TOWN OF YEMASSEE PLANNING COMMISSION MEETING

Tuesday, April 4, 2023 – 3:00PM

Yemassee Municipal Complex, 101 Town Cir, Yemassee, SC 29945-3363

I. Call to Order

II. Roll Call

III. Public Comments

- **a.** Every member of the public who is recognized to speak shall address the Chairman and in speaking, avoid disrespect to the Committee, Staff, and other members of the meeting. State your name and address for the record. *Comments are limited to Two (2) Minutes.*

IV. Old Business

- **a.** Approval of the March 7, 2023, Planning Commission Meeting Minutes

V. Public Hearings

- **a. Ironline Metals (Zoning Map Amendment Application):** A request by Conor Blanely of Ward Edwards, Inc., on behalf of the property owner Ironline Metals, LLC. for approval of a Zoning Map Amendment for approximately 102.4 acres of land located at the intersection of U.S. Highway 17A and Jinks St. The application seeks rezoning of three parcels from their current zonings; 204-01-05-005 (Residential ¼ Acre), 204-01-05-013 (Office Commercial District) and 203-00-00-046 (Conservation Preservation District) to a zoning of Planned Unit Development within the Highway Corridor Overlay District (HCOD).

II. New Business

- **a. Rosalyn Smith (Annexation Request / Initial Briefing):** A request for a recommendation of approval on Request for an Annexation of One Parcel of Land of Approximately 1.39 Acres of land, located on Cochran St and further identified by Hampton County TMS: 198-00-00-095 via the 100% Petition and Ordinance Method with a concurrent Zoning Map Amendment requesting a rezoning from the current zoning of General Development District pursuant to the Hampton County Zoning Ordinance to General Residential (GR) pursuant to the Town of Yemassee Zoning Ordinance.
- b. **Comprehensive Plan Update –** Matthew Garnes, Town Administrator

VI. Adjournment

Colin J. Moore
Mayor

Peggy Bing-O'Banner
Mayor Pro Tempore

Matthew Garnes
Town Administrator

Council Members
Alfred Washington
Stacy Pinckney
David Paul Murray

Planning Commission Agenda Item

Subject: Consideration of an Ordinance Amending the Town of Yemassee Zoning Map to rezone three parcels of land located near the intersection of U.S. Highway 17A & Jinks St in Hampton County, and further identified by Hampton County Tax Map Numbers: 204-01-05-005, 204-01-05-013 and 203-00-0046 from their respective zonings to Planned Unit Development.

Meeting Date: April 4, 2023

Submitted by: Matthew Garnes, Town Administrator

Attachments:

	Draft Ordinance		Resolution		Other
√	Support Documents		Motion		

Summary: Attached is a request for public hearing of a Zoning Map Amendment for the three parcels of land owned by Ironline Metals, LLC. seeking a re-zoning from their current zoning designations to Planned Unit Development. In March, Town Council approved first reading and scheduled a public hearing for the request at their April 2023 meeting. Today, Planning Commission will conduct a Public Hearing on the request. Adjacent property owners have been notified by certified mail, legal notice placed in the newspaper and the property has been posted since March 7, 2023.

Recommended Action:

Commission Action:
____ Approved as Recommended
____ Approved with Modifications
____ Disapproved
____ Tabled to Time Certain

Town of Yemassee
Attn: Administration Department
101 Town Circle
Yemassee, SC 29945-3363
(843)589-2565 Ext. 3
www.townofyemassee.org

TOWN OF YEMASSEE
ZONING MAP/TEXT AMENDMENT APPLICATION

Town of Yemassee
MAR - 2 2023
Received

Applicant	Property Owner
Name: Ironline Metals	Name: Ironline Metals, LLC
Phone: 502-315-1722	Phone: 502-315-1722
Mailing Address: 1515 Ormsby Station Ct. Louisville, KY 40223	Mailing Address: 1515 Ormsby Station Ct. Louisville, KY 40223
E-mail: tim@ironlinemetals.com	E-mail: tim@ironlinemetals.com
Town Business License # (if applicable):	
Project Information	
Project Name: Pine Street Development	Acreage: 104.4
Project Location: NW of the intersection of US Hwy 17A & Jink St.	Comprehensive Plan Amendment Yes ✓No
Existing Zoning: Office Commercial District and Residential ¼ acre	Proposed Zoning: PUD
Type of Amendment: Text ✓ Map	
Tax Map Number(s): 204-01-05-013, 204-01-05-005, 204-01-05-046	
Project Description: The proposed development is to include a combination of residential and light industrial uses, to provide quality economic development and housing opportunities within the Town of Yemassee.	

Minimum Requirements for Submittal

- ☐ 1. Two (2) full sized copies and digital files of the maps and/or plans depicting the subject property.
- ☐ 3. Project Narrative and digital file describing reason for application and compliance with the criteria in Article 8 of the DSO.
- ☐ 4. An Application Review Fee as determined by the Town of Yemassee Schedule of Rates & Fees. Checks made payable to the Town of Yemassee.

Note: **A Pre-Application Meeting is required prior to Application submittal.**

Disclaimer: **The Town of Yemassee assumes no legal or financial liability to the applicant or any third party whatsoever by approving the plans associated with this permit.**

I hereby acknowledge by my signature below that the foregoing application is complete and accurate and that I am the owner of the subject property. As applicable, I authorize the subject property to be posted and inspected.

Property Owner Signature: [signature]	Date: February 8, 2023
Applicant Signature: [signature]	Date: February 8, 2023

For Office Use

Application Number: ZONE -03-23-1023	*Date Received:* 3/2/23
Received By: M. Garna	*Date Approved:*

Project Narrative

Project: **Ironline Metals**
Town of Yemasee, SC

Date: February 28, 2023

Owner: **Ironline Metals, LLC**
1515 Ormsby Court
Louisville, KY 40223

Parcel:
Property ID: 204-01-05-013, 104-01-05-005
Acreage: 102.4 Acres

Existing Conditions
The existing site is mostly undeveloped, with an existing dirt road bisecting the property. The existing road is Jinks Street off US-17, and turns into Pine Street prior to the intersection of Lacey street.

Proposed Construction
The developer is proposing to add a steel manufacturing facility at the front portion of the property. The subject property has undergone an annexation into the Town of Yemassee limits and rezoned to a PUD to help facilitate the current proposed and forthcoming proposed uses. The existing Jinks Street and Pine Street will be improved with the right-of-way to a full access paved 24' wide road. A new access along US-21 with a deceleration lane is proposed to all a separate means of access to the steel facility for larger truck traffic. Other site infrastructure improvements and proposed to support the steel manufacturing facility, which should encompass approximately 11.9 acres of the overall 102.4 acre site.

Tree Removal & Landscaping
To support the proposed development, some tree removal will be necessary. The proposed layout was designed in a manner to both preserve and accentuate the existing specimen trees onsite. Proposed landscaping can be seen with special attention to screening the proposed facility.

Erosion Control
Erosion control practices for the site will include silt fencing, inlet protection, temporary/permanent seeding, dust control measures, a concrete washout station, and sediment tubes.

Wetlands
Wetlands were identified onsite by an environmental consultant. A minor portion of these wetlands, less than 0.5 acres, is being proposed to be impacted and mitigated for through the USACOE Nationwide program.

Phasing
The Ironline facility is proposed to be completed in a single phase. Future development is to include single family residential development, under a separate submission.

Stormwater

The property currently drains to a large wetland system along the eastern portion of the property. Conveyance ditches help direct offsite stormwater runoff from the western wetland to the mentioned eastern low lying wetland area, ultimately discharging to the Combahee River. A drainage pipe system has been designed to route the western ditch runoff to the eastern outfall around the proposed development. All runoff from the proposed development will drain to a series of dry-detention and wet-detention ponds, to promote pollutant removal and meet the local and state stormwater requirements, prior to discharging along the existing outfall path at a rate less than that of existing conditions.

Water & Sewer Utilities

An existing gravity sewer main runs along Jinks Street and Pine street that has the depth and capacity to accommodate the proposed development.

A water main is proposed along Jinks Street and Pine Street, to connect to the existing water system along US-17 and Lacey Street. The proposed water main connection will be utilized to serve the proposed development.

TOWN OF YEMASSEE
PLANNED UNIT DEVELOPMENT (PUD) MASTER PLAN APPLICATION

Town of Yemassee
Attn: Administration Department
101 Town Cir
Yemassee, SC 29945-3363
(843) 589-2565 Ext. 3
http://www.townofyemassee.org

Applicant	Property Owner
Name: Ironline Metals, LLC c/o Ward Edwards, Inc.	Name: Ironline Metals, LLC
Phone: 757-814-0824	Phone: 502-315-1722
Mailing Address: PO Box 381, Bluffton, SC 29910	Mailing Address: 1515 Ormsby Station Court Louisville KY 40223
E-mail: cblaney@wardedwards.com	E-mail: tim@ironlinemetals.com
Town Business License # (if applicable):	

Project Information

Project Name: Ironline Metals	☑ New	☐ Amendment
Project Location: US Hwy 17A to the Southeast, Lacy St to the Southwest, Jenks St intersects	Acreage: 102.4	
PUD Name: Pine Street PUD		
Tax Map Number(s): 204-01-05-013, 204-01-05-005, 204-01-05-046		
Project Description: The developer is proposing to add a steel manufacturing building at the corner of Jenks Street and US-21. The existing Jenks Street would be improved/paved within the right of way at a 24' width, and a new access point along US-21 is proposed for larger truck traffic. Truck access through the building is anticipated to allow for the loading/ unloading of steel/ equipment. The project ares is approximately 11.86 acres of the 102.4 acres of land. The remaining portion of uplands is anticipated for a future phase of residential housing.		

Minimum Requirements for Submittal

- ☑ 1. Two (2) full sized copies and digital files of the Master Plan.
- ☑ 2. Recorded deed and plat showing proof of property ownership.
- ☑ 3. Project Narrative describing reason for application and compliance with the criteria in the DSO.
- ☑ 4. An Application Review Fee as determined by the Town of Yemassee Schedule of Rates & Fees. Checks made payable to the Town of Yemassee.

Note: **An approved PUD Concept Plan Application is required prior to submittal**

Disclaimer: **The Town of Yemassee assumes no legal or financial liability to the applicant or any third party whatsoever by approving the plans associated with this permit.**

I hereby acknowledge by my signature below that the foregoing application is complete and accurate and that I am the owner of the subject property. As applicable, I authorize the subject property to be posted and inspected.

Property Owner Signature:	Date: 3/1/23
Applicant Signature:	Date: 3/1/23

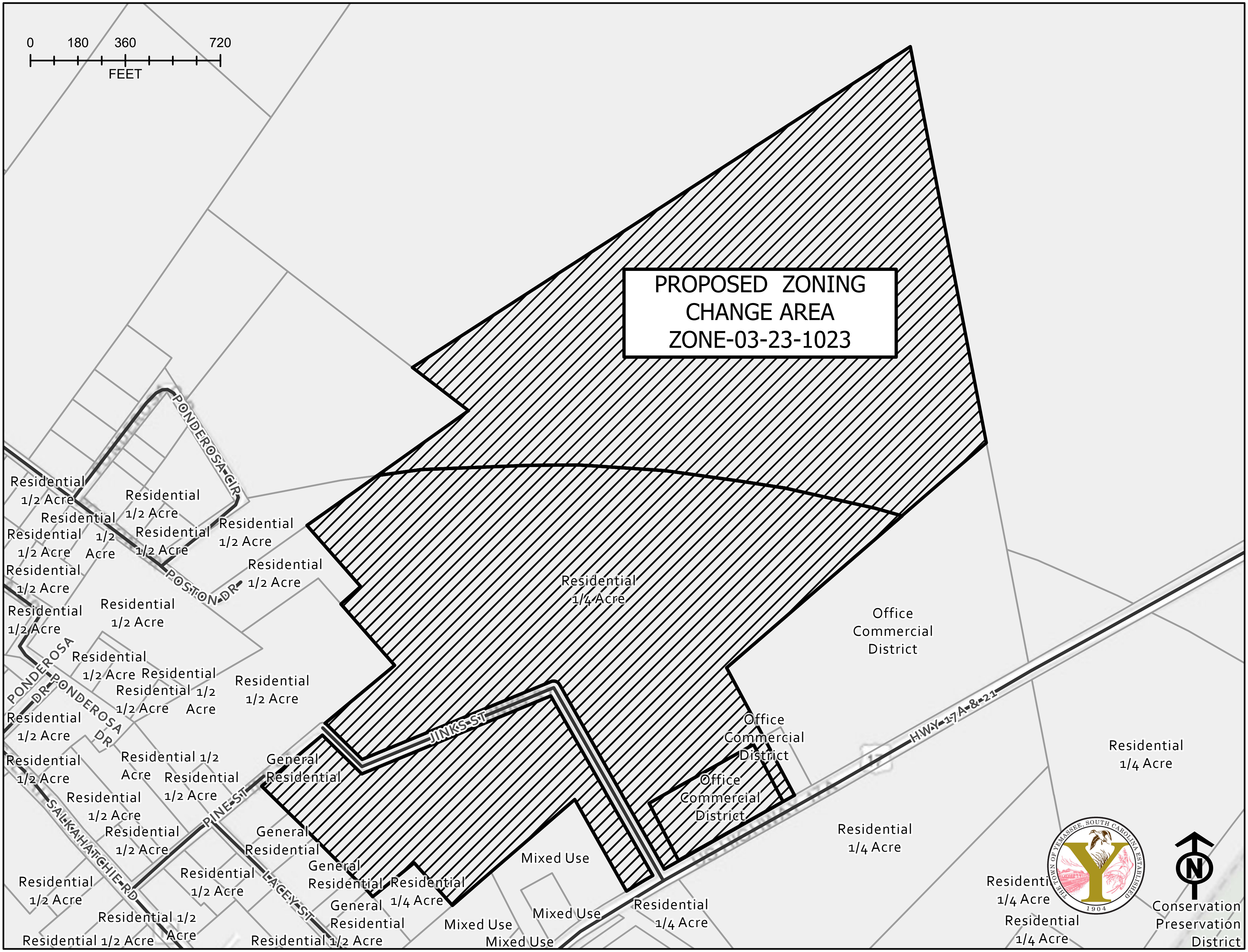
For Office Use

Application Number:	*Date Received:*
Received By:	*Date Approved:*

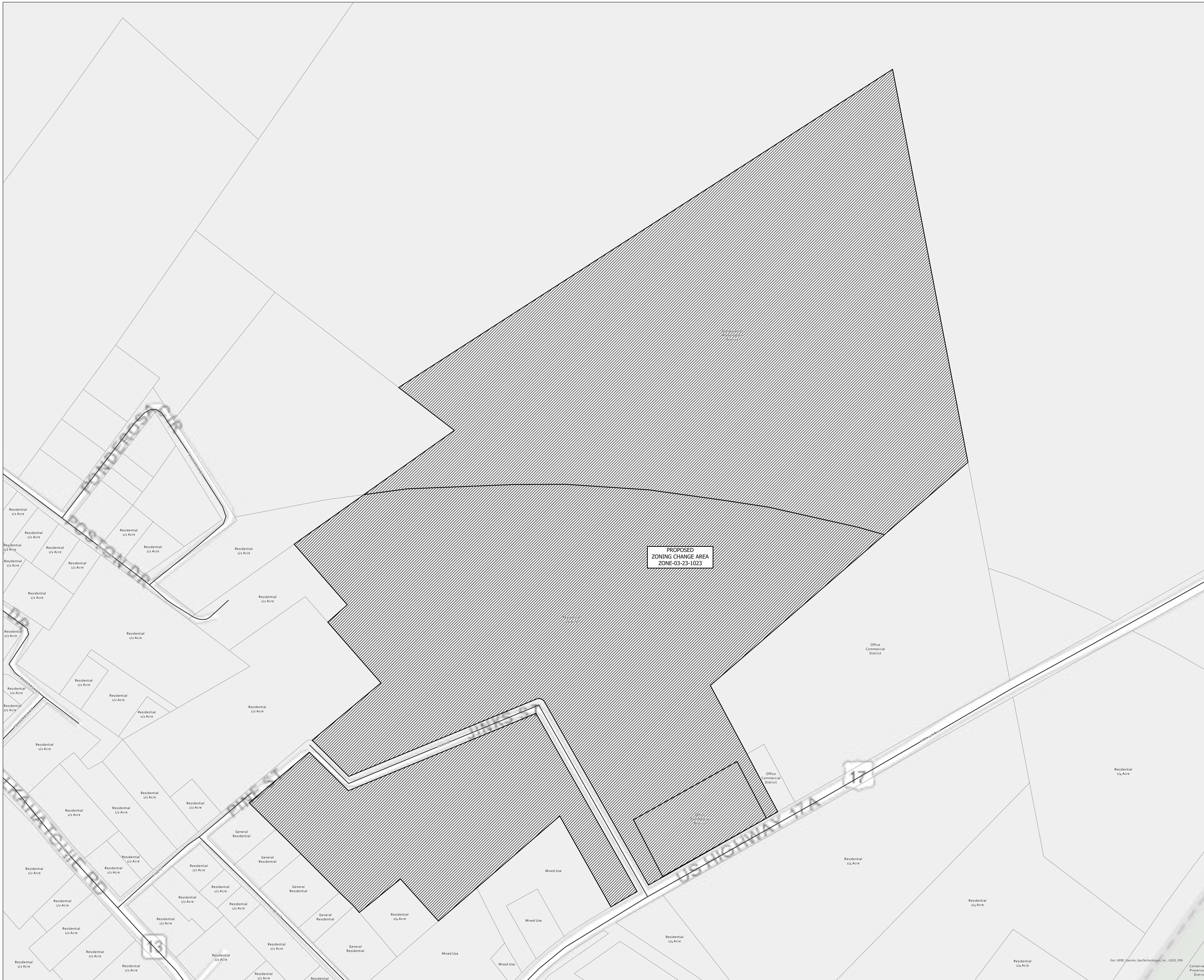
TOWN OF YEMASSEE
PLANNED UNIT DEVELOPMENT (PUD) MASTER PLAN
APPLICATION PROCESS NARRATIVE

The following Process Narrative is intended to provide Applicants with an understanding of the respective application process, procedures and Development Standards Ordinance (DSO) requirements for obtaining application approval in the Town of Yemassee. While intended to explain the process, it is not intended to repeal, eliminate or otherwise limit any requirements, regulations or provisions of the Town of Yemassee's Development Standards Ordinance. Compliance with these procedures will minimize delays and assure expeditious application review.

Step 1. Approved PUD Concept Plan	**Applicant & Staff**
Prior to the filing of a Planned Unit Development (PUD) Master Plan Application, the Applicant is required to have received approval of a PUD Concept Plan by the Planning Commission and Town Council.	
Step 2. Application Check-In Meeting	**Applicant & Staff**
Upon receiving input from Staff after the Concept Plan application, the Applicant shall submit the PUD Master Plan Application and required submittal materials to the Zoning Administrator.	
Step 3. Review by Zoning Administrator & Planning Commission	**Staff**
If the Zoning Administrator determines that the PUD Master Plan Application is complete, it shall be forwarded to the Planning Commission. The Commission shall review the application and prepare written comments for review with the Applicant.	
Step 4. Planning Commission Meeting (Initial Presentation)	**Applicant & Staff**
A public meeting shall be held with the Applicant to the review the Staff Report and discuss the application. The Applicant will be directed to address any comments, if any, and resubmit the application materials. If applicable, upon resubmittal, the application materials will be reviewed for compliance with the Staff Report and, if all comments are addressed, the application is placed on the next available Planning Commission (PC) Meeting agenda for a Public Hearing	
Step 5. Planning Commission Meeting (Public Hearing)	**Applicant, Staff & Planning Commission**
The PC shall review the PUD Master Plan Application for compliance with the criteria and provisions in the DSO. The PC may approve, approve with conditions, or deny the application.	
Step 6. PUD Master Plan Approval	**Staff**
If the Planning Commission approves the PUD Master Plan Application, the Zoning Administrator shall issue an approval letter to the Applicant.	
Step 7. Invitation to submit Development Plan Application	**Staff**
After the application is approved by the Planning Commission, the applicant will be provided with a Development Plan Application.	



0 180 360 720
FEET
PROPOSED ZONING CHANGE AREA
ZONE-03-23-1023
Residential 1/4 Acre
Office Commercial District
Office Commercial District
Office Commercial District
Residential 1/4 Acre
Residential 1/4 Acre
Residential 1/4 Acre
Residential 1/4 Acre
Residential 1/4 Acre
Residential 1/4 Acre
Mixed Use
Mixed Use
Mixed Use
Mixed Use
General Residential
General Residential
General Residential
General Residential
Residential 1/2 Acre
PONDEROSA CIR
POSTON DR
PONDEROSA DR
PONDEROSA DR
SALKAHATCHIE RD
PINE ST
LACEY ST
JINKS ST
HWY 17A & 21
Conservation Preservation District
N



Town of
Yemassee
South Carolina
The focal point of the four counties

ZONING DEPARTMENT

PROPOSED ZONING CHANGE AREA

LEGEND
ROADS
YEMASSEE ZONING
ZONING DESCRIPTION
GENERAL RESIDENTIAL
MIXED USE
OFFICE COMMERCIAL DISTRICT
RESIDENTIAL 1/4 ACRE
RESIDENTIAL 1/2 ACRE
CONSERVATION PRESERVATION DISTRICT
PARCELS
PARCELS
HYDROLOGY
LAKE/POND
RESERVOIR
STREAM/RIVER
COUNTIES
PARCELS
PARCELS
PROPOSED ZONING CHANGE HAMPTON

DATE CREATED: 3/14/2023

DATE UPDATED: 3/14/2023

PREPARED BY: SPATIAL ENGINEERING, INC.

CARTOGRAPHY BY: GOVI HINES, GISP

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MILES

N

THE TOWN OF YEMASSEE, SOUTH CAROLINA ESTABLISHED 1904

PLANNED UNIT DEVELOPMENT
AND
INITIAL MASTER PLAN

FOR

PINE STREET

Town of Yemassee, South Carolina

FOR

RAMSEY DEVELOPMENT

BY

WITMER - JONES – KEEFER, LTD.
23 PROMENADE STREET, SUITE 201

DRAFT
February 28, 2023

PLANNED UNIT DEVELOPMENT
AND
INITIAL MASTER PLAN
PINE STREET

TABLE OF CONTENTS

LIST OF APPENDICES

PINE STREET
PLANNED UNIT DEVELOPMENT
MASTER PLAN

SECTION I – SITE DEVELOPMENT

A. THE PROPERTY

The Pine Street Planned Unit Development (PUD) is located in Yemassee, South Carolina with frontage on Highway 21 / US 17. The tract is located approximately 1 mile north of the Yemassee Hwy and is approximately 104.45 acres. A site location map is provided in Appendix A.

The Pine Street Tract is currently owned by Iron Line Metals ("Owner"), its successors or assigns. The Owner proposes that this property be zoned and developed as a PUD in accordance with the Town of Yemassee Zoning Ordinance (ZO) in effect at the time of submittal to Town of Yemassee. The PUD designation will be utilized to encourage unified planning and development, promote economical and efficient land use, foster a harmonious variety of uses, encourage creative design, and produce a better environment.

The Pine Street Tract (TM# 204-01-05-046, 204-01-05-005, 204-01-05-005, 204-01-05-013); is currently vacant undeveloped land. The property has approximately 700 linear feet frontage on Highway 17/21 to the south and has access from Pine Street to the North. Jinks Road bisects the property connection Highway 17 to Pines street and Old Salkehatchie Highway A site survey is included as Appendix B. See section I.C. and Appendix H for detail related to the Master Plan.

The property encompasses approximately 104.45 acres which consist of +/-66.95 acres non-jurisdictional freshwater wetlands, and 37.5 acres of upland. The property does not contain any saltwater marsh critical areas and has no frontage on critical areas. The U.S. Army Corps of Engineers (USACE) wetland verification are pending. Appendix C. Preliminary soil data has been evaluated using available on site soil data and USDA soils information. The soils are expected to be acceptable and suitable for the proposed site development. USDA soils data is included as Appendix D.

The **2.5** acres of Pine Street fronting Highway 17/21 is currently zoned ***Office Commercial District;*** the additional **55.64** acres located in the Town of Yemassee is currently zoned ***Single Family Residential ¼ acre District***; and remaining **46.31** acres located in Hampton County is zoned Rural Development. The adjacent land uses to the north is Hampton County Rural Development; to the west are residential properties and Light industrial zoning; and residential property to the east. Pine Street will be developed in 2-3 phases over an approximately 5 year period. An aerial overlay map of the PUD and surrounding area is included as Appendix E.

Based on a review of the USGS Jasper quadrangle map and preliminary site surveys, site elevations range from approximately 8-38 feet above mean sea level. A portion of the Topo survey is included as Appendix B. The site is currently forested and drainage flows north-east towards the existing wetland A.

Based on a review of FEMA Maps, all of the PUD property occurs outside of a designated flood zone areas A portion of FEMA Map is included as Appendix G.

B. PLANNED UNIT DEVELOPMENT(PUD)

The PUD overlay zone was adopted by the Town of Yemassee Council to *'encourage flexibility in land planning that will result in improved design, character, and quality of new homogenous and mixed use developments; to promote the most appropriate use of land ; to facilitate the provision of streets and utilities; and to preserve the natural and scenic features and open space.'*

C. MASTER PLAN

Pine Street is an approximately 104.45 acre tract of land located in Town of Yemassee, South Carolina. It is anticipated that the property will be developed over a period of 5 years, in accordance with the Master Plan set forth in this document or amended in the future. The Master Plan sets forth the general scope of the development including number of units, phasing, development standards, open space and other issues. In addition to the Master Plan, development of the property is controlled by other provisions of the PUD. The Master Plan included in Appendix H.

The goal of the development is to provide quality economic development and housing opportunities within the Town of Yemassee. PUD designation is necessary to accommodate the mix of land uses and provide for the responsible planning and development of the property over time.

The Pine Street Master Plan, prepared by Witmer-Jones-Keefer, shows a general access locations and areas designated for Light Industrial and Residential Development. Proposed land uses in the Light Industrial and Residential development areas are detailed under Section 2 - Land Use Designation and Definitions.

The Pine Street PUD property is a 104.45 acre property with 11.48 acres Light Industrial Tract '1'; 46.5 acre Residential Tract '2-3' and 46.31 acres Wetland preservation Tract 4.

Appropriate buffers shall be provided between incompatible land uses. Buffer widths shall meet the required of the latest adopted version of the Town of Yemassee Zoning Ordinance (ZO).

Development is planned to occur in accordance with the Development Schedule presented in Appendix I which is preliminary and subject to change based on market conditions.

The proposed Master Plan will maintain open space requirements per Town of Yemassee zoning ordinance. The open space and amenities will be owned and maintained in the manner approved with appropriate covenants and restrictions by the developer, homeowner's association, or other legally designated entity. Property deeded to a governmental entity becomes the maintenance responsibility of that entity.

Activities along any external property lines of the PUD shall conform to the setback, buffer, screening as described in Section II.D.3 of the PUD. Height requirements shall conform to the latest adopted version of the Town of Yemassee Zoning Ordinance (ZO)

The Master Plan constitute a request for a waiver from the current Town of Yemassee ZO . However, activities in the PUD shall conform to all other Town of Yemassee Ordinances and Regulations where differences do not occur.
The provisions of the Master Plan shall apply to development in the Pine Street PUD. In the event of a conflict, the hierarchy of documents is the following: 1) PUD and Master Plan; 2) Town of Yemassee ZO and LDR in effect at the time of Final Adoption of the Pine Street PUD.

The attached **Initial Master Plan** provides additional detail related to street network, Open spaces, storm water management and conceptual utility layout. The Master Plan is consistent with the vision for the Pine Street PUD.

D. ENVIRONMENTAL PROTECTION

Environmental protection is a priority for the Applicant. As part of the development process, Pine Street developers will meet or exceed the stormwater management requirements of the Town of Yemassee ZO /Stormwater Regulations and the South Carolina Department of Health's Office of Ocean and Coastal Resource Management (OCRM).

Pine Street developers will prepare stormwater management plans for the tracts of land as they are developed. The plan will address the hydrological characteristics of the site as well as predevelopment conditions and post-development stormwater management facilities for flood control and sediment reduction.

Freshwater wetlands on the property are typical of the South Carolina Lowcountry. Approximately 66.95 percent of the site is non-jurisdictional freshwater wetlands. A plat indicating the freshwater wetlands on the property is included in Appendix C.

On-site wetland impacts resulting from the development of the Pine Street PUD will be permitted jointly through the USACE and OCRM. All impact mitigation will be accomplished through a combination of buffers and preservation of jurisdictional wetlands located on the property and will meet or exceed state and/or federal standards.

E. CULTURAL AND HISTORICAL RESOURCES

As part of the comprehensive study of the property, a preliminary assessment of the cultural and historical resources on the site will be prepared prior to submittal of a development plan for each of the tracts. As part of Master Plan Approval and prior to final design, the South Carolina Department of Archives and History will be contacted by the Owner to request a review of the Department's cultural resource inventory database. The Owner will follow the direction and procedures of the Department of Archives and History as appropriate and if necessary, will address all cultural resource issues with the State Historic Preservation Office. A final determination will be provided as part of Master Plan Approval.

F. WATER AND SEWER SERVICE

Water and sewer service will be provided to Pine Street by Town of Yemassee Water and Sewer Department (YW&S). Detailed planning for the water and sewer systems will commence at the time of PUD approval by Town of Yemassee. The Owner will coordinate Water and Sewer service with YW&S. YW&S will operate and maintain the water and sewer systems within their service area upon completion by the developer and acceptance by the Authority.

G. UTILITY SERVICE

Pine Street is within the service territory of Dominion Energy for electrical power. The Owner will coordinate with Dominion Energy regarding planning for the PUD.

Palmetto Rural Telephone Cooperative is able to provide telephone service to Pine Street. The Owner will coordinate with Palmetto Rural Telephone Cooperative regarding planning for the PUD.

Other utility services may be provided by legally established entities at the discretion of the Owner, provided such are in accordance with applicable franchising ordinances and licensing requirements of Town of Yemassee. See appendix J for Utility intent to serve letters.

H. ROADWAYS AND TRAFFIC

Pine Street has frontage on SC Highway 17/21 to the south and access to Jinks Road to the north. Establishing safe and reasonable ingress and egress for the property is a priority for the Owner, South Carolina Department of Transportation (SCDOT), and Town of Yemassee. Full access shall be defined as access which allows any and all possible vehicular traffic movements into and out of the development. Limited access shall be defined as access which limits the movement of traffic into and out of a development (i.e., right-in, right-out). Any proposed roadway improvements shall be subject to approval by Town of Yemassee and, where appropriate, the SCDOT.

The Master Plan provides locations for potential internal access points for future interconnectivity.

As part of the access management plan for the project, the Owner will work with SCDOT and Town of Yemassee to obtain two access points from Highway 17/21; one access off Pine Street and one possible access point off Lacey Street. All proposed access points will be consistent with the Town of Yemassee and SCDOT Highway Management Access Plans and design criteria. These accesses may be relocated to accommodate traffic patterns, site specific characteristics and adjacent land uses as part of the access management plan.

Roads indicated on the Master Plan are subject to modification at the time of Development Plan approval based upon specific soil conditions, environmental concerns, physical constraints and design parameters.

The access point locations described above and shown on the Master Plan are preliminary and may be relocated during final development plans. Planning, design and construction of these accesses as well as all roadways and transportation elements shall be in accordance with SCDOT standards, Town of Yemassee Ordinances, PUD standards, or other engineering standards reasonably acceptable to the County engineer. Typical roadway sections will be submitted for review at the Development Plan approval stage.

Potential access across the jurisdictional wetlands surrounding adjacent tracts may be allowed if approved by OCRM and the USACE. Road linkages to adjacent properties may include impacts to jurisdictional wetlands.

Notwithstanding other provisions of this document and subject to approval by Town of Yemassee, roadway design standards may be modified to reduce environmental impacts and increase tree preservation provided safety concerns are not compromised. Protection and preservation of significant trees will be encouraged. Reductions of roadway and right-of-way widths may not occur unless specifically authorized by the County.

A traffic impact analysis (TIA) is included as exhibit K. The TIA indicated the following : *The results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable level of service with the proposed Pine Street Residential development.*

Per the criteria documented in Section 5D-4 of SCDOT's Access and Roadside Management Standards (ARMS, 2008), exclusive turn lanes are not recommended at any of the study intersections or project driveways.

I. PARKING

The total number of required parking spaces for all land uses allowed herein shall conform to the Town of Yemassee ZO in effect at the time of Final Adoption of the Pine Street PUD. Modulation of those standards may be allowed provided the applicant furnishes actual documentation that the new proposed standard meets the parking needs of the proposed land use and the Town agrees at Master Plan approval.

J. STORMWATER MANAGEMENT

Pine Street PUD shall conform to the Town of Yemassee ZO and Stormwater Management Ordinance in effect at the time of Master Plan approval for the Pine Street PUD as well as all other applicable state and federal requirements. Sufficient stormwater best management practices will be employed in the development of the PUD to ensure runoff leaving the site does not degrade water quality within surrounding wetlands and the receiving waterways. The Stormwater Master Plan is included with appendix L.

SECTION II – LAND USE

A. INTRODUCTION AND NARRATIVE

The Pine Street PUD has a total area of 104.45 acres, including 65.92 acres of non-jurisdictional freshwater wetlands, as indicated on the Master Plan.

The Master Plan consists of the following land use areas:

List types of proposed uses:

Approximately 11.48 upland acres are intended for Light Industrial use, approximately 46.51 upland acres are intended for residential uses and 46.31 upland acres are intended for wetland preservation, community open space use and stormwater management.

The Light Industrial includes warehouse / production space and future expansion space. (Including Manufacture light gauge steel framing products including steel studs for residential and commercial buildings).

Of the residential units, initial plans include single family homes.

The land use areas indicated on the Master Plan are not intended to be rigid exact boundary lines for future land use and improvements. The Master Plan for the Pine Street PUD shall maintain flexibility to accommodate specific soil conditions, environmental conditions, pedestrian friendly requirements, physical constraints, market conditions and design parameters and as such, the exact location of boundary lines between land uses and their subsequent location and size indicated within the planning area shall be subject to change at the time Development Permit Plan(s) are submitted for development; provided, however, that maximum densities and other conditions of this PUD between the Owner and Town of Yemassee, South Carolina, will be strictly adhered to, unless adjustment is requested by the Owner and approved by the Town of Yemassee. The boundaries of the PUD may be modified to include adjacent acreage subject to the approval of Town of Yemassee by appropriate petition/application to the County to amend the PUD.

B. ALLOWED LAND USES

The following land uses shall be permitted in the Pine Street PUD. The purpose of this portion of the PUD document is to state which land uses shall be allowed within the Pine Street PUD; however, by allowing these uses this does not obligate the developer to provide the uses or facilities stated herein.

The following land uses and definitions shall be permitted in the Pine Street PUD:

List types of proposed uses:

Tract 1 : Light Industrial (+/-11.48 acres)

Tract 2-3: SFR ¼ Acre District (+/-46.5 acres)

Tract 4: Wetland Preservation (+/- 46.31 acres)

Any easement that occurs within the property shall have the same land uses as any of the adjacent land uses. Any restrictions shall be based on the legal definition of the easement.

Design Regulations and Performance Standards will be established for each area at the time of the Master Plan approval. Unless otherwise agreed at Master Plan approval or in this PUD, the standard for uses and design criteria from the Town of Yemassee ZO will apply.

C. ALLOWED DENSITY

Of the approximately 104.45 upland acres, the Master Plan for the Pine Street PUD consists of approximately 11.48 acres of Light Industrial and approximately 46.5 acres of Residential uses. The Master Plan may be modified at Master Plan approval, taking into consideration the potential need to change the exact locations of the proposed use(s) in order to address traffic considerations and in response to market conditions.

The overall Commercial use density within Tract 1 for the PUD shall not exceed total build-out cap of 200,000 square feet of light industrial or commercial space.

The Pine Street PUD is planned to include a maximum of 107 residential units, which is based on a unit density of 4 units/upland acre for Parcels 2 and 3. Overall residential density shall include both Attached and Detached Single-Family Residential. Detached guesthouses, “Mother-in-Law” Apartments, and Garage Apartments (for rent or not) on the same lot with a single family unit will be allowed as one structure per lot. *The Initial Master Plan is included as appendix H.*

D. DEFINITIONS OF LAND USE TERMS AND DENSITY TERMS

In the absence of a term definition in this Master Plan, the definitions of the Town of Yemassee Zoning Ordinance shall apply in the interpretation of this Master Plan. The definitions below shall generally describe the allowed uses within the PUD.

1. Tract 1 – Light Industrial District (LID)

    5.8.1 The purpose of this District is to provide a suitable environment for and enhancing the locational flexibility of uses generally classified as research and development, assembly, high technology production, precision manufacturing, and light industry by excluding heavy manufacturing and permitting only those cleaner industries and operations which tend to be less objectionable to the community; and by requiring high performance standards and

    Permitted Uses as outlined in the Town of Yemassee Zoning Ordinance section 5.8.1

2. Tract 2-3 – Single-Family Residential 1/4 Acre [SF]

    5.4 Single-Family Residential District 1/4 Acre is designed to provide for, homogeneous residential purposes. The intent of the District is to provide areas primarily for single-family detached dwellings, and to discourage any encroachment by uses which may be incompatible with such residential use.
    Permitted Uses as outlined in the Town of Yemassee Zoning Ordinance section 5.4.1

3. Setbacks and Buffers

    Setbacks and buffers required by the zoning district shall apply according to the Zoning Ordinance if and when necessary. All other buffers and setbacks shall be maintained as described below:

    a. Setbacks and buffer standards within the Pine Street PUD shall include:

        1. Minimum buffer strips of ten (10) feet shall be maintained along all external dimensions of a PUD.

        2. Buffer strips shall be in addition to the required external setback. In effect there shall be a minimum thirty (30) feet of total setbacks with the required buffer.

3. No development, parking areas, structures, or accessory buildings, except the required fence and vegetation, shall be placed in the buffer area. Buffer strips shall include vegetative cover and be maintained regularly. In addition, no development, parking areas, structures, or accessory buildings shall be placed in the setback areas.

4. The buffer shall include a vegetative screen of evergreen trees and/or shrubs that will reach six (6) feet in height within twelve (12) months of installation and form a contiguous screen within two (2) years of installation.

5. The Town of Yemassee reserves the right, if it finds substantial needs for screening of the proposed PUD activity, to include within the buffer a six (6) foot high fence made of either brick, finished concrete, mortar, wood, stone, masonry units, or a combination of the above. The fence shall be fronted by the required vegetative screen.

6. The frontline of the required side yard buffer shall begin where the private property line and the public right-of-way intersect and extend to the rear lot line. The required vegetative screen and the fence, if required, shall begin twenty (20) feet from where the private property line and the public right-of-way intersect and extend to the rear lot line.

7. Required rear yard buffer strips and the fence, if required, shall extend the entire length of the rear lot line.

8. See HCOD standards 5.17.8B (Town of Yemassee Zoning ordinance) for Buffer Requirements along the Highway 17 corridor.

4. Signage Control

Signage for the Pine Street PUD shall be governed by the Town of Yemassee ZO in effect at the time of the submission of final development plans or as herein contained.

5. Wetlands

This designation allows the following uses within wetlands. Freshwater wetlands on the property shall be those areas over which the applicable governmental agencies claim jurisdiction for freshwater wetlands. Unless restricted via a future Memorandum of Agreement (MOA) to the contrary, the following are permitted uses:

a. Buffers

b. Conservation areas
c. Activities in all wetland areas as permitted by the USACE and OCRM
d. Disposal of reclaimed water as permitted by SCDHEC
e. Stormwater management and recreational lakes
f. Boardwalks, trails, bridges and other permitted structures
g. Game Management

6. Utilities

This designation allows for utility service to serve the planned tracts of the Pine Street PUD. Utility types and facilities not germane to the development will be subject to review by the Planning Commission as part of the Master Plan review process. The following land uses shall be allowed:

a. Potable water supply and distribution
b. Wastewater collection, treatment and disposal
c. Stormwater collection, treatment and detention
d. Irrigation
e. Communication towers (except in residential land use areas)
f. Satellite antennas
g. Cable television facilities
h. Telephone facilities
i. Power transmission and distribution
j. Fiber optic lines
k. Other utility services (i.e., Internet access and other telecommunication uses)

Certain community-wide infrastructure is required for the development of any large, master-planned community. This infrastructure may include, but is not limited to the following:

a. Arterial streets and primary access roads
b. Water supply
c. Wastewater treatment and effluent disposal
d. Power substations
e. Central telephone facilities
f. Stormwater management lagoons
g. Natural gas supply

In the case of this Master Plan, the community-wide infrastructure may serve more than one planning tract. Infrastructure serving the community (on-site and off-site) will be approved as part of the Master Plan approval process. Infrastructure projects must receive a Town of Yemassee Development Permit prior to construction.

SECTION III – CHANGES AND EXEMPTIONS

The Planned Unit Development constitute a request for a waiver from the current Town of Yemessee Zoning Ordinance where differences occur. However, activities in the PUD shall conform to all other Town of Yemessee Ordinances and Regulations where differences do not occur. The PUD may introduce land uses that do not exist in the current Zoning Ordinance. Based on the PUD, Pine Street requests deviations from the Zoning Ordinance.

The provisions of the PUD shall apply to development in the Pine Street PUD. In the event of a conflict, the hierarchy of documents is the following: 1) PUD; 2) Town of Yemessee Zoning Ordinance in effect at the time of Final Adoption of the Pine Street PUD.

The following clarifications or modifications to otherwise applicable standards of the Yemessee Zoning Ordinance are hereby made applicable to the Pine Street PUD:

Modification 1:

Section 5.8

Light Industrial District [LID]

A. All permitted and conditional uses in the Regional Commercial District subject to the same conditions apply in the District;

Add

20. Manufacture light gauge steel framing products including steel studs for residential and commercial buildings.

Modification 2:

5.8.5 General Requirements.

A. Minimum lot size is ~~twenty-five (25)~~ **ten (10)** acres.

C. Industrial uses shall be setback a minimum of ~~fifty (50)~~ **twenty five (25)** feet from any commercial use; ~~one hundred (100)~~ **seventy five (75)** feet from a major thoroughfare; and fifty (50) feet from another industrial use.

Modification 3:

Section 5.4 Single-Family Residential 1/4 Acre [SF]

5.4.1 Standards for the SF District

Maximum density: ~~Three~~ Four (4) dwelling units per acre.

Minimum lot size: ~~10,890~~ 6000 square feet per dwelling unit.

Minimum front yard setback: ~~Fifteen (15)~~ **Ten (10)** feet from the street right-of-way line.

Minimum side yard setbacks: ~~Ten (10)~~ **Five (5)** feet from lot lines.

Modification 4:

Section 5.17 Highway Corridor Overlay District [HCOD]

5.17.5 A minimum distance of ~~one thousand five hundred (1,500)~~ **four hundred (400) feet** shall be maintained between all access points onto the corridor, including private driveways, roads, and public right-of-way. Spacing will be measured from the midpoint of each driveway. If the existence of jurisdictional wetlands precludes compliance with this provision, the Planning Commission shall have discretion as to the placing of an alternative access point; however, no additional curb cuts on the subject parcel should result from having the alternative access point.

5.17.6 D. The minimum lot width at the building setback line for newly created parcels shall be a distance of one hundred fifty (150) feet. Newly created parcels are subject to the ~~one thousand five hundred (1,500~~) **four hundred (400) foot** distance requirement between access points from the highway.

5.17.7 In addition to the existing standards of the Town of Yemassee Zoning Ordinances regarding subdivisions, the following requirements pertain to the HCOD:

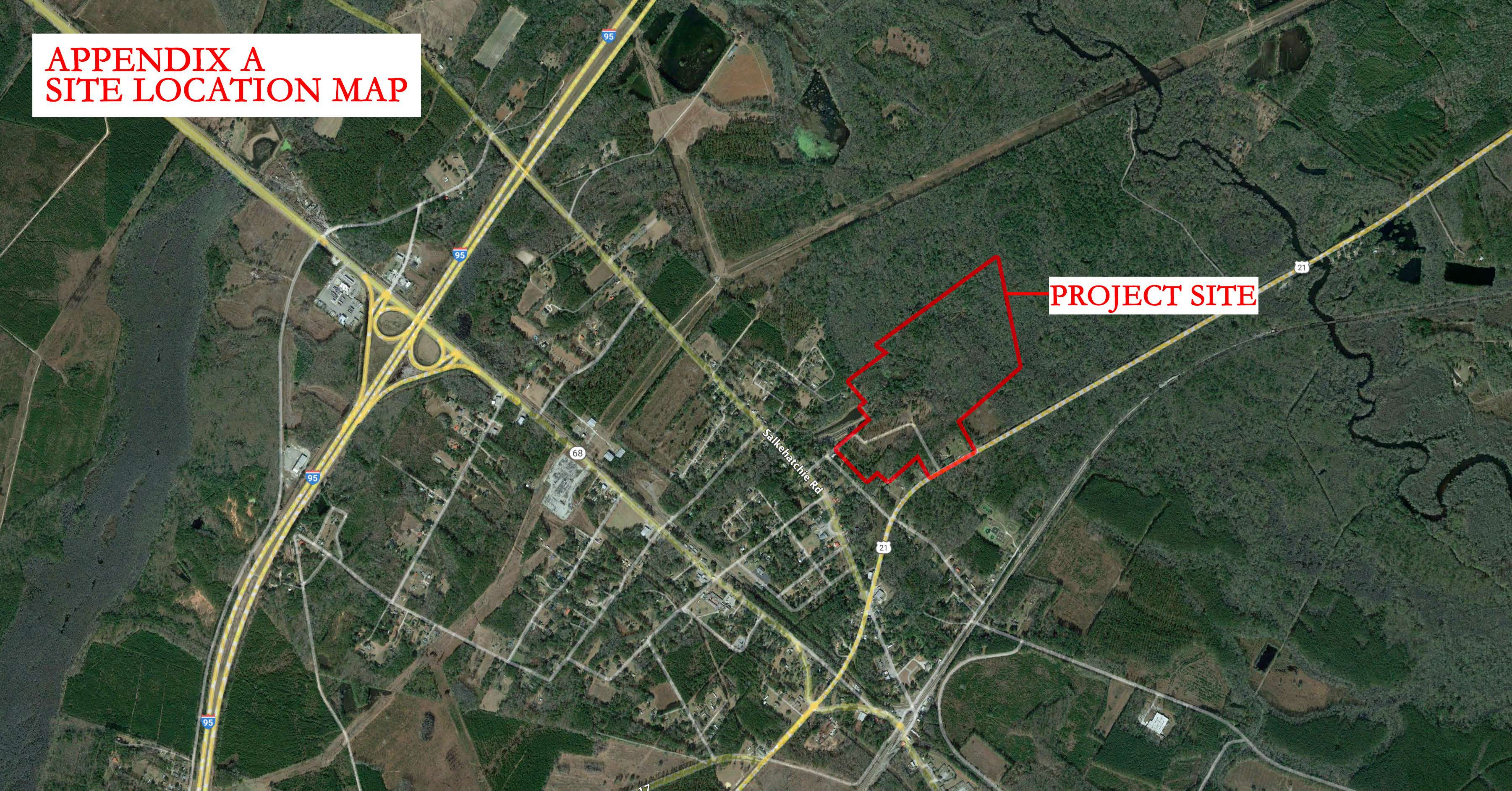
A. Newly created subdivisions are subject to the ~~one thousand five hundred (1,500)~~ **four hundred (400) foot** distance requirement between access points from the highway;
B. No subdivision of land which would create parcels fronting on the highway shall be approved unless it is established prior to subdivision approval how access will be provided to each parcel in compliance with the ~~one thousand five hundred (1,500)~~ **four hundred (400)** distance requirement, (i.e., frontage roads, shared access drives, and others);

**Draft format for review ; additional clarifications and modfications to be included with final approval documents based on feed back from Planning Commission, Town Council, Town Staff and the Applicant.*

APPENDIX A

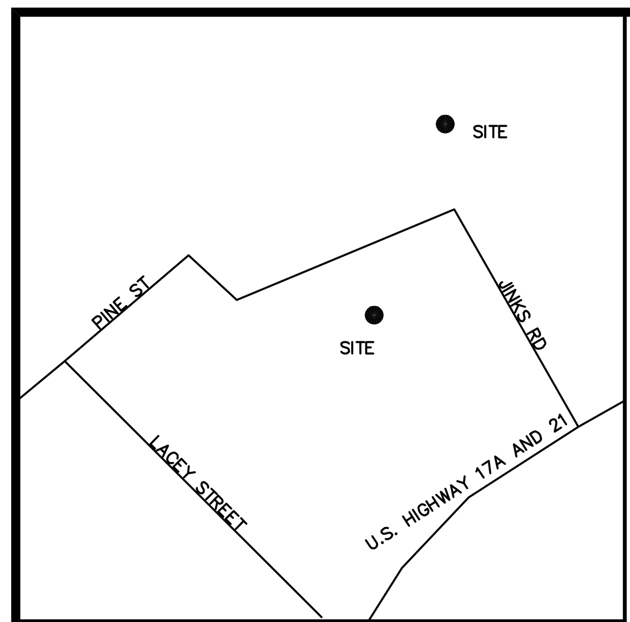
SITE LOCATION MAP

APPENDIX A
SITE LOCATION MAP



APPENDIX B

SITE SURVEY



LOCATION MAP

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THE VERTICAL DATUM FOR FLOOD ZONE INFORMATION AND TOPOGRAPHY IS NAVD 1988 AND WAS DETERMINED USING THE SC VRS NETWORK.

