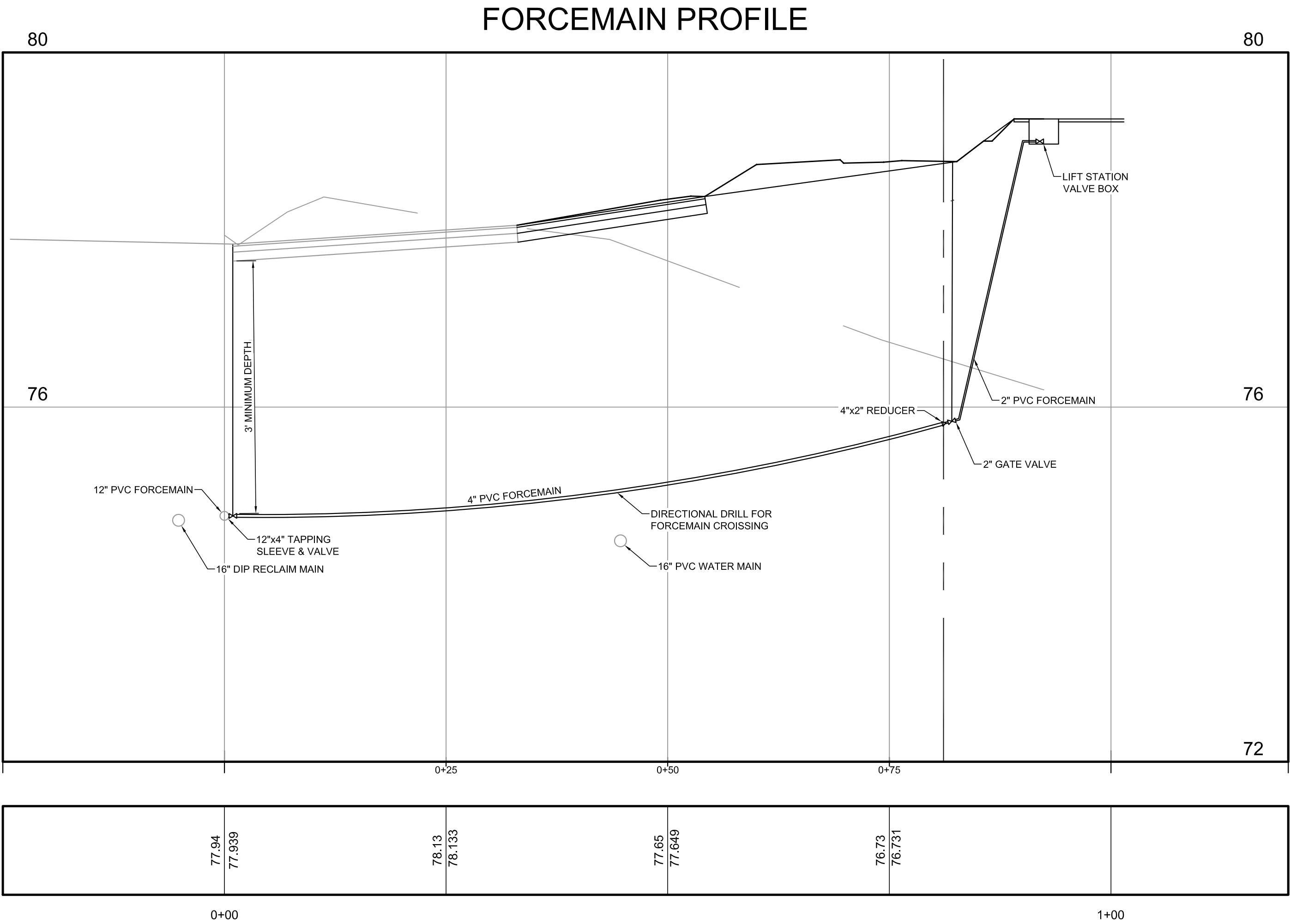
SECTION I-I



SECTION G-G



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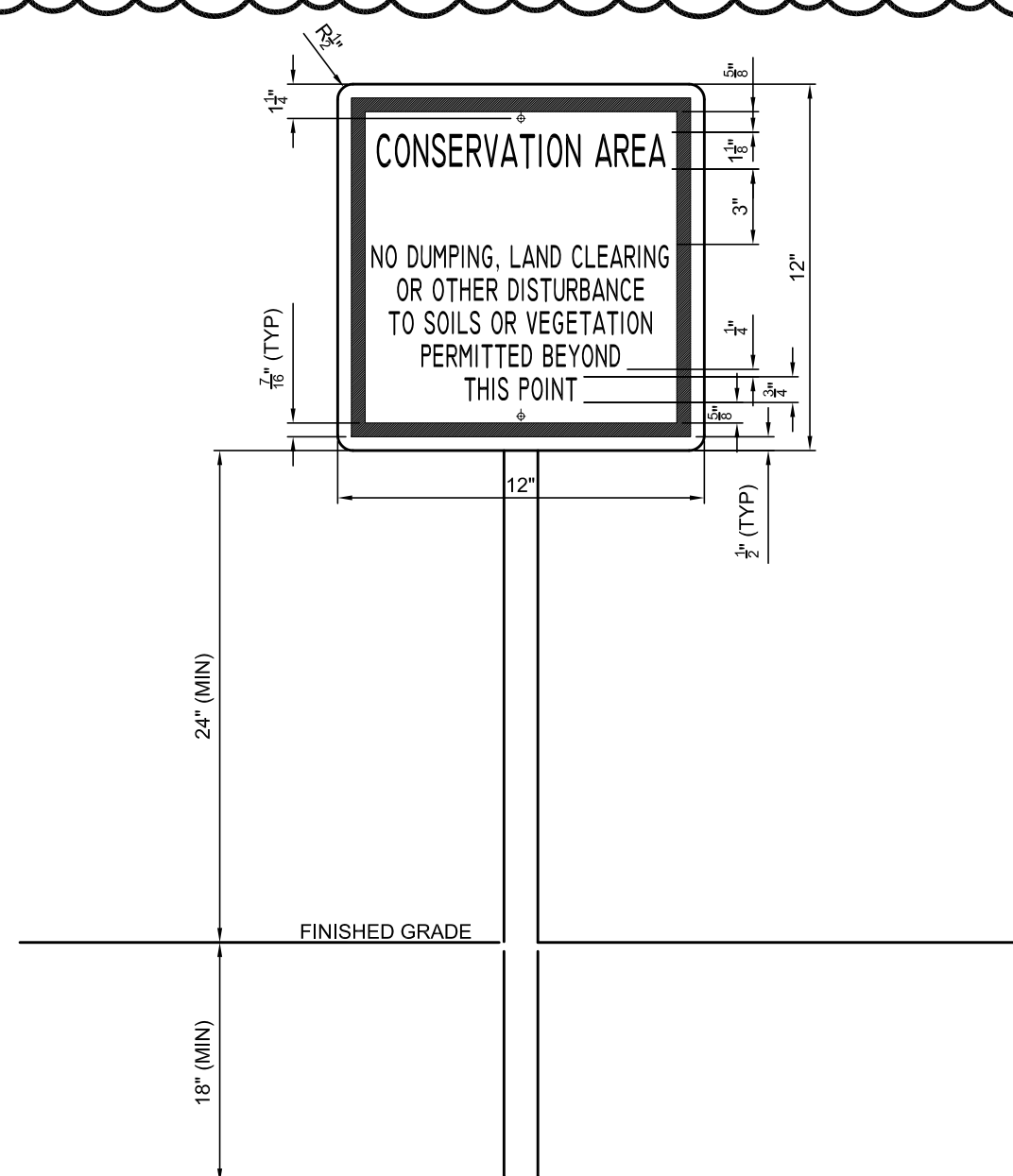
FORCEMAIN PLAN & PROFILE	
LAKE CARTER EXCHANGE W. KEENE ROAD AND SR 429 APOPKA, FLORIDA 32703	
DATE	01/09/24
SCALE	1"=10'
DRAWN-BY	DDP
PROJECT NUMBER: 112-001	
C-5.2	
SHEET NO.	

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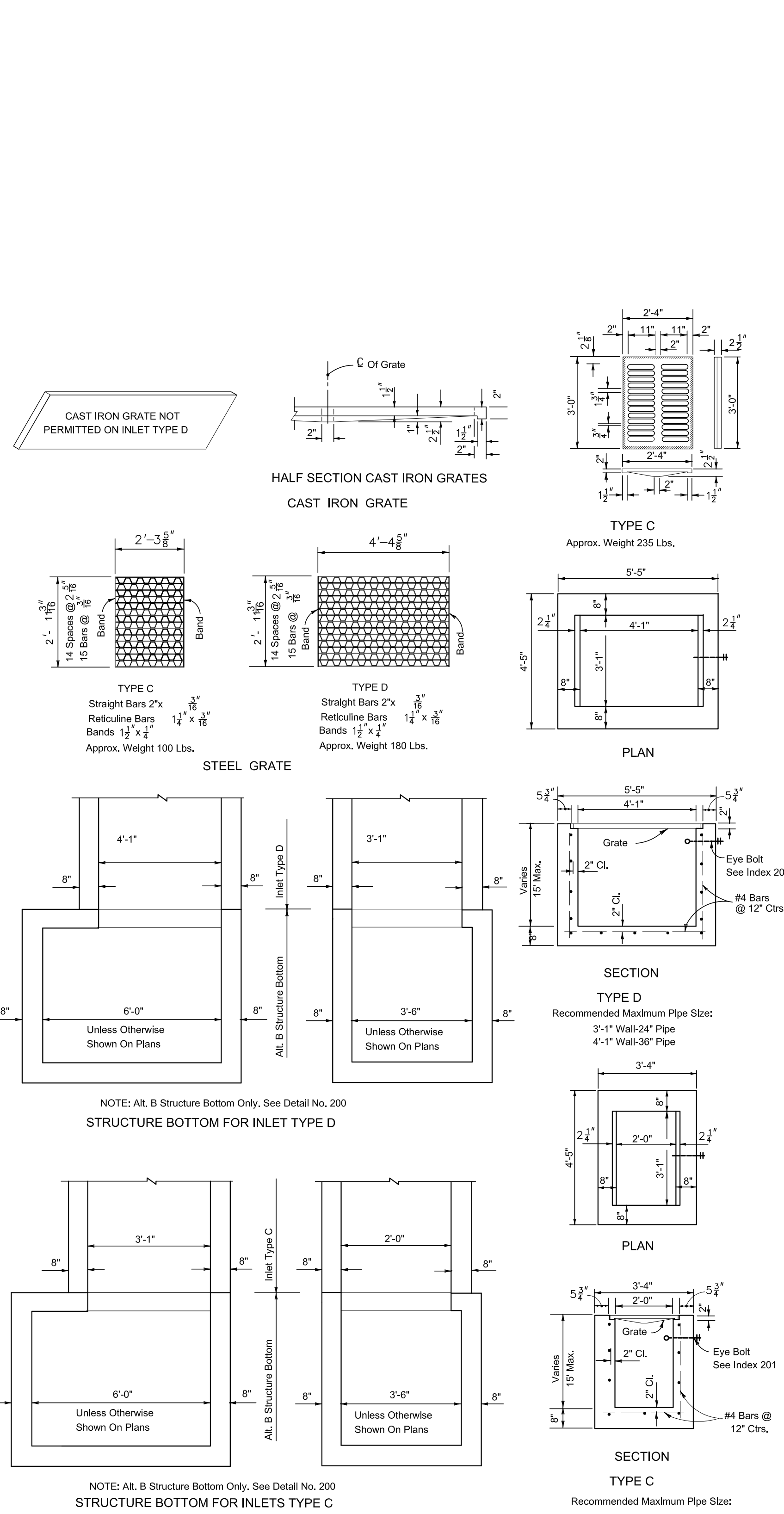
EMERGENCY OUTFALL STS17



- NOTES:
- HEIGHT OF SIGN WILL DEPEND ON LOCATION AND SURROUNDING LANDSCAPE PLANT TYPES. IN ALL CASES, THE SIGN SHALL BE VISIBLE TO THE PUBLIC.
 - BACKGROUND SHALL BE WHITE. LETTERS SHALL BE BLACK (HELVETICA, SWISS 721 COREL OR ACCEPTABLE EQUAL) AND BORDER SHALL BE IN ACCORDANCE WITH COUNTY REQUIREMENTS.
 - ENGINEERING GRADE REFLECTIVE MATERIALS SHALL BE USED.
 - SIGN MATERIAL SHALL BE OF 0.040 GAUGE METAL.
 - POST SHALL BE 2-3/8" OD STEEL PIPE, HOT DIP GALVANIZED PER ASTM A-123.
 - MOUNTING HARDWARE SHALL BE STAINLESS STEEL.
 - SIGNS SHALL BE PLACED LANDWARD OF THE WETLAND LINE AT MIN. 50' ON CENTER BY THE CONTRACTOR.

4
NTS

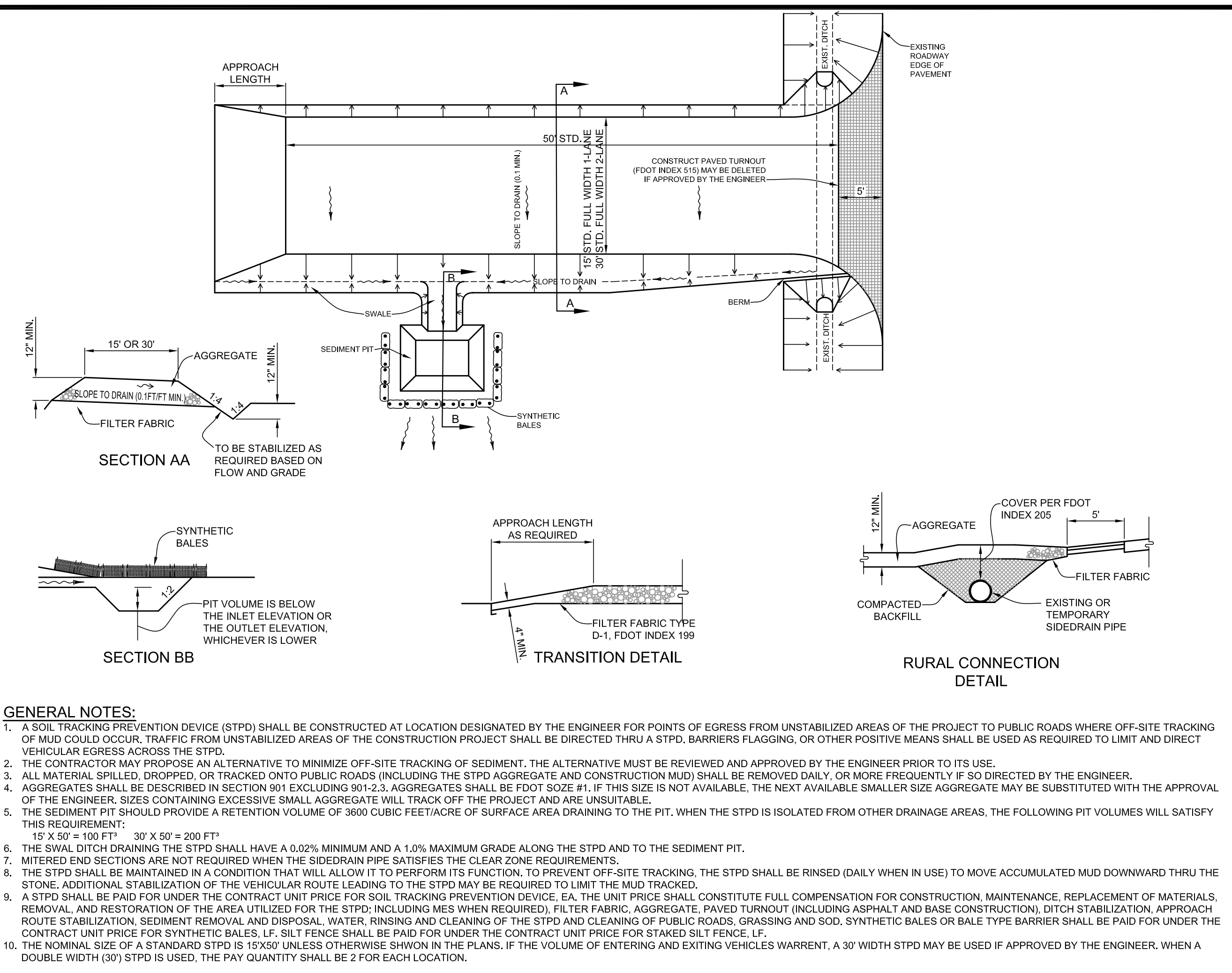
CONSERVATION AREA SIGN



- GENERAL NOTES:
- THESE INLETS ARE SUITABLE FOR BICYCLE AND PEDESTRIAN AREAS AND ARE TO BE USED IN DITCHES, MEDIANS AND OTHER AREAS SUBJECT TO INFREQUENT TRAFFIC LOADINGS BUT ARE NOT TO BE PLACED IN AREAS SUBJECT TO ANY HEAVY WHEEL LOADS.
 - INLETS SUBJECT TO MINIMAL DEBRIS SHOULD BE CONSTRUCTED WITHOUT SLOTS. WHERE DEBRIS IS A PROBLEM INLETS SHOULD BE CONSTRUCTED WITH SLOTS. SLOTTED INLETS LOCATED WITHIN ROADWAY CLEAR ZONES AND IN AREAS ACCESSIBLE TO PEDESTRIANS SHALL HAVE TRAVERSABLE SLOTS. THE TRAVERSABLE SLOT MODIFICATION IS NOT ADAPTABLE TO INLET TYPE H. SLOTS MAY BE CONSTRUCTED AT EITHER OR BOTH ENDS AS SHOWN ON PLANS.
 - STEEL GRATES ARE TO BE USED ON ALL INLETS WHERE BICYCLE TRAFFIC IS ANTICIPATED. STEEL GRATES ARE TO BE USED ON ALL INLETS WITH TRAVERSABLE SLOTS. EITHER CAST IRON OR STEEL GRATES MAY BE USED ON INLETS WITHOUT SLOTS WHERE BICYCLE TRAFFIC IS NOT ANTICIPATED. EITHER CAST IRON OR STEEL GRATES MAY BE USED ON ALL INLETS WITH NON-TRAVERSABLE SLOTS, SUBJECT TO THE SELECTION DESCRIBED ABOVE. WHEN ALTERNATE G GRATE IS SPECIFIED IN THE PLANS, EITHER THE STEEL GRATE, HOT DIPPED GALVANIZED AFTER FABRICATION, OR THE CAST IRON GRATE MAY BE USED, UNLESS THE PLANS STIPULATE THE PARTICULAR TYPE.
 - RECOMMENDED MAXIMUM PIPE SIZES SHOWN ARE FOR CONCRETE PIPE. PIPE SIZES LARGER THAN THOSE RECOMMENDED MUST BE CHECKED FOR FIT.
 - ALL EXPOSED CORNERS AND EDGES OF CONCRETE ARE TO BE CHAMFERED 1/4".
 - PAVEMENT TO BE USED ON INLETS WITHOUT SLOTS AND INLETS WITH NON-TRAVERSABLE SLOTS ONLY WHEN CALLED FOR IN THE PLANS; BUT REQUIRED ON ALL TRAVERSABLE SLOT INLETS. COST TO BE INCLUDED IN CONTRACT UNIT PRICE FOR INLETS. QUANTITIES SHOWN ARE FOR INFORMATION ONLY.
 - TRAVERSABLE SLOTS CONSTRUCTED IN EXISTING INLETS SHALL BE PAID FOR AS INLETS PARTIAL, AND SHALL INCLUDE THE COST FOR SLOT OPENINGS, PAVING AND ANY REQUIRED REPLACEMENT GRATES.
 - SODDING TO BE USED ON ALL INLETS NOT LOCATED IN PAVED AREAS AND PAID FOR UNDER CONTRACT UNIT PRICE FOR SODDING SY.
 - FOR SUPPLEMENTARY DETAILS SEE DETAIL NO. 201.