ZONING AND SETBACKS WERE NOT DETERMINED AT THIS TIME

AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40

LINE	BEARING	DISTANCE
L1	S 54°02'11" W	119.41'
L2	N 38°18'44" W	245.26'
L3	S 54°42'38" E	194.73'
L4	N 43°12'39" W	208.73'
L5	S 50°45'40" W	183.01'
L6	S 60°26'56" W	50.00'
L7	S 60°26'56" W	113.82'
L8	N 48°49'06" E	209.73'
L9	N 40°27'17" W	46.59'
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L21	N 59°36'32" E	50.25'
L22	N 29°20'15" W	146.49'
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WETLANDS AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	1,186.4	7,907	0.18
Ditch C	1,682.5	9,786	0.22
Ditch D	1,499.7	11,460.52	0.26
Ditch E	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
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Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
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E	1.00	43,567	0.11	0.03
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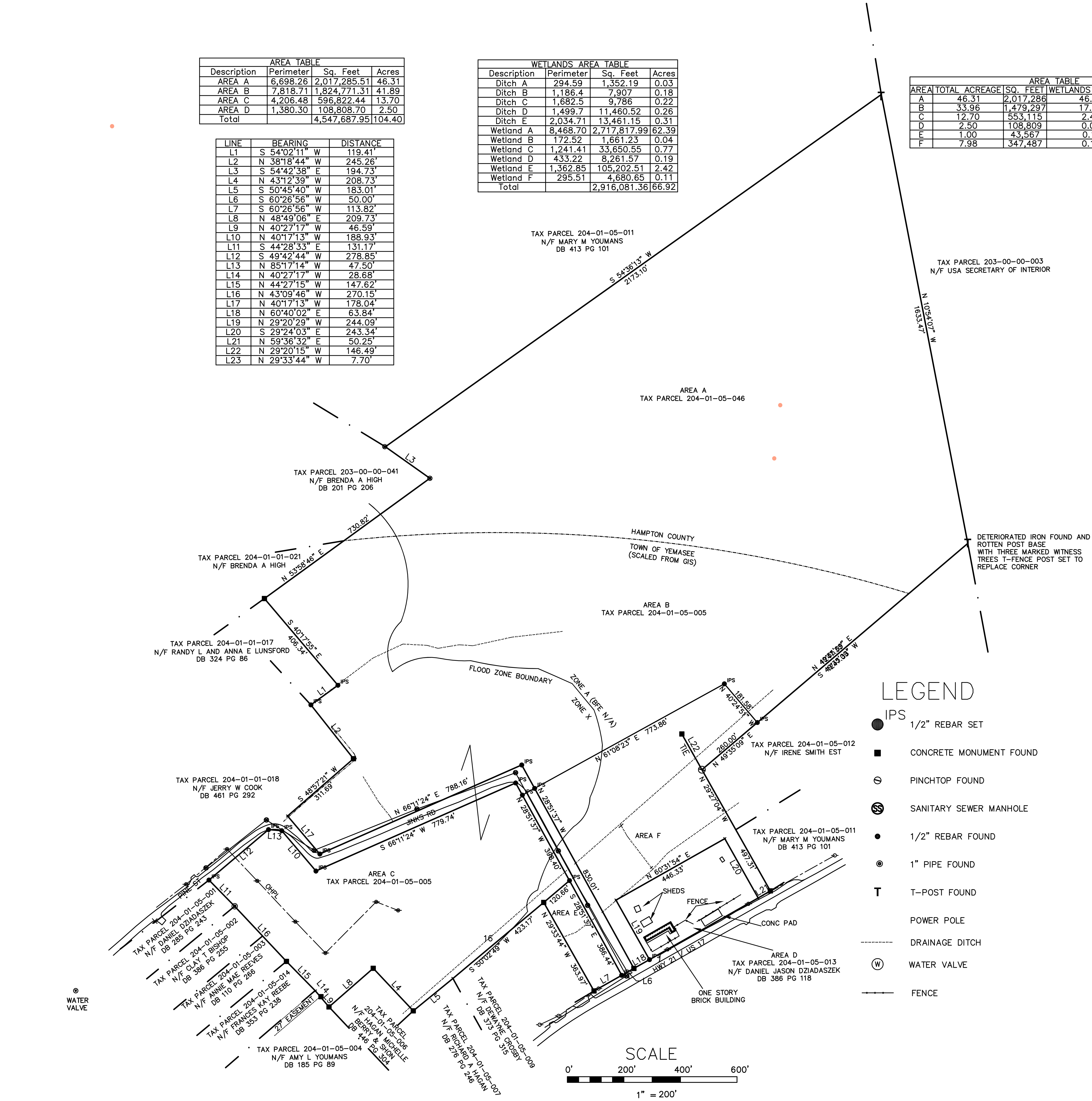
LAND CONSULTING GROUP, LLC
Land Consulting Group, LLC
BEAUFORT



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COMMUNITY NAME: HAMPTON CO. UN INCORP./TOWN OF YEMASSEE
COMMUNITY #: 450095 / 450103
MAP #: 45049C0450C
PANEL #: 450 OF 550
PANEL DATE: SEPTEMBER 29, 2010
INDEX DATE: SEPTEMBER 29, 2010

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SOUTH CAROLINA
PROFESSIONAL LAND SURVEYOR
LORICK V. FANNING
PLS# 19882

SOUTH CAROLINA
LAND CONSULTING GROUP, LLC
No. C02082
CERTIFICATE OF AUTHORIZATION

LORICK V. FANNING, PLS 19882

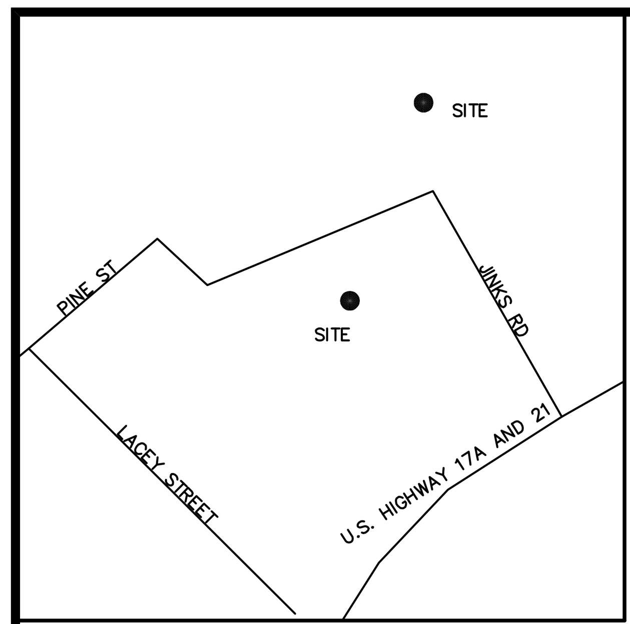
BOUNDARY SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
PB 21 PG 417 PB 3 PG 127 DB 484 PG 261
PB 32 PG 4 PB 14 PG 64
PB 5 PG 96 PB 3 PG 157

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206



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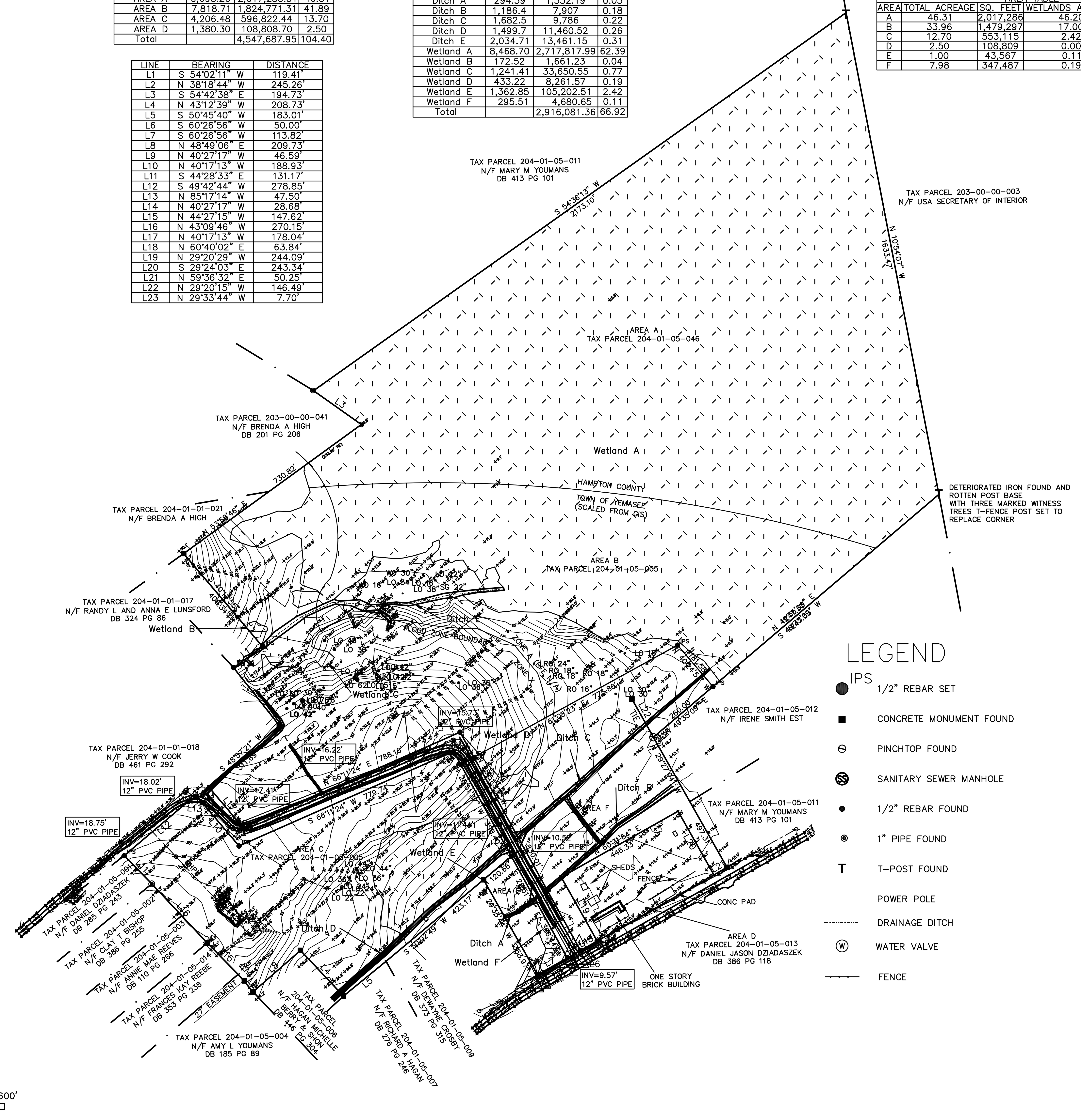

LEGEND

IPS 1/2" REBAR SET

CONCRETE MONUMENT FOUND

PINCHTOP FOUND

SANITARY SEWER MANHOLE

1/2" REBAR FOUND

1" PIPE FOUND

T-POST FOUND

POWER POLE

DRAINAGE DITCH

WATER VALVE

FENCE

TREE LEGEND		
DESCRIPTION	COMMONNAME	SCIENTIFICNAME
BG	BLACK GUM	*Nyssa sylvatica*
CE	RED CEDAR	*Juniperus virginiana*
CH	CHERRY	*Prunus spp*
DW	DOGWOOD	*Cornus florida*
GUM	SWEETGUM	*Liquidambar styraciflua*
HI	HICKORY	*Carya spp*
LO	LIVEOAK	*Quercus virginiana*
MA	MAPLE	*Acer spp*
MAG	MAGNOLIA	*Magnolia grandiflora*
MYRT	WAXMYRTLE	*Myrica cerifera*
O	OAK	*Quercus spp*
PA	PALMETTO	*Sabal palmetto*
PE	PECAN	*Carya illinoensis*
PN	PINE	*Pinus spp*
SUG	SUGARBERRY	*Nyssa sylvatica*
TA	TALLOW TREE	*Triadica Loureiro*

FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): A (BFE=NOT DETERMINED) AND X
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COMMUNITY #: 450095 / 450103
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PANEL DATE: SEPTEMBER 29, 2010
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NOT FOR RECORDING

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LORICK V. FANNING
PLS# 19882

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
LAND CONSULTING GROUP, LLC
No. C02082

LIMITED TREE AND TOPOGRAPHIC SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
PB 21 PG 417 PB 3 PG 127 DB 484 PG 261
PB 32 PG 4 PB 14 PG 64
PB 5 PG 96 PB 3 PG 157

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206

APPENDIX C

FRESHWATER WETLANDS DELINEATION

FLOOD ZONE DETERMINATION

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SOUTH CAROLINA
LORICK V. FANNING
PLS# 19882
PROFESSIONAL LAND SURVEYOR

SOUTH CAROLINA
LAND CONSULTING GROUP, LLC
No. C02082
CERTIFICATE OF AUTHORIZATION

LORICK V. FANNING, PLS 19882

WETLANDS SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT
SHEET 2 OF 2

JOB # 6024

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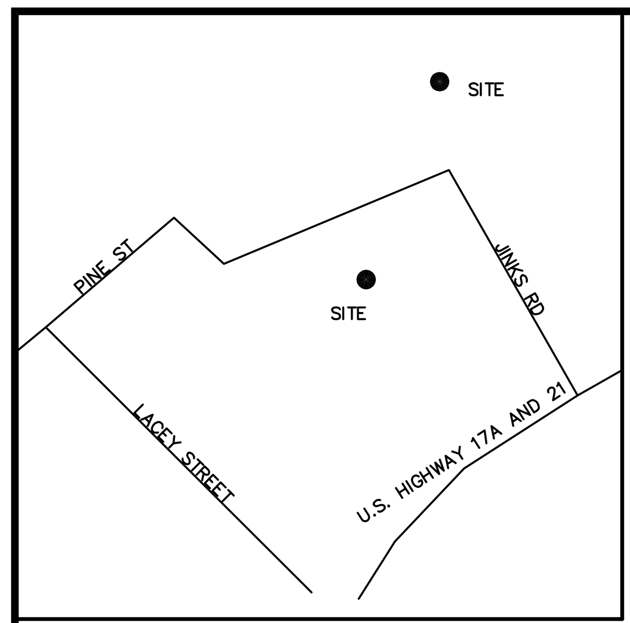
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206



LOCATION MAP

NOTES

THIS PLAT DOES NOT CERTIFY THAT THE INFORMATION SHOWN HEREON COMPLIES WITH LOCAL ZONING REGULATIONS. THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF OVERLAY DISTRICTS OR SPECIAL HAZARD AREAS SUCH AS BUT NOT LIMITED TO AIRPORT AND AICUZ ZONES.

THIS PLAT REPRESENTS CONDITIONS FOUND ON 4/1/2022 AND DOES NOT REPRESENT CONDITIONS FOUND ON ANY OTHER DATE.

THIS PLAT WAS SURVEYED BASED ON REFERENCED DOCUMENTS AND WAS NOT SURVEYED IN COORDINATION WITH A TITLE EXAMINATION. THE SURVEYOR DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF EASEMENTS.

THE AREA CALCULATIONS SHOWN HEREON WERE DETERMINED BY THE COORDINATE METHOD.

THE PRESENCE OR ABSENCE OF REGULATED NATURAL RESOURCES (SUCH AS, BUT NOT LIMITED TO, CRITICAL AREAS, FRESHWATER WETLANDS, SPECIMEN TREES, AND HISTORICALLY SIGNIFICANT SITES AND CULTURAL RESOURCES) WAS NOT DETERMINED AT THIS TIME OTHER THAN THOSE SHOWN HEREON AND ACCOMPANIED BY THE CERTIFICATION OR APPROVAL OF APPROPRIATE REGULATORY AGENCY.

THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF UNDERGROUND FEATURES, (INCLUDING, BUT NOT LIMITED TO UTILITIES, STORAGE TANKS, AND SIMILAR).

THE VERTICAL DATUM FOR FLOOD ZONE INFORMATION AND TOPOGRAPHY IS NAVD 1988 AND WAS DETERMINED USING THE SC VRS NETWORK.

ZONING AND SETBACKS WERE NOT DETERMINED AT THIS TIME

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40

LINE	BEARING	DISTANCE
L1	S 54°02'11" W	119.41'
L2	N 38°18'44" W	245.26'
L3	S 54°42'38" E	194.73'
L4	N 43°12'39" W	208.73'
L5	S 50°45'40" W	183.01'
L6	S 60°26'56" W	50.00'
L7	S 60°26'56" W	113.82'
L8	N 48°49'06" E	209.73'
L9	N 40°27'17" W	46.59'
L10	N 40°17'13" W	188.93'
L11	S 44°28'33" E	131.17'
L12	S 49°42'44" W	278.85'
L13	N 85°17'14" W	47.50'
L14	N 40°27'17" W	28.68'
L15	N 44°27'15" W	147.62'
L16	N 43°09'46" W	270.15'
L17	N 40°17'13" W	178.04'
L18	N 60°40'02" E	63.84'
L19	N 29°20'29" W	244.09'
L20	S 29°24'03" E	243.34'
L21	N 59°36'32" E	50.25'
L22	N 29°20'15" W	146.49'
L23	N 29°33'44" W	7.70'

WETLANDS AREA TABLE

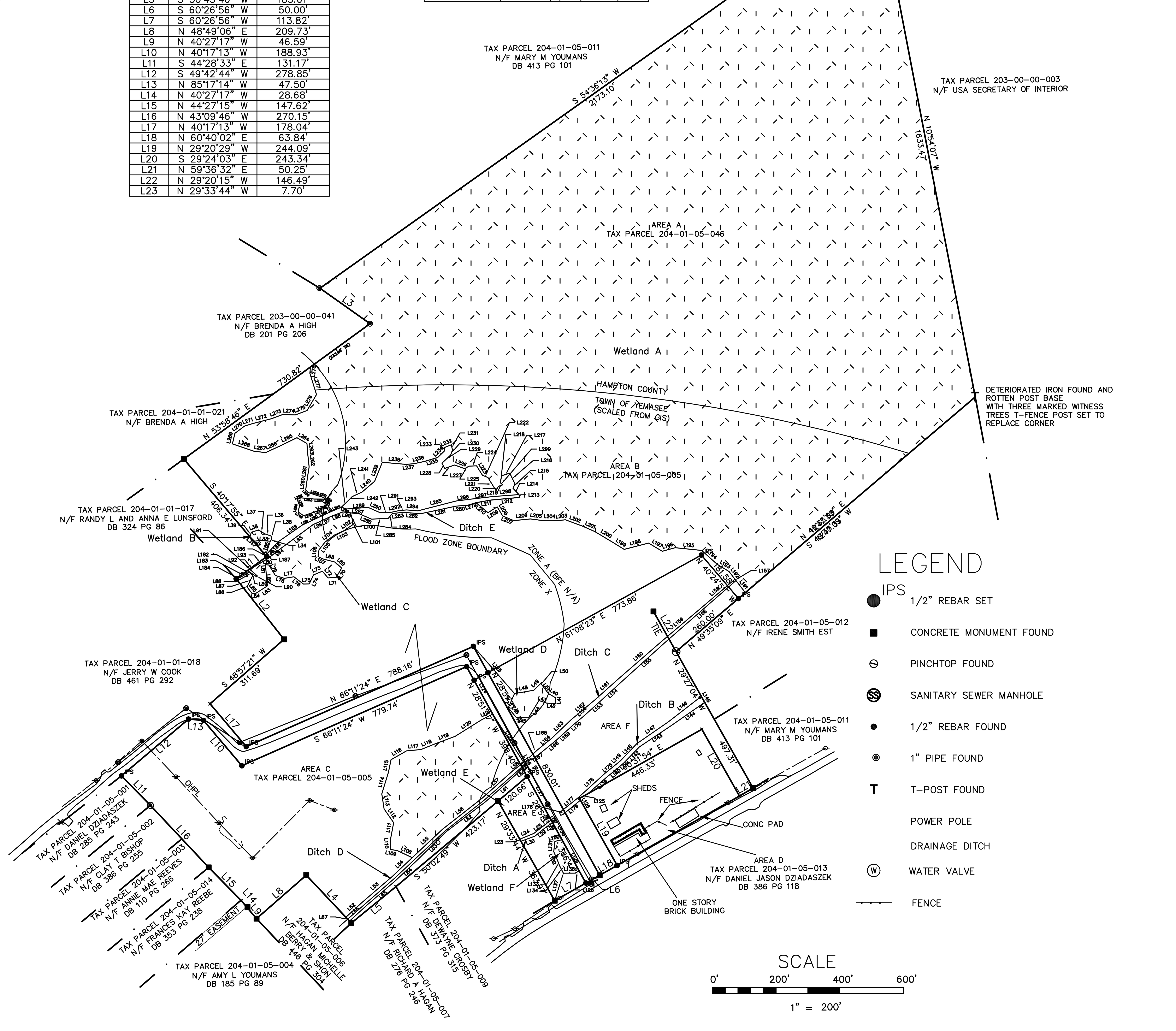
Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	1,186.4	7,907	0.18
Ditch C	1,682.5	9,786	0.22
Ditch D	1,499.7	11,460.52	0.26
Ditch E	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
Wetland B	172.52	1,661.23	0.04
Wetland C	1,241.41	33,650.55	0.77
Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
Wetland F	295.51	4,680.65	0.11
Total		2,916,081.36	66.92

AREA TABLE

AREA	TOTAL ACREAGE	SQ. FEET	WETLANDS ACREAGE	DITCH ACREAGE
A	46.31	2,017,286	46.20	0.00
B	33.96	1,479,297	17.00	0.31
C	12.70	553,115	2.42	0.27
D	2.50	108,809	0.00	0.00
E	1.00	43,567	0.11	0.03
F	7.98	347,487	0.19	0.42

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40



LEGEND

IPS 1/2" REBAR SET
CONCRETE MONUMENT FOUND
PINCHTOP FOUND
SANITARY SEWER MANHOLE
1/2" REBAR FOUND
1" PIPE FOUND
T-POST FOUND
POWER POLE
DRAINAGE DITCH
WATER VALVE
FENCE

SCALE

0' 200' 400' 600'

1" = 200'

LINE	BEARING	DISTANCE
L24	N 67°42'26" E	48.34'
L25	N 54°21'03" E	48.16'
L26	N 51°56'55" E	37.48'
L27	S 24°45'48" E	10.12'
L28	S 54°10'28" W	43.47'
L29	S 53°39'09" W	41.93'
L30	S 69°33'31" W	47.29'
L31	S 45°26'11" E	20.80'
L32	N 80°47'05" E	16.25'
L33	S 85°54'34" E	33.94'
L34	N 35°39'44" E	8.66'
L35	N 16°42'56" W	10.01'
L36	N 71°04'53" W	20.57'
L37	N 58°10'23" W	23.55'
L38	S 72°04'53" W	24.22'
L39	S 17°29'54" W	14.53'
L40	S 59°00'43" E	27.91'
L41	S 03°43'59" W	18.54'
L42	N 85°21'48" W	28.81'
L43	N 71°24'10" W	24.80'
L44	S 31°17'53" W	64.38'
L45	N 87°55'49" W	38.43'
L46	N 39°46'17" W	39.56'
L47	N 23°22'06" E	49.29'
L48	N 80°03'53" E	62.15'
L49	N 45°48'46" E	36.64'
L50	S 09°47'09" W	7.63'
L51	S 36°37'00" E	35.07'
L52	N 47°22'29" E	71.33'
L53	N 49°20'42" E	124.90'
L54	N 46°45'02" E	87.15'
L55	N 46°54'03" E	131.98'
L56	N 51°53'20" E	158.18'
L57	N 49°11'48" E	134.60'
L58	N 52°35'15" E	44.45'
L59	S 26°15'28" E	10.24'
L60	S 44°58'35" W	44.45'
L61	S 49°15'06" W	129.16'
L62	S 52°49'21" W	160.08'
L63	S 45°15'56" W	125.22'
L64	S 46°36'31" W	96.13'
L65	S 49°23'09" W	123.17'
L66	S 47°28'45" W	71.50'
L67	N 43°12'39" W	16.72'
L68	S 75°42'22" E	39.79'
L69	S 47°42'55" E	28.12'
L70	S 30°00'38" W	34.07'
L71	S 85°30'03" W	26.16'
L72	N 40°10'52" W	28.21'
L73	S 67°00'10" W	30.17'
L74	S 25°46'25" W	31.86'
L75	S 89°35'21" W	18.54'
L76	N 52°40'38" W	37.56'
L77	S 80°42'07" W	31.23'
L78	N 71°39'20" W	29.80'
L79	N 32°15'32" W	38.93'
L80	N 84°05'10" W	11.13'
L81	S 05°55'48" E	19.67'
L82	S 05°15'18" E	48.04'
L83	S 57°24'44" W	42.27'
L84	S 83°21'44" W	12.57'
L85	N 37°53'20" W	25.30'
L86	N 17°42'44" E	6.92'
L87	N 26°07'09" E	34.76'
L88	N 44°59'37" W	17.32'
L89	S 55°25'46" E	30.30'
L90	N 28°48'00" E	3.50'
L91	N 48°18'36" W	29.18'
L92	N 47°21'22" E	11.99'
L93	N 59°28'59" E	53.34'
L94	N 51°49'16" E	52.38'
L95	N 53°30'51" E	128.47'
L96	N 67°02'28" E	19.22'
L97	N 64°50'13" E	43.63'
L98	N 69°36'55" E	39.80'
L99	S 83°16'17" E	24.23'
L100	S 15°20'50" E	22.83'
L101	S 05°13'27" E	15.41'
L102	S 55°44'53" W	34.59'
L103	S 65°09'54" W	32.60'
L104	S 53°37'04" W	37.93'
L105	S 37°41'27" W	30.65'
L106	S 08°25'45" W	21.73'
L107	S 63°23'37" E	17.39'
L108	N 64°47'59" W	52.39'
L109	N 80°14'52" W	21.35'
L110	N 02°49'10" W	28.63'
L111	N 10°53'49" E	57.42'
L112	N 34°56'36" W	53.29'
L113	N 08°41'36" W	48.42'
L114	N 17°13'24" E	71.54'
L115	N 11°28'09" E	40.93'
L116	N 60°11'12" E	56.68'
L117	N 84°41'06" E	46.26'
L118	N 68°00'42" E	48.12'
L119	N 69°25'09" E	68.12'
L120	N 57°59'53" E	98.97'

LINE	BEARING	DISTANCE
L121	N 62°44'02" E	39.83'
L122	S 28°51'37" E	173.30'
L123	N 41°01'08" W	198.85'
L124	N 28°51'37" W	172.06'
L125	N 60°31'54" E	31.30'
L126	N 29°20'29" W	6.54'
L127	S 28°51'37" E	152.55'
L128	N 57°43'22" E	13.88'
L129	N 28°51'37" W	112.46'
L130	S 77°06'49" W	23.30'
L131	S 06°19'37" W	32.81'
L132	S 23°43'28" E	31.29'
L133	S 20°12'57" E	16.72'
L134	S 27°21'57" E	26.91'
L135	N 89°48'01" E	38.14'
L136	N 28°51'37" W	51.89'
L137	S 17°30'58" W	91.85'
L138	S 55°06'41" W	50.28'
L139	N 48°40'20" E	77.22'
L140	N 51°01'32" E	49.92'
L141	N 48°42'14" E	22.63'
L142	N 44°09'09" E	71.27'
L143	N 56°18'05" E	123.64'
L144	N 55°02'21" E	127.02'
L145	N 29°27'04" W	21.90'
L146	S 52°09'46" W	132.15'
L147	S 55°24'42" W	121.99'
L148	S 43°33'57" W	74.50'
L149	N 49°53'42" E	10.51'
L150	N 48°23'00" E	19.15'
L153	N 48°05'39" E	45.23'
L154	N 47°33'09" E	109.69'
L155	N 47°54'31" E	177.29'
L156	N 48°53'08" E	299.37'
L157	N 37°44'23" W	5.32'
L158	S 49°34'21" W	147.54'
L159	S 49°55'40" W	154.36'
L160	S 49°01'31" W	180.73'
L161	S 48°11'40" W	104.12'
L162	S 50°08'54" W	100.36'
L163	S 46°03'39" W	81.49'
L164	S 48°47'37" W	57.76'
L165	S 46°54'27" W	23.59'
L166	S 29°57'09" E	10.47
L167	N 52°46'00" E	42.70'
L168	N 48°31'33" E	54.35'
L169	N 47°53'14" E	75.10'
L170	N 50°09'57" E	38.95'
L175	S 51°07'42" W	52.42'
L176	S 47°43'47" W	114.58'
L177	S 49°42'14" W	67.40'
L178	S 24°44'26" E	11.95'
L179	N 49°06'34" E	69.43'
L180	S 64°50'13" W	43.63'
L181	S 66°59'07" W	19.27'
L182	S 41°02'25" W	7.50'
L183	S 60°18'38" W	26.47'
L184	S 68°02'09" W	13.85'
L185	S 18°18'02" W	47.62'
L186	N 40°17'55" W	5.11'
L187	N 42°44'49" E	17.27'
L188	N 42°29'37" E	41.02'
L189	N 55°14'43" E	94.12'
L190	N 65°02'02" E	96.37'
L191	N 37°44'23" W	48.67'
L192	N 37°44'23" W	30.86'
L193	N 58°42'59" W	44.05'
L194	N 48°05'58" W	65.98'
L195	N 84°02'31" W	84.41'
L196	S 74°43'05" W	42.71'
L197	N 59°13'14" W	50.94'
L198	S 75°20'46" W	79.62'
L199	N 58°20'14" W	39.13'
L200	N 59°00'08" W	70.01'
L201	N 65°59'10" W	43.06'
L202	N 69°48'56" W	57.58'
L203	S 83°49'20" W	21.93'
L204	N 89°16'04" W	56.19'
L205	N 82°23'31" W	33.71'
L206	S 83°53'07" W	52.94'
L207	N 67°08'43" W	37.88'
L208	N 31°37'32" W	33.98'
L209	S 57°59'02" W	34.05'
L210	N 50°38'56" W	49.85'
L211	N 80°14'41" E	49.81'
L212	N 84°50'10" E	90.19'
L213	N 13°57'00" W	9.38'
L214	N 43°37'58" W	27.53'
L215	N 24°58'57" E	15.46'
L216	N 26°10'53" W	38.00'
L217	S 72°37'44" W	26.77'

LINE	BEARING	DISTANCE
L218	S 12°35'50" W	22.53'
L219	S 70°37'46" W	15.17'
L220	S 28°12'22" W	15.21'
L221	N 31°43'46" W	48.99'
L222	N 66°57'01" W	18.56'
L223	N 32°22'14" W	35.28'
L224	S 87°47'53" W	23.97'
L225	S 60°27'38" W	16.22'
L226	N 69°35'37" W	33.67'
L227	S 70°54'06" W	33.52'
L228	N 27°37'01" W	18.76'
L229	N 46°36'54" E	37.96'
L230	N 20°51'33" E	16.68'
L231	N 11°20'48" W	17.41'
L232	S 67°48'46" W	24.02'
L233	S 00°57'36" E	10.68'
L234	S 45°38'50" W	29.67'
L235	S 73°20'13" W	43.98'
L236	S 77°39'01" W	34.83'
L237	S 85°39'05" W	24.95'
L238	N 85°04'23" W	75.44'
L239	S 21°47'35" W	64.92'
L240	S 49°38'29" W	52.62'
L241	S 65°03'20" W	34.38'
L242	S 44°37'07" W	17.74'
L243	S 46°35'03" W	30.33'
L244	S 66°21'45" W	39.86'
L245	N 41°58'04" W	16.72'
L246	S 80°10'31" W	12.87'
L247	S 69°04'06" W	33.97'
L248	S 71°25'38" W	29.44'
L249	N 54°29'25" W	21.03'
L250	N 12°36'01" E	20.88'
L251	N 21°59'15" W	20.69'
L252	N 68°16'05" E	13.02'
L253	S 85°08'44" E	40.97'
L254	S 89°13'03" E	32.58'
L255	S 56°49'52" E	21.71'
L256	N 49°49'45" W	26.63'
L257	N 72°54'43" W	20.31'
L258	N 71°19'32" W	28.99'
L259	N 48°05'06" W	12.52'
L260	N 07°47'46" E	40.74'
L261	N 09°09'04" E	33.15'
L262	N 05°46'33" W	40.80'
L263	N 04°33'13" W	34.21'
L264	N 60°01'45" W	36.48'
L265	S 64°15'31" W	58.67'
L266	S 65°16'47" W	51.69'
L267	N 83°17'36" W	37.99'
L268	N 71°14'43" W	71.52'
L269	N 13°29'57" E	34.72'
L270	N 52°52'45" E	38.43'
L271	N 73°22'38" E	27.28'
L272	N 75°20'46" E	61.26'
L273	N 69°44'01" E	37.43'
L274	S 88°12'34" E	40.51'
L275	N 69°15'40" E	40.10'
L276	N 30°25'16" E	58.73'
L277	N 17°06'33" W	70.69'
L278	N 04°41'33" E	19.94'
L279	S 72°39'08" W	26.77'
L280	S 85°16'33" W	37.93'
L281	S 77°56'02" W	114.44'
L282	N 85°38'34" W	56.93'
L283	S 83°12'34" W	33.76'
L284	S 40°33'38" W	19.64'
L285	S 87°01'50" W	52.95'
L286	N 66°28'14" W	41.94'
L287	N 83°21'00" W	28.59'
L288	S 71°21'41" E	17.79'
L289	N 85°53'07" E	68.36'
L290	S 65°50'28" E	41.17'
L291	N 87°30'46" E	36.91'
L292	N 78°02'25" E	24.85'
L293	N 85°10'35" E	23.69'
L294	S 85°05'01" E	35.53'
L295	N 75°25'11" E	125.52'
L296	N 82°51'35" E	45.06'
L297	N 83°24'53" E	71.56'
L298	N 85°36'39" E	84.02'
L299	N 49°13'56" W	10.97'

LAND CONSULTING GROUP, LLC
Land Consulting Group,LLC
BEAUFORT SOUTH CAROLINA

FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): A (BFE=NOT DETERMINED) AND X
COMMUNITY NAME: HAMPTON CO. UN INCORP./TOWN OF YEMASSEE
COMMUNITY #: 450095 / 450103
MAP #: 45049C0450C
PANEL #: 450 OF 550
PANEL DATE: SEPTEMBER 29, 2010
INDEX DATE: SEPTEMBER 29, 2010

THIS FLOOD ZONE DETERMINATION IS APPROXIMATE AND SHOULD BE VERIFIED BY THE APPROPRIATE BUILDING CODES OFFICE BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.

I HEREBY CERTIFY TO RAMSEY DEVELOPMENT THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "C" SURVEY AS SPECIFIED THEREIN, ALSO THERE ARE NO ENCROACHMENTS OR PROJECTIONS AFFECTING THE PROPERTY OTHER THAN THOSE SHOWN.

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
LORICK V. FANNING
PLS# 19882

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
LAND CONSULTING GROUP, LLC
No. C02082

LORICK V. FANNING, PLS 19882

WETLANDS SURVEY OF CORBETT TRACT

TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT
SHEET 1 OF 2

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
PB 21 PG 417
PB 32 PG 4
PB 5 PG 96
PB 3 PG 127
PB 14 PG 64
PB 3 PG 157
DB 484 PG 261

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206

APPENDIX D

USDA SOILS DATA

United States Department of Agriculture

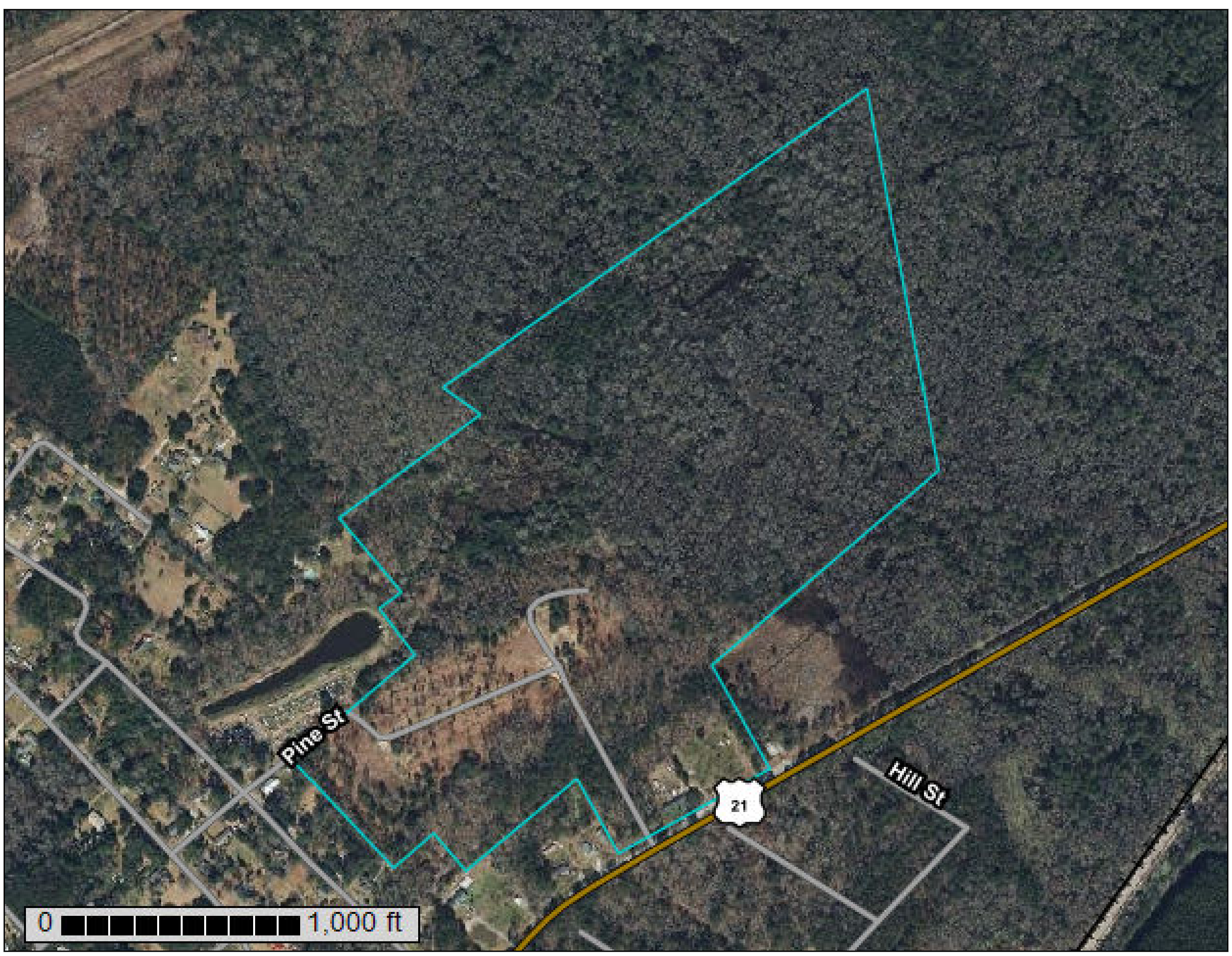
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

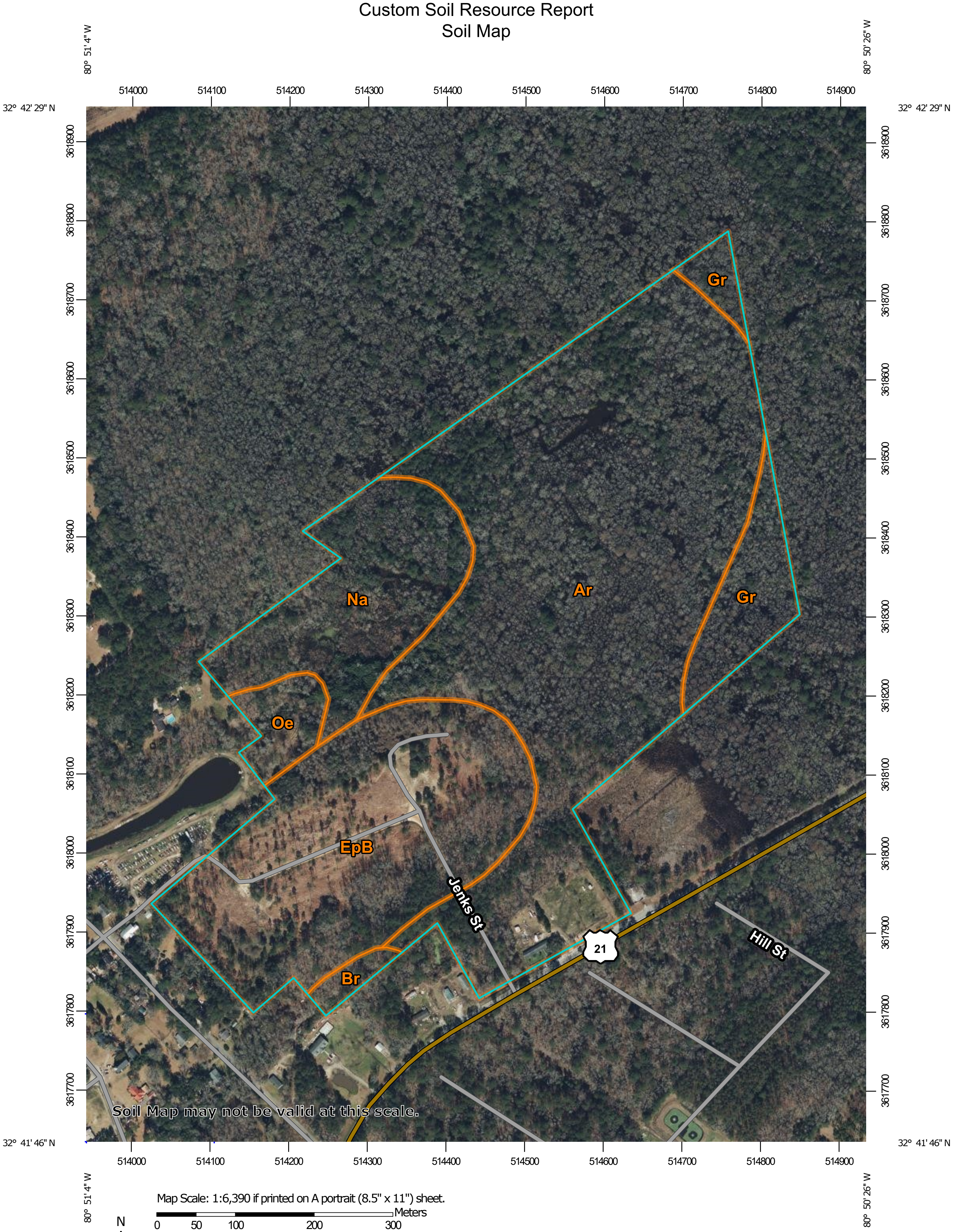
Custom Soil Resource Report for

Hampton County, South Carolina



October 27, 2022

Soil Map



Map Scale: 1:6,390 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 300, 600, 1200, 1800

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hampton County, South Carolina
Survey Area Data: Version 22, Sep 7, 2022

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

Date(s) aerial images were photographed: Feb 21, 2021—Feb 23, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ar	Argent fine sandy loam, ponded	56.5	53.2%
Br	Brookman clay loam, ponded	1.0	0.9%
EpB	Emporia loamy sand, 2 to 6 percent slopes	26.5	24.9%
Gr	Grifton-Osier complex, frequently flooded	6.3	5.9%
Na	Nakina fine sandy loam, occasionally flooded	13.4	12.6%
Oe	Osier loamy sand	2.7	2.5%
Totals for Area of Interest		**106.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hampton County, South Carolina

Ar—Argent fine sandy loam, ponded

Map Unit Setting

National map unit symbol: 4cc7
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Argent and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Argent

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey marine deposits

Typical profile

A - 0 to 5 inches: fine sandy loam
Btg - 5 to 58 inches: clay
BCg - 58 to 65 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Br—Brookman clay loam, ponded

Map Unit Setting

National map unit symbol: 4ccj
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Brookman and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brookman

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey marine deposits

Typical profile

A - 0 to 4 inches: clay loam
Btg1 - 4 to 11 inches: clay loam
Btg2 - 11 to 44 inches: clay
Btg3 - 44 to 62 inches: clay loam
Cg - 62 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

EpB—Emporia loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 4cct
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Emporia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Emporia

Setting

Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 11 inches: loamy sand
Bt1 - 11 to 31 inches: sandy clay loam
Bt2 - 31 to 45 inches: sandy clay loam
BC - 45 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: About 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Gr—Grifton-Osier complex, frequently flooded

Map Unit Setting

National map unit symbol: 4cd0
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Grifton and similar soils: 60 percent
Osier and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grifton

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 6 inches: fine sandy loam
E - 6 to 13 inches: fine sandy loam
Btg - 13 to 48 inches: sandy clay loam
Cg - 48 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Osier

Setting

Landform: Depressions, marine terraces

Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy alluvium

Typical profile

A - 0 to 19 inches: loamy sand
Cg1 - 19 to 35 inches: sand
Cg2 - 35 to 70 inches: coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Na—Nakina fine sandy loam, occasionally flooded

Map Unit Setting

National map unit symbol: 4cd5
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Nakina and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nakina

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Loamy marine deposits

Typical profile

A - 0 to 15 inches: fine sandy loam
Btg - 15 to 43 inches: sandy clay loam
BCg - 43 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Oe—Osier loamy sand

Map Unit Setting

National map unit symbol: 4cdd
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Osier and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osier

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy alluvium

Typical profile

A - 0 to 19 inches: loamy sand
Cg1 - 19 to 35 inches: sand
Cg2 - 35 to 70 inches: coarse sand

Properties and qualities

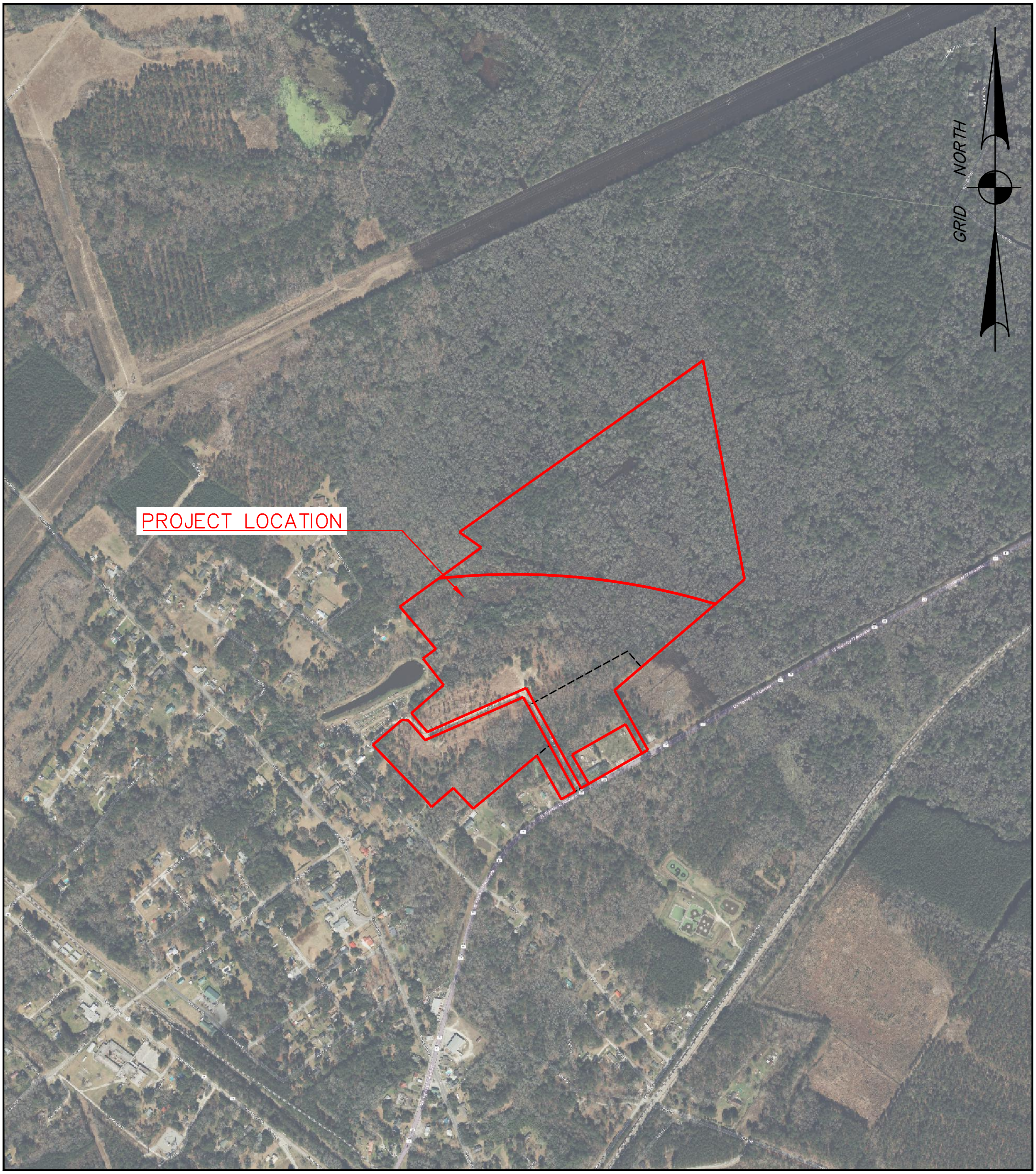
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

APPENDIX E

AERIAL SITE MAP



Ward Edwards
ENGINEERING

P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

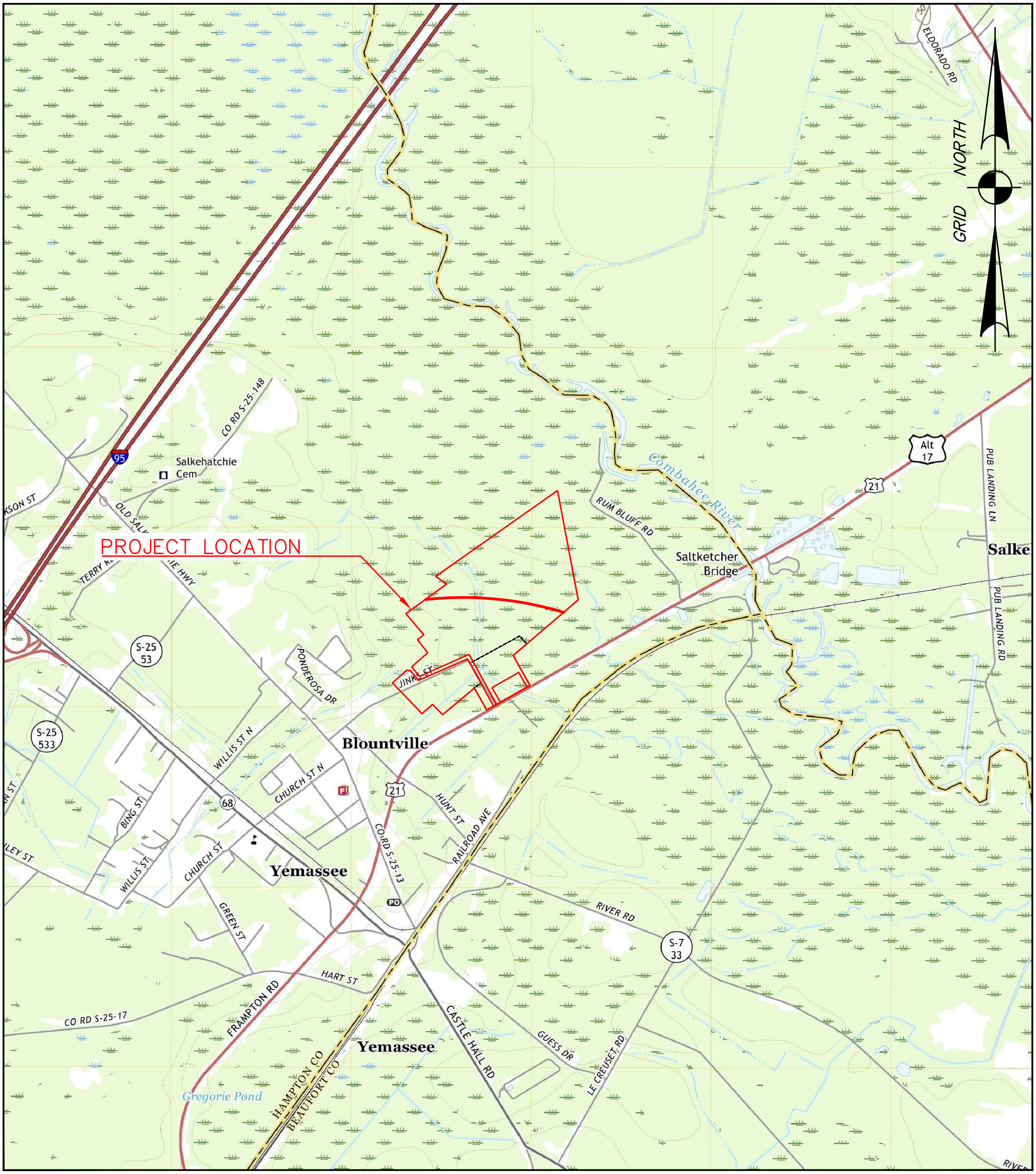
VICINITY MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=1,000'

APPENDIX F

USGS QUADRANGLE MAP



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PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

QUAD MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=2000'

APPENDIX G

FEMA MAP

National Flood Hazard Layer FIRMette

FEMA

80°50'44"W 32°42'26"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

80°50'6"W 32°41'56"N

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) *Zone A, V, A99*
		With BFE or Depth *Zone AE, AO, AH, VE, AR*
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
		Future Conditions 1% Annual Chance Flood Hazard *Zone X*
		Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
		Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN	Area of Minimal Flood Hazard *Zone X*
		Effective LOMRs
		Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES	B 20.2 / 17.5	Cross Sections with 1% Annual Chance Water Surface Elevation
	8	Coastal Transect
	513	Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/27/2022 at 5:25 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

APPENDIX H

PUD MASTER PLAN AND INITIAL MASTER PLAN

SUMMARY BY PARCEL

	UPLAND (ACRES)	WETLAND (ACRES)	TOTAL (ACRES)
PARCEL 1	10.73	.75	11.48
PARCEL 2	10.01	2.69	12.7
PARCEL 3	16.76	17.2	33.8
PARCEL 4	0.11	46.2	46.31
TOTAL	37.5	66.95	104.45

Witmer Jones Keefer Ltd.
landscape architecture land planning

CLIENT: RAMSEY DEVELOPMENT
NOVEMBER 29, 2022

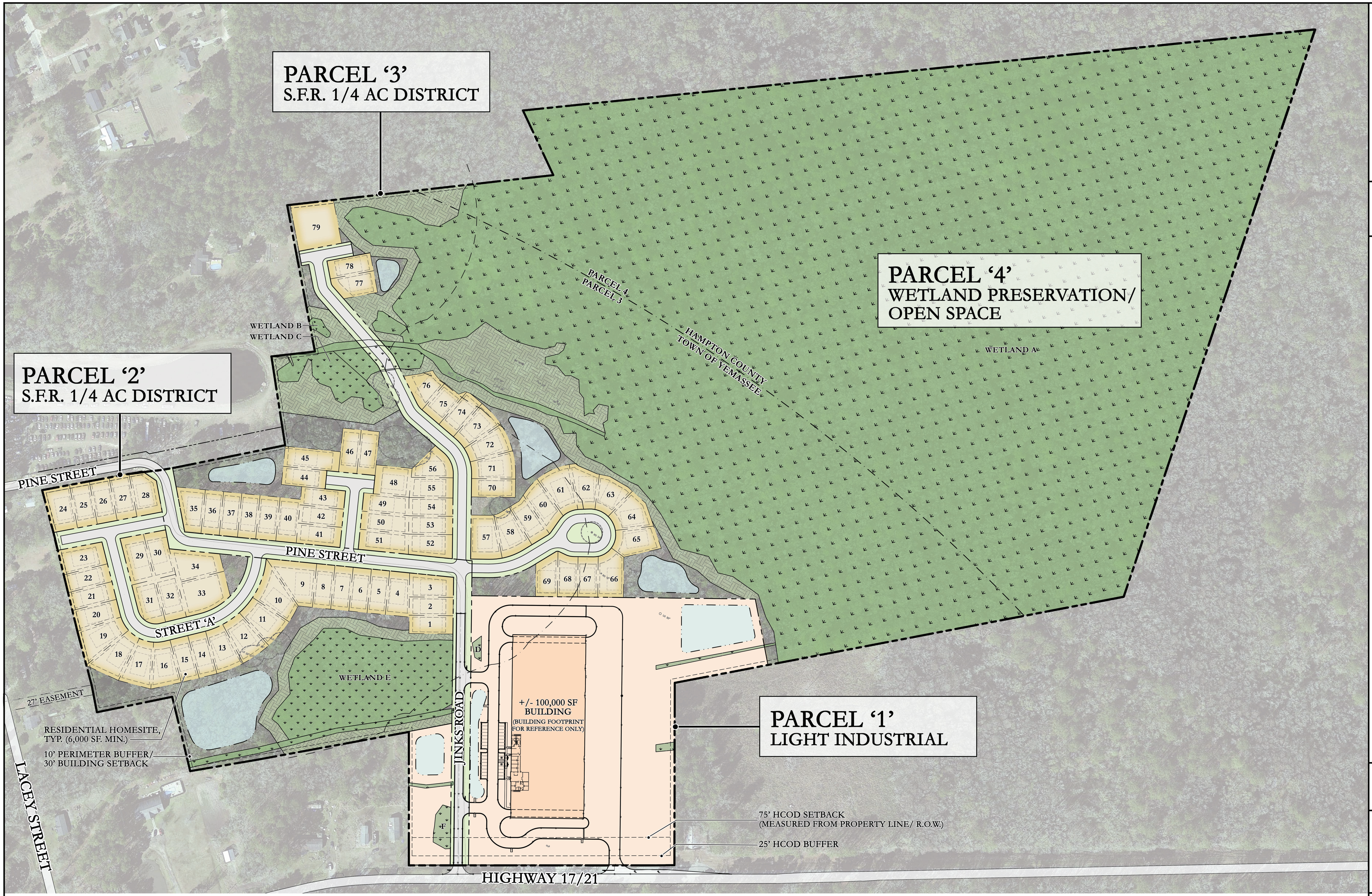
AMENDMENT DATE:	DESCRIPTION:

PLANNED UNIT DEVELOPMENT MASTER PLAN
FOR
PINE STREET
YEMASSEE, SOUTH CAROLINA

Note: Plan is conceptual in nature and subject to change. Plan uses, calculations, and boundaries are subject to change.

DRAFT

0 50 100 150 200 250 300 350 400
Scale 1" = 100'



Witmer·Jones·Keefer Ltd.
landscape architecture
land planning
www.wjkltd.com
23 Promenade Street, Suite 201 · Bluffton, South Carolina · 29910 · ph 843.757.7411

THIS SHEET TO SCALE AT: 30"X42"

INITIAL MASTER PLAN FOR PINE STREET

YEMASSEE, SOUTH CAROLINA

DATE:	FEB. 27 2023
PROJECT NO.:	22024.01
DRAWN BY:	KJ
CHECKED BY:	DK

PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

DRAWING TITLE

INITIAL MASTER PLAN

DRAWING NUMBER

....

SITE DATA TABLE

PROJECT AREA: 104.45 ACRES

OPEN SPACE: 46.31 ACRES

NUMBER OF LOTS: 79*

RESIDENTIAL DENSITY ALLOWED (RU/UPLAND AC): 107

SUMMARY BY PARCEL

	UPLAND (ACRES)	WETLAND (ACRES)	TOTAL (ACRES)
PARCEL 1	10.73	.75	11.48
PARCEL 2	10.01	2.69	12.7
PARCEL 3	16.76	17.2	33.8
PARCEL 4	0.11	46.2	46.31
TOTAL	37.5	66.95	104.45

LAND USE KEY

- RESIDENTIAL LOTS 1-79 (6,000 SF. MIN.)
- POND / RAIN GARDEN
- RIGHT-OF-WAY
- GREEN / OPEN SPACE
- WETLAND BUFFER
- WETLAND

*LOT LAYOUT AND DENSITY ARE CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE PENDING FINAL DEVELOPMENT PLAN SUBMITTAL.

0 50 100 150 200 250 300 350 400

Scale 1" = 100'

APPENDIX I

DEVELOPMENT SCHEDULE

The following is a Preliminary Development Schedule for Pine Street PUD that is subject to change based on market conditions and other factors:

Year	Commercial (sq ft)	Residential (dwelling units)
Phase 1 – 2023-2025	100,000	50 DU's
Phase 2 -2026-2028	50,000	57 DU's

APPENDIX J

INTENT TO SERVE LETTERS

RE: Ironline Metals - Letter of Intent to Serve Request

Matt Sigman <matt.sigman@prtc.us>
Thu 11/10/2022 1:13 PM
To: Shelly Snyder <ssnyder@wardedwards.com>
Cc: Conor Blaney <cblaney@wardedwards.com>

Good afternoon, Shelly

After reviewing this conceptual plan with our engineering manager, he wanted me to pass this along to you.