3
NTS

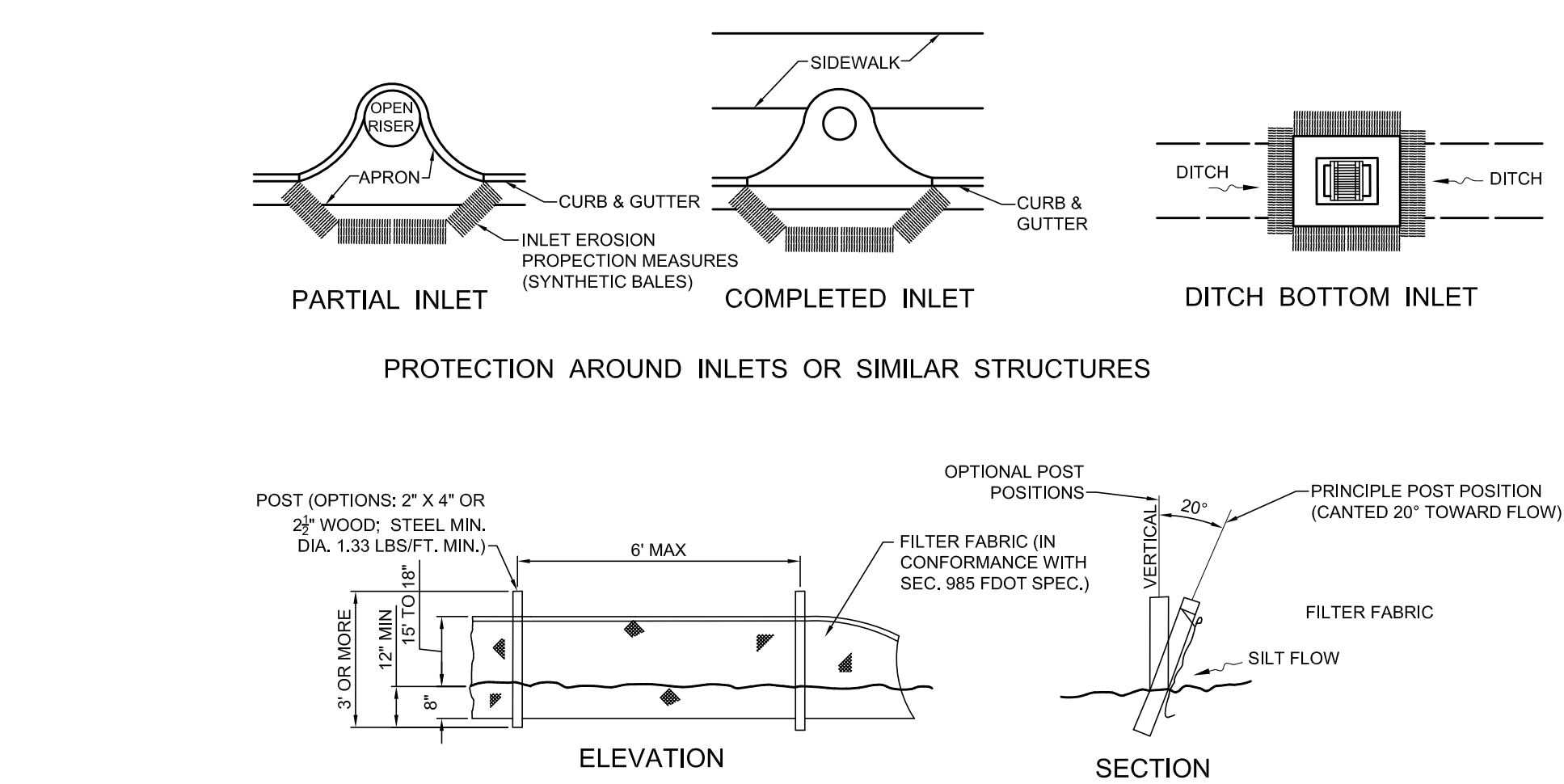
TYPE C AND D INLET (FDOT INDEX 232)



- GENERAL NOTES:
- A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATION DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFF-SITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A STPD. BARRIERS FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STPD.
 - THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TO MINIMIZE OFF-SITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
 - ALL MATERIAL SPILLED, DROPPED OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
 - AGGREGATES SHALL BE DESCRIBED IN SECTION 901 EXCLUDING 901-2.3. AGGREGATES SHALL BE FDOT SOZE #1, IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.
 - THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT:
15' X 50' = 100 FT³ 30' X 50' = 200 FT³
 - THE SWAL DITCH DRAINING THE STPD SHALL HAVE A 0.02% MINIMUM AND A 1.0% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
 - MITERED END SECTIONS ARE NOT REQUIRED WHEN THE SIDEDRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
 - THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFF-SITE TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
 - A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE. EA, THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL AND RESTORATION OF THE AREA UTILIZED FOR THE STPD, INCLUDING MES WHEN REQUIRED. FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF PUBLIC ROADS, GRASSING AND SOD, SYNTHETIC BALES OR BALE TYPE BARRIER SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SYNTHETIC BALES. LF, SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE. LF.
 - THE NOMINAL SIZE OF A STANDARD STPD IS 15X50 UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUME OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER. WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.

2
NTS

CONSTRUCTION ENTRANCE DETAILS



- PROTECTION AROUND INLETS OR SIMILAR STRUCTURES
- TYPE III SILT FENCE
- SILT FENCE APPLICATIONS

1
NTS

EROSION CONTROL DETAILS

DATE	07/27/23
SCALE	NTS
DRAWN-BY	DDP
PROJECT NUMBER:	112-001
C-7.0	
SHEET NO.	

REVISIONS

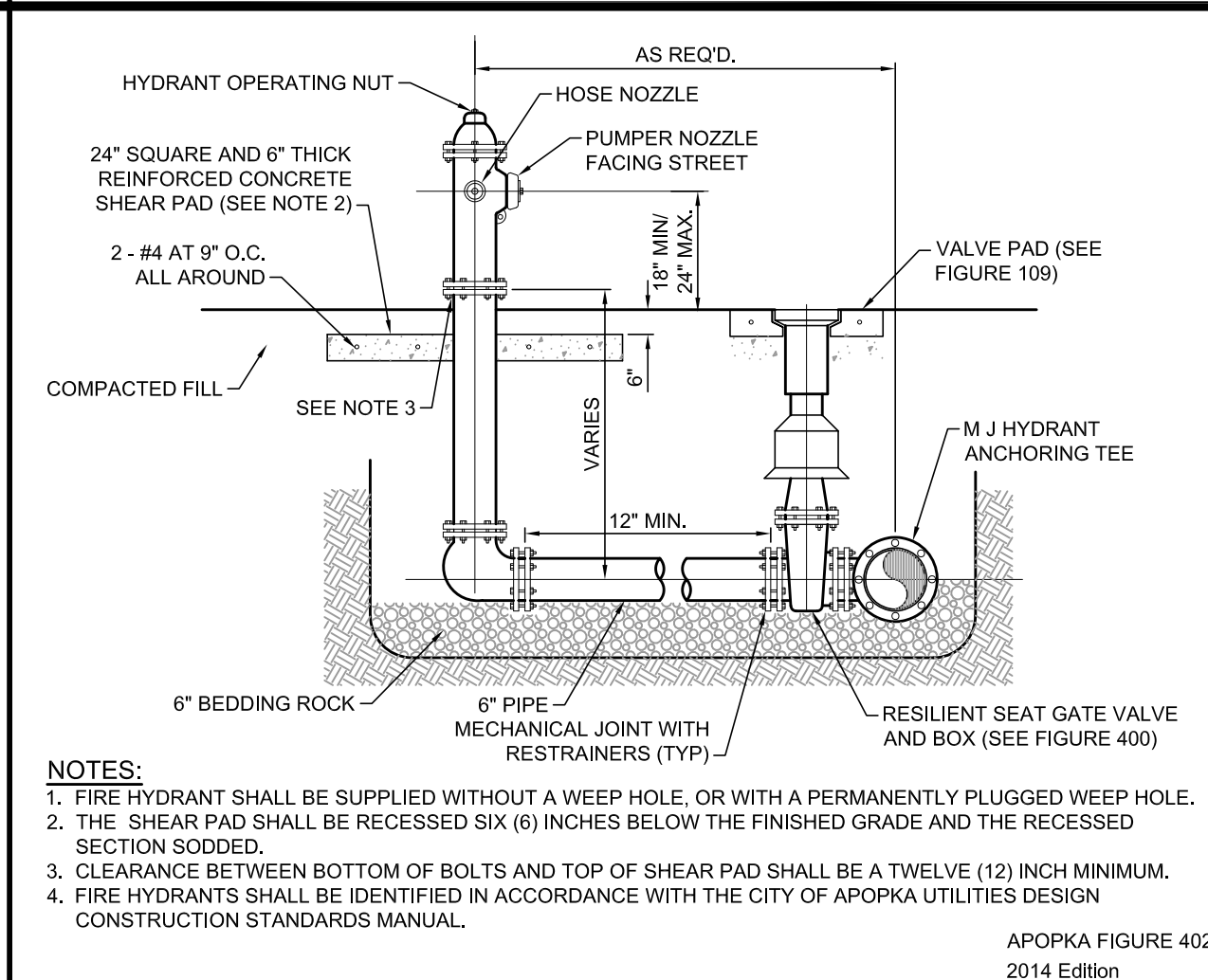
NO.	REVISIONS	BY	DATE
1	ISSUED FOR PERMITTING	BRP	08/05/23
2	REVISED PER COMMENTS	DDP	01/30/24
3	REVISED PER COMMENTS	DDP	02/23/24

Sunshine 811

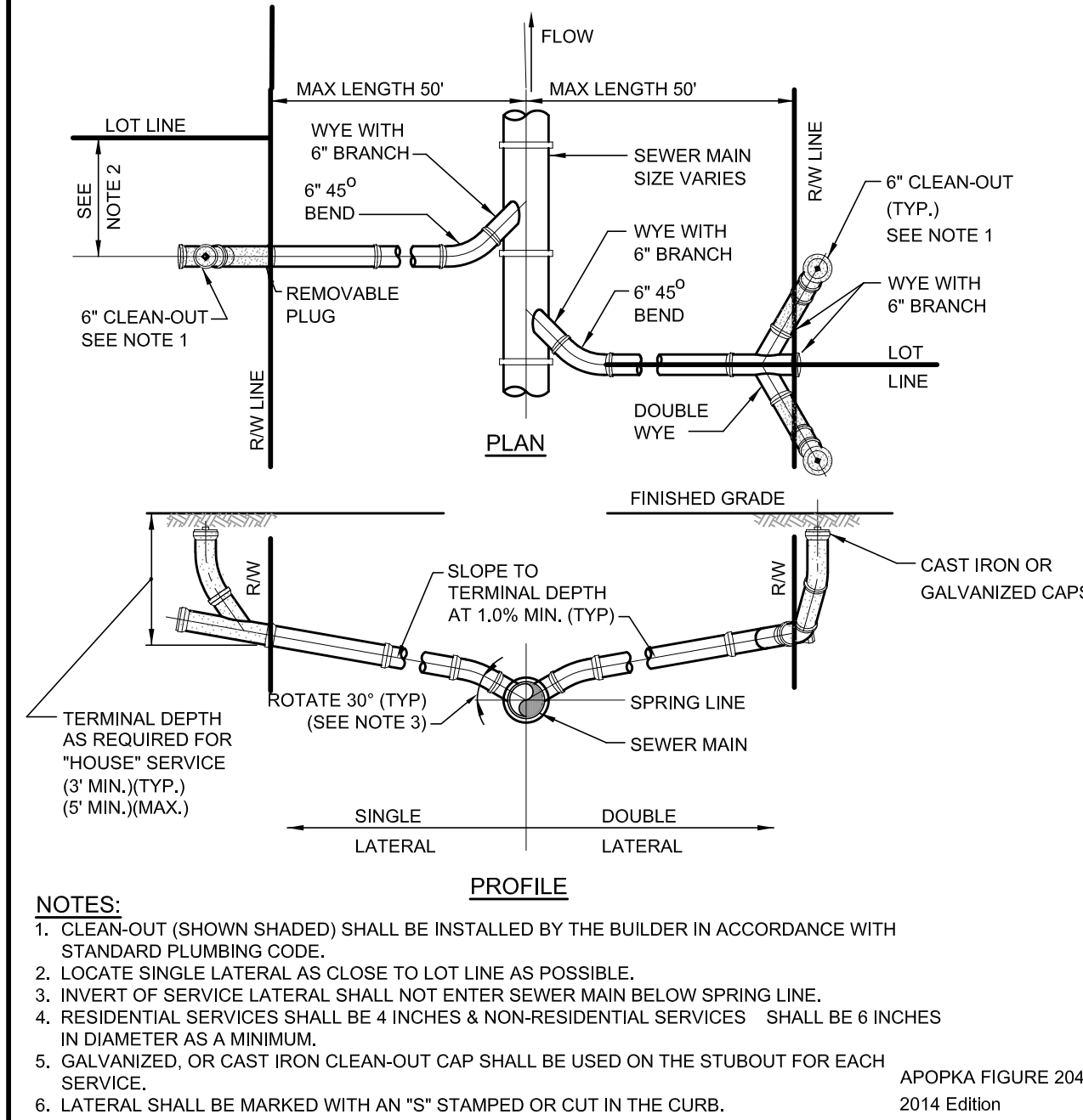
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ORLANDO, FLORIDA 32825
(407) 982-9878
www.tannathdesign.com
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DRAINAGE DETAILS

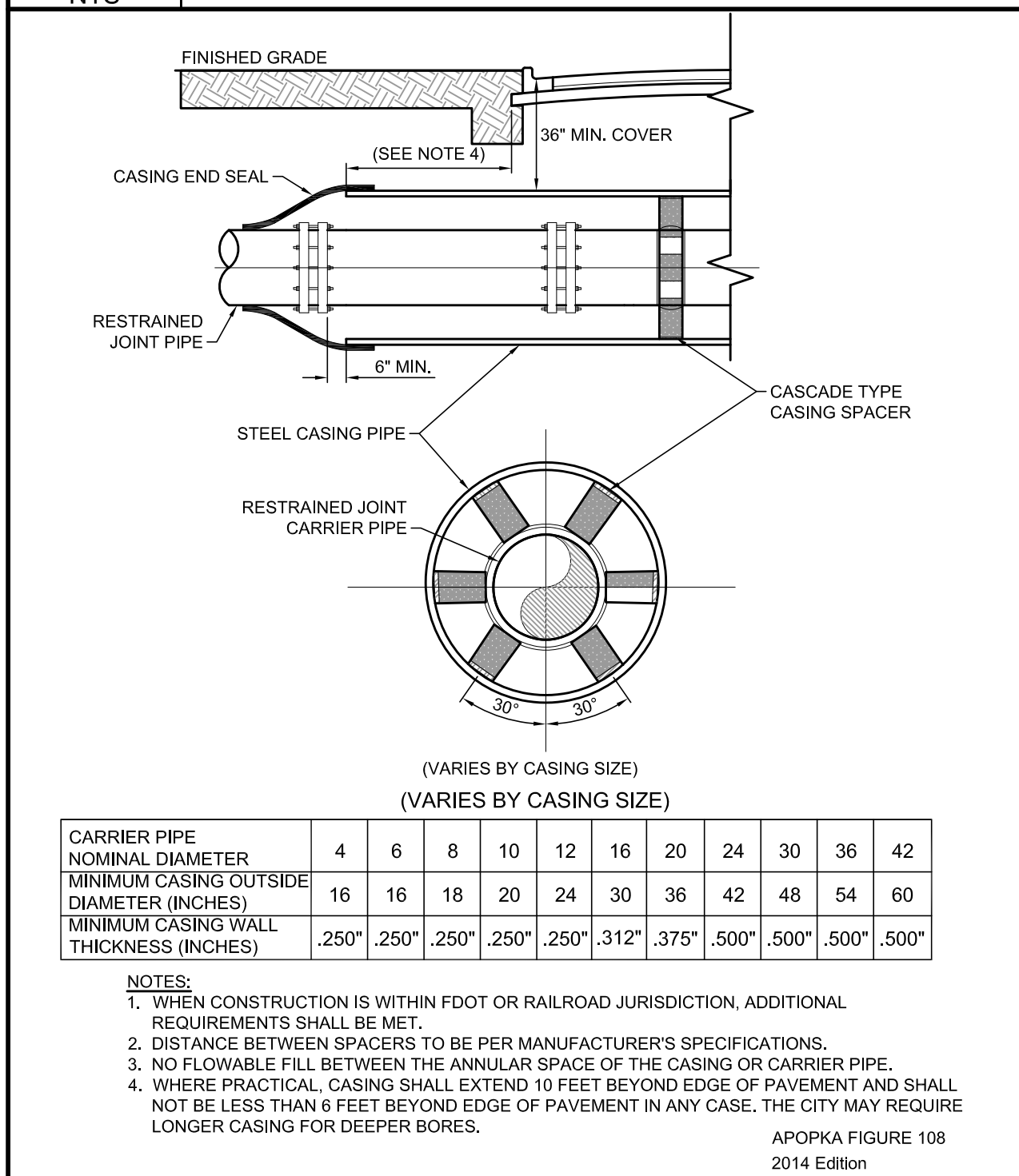
LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703