"In reference Pine Street Residential subdivision. We have existing fiber cable on Pine St, Lacey St, and Hwy 17A. We will be able to accommodate any future build in this area with our existing fiber facilities."

Please let me know if you have any additional questions.

Thank you,

Matt Sigman
Business Development Manager
Palmetto Rural Telephone Cooperative, Inc.
Desk: 843-538-9381
Mobile: 843-217-3653
Business Direct: 843-538-SALE(7253)
Email: matt.sigman@prtc.coop
Business Direct: busdirect@prtc.coop
292 Robertson Blvd.
Walterboro, SC 29488

Letter of Power Availability

Nov 16, 2022

Correspondence Sent Electronically

Shelly Snyder
Ward Edwards Engineering
Bluffton, S.C.

Re: Ironline Metals, Yemassee, S.C.

Ms. Snyder:

I am pleased to inform you that Dominion Energy will be able to provide electric service to the above referenced project. Electric service will be provided in accordance with Dominion Energy General Terms and Conditions, other documents on file with the South Carolina Public Service Commission, and the company's standard operating policies and procedures. To begin engineering work for the project, the following information will need to be provided:

1.) Detailed utility site plan in AutoCAD format showing water, sewer, and storm drainage, as well as the requested service point/transformer locations.
2.) Additional drawings that indicate wetland boundaries, tree survey with barricade plan and buffer zones (if required), as well as any existing or additional easements that will also be needed.
3.) Electric load breakdown by type with riser diagrams and desired metering specifications.
4.) The anticipated timeline for each phase of the development.
5.) Dominion Energy has specific requirements for electric service to new water and sewer pump-stations. If your project requires these facilities, please contact me for more details.

Dominion Energy construction standards and specifications are available here:
https://www.dominionenergy.com/south-carolina/start-stop-service/new-construction

If you have any questions, please contact me at 843-540-1315.

Sincerely,

Parks Moss

Parks Moss
Senior Key Account Manager
Dominion Energy South Carolina

Natural Gas Letter of Availability

11/16/2022
Shelly Snyder
Ironline Metals
Yemassee, SC

I am pleased to inform you that Dominion Energy South Carolina will be able to provide natural gas service to the above referenced. Natural gas service can be provided in accordance with Dominion Energy's General Terms and Conditions, other documents on file with the South Carolina Public Service Commission, and the company's standard operating policies and procedures. **In order to begin the design process for the project, the following information will need to be provided:**

1. Site Plan / Cad File / PDF
2. Total natural gas BTU load of each piece of equipment per building
3. Delivery pressure
4. Estimated wanted by date for gas line installation
6. Permanent account established, please call 1-877-937-7234
7. All required Contribution in Aid of Construction must be received before scheduling can be arranged.

Thank you in advance for this information and I look forward to working with your company.

For more information or questions, don't hesitate to contact me.

Sincerely,

Ryan Hooks

Account Manager – Natural Gas
Dominion Energy South Carolina

81 May River Rd. Bluffton, SC 29910
P (843) 576-8911 • M (843) 412-5178
michael.r.hooks@dominionenergy.com

APPENDIX K

TRAFFIC IMPACT ANALYSIS

PINE STREET RESIDENTIAL

2023
January

Project No:
171002659

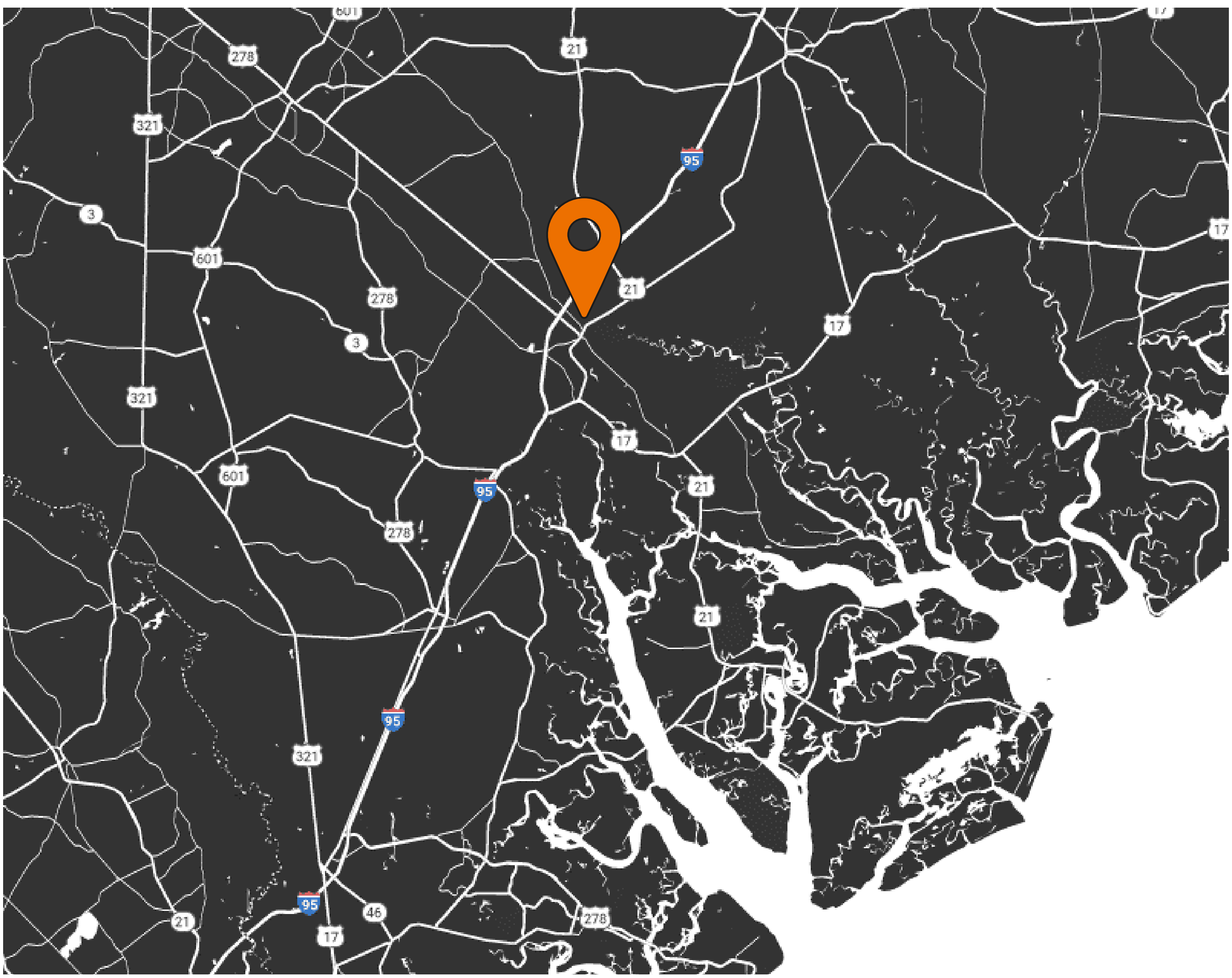
DRAFT

PREPARED FOR: WARD EDWARDS ENGINEERING

PO BOX 381, BLUFFTON, SC 29910

TRAFFIC IMPACT ANALYSIS

ALONG PINE STREET
IN HAMPTON COUNTY, SOUTH CAROLINA



PREPARED BY: STANTEC CONSULTING SERVICES INC. // N. CHARLESTON, SC

PINE STREET RESIDENTIAL

TRAFFIC IMPACT ANALYSIS

The conclusions in the Report titled "Pine Street Residential Traffic Impact Analysis" are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

Stantec has assumed all information received from Ward Edwards Engineering (the "Client") and third parties in the preparation of the Report to be correct. While Stantec has exercised a customary level of judgement or due diligence in the use of such information, Stantec assumes no responsibility for the consequence of any error or omission contained therein.

This Report is intended solely for use by the Client in accordance with Stantec's contract with the Client. While the Report may be provided to applicable authorities having jurisdiction and others for whom the Client is responsible, Stantec does not warrant the services to any third party. The report may not be relied upon by any other party without the express written consent of Stantec, which may be withheld at Stantec's discretion.

Prepared by: ______________________

Prasad Chame

Reviewed by: ______________________

Stuart Day, PE, PTOE

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 36464
JOSHUA A. MITCHELL

Approved by: ______________________

Josh Mitchell, PE

January 2023

TABLE OF CONTENTS

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EXECUTIVE SUMMARY

A traffic impact analysis was conducted for the Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines.

The proposed Pine Street Residential development (which is anticipated to be constructed by 2025) is located on Pine Street, north of US 21, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, which meets SCDOT's access spacing criteria, as well as via driveways along existing Pine Street, will serve as the access for the development.

For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

The operation of each of the study area intersections (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Pine Street Residential development.

The results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable level of service with the proposed Pine Street Residential development.

Per the criteria documented in *Section 5D-4* of SCDOT's *Access and Roadside Management Standards (ARMS, 2008)*, exclusive turn lanes are not recommended at any of the study intersections or project driveways.

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The purpose of this report is to document the procedures and findings of a traffic impact analysis for the proposed Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines. The proposed Pine Street Residential development is located along US 21 and along Pine Street, north of US 21, as shown in Exhibit 1.1, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building with anticipated completion by 2025.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, along with driveways along existing Pine Street, will serve as the access for the development, as shown in Exhibit 1.2. For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

1.2 EXISTING ROADWAY CONDITIONS

US 21 is a two-lane arterial that primarily serves commercial and residential land uses. The posted speed limit is 45-miles per hour (mph) north of Pine Street, while the posted speed limit south of Lacey Street is 35-mph. The speed limit changes from 45-mph to 35-mph between Pine Street and Lacey Street. The average annual daily traffic (AADT) in 2021 was 1,650 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along US 21 is approximately 13%.

Salkehatchie Road is a two-lane major collector that primarily serves residential and commercial land uses. The posted speed limit is 30-mph. The AADT in 2021 was 850 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along Salkehatchie Road is approximately 2%.

Pine Street is a two-lane local road that primarily serves residential land uses. Based upon existing turning movement counts, the percentage of heavy vehicles along Pine Street is approximately 5%.

Exhibit 1.1 – Pine Street Residential Location Map

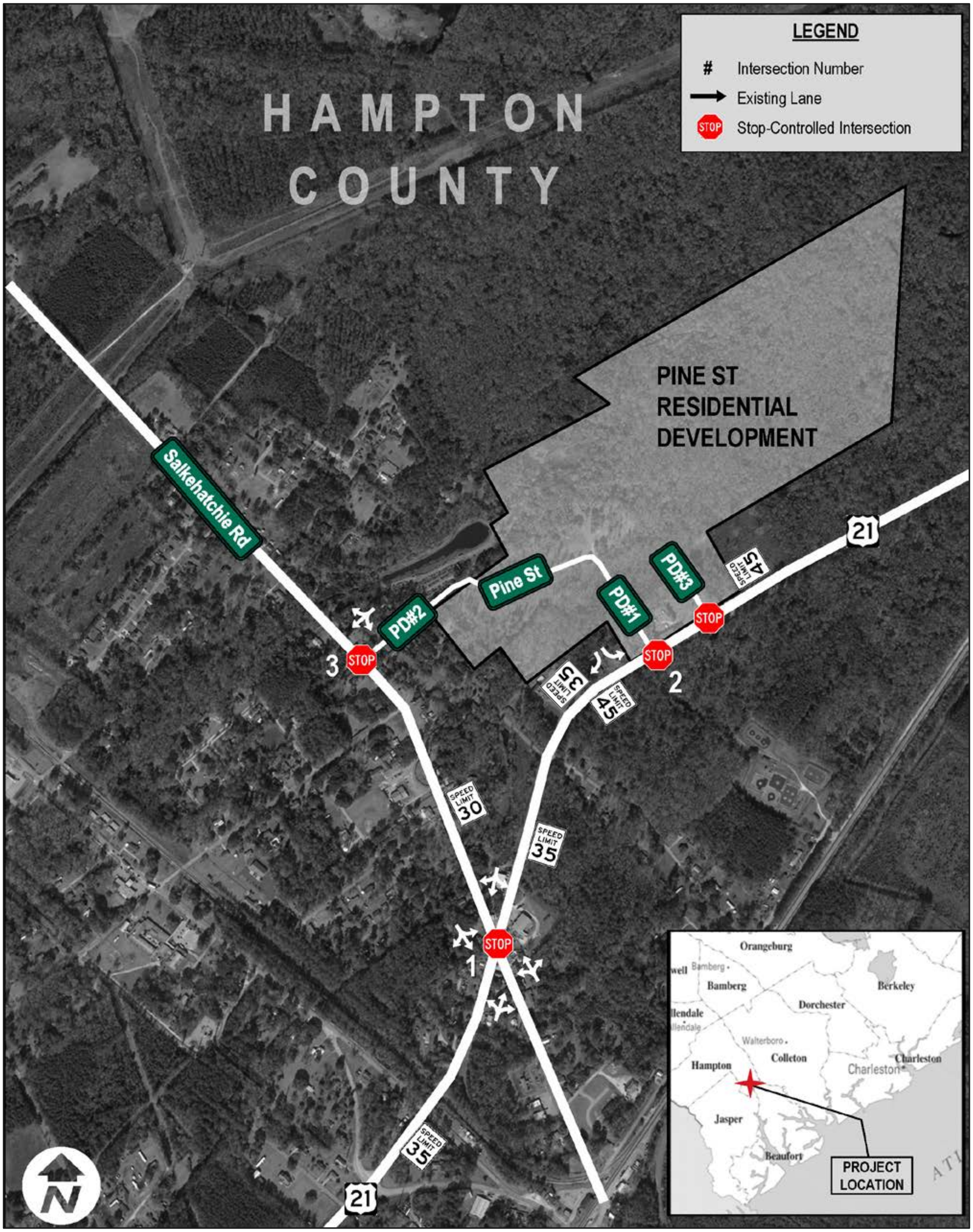


Exhibit 1.2 – Pine Street Residential Site Plan

2.0 DRIVEWAY SPACING REVIEW

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, along with driveways along existing Pine Street, will serve as the access for the development.

As shown in **Exhibit 1.2**, For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

Since the intersections of US 21 & Pine Street and Salkehatchie Road & Pine Street currently exist, a driveway spacing was not performed for Project Driveways #1 and #2. However, a driveway spacing was performed for Project Driveway #3, since it is a new proposed access along US 21.

A review of the driveway spacing of the proposed driveway was completed based on information contained in SCDOT's *Access & Roadside Management Standards (ARMS)* manual (2008), shown in the adapted **Table 2.1**.

Table 2.1 – Minimum Driveway Spacing*

Posted Speed Limit (mph)	**AADT ≥ 2000;** *or* Driveways Generating > 50 Peak Hour Trips	AADT < 2000
30	160 ft	75 ft
35	220 ft	125 ft
40	275 ft	175 ft
45	325 ft	225 ft
≥ 50	400 ft	275 ft

**Figure 3-7 of Access & Roadside Management Standards, 2008, SCDOT*

Based upon the 45-mph speed limit and the driveway spacing criteria of *ARMS*, a **minimum of 325 feet** is required for full access along US 21.

Project Driveway #3 is proposed to be located along US 21, approximately 430 feet east of the intersection of US 21 & Pine Street, which meets the spacing criteria and approximately 4,700 feet west of the intersection of US 21 & Rum Bluff Road, which meets the spacing criteria.

3.0 PROJECT TRAFFIC

3.1 PROPOSED LAND USES

Project traffic in this analysis is defined as the vehicle trips anticipated to be generated by the proposed Pine Street Residential development. These trips were distributed and assigned throughout the study roadway network.

The Pine Street Residential development is proposed to consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

3.2 TRIP GENERATION ESTIMATES

The trip generation potential for the development was estimated using information contained in ITE's *Trip Generation Manual*, 11th Edition (2021) reference. The estimates utilized land use codes (LUC) 210 – Single-Family Detached Housing, and LUC 110 – General Light Industrial.

Due to the nature of the proposed Pine Street Residential development, internal capture trips and pass-by trips were not considered in the trip generation estimates.

The trip generation estimates for the development are shown below in Table 3.1, and documented in Appendix A.

3.3 TRIP DISTRIBUTION & ASSIGNMENT

3.3.1 New External Traffic

New external traffic expected to be generated by the Pine Street Residential development was distributed and assigned to the roadway network based upon existing travel patterns in the area. Since the proposed Pine Street Residential development will also consist of a 100,000 square-foot light industrial building, the residential and light industrial trips were distributed and assigned separately considering the nature of the trips attracted to/generated from these land uses. The general distribution of the residential project trips was assumed to be:

- 30% to/from the north via Salkehatchie Road;
- 10% to/from the south via Salkehatchie Road;
- 30% to/from the east via US 21; and
- 30% to/from the west via US 21.

The assignment of new external project traffic anticipated to be generated by the residential trips of the Pine Street Residential development is illustrated in Exhibit 3.1.

The general distribution of the light industrial project trips was assumed to be:

- 50% to/from the east via US 21; and
- 50% to/from the west via US 21.

The assignment of new external project traffic anticipated to be generated by the residential trips of the Pine Street Residential development is illustrated in Exhibit 3.2.

The AM and PM peak hour project traffic volumes are illustrated in Exhibit 3.3.

Table 3.1 – Trip Generation Estimates

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Period		Weekday PM Peak Period	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	71 Dwelling Units	736	14	41	45	27
General Light Industrial	110	100,000 Sq. Ft.	426	63	9	5	35
		New, External Trips	1,162	77	50	50	62

Exhibit 3.1 - Project Traffic Distribution and Assignment (Residential)

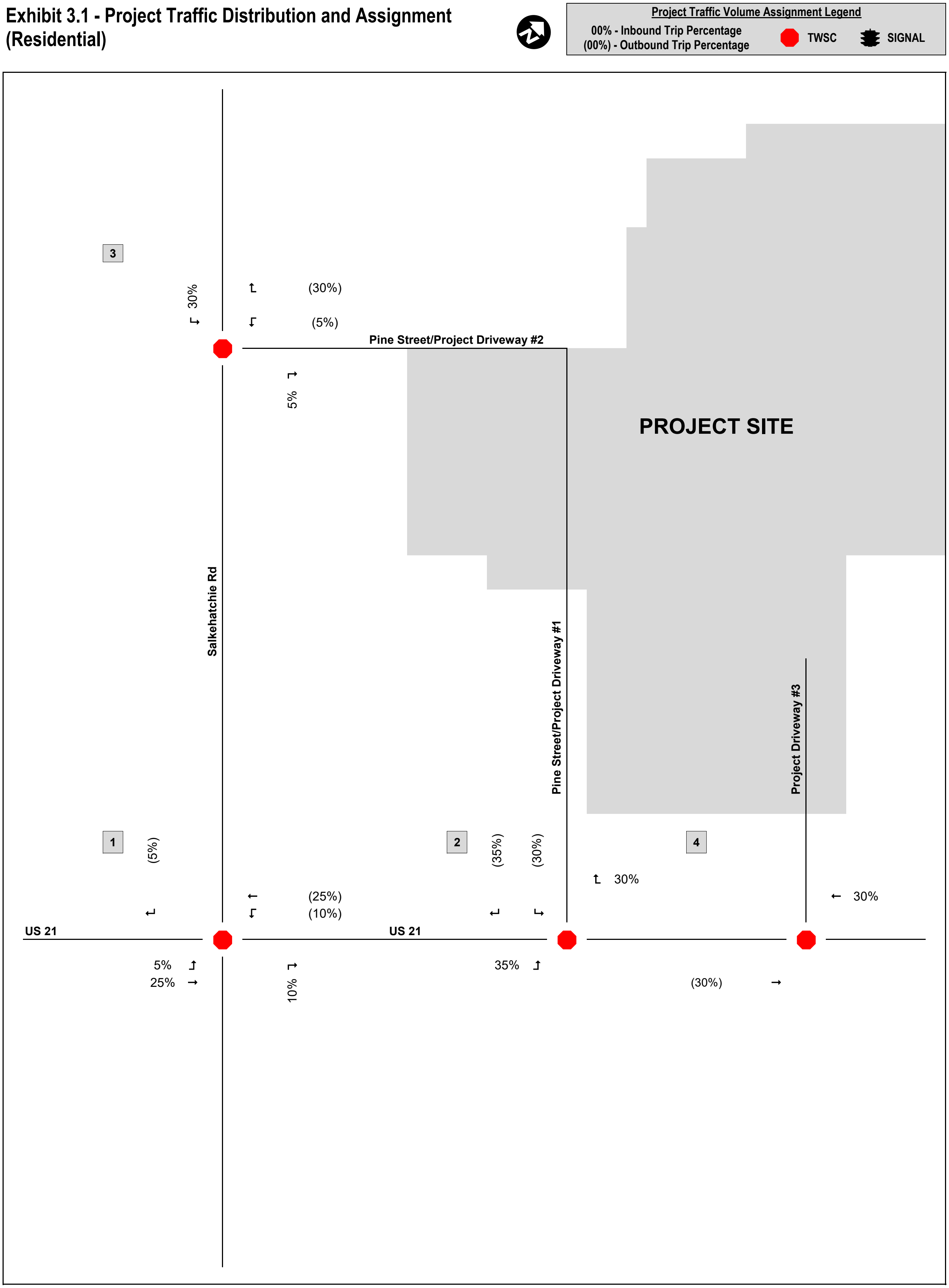


Exhibit 3.2 - Project Traffic Distribution and Assignment (Light Industrial)

Project Traffic Volume Assignment Legend

00% - Inbound Trip Percentage
(00%) - Outbound Trip Percentage
TWSC
SIGNAL

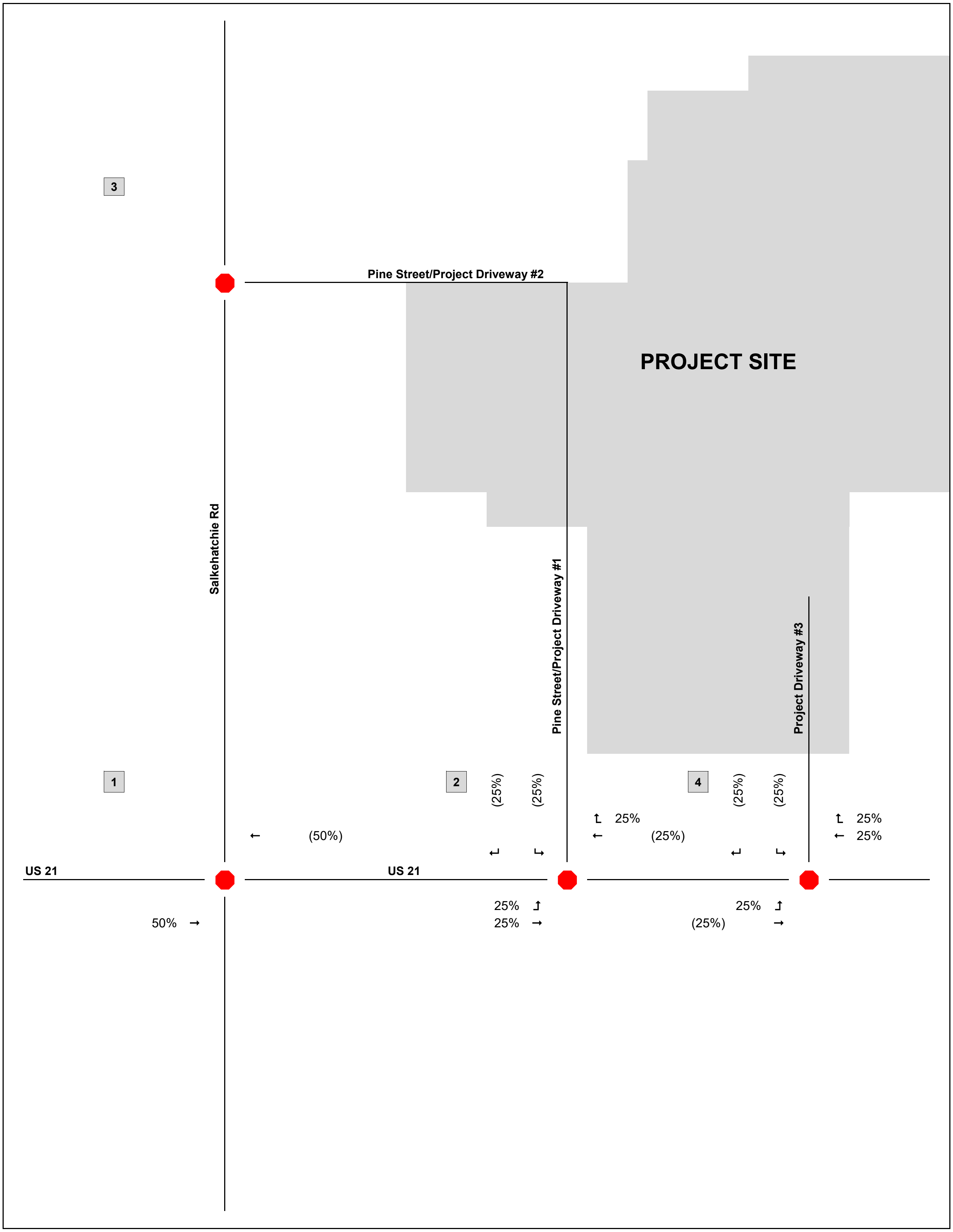


Exhibit 3.3 - Peak Hour Project Traffic Volumes

4.0 TRAFFIC VOLUME DEVELOPMENT

4.1 EXISTING TRAFFIC VOLUMES

The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames. The extent of the existing roadway network to be studied consists of the three (3) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1); and
3. Salkehatchie Road & Pine Street (Project Driveway #2).

Existing 2022 traffic volumes were collected at these study area intersections during the AM and PM peak periods listed above.

The raw traffic volume counts are provided in Appendix B and the 2022 existing AM and PM peak hour traffic volumes are illustrated in Exhibit 4.1.

4.2 FUTURE TRAFFIC PROJECTIONS

Future 2025 No Build traffic volumes were developed by adding *background traffic growth* to the collected existing study area peak hour volumes. *Background traffic growth* is growth anticipated to occur in the study area regardless of the proposed Pine Street Residential development.

To develop an annual background growth rate for use in the analysis, historical count data along US 21 (SCDOT count stations #103 & #105) and Salkehatchie Road (SCDOT count stations #271 & #273) was reviewed over the past 5 years. It was determined that the roadways have experienced a collective annual growth of less than 1%. Therefore, in an effort to be conservative, a 1% annual growth rate was utilized to develop anticipated *background traffic growth* through the anticipated 2025 buildout year.

Future 2025 No Build AM and PM peak hour traffic volumes, illustrated in Exhibit 4.2, were developed by adding the *background traffic growth* (assuming 1% annual growth of the existing traffic volumes) to the 2022 existing AM and PM peak hour traffic volumes.

Future 2025 Build AM and PM peak hour traffic volumes, illustrated in Exhibit 4.3, were developed by adding the Pine Street Residential project traffic (shown in Exhibit 3.2) volumes to the 2025 No Build traffic volumes.

Volume development worksheets for each intersection are documented in Appendix C.

Exhibit 4.1 - 2022 Existing Peak Hour Traffic Volumes

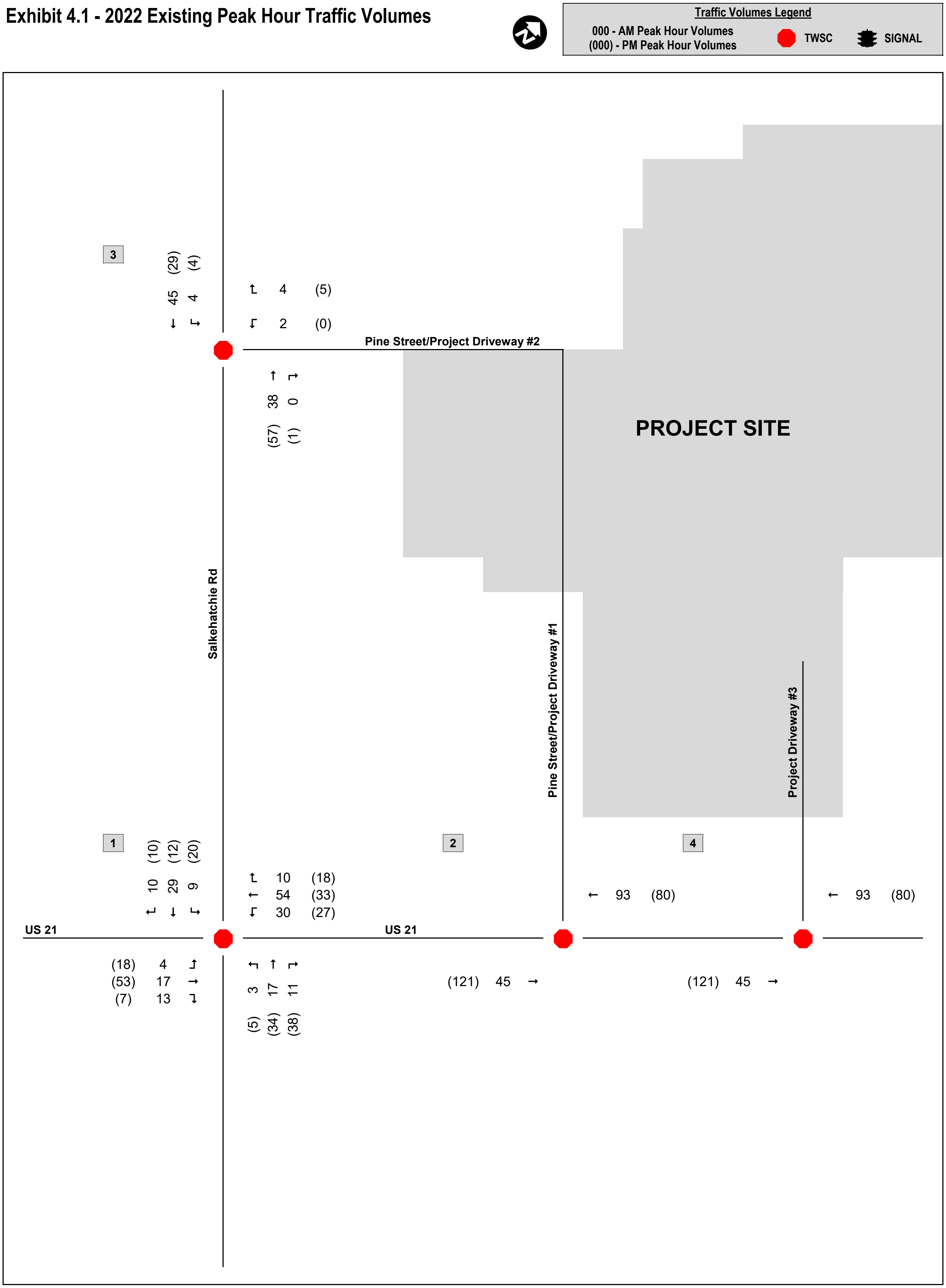


Exhibit 4.2 - 2025 No Build Peak Hour Traffic Volumes

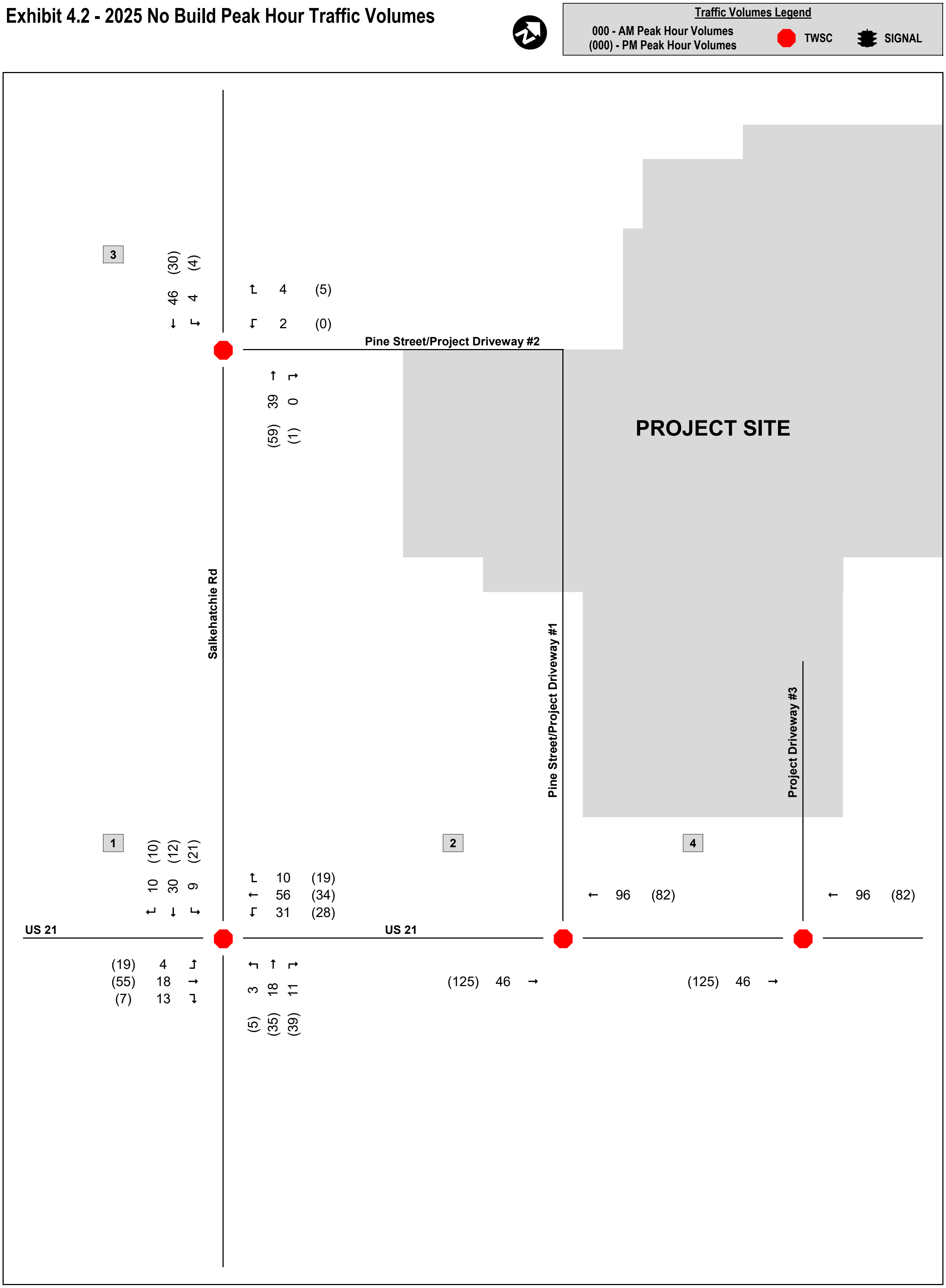
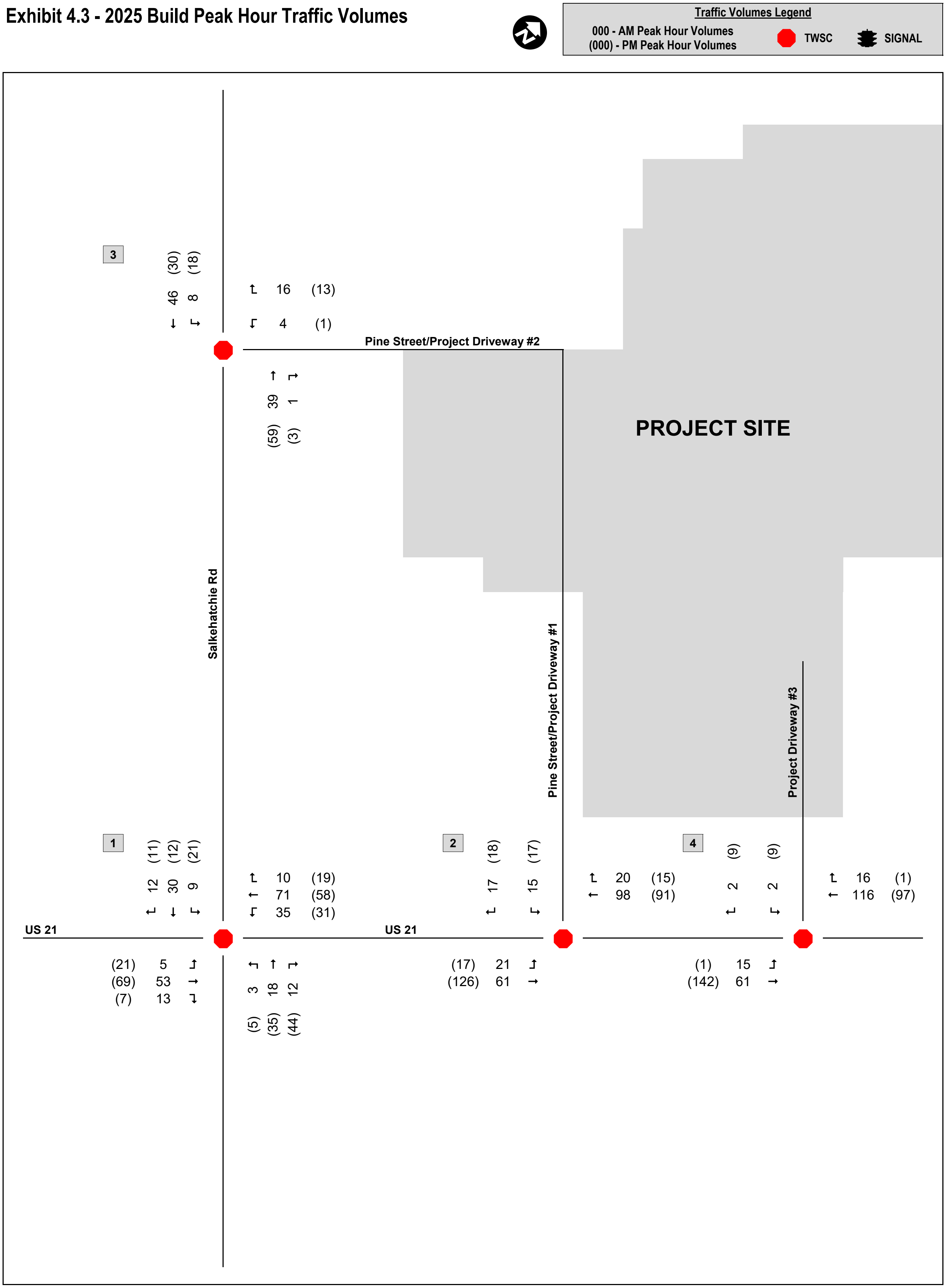


Exhibit 4.3 - 2025 Build Peak Hour Traffic Volumes



5.0 TRAFFIC IMPACT ANALYSIS

A traffic impact analysis was conducted for the Pine Street Residential development which analyzed the need for turn lanes at the project driveway and study intersections according to *Highway Capacity Manual (HCM) 6th Edition* methodologies.

5.1 TURN LANE ANALYSIS

5.1.1 Right-Turn Lanes

The need for exclusive right-turn lanes is based upon the criteria documented in *Section 9.5.1.1* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

1. *At a free-flowing leg of any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 9.5-A;*
2. *at a free-flowing leg of any unsignalized intersection on a high-speed (50 mph or greater), four-lane urban or rural highway which satisfies the criteria in Figure 9.5-B;*
3. *at the free-flowing leg of any unsignalized intersection on a six-lane urban or rural highway;*
4. *at any intersection where a capacity analysis determines a right-turn lane is necessary to meet the overall level-of-service criteria;*
5. *as a general rule, at any signalized intersection where the projected right-turning volume is greater than 300 vehicles per hour and where there are greater than 300 vehicles per hour per lane on the mainline (A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour);*
6. *for uniformity of intersection design along the highway if other intersections have right-turn lanes;*
7. *at any intersection where the mainline is curved to the left and where the mainline curve requires superelevation;*
8. *at railroad crossings where the railroad is paralleled to the facility and is located close to the intersection and where a right-turn lane would be desirable to store queued vehicles avoiding interference with the movement of through traffic; or*
9. *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to right-turning vehicles;*

Table 5.1 details whether the previously mentioned criteria are satisfied for Project Driveway #1 and at the study intersections of Salkehatchie Road & Pine Street (Project Driveway #2) and US 21 & Salkehatchie Road. An "✘" indicates that the criteria is not met; a "✓" indicates that it is met; and "N/A" indicates that the criteria is not applicable.

Table 5.1 – Right-Turn Lane Criteria Warrants

Crit-eria	PD #1	PD #3	Pine St & Salke-hatchie Rd	US 21 & Salke-hatchie Rd	Reference/ Note
1	✘	✘	✘	✘	Appendix G
2	N/A	N/A	N/A	N/A	Not a four-lane highway
3	N/A	N/A	N/A	N/A	Not a six-lane highway
4	✘	✘	✘	✘	Table 5.4
5	N/A	N/A	N/A	N/A	Not signalized
6	✘	✘	✘	✘	Not typically provided
7	✘	✘	✘	✘	Mainline not curved
8	✘	✘	✘	✘	No railroad crossing
9	N/A	N/A	N/A	N/A	Crash data not reviewed

Based on SCDOT's *Roadway Design Manual* considerations, exclusive right-turn lanes are not recommended at any of the study intersections.

Worksheets documenting the turn-lane analysis are provided in Appendix G.

5.1.2 Left-Turn Lanes

The need for exclusive left-turn lanes is based upon the criteria documented in *Section 9.5.1.2* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

1. *At any unsignalized intersection on principal, high-speed rural highways with other arterials or collectors;*
2. *at any unsignalized intersection on a two-lane urban or rural highway that satisfies the criteria in Figures 9.5-C, 9.5-D, 9.5-E, 9.5-F, or 9.5-G;*
3. *at any intersection where a capacity analysis determines a left-turn lane is necessary to meet the level of service criteria;*
4. *at any signalized intersection where the left-turn volume is 300 vehicles per hour or more, conduct a traffic review to determine if dual left-turn lanes are required;*
5. *as a general rule, at any intersection where the left-turning volume is 100 vehicles per hour (for a single turn lane) or 300 vehicles per hour (for a dual turn lane);*
6. *at all entrances to major residential, commercial, and industrial developments;*
7. *at all median crossovers;*
8. *for uniformity of intersection design along the highway if other intersections have left-turn lanes (i.e., to satisfy driver expectancy); or*
9. *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to left-turning vehicles;*

Table 5.2 below details whether the previously mentioned criteria are satisfied for Project Driveway #1 and at the study intersections of Salkehatchie Road & Pine Street (Project Driveway #2) and US 21 & Salkehatchie Road. An "✖" indicates that the criteria is not met; a "✓" indicates that it is met; and "N/A" indicates that the criteria is not applicable.

Table 5.2 – Left-Turn Lane Criteria Warrants

Crit-eria	PD #1	PD #3	Pine St & Salke-hatchie Rd	US 21 & Salke-hatchie Rd	Reference/ Note
1	N/A	N/A	N/A	N/A	Not an arterial or collector
2	✖	✖	✖*	✖	Appendix G
3	✖	✖	✖	✖	Table 5.4
4	N/A	N/A	N/A	N/A	Not signalized
5	✖	✖	✖	✖	Exhibit 4.3
6	✖	✖	✖	✖	Not a major development
7	✖	✖	✖	✖	No median crossover
8	✖	✖	✖	✖	Not typically provided
9	N/A	N/A	N/A	N/A	No crash data reviewed

**Since Section 9.5.1.2* of SCDOT's *Roadway Design Manual* (2021) *does not provide turn-lane criteria figure for roadways with speed limit 30 mph, Figure 9.5-G was used for analysis.*

Based on SCDOT's *Roadway Design Manual* considerations, exclusive left-turn lanes are not recommended at any of the study intersections.

Worksheets documenting the turn-lane analysis are provided in Appendix G.

5.2 INTERSECTION LOS ANALYSIS

Using the existing and projected peak hour traffic volumes previously discussed, intersection analysis was conducted for the study and project driveway intersections considering 2022 Existing Conditions, 2025 No Build Conditions, and 2025 Build Conditions. The analysis was conducted using the Transportation Research Board's *Highway Capacity Manual (HCM) 6th Edition* methodologies of the *Synchro*, Version 11 software for stop-controlled intersection analysis.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. Table 5.3 summarizes the HCM 6th Edition control delay thresholds associated with each LOS grade for unsignalized intersections. Level of service A through D is considered to be acceptable LOS, while LOS E and F is considered to be undesirable.

Table 5.3 – HCM 6th Edition Intersection LOS Criteria

LOS	Control Delay per Vehicle (s) Unsignalized
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

As part of the intersection analysis, SCDOT's default *Synchro* parameters were utilized. The existing 2022 traffic counts' peak hour factors (PHF) were utilized in the analysis of existing conditions. Future-year 2025 conditions were analyzed utilizing existing PHF, but with a minimum PHF of 0.90 and maximum PHF of 0.95 considered. The existing 2022 heavy vehicle percentages, as previously discussed, were utilized in the analysis, with a minimum percentage of 2% considered.

Existing lane geometry was utilized for the analysis of 2022 Existing Conditions and 2025 No Build Conditions. The 2025 Build Conditions were analyzed both with existing lane geometry and with any proposed improvements resulting from this impact analysis (including any proposed exclusive turn lanes per the results of Section 5.1) to illustrate their anticipated impact on traffic operations.

The results of the intersection analysis for existing and future-year conditions for the weekday AM and PM peak hour time periods are summarized in Table 5.4.

For two-way stop-controlled (TWSC) intersections, the LOS and delay results are evaluated for the worst-case minor-street approaches only, per *HCM 6th Edition* methodologies for TWSC intersections.

As shown in Table 5.4, the results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable LOS with the proposed Pine Street Residential development.

Worksheets documenting the intersection analyses are provided in Appendix D for 2022 Existing Conditions, Appendix E for 2025 No Build Conditions, and Appendix F for 2025 Build Conditions.

Table 5.4 – Peak Hour Intersection Analysis Results

Intersection	Control	LOS/Delay (seconds/vehicle)					
		AM Peak Hour			PM Peak Hour		
		2022 Existing	2025 No Build	2025 Build	2022 Existing	2025 No Build	2025 Build
1 US 21 & Salkehatchie Road	TWSC	B/10.3 (EB)	B/10.3 (EB)	B/10.9 (EB)	B/10.8 (WB)	B/10.8 (WB)	B/11.1 (WB)
2 US 21 & Pine Street (Project Driveway #1)	TWSC	--	--	A/9.5 (SB)	--	--	B/11.0 (SB)
3 Salkehatchie Road & Pine Street (Project Driveway #2)	TWSC	A/8.7 (WB)	A/8.7 (WB)	A/8.7 (WB)	A/8.6 (WB)	A/8.6 (WB)	A/8.7 (WB)
4 US 21 & Project Driveway #3	TWSC	--	--	A/9.6 (SB)	--	--	A/9.6 (SB)

6.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact analysis was conducted for the Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines.

The proposed Pine Street Residential development (which is anticipated to be constructed by 2025) is located on Pine Street, north of US 21, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, which meets SCDOT's access spacing criteria, as well as via driveways along existing Pine Street, will serve as the access for the development.

For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

The operation of each of the study area intersections (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Pine Street Residential development.

The results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable level of service with the proposed Pine Street Residential development.

Per the criteria documented in *Section 5D-4* of SCDOT's *Access and Roadside Management Standards (ARMS, 2008)*, exclusive turn lanes are not recommended at any of the study intersections or project driveways.