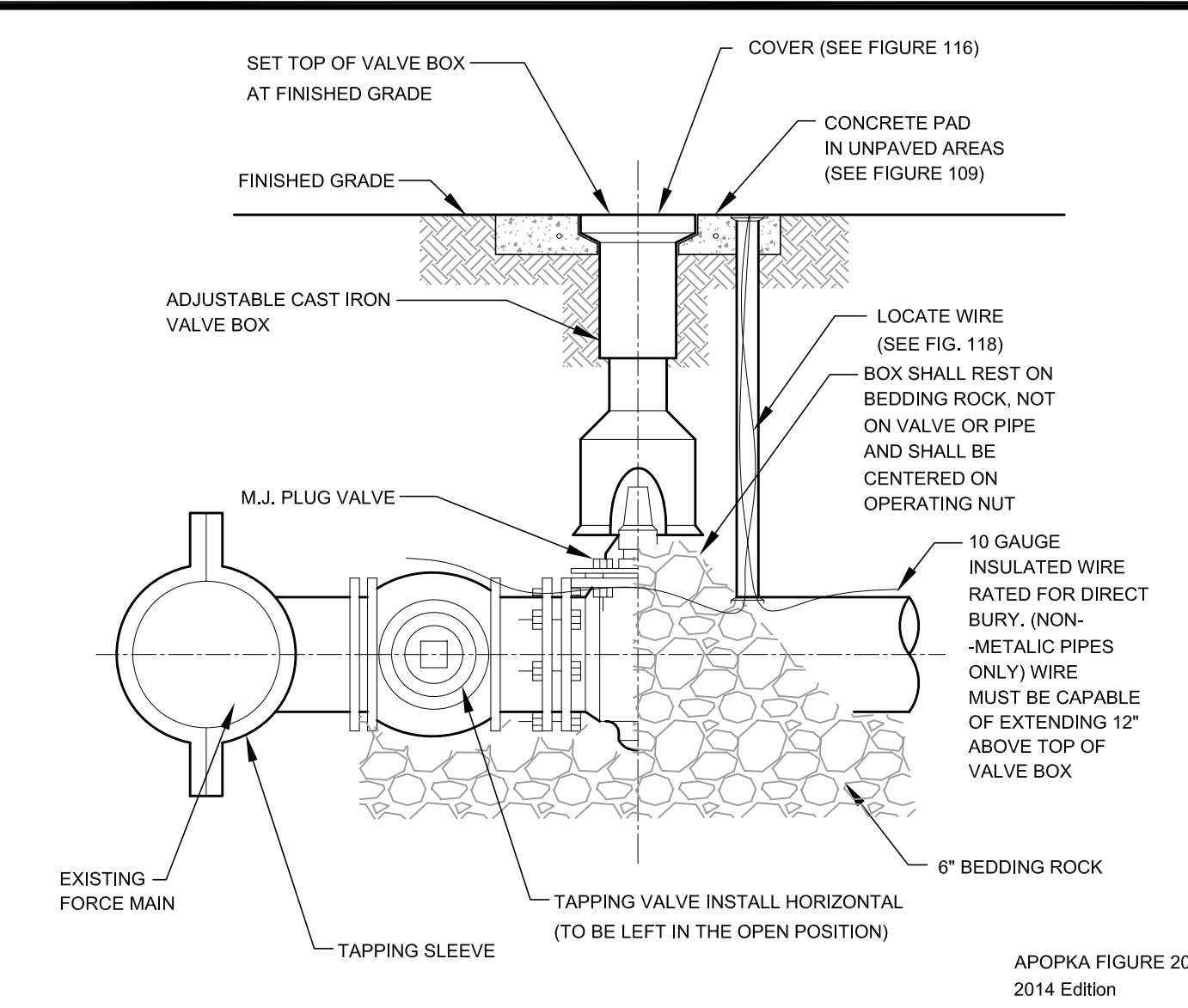
14 FIRE HYDRANT ASSEMBLY



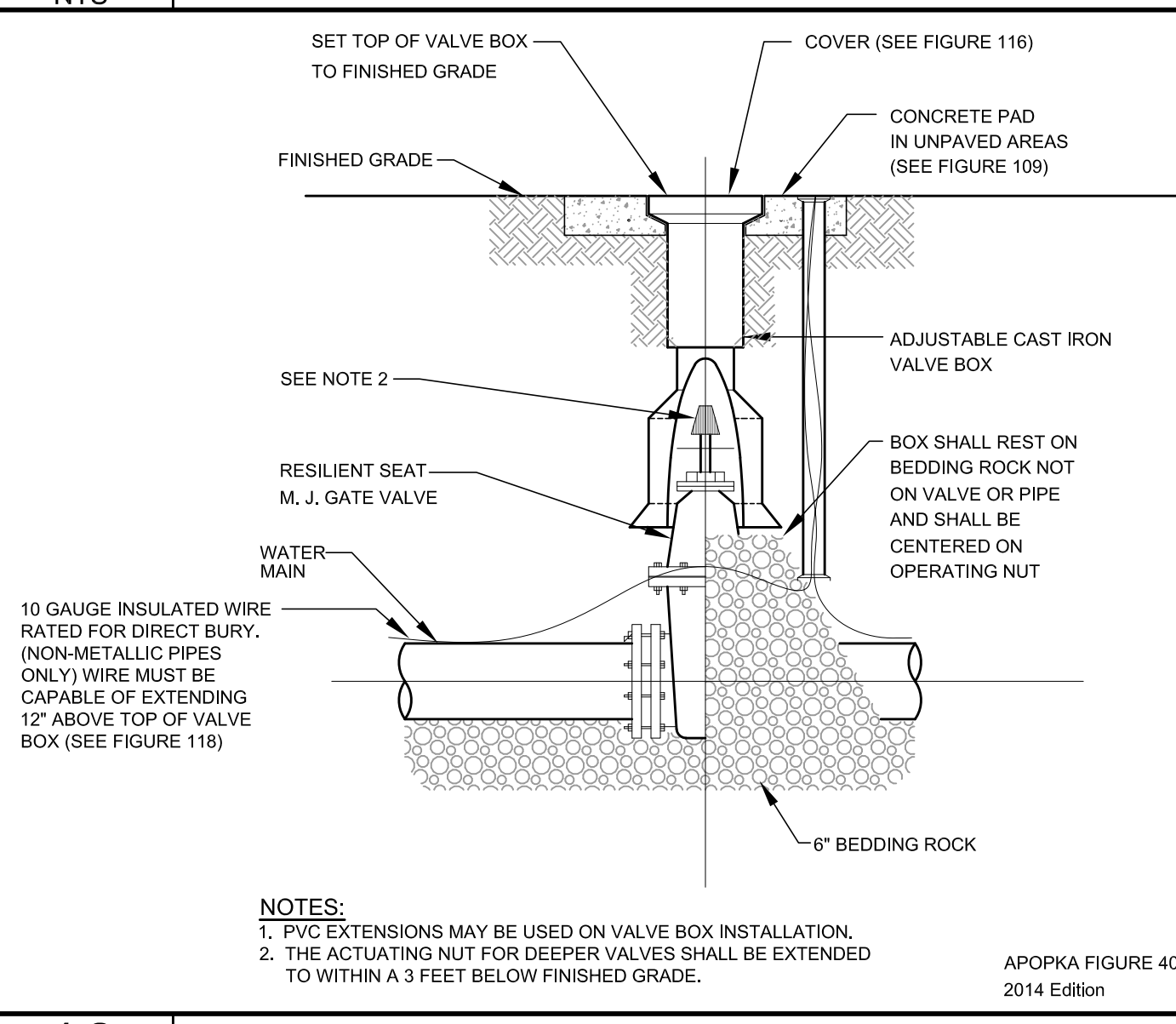
13 SERVICE LATERAL



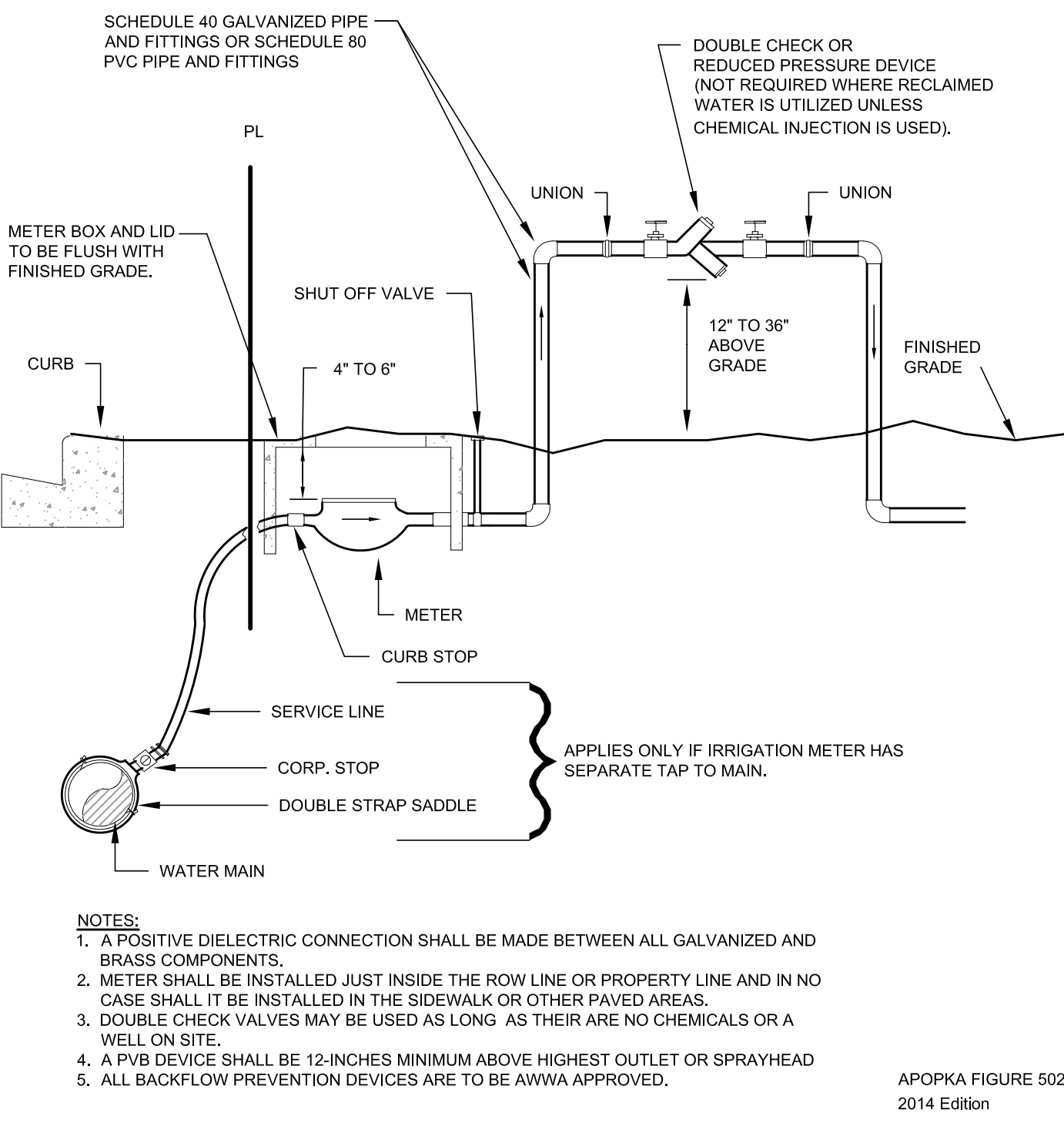
12 BORING AND JACKING DETAIL



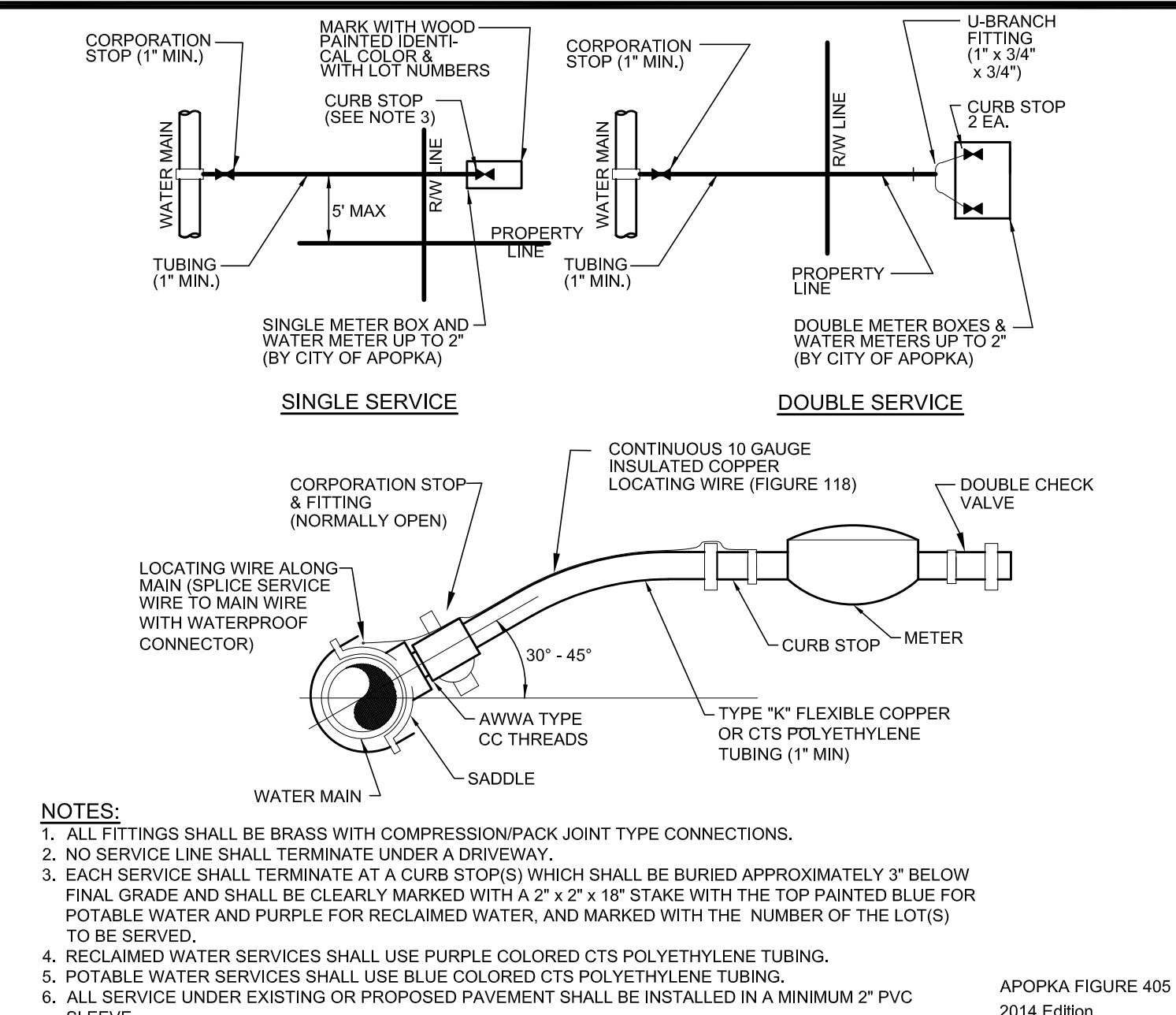
11 FORCE MAIN WET TAP TIE-IN



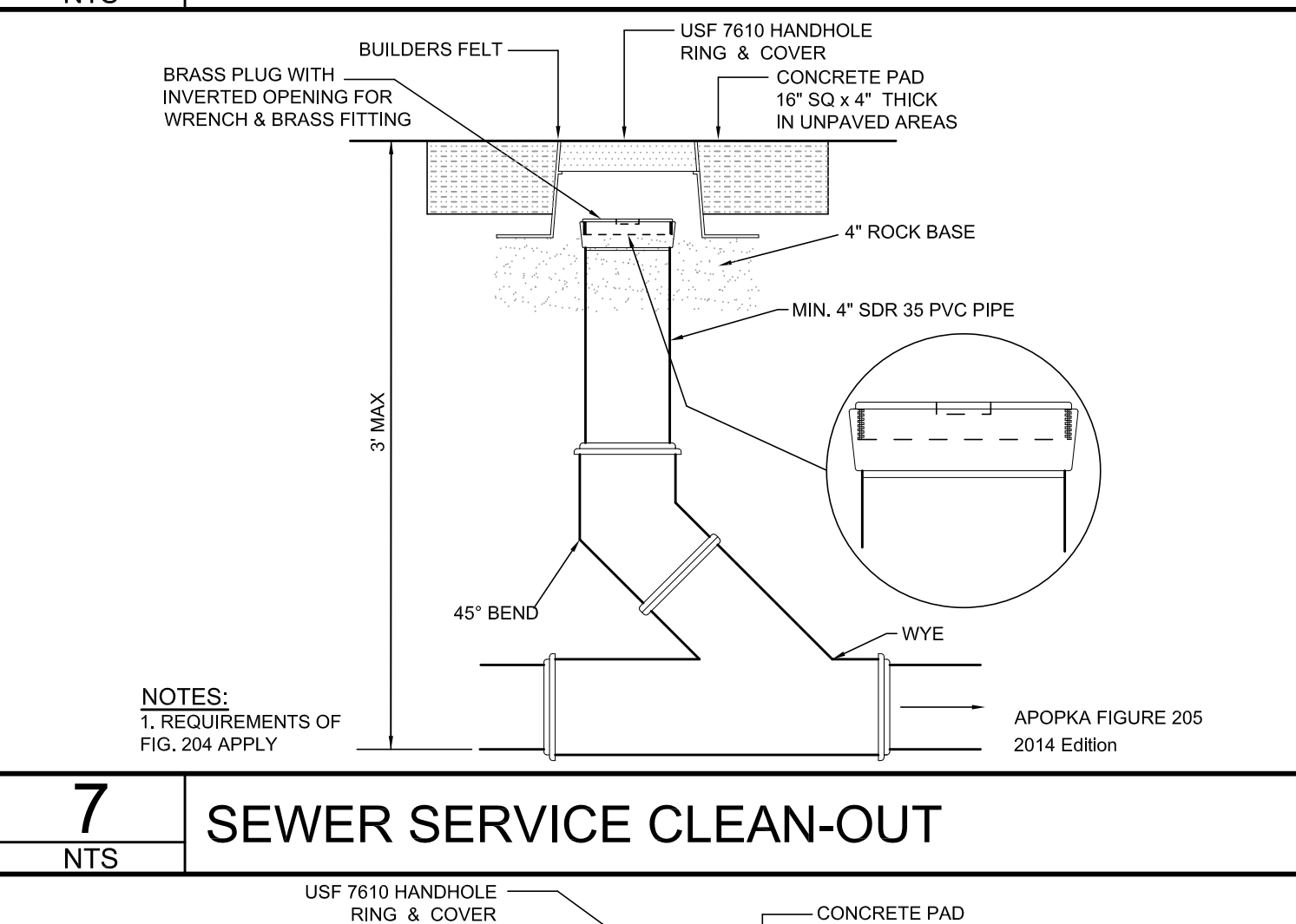
10 GATE VALVE AND BOX



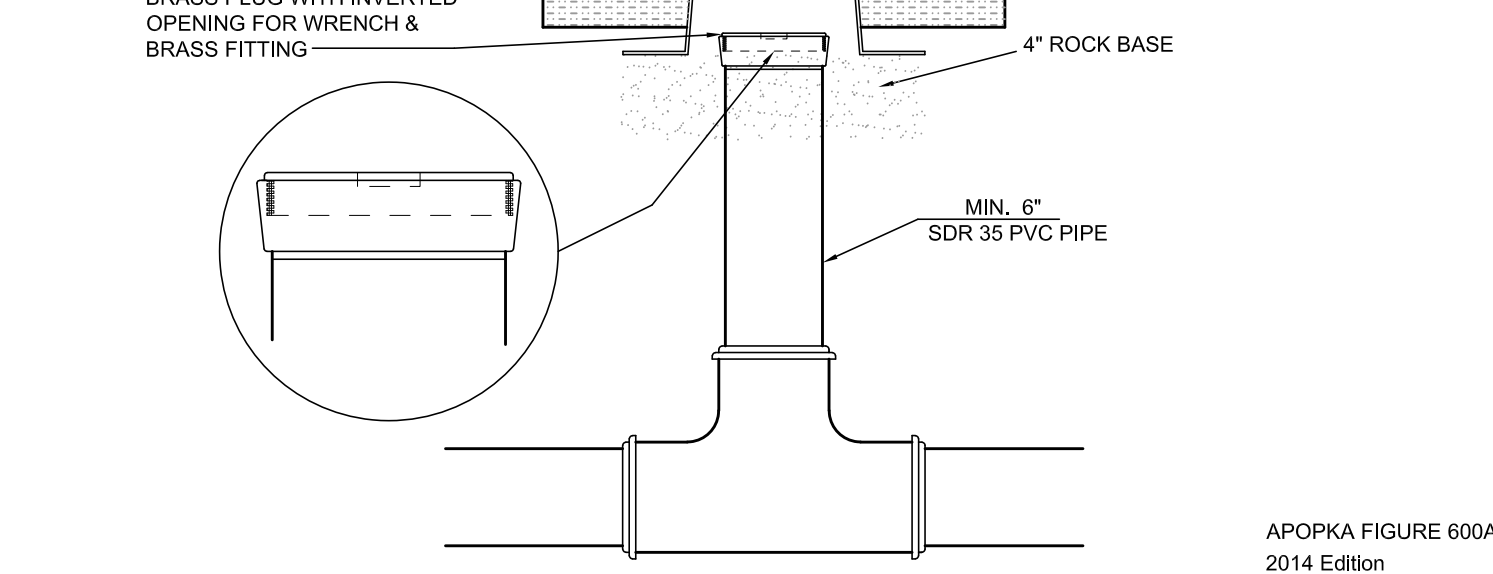
9 IRR. METER & DBL CHECK VALVE OR REDUCED PRESSURE BACKFLOW PREVENTER



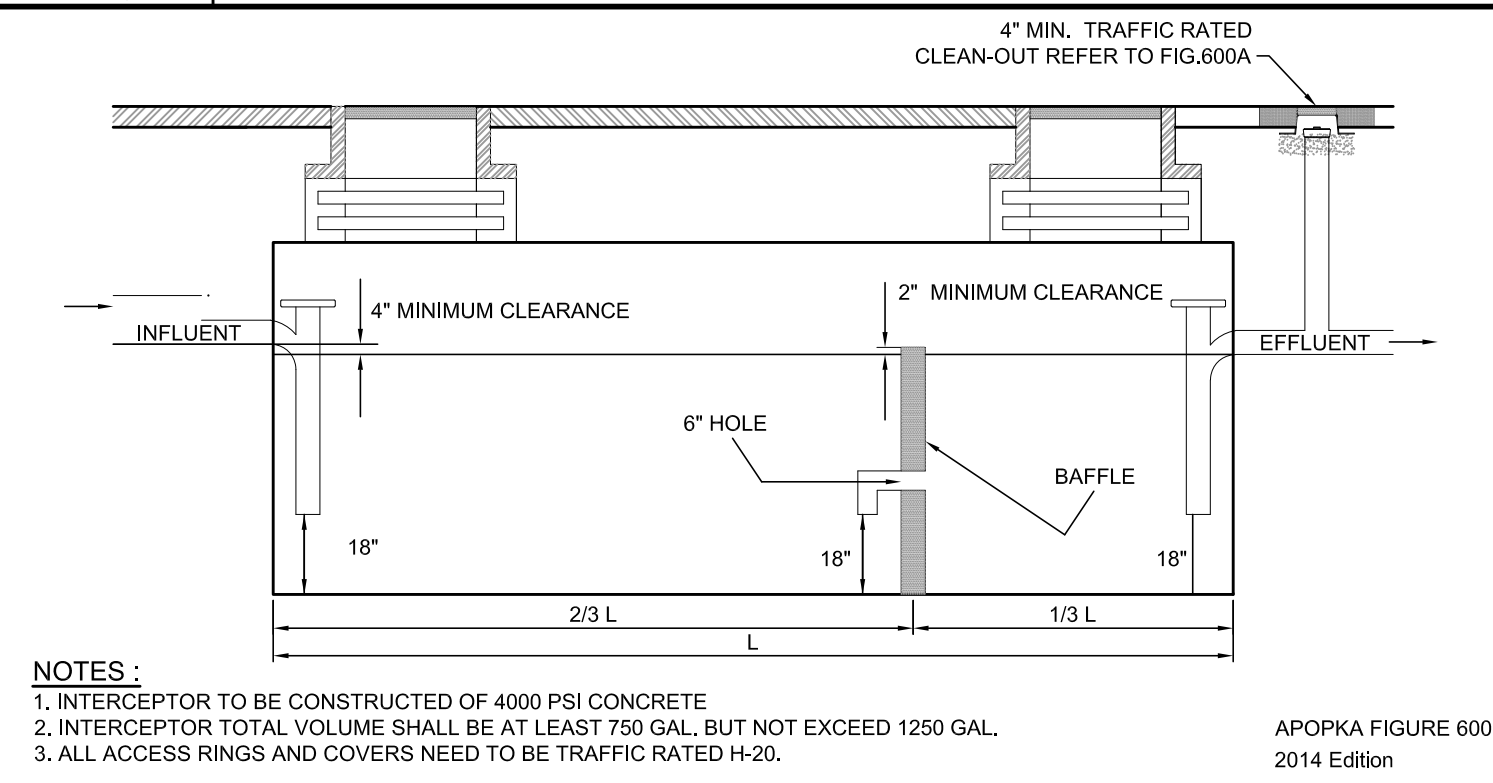
8 WATER SERVICE CONNECTION



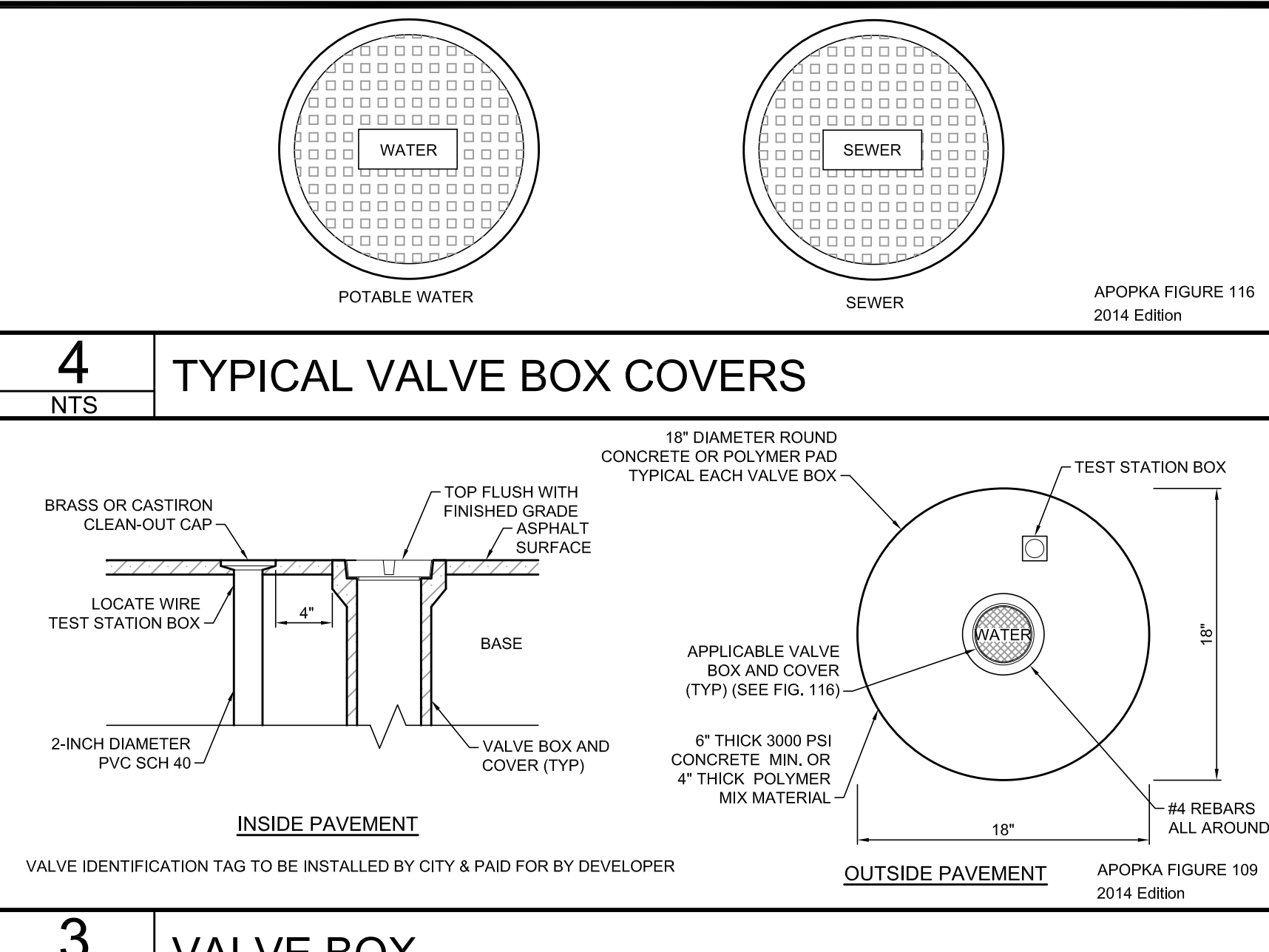
7 SEWER SERVICE CLEAN-OUT



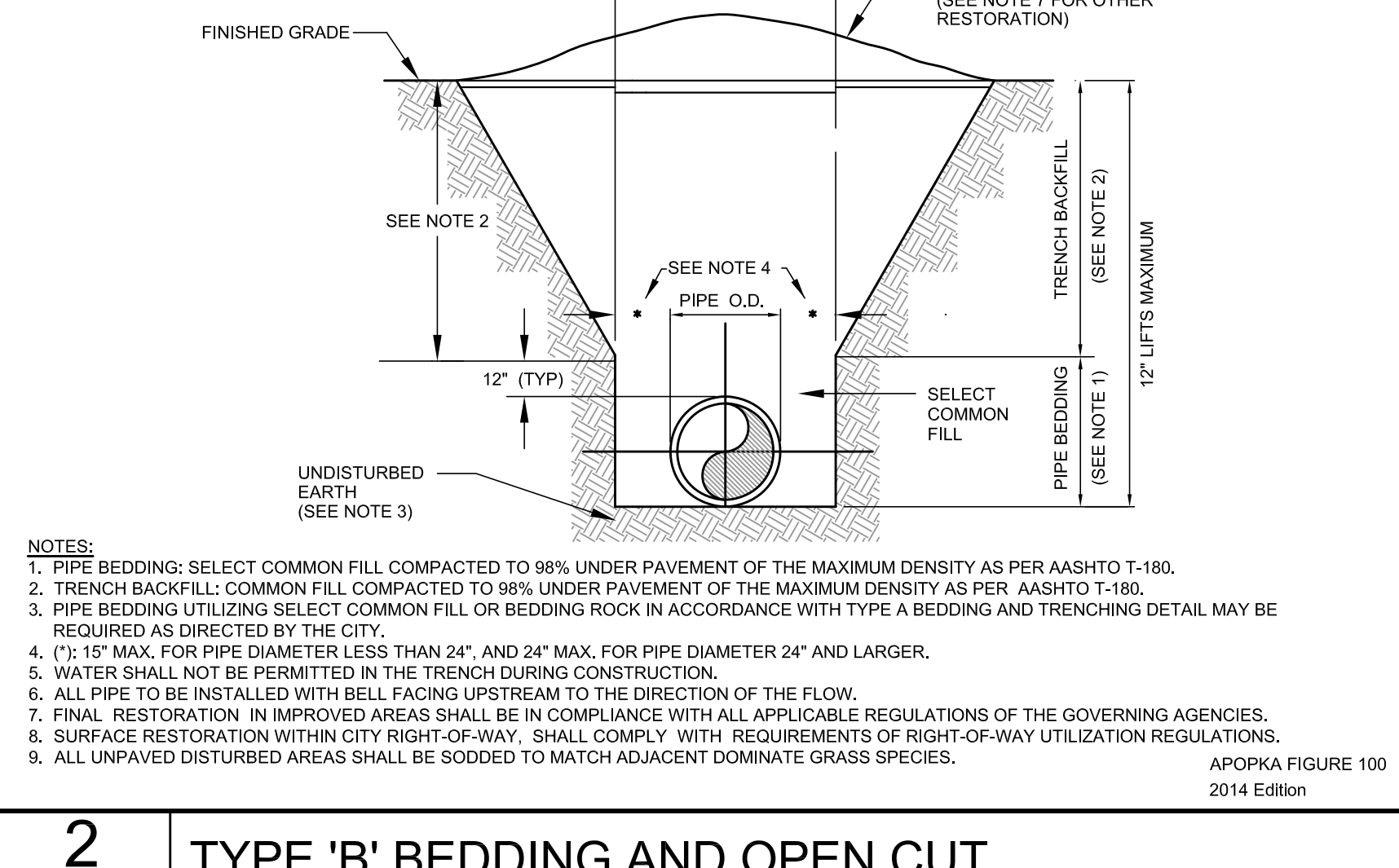
6 GREASE INTERCEPTOR CLEAN-OUT



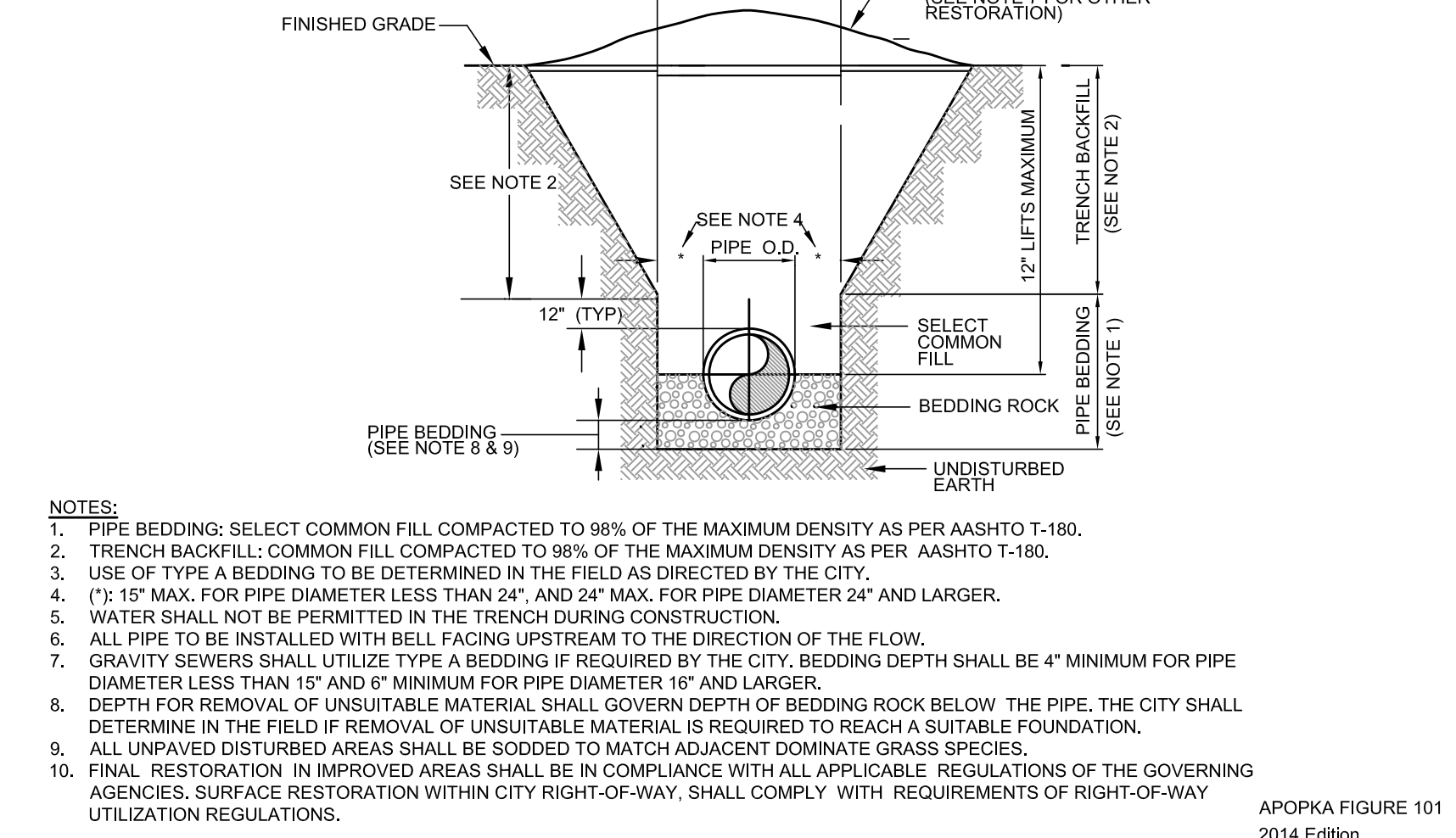
5 GREASE INTERCEPTOR



3 VALVE BOX



2 TYPE 'B' BEDDING AND OPEN CUT



1 TYPE 'A' BEDDING AND OPEN CUT



UTILITY DETAILS

LAKE CARTER EXCHANGE
W. KEENE ROAD AND SR 429
APOPKA, FLORIDA 32703

DATE 07/27/23
SCALE NTS
DRAWN-BY DDP
PROJECT NUMBER: 112-001
C-8.0
SHEET NO.

REVISIONS
NO.

ISSUED FOR PERMITTING
NO.

BRP
NO.

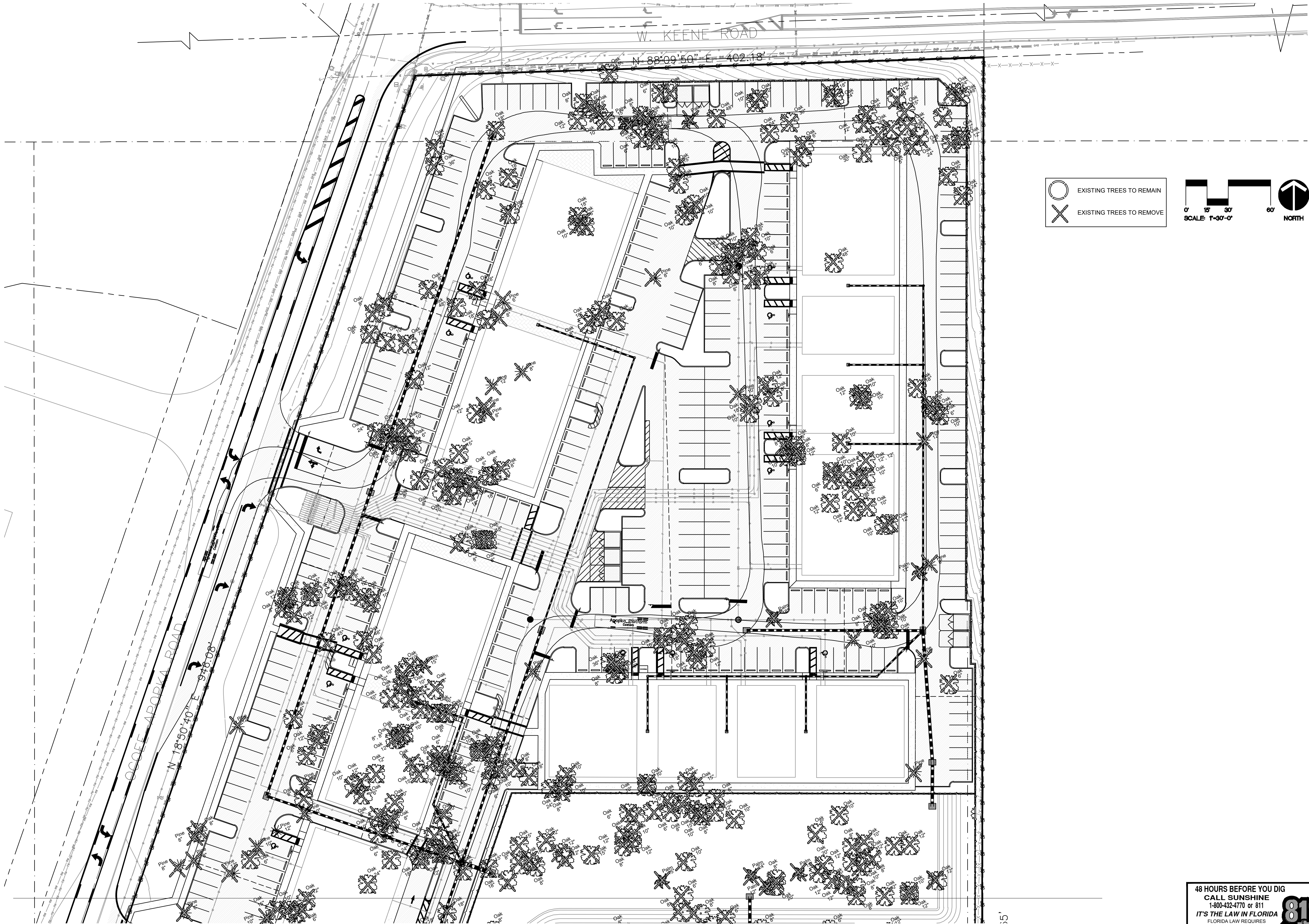
BY
NO.

DATE
NO.

Sunshine 811

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EXISTING TREES TO REMAIN
EXISTING TREES TO REMOVE

0' 15' 30' 60'
SCALE: 1"=30'-0"
NORTH

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Florida Landscape Architecture Firm
432 Nowell Loop,
Deland, FL 32724
Office: 407 310-5567
Jason Bridgewater, RLA
Florida Water Star AP
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LAKE CARTER EXCHANGE

Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida

APOPKA, FLORIDA

REVISIONS:

No.	Date	Item
1	3/15/24	City Comments
2	4/22/24	City Comments
3		
4		
5		
6		

Seal:
DATE: 04/22/2024



Digitally signed
by Jason P
Bridgewater
Date:
2024.04.22
14:35:34 -04'00'

Jason P. Bridgewater
Registered Landscape Architect
FL Registration -LA 6667308

DATE: 10/13/2023
DRAWN BY: JB
CHECKED BY: JB
SCALE:

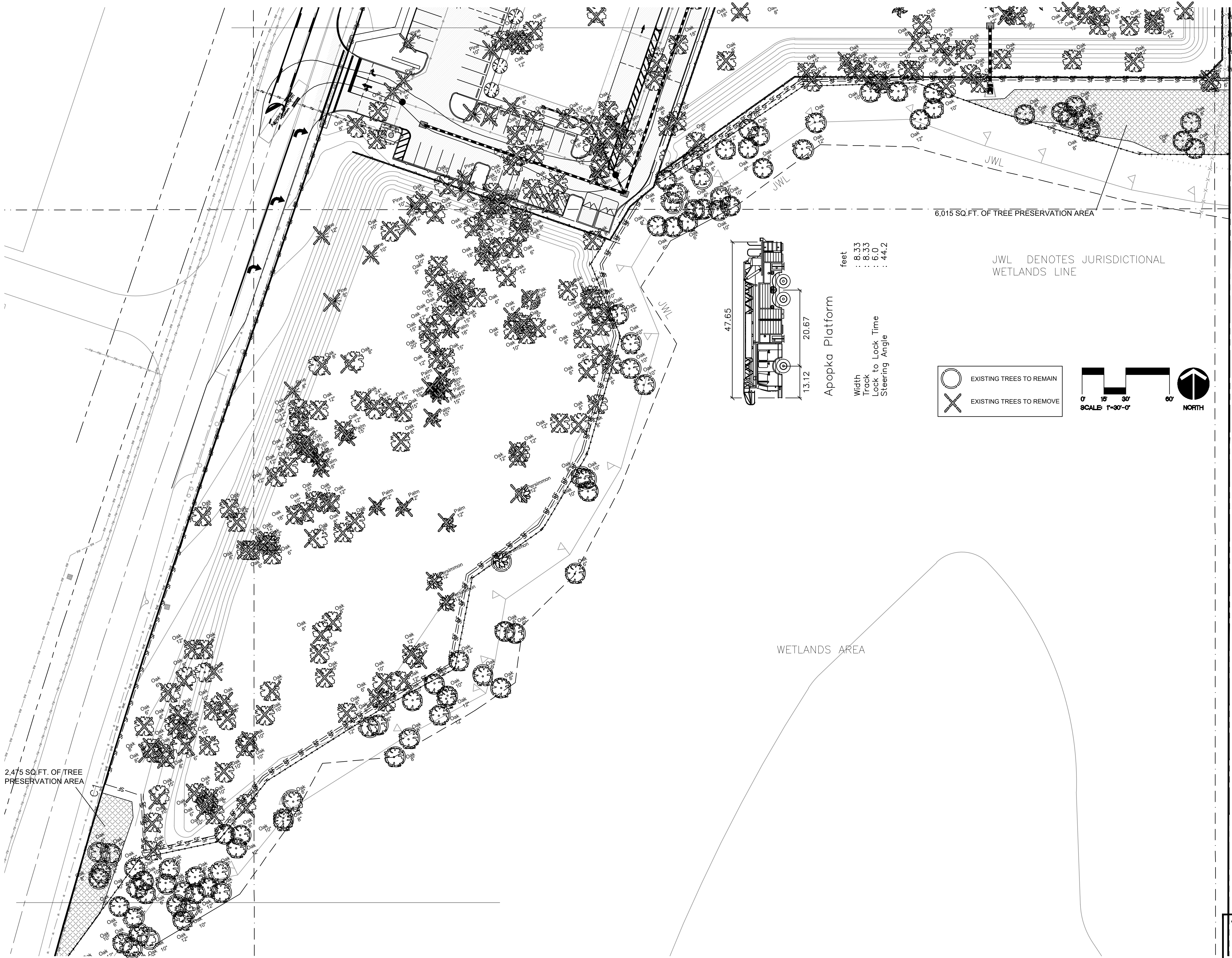
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FACILITIES NO LESS THAN TWO
(2) DAYS PRIOR TO EXCAVATION



L-1

TREE REMOVAL
PLAN

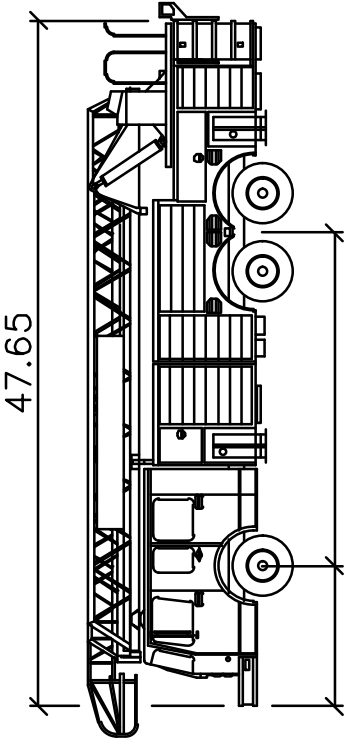
SHEET 1 OF 9



S 00°05'19" W 1313.65'

6.015 SQ.FT. OF TREE PRESERVATION AREA

JWL DENOTES JURISDICTIONAL
WETLANDS LINE



Apopka Platform

Width : 8.33
Track : 8.33
Lock to Lock Time : 6.0
Steering Angle : 44.2

EXISTING TREES TO REMAIN

EXISTING TREES TO REMOVE

0'15'30'60'

SCALE 1"=30'-0"

NORTH

2.475 SQ.FT. OF TREE
PRESERVATION AREA

WETLANDS AREA

LAKE CARTER EXCHANGE

Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida

APOPKA, FLORIDA

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Florida Landscape Architecture Firm
432 Nowell Loop,
Deland, FL 32724
Office: 407 310-5567 Jason Bridgewater, RLA
Florida Water Star AP
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No.	Date	Item
1	3/15/24	City Comments
2	4/22/24	City Comments

Seal:
DATE: 04/22/2024

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Registered Landscape Architect
FL Registration -LA 6667308

DATE: 10/13/2023
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SCALE:

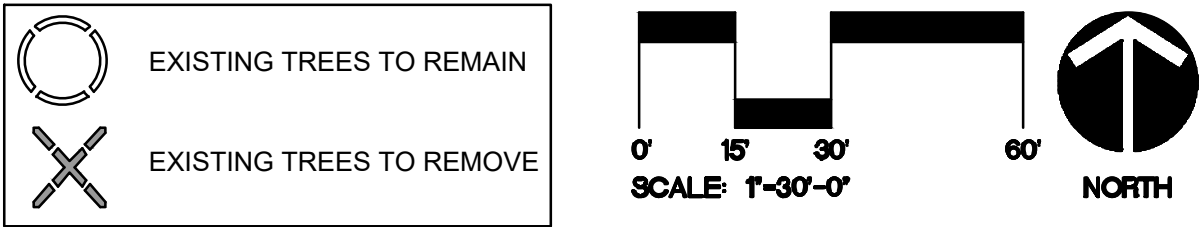
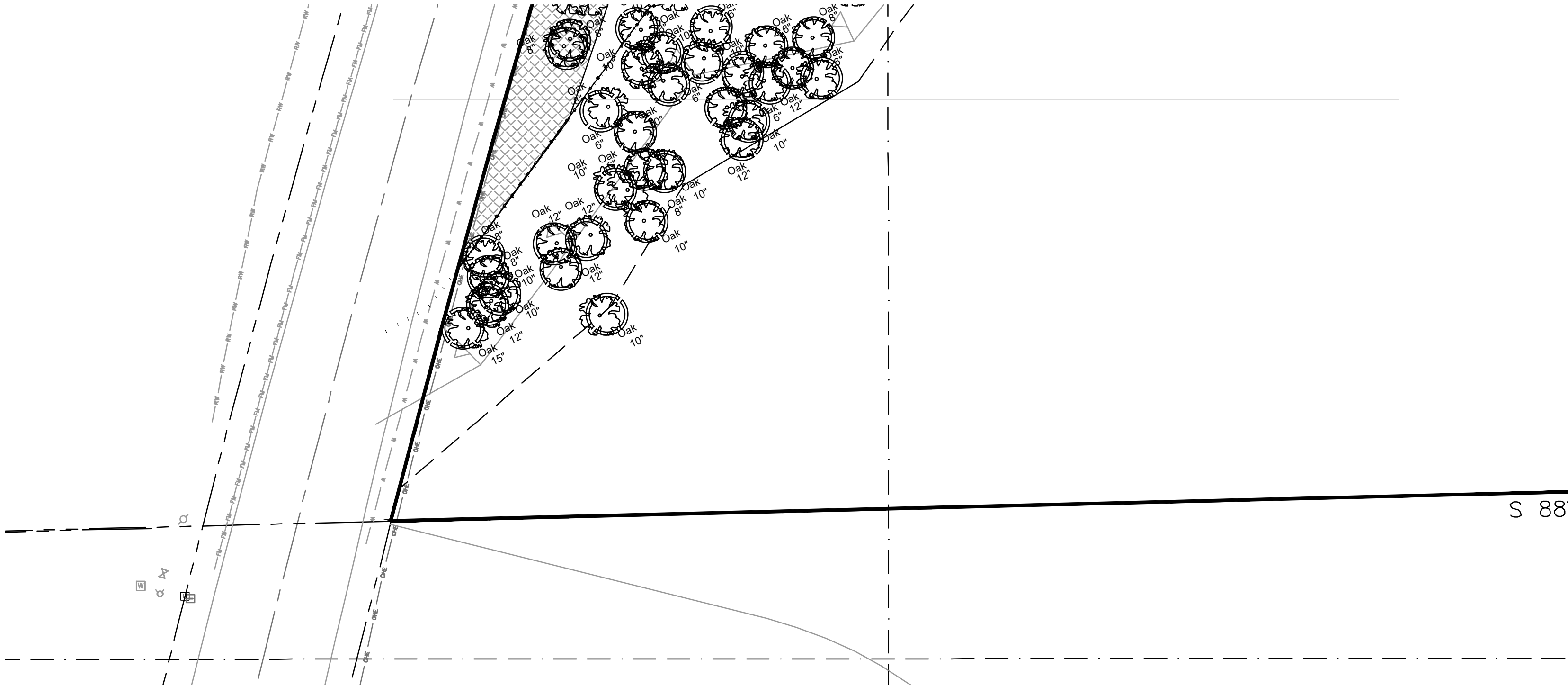
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L-2

TREE REMOVAL
PLAN

SHEET 2 OF 9



TREE MITIGATION CALCULATIONS
EXISTING TREE CANOPY - 50%
8.66 X 50% = 188,614.8
188,614.8 X 50% = 94,307.4 SF
RETAIN 6%
94,307.4 SF X 6% = 5,658.444 SQUARE FEET.