PINE STREET RESIDENTIAL TRAFFIC IMPACT ANALYSIS

APPENDICES

Appendix A TRIP GENERATION WORKSHEETS

TRIP GENERATION ESTIMATES
Pine St Residential TIA

Weekday Daily

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	368	368	736	0%	0	0	0	0%	0	0	0	368	368	736
General Light Industrial	11th	110	100	DU	T = 3.76(X) + 50.47	50%	50%	213	213	426	0%	0	0	0	0%	0	0	0	213	213	426
					.		Total:	581	581	1,162	0%	0	0	0	0%	0	0	0	581	581	1,162

Weekday AM Peak Hour

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.91 Ln(X) + 0.12	26%	74%	14	41	55	0%	0	0	0	0%	0	0	0	14	41	55
General Light Industrial	11th	110	100	DU	T = 0.68 (X) + 3.81	88%	12%	63	9	72	0%	0	0	0	0%	0	0	0	63	9	72
							Total:	77	50	127	0%	0	0	0	0%	0	0	0	77	50	127

Weekday PM Peak Hour

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	45	27	72	0%	0	0	0	0%	0	0	0	45	27	72
General Light Industrial	11th	110	100	DU	Ln(T) = 0.72 Ln(X) + 0.38	14%	86%	5	35	40	0%	0	0	0	0%	0	0	0	5	35	40
							Total:	50	62	112	0%	0	0	0	0%	0	0	0	50	62	112

Appendix B TRAFFIC VOLUME DATA

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : Pine St @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Salkehatchie Rd Southbound				Pine St Westbound				Salkehatchie Rd Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	10	0	0	0	0	0	0	0	7	0	0	0	0	0	0	17
07:15	0	11	0	0	1	0	2	0	0	5	1	0	0	0	0	0	20
07:30	1	7	0	0	1	0	2	0	0	8	0	0	0	0	0	0	19
07:45	1	11	0	0	0	0	0	0	0	11	0	0	0	0	0	0	23
Total	2	39	0	0	2	0	4	0	0	31	1	0	0	0	0	0	79
08:00	1	14	0	0	0	0	2	0	0	8	0	0	0	0	0	0	25
08:15	1	13	0	0	1	0	0	0	0	11	0	0	0	0	0	0	26
08:30	1	6	0	0	0	0	1	0	0	3	0	0	0	0	0	0	11
08:45	0	7	0	0	0	0	1	0	0	3	0	0	0	0	0	0	11
Total	3	40	0	0	1	0	4	0	0	25	0	0	0	0	0	0	73
16:00	2	12	0	0	0	0	2	0	0	12	0	0	0	0	0	0	28
16:15	1	7	0	0	0	0	3	0	0	16	1	0	0	0	0	0	28
16:30	1	7	0	0	0	0	2	0	0	10	0	0	0	0	0	0	20
16:45	1	5	0	0	1	0	1	0	0	5	1	0	0	0	0	0	14
Total	5	31	0	0	1	0	8	0	0	43	2	0	0	0	0	0	90
17:00	0	8	0	0	0	0	1	0	0	14	0	0	0	0	0	0	23
17:15	1	5	0	0	0	0	1	0	0	11	1	0	0	0	0	0	19
17:30	0	7	0	0	0	0	1	0	0	21	0	0	0	0	0	0	29
17:45	3	9	0	0	0	0	2	0	0	11	0	0	0	0	0	0	25
Total	4	29	0	0	0	0	5	0	0	57	1	0	0	0	0	0	96
Grand Total	14	139	0	0	4	0	21	0	0	156	4	0	0	0	0	0	338
Apprch %	9.2	90.8	0	0	16	0	84	0	0	97.5	2.5	0	0	0	0	0	
Total %	4.1	41.1	0	0	1.2	0	6.2	0	0	46.2	1.2	0	0	0	0	0	
Passenger Vehicles	14	137	0	0	4	0	19	0	0	151	4	0	0	0	0	0	329
% Passenger Vehicles	100	98.6	0	0	100	0	90.5	0	0	96.8	100	0	0	0	0	0	97.3
Heavy Vehicles	0	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0	5
% Heavy Vehicles	0	1.4	0	0	0	0	4.8	0	0	1.3	0	0	0	0	0	0	1.5
Buses	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4
% Buses	0	0	0	0	0	0	4.8	0	0	1.9	0	0	0	0	0	0	1.2

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : Pine St @ Salkehatchie Rd
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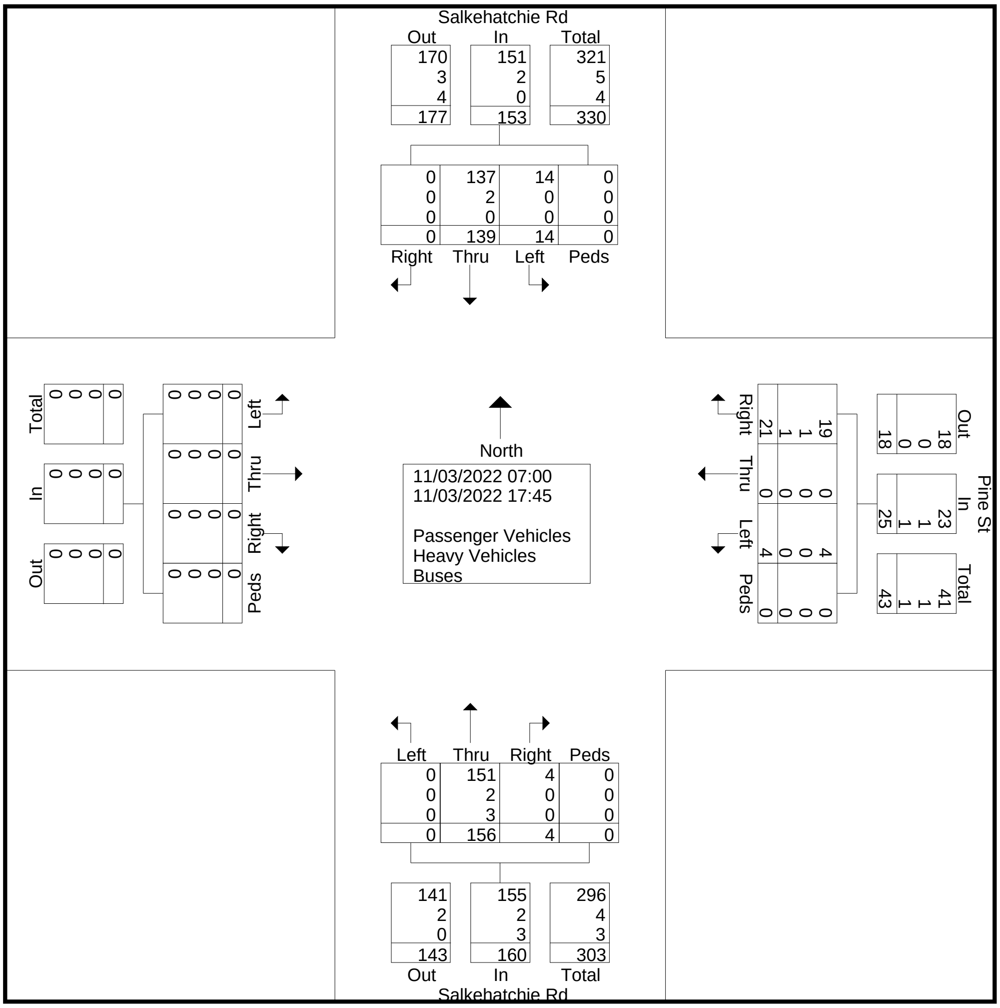
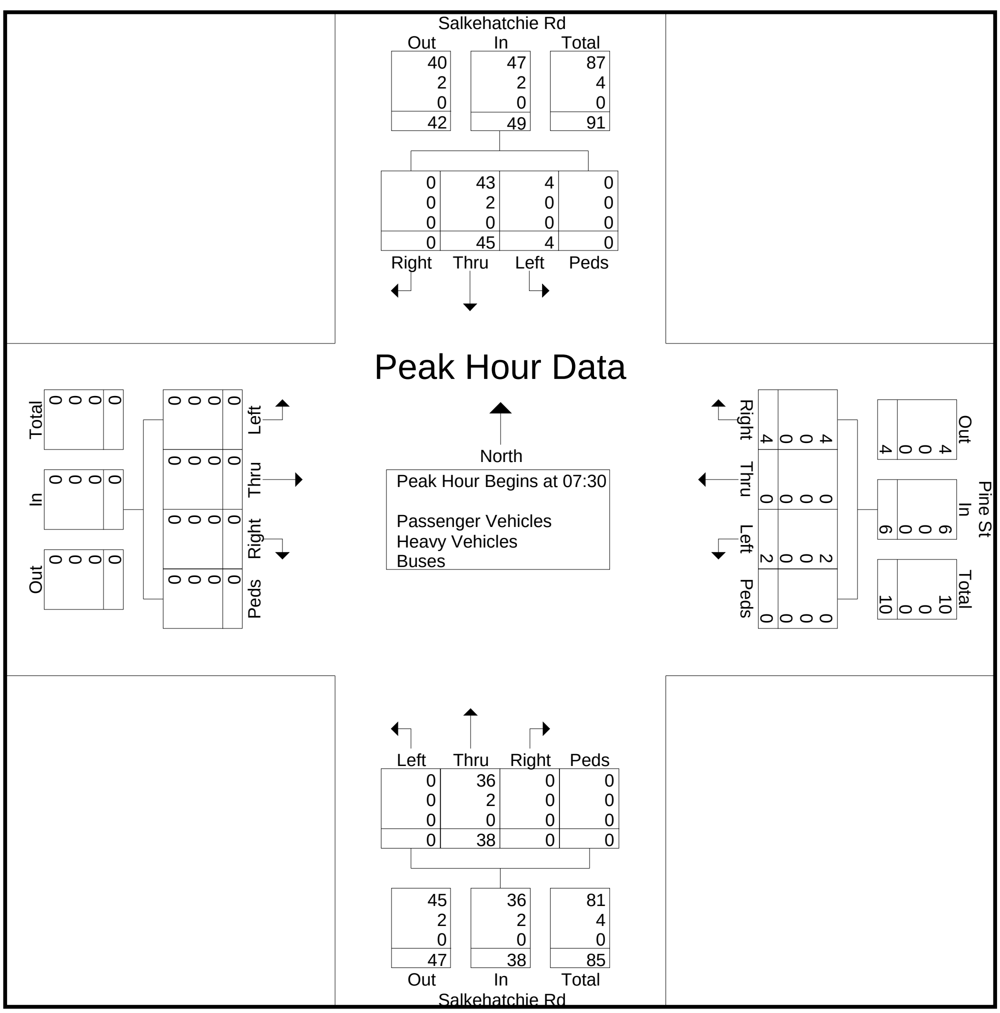


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

	Salkehatchie Rd Southbound					Pine St Westbound					Salkehatchie Rd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**1**	7	0	0	8	**1**	0	**2**	0	**3**	0	8	0	0	8	0	0	0	0	0	19
07:45	1	11	0	0	12	0	0	0	0	0	0	**11**	0	0	**11**	0	0	0	0	0	23
08:00	1	**14**	0	0	**15**	0	0	2	0	2	0	8	0	0	8	0	0	0	0	0	25
08:15	1	13	0	0	14	1	0	0	0	1	0	11	0	0	11	0	0	0	0	0	**26**
Total Volume	4	45	0	0	49	2	0	4	0	6	0	38	0	0	38	0	0	0	0	0	93
% App. Total	8.2	91.8	0	0		33.3	0	66.7	0		0	100	0	0		0	0	0	0		
PHF	1.00	.804	.000	.000	.817	.500	.000	.500	.000	.500	.000	.864	.000	.000	.864	.000	.000	.000	.000	.000	.894
Passenger Vehicles	4	43	0	0	47	2	0	4	0	6	0	36	0	0	36	0	0	0	0	0	89
% Passenger Vehicles																					
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
% Heavy Vehicles	0	4.4	0	0	4.1	0	0	0	0	0	0	5.3	0	0	5.3	0	0	0	0	0	4.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SHORT COUNTS, LLC

735 Maryland St
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We can't say we're the Best, but you Can!

File Name : Pine St @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
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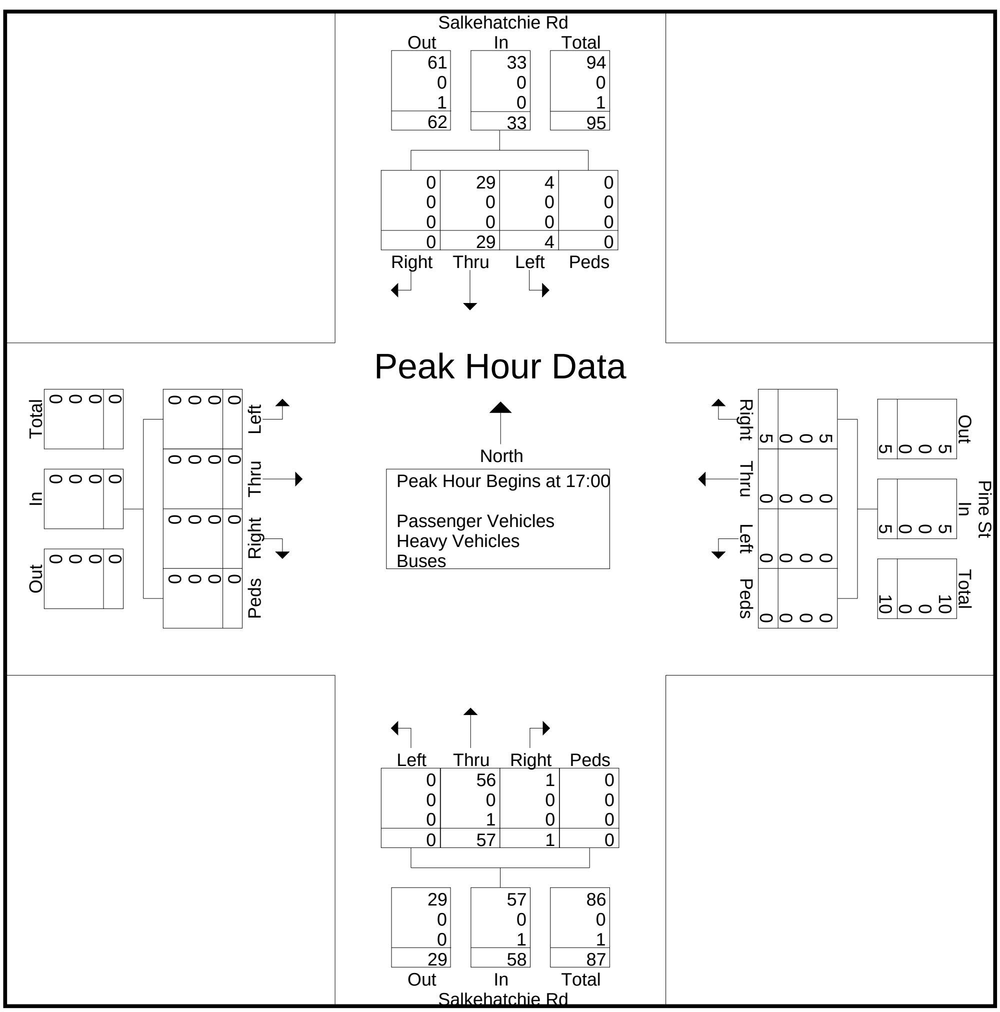
	Salkehatchie Rd Southbound					Pine St Westbound					Salkehatchie Rd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	8	0	0	8	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	23
17:15	1	5	0	0	6	0	0	1	0	1	0	11	**1**	0	12	0	0	0	0	0	19
17:30	0	7	0	0	7	0	0	1	0	1	0	**21**	0	0	**21**	0	0	0	0	0	**29**
17:45	**3**	**9**	0	0	**12**	0	0	**2**	0	**2**	0	11	0	0	11	0	0	0	0	0	25
Total Volume	4	29	0	0	33	0	0	5	0	5	0	57	1	0	58	0	0	0	0	0	96
% App. Total	12.1	87.9	0	0		0	0	100	0		0	98.3	1.7	0		0	0	0	0		
PHF	.333	.806	.000	.000	.688	.000	.000	.625	.000	.625	.000	.679	.250	.000	.690	.000	.000	.000	.000	.000	.828
Passenger Vehicles	4	29	0	0	33	0	0	5	0	5	0	56	1	0	57	0	0	0	0	0	95
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	1.8	0	0	1.7	0	0	0	0	0	1.0



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Pine St Southbound				US 21 Westbound				Northbound				US 21 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	23	0	0	0	0	0	0	0	8	0	0	31
07:15	0	0	0	0	0	21	0	0	0	0	0	0	0	9	0	0	30
07:30	0	0	0	0	0	17	0	0	0	0	0	0	0	12	0	0	29
07:45	0	0	0	0	0	32	0	0	0	0	0	0	0	13	0	0	45
Total	0	0	0	0	0	93	0	0	0	0	0	0	0	42	0	0	135
08:00	0	0	0	0	0	23	0	0	0	0	0	0	0	11	0	0	34
08:15	0	0	0	0	0	16	0	0	0	0	0	0	0	8	0	0	24
08:30	0	0	0	0	0	14	0	0	0	0	0	0	0	10	0	0	24
08:45	0	0	0	0	0	22	0	0	0	0	0	0	0	11	0	0	33
Total	0	0	0	0	0	75	0	0	0	0	0	0	0	40	0	0	115
16:00	0	0	0	0	0	21	0	0	0	0	0	0	0	31	0	0	52
16:15	0	0	0	0	0	19	0	0	0	0	0	0	0	25	0	0	44
16:30	0	0	0	0	0	13	0	0	0	0	0	0	0	29	0	0	42
16:45	0	0	0	0	0	21	0	0	0	0	0	0	0	29	0	0	50
Total	0	0	0	0	0	74	0	0	0	0	0	0	0	114	0	0	188
17:00	0	0	0	0	0	14	0	0	0	0	0	0	0	32	0	0	46
17:15	0	0	0	0	0	21	0	0	0	0	0	0	0	27	0	0	48
17:30	0	0	0	0	0	13	0	0	0	0	0	0	0	37	0	0	50
17:45	0	0	0	0	0	32	0	0	0	0	0	0	0	25	0	0	57
Total	0	0	0	0	0	80	0	0	0	0	0	0	0	121	0	0	201
Grand Total	0	0	0	0	0	322	0	0	0	0	0	0	0	317	0	0	639
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	50.4	0	0	0	0	0	0	0	49.6	0	0	
Passenger Vehicles	0	0	0	0	0	276	0	0	0	0	0	0	0	290	0	0	566
% Passenger Vehicles	0	0	0	0	0	85.7	0	0	0	0	0	0	0	91.5	0	0	88.6
Heavy Vehicles	0	0	0	0	0	45	0	0	0	0	0	0	0	26	0	0	71
% Heavy Vehicles	0	0	0	0	0	14	0	0	0	0	0	0	0	8.2	0	0	11.1
Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
% Buses	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.3	0	0	0.3

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
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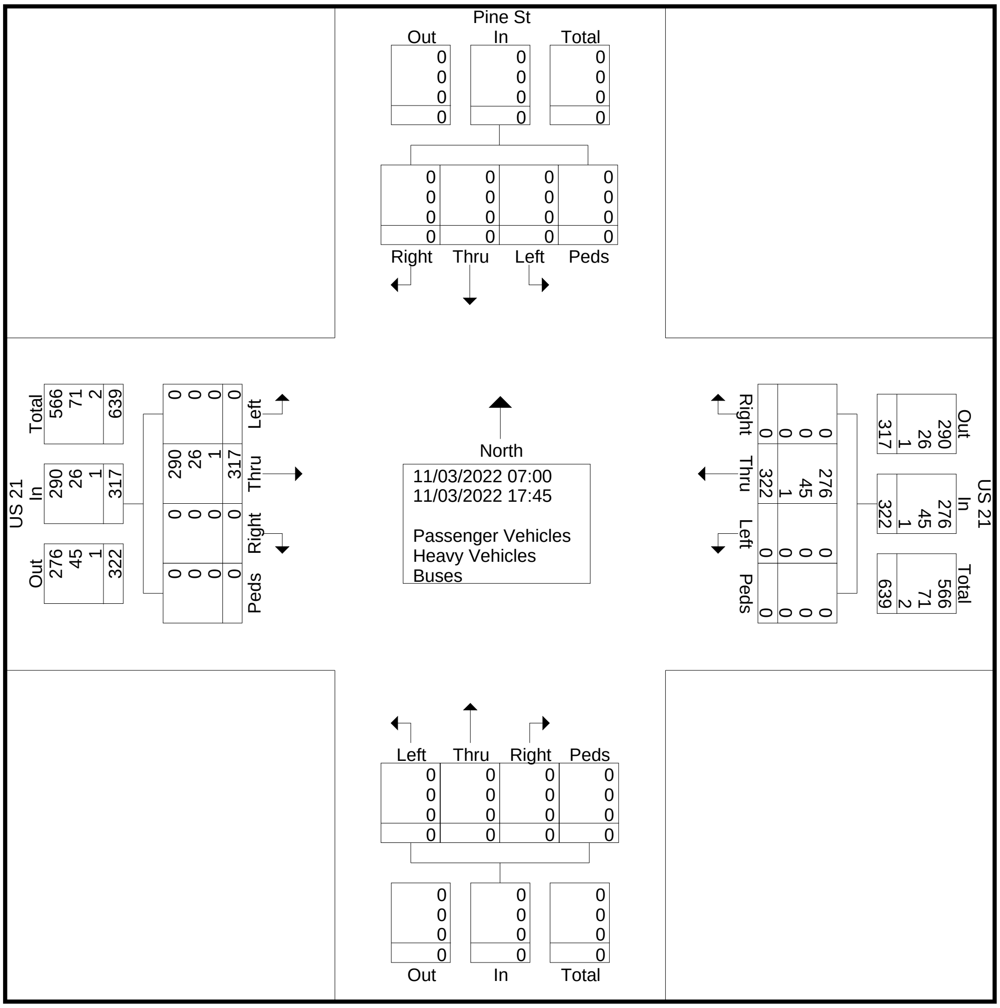

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
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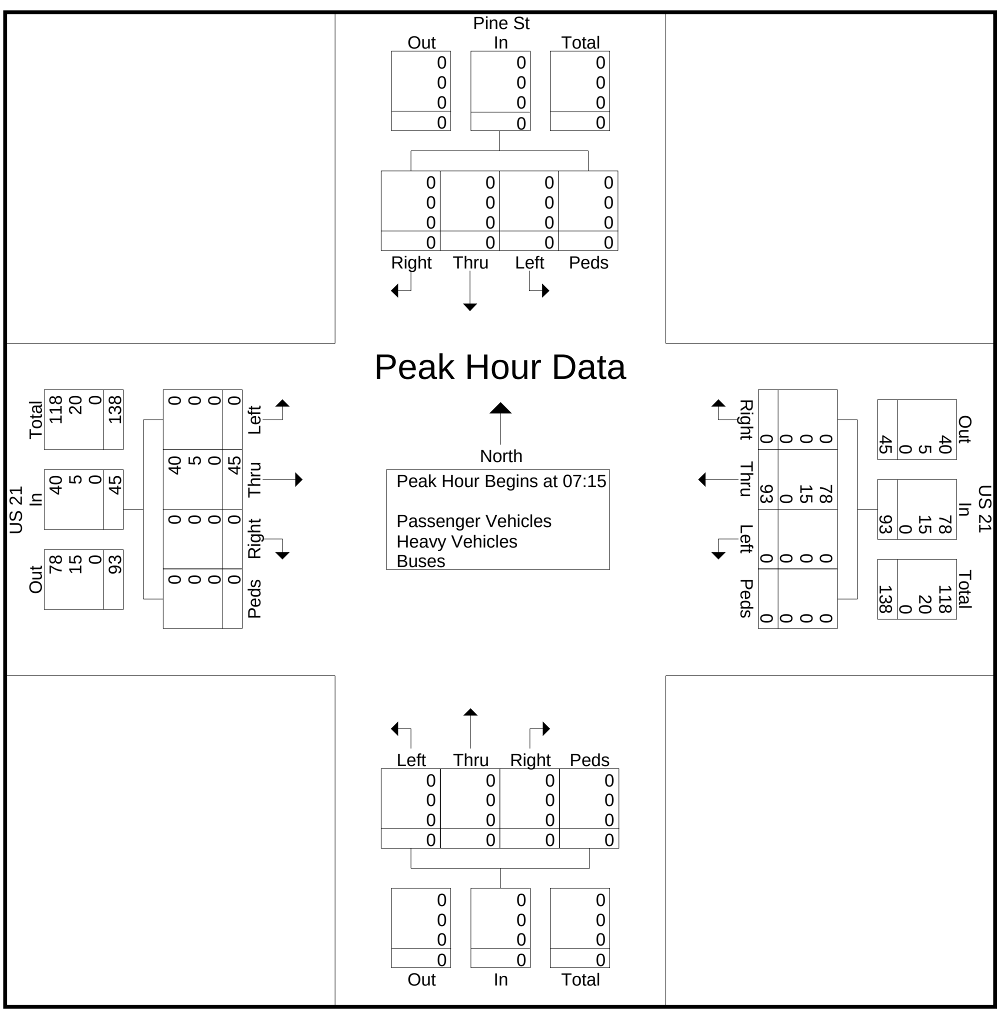
	Pine St Southbound					US 21 Westbound					Northbound					US 21 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	9	0	0	9	30
07:30	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	12	0	0	12	29
07:45	0	0	0	0	0	0	**32**	0	0	**32**	0	0	0	0	0	0	**13**	0	0	**13**	**45**
08:00	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	11	0	0	11	34
Total Volume	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	0	45	0	0	45	138
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.727	.000	.000	.727	.000	.000	.000	.000	.000	.000	.865	.000	.000	.865	.767
Passenger Vehicles	0	0	0	0	0	0	78	0	0	78	0	0	0	0	0	0	40	0	0	40	118
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	5	0	0	5	20
% Heavy Vehicles	0	0	0	0	0	0	16.1	0	0	16.1	0	0	0	0	0	0	11.1	0	0	11.1	14.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

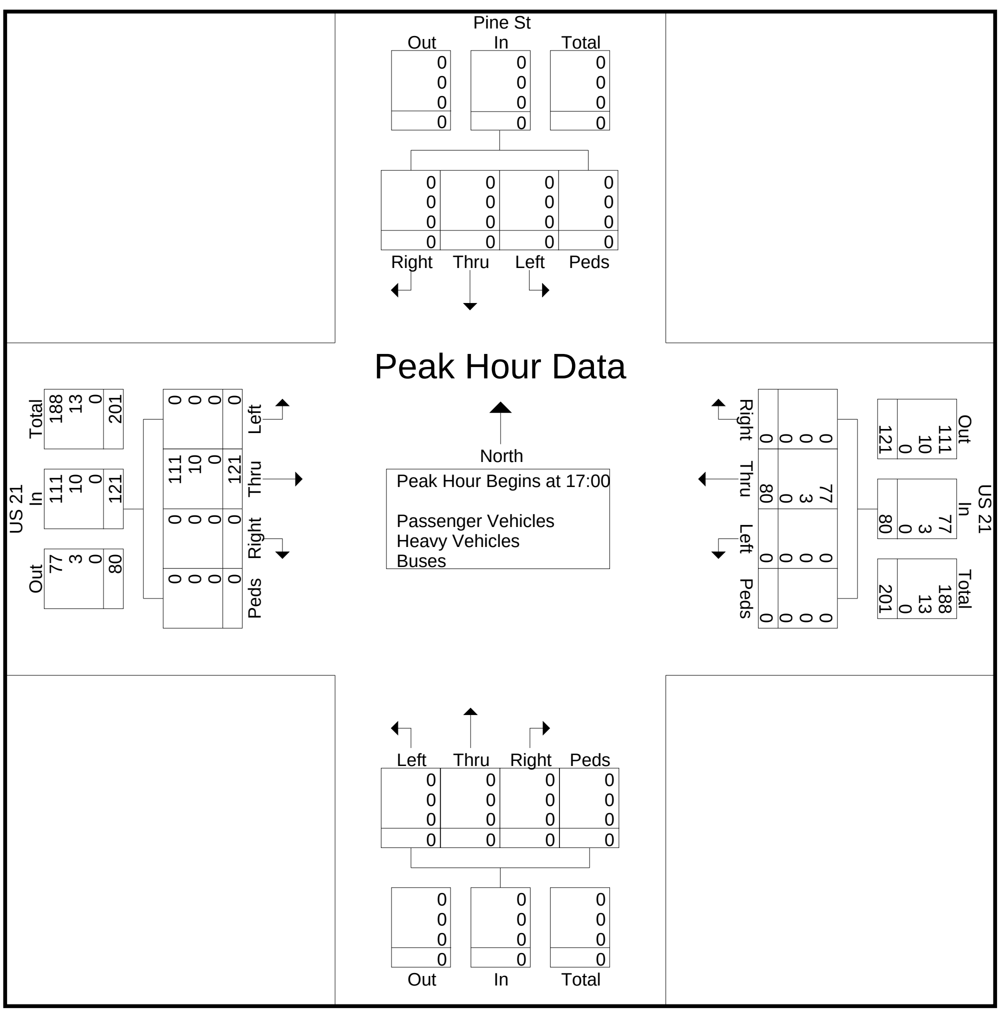


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 4

	Pine St Southbound					US 21 Westbound					Northbound					US 21 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	32	0	0	32	46
17:15	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	27	0	0	27	48
17:30	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	**37**	0	0	**37**	50
17:45	0	0	0	0	0	0	**32**	0	0	**32**	0	0	0	0	0	0	25	0	0	25	**57**
Total Volume	0	0	0	0	0	0	80	0	0	80	0	0	0	0	0	0	121	0	0	121	201
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.000	.818	.000	.000	.818	.882
Passenger Vehicles	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	111	0	0	111	188
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	10	0	0	10	13
% Heavy Vehicles	0	0	0	0	0	0	3.8	0	0	3.8	0	0	0	0	0	0	8.3	0	0	8.3	6.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SHORT COUNTS, LLC

735 Maryland St
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We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
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Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	US 21 Southbound				Salkehatchie Rd Westbound				US 21 Northbound				Salkehatchie Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	9	2	0	0	4	2	0	1	6	0	0	1	8	0	0	38
07:15	7	11	1	0	2	0	3	0	1	2	0	0	0	5	5	0	37
07:30	7	6	2	7	1	4	3	0	0	5	3	0	1	5	2	0	46
07:45	9	22	3	3	1	4	1	0	0	5	6	2	2	9	1	0	68
Total	28	48	8	10	4	12	9	0	2	18	9	2	4	27	8	0	189
08:00	8	14	2	1	1	5	5	0	0	5	3	1	4	8	5	0	62
08:15	6	12	3	0	0	4	2	0	4	2	1	0	2	7	2	0	45
08:30	4	9	1	0	1	3	4	0	1	6	0	0	2	4	3	0	38
08:45	2	6	2	0	1	3	1	0	0	6	1	0	4	8	1	0	35
Total	20	41	8	1	3	15	12	0	5	19	5	1	12	27	11	0	180
16:00	4	12	4	1	2	8	4	0	4	15	0	0	7	8	3	0	72
16:15	3	5	5	0	2	12	7	0	3	12	4	0	3	6	1	0	63
16:30	2	12	6	0	4	5	4	0	3	14	0	0	4	4	2	0	60
16:45	2	11	7	2	0	3	12	0	3	12	0	0	4	2	2	0	60
Total	11	40	22	3	8	28	27	0	13	53	4	0	18	20	8	0	255
17:00	1	10	3	0	4	11	6	0	7	21	4	0	5	4	2	0	78
17:15	12	5	7	0	0	4	14	0	0	11	0	0	5	1	2	0	61
17:30	4	5	6	0	1	12	11	0	8	9	2	0	6	2	6	0	72
17:45	10	13	2	0	0	7	7	0	3	12	1	1	4	5	0	0	65
Total	27	33	18	0	5	34	38	0	18	53	7	1	20	12	10	0	276
Grand Total	86	162	56	14	20	89	86	0	38	143	25	4	54	86	37	0	900
Apprch %	27	50.9	17.6	4.4	10.3	45.6	44.1	0	18.1	68.1	11.9	1.9	30.5	48.6	20.9	0	
Total %	9.6	18	6.2	1.6	2.2	9.9	9.6	0	4.2	15.9	2.8	0.4	6	9.6	4.1	0	
Passenger Vehicles	83	127	56	14	19	87	82	0	37	121	25	4	54	85	37	0	831
% Passenger Vehicles	96.5	78.4	100	100	95	97.8	95.3	0	97.4	84.6	100	100	100	98.8	100	0	92.3
Heavy Vehicles	3	35	0	0	1	0	4	0	0	20	0	0	0	1	0	0	64
% Heavy Vehicles	3.5	21.6	0	0	5	0	4.7	0	0	14	0	0	0	1.2	0	0	7.1
Buses	0	0	0	0	0	2	0	0	1	2	0	0	0	0	0	0	5
% Buses	0	0	0	0	0	2.2	0	0	2.6	1.4	0	0	0	0	0	0	0.6

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
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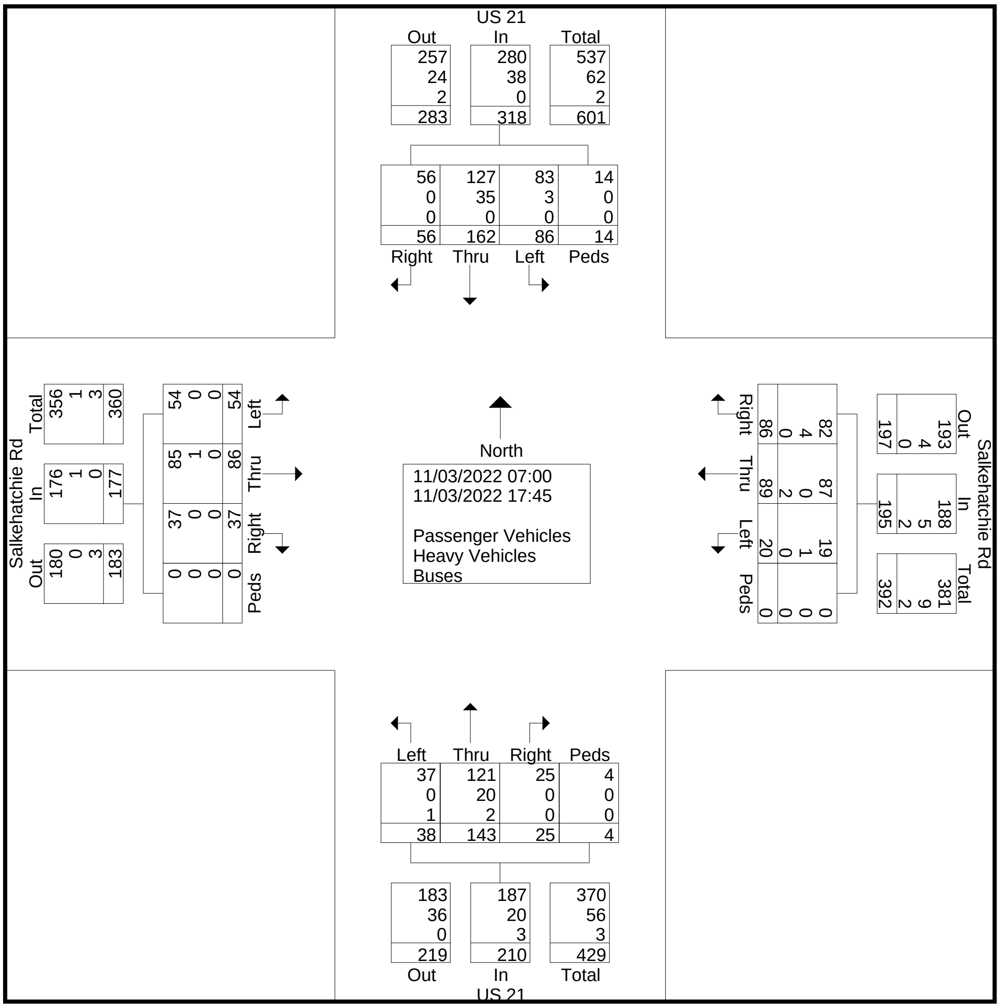

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
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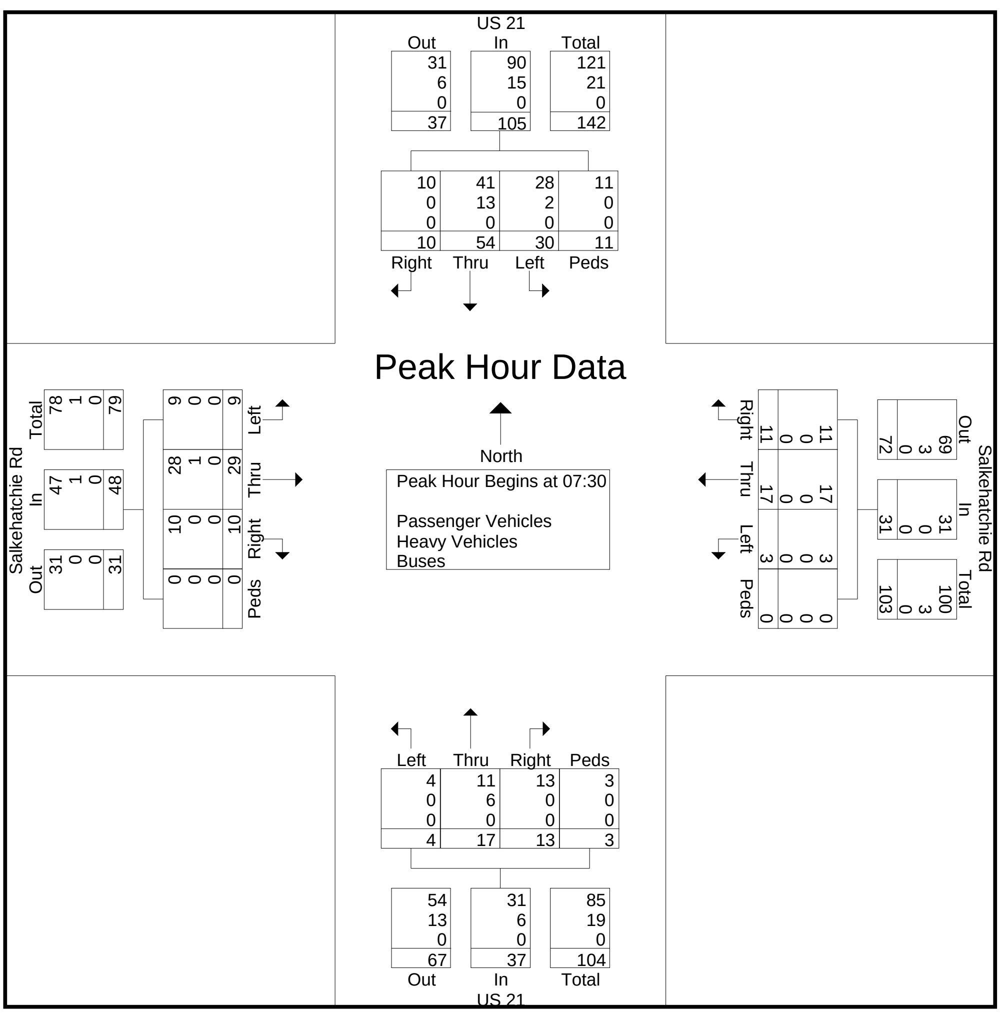
	US 21 Southbound					Salkehatchie Rd Westbound					US 21 Northbound					Salkehatchie Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	7	6	2	**7**	22	**1**	4	3	0	8	0	**5**	3	0	8	1	5	2	0	8	46
07:45	**9**	**22**	**3**	3	**37**	1	4	1	0	6	0	5	**6**	**2**	**13**	2	**9**	1	0	12	**68**
08:00	8	14	2	1	25	1	**5**	**5**	0	**11**	0	5	3	1	9	**4**	8	**5**	0	**17**	62
08:15	6	12	3	0	21	0	4	2	0	6	**4**	2	1	0	7	2	7	2	0	11	45
Total Volume	30	54	10	11	105	3	17	11	0	31	4	17	13	3	37	9	29	10	0	48	221
% App. Total	28.6	51.4	9.5	10.5		9.7	54.8	35.5	0		10.8	45.9	35.1	8.1		18.8	60.4	20.8	0		
PHF	.833	.614	.833	.393	.709	.750	.850	.550	.000	.705	.250	.850	.542	.375	.712	.563	.806	.500	.000	.706	.813
Passenger Vehicles	28	41	10	11	90	3	17	11	0	31	4	11	13	3	31	9	28	10	0	47	199
% Passenger Vehicles																					
Heavy Vehicles	2	13	0	0	15	0	0	0	0	0	0	6	0	0	6	0	1	0	0	1	22
% Heavy Vehicles	6.7	24.1	0	0	14.3	0	0	0	0	0	0	35.3	0	0	16.2	0	3.4	0	0	2.1	10.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

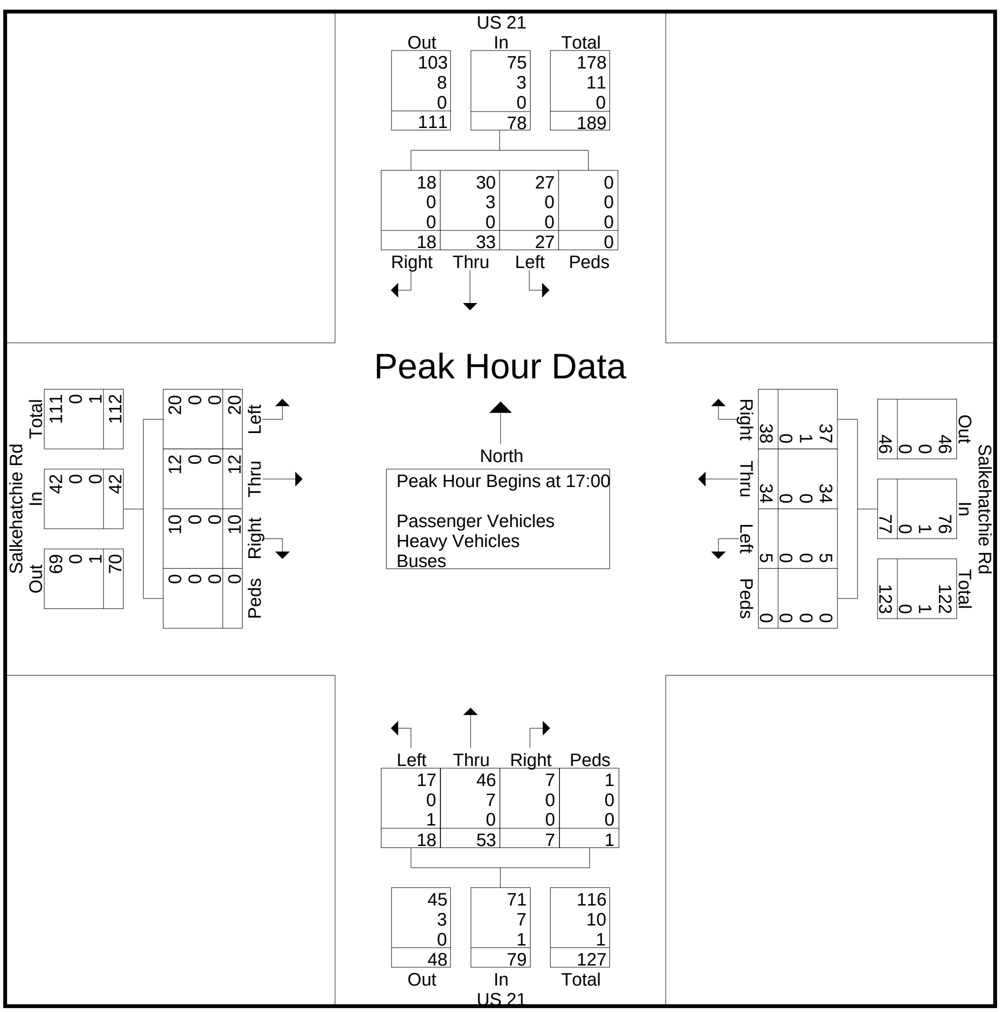


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 4

	US 21 Southbound					Salkehatchie Rd Westbound					US 21 Northbound					Salkehatchie Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	1	10	3	0	14	**4**	11	6	0	21	7	**21**	**4**	0	**32**	5	4	2	0	11	**78**
17:15	**12**	5	**7**	0	24	0	4	**14**	0	18	0	11	0	0	11	5	1	2	0	8	61
17:30	4	5	6	0	15	1	**12**	11	0	**24**	**8**	9	2	0	19	**6**	2	**6**	0	**14**	72
17:45	10	**13**	2	0	**25**	0	7	7	0	14	3	12	1	**1**	17	4	**5**	0	0	9	65
Total Volume	27	33	18	0	78	5	34	38	0	77	18	53	7	1	79	20	12	10	0	42	276
% App. Total	34.6	42.3	23.1	0		6.5	44.2	49.4	0		22.8	67.1	8.9	1.3		47.6	28.6	23.8	0		
PHF	.563	.635	.643	.000	.780	.313	.708	.679	.000	.802	.563	.631	.438	.250	.617	.833	.600	.417	.000	.750	.885
Passenger Vehicles	27	30	18	0	75	5	34	37	0	76	17	46	7	1	71	20	12	10	0	42	264
% Passenger Vehicles																					
Heavy Vehicles	0	3	0	0	3	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	11
% Heavy Vehicles	0	9.1	0	0	3.8	0	0	2.6	0	1.3	0	13.2	0	0	8.9	0	0	0	0	0	4.0
Buses	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	5.6	0	0	0	1.3	0	0	0	0	0	0.4



Appendix C TRAFFIC VOLUME DEVELOPMENT WORKSHEETS

1 - Salkehatchie Rd & US 21

			TOTAL PROJECT TRAFFIC			
Traffic Control:	TWSC		IN	OUT	IN	OUT
Date Counted:	11/3/2022	AM	77	50	PM 50	62

AM PEAK HOUR 7:30 AM - 8:30 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**9**	**29**	**10**	**3**	**17**	**11**	**4**	**17**	**13**	**30**	**54**	**10**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	1	0	0	1	0	1	2	0
Vested Traffic												
2025 No Build Traffic Volumes	**9**	**30**	**10**	**3**	**18**	**11**	**4**	**18**	**13**	**31**	**56**	**10**
Inbound Residential Project Traffic %						10%	5%	25%				
Outbound Residential Project Traffic %			5%							10%	25%	
Inbound Industrial Project Traffic %								50%				
Outbound Industrial Project Traffic %											50%	
2025 Project Traffic	0	0	2	0	0	1	1	35	0	4	15	0
2025 Build Traffic Volumes	**9**	**30**	**12**	**3**	**18**	**12**	**5**	**53**	**13**	**35**	**71**	**10**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**20**	**12**	**10**	**5**	**34**	**38**	**18**	**53**	**7**	**27**	**33**	**18**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	1	0	0	0	1	1	1	2	0	1	1	1
Vested Traffic												
2025 No Build Traffic Volumes	**21**	**12**	**10**	**5**	**35**	**39**	**19**	**55**	**7**	**28**	**34**	**19**
Inbound Project Traffic %						10%	5%	25%				
Outbound Project Traffic %			5%							10%	25%	
Inbound Industrial Project Traffic %								50%				
Outbound Industrial Project Traffic %											50%	
2025 Project Traffic	0	0	1	0	0	5	2	14	0	3	24	0
2025 Build Traffic Volumes	**21**	**12**	**11**	**5**	**35**	**44**	**21**	**69**	**7**	**31**	**58**	**19**

2 - US 21 & Pine Street/Project Driveway #1

Traffic Control: TWSC
Date Counted: 11/3/2022

	TOTAL PROJECT TRAFFIC				
	IN	OUT		IN	OUT
AM	**77**	**50**	PM	**50**	**62**

AM PEAK HOUR 7:15 AM - 8:15 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**45**	**0**	**0**	**93**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	3	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**46**	**0**	**0**	**96**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	35%					30%						
Outbound Project Traffic %										30%		35%
Inbound Industrial Project Traffic %	25%	25%				25%						
Outbound Industrial Project Traffic %					25%					25%		25%
2025 Project Traffic	21	15	0	0	2	20	0	0	0	15	0	17
2025 Build Traffic Volumes	**21**	**61**	**0**	**0**	**98**	**20**	**0**	**0**	**0**	**15**	**0**	**17**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**121**	**0**	**0**	**80**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	4	0	0	2	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**125**	**0**	**0**	**82**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	35%					30%						
Outbound Project Traffic %										30%		35%
Inbound Industrial Project Traffic %	25%	25%				25%						
Outbound Industrial Project Traffic %					25%					25%		25%
2025 Project Traffic	17	1	0	0	9	15	0	0	0	17	0	18
2025 Build Traffic Volumes	**17**	**126**	**0**	**0**	**91**	**15**	**0**	**0**	**0**	**17**	**0**	**18**

3 - Salkehatchie Rd & Pine Street/Project Driveway #2

				TOTAL PROJECT TRAFFIC							
Traffic Control:	TWSC				IN	OUT		IN	OUT		
Date Counted:	11/3/2022			AM	**77**	**50**	PM	**50**	**62**		

AM PEAK HOUR 7:30 AM - 8:30 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**38**	**0**	**4**	**45**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	0	0	0	0	0	0	1	0	0	1	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**39**	**0**	**4**	**46**	**0**
Inbound Project Traffic %									5%	30%		
Outbound Project Traffic %				5%		30%						
Inbound Industrial Project Traffic %												
Outbound Industrial Project Traffic %												
2025 Project Traffic	0	0	0	2	0	12	0	0	1	4	0	0
2025 Build Traffic Volumes	**0**	**0**	**0**	**4**	**0**	**16**	**0**	**39**	**1**	**8**	**46**	**0**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**57**	**1**	**4**	**29**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	0	0	0	0	0	0	2	0	0	1	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**59**	**1**	**4**	**30**	**0**
Inbound Project Traffic %									5%	30%		
Outbound Project Traffic %				5%		30%						
Inbound Industrial Project Traffic %												
Outbound Industrial Project Traffic %												
2025 Project Traffic	0	0	0	1	0	8	0	0	2	14	0	0
2025 Build Traffic Volumes	**0**	**0**	**0**	**1**	**0**	**13**	**0**	**59**	**3**	**18**	**30**	**0**

4 - US 21 & Project Driveway #3												
					TOTAL PROJECT TRAFFIC							
Traffic Control:	TWSC				IN	OUT		IN	OUT			
Date Counted:	11/3/2022			AM	77	50	PM	50	62			

AM PEAK HOUR 7:15 AM - 8:15 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**45**	**0**	**0**	**93**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	3	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**46**	**0**	**0**	**96**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %					30%							
Outbound Project Traffic %		30%										
Inbound Industrial Project Traffic %	25%				25%	25%						
Outbound Industrial Project Traffic %		25%								25%		25%
2025 Project Traffic	15	15	0	0	20	16	0	0	0	2	0	2
2025 Build Traffic Volumes	**15**	**61**	**0**	**0**	**116**	**16**	**0**	**0**	**0**	**2**	**0**	**2**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**0**	**121**	**0**	**0**	**80**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	4	0	0	2	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**125**	**0**	**0**	**82**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %					30%							
Outbound Project Traffic %		30%										
Inbound Industrial Project Traffic %	25%				25%	25%						
Outbound Industrial Project Traffic %		25%								25%		25%
2025 Project Traffic	1	17	0	0	15	1	0	0	0	9	0	9
2025 Build Traffic Volumes	**1**	**142**	**0**	**0**	**97**	**1**	**0**	**0**	**0**	**9**	**0**	**9**

Appendix D ANALYSIS WORKSHEETS: 2022 EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	29	10	3	17	11	4	17	13	30	54	10
Future Vol, veh/h	9	29	10	3	17	11	4	17	13	30	54	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	11	3	19	12	4	19	15	34	61	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	185	177	67	192	175	27	72	0	0	34	0	0
Stage 1	135	135	-	35	35	-	-	-	-	-	-	-
Stage 2	50	42	-	157	140	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	750	695	964	738	694	1010	1528	-	-	1578	-	-
Stage 1	840	762	-	946	839	-	-	-	-	-	-	-
Stage 2	934	837	-	813	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	711	678	964	689	677	1010	1528	-	-	1578	-	-
Mov Cap-2 Maneuver	711	678	-	689	677	-	-	-	-	-	-	-
Stage 1	837	745	-	943	836	-	-	-	-	-	-	-
Stage 2	899	834	-	751	738	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.9	0.9	2.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	729	768	1578	-	-
HCM Lane V/C Ratio	0.003	-	-	0.074	0.045	0.021	-	-
HCM Control Delay (s)	7.4	0	-	10.3	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	38	0	4	45
Future Vol, veh/h	2	4	38	0	4	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	2	4	43	0	4	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	43	0	0	43	0
Stage 1	43	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	896	1027	-	-	1553	-
Stage 1	979	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	893	1027	-	-	1553	-
Mov Cap-2 Maneuver	893	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	8.7		0		0.6	
HCM LOS	A					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	12	10	5	34	38	18	53	7	27	33	18
Future Vol, veh/h	20	12	10	5	34	38	18	53	7	27	33	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	24	14	12	6	41	46	22	64	8	33	40	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	273	233	51	242	240	68	62	0	0	72	0	0
Stage 1	117	117	-	112	112	-	-	-	-	-	-	-
Stage 2	156	116	-	130	128	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	675	664	1011	698	649	976	1541	-	-	1528	-	-
Stage 1	883	795	-	876	789	-	-	-	-	-	-	-
Stage 2	842	796	-	857	777	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	594	639	1011	659	625	976	1541	-	-	1528	-	-
Mov Cap-2 Maneuver	594	639	-	659	625	-	-	-	-	-	-	-
Stage 1	870	778	-	863	777	-	-	-	-	-	-	-
Stage 2	749	784	-	813	760	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	10.4	1.7	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	674	763	1528	-	-
HCM Lane V/C Ratio	0.014	-	-	0.075	0.122	0.021	-	-
HCM Control Delay (s)	7.4	0	-	10.8	10.4	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection						
Int Delay, s/veh	0.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	57	1	4	29
Future Vol, veh/h	0	5	57	1	4	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	63	1	4	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	104	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	894	1000	-	-	1538	-
Stage 1	959	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	891	1000	-	-	1538	-
Mov Cap-2 Maneuver	891	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1538	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix E ANALYSIS WORKSHEETS: 2025 NO BUILD CONDITIONS

Intersection												
Int Delay, s/veh	5											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	30	10	3	18	11	4	18	13	31	56	10
Future Vol, veh/h	9	30	10	3	18	11	4	18	13	31	56	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	11	3	20	12	4	20	14	34	62	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	187	178	68	193	176	27	73	0	0	34	0	0
Stage 1	136	136	-	35	35	-	-	-	-	-	-	-
Stage 2	51	42	-	158	141	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	748	695	963	737	693	1010	1527	-	-	1578	-	-
Stage 1	839	761	-	946	839	-	-	-	-	-	-	-
Stage 2	932	837	-	812	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	708	678	963	688	676	1010	1527	-	-	1578	-	-
Mov Cap-2 Maneuver	708	678	-	688	676	-	-	-	-	-	-	-
Stage 1	836	744	-	943	836	-	-	-	-	-	-	-
Stage 2	896	834	-	750	737	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.9	0.8	2.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1527	-	-	728	764	1578	-	-
HCM Lane V/C Ratio	0.003	-	-	0.075	0.047	0.022	-	-
HCM Control Delay (s)	7.4	0	-	10.3	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection						
Int Delay, s/veh	0.9					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	39	0	4	46
Future Vol, veh/h	2	4	39	0	4	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	2	4	43	0	4	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	43	0	0	43	0
Stage 1	43	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	896	1027	-	-	1553	-
Stage 1	979	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	893	1027	-	-	1553	-
Mov Cap-2 Maneuver	893	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	12	10	5	35	39	19	55	7	28	34	19
Future Vol, veh/h	21	12	10	5	35	39	19	55	7	28	34	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	23	13	11	6	39	43	21	61	8	31	38	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	259	222	49	230	228	65	59	0	0	69	0	0
Stage 1	111	111	-	107	107	-	-	-	-	-	-	-
Stage 2	148	111	-	123	121	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	690	673	1014	710	659	980	1545	-	-	1532	-	-
Stage 1	889	800	-	882	793	-	-	-	-	-	-	-
Stage 2	850	800	-	864	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	612	649	1014	673	636	980	1545	-	-	1532	-	-
Mov Cap-2 Maneuver	612	649	-	673	636	-	-	-	-	-	-	-
Stage 1	877	783	-	870	782	-	-	-	-	-	-	-
Stage 2	761	789	-	822	766	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	10.3	1.7	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1545	-	-	686	773	1532	-	-
HCM Lane V/C Ratio	0.014	-	-	0.07	0.114	0.02	-	-
HCM Control Delay (s)	7.4	0	-	10.6	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	59	1	4	30
Future Vol, veh/h	0	5	59	1	4	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	66	1	4	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	108	67	0	0	67	0
Stage 1	67	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	889	997	-	-	1535	-
Stage 1	956	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	886	997	-	-	1535	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	997	1535	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix F ANALYSIS WORKSHEETS: 2025 BUILD CONDITIONS

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	30	12	3	18	12	5	53	13	35	71	10
Future Vol, veh/h	9	30	12	3	18	12	5	53	13	35	71	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	13	3	20	13	6	59	14	39	79	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	258	248	85	264	246	66	90	0	0	73	0	0
Stage 1	163	163	-	78	78	-	-	-	-	-	-	-
Stage 2	95	85	-	186	168	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	634	942	661	633	960	1505	-	-	1527	-	-
Stage 1	812	741	-	897	803	-	-	-	-	-	-	-
Stage 2	883	802	-	784	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	630	614	942	610	613	960	1505	-	-	1527	-	-
Mov Cap-2 Maneuver	630	614	-	610	613	-	-	-	-	-	-	-
Stage 1	809	721	-	893	800	-	-	-	-	-	-	-
Stage 2	846	799	-	717	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	10.4	0.5	2.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	672	705	1527	-	-
HCM Lane V/C Ratio	0.004	-	-	0.084	0.052	0.025	-	-
HCM Control Delay (s)	7.4	0	-	10.9	10.4	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	61	98	20	15	17
Future Vol, veh/h	21	61	98	20	15	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	16	16	2	2
Mvmt Flow	23	68	109	22	17	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	131	0	-	0	234	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	4.21	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.299	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1400	-	-	-	754	931
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	741	931
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	831
HCM Lane V/C Ratio	0.017	-	-	-	0.043
HCM Control Delay (s)	7.6	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection						
Int Delay, s/veh	2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	16	39	1	8	46
Future Vol, veh/h	4	16	39	1	8	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	4	18	43	1	9	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	113	44	0	0	44	0
Stage 1	44	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	884	1026	-	-	1552	-
Stage 1	978	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1026	-	-	1552	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1552	-
HCM Lane V/C Ratio	-	-	0.022	0.006	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	61	116	16	2	2
Future Vol, veh/h	15	61	116	16	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	16	16	16	11
Mvmt Flow	17	68	129	18	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	240	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.21	-	-	-	6.56	6.31
Critical Hdwy Stg 1	-	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	-	5.56	-
Follow-up Hdwy	2.299	-	-	-	3.644	3.399
Pot Cap-1 Maneuver	1381	-	-	-	719	887
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1381	-	-	-	710	887
Mov Cap-2 Maneuver	-	-	-	-	710	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1381	-	-	-	789
HCM Lane V/C Ratio	0.012	-	-	-	0.006
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection												
Int Delay, s/veh	5.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	12	11	5	35	44	21	69	7	31	58	19
Future Vol, veh/h	21	12	11	5	35	44	21	69	7	31	58	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	23	13	12	6	39	49	23	77	8	34	64	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	314	274	75	282	280	81	85	0	0	85	0	0
Stage 1	143	143	-	127	127	-	-	-	-	-	-	-
Stage 2	171	131	-	155	153	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	635	630	981	656	617	960	1512	-	-	1512	-	-
Stage 1	855	775	-	860	778	-	-	-	-	-	-	-
Stage 2	826	784	-	831	758	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	555	605	981	618	592	960	1512	-	-	1512	-	-
Mov Cap-2 Maneuver	555	605	-	618	592	-	-	-	-	-	-	-
Stage 1	841	756	-	846	766	-	-	-	-	-	-	-
Stage 2	732	771	-	787	740	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	10.5	1.6	2.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1512	-	-	639	743	1512	-	-
HCM Lane V/C Ratio	0.015	-	-	0.077	0.126	0.023	-	-
HCM Control Delay (s)	7.4	0	-	11.1	10.5	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	125	82	17	26	27
Future Vol, veh/h	17	125	82	17	26	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	4	80	80
Mvmt Flow	19	139	91	19	29	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	110	0	-	0	278	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.18	-	-	-	7.2	7
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.272	-	-	-	4.22	4.02
Pot Cap-1 Maneuver	1443	-	-	-	573	778
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1443	-	-	-	565	778
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1443	-	-	-	657
HCM Lane V/C Ratio	0.013	-	-	-	0.09
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection						
Int Delay, s/veh	2.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	59	3	18	30
Future Vol, veh/h	1	13	59	3	18	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	14	66	3	20	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	141	68	0	0	69	0
Stage 1	68	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	852	995	-	-	1532	-
Stage 1	955	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	841	995	-	-	1532	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	982	1532	-
HCM Lane V/C Ratio	-	-	0.016	0.013	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	142	97	1	9	9
Future Vol, veh/h	1	142	97	1	9	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	4	4	8
Mvmt Flow	1	158	108	1	10	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	269	109
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	4.18	-	-	-	6.44	6.28
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.272	-	-	-	3.536	3.372
Pot Cap-1 Maneuver	1445	-	-	-	716	929
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	864	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1445	-	-	-	715	929
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	864	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1445	-	-	-	808
HCM Lane V/C Ratio	0.001	-	-	-	0.025
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix G TURN LANE ANALYSIS WORKSHEETS

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Salkhatchie Road
Left Turn Movement:	Northbound Left-Turn Lane
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	35 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	5	21
	Through	53	69
	Right	13	7
Opposing	Left	35	31
	Through	71	58
	Right	10	19

	AM	PM
Advancing Volume:	71	97
Opposing Volume:	116	108
Left Turn Volume:	5	21
% Left Turns in Advancing Volume:	7.0%	21.6%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	35	31
	Through	71	58
	Right	10	19

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	116	108
Right Turn Volume:	10	19

Turn Lane Warrant Met?

	Left Turn Lane Warrant	Right Turn Lane Warrant
Applicable Warrant Chart:	**Fig 9.5-G**	**Fig 9.5-A**
Warrant Satisfied:	**No**	**No**

Recommended Turn Lane Length

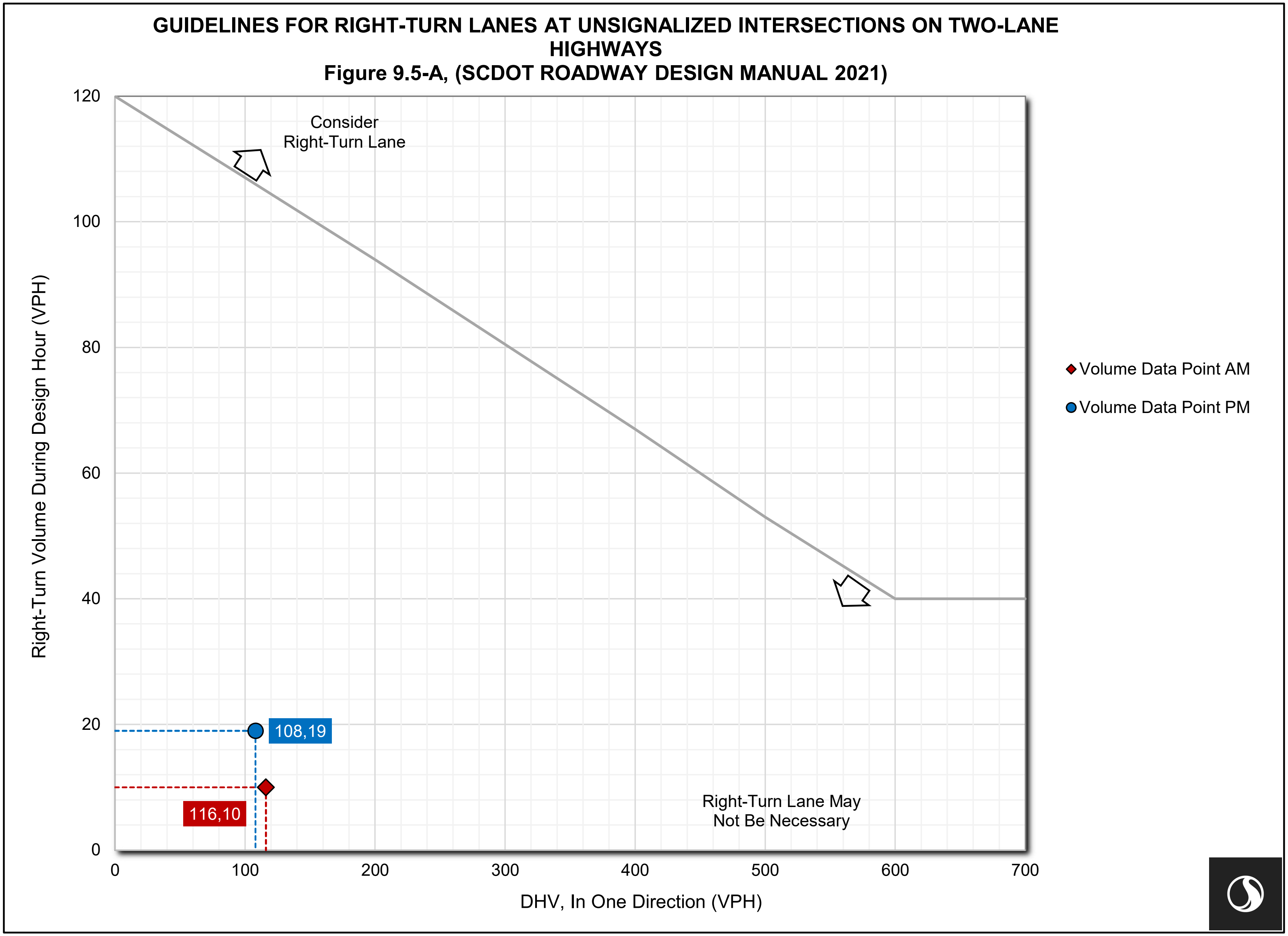
Turning Truck%: 2% Turning Truck%: 2%

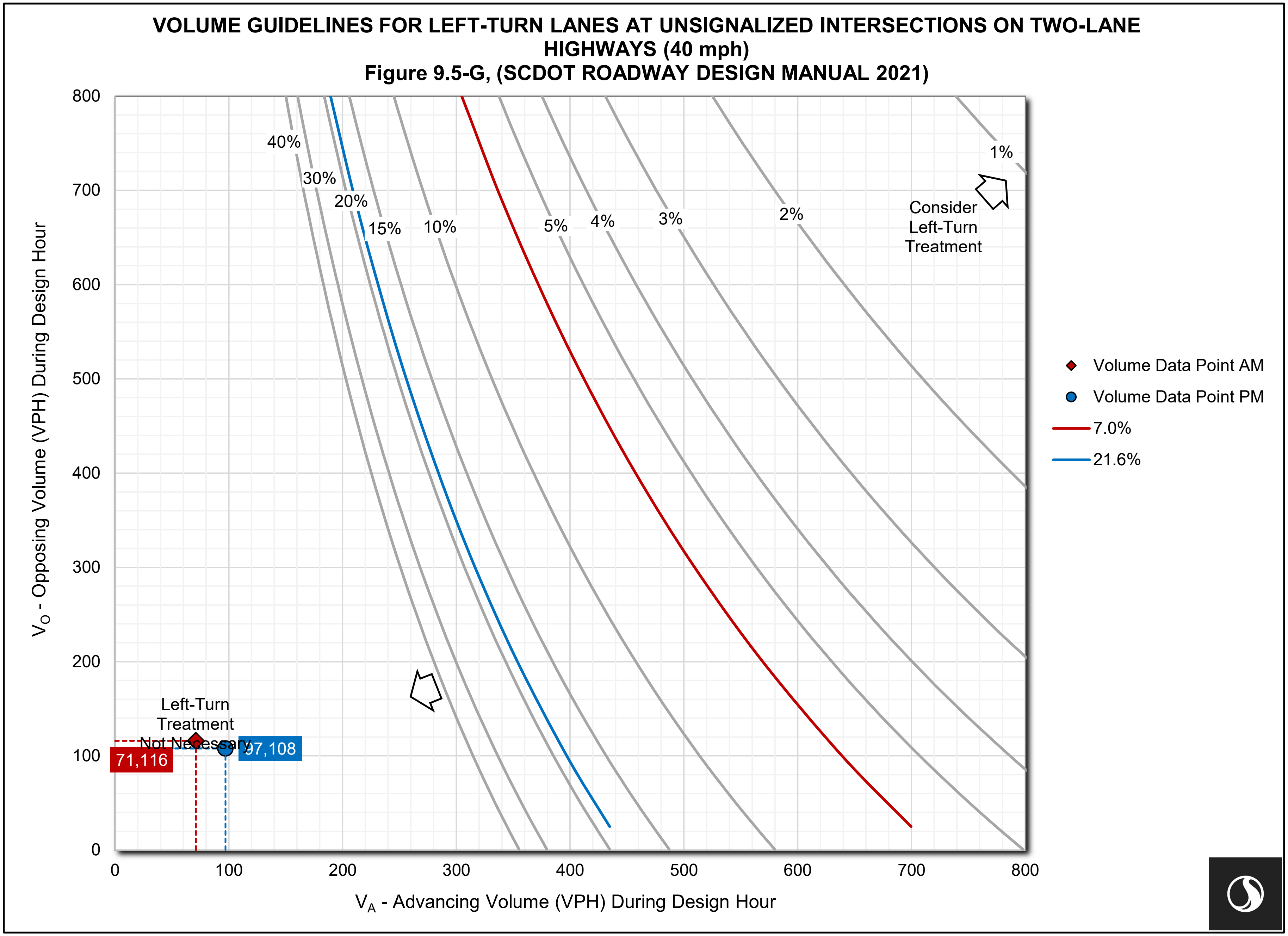
Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**N/A**	ft	Storage Length:	**N/A**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.


GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Right-Turn Lane
Right-Turn Lane May Not Be Necessary
108,19
116,10
Right-Turn Volume During Design Hour (VPH)
DHV, In One Direction (VPH)
0
20
40
60
80
100
120
0
100
200
300
400
500
600
700
Volume Data Point AM
Volume Data Point PM



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G, (SCDOT ROADWAY DESIGN MANUAL 2021)
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
Consider Left-Turn Treatment
Left-Turn Treatment Not Necessary
71,116
97,108
Volume Data Point AM
Volume Data Point PM
7.0%
21.6%
800
700
600
500
400
300
200
100
0
0
100
200
300
400
500
600
700
800
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Pine St (Project Driveway #1)
Left Turn Movement:	Eastbound Left-Turn Lane
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	21	17
	Through	61	126
	Right	0	0
Opposing	Left	0	0
	Through	98	91
	Right	20	15

	AM	PM
Advancing Volume:	82	143
Opposing Volume:	118	106
Left Turn Volume:	21	17
% Left Turns in Advancing Volume:	25.6%	11.9%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	98	91
	Right	20	15

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	118	106
Right Turn Volume:	20	15

Turn Lane Warrant Met?

Left Turn Lane Warrant		Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**	Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**	Warrant Satisfied:	**No**

Recommended Turn Lane Length

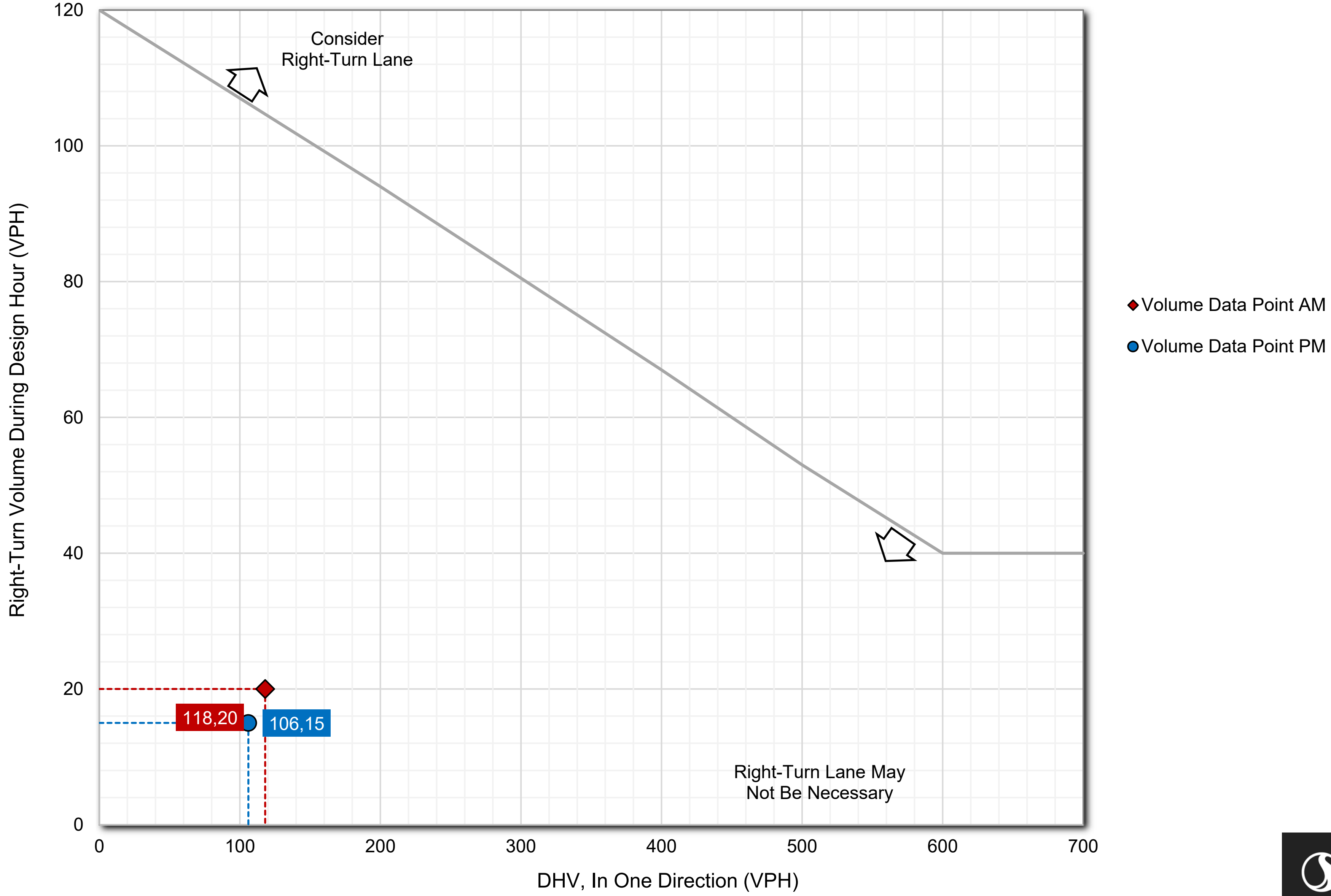
Left Turn Lane			Right Turn Lane		
Turning Truck%:	20%		Turning Truck%:	20%	
Storage Length (ft):	**N/A**	ft	Storage Length:	**N/A**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**N/A**	ft

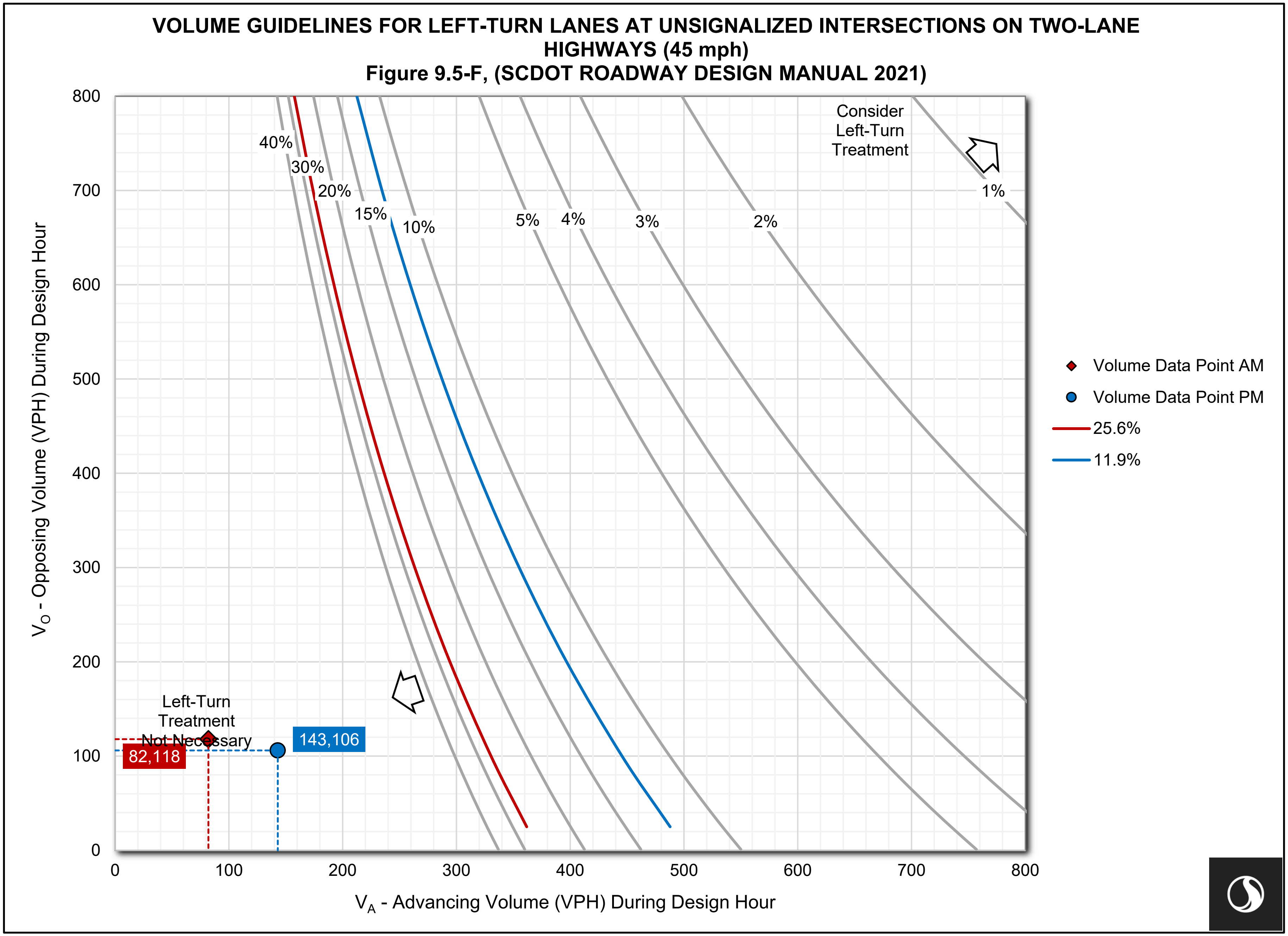
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)





VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Left-Turn Treatment
Left-Turn Treatment Not Necessary
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
82,118
143,106
Volume Data Point AM
Volume Data Point PM
25.6%
11.9%
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Salkhatchie Rd & Pine St (Project Driveway #2)
Left Turn Movement:	Southbound Left-Turn Lane
Right Turn Movement:	Northbound Right-Turn Lane

Posted Speed Limit:	35 mph	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	8	18
	Through	46	30
	Right	0	0
Opposing	Left	0	0
	Through	39	59
	Right	1	3

	AM	PM
Advancing Volume:	54	48
Opposing Volume:	40	62
Left Turn Volume:	8	18
% Left Turns in Advancing Volume:	14.8%	37.5%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	39	59
	Right	1	3

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	40	62
Right Turn Volume:	1	3

Turn Lane Warrant Met?

	Left Turn Lane Warrant	Right Turn Lane Warrant
Applicable Warrant Chart:	**Fig 9.5-G**	**Fig 9.5-A**
Warrant Satisfied:	**No**	**No**

Recommended Turn Lane Length

	Left Turn Lane	Right Turn Lane
Turning Truck%:	80%	80%

Left Turn Lane

Storage Length (ft):	**N/A**	ft
Taper Length (ft):	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft

Right Turn Lane

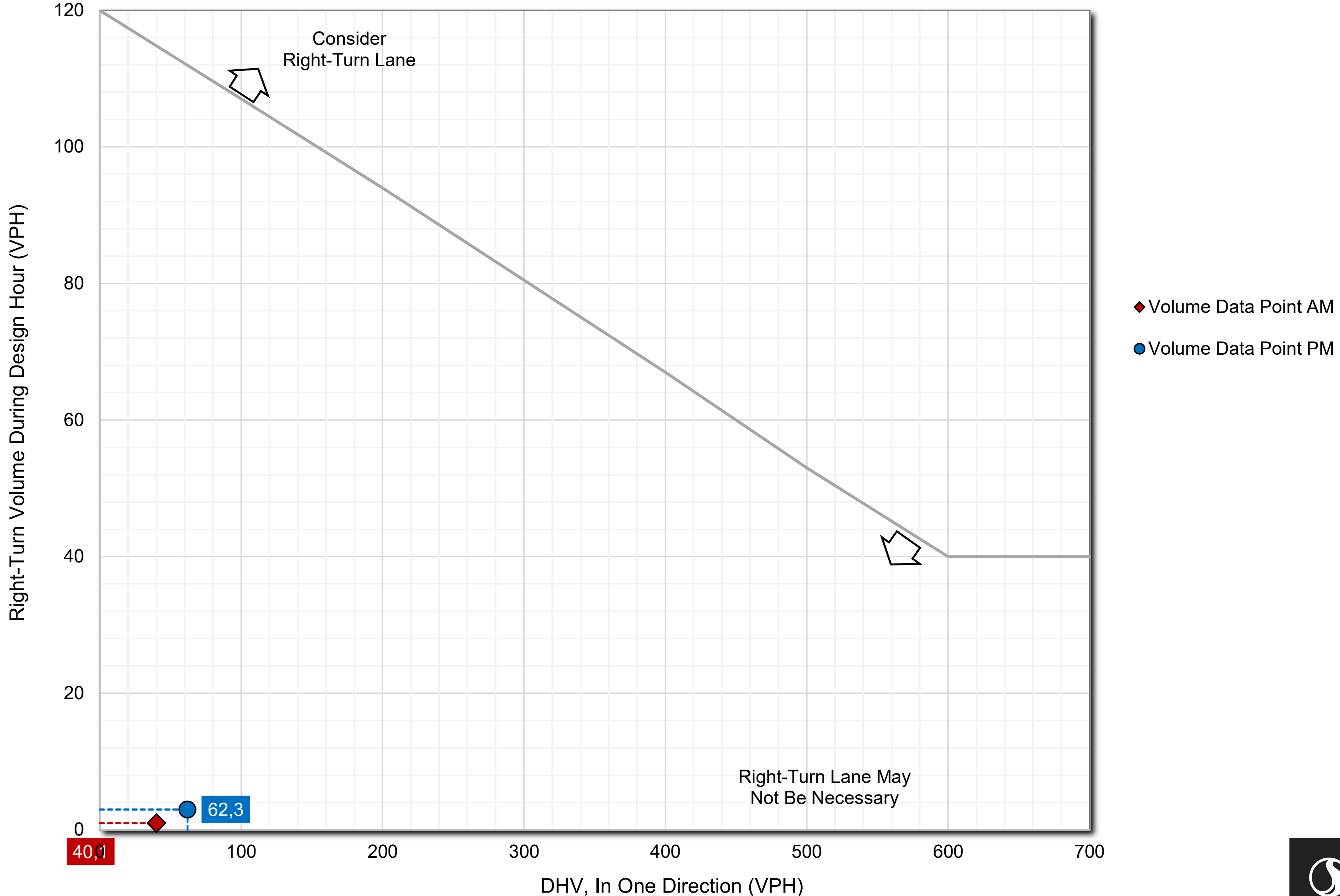
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

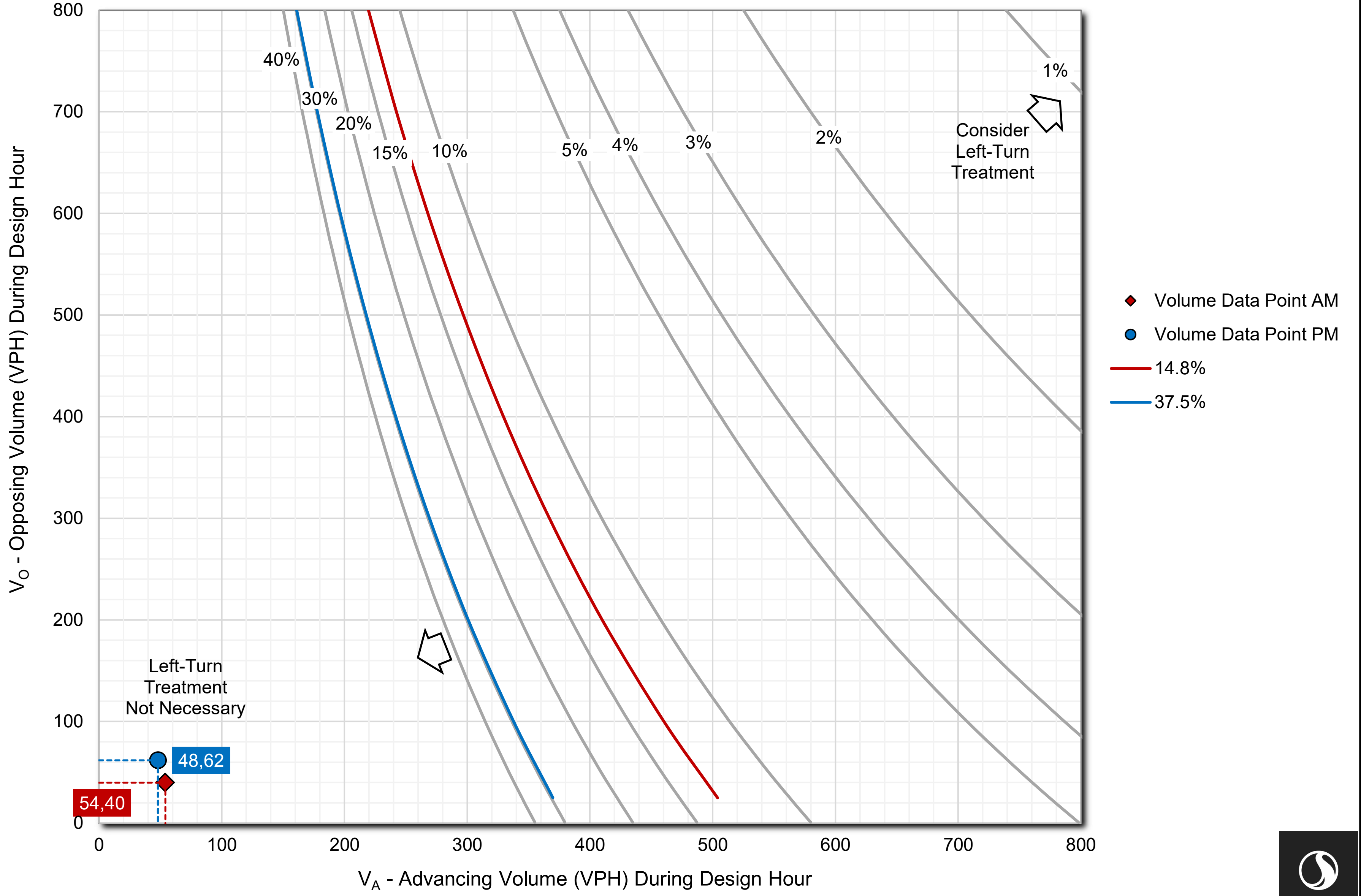
The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G, (SCDOT ROADWAY DESIGN MANUAL 2021)



Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Project Driveway #3
Left Turn Movement:	Eastbound Left-Turn Lane
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph)	
		AM	PM
Advancing	Left	15	1
	Through	61	142
	Right	0	0
Opposing	Left	0	0
	Through	116	97
	Right	16	1

	AM	PM
Advancing Volume:	76	143
Opposing Volume:	132	98
Left Turn Volume:	15	1
% Left Turns in Advancing Volume:	19.7%	0.7%

Right Turn Lane Volume Calculations

Movement		Volume (vph)	
		AM	PM
Advancing	Left	0	0
	Through	116	97
	Right	16	1

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	132	98
Right Turn Volume:	16	1

Turn Lane Warrant Met?

Left Turn Lane Warrant		Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**	Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**	Warrant Satisfied:	**No**

Recommended Turn Lane Length

Turning Truck%: 20% | Turning Truck%: 20%

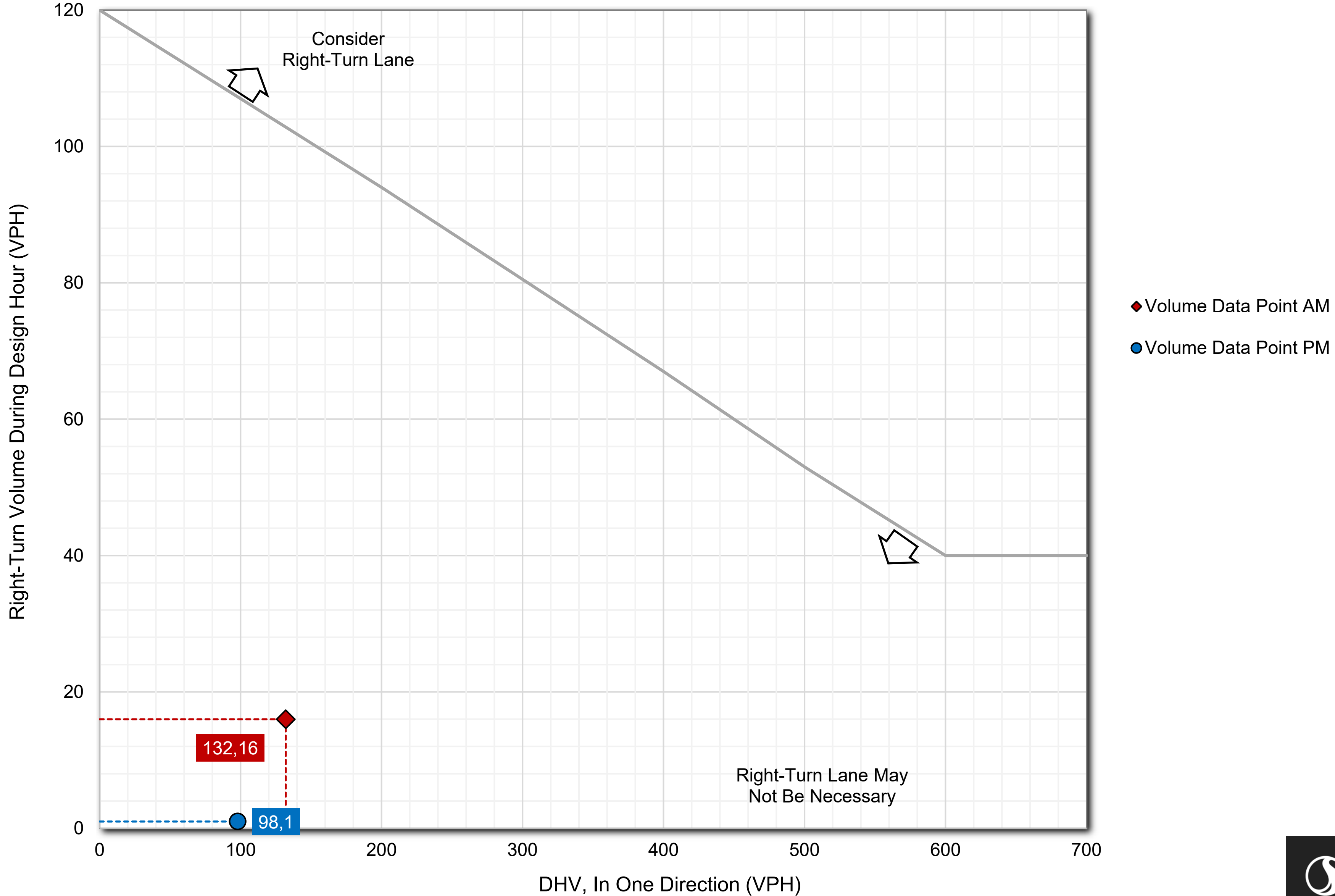
Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**N/A**	ft	Storage Length:	**N/A**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**N/A**	ft

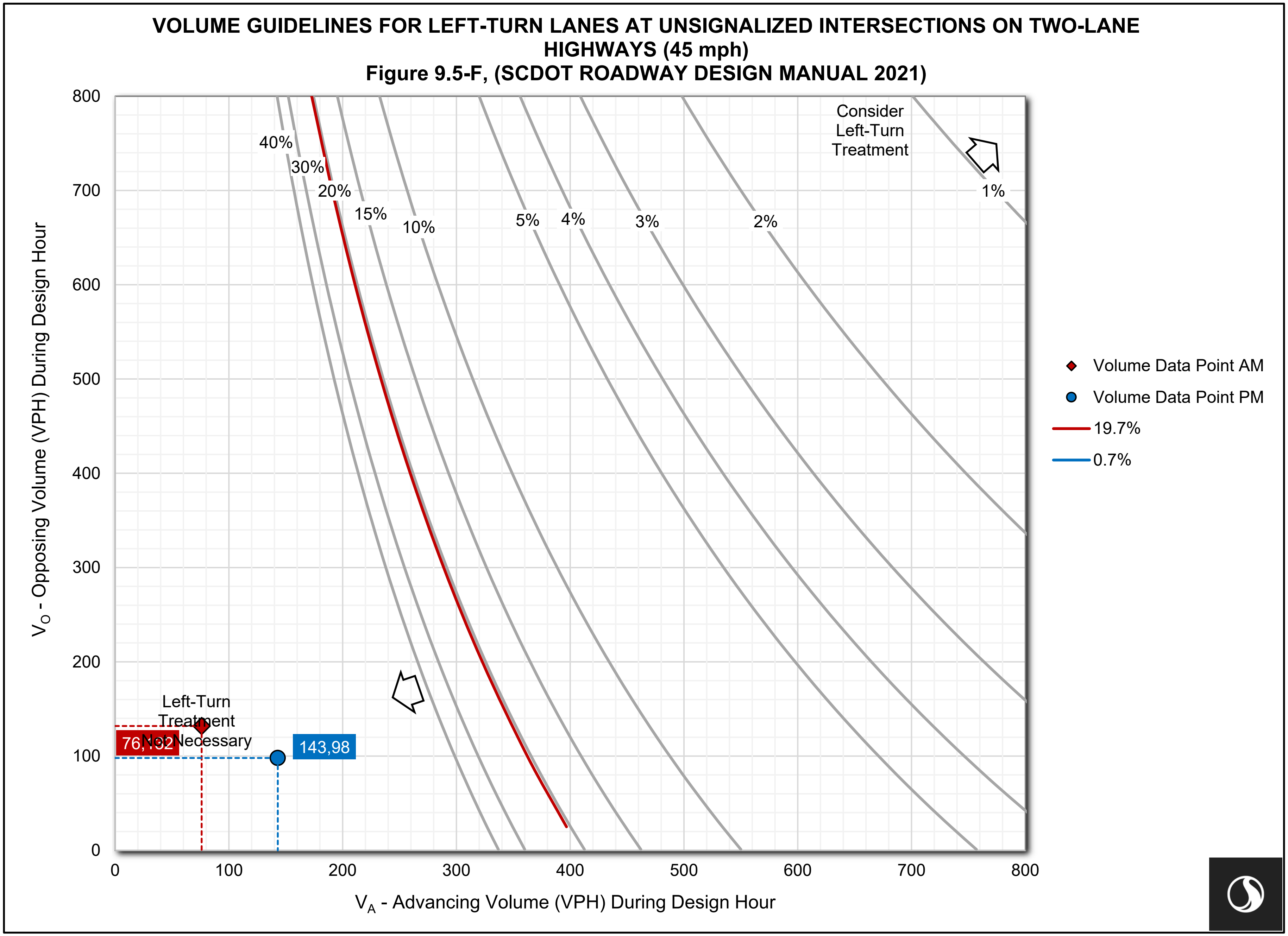
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

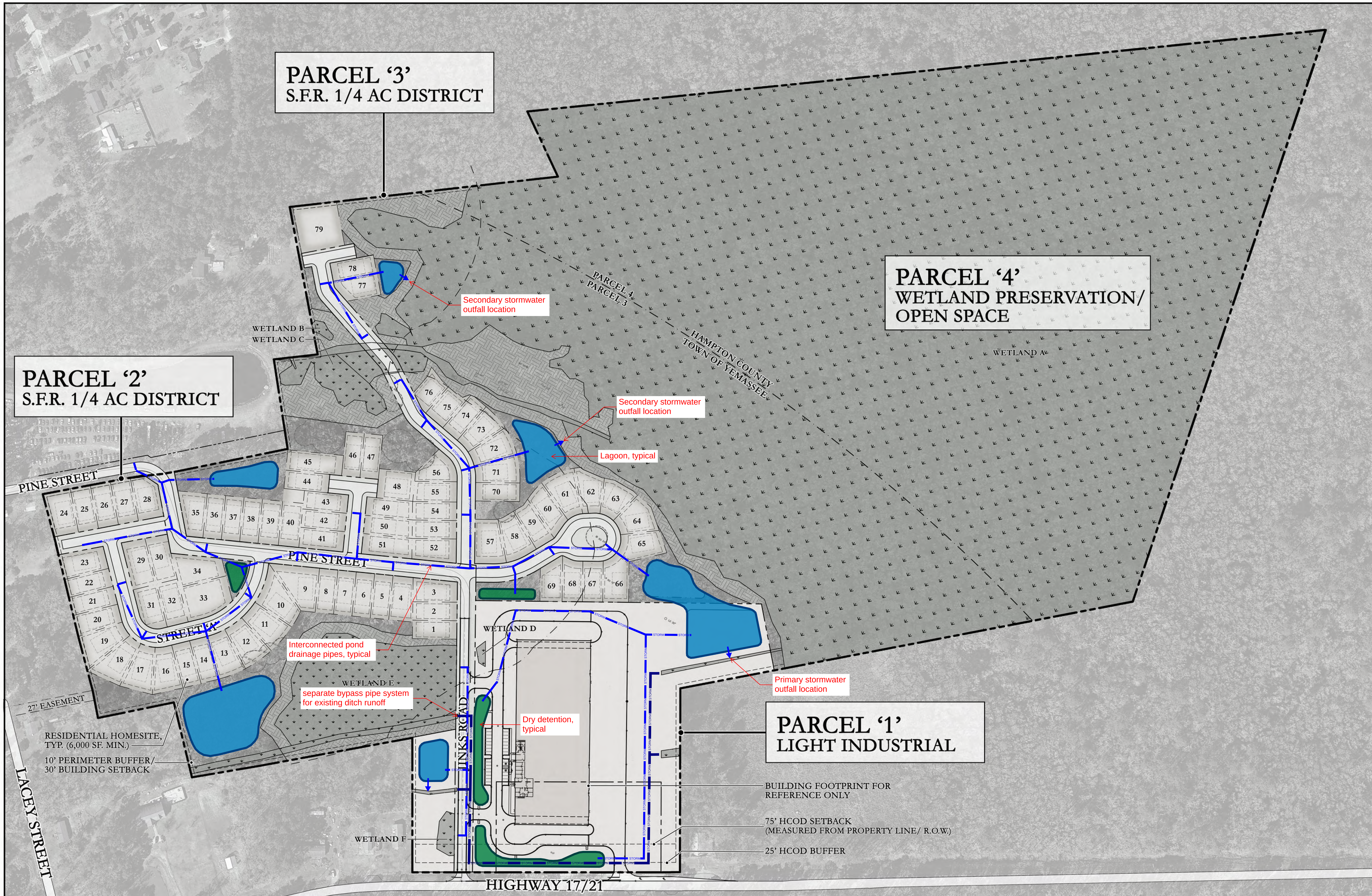
GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)




VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Left-Turn Treatment
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
Left-Turn Treatment Not Necessary
76,132
143,98
Volume Data Point AM
Volume Data Point PM
19.7%
0.7%
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800

APPENDIX L

WATER, SEWER AND STORMWATER MASTER PLAN



SITE DATA TABLE

SUMMARY BY PARCEL

	UPLAND (ACRES)	WETLAND (ACRES)	TOTAL (ACRES)
PARCEL 1	10.73	.75	11.48
PARCEL 2	10.01	2.69	12.7
PARCEL 3	16.76	17.2	33.8
PARCEL 4	0.11	46.2	46.31
TOTAL	37.5	66.95	104.45

LAND USE KEY

0 50 100 150 200 250 300 350 400

Scale 1" = 100'

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SITE DEVELOPMENT PLANS FOR

PINE STREET RESIDENTIAL

YEMASSEE, SOUTH CAROLINA

DATE: FEB. 27 2023
PROJECT NO.: 22024.01
DRAWN BY: KJ
CHECKED BY: DK

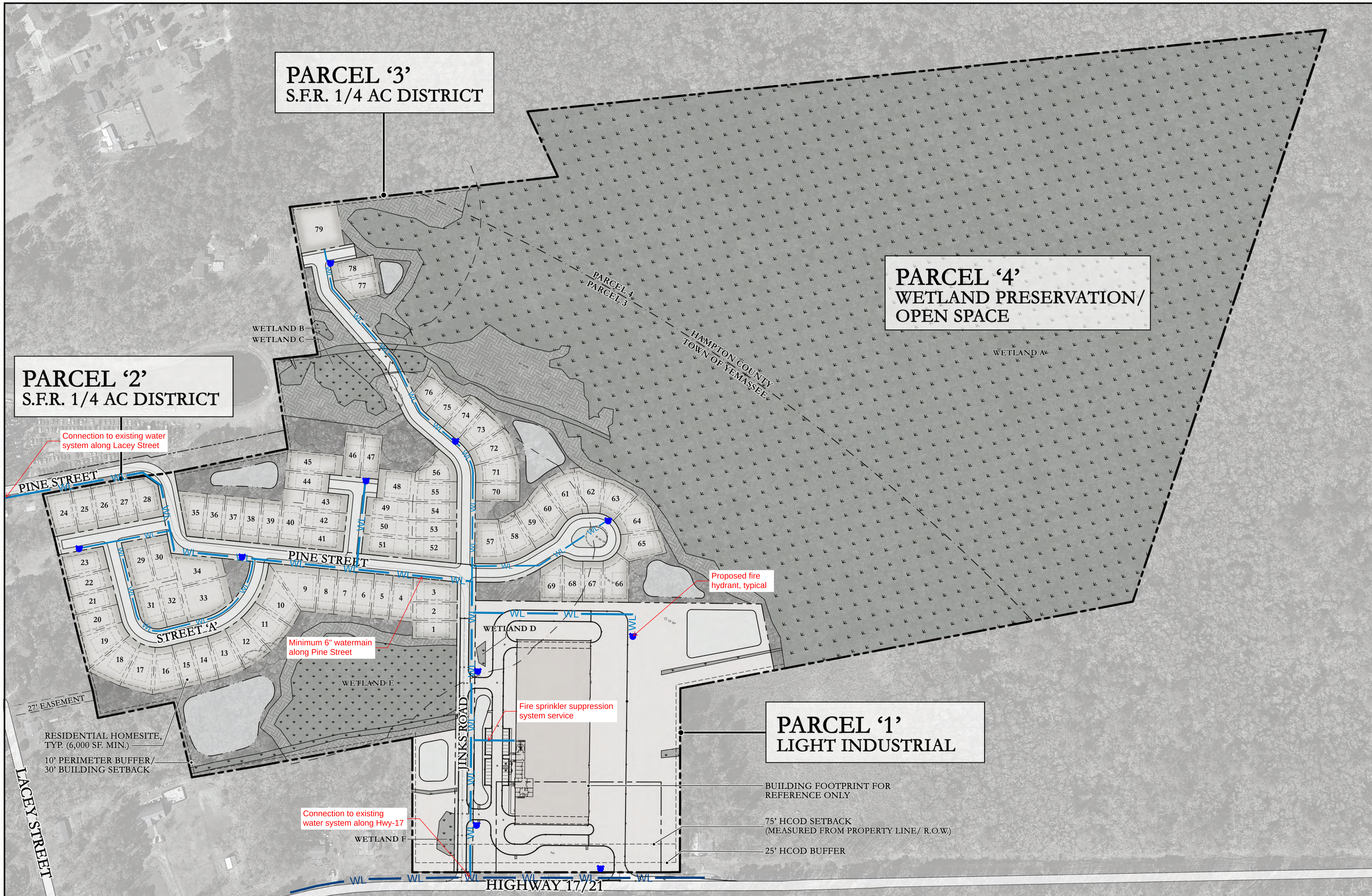
PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

DRAWING TITLE

STORMWATER MASTERPLAN

DRAWING NUMBER



SITE DATA TABLE

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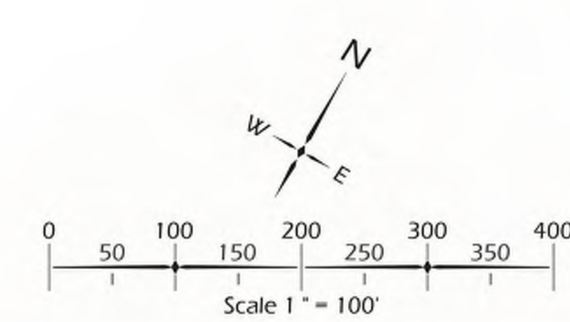
LAND USE KEY



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THIS SHEET TO SCALE AT: 30"X42"

SITE DEVELOPMENT PLANS
FOR
PINE STREET RESIDENTIAL
YEMASSEE, SOUTH CAROLINA

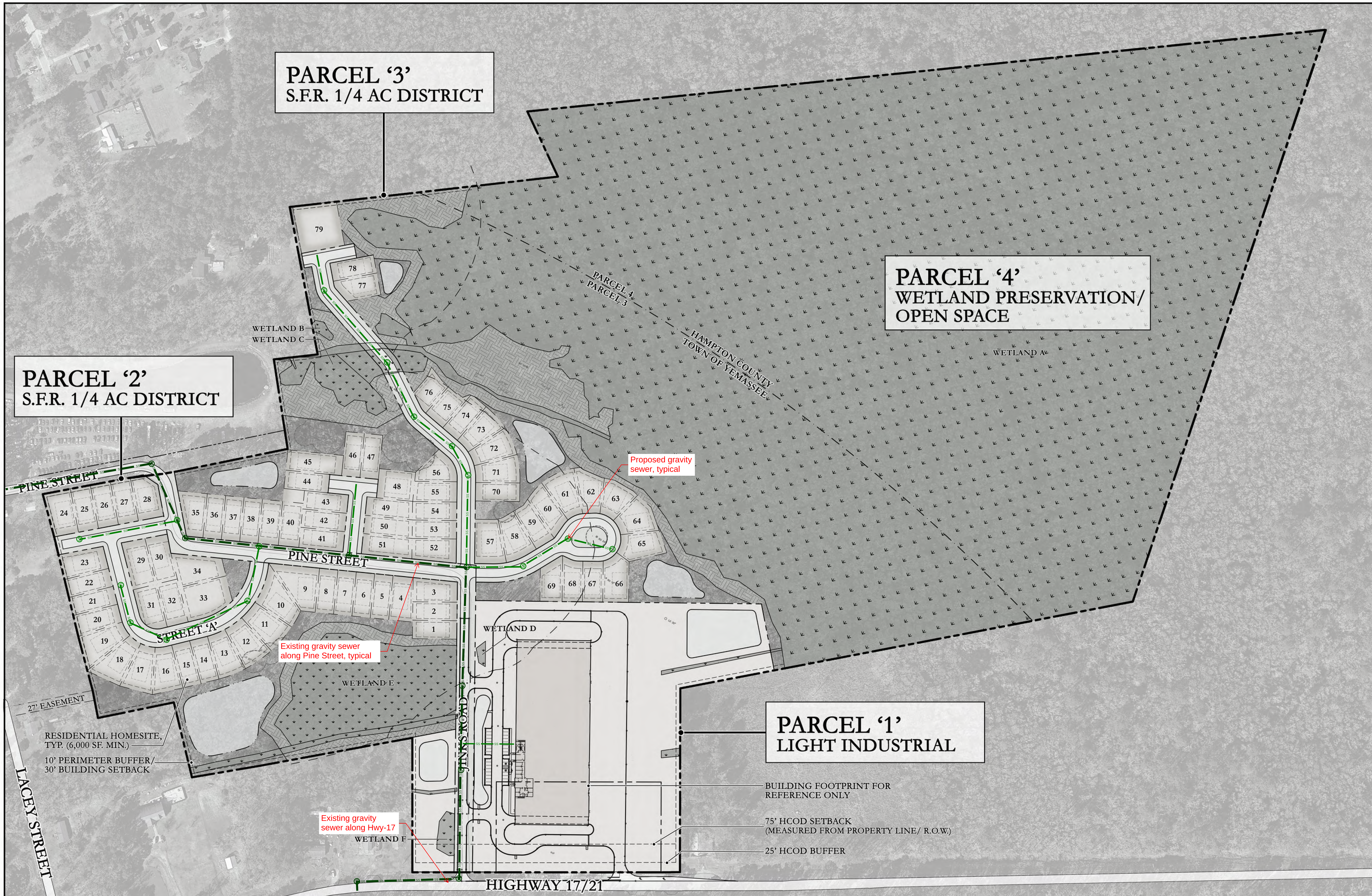
DATE:	FEB. 27 2023
PROJECT NO.:	22024.01
DRAWN BY:	KJ
CHECKED BY:	DK

PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

DRAWING TITLE
WATER MASTERPLAN

DRAWING NUMBER
....



SITE DATA TABLE

SUMMARY BY PARCEL

	UPLAND (ACRES)	WETLAND (ACRES)	TOTAL (ACRES)
PARCEL 1	10.73	.75	11.48
PARCEL 2	10.01	2.69	12.7
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PARCEL 4	0.11	46.2	46.31
TOTAL	37.5	66.95	104.45

LAND USE KEY

N
W
E

0 50 100 150 200 250 300 350 400

Scale 1" = 100'

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THIS SHEET TO SCALE AT: 30"X42"

SITE DEVELOPMENT PLANS
FOR
PINE STREET RESIDENTIAL
YEMASSEE, SOUTH CAROLINA

DATE:	FEB. 27 2023
PROJECT NO.:	22024.01
DRAWN BY:	KJ
CHECKED BY:	DK

PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

DRAWING TITLE

SEWER MASTERPLAN

DRAWING NUMBER

....

National Flood Hazard Layer FIRMette

FEMA

80°50'44"W 32°42'26"N

80°50'6"W 32°41'56"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Effective LOMRs
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	Coastal Transect
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

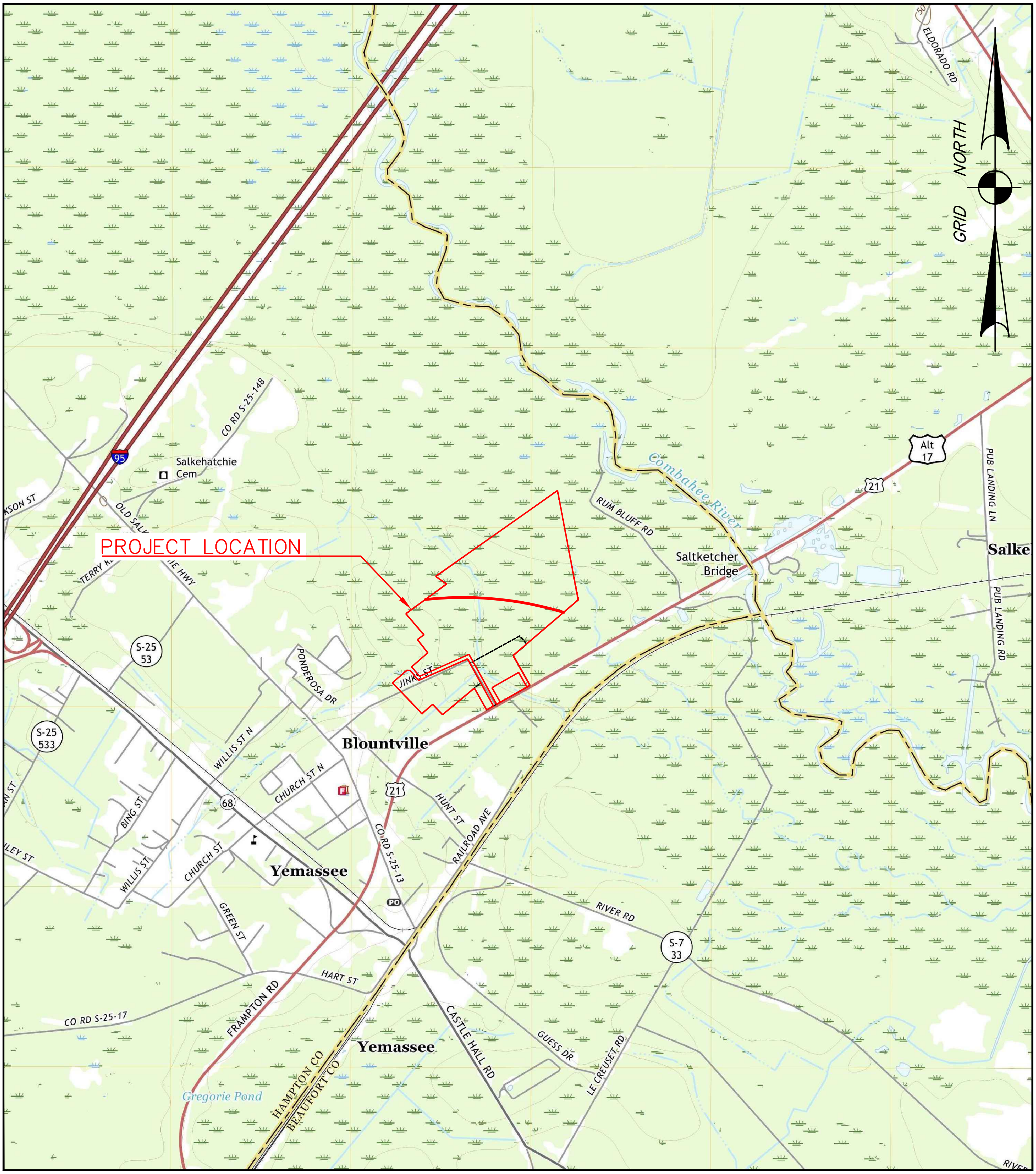
N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/27/2022 at 5:25 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.