PROJECT IS CURRENTLY PRESERVING 8,490 SQ.FT. OF EXISTING
TREE PRESERVATION MARKED ON CIVIL SET. PLEASE SEE CIVIL
DRAWINGS.

PROJECT IS REMOVING 36 SPECIMEN TREES TOTTALLING 1,131" DBH
REMOVING 513 TREES TOTAL 5,347" DBH
PROTECTING 100 TREES TOTTALLING 888" DBH

Existing Specimen Trees To Remove		
Count	SIZE	TYPE
5	48"	Oak
1	45"	Oak
5	36"	Oak
2	30"	Oak
1	72"	Oak
20	24"	Oak
1	30"	Pak
1	24"	Palm
36	1131"	

Existing Trees To Remove		
Count	SIZE	TYPE
1	8", 8"	Oak
1	12", 12"	Oak
5	12"	Oak
1	6"	Oak
119	8"	Oak
35	15"	Oak
72	6"	Oak
90	10"	Oak
30	18"	Oak
4	20"	Oak
85	12"	Oak
8	12"	Pine
1	6"	Pine
7	10"	Pine
2	8"	Pine
12	8"	Pine
14	15"	Palm
3	18"	Palm
10	12"	Palm
3	12"	Persimmon
2	12"	Pine
1	6"	Pine
6	8"	Pine
1	10"	Pine
513	5347"	

Existing Trees To Remain		
Count	SIZE	TYPE
33	8"	Oak
21	6"	Oak
27	10"	Oak
2	15"	Oak
16	12"	Oak
1	6"	Persimmon
100	888"	

LAKE CARTER EXCHANGE

Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida

APOPKA, FLORIDA

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4		
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Seal:
DATE: 04/22/2024

Jason P. Bridgewater
Registered Landscape Architect
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DATE: 10/13/2023
DRAWN BY: JB
CHECKED BY: JB
SCALE:

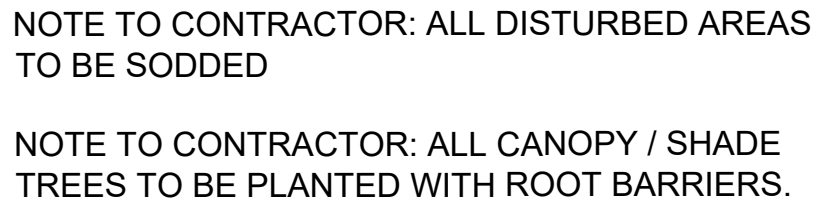
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(2) DAYS PRIOR TO EXCAVATION



L-3

TREE REMOVAL
PLAN

SHEET 3 OF 9



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Intersection of W. Keene Road and
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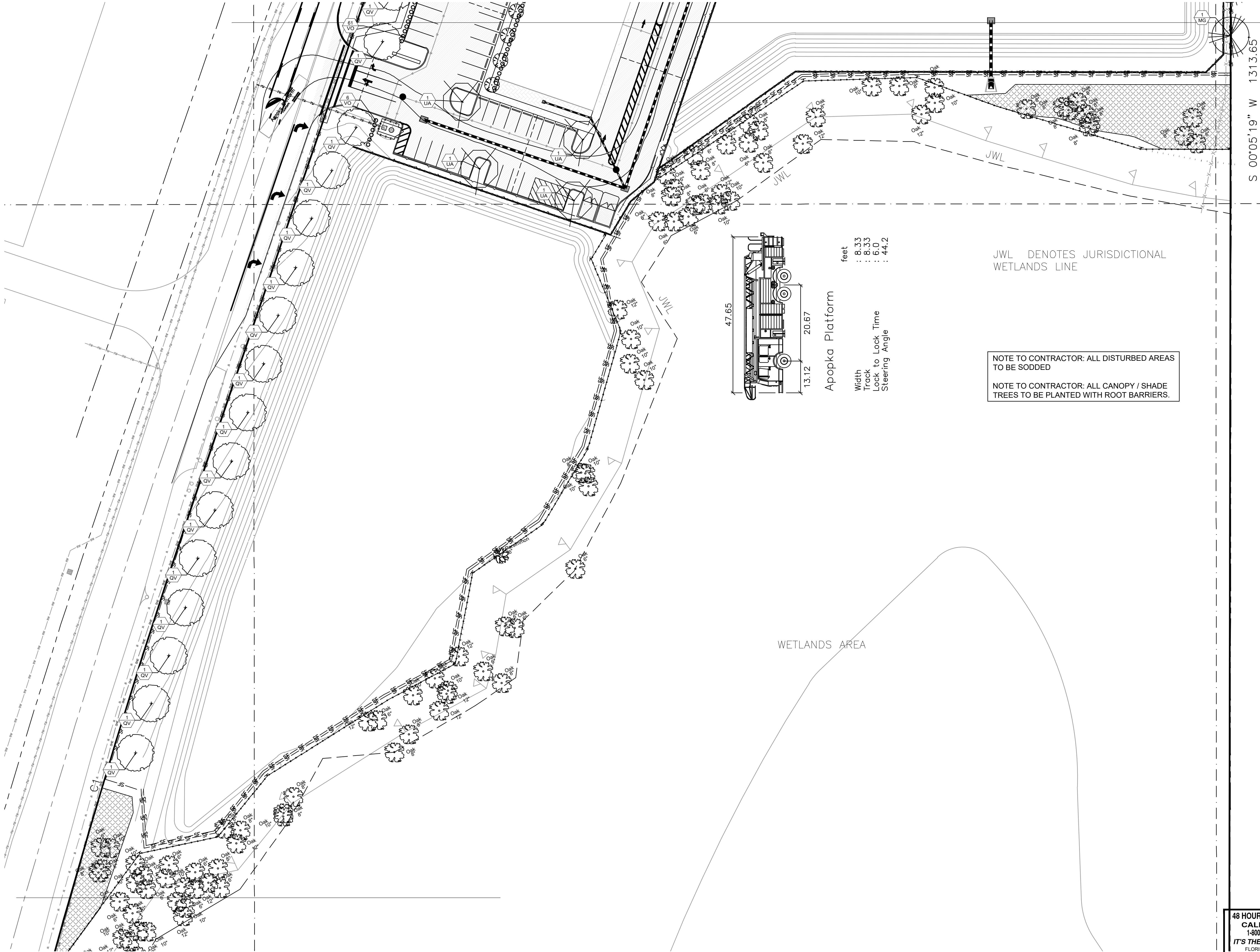
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No.	Date	Item
1	3/15/24	City Comments
2	4/22/24	City Comments

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SHEET 4 OF 9



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LAKE CARTER EXCHANGE
Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida
APOPKA, FLORIDA

REVISIONS:		
No.	Date	Item
1	3/15/24	City Comments
2	4/22/24	City Comments

Seal:
DATE: 04/22/2024

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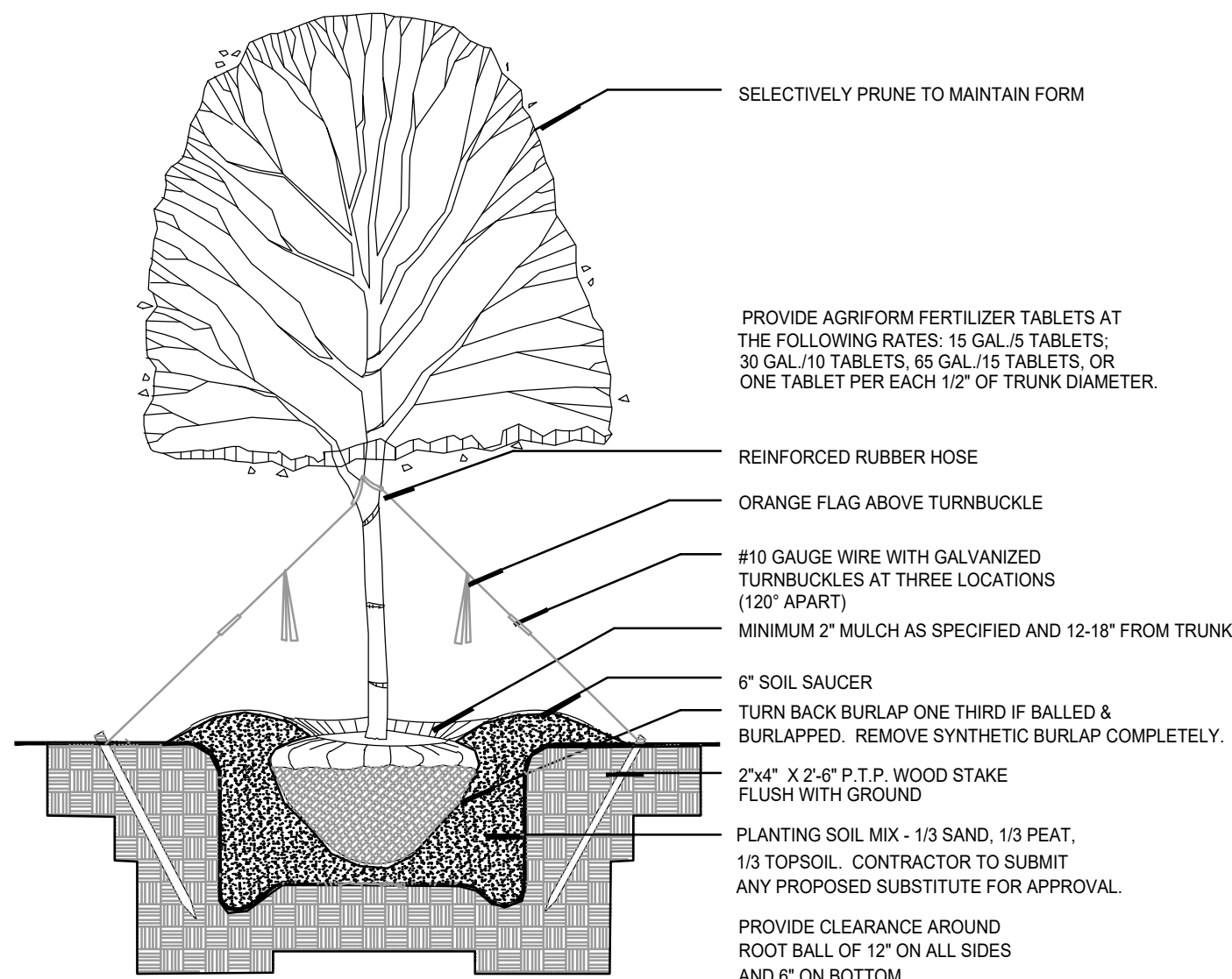
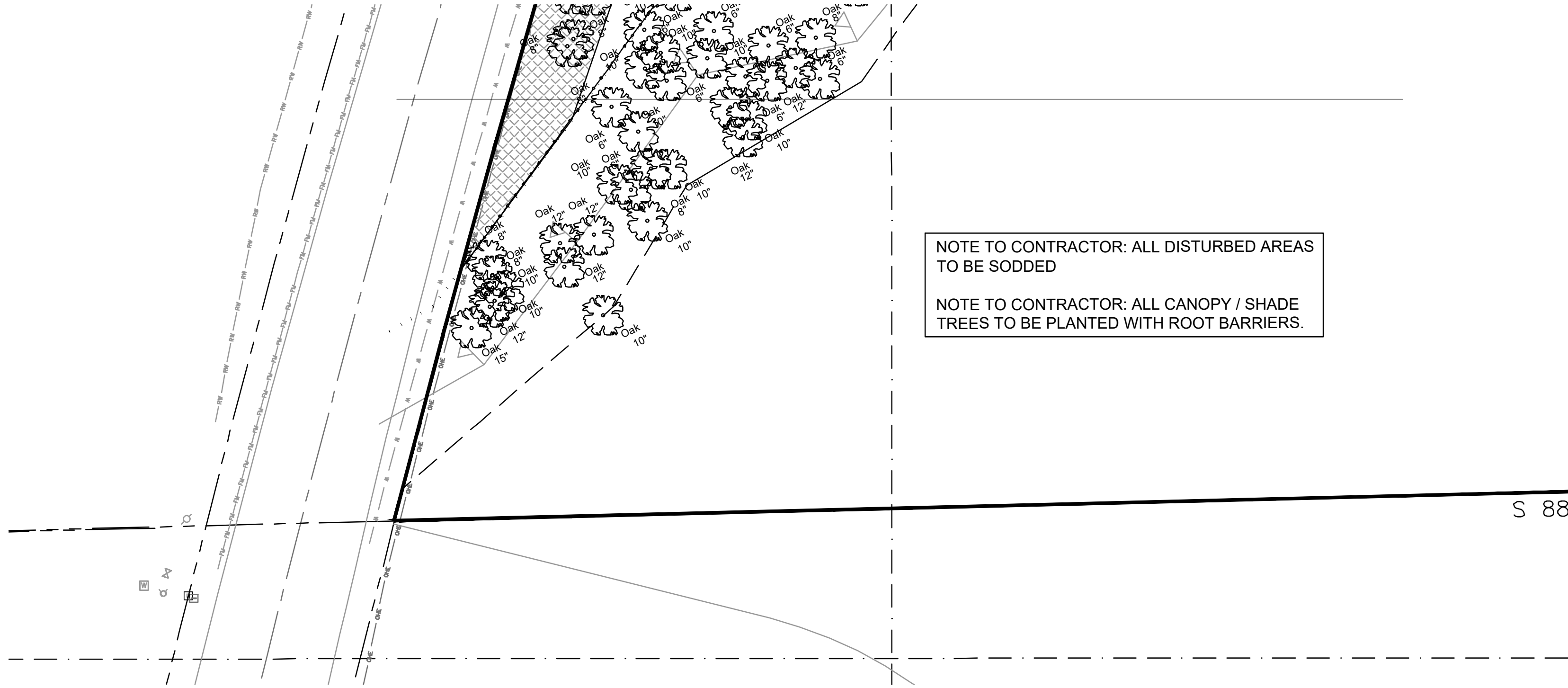
DATE: 10/13/2023
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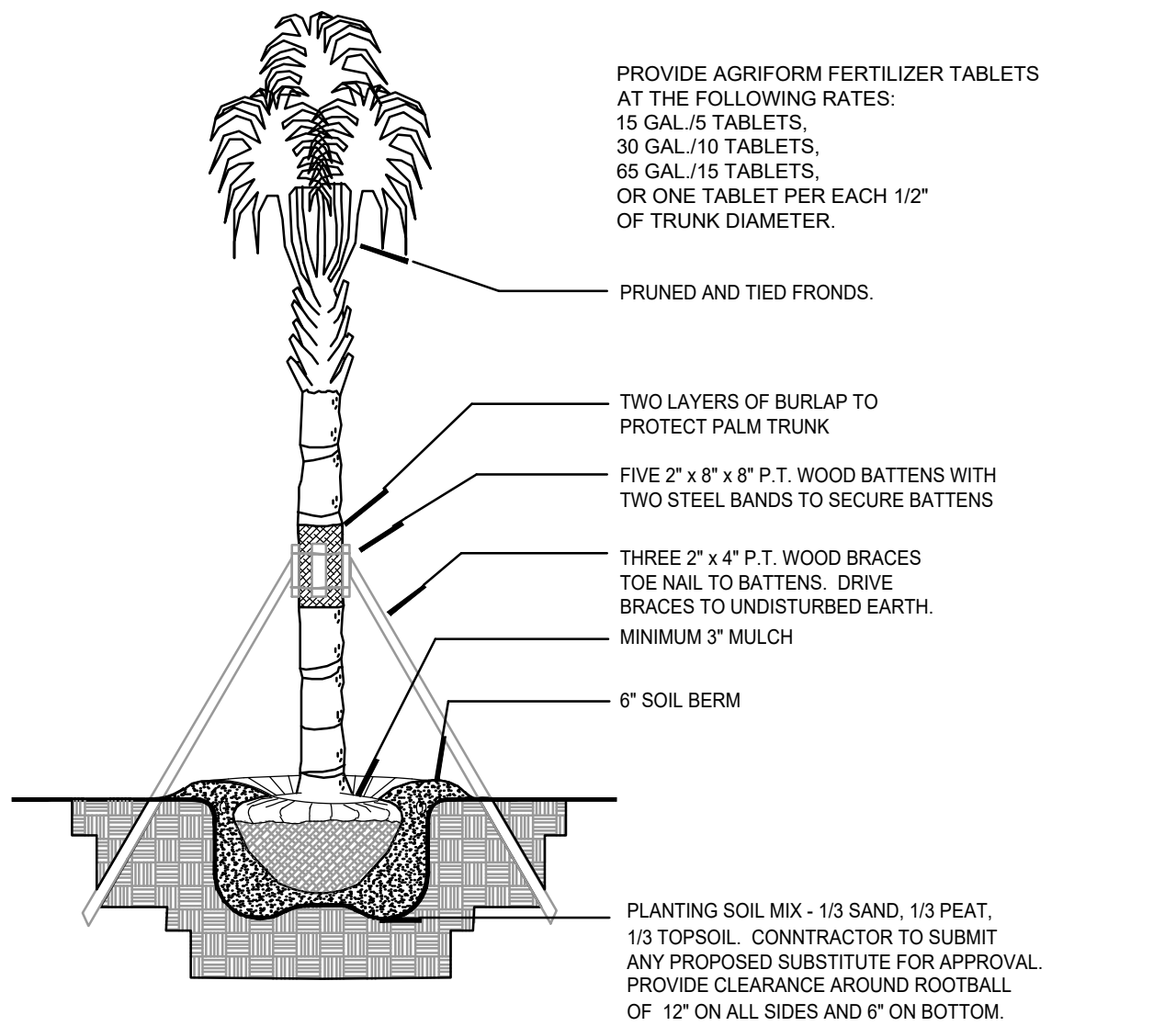
L-5
LANDSCAPE
PLAN