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QUAD MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=2000'

United States Department of Agriculture

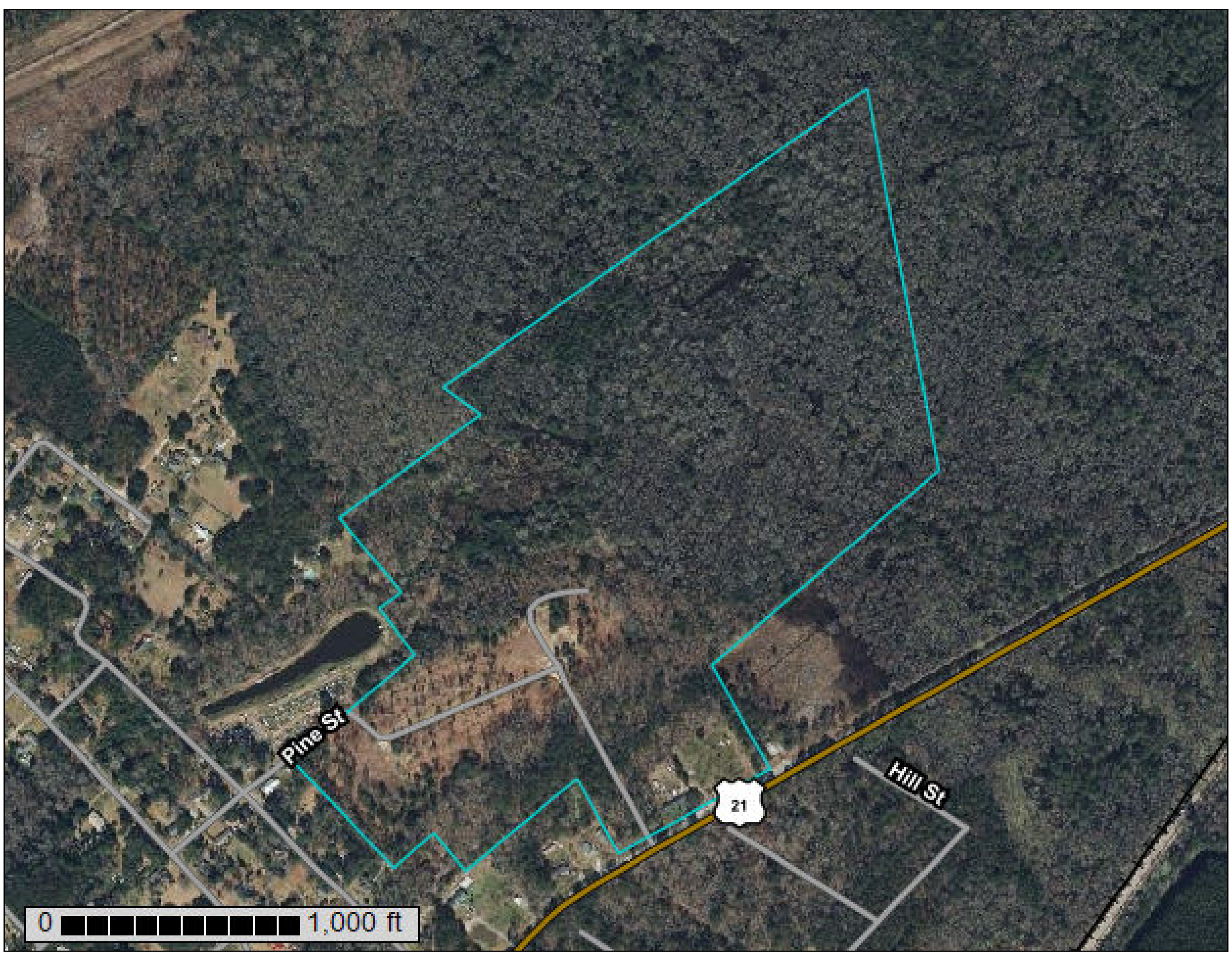
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

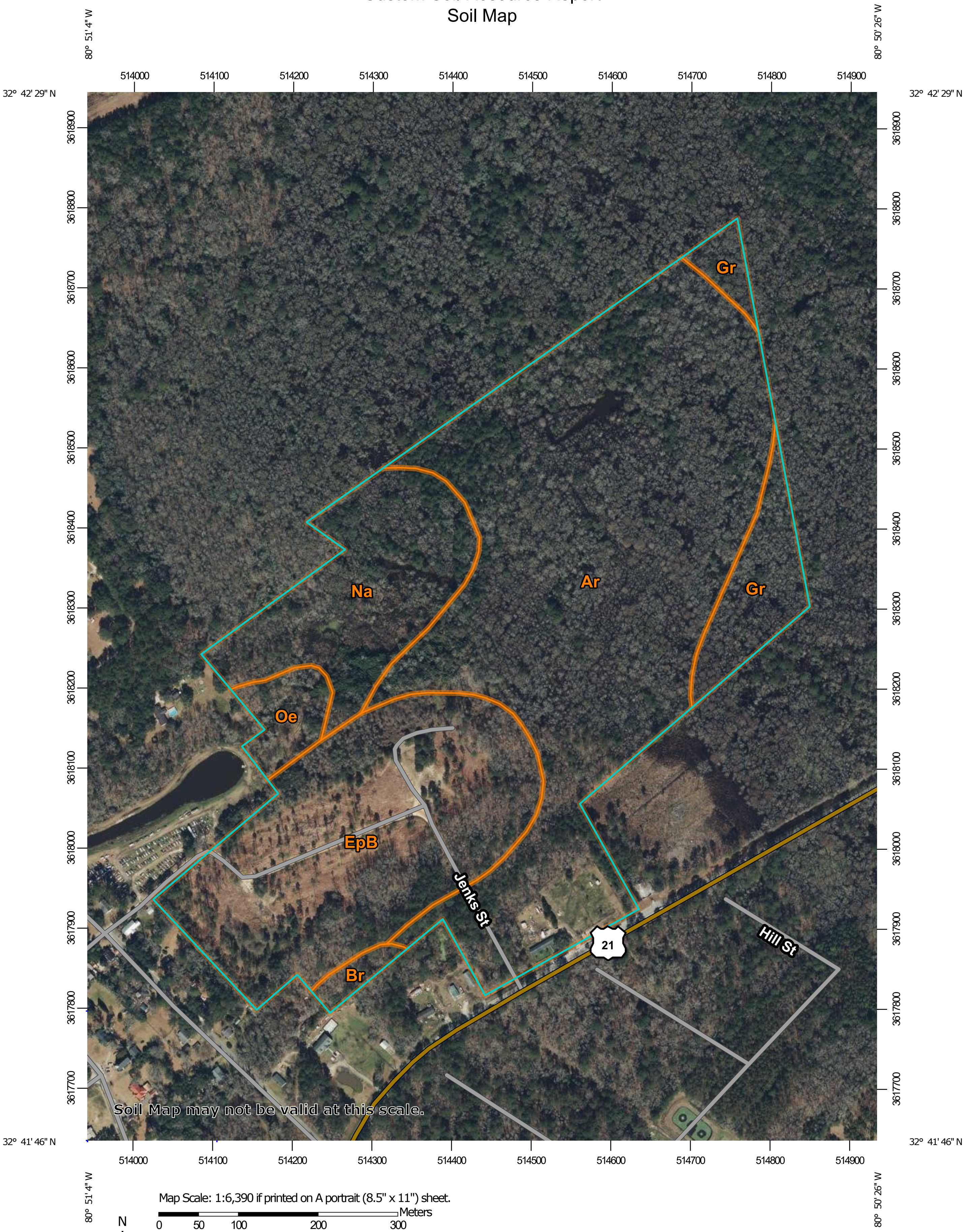
Custom Soil Resource Report for

Hampton County, South Carolina



October 27, 2022

Soil Map



Map Scale: 1:6,390 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 300, 600, 1200, 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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

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

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Hampton County, South Carolina
Survey Area Data: Version 22, Sep 7, 2022

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

Date(s) aerial images were photographed: Feb 21, 2021—Feb 23, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ar	Argent fine sandy loam, ponded	56.5	53.2%
Br	Brookman clay loam, ponded	1.0	0.9%
EpB	Emporia loamy sand, 2 to 6 percent slopes	26.5	24.9%
Gr	Grifton-Osier complex, frequently flooded	6.3	5.9%
Na	Nakina fine sandy loam, occasionally flooded	13.4	12.6%
Oe	Osier loamy sand	2.7	2.5%
Totals for Area of Interest		**106.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Hampton County, South Carolina

Ar—Argent fine sandy loam, ponded

Map Unit Setting

National map unit symbol: 4cc7
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Argent and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Argent

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey marine deposits

Typical profile

A - 0 to 5 inches: fine sandy loam
Btg - 5 to 58 inches: clay
BCg - 58 to 65 inches: clay

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water supply, 0 to 60 inches: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Br—Brookman clay loam, ponded

Map Unit Setting

National map unit symbol: 4ccj
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Brookman and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Brookman

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Clayey marine deposits

Typical profile

A - 0 to 4 inches: clay loam
Btg1 - 4 to 11 inches: clay loam
Btg2 - 11 to 44 inches: clay
Btg3 - 44 to 62 inches: clay loam
Cg - 62 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: Occasional
Available water supply, 0 to 60 inches: High (about 10.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

EpB—Emporia loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 4cct
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Emporia and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Emporia

Setting

Landform: Marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 11 inches: loamy sand
Bt1 - 11 to 31 inches: sandy clay loam
Bt2 - 31 to 45 inches: sandy clay loam
BC - 45 to 60 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.57 in/hr)
Depth to water table: About 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Hydric soil rating: No

Gr—Grifton-Osier complex, frequently flooded

Map Unit Setting

National map unit symbol: 4cd0
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Grifton and similar soils: 60 percent
Osier and similar soils: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Grifton

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 6 inches: fine sandy loam
E - 6 to 13 inches: fine sandy loam
Btg - 13 to 48 inches: sandy clay loam
Cg - 48 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Osier

Setting

Landform: Depressions, marine terraces

Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy alluvium

Typical profile
A - 0 to 19 inches: loamy sand
Cg1 - 19 to 35 inches: sand
Cg2 - 35 to 70 inches: coarse sand

Properties and qualities
Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Na—Nakina fine sandy loam, occasionally flooded

Map Unit Setting
National map unit symbol: 4cd5
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Nakina and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nakina

Setting
Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Loamy marine deposits

Typical profile

A - 0 to 15 inches: fine sandy loam
Btg - 15 to 43 inches: sandy clay loam
BCg - 43 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Oe—Osier loamy sand

Map Unit Setting

National map unit symbol: 4cdd
Elevation: 10 to 150 feet
Mean annual precipitation: 50 to 64 inches
Mean annual air temperature: 63 to 68 degrees F
Frost-free period: 220 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Osier and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Osier

Setting

Landform: Depressions, marine terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Sandy alluvium

Typical profile

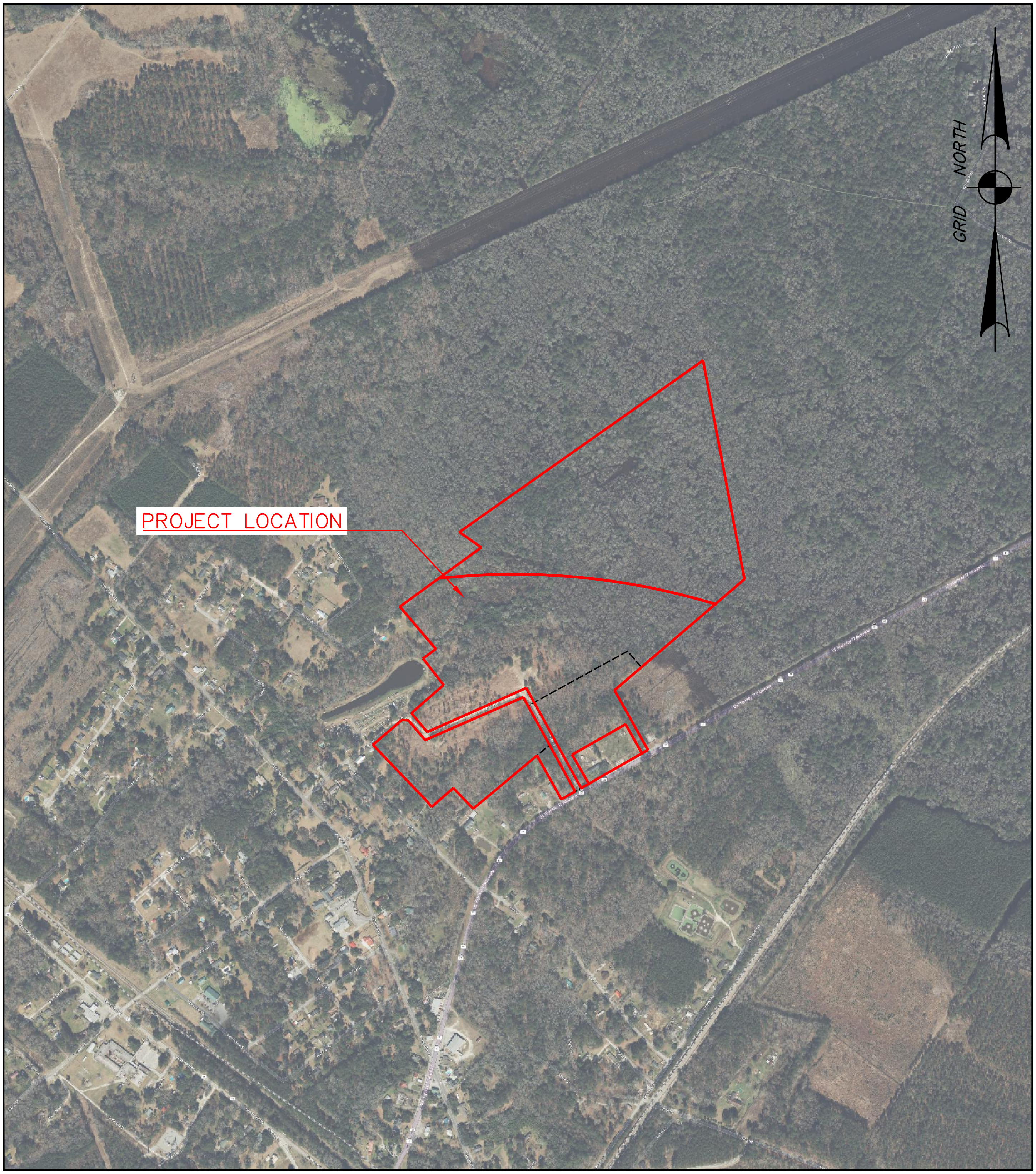
A - 0 to 19 inches: loamy sand
Cg1 - 19 to 35 inches: sand
Cg2 - 35 to 70 inches: coarse sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: RareNone
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes



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WWW.WARDEDWARDS.COM

VICINITY MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=1,000'

57-C Sheridan Park Circle
Bluffton, South Carolina 29910
United States
www.ghd.com

Our ref: 12591408-00 | Pine Street Industrial Building

October 06, 2022

Mr. Tim Huber
Ironline LLC
300 Technology Drive
Walterboro, South Carolina 29488

Report of Subsurface Exploration and Geotechnical Evaluation

Dear Mr. Huber:

GHD is pleased to present the results of our subsurface exploration and geotechnical evaluation for the above-referenced project. Our services were performed in general accordance with our Proposal No. 12591408 dated August 10, 2022.

1. Site Description / Project Understanding

GHD has received project information via email correspondence with you beginning July 29, 2022. Project information provided to us and referenced in our evaluation includes a preliminary site plan drawing titled 'Conceptual Plan for Pine Street Residential' prepared by Witmer-Jones-Keefer, Ltd. and dated July 7, 2022.

The subject property is an approximately rectangular shaped parcel located in the northeast quadrant of the intersection of Highway 17/21 and Pine Street in Yemassee, South Carolina. The south approximate half (2.5 acres) of the property is identified by street address as 311 US Highway 21 and includes an existing single multi-family residence structure fronting on Highway 17/21 in the southwest corner, a concrete parking slab adjacent to the highway right-of-way in the central portion, and the balance is cleared of significant vegetation with visual evidence of widespread past ground disturbance. Multiple small piles of miscellaneous household debris, multiple abandoned vehicles, and several used vehicle tires were observed at widespread locations throughout this south portion of the overall property. In addition, review of historic aerial images available through Google Earth reveals that the concrete parking slab adjacent to the highway (described above) was associated with a structure (visible in a 1994 aerial image) that has been demolished and removed in the past. Further, it is our understanding that it has been reported that there may be buried debris within the south portion of the subject property.

The north portion of the subject property was observed to be vegetated with moderate density mature trees and moderate to dense underbrush. Two approximately parallel southwest/northeast oriented drainage ditches cross the subject property diagonally, one separating the south and north approximate halves and the second, further north, subdividing the northern portion into approximately equal halves. In addition, the two ditches detailed above are connected by a generally north/south oriented ditch in the central portion of the overall site.

We observed that the property is generally flat but with multiple isolated lower elevated areas throughout much of both the south and north portions. At the time of our clearing for drill rig access and excavation of the test pits, as well as at the time our soil test borings were performed, we observed significant flow of water within the drainage ditches described above as well as ponded surface water within the isolated lower elevated areas.

The conceptual site plan provided to us indicates that the existing multi-unit residence structure is to be removed and that new development is to include an industrial building having initial footprint dimensions of 200 feet by 500 feet and with an anticipated future expansion along the east side of an additional width of approximately 100 feet. As requested, our evaluation addresses the entire anticipated 300 feet by 500 feet footprint of the future building. The conceptual plan also indicates that the development will include paved entrances, drives and parking along the north, west and south sides of the proposed building.

Details of the proposed new structure have not been provided to us for reference in our analyses and evaluation. It is our assumption, and our evaluation is based upon our assumption, that the structure will be of some conventional combination of concrete masonry unit (CMU), steel frame, and/or wood frame design and that the preferred foundation system will be conventional shallow spread column/continuous wall footings and soil supported concrete floor slabs. We have assumed, as stated in our proposal to perform these services, for the purpose of our analyses, that the maximum design loads for isolated column footings and/or continuous strip foundations will not exceed 60 kips and 3.5 kips per linear foot, respectively. Further, we anticipate fill thicknesses of not greater than approximately 18 inches will be required in order to bring the building floor slab to the desired elevation.

With regard to paved access drives and parking areas, we anticipate that heavy duty pavements will be required for the main entrances and access drives and that light duty pavements will be sufficient for the parking areas.

It is our understanding that the purposes of this geotechnical site investigation are generally to explore and evaluate the underlying in situ soils and groundwater conditions to provide site preparation and shallow foundation design recommendations for the proposed new structure (including potential 'static' settlement estimates, seismic design parameters, and potential liquefaction induced settlement estimates) as well as site preparation and preliminary cross-section design recommendations for conventional asphalt pavements.

2. Subsurface Exploration

Our scope of services has included eight (8) soil test borings at widely dispersed locations throughout the footprint area of the proposed new structure and four (4) hand-auger borings at widely dispersed locations throughout the paved portions of the site as indicated on the preliminary conceptual site plan provided to us, as well as test pit excavations at thirteen (13) locations within the south portion of the property.

The locations of the soil test borings, hand-auger borings, and test pit excavations in **Figure 1**. A GHD professional positioned the explorations in the field utilizing a hand-held GPS device. Given the method of locating the explorations in the field, the locations indicated on **Figure 1** should be considered approximate.

2.1 SPT Soil Test Borings

The eight soil test borings (designated B-1 through B-8) were performed on September 14 and 15, 2022. Current International Building Code (IBC) requirements dictate that the geotechnical evaluation/foundation design process include a seismic analysis; which requires at least one boring be performed to sufficient depth to provide the necessary subsurface soils parameter information. Therefore, one of the borings (B-6) was advanced to a depth of 50 feet below the existing ground surface. The other borings were each advanced to a depth of 25 feet. The borings were advanced utilizing mud-rotary drilling equipment/methods. Closely spaced soil sampling was performed in the upper ten feet and at five-foot intervals thereafter in each boring. During the sampling procedure, Standard Penetration Tests (SPT's) were conducted in general accordance with ASTM D1586 to obtain the standard penetration value of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split spoon sampler one foot. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental values. The "N" values are reported on each boring log. The results of the SPT testing indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating relative strength and compressibility of the soil profile components. The logs of each of the soil test borings are presented as **Appendix A, Soil Test Boring Logs**.

2.2 Hand-auger Borings

The four (4) hand-auger borings (designated HA-1 through HA-4) were performed on September 20, 2022. Each hand-auger boring was manually advanced to a depth of approximately 4 feet below the existing ground surface using a steel auger. The soils encountered were examined by retrieving samples of the auger cuttings at regular depth intervals during boring advancement. Our personnel visually classified the soils encountered in the field. The logs of the hand-auger borings are presented as **Appendix B, Hand-Auger Boring Logs**.

2.3 Test Pits

The test pit excavations (designated TP-1 through TP-13, but with five (A – E) excavations in close proximity to each other at location TP-3 and three (A-C) at TP-9) were performed on September 7, 2022 to depths varying from approximately 3.5 to 11 feet below the existing ground surface. The soils encountered at each test pit location were examined and visually classified during the excavation of each test pit and representative samples of the various strata encountered were collected. The logs of the test pits are presented as **Appendix C, Test Pit Logs.**

2.4 Soil Sample Handling

The soils from each soil boring sample/SPT test, selected hand-auger boring cuttings, and the representative test pit excavation samples were placed in individual containers, properly sealed and marked for identification, and transported to our laboratory for analysis and/or final classification by a GHD staff professional in accordance with the Unified Soil Classification System (USCS).

2.5 Laboratory Analyses

Selected samples of the soils obtained from the test pit excavations were tested in our laboratory to determine their percent fines (ASTM D1140) and natural moisture content (ASTM D2216). The laboratory data was used to aid in the classification of the soils in accordance with ASTM D2487 and to determine their engineering characteristics. The laboratory test results are included in the logs of test pit excavations in **Appendix C**.

3. Subsurface Stratigraphy/Conditions Encountered

A GHD professional developed the final boring log and test pit excavation log information from the field logs and visual review of the soil samples delivered to our laboratory. Similar soils were grouped into strata, with each stratum described in general accordance with the nomenclature used in ASTM D2487. Although indicated on the boring and test pit logs as distinct changes, the transition from one soil type or stratum to another may be gradual or may occur at slightly differing elevations than indicated between soil samples. Soil conditions may also vary from our findings at locations in areas of the site not explored.

The following discussion of the subsurface conditions encountered highlights the generalized major subsurface stratification encountered during our fieldwork. For more detailed descriptions of the subsurface conditions encountered at each location, please refer to the **Appendices A, B and C** to this report. The logs include the SPT "N" values (soil test borings), Unified Soil Classification System (USCS) symbols and groundwater levels at the time of our study.

3.1 Subsurface Soil Stratigraphy

The specific soil types, stratifications and consistencies encountered varied significantly both with depth within individual explorations and between the exploration locations. However, a generalized description of the soil profile encountered throughout the majority of the overall property includes a thin surface veneer of organic topsoil, a surficial layer of clayey to very clayey fine sand (SC), sometimes including fine roots, to depths of approximately 1.5 to 2.5 feet, then varied strata of clays with varying fine sand content and fine sands of varying clay content (CL, CH, SC, SP-SC, SP) through the depth of the explorations.

Within the south portion of the property that had been previously cleared of significant vegetation, and from within which a previous structure had apparently been removed, our test pit excavations identified as TP-3 (A – E), TP-9 (A- C), and TP-11 all encountered significant quantities of miscellaneous household and/or construction debris to depths varying from approximately 1.5 to 3.5 feet below the existing ground surface, abandoned shallow concrete foundations, and an undocumented sewer pipe. The deeper soils at those three locations generally consisted of fine very sandy clay (CL). Within the remainder of the south portion of the property the explorations encountered surficial grass root mass and/or topsoil underlain by a shallow layer of clayey fine sand (SC) then fine very sandy clay (CL) or underlain directly by the fine very sandy clay.

3.2 Groundwater

The depth to groundwater in the soil test borings measured after a stabilization period in excess of 24 hours varied from approximately 1 to 3 feet below the existing ground surface. No groundwater was encountered at the hand-auger locations. At test pit location TP-1, although moist soils were encountered beginning at depths of approximately 7 to 9 feet below the existing ground surface, no significant water inflow was observed.

The soil conditions observed at the exploration locations generally consisted of relatively permeable surficial and shallow subgrade soils having moderate clay content directly underlain by much less permeable very sandy clay or very clayey sand. These soil conditions are conducive to development of a ‘perched’ water condition within the near surface soils. A ‘perched’ condition occurs when surface water is not readily drained from the site and becomes ponded and/or permeates an upper more permeable soil strata while an underlying relatively impervious stratum prevents any further downward migration of the water, thus creating the ‘perched’ condition. The magnitude of ‘perched’ water is related to surficial soil permeability, lateral surface drainage onto and across the subject site, and the amount and duration of recent precipitation. The ‘perched groundwater’ may often be non-existent.

In general, we believe the variation in depth to stabilized groundwater levels in our soil test borings can be somewhat correlated to the topographic variation across the site. Also, there are a number of possible reasons why the groundwater depths vary, including localized perching within surficial sandy soils above clayey soils with low permeability and the effects of drainage feature installations and ground surface grading modifications within and/or in the vicinity of the site. We also expect groundwater levels will fluctuate depending upon the season, recent rainfall quantities in the area, and other factors.

4. Conclusions and Recommendations

4.1 General

The following conclusions and recommendations are based on the project characteristics previously described, the data obtained in our field explorations, and our experience with similar subsurface conditions and development projects. If the final design grades are to be significantly different from our understanding as stated earlier, or if subsurface conditions different from those disclosed by the soil test borings, hand-auger borings, and/or test pit excavations are encountered during site preparation, we should be notified so that we might review the following preliminary recommendations in light of such additional information and/or changed conditions.

In general, it is our opinion that the subsurface conditions encountered by the soil test borings are suitable for support of the proposed structures using conventional shallow foundations following implementation of the site preparation and design recommendations discussed in the following sections of this report.

Further, our analyses indicate that, if liquefaction did occur, the magnitude of potential total settlement of the subgrade soils within the site could be on the order of 1 inch or less. Therefore, ‘improvement’ of the subsurface soils to a degree sufficient to reduce the magnitude of potential liquefaction induced settlement of the proposed structure to a lesser magnitude would likely not be warranted.

4.2 Site Preparation Recommendations

4.2.1 Moisture Control

Our explorations encountered moisture sensitive clayey soils at or very near the existing ground surface throughout the proposed structure/pavement areas. Strict moisture control will need to be maintained to avoid destabilization of the surficial and/or shallow subgrade soils during site preparation in these areas. Failure to control moisture in clayey soils may result in the need for removal and replacement of otherwise stable soils. Moisture control methods should also be implemented even where more favourable soils are located within the upper two feet. Moisture control methods should include, but are not necessarily be limited to:

- Staging the work to avoid excessive exposure to inclement weather;
- Installing drainage features such as ditches and ponds prior to initiating site clearing and grubbing;
- Maintaining positive drainage at the end of each work day or prior to inclement weather;
- Using a smooth drum roller or bulldozer to seal areas to facilitate runoff;
- And minimizing/limiting rubber-tired vehicle traffic by utilizing low contact pressure or tracked equipment whenever possible across the work area.

We highly recommend that surface water across the area be managed prior to, during and after stripping and grubbing operations to avoid excessive surface moisture which can lead to an unstable working surface and thus, undue mixing of the organic debris with the underlying soils. Therefore, it may be necessary to drain ponded surface water and to reduce the moisture content of the surficial and shallow subgrade soils prior to initiating general site preparation procedures.

4.2.2 Stripping and Grubbing / Uncontrolled Fill/Backfill Removal

Site preparation should include the complete clearing, stripping and removal of all vegetation (including trees, underbrush, grasses/weeds, etc.), surficial topsoil, surficial and subgrade soils containing organic material and/or other debris, and other deleterious materials from within and to a minimum distance of five (5) feet beyond the perimeter of the structure footprints and pavement areas.

The depth to which topsoil, organic laden soils, miscellaneous debris, abandoned foundations and utilities, etc. was encountered at our exploration locations was generally on the order of a few inches to approximately 3.5 feet. It should be anticipated that the required depth of removal of deleterious materials and/or abandoned structures/utilities may be greater within un-explored portions of the site. During site clearing and earthwork operations, and while excavating for site utilities and foundations, the excavated and exposed soils should be observed for the presence of excessive organic and/or deleterious materials and debris that could be detrimental to building foundations, floor slabs and/or pavements. We recommend that an experienced soils engineering technician be present on site during the stripping, grubbing and uncontrolled fill/backfill removal process in order to determine which surficial and/or subgrade soils must be removed and replaced.

4.2.3 Exposed Subgrade Soils Proofrolling

After stripping and grubbing, and removal of debris/deleterious materials where necessary, GHD should inspect the disturbed surficial soils in structural (building and pavement) areas. Where practical, structural areas of the site should be proofrolled utilizing a loaded tri-axle dump truck, or other heavily loaded construction equipment. The purpose of the proofrolling will be to detect any areas where unstable soils are present. Materials that yield excessively during the proofrolling should be investigated via shallow test pits to verify the absence of organic laden soils, debris, or other deleterious materials. Where deleterious materials are not present, prior to fill placement, the soils should be over-excavated and replaced with structural fill soils meeting the material type and compaction requirements as outlined herein. GHD can recommend the nature and extent of any such remedial work.

4.2.4 Backfill/Fill Placement

4.2.4.1 Building Footprint Areas

All fill within the proposed building footprint area should be inorganic, granular soils (clean to silty/clayey sands) with a maximum of 25 percent silt and/or clay. Backfill/fill should be placed in level lifts not to exceed 12 inches loose thickness and compacted to a minimum of 95 percent of the soil's "Modified" Proctor maximum dry density as determined by ASTM D1557.

4.2.4.2 Conventional (Non-Permeable) Pavement Areas

Below 24 inches of Subgrade Elevation: All backfill/fill placed in conventional non-permeable paved parking and access drive areas at depths of 24 inches or deeper below pavement base should be inorganic, granular soils (clean to silty/clayey sands) with a maximum of 30 percent passing the No. 200 sieve. All backfill placed in undercut areas deeper than 24 inches below the pavement base course should be placed in level lifts not to exceed 12 inches in loose thickness and should be compacted to a minimum of 95 percent of the soil's maximum dry density as determined by ASTM D1557.

Upper 24 inches of Subgrade: Fill/backfill for the upper 24 inches in conventional non-permeable paved parking and access drive areas should be inorganic, granular soil (clean to silty / clayey sands) with a maximum of 20 percent passing the No. 200 sieve. Backfill/Fill within the upper 24 inches of the subgrade should be placed in level lifts not to exceed 12 inches in loose thickness and should be compacted to a minimum of 98 percent of the soil's maximum dry density as determined by ASTM D1557.

4.2.4.3 General

In-place density tests should be performed on each lift by an experienced engineering technician working under the direction of a licensed geotechnical engineer to verify that the recommended degree of compaction has been achieved.

The top surface of the fill should extend a minimum of 3 feet beyond the perimeters of the structures/pavements and fill slopes should not exceed 2 horizontal to 1 vertical to prevent possible erosion or undermining of slabs, shallow footings and/or pavements. Shallower slopes may be dictated by site grading requirements.

4.3 Shallow Foundation / Floor Slab Design and Construction

4.3.1 Foundation Design / Dimensioning

When structural loads comply with the earlier stated assumed criteria, the footings may be proportioned for a maximum allowable bearing pressure of 2000 pounds per square foot (psf). To provide an adequate factor of safety against a shearing failure in the subsoils: (1) all foundations should be founded at a depth of not less than 18 inches below the adjacent ground surface or floor slab elevation; (2) continuous footings should be at least 18 inches wide; and (3) isolated foundations should not be less than 24 inches in their least dimension.

4.3.2 Foundation Construction

All foundation elements should be excavated, formed if necessary, and have their concrete cast in the dry. Care should also be taken when scheduling the excavation of foundations to avoid inclement weather as rain will make it necessary to control stormwater and/or 'perched' water that may infiltrate the exposed bearing soils. Any sandy soils at the bottom of the foundation excavations disturbed during the excavation process should be re-densified prior to placement of reinforcement steel. Any disturbed and/or softened clayey/silty soils should be removed and replaced with properly compacted structural fill or graded aggregate prior to placement of reinforcement steel. If this issue is encountered during construction, the geotechnical engineer should be consulted to evaluate the field conditions and to determine the extent of the required undercutting and appropriate alternatives for backfill. We also recommend that probing and/or dynamic cone penetrometer (DCP) testing be performed in the foundation excavations where the footings bear in or just above in-situ soils.

4.3.3 Floor Slab Design Recommendations

A modulus of subgrade reaction of 200 psi/inch may be used for design of the floor slabs bearing on properly compacted structural fill. We recommend the placement of a vapor barrier below the floor slab(s). We suggest the use of polyethylene sheeting of at least 10-mil thickness for this purpose. Nevertheless, selection of the vapor barrier should consider the anticipated moisture conditions, flooring types and other applicable considerations.

The structural fill soils as specified herein for use in constructing the building pad are considered to be relatively free-draining soils. It is our opinion that these soils would be classified as "drainable" and that an additional aggregate material to act as a capillary barrier immediately below the floor slab would not be required.

Note that all downspouts/roof drains should be positioned such that stormwater is directed away from the structure and that the site should be constructed to meet the construction grading requirements.

4.3.4 Settlement

Column and continuous wall foundations designed and constructed in the recommended manner are estimated to be subject to a maximum potential total settlement of less than about 0.5 inch, in the absence of a significant seismic event.

4.4 Seismic Considerations

4.4.1 Liquefaction Potential

The subject property is located within an active seismic zone with its center in the Charleston, South Carolina area. Although the area has not experienced significant earthquake events in the recent past, evidence of seismic event induced liquefaction has been found and geologists have mapped this area as having the potential for recurrence(s) of such an event. Considerable research is ongoing to better determine which local soils are truly liquefiable and the magnitude of settlement that might occur as a result of their liquefaction during a significant seismic event.

Based on our review of soil and groundwater conditions at the subject site, we believe there is a risk for liquefaction settlement to occur during a significant seismic event. Utilizing 'LiquefyPro' modelling software, we have performed a liquefaction analysis of the subject site considering the 'general' subsurface soil and groundwater conditions encountered and, in reference to the 2018 International Building Code (2018 IBC), utilizing the Maximum Considered Earthquake Geometric Mean (MCE_G) and Peak Ground Acceleration (PGA_M) which considers the soil characteristics of the site (Site Class effects). As previously stated, our analysis of the potential magnitude of settlement due to liquefaction indicates that following completion of the site preparation recommendations detailed above, settlement would be on the order of 1.0 inch or less within the area of the proposed structure. The potential liquefaction induced settlement would be due generally to the consolidation of the loose to medium dense saturated sand soils below the water table encountered at various depths below the existing ground surface. Due to the depth below the ground surface to the upper boundary of liquefiable soils, we estimate that differential liquefaction induced settlement within the building footprint would be on the order of 25 percent or less of the total.

4.4.2 Seismic Design Parameters

Based upon the soil conditions encountered, our procedure for determining the site specific seismic design parameters follows that which is outlined in the 2018 International Building Code with reference to ASCE 7-16 for a default Seismic Site Class “D”. Values for Spectral Response Acceleration for short periods (0.2 seconds), S_s, and for long periods (1 second), S_1, were obtained from the Applied Technology Council (ATC) ‘Hazards by Location’ online tool which queries the United States Geological Survey (USGS) web servers and retrieves the seismic design variables in a report format. The values are expressed as a multiple of the acceleration of gravity. The design parameters generated are presented in **Appendix D, Seismic Design Parameters**.

4.5 Pavement Recommendations

The following pavement design guidelines are made without the benefit of specific traffic information and/or reference to any local minimum section standards, and are intended as a general guide for the design engineer’s evaluation. Site design decisions may dictate alterations to certain aspects of these guidelines.

4.5.1 Conventional (Non-Pervious) Pavements

The following recommendations assume that site preparation procedures, including removal and replacement of unsuitable near surface soils/debris and proper proofrolling of subgrade soils detailed in earlier sections of this report, will have been completed where necessary. All conventional asphalt pavements and base courses should be constructed in accordance with the guidelines of the latest applicable South Carolina Department of Transportation Specifications.

Entrance Drives & Truck Corridors: We recommend an asphalt pavement section consisting of 3½ inches of asphaltic concrete (2 inches intermediate course + 1½ inches surface course) over 8 inches of graded aggregate base course. The pavement section should be underlain by a 24-inch sand subbase (with a maximum of 20 percent by weight passing the No. 200 sieve).

Personal Vehicle Corridors & Parking Areas: We recommend an asphalt pavement section consisting of 2 inches of asphaltic concrete (Type C) over 6 inches of graded aggregate base course. The pavement section should be underlain by a 24-inch sand subbase (with a maximum of 20 percent by weight passing the No. 200 sieve).

Suitability of In Situ Soils: Beneath the surficial organic debris/topsoil and shallow subgrade soils consisting of fine sand of varying clay content and/or very sandy clay, our explorations generally encountered unsuitable clay of varying fine sand content and/or very clayey fine sand at depths of less than 24 inches below the existing ground surface. These unsuitable soils will require removal and replacement with suitable select fill as detailed above to the depths necessary to provide the 24-inch sand subbase included in the recommended pavement section.

5. Limitations

This report: has been prepared by GHD for Ironline LLC and may only be used and relied on by Ironline LLC and their selected consultants for the purposes agreed between GHD and Ironline LLC as set out in this report.

GHD otherwise disclaims responsibility to any person other than Ironline LLC arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD's scope of work for this project has not included investigation, detection, or evaluation related to the presence of any biological pollutants. The term 'biological pollutants' includes, but is not limited to, mold, fungi, spores, bacteria, and viruses, and the by products of any such biological organisms. Further, evaluation or review to determine compliance with State and/or Federal regulatory requirements, assessment of potential contamination migration from or onto the subject site, and/or any similar environmental analyses were beyond the scope of this study.

This report has been prepared with the intent that it not be separated. Information from this report should not be distributed or made available to designers or contractors in partial form. This report should be made available to prospective contractors for information only, and not as a warranty of subsurface conditions.

6. Closure

We appreciate the opportunity to work with you on this project. We trust that the information provided in the report is clear and understandable. Should it require any clarification or amplification, however, please contact us at (843) 815-5120.

Regards

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Appendix A

Soil Test Boring Logs

Key to Soil Classification

Correlation of Penetration Resistance with Relative Density and Consistency

Sands and Gravels

No. of Blows, N	Relative Density
0 – 4	Very loose
5 – 10	Loose
11 – 30	Medium dense
31 – 50	Dense
Over 50	Very dense

Silts and Clays

No. of Blows, N	Relative Density
0 – 2	Very soft
3 – 4	Soft
5 – 8	Firm
9 – 15	Stiff
16 – 30	Very stiff
31 – 50	Hard
Over 50	Very hard

Particle Size Identification (Unified Classification System)

Boulders:	Diameter exceeds 8 inches
Cobbles:	3 to 8 inches diameter
Gravel:	**Coarse** - 3/4 to 3 inches diameter
	Fine - 4.76 mm to 3/4 inch diameter
Sand:	**Coarse** - 2.0 mm to 4.76 mm diameter
	Medium - 0.42 mm to 2.0 mm diameter
	Fine - 0.074 mm to 0.42 mm diameter
Silt and Clay:	Less than 0.07 mm (particles cannot be seen with naked eye)

Modifiers

The modifiers provide our estimate of the amount of silt, clay or sand size particles in the soil sample.

Approximate Content	Modifiers
≤ 5%:	Trace
5% to 12%:	Slightly silty, slightly clayey, slightly sandy
12% to 30%:	Silty, clayey, sandy
30% to 50%:	Very silty, very clayey, very sandy

Field Moisture Description	
Saturated:	Usually liquid; very wet, usually from below the groundwater table
Wet:	Semisolid; requires drying to attain optimum moisture
Moist:	Solid; at or near optimum moisture
Dry:	Requires additional water to attain optimum moisture

PROJECT: *Pine Street Industrial Building*	GHD	**LOG OF BORING:** B-1
DATE DRILLED: *September 14, 2022*	**DRILLER:** *A. Nelson*	**GROUND ELEVATION:**
DRILLING METHOD: *Mud Rotary*	**BORING DEPTH:** *25.00 Feet*	**Notes:**
WATER LEVEL:	**WATER LEVEL (24-HRS):** *3'*	

Moisture Content (ANALYSIS)	% Passing 200 Sieve (ANALYSIS)	Organic Content (ANALYSIS)	Liquid Limit (ANALYSIS)	Plasticity Index (ANALYSIS)	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	11			SC	Medium dense tan to tan orange and brown clayey fine SAND
					2.8	7	▼		CL	Firm gray orange tan and brown fine very sandy CLAY with soft lense at 4' - 5.5'
					4.2					
					5.6	3				
					7	8				
					8.4	3			CH	Soft light gray CLAY
					9.8					
					11.2					
					12.6				SP	Medium dense tan fine to medium SAND
					14	19				
					15.4					
					16.8					
					18.2				SP-SC	Loose tannish gray slightly clayey fine SAND
					19.6	9				
					21					
					22.4				SC	Loose dark gray very clayey fine SAND
					23.8	5				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: *Pine Street Industrial Building*	GHD	**LOG OF BORING:** B-2
DATE DRILLED: *September 14, 2022*	**DRILLER:** *A. Nelson*	**GROUND ELEVATION:**
DRILLING METHOD: *Mud Rotary*	**BORING DEPTH:** *25.00 Feet*	**Notes:**
WATER LEVEL:	**WATER LEVEL (24-HRS):** *2.5'*	

ANALYSIS: Moisture Content	ANALYSIS: % Passing 200 Sieve	ANALYSIS: Organic Content	ANALYSIS: Liquid Limit	ANALYSIS: Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	6			SC	Loose gray and dark gray clayey fine SAND with fine roots
					2.8	8	▼		CL	Firm gray tan and orange fine very sandy CLAY
					4.2	8			SC	Loose gray very clayey fine SAND
					5.6					
					7	20			SC	Medium dense light gray and tan clayey fine SAND
					8.4	11				
					9.8					
					11.2					
					12.6					
					14	11				
					15.4					
					16.8				SC	Loose dark gray very clayey fine SAND
					18.2					
					19.6	5				
					21					
					22.4				SC	Medium dense dark gray and gray clayey fine SAND
					23.8	12				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-3
DATE DRILLED: September 14, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 2.5′	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0				SC	4" Topsoil Loose dark gray and brown clayey fine SAND with decayed organics
					1.4	5				
					2.8	8	▼		CL	Firm brown gray and orange fine very sandy CLAY
					4.2					
					5.6	7				
					7	8				
					8.4				CH	Firm light gray CLAY with thin clayey fine sand seams
					9.8	6				
					11.2					
					12.6					
					14					
					15.4	5				
					16.8				SC	Loose to medium dense dark gray slightly clayey fine SAND
					18.2					
					19.6	10				
					21					
					22.4					
					23.8					
					25.2	15				Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-4
DATE DRILLED: September 15, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 2.5′	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0				SC	4" Topsoil
					1.4	5				Loose gray tan orange and brown very clayey fine SAND with fine roots
					2.8	13	▼		CL	Stiff brown tan and orange fine very sandy CLAY
					4.2					
					5.6	9				
					7	33			SC	Dense gray light gray orange and tan very clayey fine SAND
					8.4	15			CH	Stiff gray CLAY with thin clayey fine sand seams
					9.8					
					11.2					
					12.6					
					14	9				
					15.4					
					16.8				CH	Stiff greenish gray CLAY
					18.2					
					19.6	9				
					21					
					22.4				SC	Medium dense dark gray very clayey fine SAND
					23.8	12				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-5
DATE DRILLED: September 15, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 3′	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					6" Topsoil
					1.4	4			SC	Very loose gray tan orange and light gray clayey fine SAND
					2.8	10			SC	Loose gray tan and orange very clayey fine SAND
					4.2					
					5.6	12			CL	Stiff to very stiff gray and tan fine very sandy CLAY
					7	21				
					8.4	14			SC	Medium dense tan and orange clayey fine SAND
					9.8					
					11.2					
					12.6					
					14	11				
					15.4					
					16.8				SC	Loose to medium dense gray and dark gray clayey fine SAND
					18.2					
					19.6	9				
					21					
					22.4					
					23.8					
					25.2	16				Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT:		LOG OF BORING:
Pine Street Industrial Building	GHD	B-6
DATE DRILLED: *September 15, 2022*	DRILLER: *A. Nelson*	GROUND ELEVATION:
DRILLING METHOD: *Mud Rotary*	BORING DEPTH: *50.00 Feet*	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): *3'*	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					6" Topsoil
					1.4	4			SC	Very loose gray brown and tan very clayey fine SAND with fine roots
					2.8	9	▼		SC	Loose to medium dense gray tan orange and red very clayey fine SAND
					4.2					
					5.6	7				
					7	17				
					8.4	10			CL	Stiff greenish gray fine very sandy CLAY
					9.8					
					11.2					
					12.6				SP-SC	Medium dense light gray and tan slightly clayey fine SAND
					14	11				
					15.4					
					16.8				SC	Loose gray and dark gray very clayey fine SAND
					18.2					
					19.6	9				
					21					
					22.4				SC	Medium dense dark greenish gray very clayey fine SAND with thin clay seams
					23.8					
					25.2	12				
					26.6					
					28					
					29.4	14				
					30.8					
					32.2				SC	Medium dense dark gray clayey fine SAND
					33.6					
					35	17				
					36.4					
					37.8					
					39.2					
					40.6	15				
					42				SC	Medium dense dark gray very clayey fine SAND
					43.4					
					44.8	12				
					46.2					
					47.6					
					49					
					50.4	17				Boring terminated at 50 feet
					51.8					
					53.2					

PROJECT: *Pine Street Industrial Building*		LOG OF BORING: B-7
DATE DRILLED: *September 15, 2022*	DRILLER: *A. Nelson*	GROUND ELEVATION:
DRILLING METHOD: *Mud Rotary*	BORING DEPTH: *25.00 Feet*	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): *1'*	

Moisture Content (ANALYSIS)	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	6	▼		SC	Loose gray light gray tan orange and red clayey fine SAND with fine roots
					2.8	15			CL	Stiff to firm gray orange and red fine very sandy CLAY
					4.2					
					5.6	8				
					7	18			CH	Very stiff light gray and gray CLAY with thin clayey fine sand seams
					8.4	22			SC	Medium dense light gray and tan clayey fine SAND
					9.8					
					11.2					
					12.6				SC	Medium dense gray very clayey fine SAND
					14	14				
					15.4					
					16.8				SC	Medium dense dark gray clayey fine SAND
					18.2					
					19.6	12				
					21					
					22.4					
					23.8	12				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building	GHD	LOG OF BORING: B-8
DATE DRILLED: September 15, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 2'	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	10	▼		SC	Loose gray tan and orange very clayey fine SAND
					2.8	19			CL	Very stiff to stiff gray tan and red fine sandy CLAY
					4.2					
					5.6	14				
					7	16			SP-SC	Medium dense light gray and tan slightly clayey fine SAND
					8.4	12				
					9.8					
					11.2					
					12.6				SP	Medium dense gray fine to medium SAND with thin slightly clayey fine sand seams
					14	12				
					15.4					
					16.8				SC	Loose to medium dense gray and dark gray clayey fine SAND
					18.2					
					19.6	8				
					21					
					22.4					
					23.8	18				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

Appendix B

Hand-auger Boring Logs

B-1 Log of Hand-Auger Borings

Project: Pine Street Industrial Building

Date: September 20, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure

Location	Depth Below Ground Surface	Soil Description
HA-1	0 – 6”	Topsoil
	6” – 14”	Gray and brown slightly clayey fine SAND (SP-SC)
	14” – 22”	Gray orange and tan very clayey fine SAND (SC)
	22” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-2	0 – 14”	Topsoil and roots
	14” – 18”	Gray orange and tan very clayey fine SAND (SC)
	18” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-3	0 – 4”	Topsoil
	4” – 8”	Tan clayey fine SAND (SC)
	8” – 14”	Gray orange and tan very clayey fine SAND (SC)
	14” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-4	0 – 3”	Topsoil
	3” – 8”	Gray orange and tan very clayey fine SAND (SC)
	8” – 48”	Gray orange tan and red fine very sandy CLAY (CL)

Comments:

Appendix C

Test Pit Excavation Logs

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-1	0 – 2”	Topsoil		
	2” – 14”	Gray to tan slightly clayey fine SAND (SP-SC)		
	14” – 32”	Gray and tan very clayey fine SAND (SC)		
	32” – 8.5’	Gray orange and tan fine very sandy CLAY (CL) *<Water inflow at 8.5’>*	35.1	67.9
	8.5’ – 11’	Light gray and tan clayey fine AND (SC)	23.6	16.8
Test pit terminated at 11’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-2	0 – 4”	Topsoil		
	4” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-3 (A-E)	0 – 6”	Topsoil		
	6” – 2.5’	Gray and tan slightly clayey fine SAND (SP-SC) and debris (shingles/metal/PVC/bricks)		
	2.5’ – 6’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 6’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-4	0 – 4”	Topsoil		
	4” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-5	0 – 3”	Topsoil		
	3” – 10”	Gray slightly clayey fine SAND (SP-SC)		
	10” – 4’	Gray orange and tan fine very sandy CLAY (CL)	30.6	65.4
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-6	0 – 4”	Topsoil		
	4” – 14”	Gray to tan slightly clayey fine SAND (SP-SC)		
	14” – 3’	Gray and tan very clayey fine SAND (SC)		
	3’ – 5’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 5’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-7	0 – 5”	Topsoil		
	5” – 14”	Gray slightly clayey fine SAND (SP-SC)		
	14” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-8	0 – 8”	Topsoil and debris (bricks/plastic/gravel)		
	8” – 16”	Gray slightly clayey fine SAND (SP-SC)		
	16” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building   Date: September 7, 2022

Personnel: C. Rushing   Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-9 (A-C)	0 – 14”	Topsoil and debris (bricks/plastic/gravel/clay pipe/strip foundation)		
	14” – 20”	Gray slightly clayey fine SAND (SP-SC)		
	20” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-10	0 – 4”	Topsoil		
	4” – 14”	Gray slightly clayey fine SAND (SP-SC) with few bricks and roots		
	14” – 3’	Gray orange and tan fine very sandy CLAY (CL)	33.8	66.0
Test pit terminated at 4’ *Note: Test pit located under current debris pile*				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-11	0 – 4”	Topsoil		
	4” – 16”	Gray and tan slightly clayey fine SAND (SP-SC)		
	16” – 3.5’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 3.5’ *Note: Encountered cast iron pipe oriented parallel to highway at 3.5’*				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-12	0 – 2”	Topsoil		
	2” – 14”	Tan slightly clayey fine SAND (SP-SC)		
	14” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-13	0 – 2”	Topsoil		
	2” – 16”	Tan slightly clayey fine SAND (SP-SC)		
	16” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Appendix D

Seismic Design Parameters

This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

ATC Hazards by Location

Search Information

Address: 311 US-17 ALT, Yemassee, SC 29945, USA

Coordinates: 32.6985622, -80.84510920000001

Elevation: 16 ft

Timestamp: 2022-10-05T17:46:28.305Z

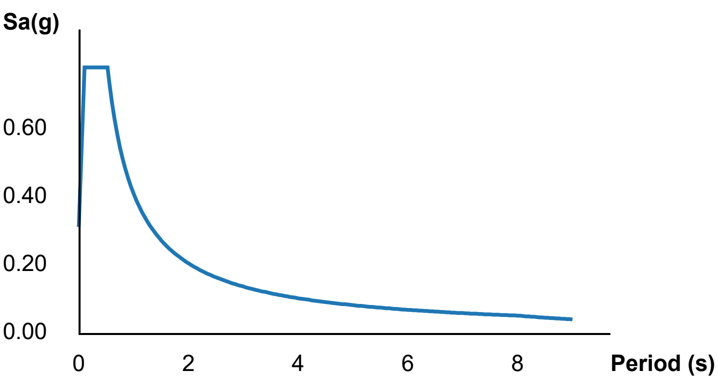
Hazard Type: Seismic

Reference Document: ASCE7-16

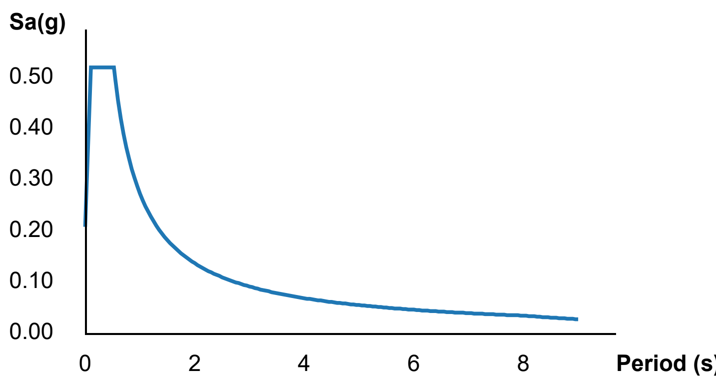
Risk Category: II

Site Class: D-default

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.587	MCE_R ground motion (period=0.2s)
S_1	0.184	MCE_R ground motion (period=1.0s)
S_{MS}	0.781	Site-modified spectral acceleration value
S_{M1}	0.41	Site-modified spectral acceleration value
S_{DS}	0.52	Numeric seismic design value at 0.2s SA
S_{D1}	0.273	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	D	Seismic design category

F_a	1.331	Site amplification factor at 0.2s
F_v	2.233	Site amplification factor at 1.0s
CR_S	0.899	Coefficient of risk (0.2s)
CR_1	0.908	Coefficient of risk (1.0s)
PGA	0.344	MCE_G peak ground acceleration
F_{PGA}	1.256	Site amplification factor at PGA
PGA_M	0.432	Site modified peak ground acceleration
T_L	8	Long-period transition period (s)
SsRT	0.587	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.653	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.184	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.202	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.5	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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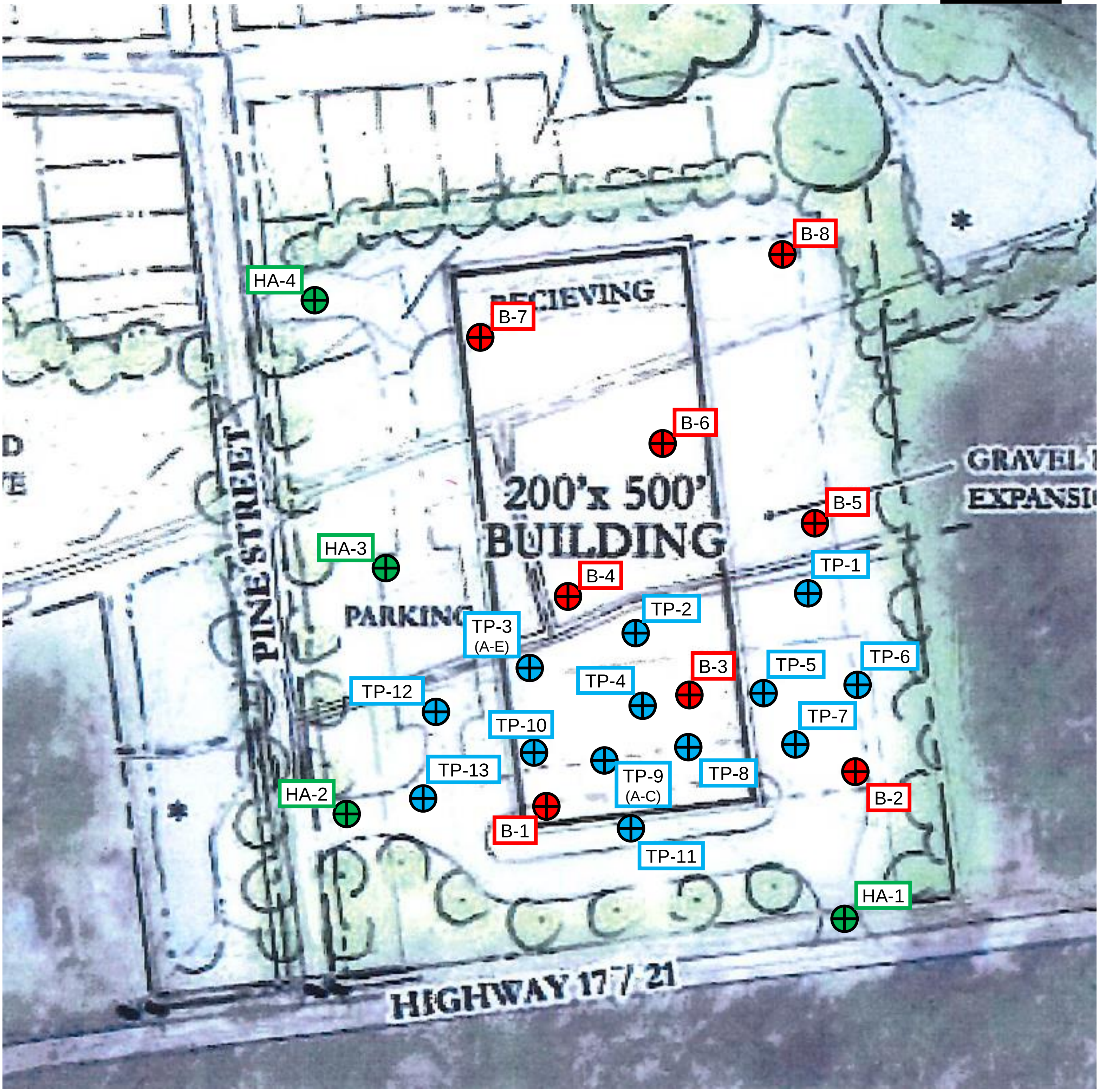
Appendix E

Figure



B-# Designation / approximate location of Standard Penetration Test (SPT) Boring

HA-# Designation / approximate location of Hand-Auger Boring

TP-# Designation / approximate location of Test Pit Excavation

Figure 1: Location Plan

Pine Street Industrial Building

Prepared By:
S. Thompson
Date: 10-5-2022

Checked By:
C. Rushing
Date: 10-5-2022

GHD | Ironline, LLC | 12591408-00 | Subsurface Exploration and Geotechnical Evaluation

PINE STREET RESIDENTIAL

2023
January

Project No:
171002659

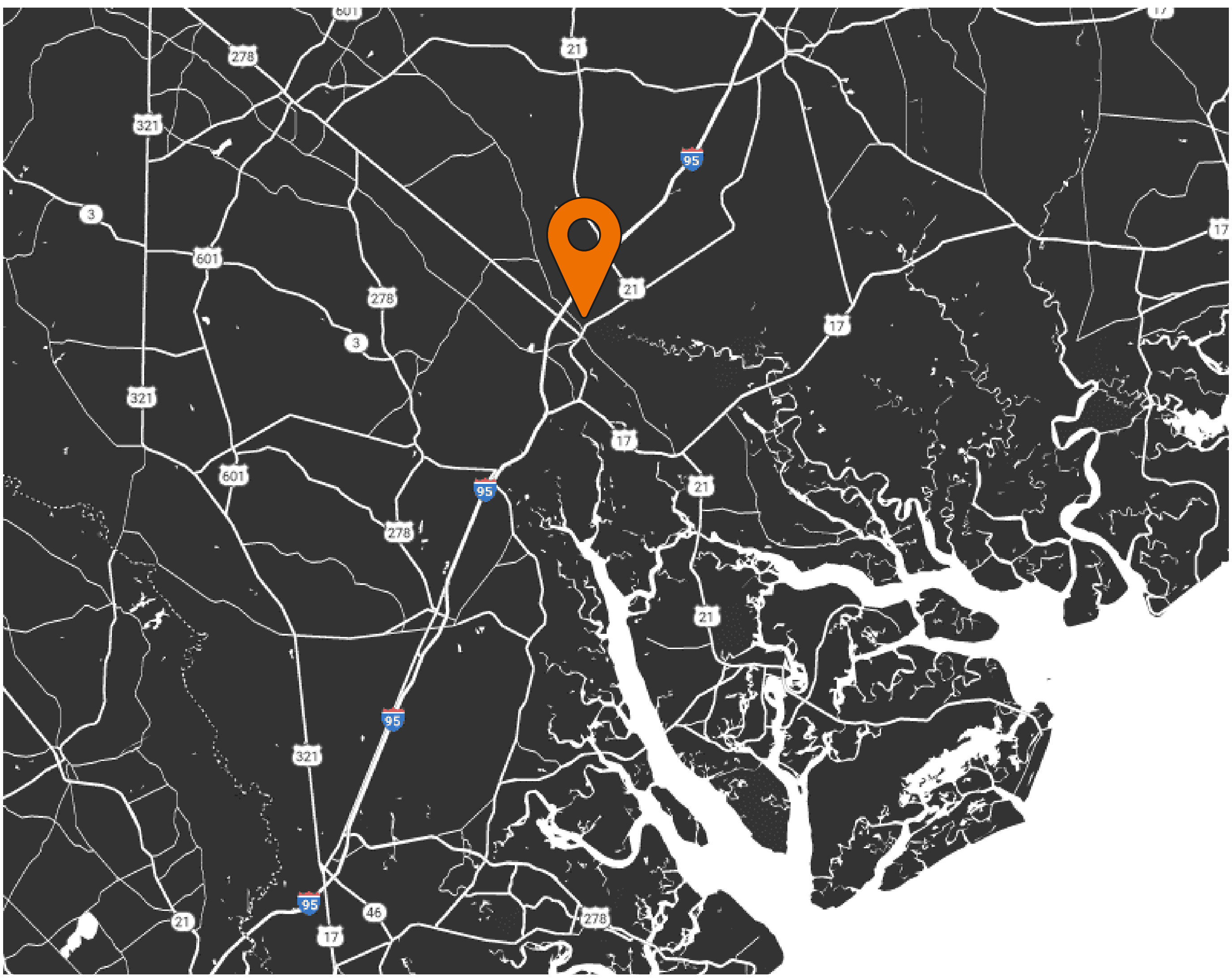
DRAFT

PREPARED FOR: WARD EDWARDS ENGINEERING

PO BOX 381, BLUFFTON, SC 29910

TRAFFIC IMPACT ANALYSIS

ALONG PINE STREET
IN HAMPTON COUNTY, SOUTH CAROLINA



PREPARED BY: STANTEC CONSULTING SERVICES INC. // N. CHARLESTON, SC

PINE STREET RESIDENTIAL

TRAFFIC IMPACT ANALYSIS

The conclusions in the Report titled "Pine Street Residential Traffic Impact Analysis" are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Prepared by: ______________________

Prasad Chame

Reviewed by: ______________________

Stuart Day, PE, PTOE

SOUTH CAROLINA
LICENSED PROFESSIONAL ENGINEER
No. 36464
JOSHUA A. MITCHELL

Approved by: ______________________

Josh Mitchell, PE

January 2023

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EXECUTIVE SUMMARY

A traffic impact analysis was conducted for the Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines.

The proposed Pine Street Residential development (which is anticipated to be constructed by 2025) is located on Pine Street, north of US 21, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, which meets SCDOT's access spacing criteria, as well as via driveways along existing Pine Street, will serve as the access for the development.

For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

The operation of each of the study area intersections (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Pine Street Residential development.

The results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable level of service with the proposed Pine Street Residential development.

Per the criteria documented in *Section 5D-4* of SCDOT's *Access and Roadside Management Standards (ARMS, 2008)*, exclusive turn lanes are not recommended at any of the study intersections or project driveways.

1.0 INTRODUCTION

1.1 PROJECT BACKGROUND

The purpose of this report is to document the procedures and findings of a traffic impact analysis for the proposed Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines. The proposed Pine Street Residential development is located along US 21 and along Pine Street, north of US 21, as shown in Exhibit 1.1, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building with anticipated completion by 2025.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, along with driveways along existing Pine Street, will serve as the access for the development, as shown in Exhibit 1.2. For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

1.2 EXISTING ROADWAY CONDITIONS

US 21 is a two-lane arterial that primarily serves commercial and residential land uses. The posted speed limit is 45-miles per hour (mph) north of Pine Street, while the posted speed limit south of Lacey Street is 35-mph. The speed limit changes from 45-mph to 35-mph between Pine Street and Lacey Street. The average annual daily traffic (AADT) in 2021 was 1,650 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along US 21 is approximately 13%.

Salkehatchie Road is a two-lane major collector that primarily serves residential and commercial land uses. The posted speed limit is 30-mph. The AADT in 2021 was 850 vehicles/day. Based upon existing turning movement counts, the percentage of heavy vehicles along Salkehatchie Road is approximately 2%.

Pine Street is a two-lane local road that primarily serves residential land uses. Based upon existing turning movement counts, the percentage of heavy vehicles along Pine Street is approximately 5%.

Exhibit 1.1 – Pine Street Residential Location Map

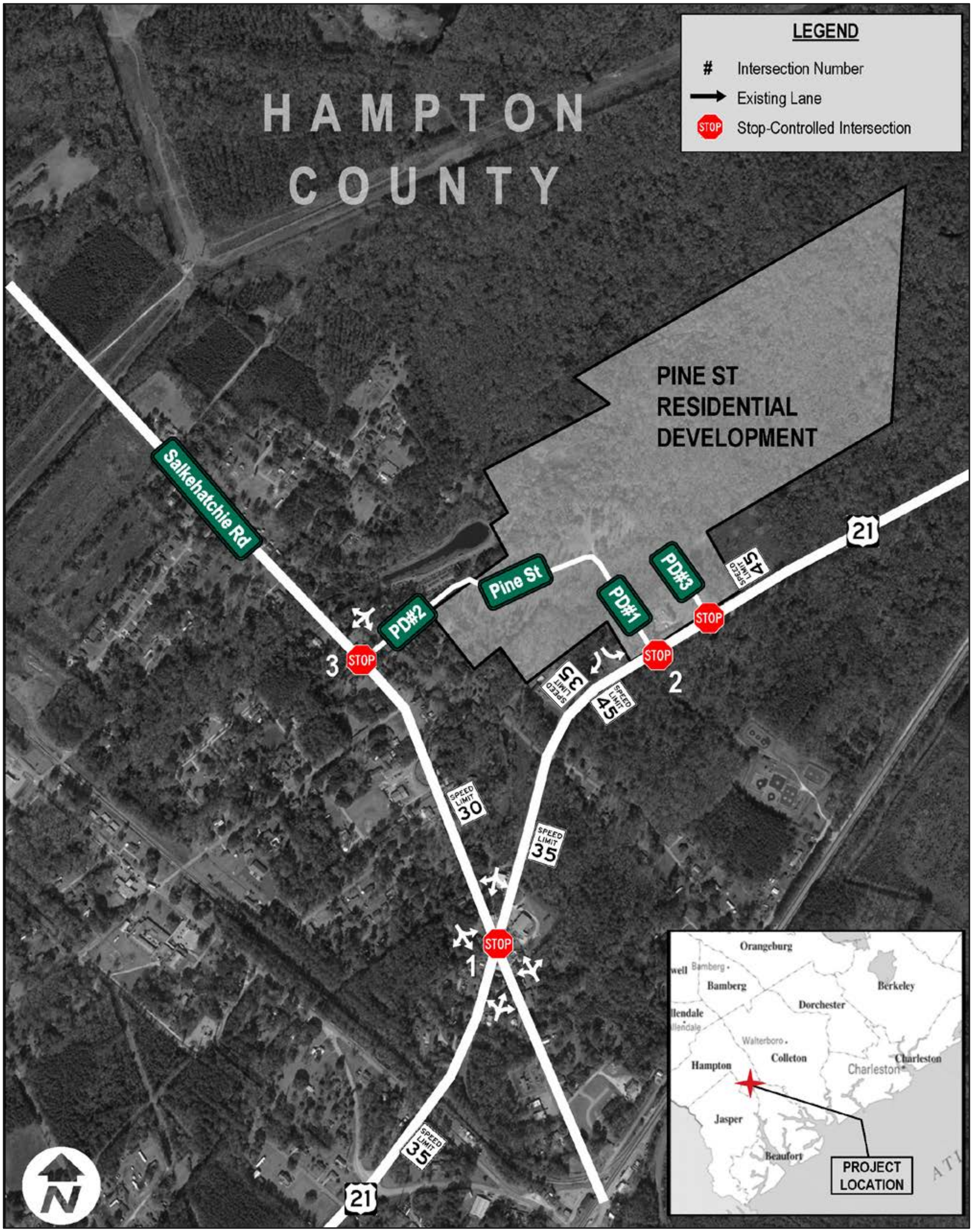


Exhibit 1.2 – Pine Street Residential Site Plan

2.0 DRIVEWAY SPACING REVIEW

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, along with driveways along existing Pine Street, will serve as the access for the development.

As shown in **Exhibit 1.2**, For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

Since the intersections of US 21 & Pine Street and Salkehatchie Road & Pine Street currently exist, a driveway spacing was not performed for Project Driveways #1 and #2. However, a driveway spacing was performed for Project Driveway #3, since it is a new proposed access along US 21.

A review of the driveway spacing of the proposed driveway was completed based on information contained in SCDOT's *Access & Roadside Management Standards (ARMS)* manual (2008), shown in the adapted **Table 2.1**.

Table 2.1 – Minimum Driveway Spacing*

Posted Speed Limit (mph)	**AADT ≥ 2000**; *or* Driveways Generating > 50 Peak Hour Trips	AADT < 2000
30	160 ft	75 ft
35	220 ft	125 ft
40	275 ft	175 ft
45	325 ft	225 ft
≥ 50	400 ft	275 ft

**Figure 3-7 of Access & Roadside Management Standards, 2008, SCDOT*

Based upon the 45-mph speed limit and the driveway spacing criteria of *ARMS*, a **minimum of 325 feet** is required for full access along US 21.

Project Driveway #3 is proposed to be located along US 21, approximately 430 feet east of the intersection of US 21 & Pine Street, which meets the spacing criteria and approximately 4,700 feet west of the intersection of US 21 & Rum Bluff Road, which meets the spacing criteria.

3.0 PROJECT TRAFFIC

3.1 PROPOSED LAND USES

Project traffic in this analysis is defined as the vehicle trips anticipated to be generated by the proposed Pine Street Residential development. These trips were distributed and assigned throughout the study roadway network.

The Pine Street Residential development is proposed to consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

3.2 TRIP GENERATION ESTIMATES

The trip generation potential for the development was estimated using information contained in ITE's *Trip Generation Manual*, 11th Edition (2021) reference. The estimates utilized land use codes (LUC) 210 – Single-Family Detached Housing, and LUC 110 – General Light Industrial.

Due to the nature of the proposed Pine Street Residential development, internal capture trips and pass-by trips were not considered in the trip generation estimates.

The trip generation estimates for the development are shown below in Table 3.1, and documented in Appendix A.

3.3 TRIP DISTRIBUTION & ASSIGNMENT

3.3.1 New External Traffic

New external traffic expected to be generated by the Pine Street Residential development was distributed and assigned to the roadway network based upon existing travel patterns in the area. Since the proposed Pine Street Residential development will also consist of a 100,000 square-foot light industrial building, the residential and light industrial trips were distributed and assigned separately considering the nature of the trips attracted to/generated from these land uses. The general distribution of the residential project trips was assumed to be:

- ❖ 30% to/from the north via Salkehatchie Road;
- ❖ 10% to/from the south via Salkehatchie Road;
- ❖ 30% to/from the east via US 21; and
- ❖ 30% to/from the west via US 21.

The assignment of new external project traffic anticipated to be generated by the residential trips of the Pine Street Residential development is illustrated in Exhibit 3.1.

The general distribution of the light industrial project trips was assumed to be:

- ❖ 50% to/from the east via US 21; and
- ❖ 50% to/from the west via US 21.

The assignment of new external project traffic anticipated to be generated by the residential trips of the Pine Street Residential development is illustrated in Exhibit 3.2.

The AM and PM peak hour project traffic volumes are illustrated in Exhibit 3.3.

Table 3.1 – Trip Generation Estimates

Land Use	ITE LUC	Scale	Daily	Weekday AM Peak Period		Weekday PM Peak Period	
				Enter	Exit	Enter	Exit
Single-Family Detached Housing	210	71 Dwelling Units	736	14	41	45	27
General Light Industrial	110	100,000 Sq. Ft.	426	63	9	5	35
		New, External Trips	1,162	77	50	50	62

Exhibit 3.1 - Project Traffic Distribution and Assignment (Residential)

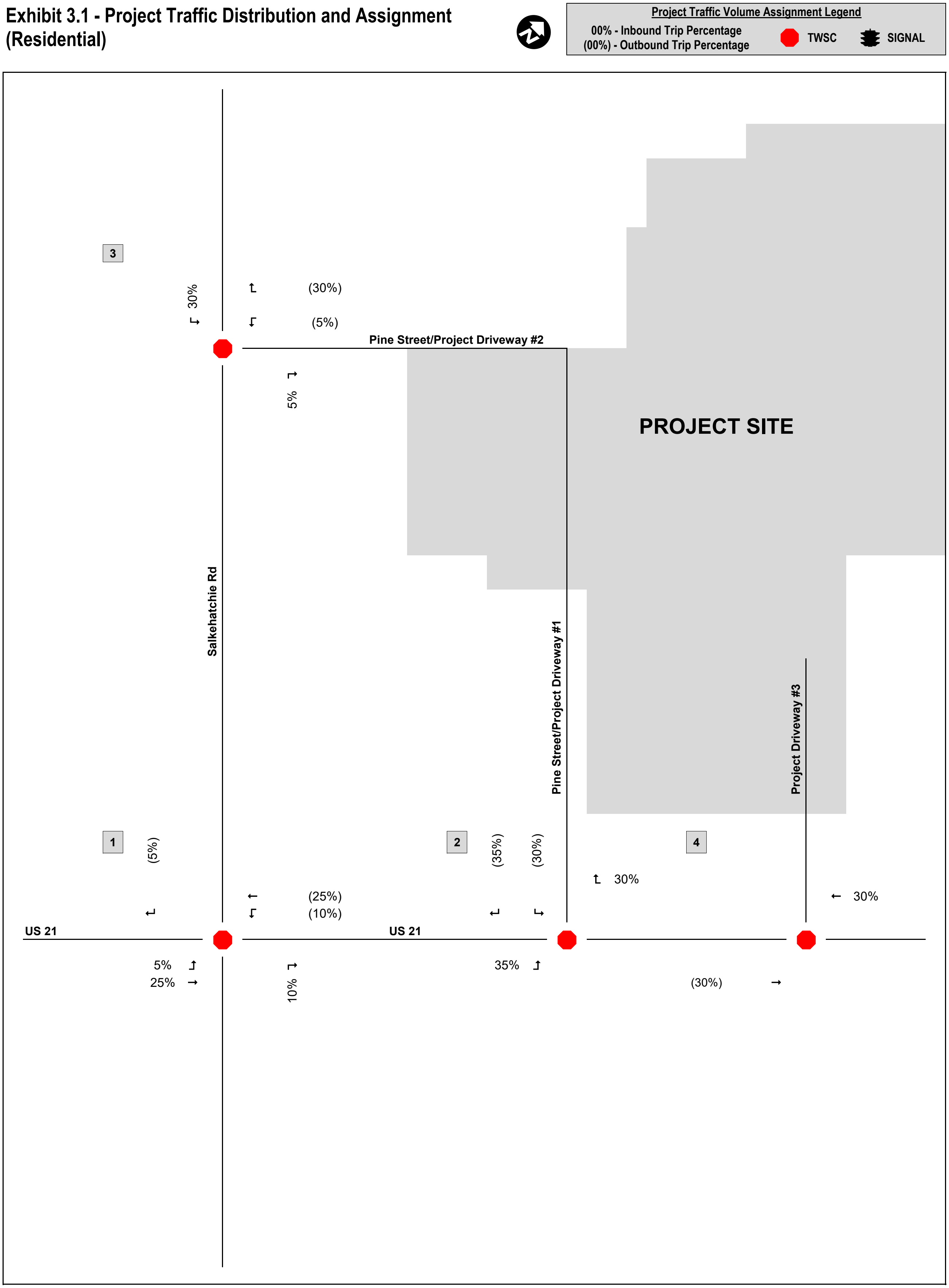


Exhibit 3.2 - Project Traffic Distribution and Assignment (Light Industrial)

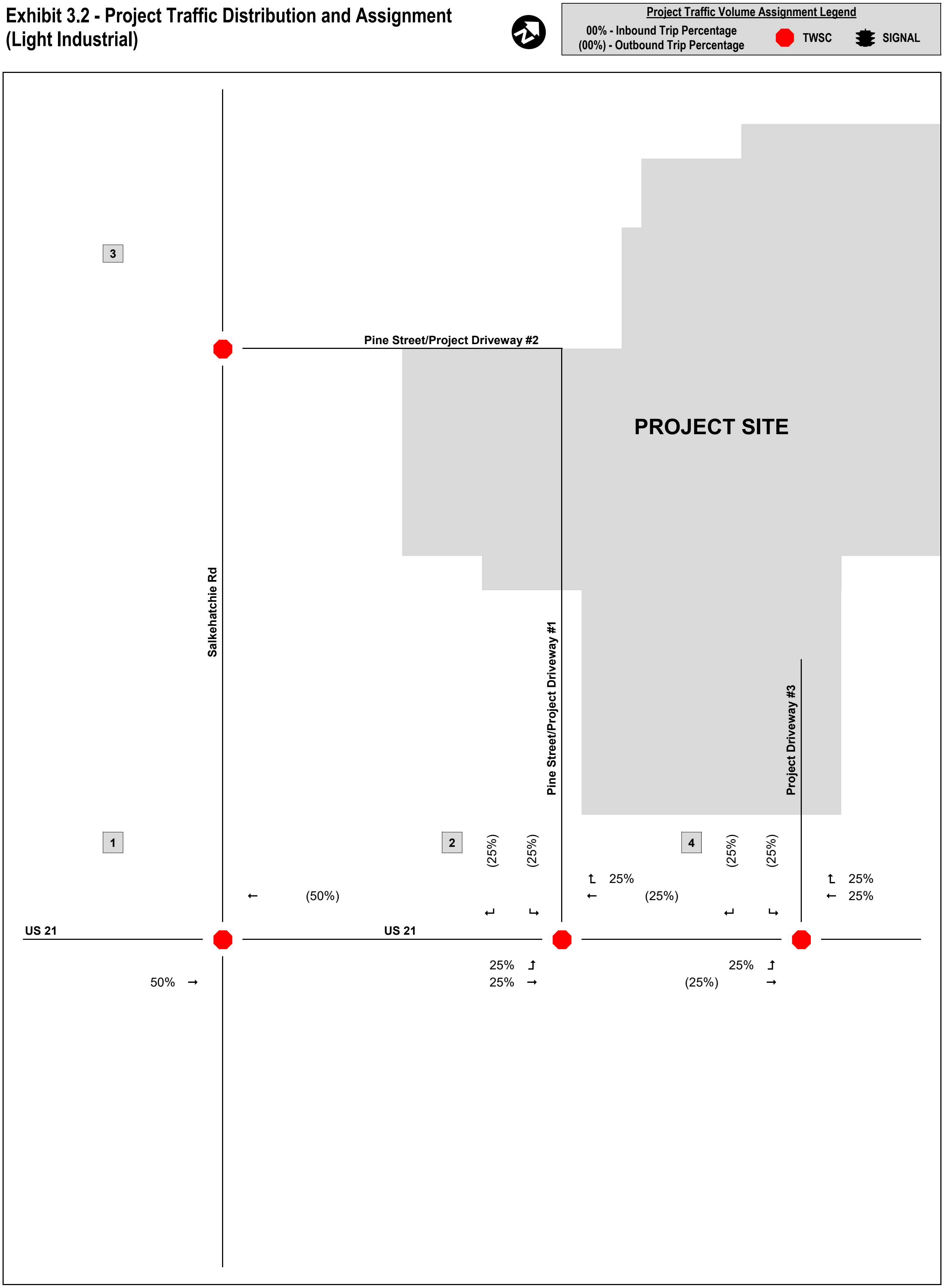


Exhibit 3.3 - Peak Hour Project Traffic Volumes

4.0 TRAFFIC VOLUME DEVELOPMENT

4.1 EXISTING TRAFFIC VOLUMES

The traffic impact analysis considers the weekday AM peak hour (between 7:00 AM and 9:00 AM) and the weekday PM peak hour (between 4:00 PM and 6:00 PM) as the study time frames. The extent of the existing roadway network to be studied consists of the three (3) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1); and
3. Salkehatchie Road & Pine Street (Project Driveway #2).

Existing 2022 traffic volumes were collected at these study area intersections during the AM and PM peak periods listed above.

The raw traffic volume counts are provided in Appendix B and the 2022 existing AM and PM peak hour traffic volumes are illustrated in Exhibit 4.1.

4.2 FUTURE TRAFFIC PROJECTIONS

Future 2025 No Build traffic volumes were developed by adding *background traffic growth* to the collected existing study area peak hour volumes. *Background traffic growth* is growth anticipated to occur in the study area regardless of the proposed Pine Street Residential development.

To develop an annual background growth rate for use in the analysis, historical count data along US 21 (SCDOT count stations #103 & #105) and Salkehatchie Road (SCDOT count stations #271 & #273) was reviewed over the past 5 years. It was determined that the roadways have experienced a collective annual growth of less than 1%. Therefore, in an effort to be conservative, a 1% annual growth rate was utilized to develop anticipated *background traffic growth* through the anticipated 2025 buildout year.

Future 2025 No Build AM and PM peak hour traffic volumes, illustrated in Exhibit 4.2, were developed by adding the *background traffic growth* (assuming 1% annual growth of the existing traffic volumes) to the 2022 existing AM and PM peak hour traffic volumes.

Future 2025 Build AM and PM peak hour traffic volumes, illustrated in Exhibit 4.3, were developed by adding the Pine Street Residential project traffic (shown in Exhibit 3.2) volumes to the 2025 No Build traffic volumes.

Volume development worksheets for each intersection are documented in Appendix C.

Exhibit 4.1 - 2022 Existing Peak Hour Traffic Volumes

Traffic Volumes Legend
000 - AM Peak Hour Volumes
(000) - PM Peak Hour Volumes
TWSC
SIGNAL

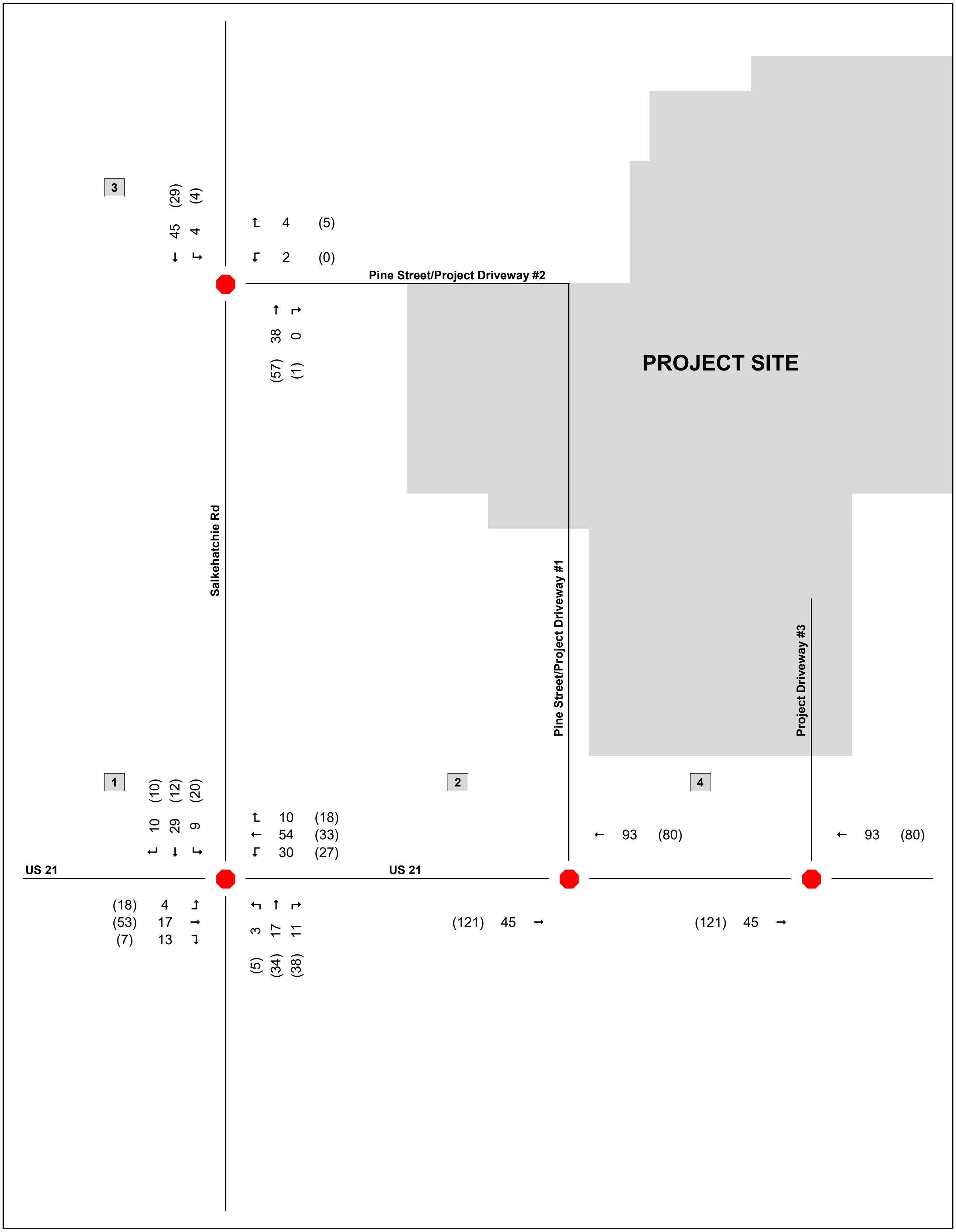


Exhibit 4.2 - 2025 No Build Peak Hour Traffic Volumes

Traffic Volumes Legend
000 - AM Peak Hour Volumes
(000) - PM Peak Hour Volumes
TWSC
SIGNAL

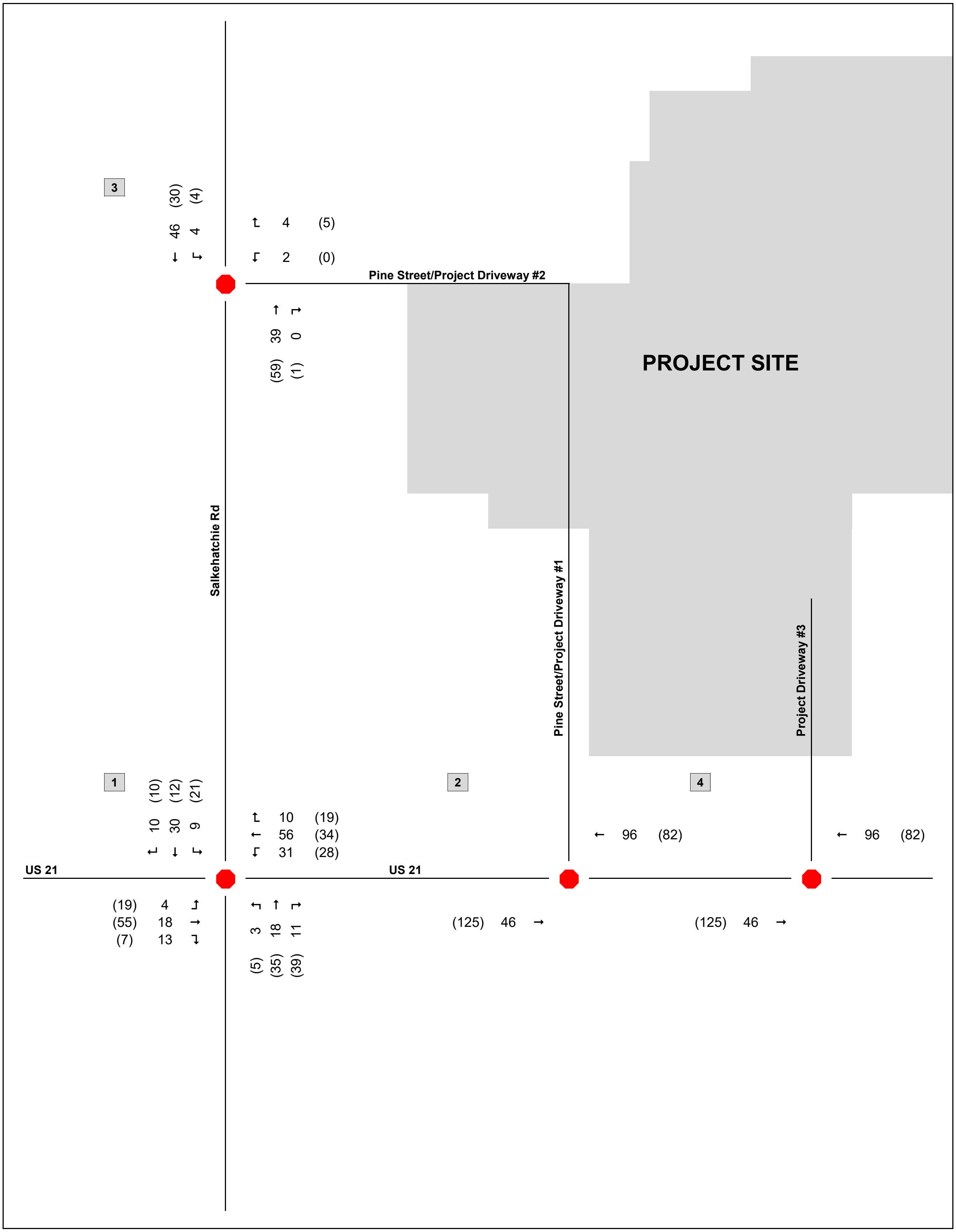
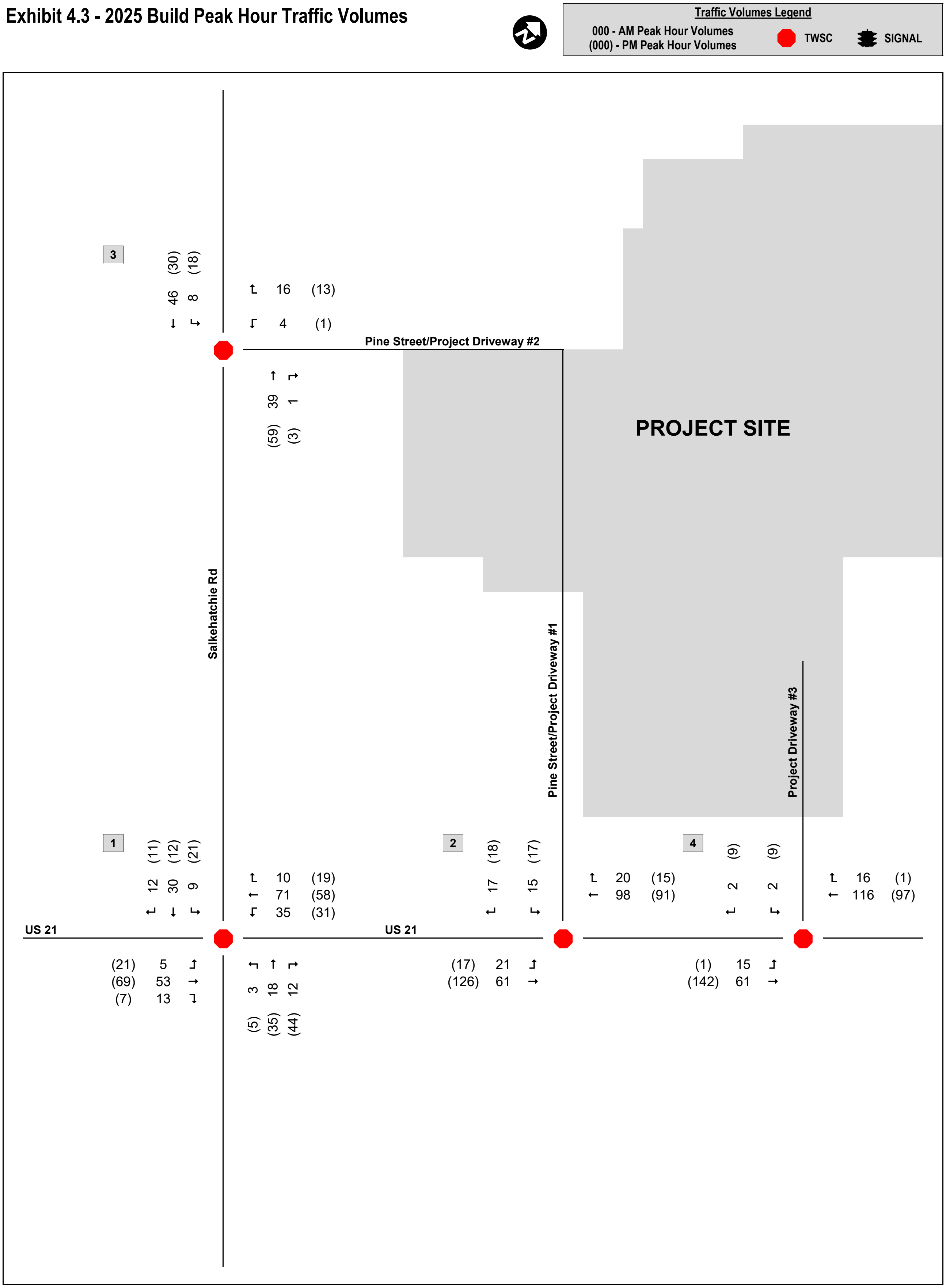


Exhibit 4.3 - 2025 Build Peak Hour Traffic Volumes



5.0 TRAFFIC IMPACT ANALYSIS

A traffic impact analysis was conducted for the Pine Street Residential development which analyzed the need for turn lanes at the project driveway and study intersections according to *Highway Capacity Manual (HCM) 6th Edition* methodologies.

5.1 TURN LANE ANALYSIS

5.1.1 Right-Turn Lanes

The need for exclusive right-turn lanes is based upon the criteria documented in *Section 9.5.1.1* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

1. *At a free-flowing leg of any unsignalized intersection on a two-lane urban or rural highway which satisfies the criteria in Figure 9.5-A;*
2. *at a free-flowing leg of any unsignalized intersection on a high-speed (50 mph or greater), four-lane urban or rural highway which satisfies the criteria in Figure 9.5-B;*
3. *at the free-flowing leg of any unsignalized intersection on a six-lane urban or rural highway;*
4. *at any intersection where a capacity analysis determines a right-turn lane is necessary to meet the overall level-of-service criteria;*
5. *as a general rule, at any signalized intersection where the projected right-turning volume is greater than 300 vehicles per hour and where there are greater than 300 vehicles per hour per lane on the mainline (A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour);*
6. *for uniformity of intersection design along the highway if other intersections have right-turn lanes;*
7. *at any intersection where the mainline is curved to the left and where the mainline curve requires superelevation;*
8. *at railroad crossings where the railroad is paralleled to the facility and is located close to the intersection and where a right-turn lane would be desirable to store queued vehicles avoiding interference with the movement of through traffic; or*
9. *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to right-turning vehicles;*

Table 5.1 details whether the previously mentioned criteria are satisfied for Project Driveway #1 and at the study intersections of Salkehatchie Road & Pine Street (Project Driveway #2) and US 21 & Salkehatchie Road. An "✖" indicates that the criteria is not met; a "✓" indicates that it is met; and "N/A" indicates that the criteria is not applicable.

Table 5.1 – Right-Turn Lane Criteria Warrants

Crit-eria	PD #1	PD #3	Pine St & Salke-hatchie Rd	US 21 & Salke-hatchie Rd	Reference/ Note
1	✖	✖	✖	✖	Appendix G
2	N/A	N/A	N/A	N/A	Not a four-lane highway
3	N/A	N/A	N/A	N/A	Not a six-lane highway
4	✖	✖	✖	✖	Table 5.4
5	N/A	N/A	N/A	N/A	Not signalized
6	✖	✖	✖	✖	Not typically provided
7	✖	✖	✖	✖	Mainline not curved
8	✖	✖	✖	✖	No railroad crossing
9	N/A	N/A	N/A	N/A	Crash data not reviewed

Based on SCDOT's *Roadway Design Manual* considerations, exclusive right-turn lanes are not recommended at any of the study intersections.

Worksheets documenting the turn-lane analysis are provided in Appendix G.

5.1.2 Left-Turn Lanes

The need for exclusive left-turn lanes is based upon the criteria documented in *Section 9.5.1.2* of SCDOT's *Roadway Design Manual* (2021), which consists of nine considerations, listed below:

1. *At any unsignalized intersection on principal, high-speed rural highways with other arterials or collectors;*
2. *at any unsignalized intersection on a two-lane urban or rural highway that satisfies the criteria in Figures 9.5-C, 9.5-D, 9.5-E, 9.5-F, or 9.5-G;*
3. *at any intersection where a capacity analysis determines a left-turn lane is necessary to meet the level of service criteria;*
4. *at any signalized intersection where the left-turn volume is 300 vehicles per hour or more, conduct a traffic review to determine if dual left-turn lanes are required;*
5. *as a general rule, at any intersection where the left-turning volume is 100 vehicles per hour (for a single turn lane) or 300 vehicles per hour (for a dual turn lane);*
6. *at all entrances to major residential, commercial, and industrial developments;*
7. *at all median crossovers;*
8. *for uniformity of intersection design along the highway if other intersections have left-turn lanes (i.e., to satisfy driver expectancy); or*
9. *at any intersection where the crash experience, existing traffic operations, sight distance restrictions (e.g., intersection beyond a crest vertical curve), or engineering judgement indicates a significant conflict related to left-turning vehicles;*

Table 5.2 below details whether the previously mentioned criteria are satisfied for Project Driveway #1 and at the study intersections of Salkehatchie Road & Pine Street (Project Driveway #2) and US 21 & Salkehatchie Road. An "✖" indicates that the criteria is not met; a "✓" indicates that it is met; and "N/A" indicates that the criteria is not applicable.

Table 5.2 – Left-Turn Lane Criteria Warrants

Crit-eria	PD #1	PD #3	Pine St & Salke-hatchie Rd	US 21 & Salke-hatchie Rd	Reference/ Note
1	N/A	N/A	N/A	N/A	Not an arterial or collector
2	✖	✖	✖*	✖	Appendix G
3	✖	✖	✖	✖	Table 5.4
4	N/A	N/A	N/A	N/A	Not signalized
5	✖	✖	✖	✖	Exhibit 4.3
6	✖	✖	✖	✖	Not a major development
7	✖	✖	✖	✖	No median crossover
8	✖	✖	✖	✖	Not typically provided
9	N/A	N/A	N/A	N/A	No crash data reviewed

**Since Section 9.5.1.2* of SCDOT's *Roadway Design Manual* (2021) *does not provide turn-lane criteria figure for roadways with speed limit 30 mph, Figure 9.5-G was used for analysis.*

Based on SCDOT's *Roadway Design Manual* considerations, exclusive left-turn lanes are not recommended at any of the study intersections.

Worksheets documenting the turn-lane analysis are provided in Appendix G.

5.2 INTERSECTION LOS ANALYSIS

Using the existing and projected peak hour traffic volumes previously discussed, intersection analysis was conducted for the study and project driveway intersections considering 2022 Existing Conditions, 2025 No Build Conditions, and 2025 Build Conditions. The analysis was conducted using the Transportation Research Board's *Highway Capacity Manual (HCM) 6th Edition* methodologies of the *Synchro*, Version 11 software for stop-controlled intersection analysis.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. Table 5.3 summarizes the HCM 6th Edition control delay thresholds associated with each LOS grade for unsignalized intersections. Level of service A through D is considered to be acceptable LOS, while LOS E and F is considered to be undesirable.

Table 5.3 – HCM 6th Edition Intersection LOS Criteria

LOS	Control Delay per Vehicle (s) Unsignalized
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

As part of the intersection analysis, SCDOT's default *Synchro* parameters were utilized. The existing 2022 traffic counts' peak hour factors (PHF) were utilized in the analysis of existing conditions. Future-year 2025 conditions were analyzed utilizing existing PHF, but with a minimum PHF of 0.90 and maximum PHF of 0.95 considered. The existing 2022 heavy vehicle percentages, as previously discussed, were utilized in the analysis, with a minimum percentage of 2% considered.

Existing lane geometry was utilized for the analysis of 2022 Existing Conditions and 2025 No Build Conditions. The 2025 Build Conditions were analyzed both with existing lane geometry and with any proposed improvements resulting from this impact analysis (including any proposed exclusive turn lanes per the results of Section 5.1) to illustrate their anticipated impact on traffic operations.

The results of the intersection analysis for existing and future-year conditions for the weekday AM and PM peak hour time periods are summarized in Table 5.4.

For two-way stop-controlled (TWSC) intersections, the LOS and delay results are evaluated for the worst-case minor-street approaches only, per *HCM 6th Edition* methodologies for TWSC intersections.

As shown in Table 5.4, the results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable LOS with the proposed Pine Street Residential development.

Worksheets documenting the intersection analyses are provided in Appendix D for 2022 Existing Conditions, Appendix E for 2025 No Build Conditions, and Appendix F for 2025 Build Conditions.

Table 5.4 – Peak Hour Intersection Analysis Results

Intersection	Control	LOS/Delay (seconds/vehicle)					
		AM Peak Hour			PM Peak Hour		
		2022 Existing	2025 No Build	2025 Build	2022 Existing	2025 No Build	2025 Build
1 US 21 & Salkehatchie Road	TWSC	B/10.3 (EB)	B/10.3 (EB)	B/10.9 (EB)	B/10.8 (WB)	B/10.8 (WB)	B/11.1 (WB)
2 US 21 & Pine Street (Project Driveway #1)	TWSC	--	--	A/9.5 (SB)	--	--	B/11.0 (SB)
3 Salkehatchie Road & Pine Street (Project Driveway #2)	TWSC	A/8.7 (WB)	A/8.7 (WB)	A/8.7 (WB)	A/8.6 (WB)	A/8.6 (WB)	A/8.7 (WB)
4 US 21 & Project Driveway #3	TWSC	--	--	A/9.6 (SB)	--	--	A/9.6 (SB)

6.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact analysis was conducted for the Pine Street Residential development in accordance with SCDOT and Town of Yemassee guidelines.

The proposed Pine Street Residential development (which is anticipated to be constructed by 2025) is located on Pine Street, north of US 21, and will consist of 71 single-family detached housing units and an approximately 100,000 square-foot light industrial building.

Access to the development will be provided via one new proposed access along US 21, servicing the light industrial building, which meets SCDOT's access spacing criteria, as well as via driveways along existing Pine Street, will serve as the access for the development.

For the purposes of the analysis, the intersection of US 21 & Pine Street is also referred to as Project Driveway #1, the intersection of Salkehatchie Road & Pine Street is also referred to as Project Driveway #2, and the new proposed access along US 21 is referred to as Project Driveway #3.

The extent of the roadway network analyzed consisted of the four (4) intersections of:

1. US 21 & Salkehatchie Road;
2. US 21 & Pine Street (Project Driveway #1);
3. Salkehatchie Road & Pine Street (Project Driveway #2); and
4. US 21 & Project Driveway #3.

The operation of each of the study area intersections (in terms of average vehicular delay and level of service) was analyzed with and without the project traffic anticipated to be generated by the Pine Street Residential development.

The results of the analysis indicate that the study intersections currently operate and are expected to continue to operate at an acceptable level of service with the proposed Pine Street Residential development.

Per the criteria documented in *Section 5D-4* of SCDOT's *Access and Roadside Management Standards (ARMS, 2008)*, exclusive turn lanes are not recommended at any of the study intersections or project driveways.

PINE STREET RESIDENTIAL TRAFFIC IMPACT ANALYSIS

APPENDICES

Appendix A TRIP GENERATION WORKSHEETS

TRIP GENERATION ESTIMATES
Pine St Residential TIA

Weekday Daily

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.92 Ln(X) + 2.68	50%	50%	368	368	736	0%	0	0	0	0%	0	0	0	368	368	736
General Light Industrial	11th	110	100	DU	T = 3.76(X) + 50.47	50%	50%	213	213	426	0%	0	0	0	0%	0	0	0	213	213	426
					.		Total:	581	581	1,162	0%	0	0	0	0%	0	0	0	581	581	1,162

Weekday AM Peak Hour

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.91 Ln(X) + 0.12	26%	74%	14	41	55	0%	0	0	0	0%	0	0	0	14	41	55
General Light Industrial	11th	110	100	DU	T = 0.68 (X) + 3.81	88%	12%	63	9	72	0%	0	0	0	0%	0	0	0	63	9	72
							Total:	77	50	127	0%	0	0	0	0%	0	0	0	77	50	127

Weekday PM Peak Hour

TRIP GENERATION CHARACTERISTICS						DIRECT. DISTRIB.		GROSS TRIPS			INTERNAL CAPTURE TRIPS				PASS-BY CAPTURE TRIPS				NEW EXTERNAL TRIPS		
Land Use	Ed.	LUC	Scale	Unit	Equation/Rate	In	Out	In	Out	Total	%	In	Out	Trips	%	In	Out	Trips	In	Out	Total
Single-Family Detached Housing	11th	210	71	DU	Ln(T) = 0.94 Ln(X) + 0.27	63%	37%	45	27	72	0%	0	0	0	0%	0	0	0	45	27	72
General Light Industrial	11th	110	100	DU	Ln(T) = 0.72 Ln(X) + 0.38	14%	86%	5	35	40	0%	0	0	0	0%	0	0	0	5	35	40
							Total:	50	62	112	0%	0	0	0	0%	0	0	0	50	62	112

Appendix B TRAFFIC VOLUME DATA

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : Pine St @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 1

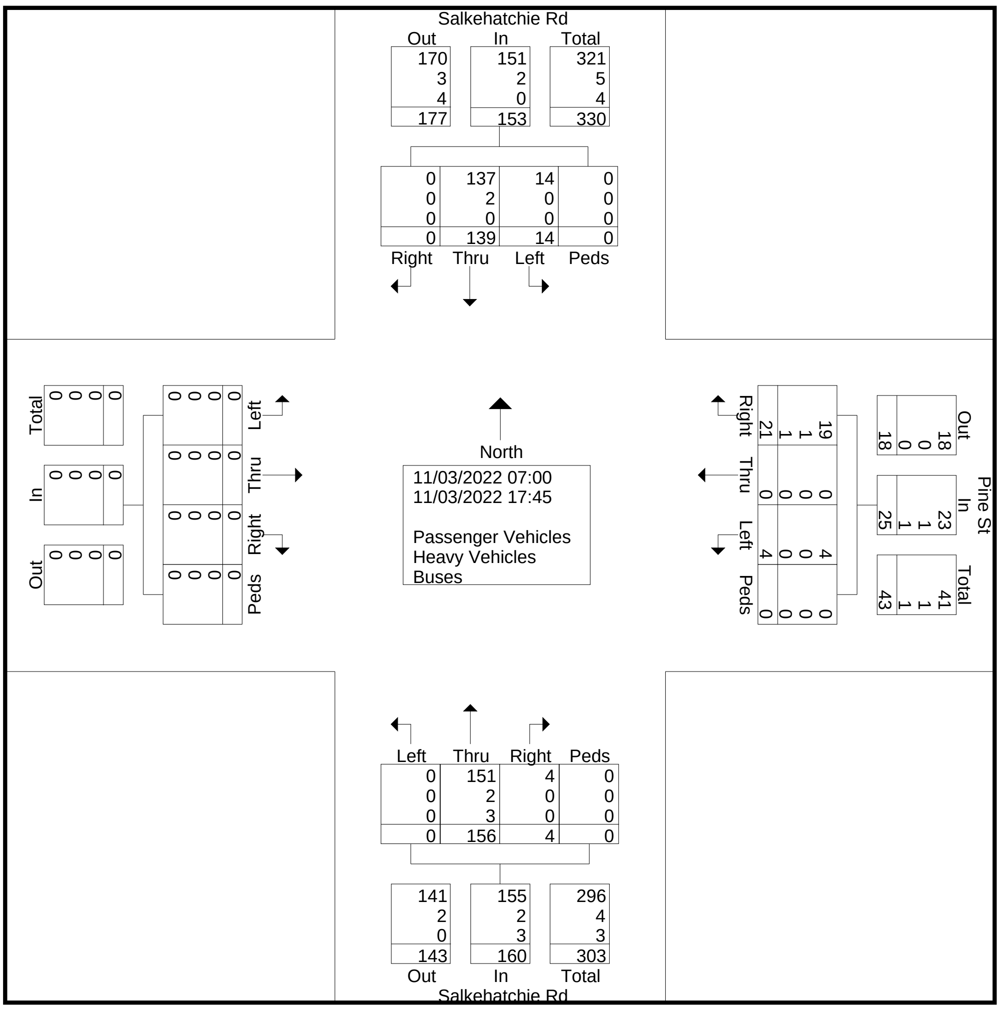
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Salkehatchie Rd Southbound				Pine St Westbound				Salkehatchie Rd Northbound				Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	10	0	0	0	0	0	0	0	7	0	0	0	0	0	0	17
07:15	0	11	0	0	1	0	2	0	0	5	1	0	0	0	0	0	20
07:30	1	7	0	0	1	0	2	0	0	8	0	0	0	0	0	0	19
07:45	1	11	0	0	0	0	0	0	0	11	0	0	0	0	0	0	23
Total	2	39	0	0	2	0	4	0	0	31	1	0	0	0	0	0	79
08:00	1	14	0	0	0	0	2	0	0	8	0	0	0	0	0	0	25
08:15	1	13	0	0	1	0	0	0	0	11	0	0	0	0	0	0	26
08:30	1	6	0	0	0	0	1	0	0	3	0	0	0	0	0	0	11
08:45	0	7	0	0	0	0	1	0	0	3	0	0	0	0	0	0	11
Total	3	40	0	0	1	0	4	0	0	25	0	0	0	0	0	0	73
16:00	2	12	0	0	0	0	2	0	0	12	0	0	0	0	0	0	28
16:15	1	7	0	0	0	0	3	0	0	16	1	0	0	0	0	0	28
16:30	1	7	0	0	0	0	2	0	0	10	0	0	0	0	0	0	20
16:45	1	5	0	0	1	0	1	0	0	5	1	0	0	0	0	0	14
Total	5	31	0	0	1	0	8	0	0	43	2	0	0	0	0	0	90
17:00	0	8	0	0	0	0	1	0	0	14	0	0	0	0	0	0	23
17:15	1	5	0	0	0	0	1	0	0	11	1	0	0	0	0	0	19
17:30	0	7	0	0	0	0	1	0	0	21	0	0	0	0	0	0	29
17:45	3	9	0	0	0	0	2	0	0	11	0	0	0	0	0	0	25
Total	4	29	0	0	0	0	5	0	0	57	1	0	0	0	0	0	96
Grand Total	14	139	0	0	4	0	21	0	0	156	4	0	0	0	0	0	338
Apprch %	9.2	90.8	0	0	16	0	84	0	0	97.5	2.5	0	0	0	0	0	
Total %	4.1	41.1	0	0	1.2	0	6.2	0	0	46.2	1.2	0	0	0	0	0	
Passenger Vehicles	14	137	0	0	4	0	19	0	0	151	4	0	0	0	0	0	329
% Passenger Vehicles	100	98.6	0	0	100	0	90.5	0	0	96.8	100	0	0	0	0	0	97.3
Heavy Vehicles	0	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0	5
% Heavy Vehicles	0	1.4	0	0	0	0	4.8	0	0	1.3	0	0	0	0	0	0	1.5
Buses	0	0	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4
% Buses	0	0	0	0	0	0	4.8	0	0	1.9	0	0	0	0	0	0	1.2

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

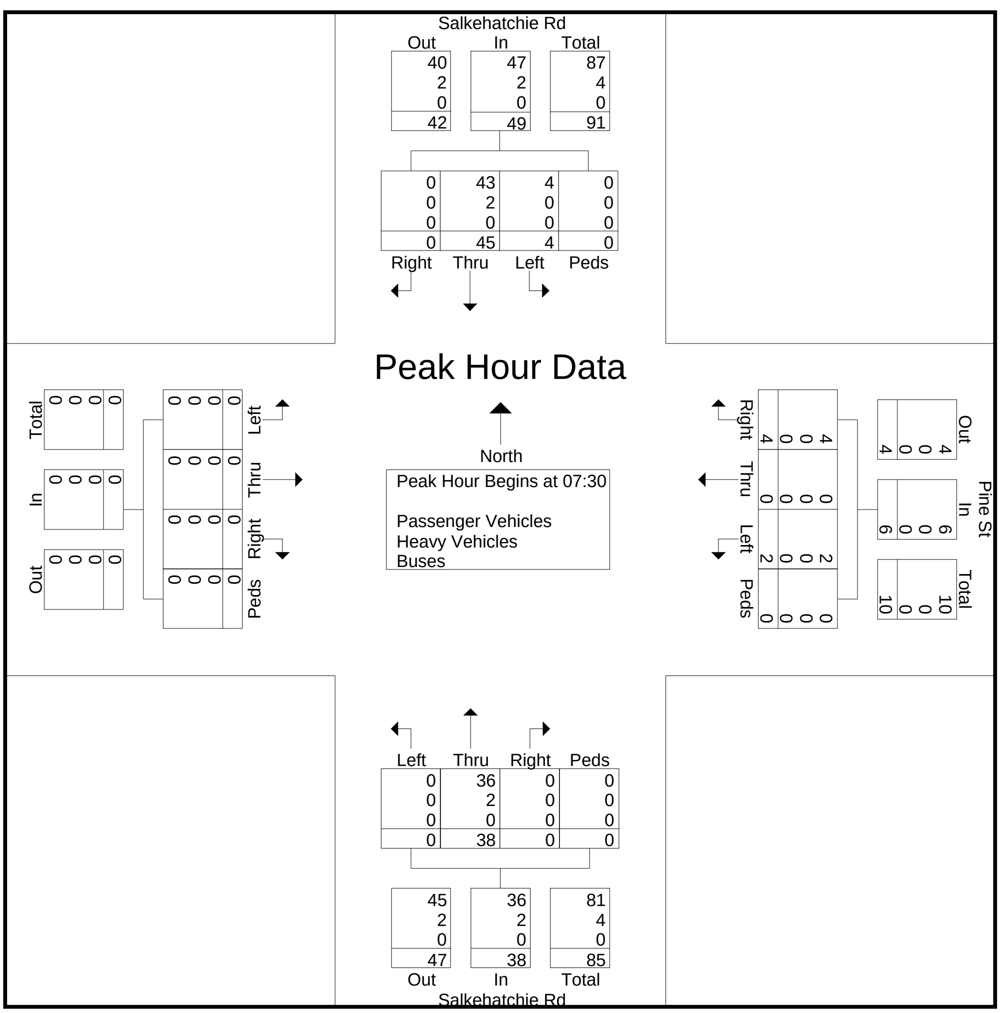
File Name : Pine St @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022