SHEET 5 OF 9



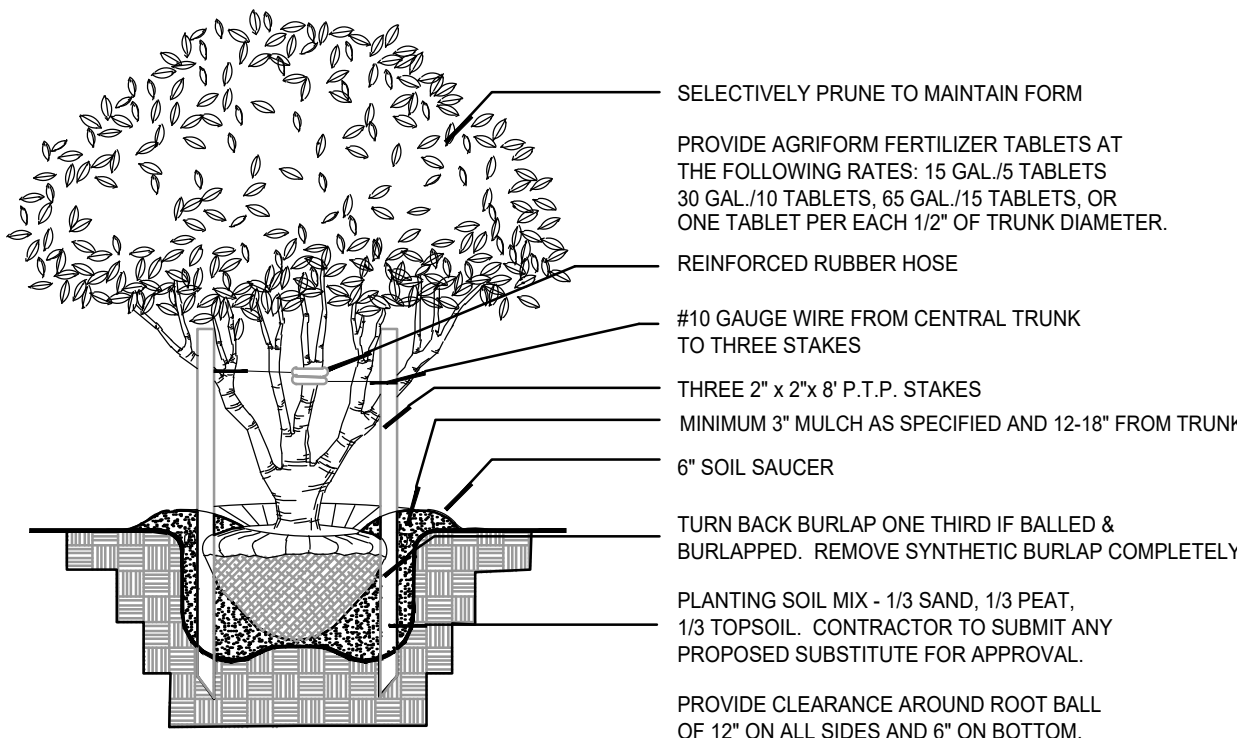
TREE PLANTING DETAIL

NOT TO SCALE



PALM PLANTING DETAIL

NOT TO SCALE



MULTI-TRUNK TREE PLANTING DETAIL

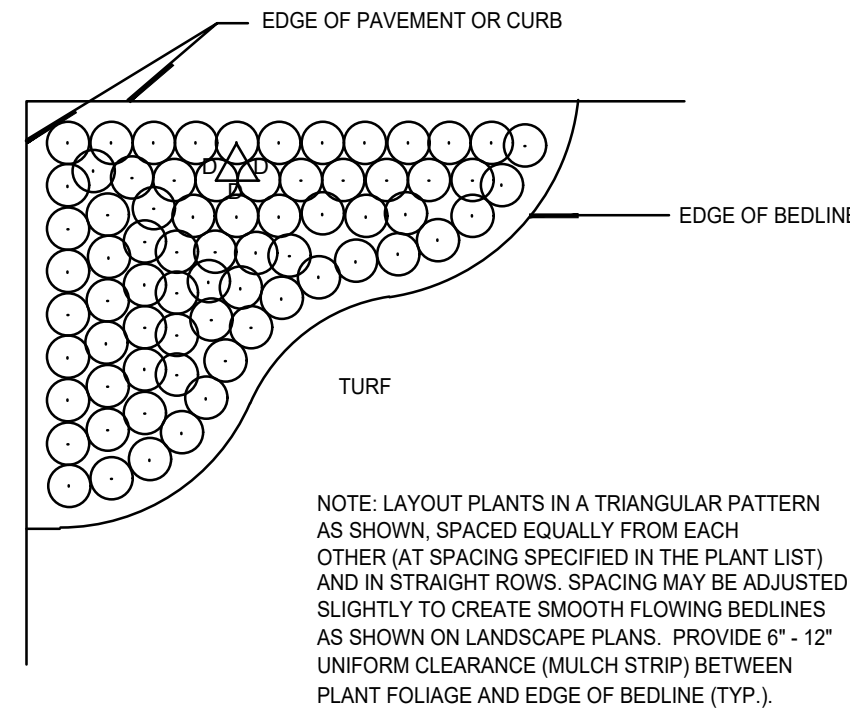
NOT TO SCALE

LANDSCAPE PLANTING NOTES:

- ALL PLANTS MUST BE HEALTHY, VIGOROUS MATERIAL FREE OF PESTS AND DISEASES.
- ALL PLANTS SHALL BE FLORIDA FANCY, AS GRADED IN FLORIDA GRADES AND STANDARDS FOR NURSERY PLANTS.
- ALL PLANTS ARE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT AND OWNER BEFORE, DURING, AND AFTER INSTALLATION.
- ALL SINGLE-TRUNKED TREES SHALL BE STRAIGHT TRUNKED WITH ONE CENTRAL LEADER AND HAVE A FULL, DENSE CROWN.
- ALL TREES SHALL BE STAKED AND GUYED AS SHOWN IN PLANTING DETAILS.
- ALL MULCH PLANTING AREAS SHALL BE A MINIMUM OF 3" IN DEPTH.
- ALL PLANTING AREAS SHALL HAVE A MINIMUM OF 3" TOPSOIL.
- ALL TREES SHALL BE FREE OF OPEN WOUNDS AND WOUND SCARS IN THE CLEAR TRUNK AREA.
- ANY SYNTHETIC BURLAP AND/OR WIRE BASKETS MUST BE TOTALLY REMOVED PRIOR TO INSTALLATION OF PLANT MATERIAL. IF NATURAL BURLAP IS USED, IT MAY BE TURNED DOWN 1/3 OF THE ROOTBALL.

LANDSCAPE CONTRACTOR NOTES:

- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING, IN FULL, ALL LANDSCAPE PLANTING AREAS, UNTIL THE JOB IS ACCEPTED IN FULL BY THE OWNER. "IN FULL" MEANS WATERING, PEST CONTROL, MULCHING, MOWING, FERTILIZING AND RESETTING TREES THAT ARE OUT OF PLUMB.
- THE LANDSCAPE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL INSTALLED PLANT MATERIAL FOR A PERIOD OF ONE CALENDAR YEAR BEGINNING ON THE DATE OF 100% COMPLETION. ANY AND ALL REQUIRED PLANT REPLACEMENTS SHALL BE MADE PROMPTLY AND AT NO ADDITIONAL COST TO THE OWNER.
- THE LANDSCAPE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PLANT MATERIAL AND PLANTING BED LINES FOR REVIEW BY THE LANDSCAPE ARCHITECT AND OWNER.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL WRITTEN PLANT QUANTITIES PRIOR TO INITIATION OF THE WORK. IN THE EVENT THAT THE PLANS CONTRADICT THE PLANT LIST, THE PLANS SHALL RULE.
- THE LANDSCAPE CONTRACTOR SHALL BE FAMILIAR WITH AND ACCEPT THE EXISTING SITE CONDITIONS PRIOR TO INITIATION OF THE WORK. ANY VARIATION FROM THE SPECIFIED WORK SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES, DRAINAGE STRUCTURES, CURBS, SIDEWALKS, AND ANY OTHER OBJECTS WHICH MIGHT BE DAMAGED DURING THE WORK.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL NECESSARY REPAIRS TO DAMAGE CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER OR LANDSCAPE ARCHITECT.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, AND FOLLOWING ALL APPLICABLE LOCAL CODES PERTAINING TO THE PROJECT DURING THE COURSE. OF HIS WORK.



SHRUB/GROUNDCOVER SPACING DETAIL

NOT TO SCALE

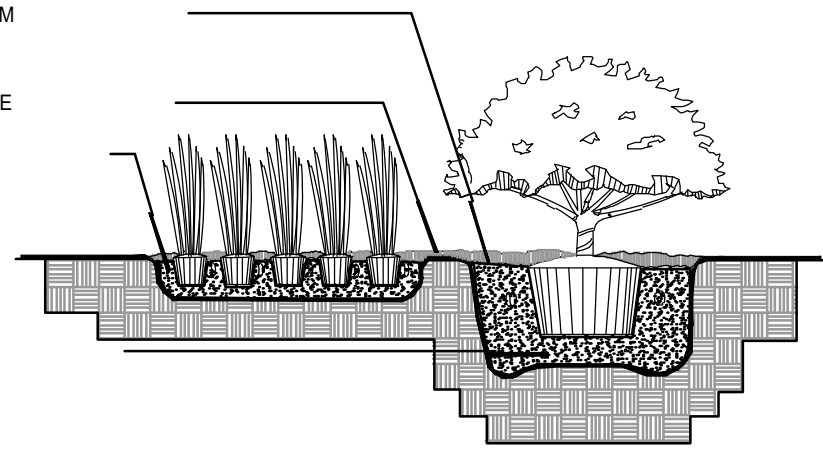
PROVIDE AGRIFORM (20-10-5) FERTILIZER TABLETS AT THE FOLLOWING RATES:
3 GAL./ 2 TABLETS: 1 GAL./1 TABLET.

PROVIDE 6" MINIMUM CLEARANCE AROUND ROOT BALL (SIDES AND BOTTOM).

5" MULCH MINIMUM - DO NOT COVER MAIN STEM

SET TOP OF ROOTBALL 1" ABOVE FINISH GRADE
12" MINIMUM DEPTH OF PLANTING SOIL MIX IN SHRUB/GROUNDCOVER PLANTING BEDS.

PLANTING SOIL MIX - 1/3 SAND, 1/3 PEAT, 1/3 TOPSOIL. CONTRACTOR TO SUBMIT ANY PROPOSED SUBSTITUTE FOR APPROVAL.



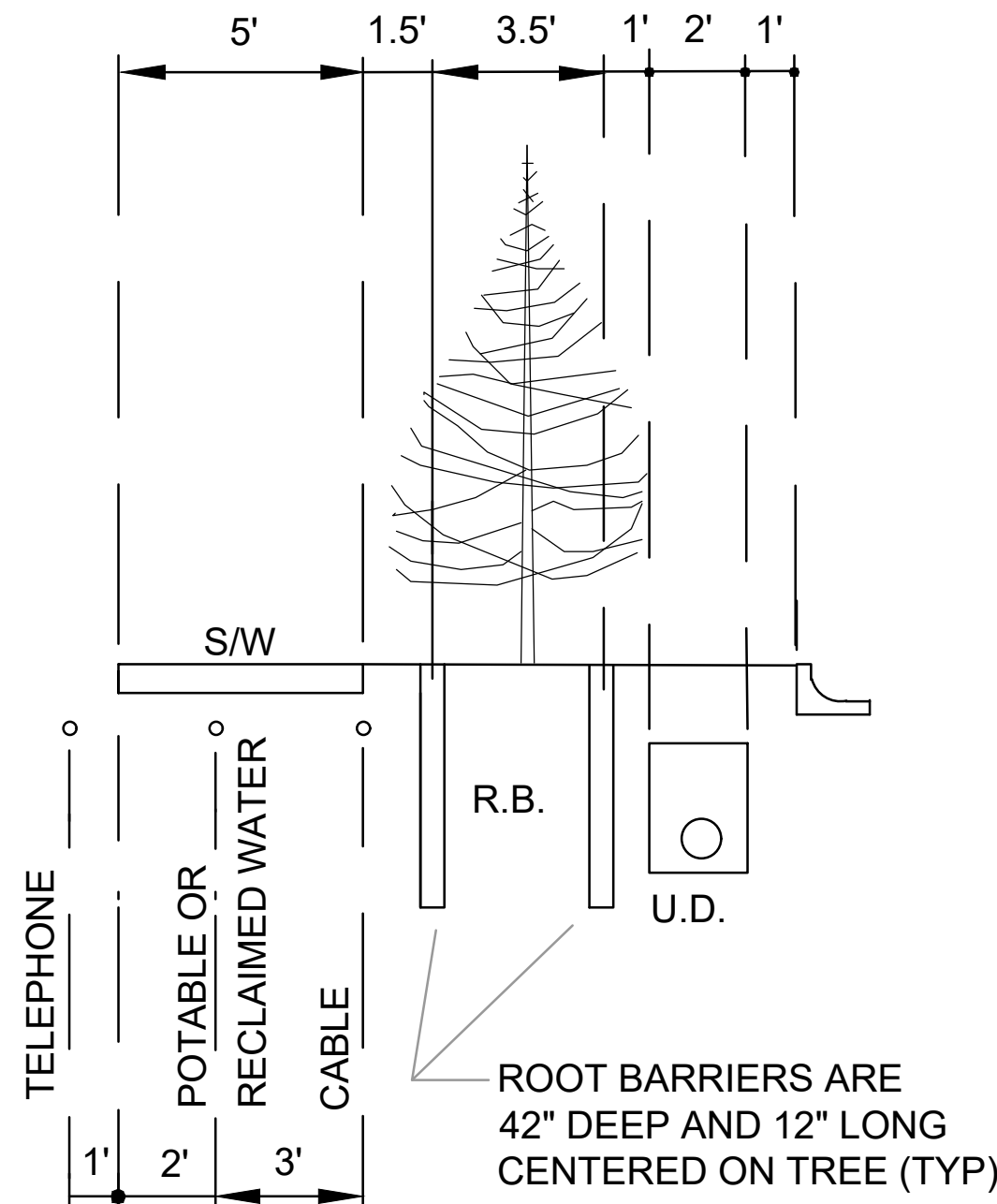
SHRUB AND GROUNDCOVER PLANTING DETAIL

NOT TO SCALE

PLANT LIST					
SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	DESCRIPTION	REMARKS
TREES					
MG	25	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	12'-14' HT x 5' SPR. / 3" CAL	SPACE AS SHOWN GUY
QV	33	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	12'-14' HT x 5' SPR. / 3" CAL	SPACE AS SHOWN GUY
SP	47	SABAL PALMETTO	CABBAGE PALM	8' HEIGHT, CLEAR TRUNK, HURRICANE CUT	SPACE AS SHOWN GUY
UA	50	ULMUS ALATA	WINGED ELM	12'-14' HT x 5' SPR. / 3" CAL	SPACE AS SHOWN GUY
SHRUBS					
VO	782	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	36" HT. x 30" SPRD. / FULL / 7G	30" O.C.
SOD					
	SEE PLANS	PASPALUM NOTATUM 'ARGENTINE'	ARGENTINE BAHIA	SOLID, FREE OF PESTS AND DISEASES	FIELD VERIFY QTY.
MULCH					
	SEE PLANS	MINI PINE BARK NUGGETS	MINI PINE BARK NUGGETS	FREE OF DIRT AND DEBRIS	FIELD VERIFY QTY.

LANDSCAPE CODE NOTES:

WEST PROPERTY LINE BUFFER: 1,269 LINEAR FEET LESS 89' ACCESS DRIVE AND 137' TREE PRESERVATION AREA = 1,043 LINEAR FEET/ 35' = 29.8 TREES REQUIRED
PROVIDED: 30 CANOPY TREES
NORTH PROPERTY LINE BUFFER: 402 LINEAR FEET / 35' = 11.4 TREES REQUIRED
PROVIDED: 11 CANOPY TREES
EAST PROEPRTY LINE BUFFER: 702 LINEAR FEET LESS 104' TREE PRESERVATION AREA = 598' / 35' = 17 TREES REQUIRED
PROVIDED: 17 CANOPY TREES



EXTRUDED SHEETS OR PANELS WITH INTEGRAL MALE/FEMALE SLIDING LOCK CONNECTION ENDS. MATERIAL SHALL BE HDPE WITH A MINIMUM THICKNESS OF 60 MIL, AND SHALL BE RIBBED. ROOT BARRIER SHALL EXTEND TO A MINIMUM DEPTH OF 42" BELOW FINISH GRADE. THE ROOT BARRIER SHALL BE A MINIMUM OF 12" LONG, CENTERED ON THE TREE AND PARALLEL WITH THE UTILITY MAIN OR SERVICE LINE BEING PROTECTED, UNLESS SHOWN OTHERWISE ON THE PLANS. ROOT BARRIER SHALL BE INSTALLED AT ANY CANOPY / SHADE TREE PLANTED. NO TREES SHALL BE CLOSER THAN 5' TO ANY UTILITY LINE OR SERVICES.

ROOT BARRIER DETAIL

SCALE: N.T.S.

CADDSCAPES, INC.
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432 Nowell Loop,
Deland, FL 32724
Office: 407 310-5567 Jason Bridgewater, RLA
Florida Water Star AP
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LAKE CARTER EXCHANGE

Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida

APOPKA, FLORIDA

REVISIONS:

No.	Date	Item
1	3/15/24	City Comments
2	4/22/24	City Comments

Seal:
DATE: 04/22/2024

Jason P. Bridgewater
Registered Landscape Architect
FL Registration -LA 6667308

DATE: 10/13/2023
DRAWN BY: JB
CHECKED BY: JB
SCALE:

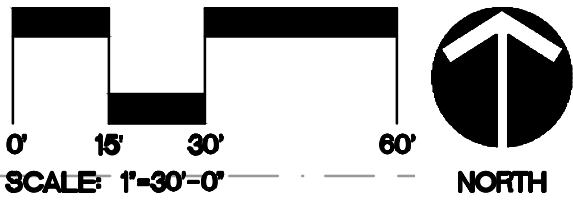
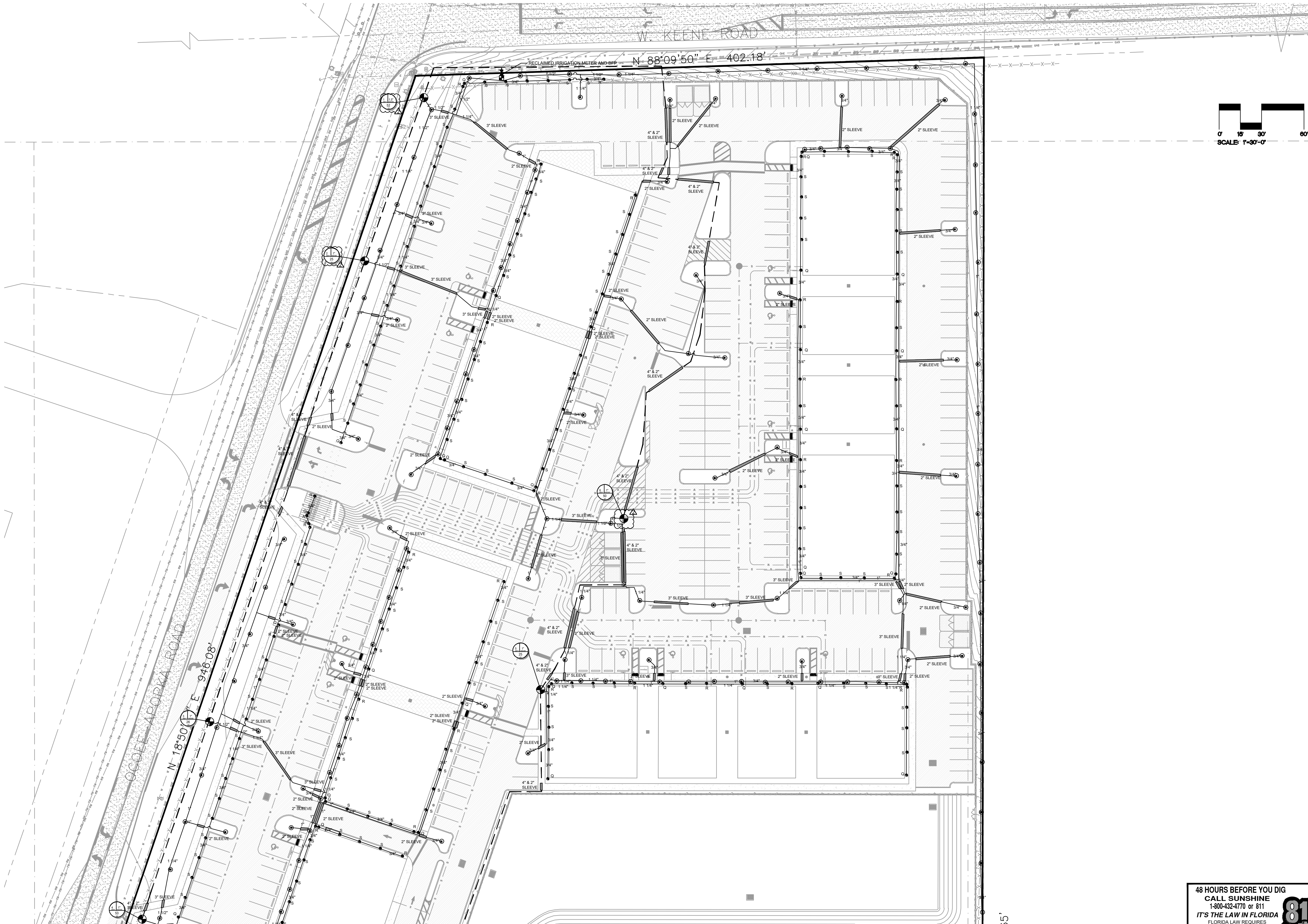
L-6

LANDSCAPE
PLAN

SHEET 6 OF 9

48 HOURS BEFORE YOU DIG
CALL SUNSHINE
1-800-432-4770 or 811
IT'S THE LAW IN FLORIDA
FLORIDA LAW REQUIRES
EXCAVATORS TO NOTIFY
OWNERS OF UNDERGROUND
FACILITIES NO LESS THAN TWO
(2) DAYS PRIOR TO EXCAVATION





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Florida Water Star AP
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LAKE CARTER EXCHANGE

**Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida**

APOPKA, FLORIDA

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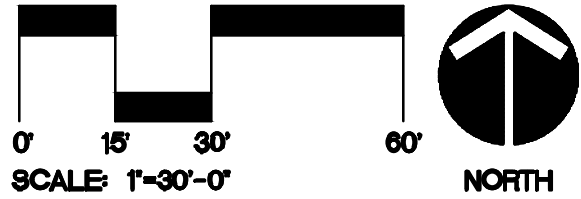
L-7

**IRRIGATION
PLAN**

SHEET 7 OF 9



S 00°05'19" W 1313.65'



LAKE CARTER EXCHANGE

Intersection of W. Keene Road and
Ocoee Apopka Road, Apopka Florida

APOPKA, FLORIDA

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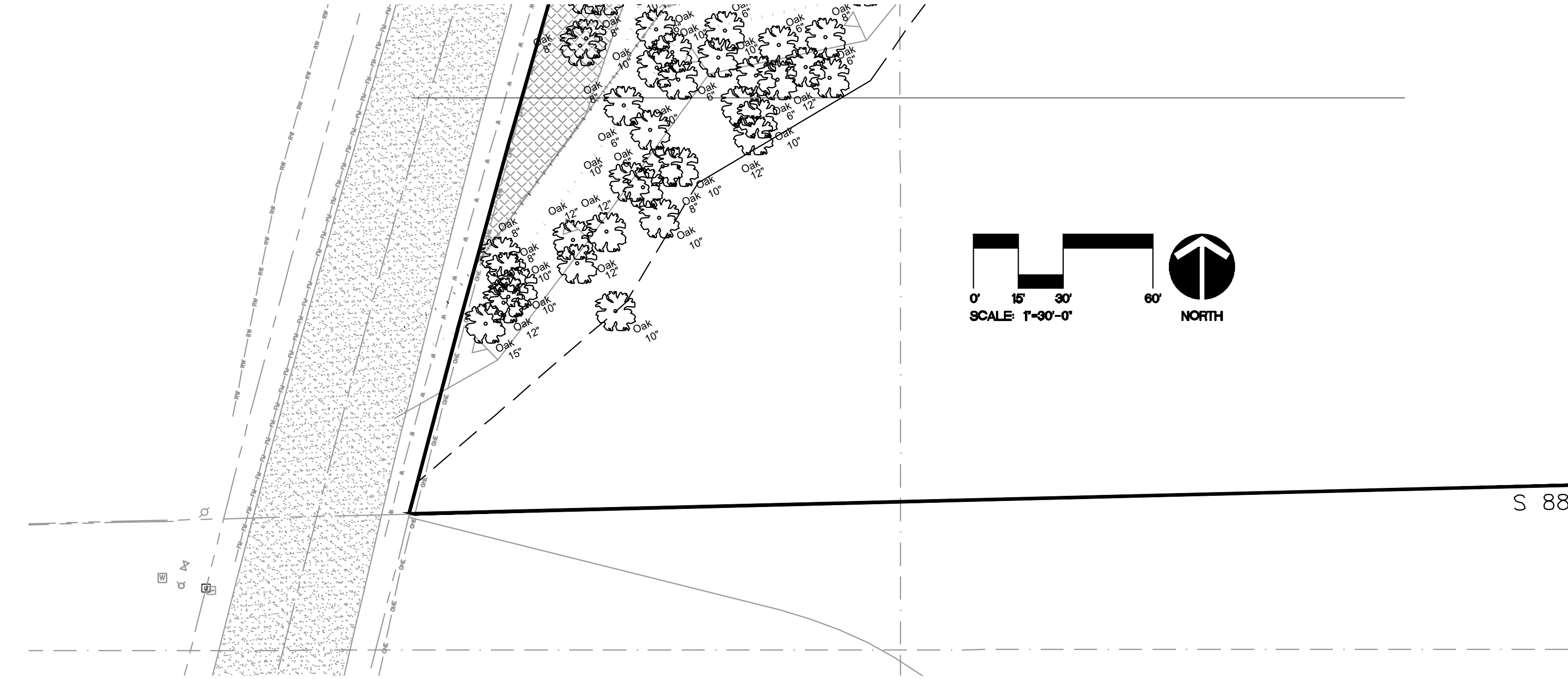
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OWNERS OF UNDERGROUND
FACILITIES NO LESS THAN TWO
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L-8
IRRIGATION
PLAN

SHEET 8 OF 9

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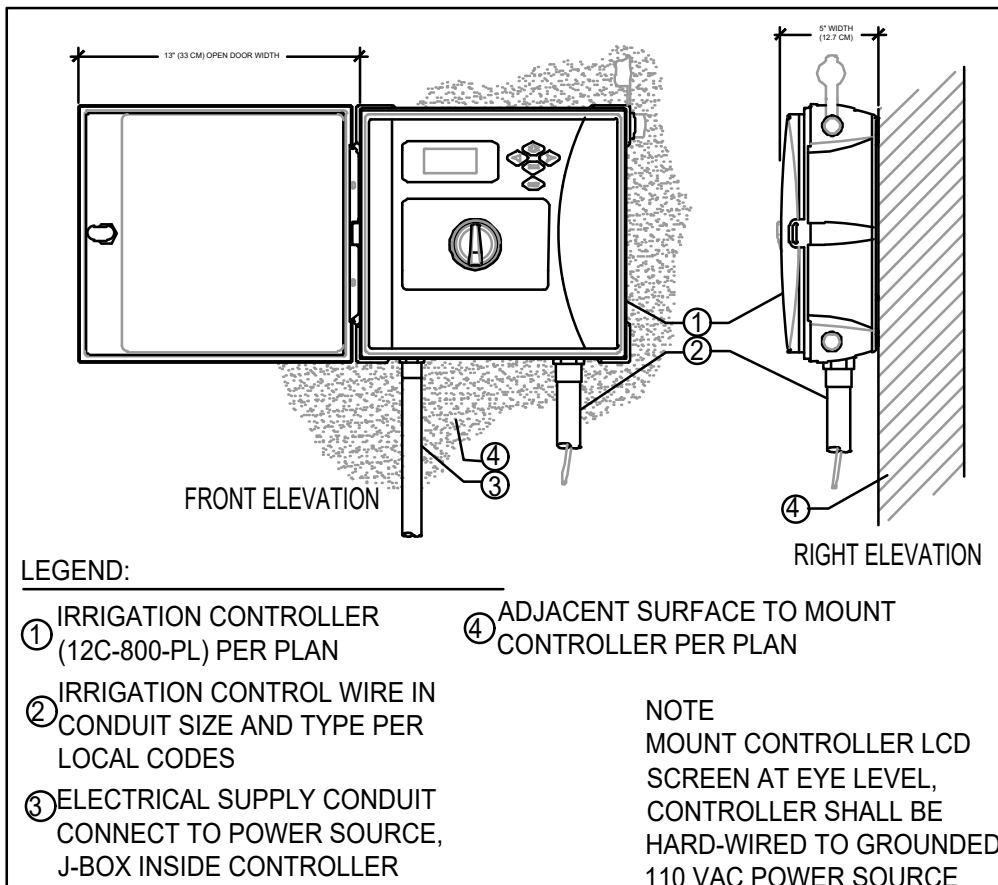
Jason Bridgewater, RLA
Florida Water Star AP
jasonbridgewater@gmail.com



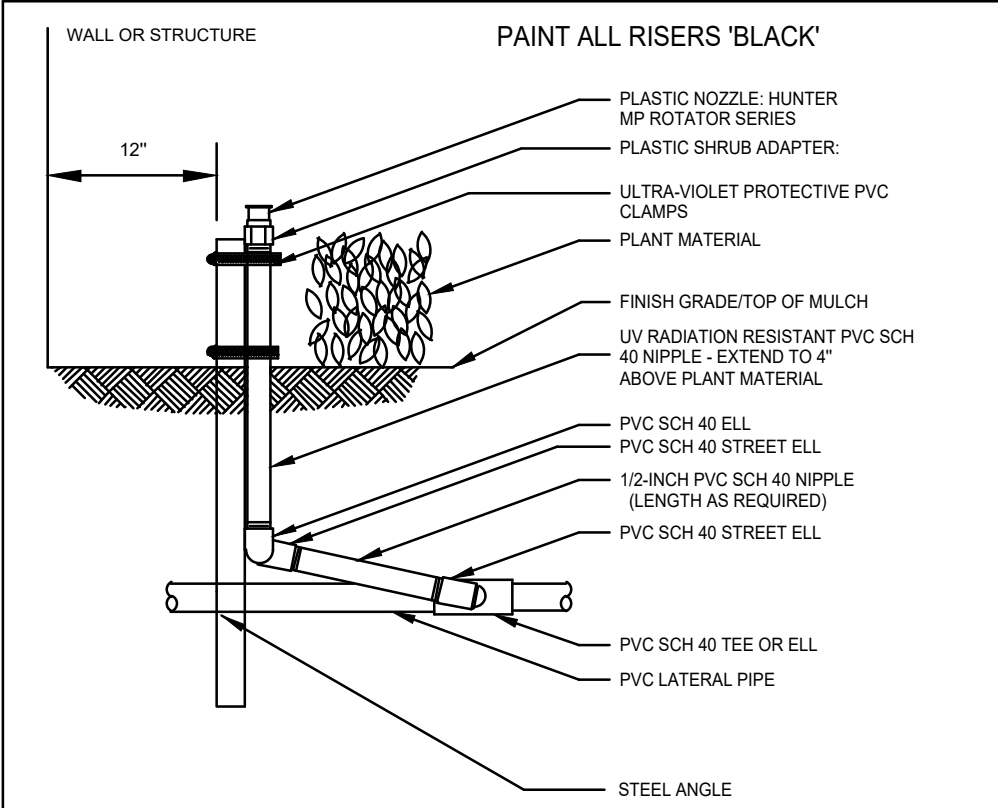
SPRAY NOZZLE CHART

	SYM	NOZZLE	NOZZLE PATTERN	GPM
MP1000 8'-15' radius	A	MAROON	90° ADJUSTABLE ARC	.19
	B	MAROON	180° ADJUSTABLE ARC	.37
	C	LT. BLUE	210° ADJUSTABLE ARC	.43
	D	LT. BLUE	270° ADJUSTABLE ARC	.57
	E	OLIVE	360° ARC	.75
	F	BLACK	90° ADJUSTABLE ARC	.40
MP2000 13'-21' radius	G	BLACK	180° ADJUSTABLE ARC	.74
	H	GREEN	210° ADJUSTABLE ARC	.86
	I	GREEN	270° ADJUSTABLE ARC	1.10
	J	RED	360° ARC	1.47
	K	BLUE	90° ADJUSTABLE ARC	.86
	L	BLUE	180° ADJUSTABLE ARC	1.82
MP3000 22'-30' radius	M	YELLOW	210° ADJUSTABLE ARC	2.12
	N	YELLOW	270° ADJUSTABLE ARC	2.73
	O	GRAY	360° ARC	3.64
	P	TURQUOISE	45°-105° ADJUSTABLE ARC	.45
	Q	IVORY	5'x15' LEFT STRIP	.22
	R	COPPER	5'x15' RIGHT STRIP	.22
STRIPS AND CORNERS	S	BROWN	5'x30' SIDE STRIP	.44
	T	PCN10	1.00 GPM FLOOD BUBBLER	1.00
	U	PCN50	.50 GPM FLOOD BUBBLER	.50
BUBBLERS AND MICRO- SPRAYS	V	SR-2Q	90° 2' RADIUS	.11
	W	SR-2H	180° 2' RADIUS	.16
	X	MS-F	360° 5' RADIUS	.50

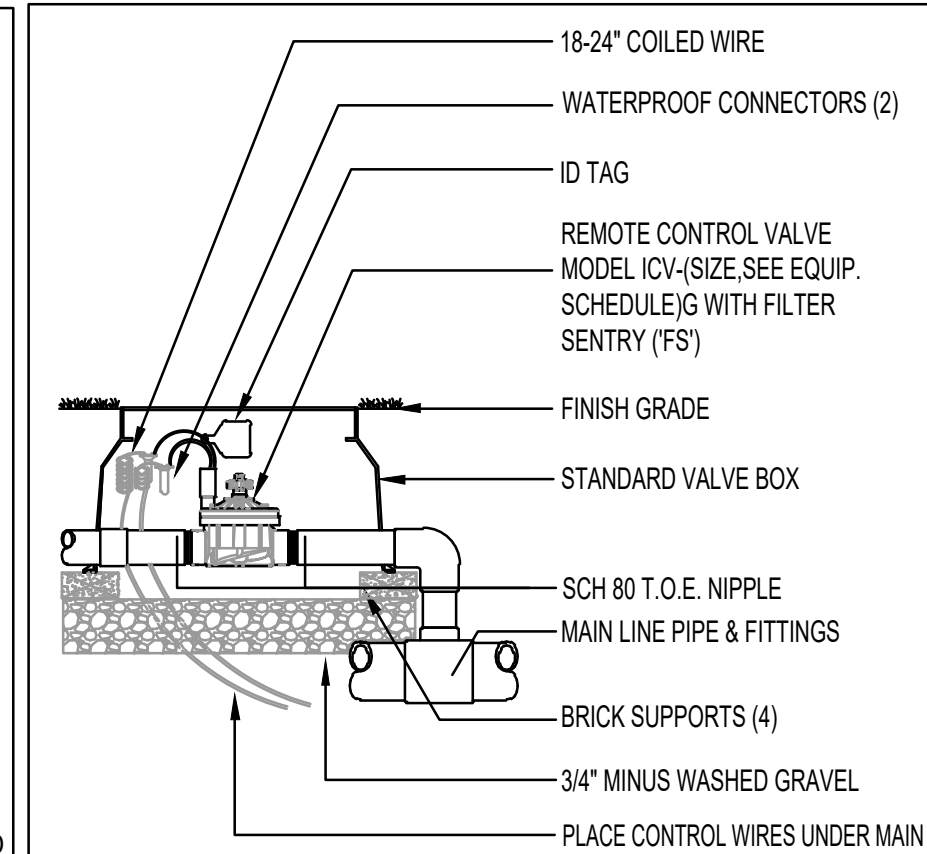
IRRIGATION DETAILS



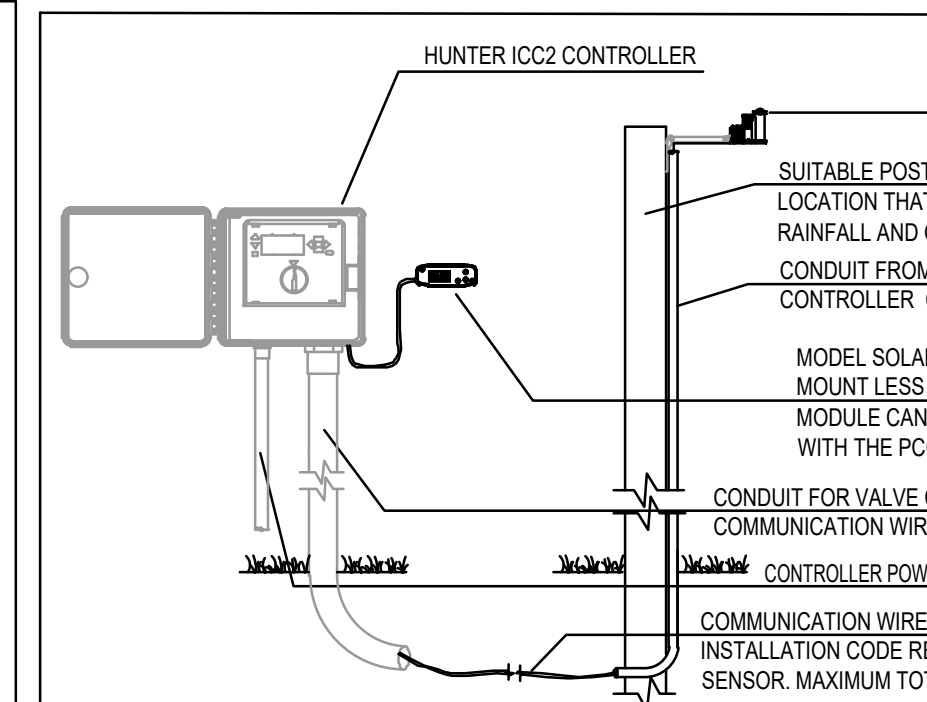
A ICC2 WALL MOUNT CONTROLLER



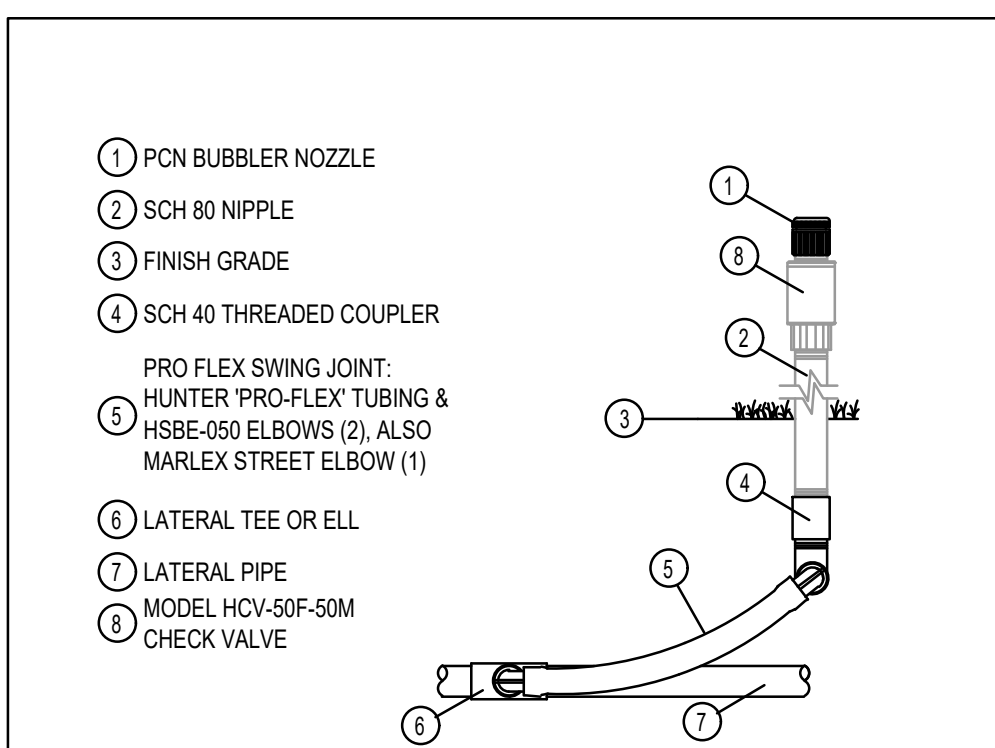
E SHRUB RISER DETAIL



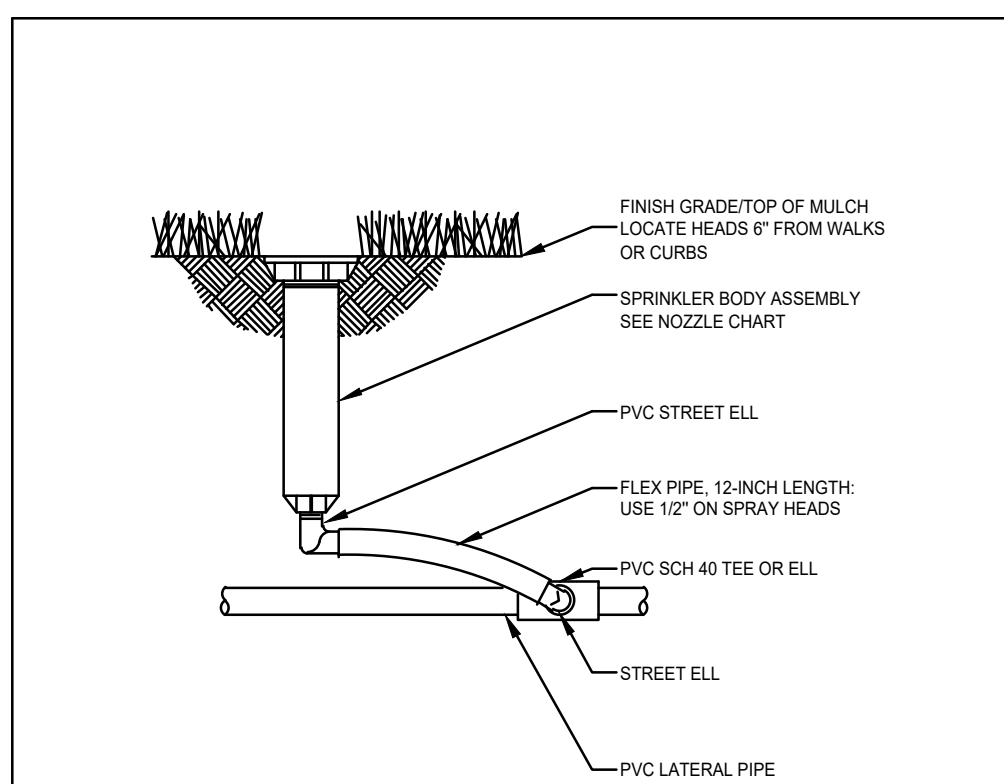
B ICV-151 OR 201 GLOBE VALVE



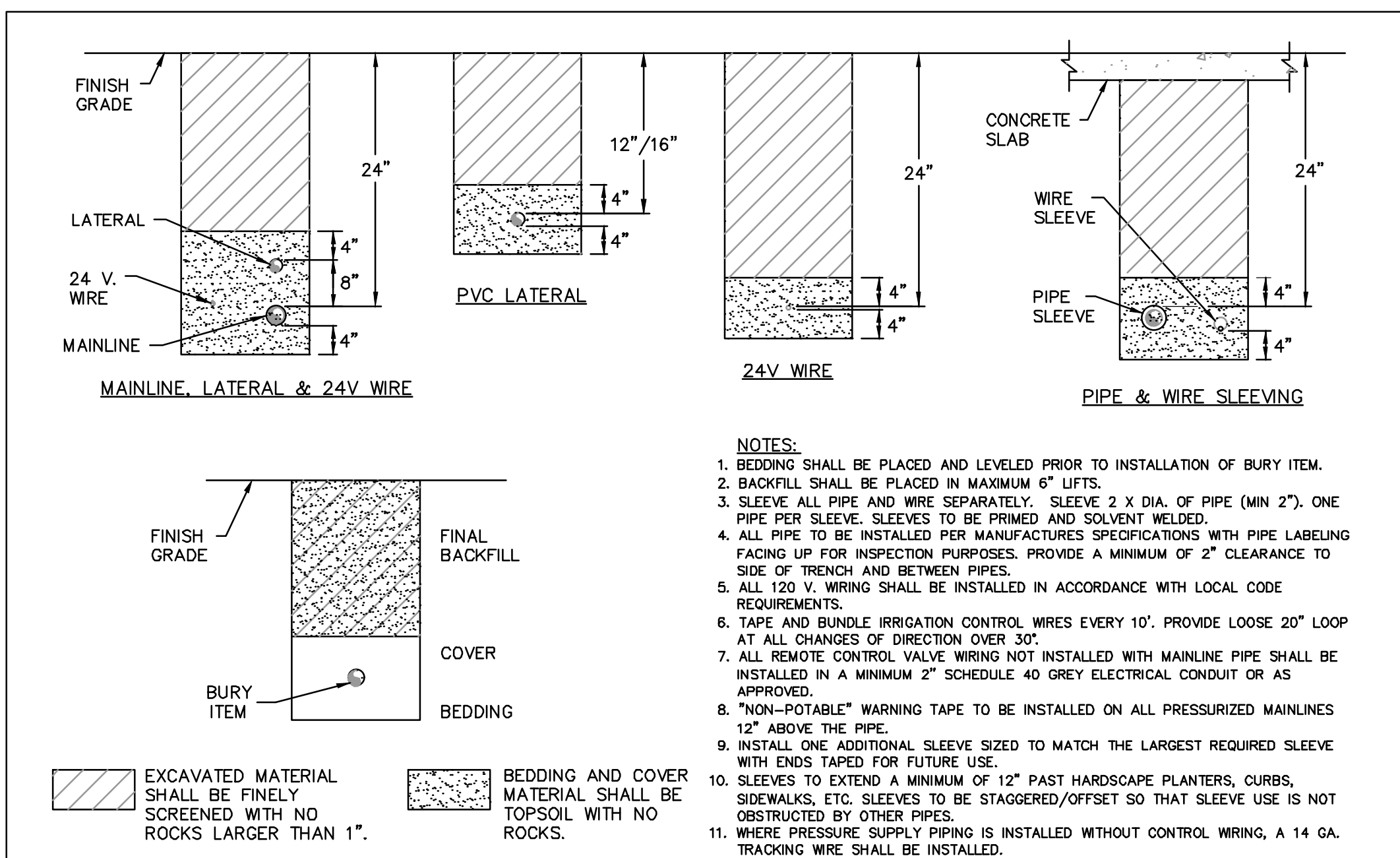
F HUNTER SOLAR SYNC SYSTEM



C PCN BUBBLER



D HEAD DETAIL



G TRENCHING DETAILS

IRRIGATION NOTES

- REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREES AND SHRUBS.
- ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 18" OF COVER. ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.
- ALL POP-UP ROTORS AND SPRAY HEADS SHALL BE INSTALLED USING AN 18" P.V.C. FLEX PIPE CONNECTION. DO NOT USE FUNNY PIPE.
- ADJUST ALL NOZZLES TO REDUCE WATER WASTE ON HARD SURFACES AND BUILDING WALLS.
- THROTTLER ALL VALVES ON SHRUB LINES AS REQUIRED TO PREVENT FOGGING.
- ALL RISERS SHALL BE PAINTED BLACK.
- ALL RISERS SHALL BE STAKED WITH A STEEL ANGLE AND SECURED WITH ULTRA-VIOLET LIGHT PROTECTED P.V.C. CLAMPS.
- ALL CONTROL WIRE SPLICES SHALL BE MADE IN VALVE BOXES USING SNAP-TITE CONNECTORS AND SEALANT.
- THE CONTRACTOR SHALL PREPARE AN AS-BUILT DRAWING ON A REPRODUCIBLE PAPER (SEPIA OR MYLAR) SHOWING ALL INSTALLED IRRIGATION. A MYLAR OR SEPIA OF THE ORIGINAL PLAN MAY BE OBTAINED FROM THE LANDSCAPE ARCHITECT FOR A FEE. THE DRAWING SHALL LOCATE ALL MAINLINE AND VALVES BY SHOWING EXACT MEASUREMENTS FROM HARD SURFACES.
- ALL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.
- ANY PIPING SHOWN OUTSIDE THE PROPERTY LINE OR RUNNING OUTSIDE A LANDSCAPE AREA IS SHOWN THERE FOR CLARITY ONLY. ALL LINES SHALL BE INSTALLED ON THE PROPERTY AND INSIDE THE LANDSCAPE AREAS.
- ALL RISERS SHALL BE INSTALLED 12" FROM ANY WALL AND A MINIMUM OF 36" FROM ANY SIDEWALK, PATIO OR ROAD.
- THE EXACT HEIGHT OF ANY 12" POP-UP THAT IS SHOWN IN A SHRUB BED SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
- THE CONTRACTOR SHALL EXERCISE CARE SO AS NOT TO DAMAGE ANY EXISTING UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIRS AND COST OF ANY DAMAGE CAUSED BY HIS WORK.
- ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.
- CONTRACTOR TO USE MIN. OF 12 GAUGE WIRE FOR ALL COMMON WIRES AND 14 GAUGE WIRE FOR ALL CONTROL WIRES. CONTRACTOR ALSO TO PROVIDE 3 SPARE CONTROL WIRES FOR ANY FUTURE USE.
- CONCRETE THRUST BLOCKS ARE TO BE UTILIZED AT ALL MAINLINE DIRECTION CHANGES.
- ALL IRRIGATION SHOWN ON PLANS IS SCHEMATIC AND DOES NOT REFLECT ALL FITTINGS AND APPURTENANCES WHICH SHALL BE INCLUDED TO PROVIDE A FULLY FUNCTIONAL IRRIGATION SYSTEM CAPABLE OF PROVIDING 100 PERCENT COVERAGE WITH A 50 PERCENT OVERLAP.

EQUIPMENT LIST

SYMBOL	DESCRIPTION	QUANTITY
	0.50 GPM BUBBLER (2 PER TREE)	310
	6" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 WMP2000 NOZZELS	0
	12" POP-UP SPRAY - HUNTER INDUSTRIES MPR40 WMP2000 NOZZELS	0
	SPRAY ON RISER - HUNTER INDUSTRIES INST-00-CV-MP2000	208
	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- PART RADIUS	0
	HUNTER INDUSTRIES - 4" POP-UP PGP ROTORS- FULL RADIUS	0
	HUNTER INDUSTRIES - 1-40 ROTORS - PART 60" RADIUS	0
	HUNTER '1CV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR	1"
	HUNTER '1CV' SERIES ELECTRIC VALVE WITH ACCU-SET PRESSURE REGULATOR	1 1/2"
	HUNTER ICC2 8 STATION CONTROLLER, 120VOLT, INSTALL WITH A SOLAR SYNC (WITH EVAPOTRANSPIRATION SENSOR AND RAIN SENSOR AND BY-PASS BOX.) GROUND WITH AN 8" COPPER CLAD ROD.	1
	1.5" RECLAIMED IRRIGATION METER TO PROVIDE 55 GPM AT 40 PSI	1
	1" DOUBLE CHECK VALVE BACKFLOW PREVENTOR	1
	LATERAL LINE SIZE PER PLAN	SEE PLAN
	2" MAINLINE CLASS 200 P.V.C. SIZE PER PLAN	SEE PLAN
	SLEEVING - SCH. 40 P.V.C. MIN. DEPTH OF 24" (ALL 4" SLEEVES TO HAVE ACCOMPANYING 2" SLEEVE FOR WIRES)	SEE PLAN

IRRIGATION TO CONNECT TO RE-USE. ALL PIPING AND COMPONENTS TO USE PURPLE (PANTONE COLOR 512)

Zone Chart	GPM	Water Use	Program
Zone#1	52	Bubblers	A
2	25	Shrubs	B
3	26	Shrubs	B
4	53	Bubblers	A
5	25	Shrubs	B
6	50	Bubblers	A

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3		
4		
5		
6		

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L-9

LANDSCAPE
PLAN / DETAILS

SHEET 9 OF 9







SIGNAGE
by
FUTURETENANT

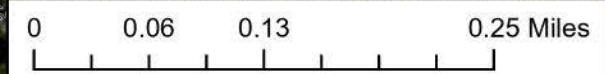
SIGNAGE
by
FUTURETENANT

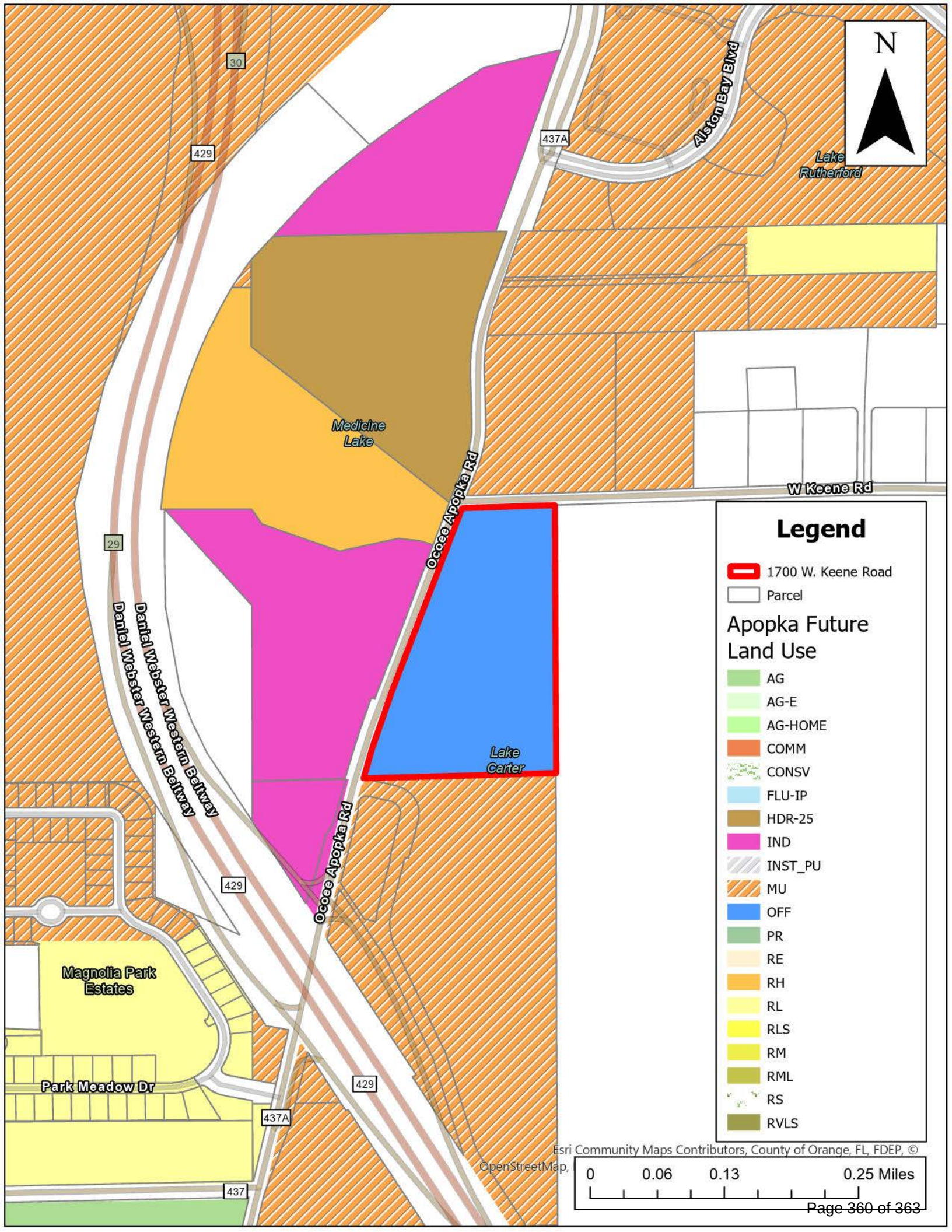


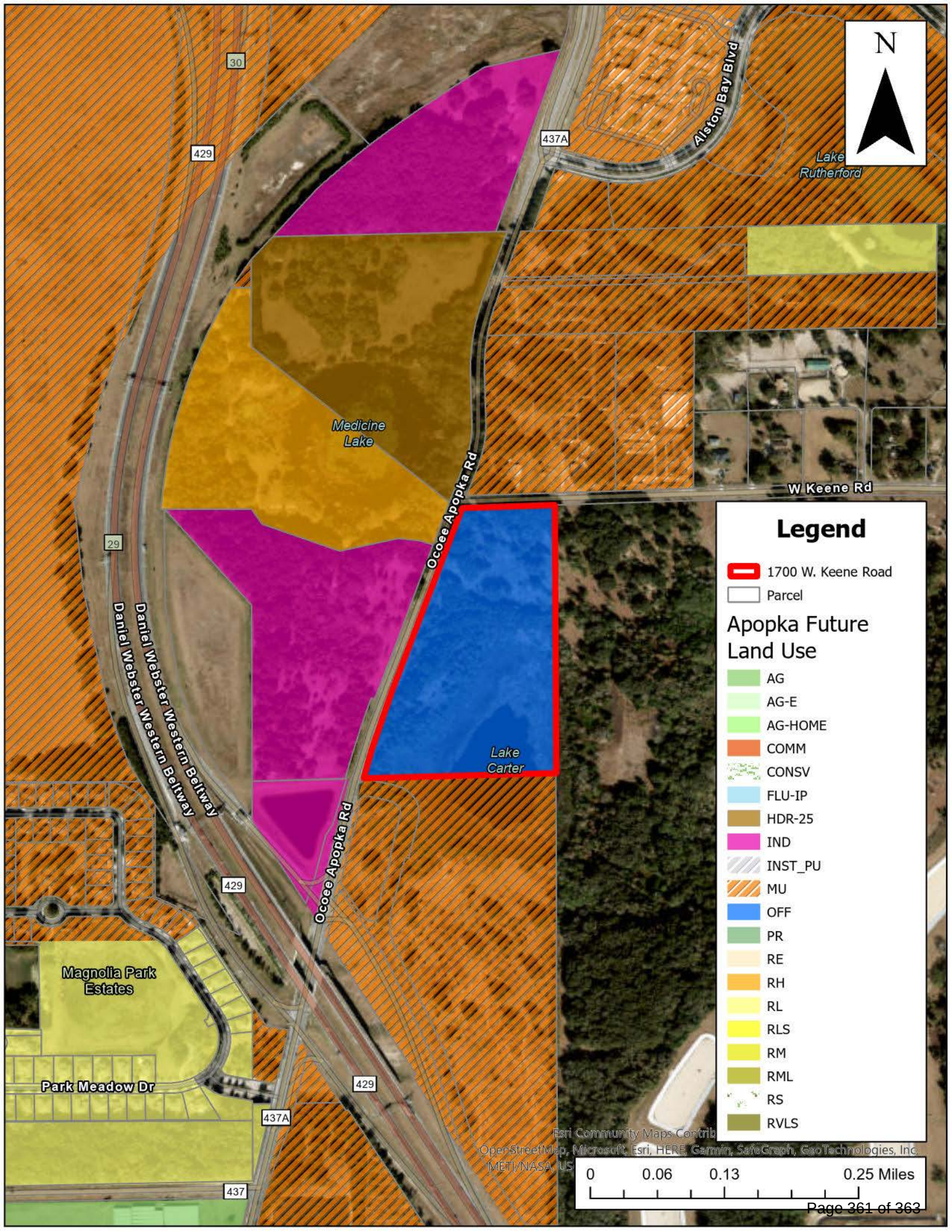
Legend

 1700 W. Keene Road

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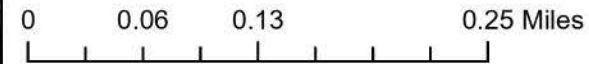
 1700 W. Keene Road

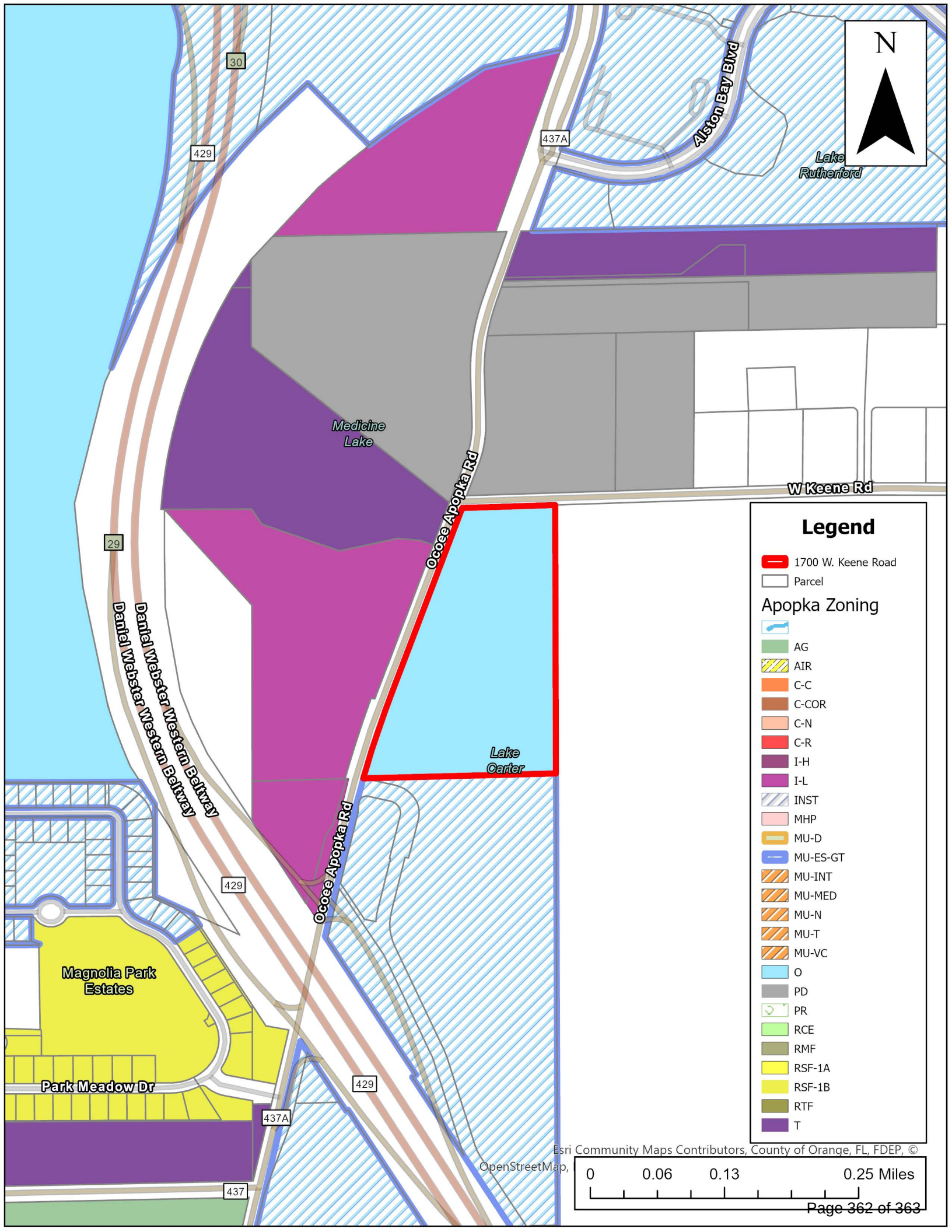
 Parcel

Apopka Future Land Use

-  AG
-  AG-E
-  AG-HOME
-  COMM
-  CONSV
-  FLU-IP
-  HDR-25
-  IND
-  INST_PU
-  MU
-  OFF
-  PR
-  RE
-  RH
-  RL
-  RLS
-  RM
-  RML
-  RS
-  RVLS

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Lake Rutherford

W Keene Rd

Legend

1700 W. Keene Road

Parcel

Apopka Zoning



AG



AIR



C-C



C-COR



C-N



C-R



I-H



I-L



INST



MHP



MU-D



MU-ES-GT



MU-INT



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PD



PR



RCE



RMF



RSF-1A



RSF-1B



RTF

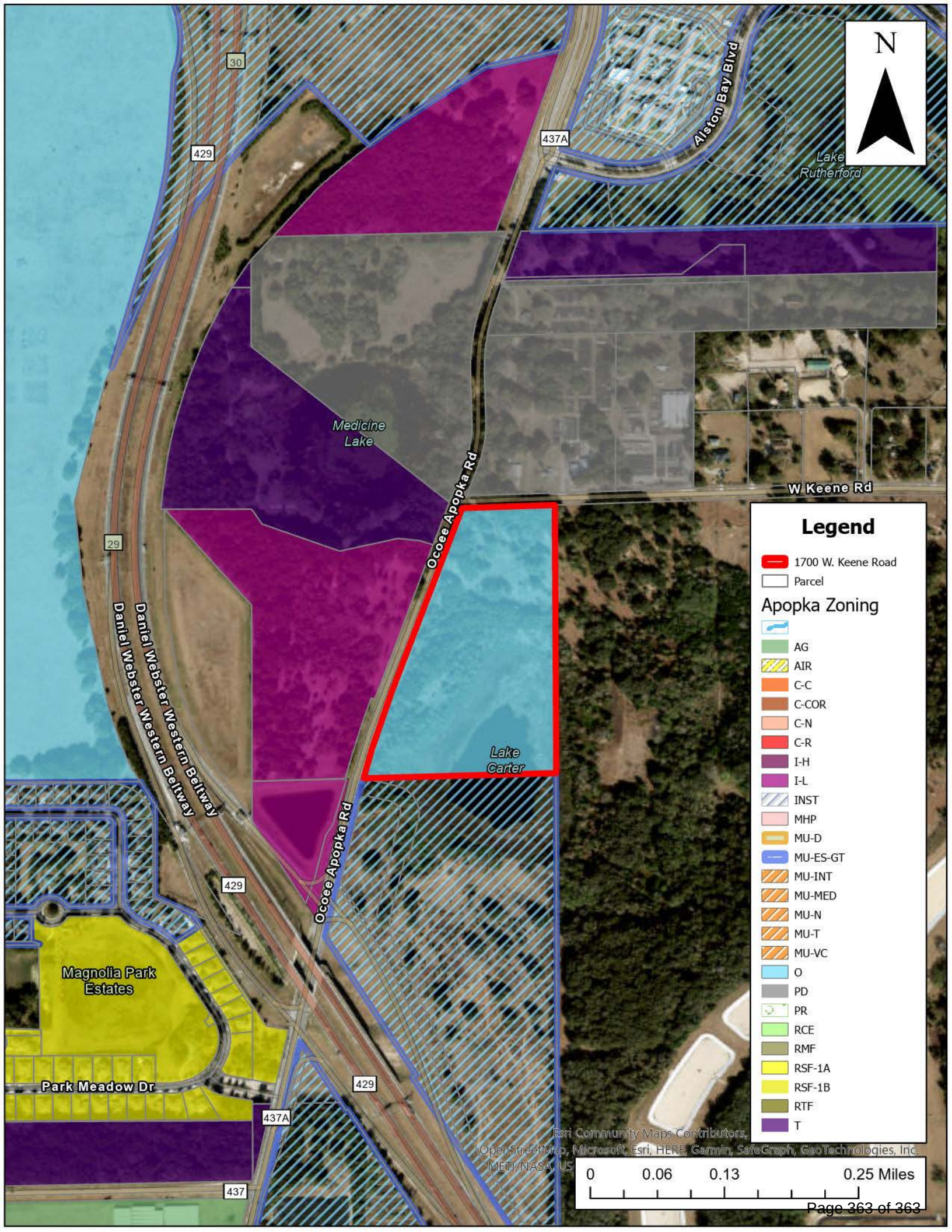


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OpenStreetMap,

0 0.06 0.13 0.25 Miles



Lake Rutherford

W Keene Rd

Legend

1700 W. Keene Road

Parcel

Apopka Zoning



AG

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0 0.06 0.13 0.25 Miles