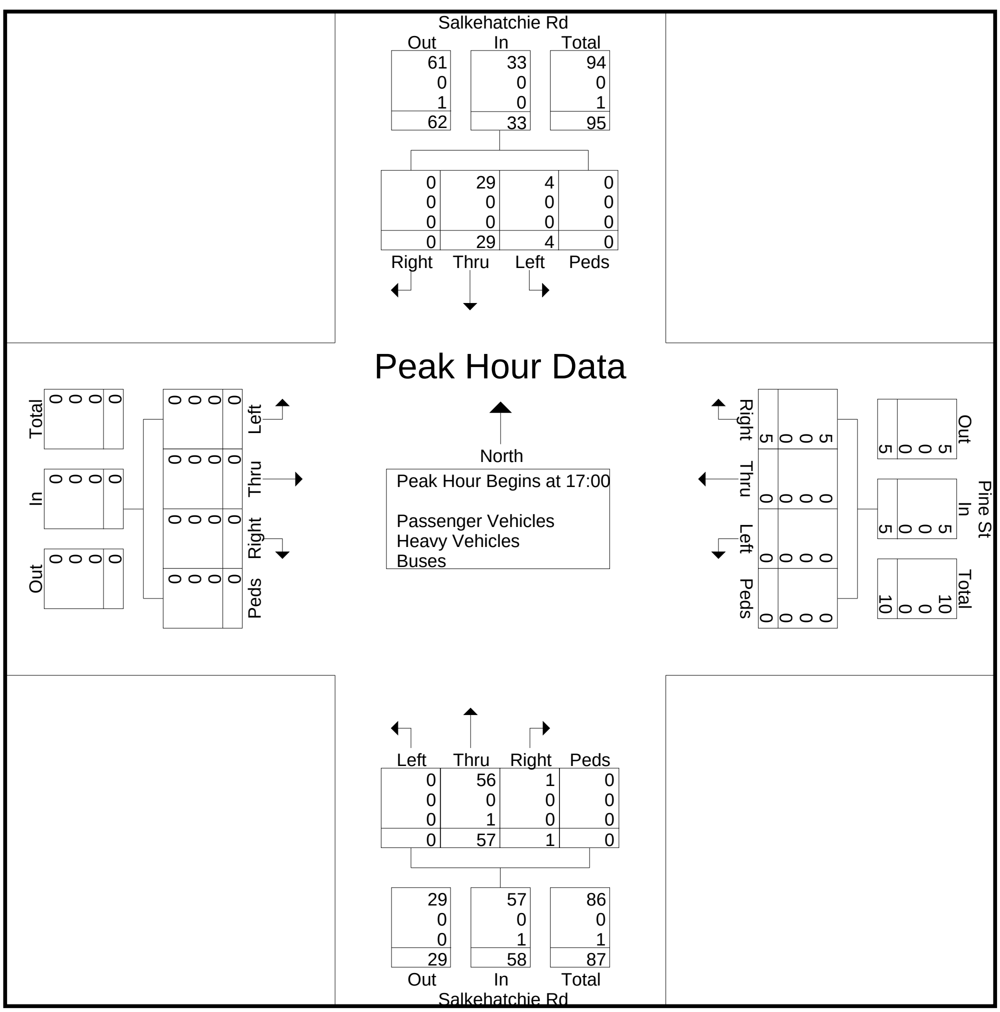
SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

	Salkehatchie Rd Southbound					Pine St Westbound					Salkehatchie Rd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	**1**	7	0	0	8	**1**	0	**2**	0	**3**	0	8	0	0	8	0	0	0	0	0	19
07:45	1	11	0	0	12	0	0	0	0	0	0	**11**	0	0	**11**	0	0	0	0	0	23
08:00	1	**14**	0	0	**15**	0	0	2	0	2	0	8	0	0	8	0	0	0	0	0	25
08:15	1	13	0	0	14	1	0	0	0	1	0	11	0	0	11	0	0	0	0	0	**26**
Total Volume	4	45	0	0	49	2	0	4	0	6	0	38	0	0	38	0	0	0	0	0	93
% App. Total	8.2	91.8	0	0		33.3	0	66.7	0		0	100	0	0		0	0	0	0		
PHF	1.00	.804	.000	.000	.817	.500	.000	.500	.000	.500	.000	.864	.000	.000	.864	.000	.000	.000	.000	.000	.894
Passenger Vehicles	4	43	0	0	47	2	0	4	0	6	0	36	0	0	36	0	0	0	0	0	89
% Passenger Vehicles																					
Heavy Vehicles	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
% Heavy Vehicles	0	4.4	0	0	4.1	0	0	0	0	0	0	5.3	0	0	5.3	0	0	0	0	0	4.3
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



	Salkehatchie Rd Southbound					Pine St Westbound					Salkehatchie Rd Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	8	0	0	8	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	23
17:15	1	5	0	0	6	0	0	1	0	1	0	11	**1**	0	12	0	0	0	0	0	19
17:30	0	7	0	0	7	0	0	1	0	1	0	**21**	0	0	**21**	0	0	0	0	0	**29**
17:45	**3**	**9**	0	0	**12**	0	0	**2**	0	**2**	0	11	0	0	11	0	0	0	0	0	25
Total Volume	4	29	0	0	33	0	0	5	0	5	0	57	1	0	58	0	0	0	0	0	96
% App. Total	12.1	87.9	0	0		0	0	100	0		0	98.3	1.7	0		0	0	0	0		
PHF	.333	.806	.000	.000	.688	.000	.000	.625	.000	.625	.000	.679	.250	.000	.690	.000	.000	.000	.000	.000	.828
Passenger Vehicles	4	29	0	0	33	0	0	5	0	5	0	56	1	0	57	0	0	0	0	0	95
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	1.8	0	0	1.7	0	0	0	0	0	1.0



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 1

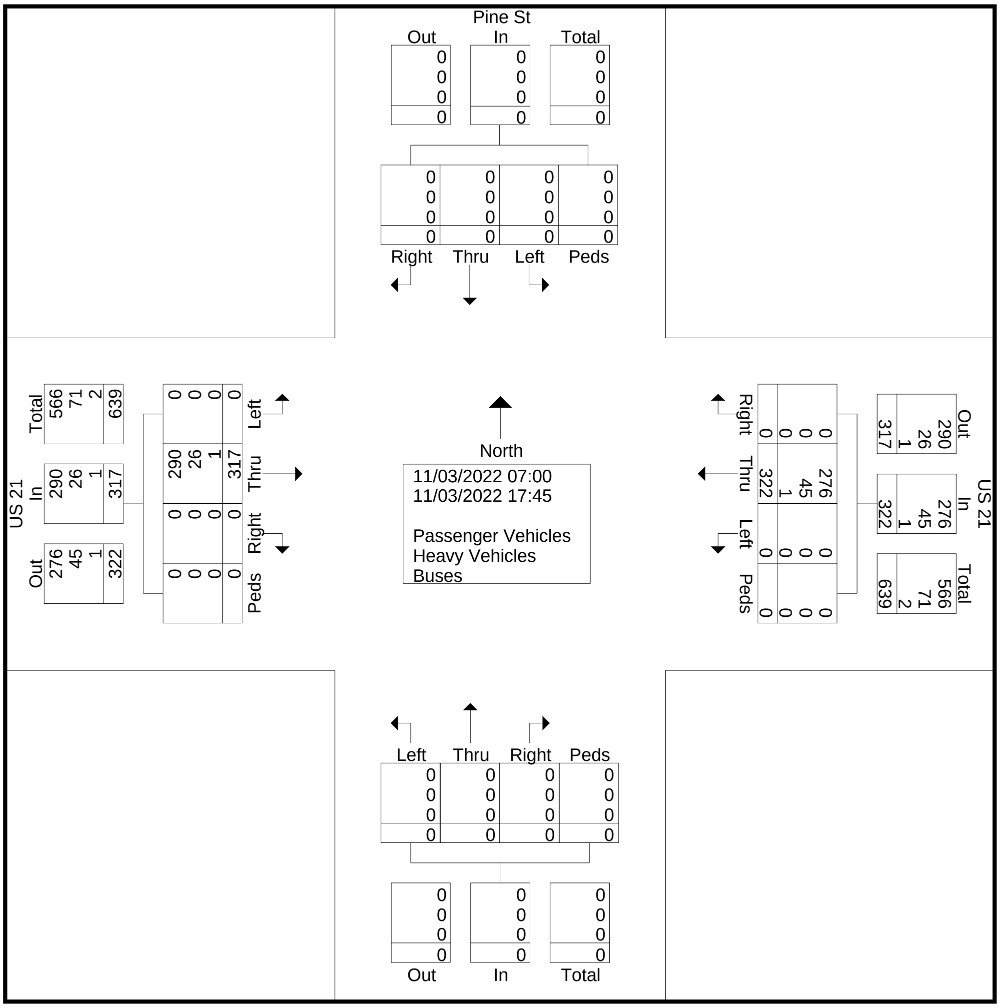
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	Pine St Southbound				US 21 Westbound				Northbound				US 21 Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	0	0	0	0	23	0	0	0	0	0	0	0	8	0	0	31
07:15	0	0	0	0	0	21	0	0	0	0	0	0	0	9	0	0	30
07:30	0	0	0	0	0	17	0	0	0	0	0	0	0	12	0	0	29
07:45	0	0	0	0	0	32	0	0	0	0	0	0	0	13	0	0	45
Total	0	0	0	0	0	93	0	0	0	0	0	0	0	42	0	0	135
08:00	0	0	0	0	0	23	0	0	0	0	0	0	0	11	0	0	34
08:15	0	0	0	0	0	16	0	0	0	0	0	0	0	8	0	0	24
08:30	0	0	0	0	0	14	0	0	0	0	0	0	0	10	0	0	24
08:45	0	0	0	0	0	22	0	0	0	0	0	0	0	11	0	0	33
Total	0	0	0	0	0	75	0	0	0	0	0	0	0	40	0	0	115
16:00	0	0	0	0	0	21	0	0	0	0	0	0	0	31	0	0	52
16:15	0	0	0	0	0	19	0	0	0	0	0	0	0	25	0	0	44
16:30	0	0	0	0	0	13	0	0	0	0	0	0	0	29	0	0	42
16:45	0	0	0	0	0	21	0	0	0	0	0	0	0	29	0	0	50
Total	0	0	0	0	0	74	0	0	0	0	0	0	0	114	0	0	188
17:00	0	0	0	0	0	14	0	0	0	0	0	0	0	32	0	0	46
17:15	0	0	0	0	0	21	0	0	0	0	0	0	0	27	0	0	48
17:30	0	0	0	0	0	13	0	0	0	0	0	0	0	37	0	0	50
17:45	0	0	0	0	0	32	0	0	0	0	0	0	0	25	0	0	57
Total	0	0	0	0	0	80	0	0	0	0	0	0	0	121	0	0	201
Grand Total	0	0	0	0	0	322	0	0	0	0	0	0	0	317	0	0	639
Apprch %	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	50.4	0	0	0	0	0	0	0	49.6	0	0	
Passenger Vehicles	0	0	0	0	0	276	0	0	0	0	0	0	0	290	0	0	566
% Passenger Vehicles	0	0	0	0	0	85.7	0	0	0	0	0	0	0	91.5	0	0	88.6
Heavy Vehicles	0	0	0	0	0	45	0	0	0	0	0	0	0	26	0	0	71
% Heavy Vehicles	0	0	0	0	0	14	0	0	0	0	0	0	0	8.2	0	0	11.1
Buses	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
% Buses	0	0	0	0	0	0.3	0	0	0	0	0	0	0	0.3	0	0	0.3

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 2

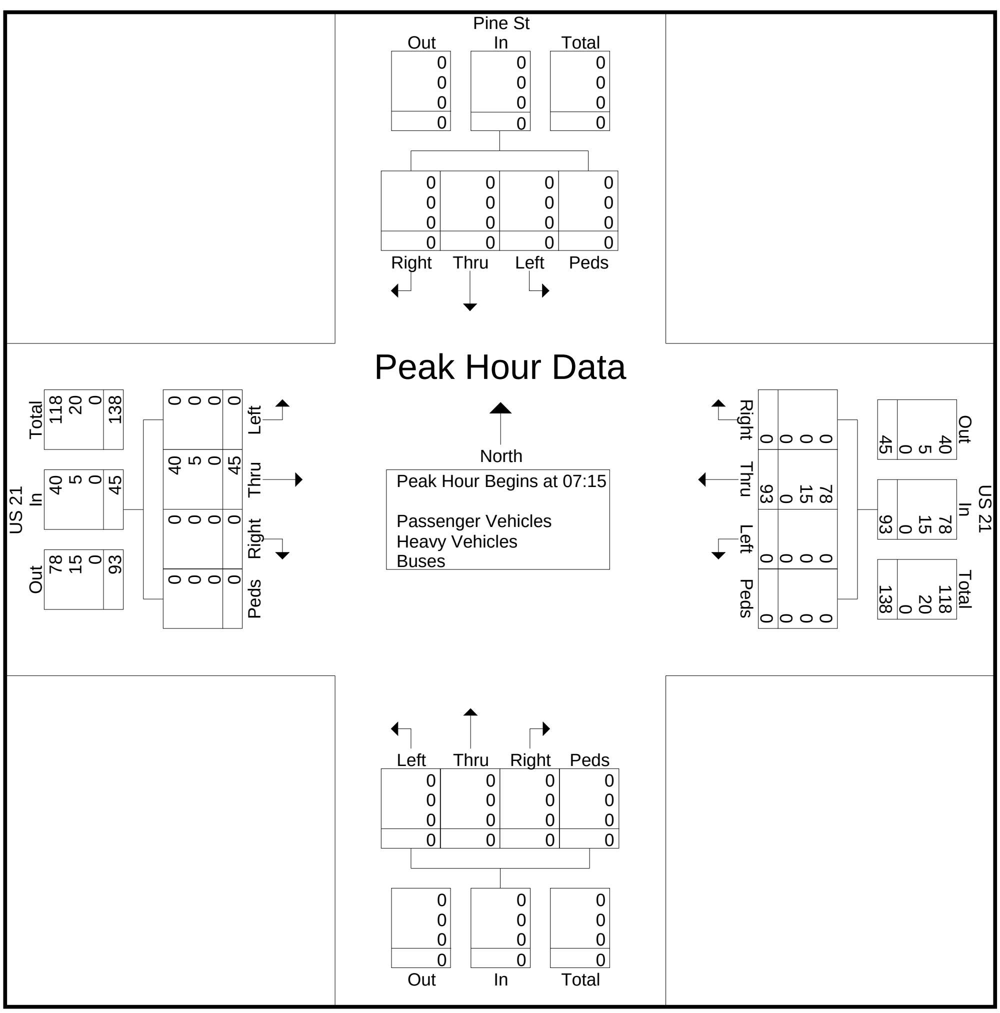


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 3

	Pine St Southbound					US 21 Westbound					Northbound					US 21 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	9	0	0	9	30
07:30	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	12	0	0	12	29
07:45	0	0	0	0	0	0	**32**	0	0	**32**	0	0	0	0	0	0	**13**	0	0	**13**	**45**
08:00	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	11	0	0	11	34
Total Volume	0	0	0	0	0	0	93	0	0	93	0	0	0	0	0	0	45	0	0	45	138
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.727	.000	.000	.727	.000	.000	.000	.000	.000	.000	.865	.000	.000	.865	.767
Passenger Vehicles	0	0	0	0	0	0	78	0	0	78	0	0	0	0	0	0	40	0	0	40	118
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	5	0	0	5	20
% Heavy Vehicles	0	0	0	0	0	0	16.1	0	0	16.1	0	0	0	0	0	0	11.1	0	0	11.1	14.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

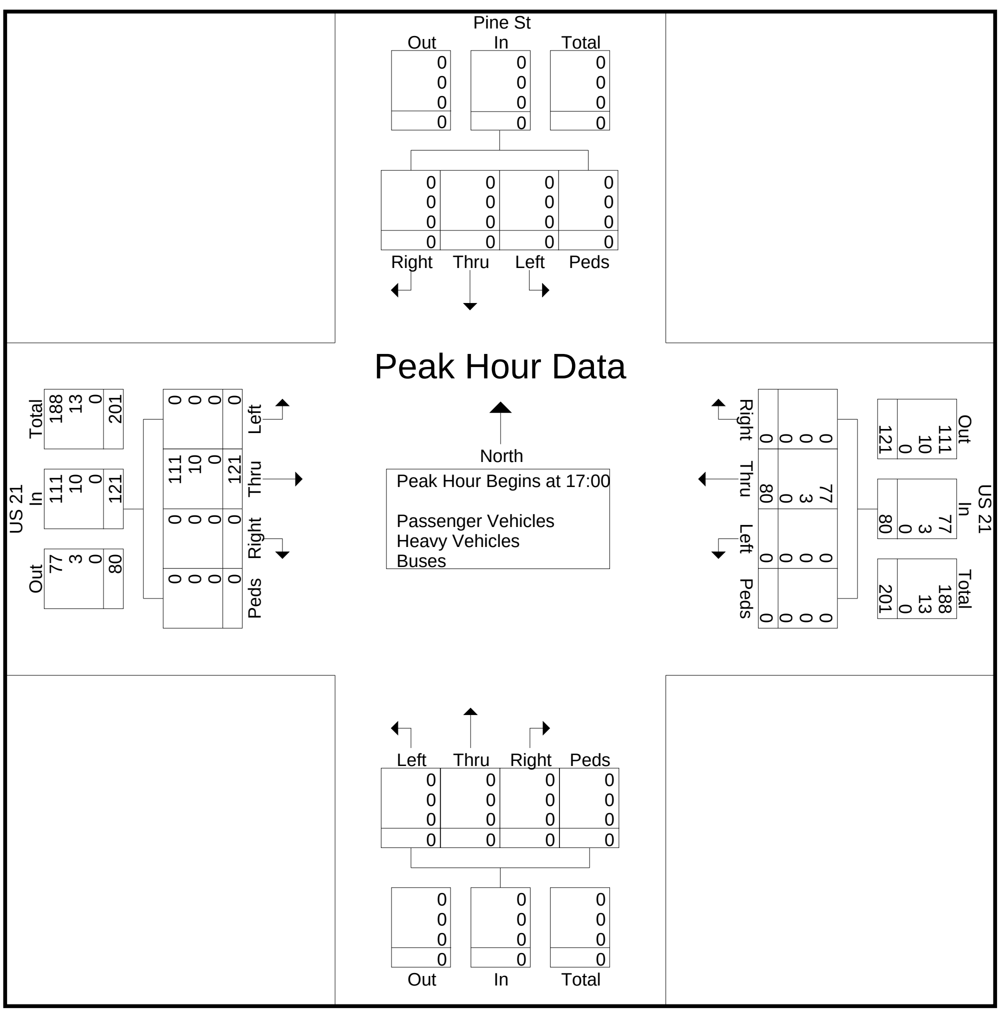


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Pine St
Site Code :
Start Date : 11/03/2022
Page No : 4

	Pine St Southbound					US 21 Westbound					Northbound					US 21 Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	32	0	0	32	46
17:15	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	27	0	0	27	48
17:30	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	**37**	0	0	**37**	50
17:45	0	0	0	0	0	0	**32**	0	0	**32**	0	0	0	0	0	0	25	0	0	25	**57**
Total Volume	0	0	0	0	0	0	80	0	0	80	0	0	0	0	0	0	121	0	0	121	201
% App. Total	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.625	.000	.000	.625	.000	.000	.000	.000	.000	.000	.818	.000	.000	.818	.882
Passenger Vehicles	0	0	0	0	0	0	77	0	0	77	0	0	0	0	0	0	111	0	0	111	188
% Passenger Vehicles																					
Heavy Vehicles	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	10	0	0	10	13
% Heavy Vehicles	0	0	0	0	0	0	3.8	0	0	3.8	0	0	0	0	0	0	8.3	0	0	8.3	6.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201

We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 1

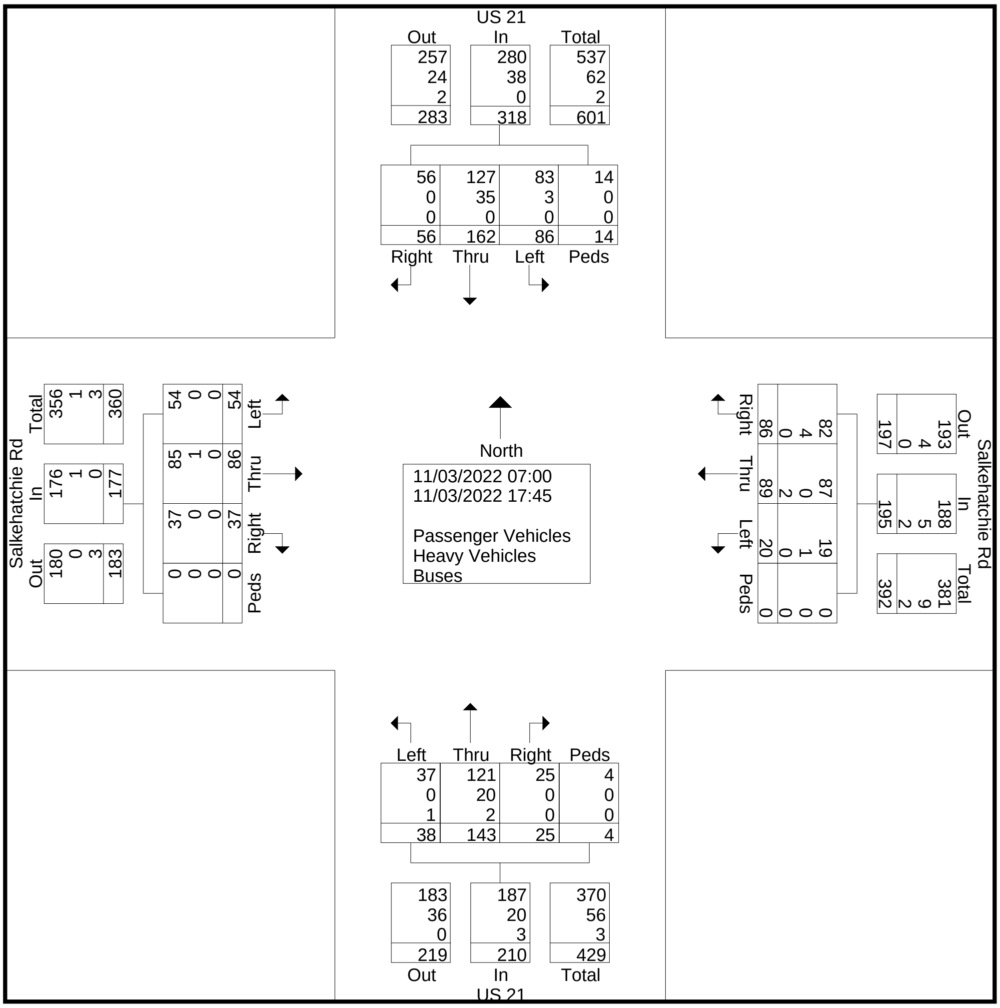
Groups Printed- Passenger Vehicles - Heavy Vehicles - Buses

	US 21 Southbound				Salkehatchie Rd Westbound				US 21 Northbound				Salkehatchie Rd Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	5	9	2	0	0	4	2	0	1	6	0	0	1	8	0	0	38
07:15	7	11	1	0	2	0	3	0	1	2	0	0	0	5	5	0	37
07:30	7	6	2	7	1	4	3	0	0	5	3	0	1	5	2	0	46
07:45	9	22	3	3	1	4	1	0	0	5	6	2	2	9	1	0	68
Total	28	48	8	10	4	12	9	0	2	18	9	2	4	27	8	0	189
08:00	8	14	2	1	1	5	5	0	0	5	3	1	4	8	5	0	62
08:15	6	12	3	0	0	4	2	0	4	2	1	0	2	7	2	0	45
08:30	4	9	1	0	1	3	4	0	1	6	0	0	2	4	3	0	38
08:45	2	6	2	0	1	3	1	0	0	6	1	0	4	8	1	0	35
Total	20	41	8	1	3	15	12	0	5	19	5	1	12	27	11	0	180
16:00	4	12	4	1	2	8	4	0	4	15	0	0	7	8	3	0	72
16:15	3	5	5	0	2	12	7	0	3	12	4	0	3	6	1	0	63
16:30	2	12	6	0	4	5	4	0	3	14	0	0	4	4	2	0	60
16:45	2	11	7	2	0	3	12	0	3	12	0	0	4	2	2	0	60
Total	11	40	22	3	8	28	27	0	13	53	4	0	18	20	8	0	255
17:00	1	10	3	0	4	11	6	0	7	21	4	0	5	4	2	0	78
17:15	12	5	7	0	0	4	14	0	0	11	0	0	5	1	2	0	61
17:30	4	5	6	0	1	12	11	0	8	9	2	0	6	2	6	0	72
17:45	10	13	2	0	0	7	7	0	3	12	1	1	4	5	0	0	65
Total	27	33	18	0	5	34	38	0	18	53	7	1	20	12	10	0	276
Grand Total	86	162	56	14	20	89	86	0	38	143	25	4	54	86	37	0	900
Apprch %	27	50.9	17.6	4.4	10.3	45.6	44.1	0	18.1	68.1	11.9	1.9	30.5	48.6	20.9	0	
Total %	9.6	18	6.2	1.6	2.2	9.9	9.6	0	4.2	15.9	2.8	0.4	6	9.6	4.1	0	
Passenger Vehicles	83	127	56	14	19	87	82	0	37	121	25	4	54	85	37	0	831
% Passenger Vehicles	96.5	78.4	100	100	95	97.8	95.3	0	97.4	84.6	100	100	100	98.8	100	0	92.3
Heavy Vehicles	3	35	0	0	1	0	4	0	0	20	0	0	0	1	0	0	64
% Heavy Vehicles	3.5	21.6	0	0	5	0	4.7	0	0	14	0	0	0	1.2	0	0	7.1
Buses	0	0	0	0	0	2	0	0	1	2	0	0	0	0	0	0	5
% Buses	0	0	0	0	0	2.2	0	0	2.6	1.4	0	0	0	0	0	0	0.6

SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 2

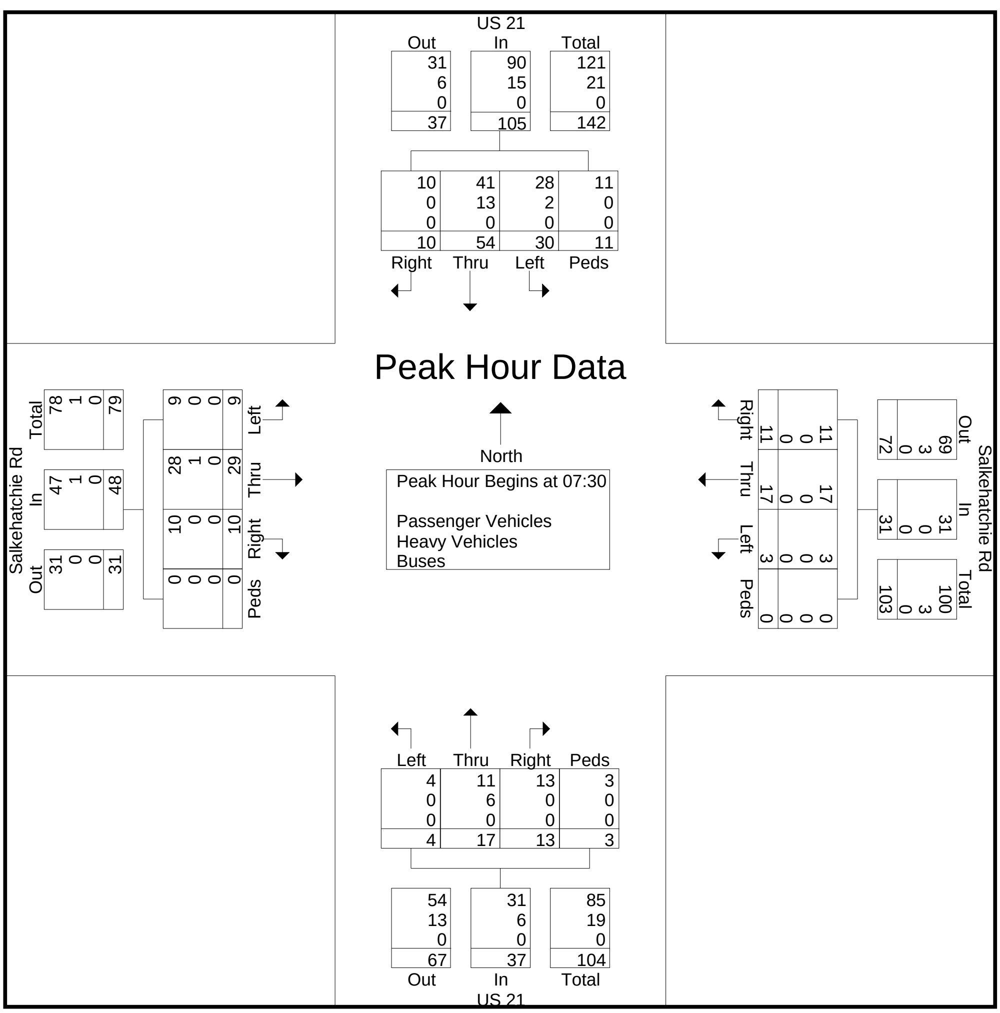


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 3

	US 21					Salkehatchie Rd					US 21					Salkehatchie Rd					
	Southbound					Westbound					Northbound					Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30																					
07:30	7	6	2	**7**	22	**1**	4	3	0	8	0	**5**	3	0	8	1	5	2	0	8	46
07:45	**9**	**22**	**3**	3	**37**	1	4	1	0	6	0	5	**6**	**2**	**13**	2	**9**	1	0	12	**68**
08:00	8	14	2	1	25	1	**5**	**5**	0	**11**	0	5	3	1	9	**4**	8	**5**	0	**17**	62
08:15	6	12	3	0	21	0	4	2	0	6	**4**	2	1	0	7	2	7	2	0	11	45
Total Volume	30	54	10	11	105	3	17	11	0	31	4	17	13	3	37	9	29	10	0	48	221
% App. Total	28.6	51.4	9.5	10.5		9.7	54.8	35.5	0		10.8	45.9	35.1	8.1		18.8	60.4	20.8	0		
PHF	.833	.614	.833	.393	.709	.750	.850	.550	.000	.705	.250	.850	.542	.375	.712	.563	.806	.500	.000	.706	.813
Passenger Vehicles	28	41	10	11	90	3	17	11	0	31	4	11	13	3	31	9	28	10	0	47	199
% Passenger Vehicles																					
Heavy Vehicles	2	13	0	0	15	0	0	0	0	0	0	6	0	0	6	0	1	0	0	1	22
% Heavy Vehicles	6.7	24.1	0	0	14.3	0	0	0	0	0	0	35.3	0	0	16.2	0	3.4	0	0	2.1	10.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

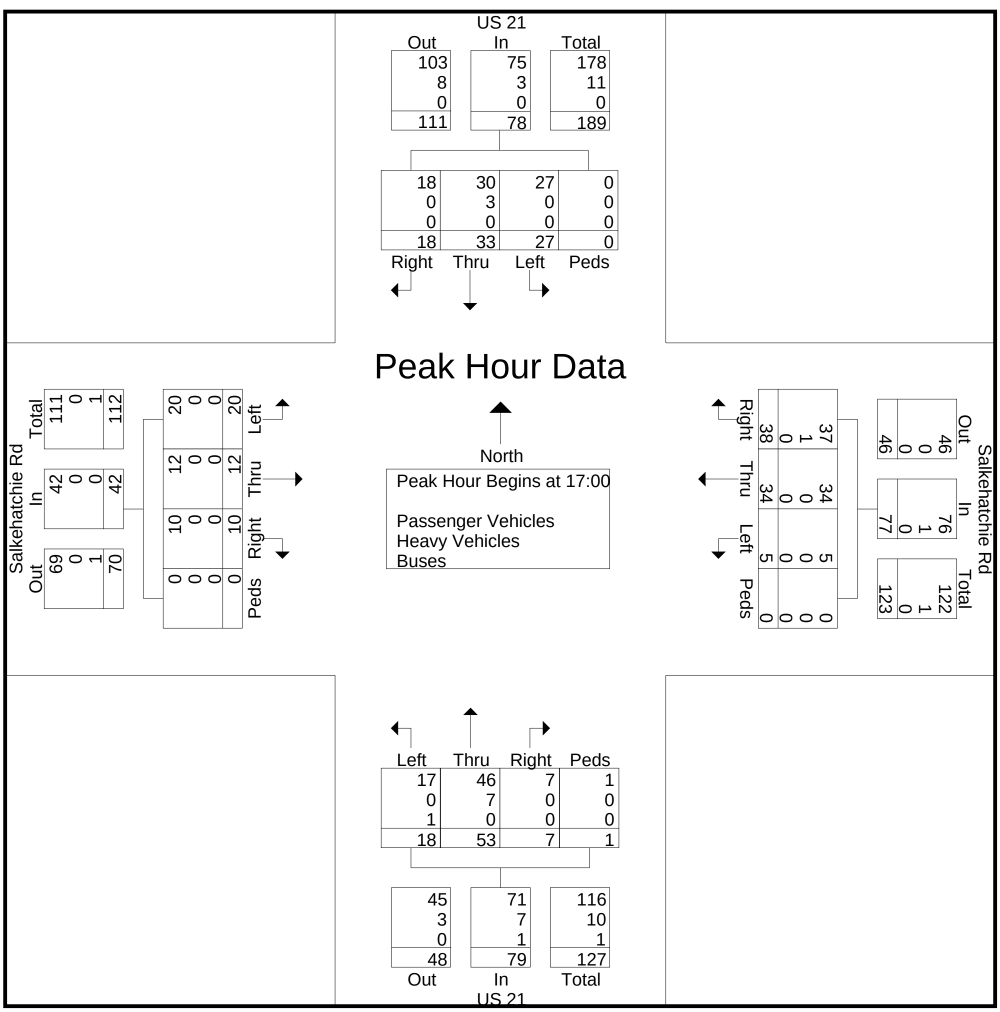


SHORT COUNTS, LLC

735 Maryland St
Columbia, SC 29201
We can't say we're the Best, but you Can!

File Name : US 21 @ Salkehatchie Rd
Site Code :
Start Date : 11/03/2022
Page No : 4

	US 21 Southbound					Salkehatchie Rd Westbound					US 21 Northbound					Salkehatchie Rd Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	1	10	3	0	14	**4**	11	6	0	21	7	**21**	**4**	0	**32**	5	4	2	0	11	**78**
17:15	**12**	5	**7**	0	24	0	4	**14**	0	18	0	11	0	0	11	5	1	2	0	8	61
17:30	4	5	6	0	15	1	**12**	11	0	**24**	**8**	9	2	0	19	**6**	2	**6**	0	**14**	72
17:45	10	**13**	2	0	**25**	0	7	7	0	14	3	12	1	**1**	17	4	**5**	0	0	9	65
Total Volume	27	33	18	0	78	5	34	38	0	77	18	53	7	1	79	20	12	10	0	42	276
% App. Total	34.6	42.3	23.1	0		6.5	44.2	49.4	0		22.8	67.1	8.9	1.3		47.6	28.6	23.8	0		
PHF	.563	.635	.643	.000	.780	.313	.708	.679	.000	.802	.563	.631	.438	.250	.617	.833	.600	.417	.000	.750	.885
Passenger Vehicles	27	30	18	0	75	5	34	37	0	76	17	46	7	1	71	20	12	10	0	42	264
% Passenger Vehicles																					
Heavy Vehicles	0	3	0	0	3	0	0	1	0	1	0	7	0	0	7	0	0	0	0	0	11
% Heavy Vehicles	0	9.1	0	0	3.8	0	0	2.6	0	1.3	0	13.2	0	0	8.9	0	0	0	0	0	4.0
Buses	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	5.6	0	0	0	1.3	0	0	0	0	0	0.4



Appendix C TRAFFIC VOLUME DEVELOPMENT WORKSHEETS

1 - Salkehatchie Rd & US 21												
					TOTAL PROJECT TRAFFIC							
Traffic Control: TWSC					IN	OUT		IN	OUT			
Date Counted: 11/3/2022				AM	**77**	**50**	PM	**50**	**62**			

AM PEAK HOUR 7:30 AM - 8:30 AM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**9**	**29**	**10**	**3**	**17**	**11**	**4**	**17**	**13**	**30**	**54**	**10**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	1	0	0	1	0	1	2	0
Vested Traffic												
2025 No Build Traffic Volumes	**9**	**30**	**10**	**3**	**18**	**11**	**4**	**18**	**13**	**31**	**56**	**10**
Inbound Residential Project Traffic %						10%	5%	25%				
Outbound Residential Project Traffic %			5%							10%	25%	
Inbound Industrial Project Traffic %								50%				
Outbound Industrial Project Traffic %											50%	
2025 Project Traffic	0	0	2	0	0	1	1	35	0	4	15	0
2025 Build Traffic Volumes	**9**	**30**	**12**	**3**	**18**	**12**	**5**	**53**	**13**	**35**	**71**	**10**

PM PEAK HOUR 5:00 PM - 6:00 PM	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2022 Existing Traffic Volumes	**20**	**12**	**10**	**5**	**34**	**38**	**18**	**53**	**7**	**27**	**33**	**18**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	1	0	0	0	1	1	1	2	0	1	1	1
Vested Traffic												
2025 No Build Traffic Volumes	**21**	**12**	**10**	**5**	**35**	**39**	**19**	**55**	**7**	**28**	**34**	**19**
Inbound Project Traffic %						10%	5%	25%				
Outbound Project Traffic %			5%							10%	25%	
Inbound Industrial Project Traffic %								50%				
Outbound Industrial Project Traffic %											50%	
2025 Project Traffic	0	0	1	0	0	5	2	14	0	3	24	0
2025 Build Traffic Volumes	**21**	**12**	**11**	**5**	**35**	**44**	**21**	**69**	**7**	**31**	**58**	**19**

2 - US 21 & Pine Street/Project Driveway #1

Traffic Control: TWSC

Date Counted: 11/3/2022

	TOTAL PROJECT TRAFFIC				
		IN	OUT		IN	OUT
AM		**77**	**50**	PM	**50**	**62**

AM PEAK HOUR 7:15 AM - 8:15 AM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**45**	**0**	**0**	**93**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	3	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**46**	**0**	**0**	**96**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	35%					30%						
Outbound Project Traffic %										30%		35%
Inbound Industrial Project Traffic %	25%	25%				25%						
Outbound Industrial Project Traffic %					25%					25%		25%
2025 Project Traffic	21	15	0	0	2	20	0	0	0	15	0	17
2025 Build Traffic Volumes	**21**	**61**	**0**	**0**	**98**	**20**	**0**	**0**	**0**	**15**	**0**	**17**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**121**	**0**	**0**	**80**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	4	0	0	2	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**125**	**0**	**0**	**82**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %	35%					30%						
Outbound Project Traffic %										30%		35%
Inbound Industrial Project Traffic %	25%	25%				25%						
Outbound Industrial Project Traffic %					25%					25%		25%
2025 Project Traffic	17	1	0	0	9	15	0	0	0	17	0	18
2025 Build Traffic Volumes	**17**	**126**	**0**	**0**	**91**	**15**	**0**	**0**	**0**	**17**	**0**	**18**

3 - Salkehatchie Rd & Pine Street/Project Driveway #2

Traffic Control: TWSC

Date Counted: 11/3/2022

	TOTAL PROJECT TRAFFIC IN	TOTAL PROJECT TRAFFIC OUT
AM	**77**	**50**
PM	**50**	**62**

AM PEAK HOUR 7:30 AM - 8:30 AM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**38**	**0**	**4**	**45**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	0	0	0	0	0	0	1	0	0	1	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**2**	**0**	**4**	**0**	**39**	**0**	**4**	**46**	**0**
Inbound Project Traffic %									5%	30%		
Outbound Project Traffic %				5%		30%						
Inbound Industrial Project Traffic %												
Outbound Industrial Project Traffic %												
2025 Project Traffic	0	0	0	2	0	12	0	0	1	4	0	0
2025 Build Traffic Volumes	**0**	**0**	**0**	**4**	**0**	**16**	**0**	**39**	**1**	**8**	**46**	**0**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**57**	**1**	**4**	**29**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	0	0	0	0	0	0	2	0	0	1	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**0**	**0**	**0**	**0**	**5**	**0**	**59**	**1**	**4**	**30**	**0**
Inbound Project Traffic %									5%	30%		
Outbound Project Traffic %				5%		30%						
Inbound Industrial Project Traffic %												
Outbound Industrial Project Traffic %												
2025 Project Traffic	0	0	0	1	0	8	0	0	2	14	0	0
2025 Build Traffic Volumes	**0**	**0**	**0**	**1**	**0**	**13**	**0**	**59**	**3**	**18**	**30**	**0**

4 - US 21 & Project Driveway #3

					TOTAL PROJECT TRAFFIC							
Traffic Control:	TWSC				IN	OUT		IN	OUT			
Date Counted:	11/3/2022			AM	77	50	PM	50	62			

AM PEAK HOUR 7:15 AM - 8:15 AM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**45**	**0**	**0**	**93**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	1	0	0	3	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**46**	**0**	**0**	**96**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %					30%							
Outbound Project Traffic %		30%										
Inbound Industrial Project Traffic %	25%				25%	25%						
Outbound Industrial Project Traffic %		25%								25%		25%
2025 Project Traffic	15	15	0	0	20	16	0	0	0	2	0	2
2025 Build Traffic Volumes	**15**	**61**	**0**	**0**	**116**	**16**	**0**	**0**	**0**	**2**	**0**	**2**

PM PEAK HOUR 5:00 PM - 6:00 PM	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
2022 Existing Traffic Volumes	**0**	**121**	**0**	**0**	**80**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Years to Buildout	3	3	3	3	3	3	3	3	3	3	3	3
Yearly Growth Rate	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Background Traffic	0	4	0	0	2	0	0	0	0	0	0	0
Vested Traffic												
2025 No Build Traffic Volumes	**0**	**125**	**0**	**0**	**82**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Inbound Project Traffic %					30%							
Outbound Project Traffic %		30%										
Inbound Industrial Project Traffic %	25%				25%	25%						
Outbound Industrial Project Traffic %		25%								25%		25%
2025 Project Traffic	1	17	0	0	15	1	0	0	0	9	0	9
2025 Build Traffic Volumes	**1**	**142**	**0**	**0**	**97**	**1**	**0**	**0**	**0**	**9**	**0**	**9**

Appendix D ANALYSIS WORKSHEETS: 2022 EXISTING CONDITIONS

Intersection	
Int Delay, s/veh	5.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	29	10	3	17	11	4	17	13	30	54	10
Future Vol, veh/h	9	29	10	3	17	11	4	17	13	30	54	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	11	3	19	12	4	19	15	34	61	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	185	177	67	192	175	27	72	0	0	34	0	0
Stage 1	135	135	-	35	35	-	-	-	-	-	-	-
Stage 2	50	42	-	157	140	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	750	695	964	738	694	1010	1528	-	-	1578	-	-
Stage 1	840	762	-	946	839	-	-	-	-	-	-	-
Stage 2	934	837	-	813	755	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	711	678	964	689	677	1010	1528	-	-	1578	-	-
Mov Cap-2 Maneuver	711	678	-	689	677	-	-	-	-	-	-	-
Stage 1	837	745	-	943	836	-	-	-	-	-	-	-
Stage 2	899	834	-	751	738	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.9	0.9	2.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1528	-	-	729	768	1578	-	-
HCM Lane V/C Ratio	0.003	-	-	0.074	0.045	0.021	-	-
HCM Control Delay (s)	7.4	0	-	10.3	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	38	0	4	45
Future Vol, veh/h	2	4	38	0	4	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	2	4	43	0	4	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	43	0	0	43	0
Stage 1	43	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	896	1027	-	-	1553	-
Stage 1	979	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	893	1027	-	-	1553	-
Mov Cap-2 Maneuver	893	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	12	10	5	34	38	18	53	7	27	33	18
Future Vol, veh/h	20	12	10	5	34	38	18	53	7	27	33	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	24	14	12	6	41	46	22	64	8	33	40	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	273	233	51	242	240	68	62	0	0	72	0	0
Stage 1	117	117	-	112	112	-	-	-	-	-	-	-
Stage 2	156	116	-	130	128	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	675	664	1011	698	649	976	1541	-	-	1528	-	-
Stage 1	883	795	-	876	789	-	-	-	-	-	-	-
Stage 2	842	796	-	857	777	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	594	639	1011	659	625	976	1541	-	-	1528	-	-
Mov Cap-2 Maneuver	594	639	-	659	625	-	-	-	-	-	-	-
Stage 1	870	778	-	863	777	-	-	-	-	-	-	-
Stage 2	749	784	-	813	760	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	10.4	1.7	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1541	-	-	674	763	1528	-	-
HCM Lane V/C Ratio	0.014	-	-	0.075	0.122	0.021	-	-
HCM Control Delay (s)	7.4	0	-	10.8	10.4	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	57	1	4	29
Future Vol, veh/h	0	5	57	1	4	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	63	1	4	32

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	104	64	0	0	64	0
Stage 1	64	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	894	1000	-	-	1538	-
Stage 1	959	-	-	-	-	-
Stage 2	982	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	891	1000	-	-	1538	-
Mov Cap-2 Maneuver	891	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	979	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1538	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix E ANALYSIS WORKSHEETS: 2025 NO BUILD CONDITIONS

Intersection	
Int Delay, s/veh	5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	30	10	3	18	11	4	18	13	31	56	10
Future Vol, veh/h	9	30	10	3	18	11	4	18	13	31	56	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	11	3	20	12	4	20	14	34	62	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	187	178	68	193	176	27	73	0	0	34	0	0
Stage 1	136	136	-	35	35	-	-	-	-	-	-	-
Stage 2	51	42	-	158	141	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	748	695	963	737	693	1010	1527	-	-	1578	-	-
Stage 1	839	761	-	946	839	-	-	-	-	-	-	-
Stage 2	932	837	-	812	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	708	678	963	688	676	1010	1527	-	-	1578	-	-
Mov Cap-2 Maneuver	708	678	-	688	676	-	-	-	-	-	-	-
Stage 1	836	744	-	943	836	-	-	-	-	-	-	-
Stage 2	896	834	-	750	737	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.9	0.8	2.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1527	-	-	728	764	1578	-	-
HCM Lane V/C Ratio	0.003	-	-	0.075	0.047	0.022	-	-
HCM Control Delay (s)	7.4	0	-	10.3	9.9	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	39	0	4	46
Future Vol, veh/h	2	4	39	0	4	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	2	4	43	0	4	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	102	43	0	0	43	0
Stage 1	43	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	896	1027	-	-	1553	-
Stage 1	979	-	-	-	-	-
Stage 2	964	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	893	1027	-	-	1553	-
Mov Cap-2 Maneuver	893	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	978	1553	-
HCM Lane V/C Ratio	-	-	0.007	0.003	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	12	10	5	35	39	19	55	7	28	34	19
Future Vol, veh/h	21	12	10	5	35	39	19	55	7	28	34	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	23	13	11	6	39	43	21	61	8	31	38	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	259	222	49	230	228	65	59	0	0	69	0	0
Stage 1	111	111	-	107	107	-	-	-	-	-	-	-
Stage 2	148	111	-	123	121	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	690	673	1014	710	659	980	1545	-	-	1532	-	-
Stage 1	889	800	-	882	793	-	-	-	-	-	-	-
Stage 2	850	800	-	864	782	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	612	649	1014	673	636	980	1545	-	-	1532	-	-
Mov Cap-2 Maneuver	612	649	-	673	636	-	-	-	-	-	-	-
Stage 1	877	783	-	870	782	-	-	-	-	-	-	-
Stage 2	761	789	-	822	766	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.6	10.3	1.7	2.6
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1545	-	-	686	773	1532	-	-
HCM Lane V/C Ratio	0.014	-	-	0.07	0.114	0.02	-	-
HCM Control Delay (s)	7.4	0	-	10.6	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	59	1	4	30
Future Vol, veh/h	0	5	59	1	4	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	6	66	1	4	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	108	67	0	0	67	0
Stage 1	67	-	-	-	-	-
Stage 2	41	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	889	997	-	-	1535	-
Stage 1	956	-	-	-	-	-
Stage 2	981	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	886	997	-	-	1535	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	0.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	997	1535	-
HCM Lane V/C Ratio	-	-	0.006	0.003	-
HCM Control Delay (s)	-	-	8.6	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Appendix F ANALYSIS WORKSHEETS: 2025 BUILD CONDITIONS

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	30	12	3	18	12	5	53	13	35	71	10
Future Vol, veh/h	9	30	12	3	18	12	5	53	13	35	71	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	14	14	14	16	16	16	2	2	2	2	2	2
Mvmt Flow	10	33	13	3	20	13	6	59	14	39	79	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	258	248	85	264	246	66	90	0	0	73	0	0
Stage 1	163	163	-	78	78	-	-	-	-	-	-	-
Stage 2	95	85	-	186	168	-	-	-	-	-	-	-
Critical Hdwy	7.24	6.64	6.34	7.26	6.66	6.36	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.24	5.64	-	6.26	5.66	-	-	-	-	-	-	-
Follow-up Hdwy	3.626	4.126	3.426	3.644	4.144	3.444	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	634	942	661	633	960	1505	-	-	1527	-	-
Stage 1	812	741	-	897	803	-	-	-	-	-	-	-
Stage 2	883	802	-	784	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	630	614	942	610	613	960	1505	-	-	1527	-	-
Mov Cap-2 Maneuver	630	614	-	610	613	-	-	-	-	-	-	-
Stage 1	809	721	-	893	800	-	-	-	-	-	-	-
Stage 2	846	799	-	717	714	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.9	10.4	0.5	2.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1505	-	-	672	705	1527	-	-
HCM Lane V/C Ratio	0.004	-	-	0.084	0.052	0.025	-	-
HCM Control Delay (s)	7.4	0	-	10.9	10.4	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0.1	-	-

Intersection						
Int Delay, s/veh	2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	61	98	20	15	17
Future Vol, veh/h	21	61	98	20	15	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	16	16	2	2
Mvmt Flow	23	68	109	22	17	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	131	0	-	0	234	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	4.21	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.299	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1400	-	-	-	754	931
Stage 1	-	-	-	-	905	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1400	-	-	-	741	931
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	2	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	831
HCM Lane V/C Ratio	0.017	-	-	-	0.043
HCM Control Delay (s)	7.6	0	-	-	9.5
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	16	39	1	8	46
Future Vol, veh/h	4	16	39	1	8	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	5	5	4	4
Mvmt Flow	4	18	43	1	9	51

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	113	44	0	0	44	0
Stage 1	44	-	-	-	-	-
Stage 2	69	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.14	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.236	-
Pot Cap-1 Maneuver	884	1026	-	-	1552	-
Stage 1	978	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1026	-	-	1552	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	948	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	993	1552	-
HCM Lane V/C Ratio	-	-	0.022	0.006	-
HCM Control Delay (s)	-	-	8.7	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	61	116	16	2	2
Future Vol, veh/h	15	61	116	16	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	11	11	16	16	16	11
Mvmt Flow	17	68	129	18	2	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	240	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	102	-
Critical Hdwy	4.21	-	-	-	6.56	6.31
Critical Hdwy Stg 1	-	-	-	-	5.56	-
Critical Hdwy Stg 2	-	-	-	-	5.56	-
Follow-up Hdwy	2.299	-	-	-	3.644	3.399
Pot Cap-1 Maneuver	1381	-	-	-	719	887
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	888	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1381	-	-	-	710	887
Mov Cap-2 Maneuver	-	-	-	-	710	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1381	-	-	-	789
HCM Lane V/C Ratio	0.012	-	-	-	0.006
HCM Control Delay (s)	7.6	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✥			✥			✥			✥	
Traffic Vol, veh/h	21	12	11	5	35	44	21	69	7	31	58	19
Future Vol, veh/h	21	12	11	5	35	44	21	69	7	31	58	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	4	4	4	9	9	9	2	2	2	2	2	2
Mvmt Flow	23	13	12	6	39	49	23	77	8	34	64	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	314	274	75	282	280	81	85	0	0	85	0	0
Stage 1	143	143	-	127	127	-	-	-	-	-	-	-
Stage 2	171	131	-	155	153	-	-	-	-	-	-	-
Critical Hdwy	7.14	6.54	6.24	7.19	6.59	6.29	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.14	5.54	-	6.19	5.59	-	-	-	-	-	-	-
Follow-up Hdwy	3.536	4.036	3.336	3.581	4.081	3.381	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	635	630	981	656	617	960	1512	-	-	1512	-	-
Stage 1	855	775	-	860	778	-	-	-	-	-	-	-
Stage 2	826	784	-	831	758	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	555	605	981	618	592	960	1512	-	-	1512	-	-
Mov Cap-2 Maneuver	555	605	-	618	592	-	-	-	-	-	-	-
Stage 1	841	756	-	846	766	-	-	-	-	-	-	-
Stage 2	732	771	-	787	740	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.1	10.5	1.6	2.1
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1512	-	-	639	743	1512	-	-
HCM Lane V/C Ratio	0.015	-	-	0.077	0.126	0.023	-	-
HCM Control Delay (s)	7.4	0	-	11.1	10.5	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.4	0.1	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	125	82	17	26	27
Future Vol, veh/h	17	125	82	17	26	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	4	80	80
Mvmt Flow	19	139	91	19	29	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	110	0	-	0	278	101
Stage 1	-	-	-	-	101	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.18	-	-	-	7.2	7
Critical Hdwy Stg 1	-	-	-	-	6.2	-
Critical Hdwy Stg 2	-	-	-	-	6.2	-
Follow-up Hdwy	2.272	-	-	-	4.22	4.02
Pot Cap-1 Maneuver	1443	-	-	-	573	778
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1443	-	-	-	565	778
Mov Cap-2 Maneuver	-	-	-	-	565	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	696	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1443	-	-	-	657
HCM Lane V/C Ratio	0.013	-	-	-	0.09
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	59	3	18	30
Future Vol, veh/h	1	13	59	3	18	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	14	66	3	20	33

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	141	68	0	0	69	0
Stage 1	68	-	-	-	-	-
Stage 2	73	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	852	995	-	-	1532	-
Stage 1	955	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	841	995	-	-	1532	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	982	1532	-
HCM Lane V/C Ratio	-	-	0.016	0.013	-
HCM Control Delay (s)	-	-	8.7	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	142	97	1	9	9
Future Vol, veh/h	1	142	97	1	9	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	8	4	4	4	8
Mvmt Flow	1	158	108	1	10	10

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	109	0	-	0	269	109
Stage 1	-	-	-	-	109	-
Stage 2	-	-	-	-	160	-
Critical Hdwy	4.18	-	-	-	6.44	6.28
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.272	-	-	-	3.536	3.372
Pot Cap-1 Maneuver	1445	-	-	-	716	929
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	864	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1445	-	-	-	715	929
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	864	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		9.6	
HCM LOS					A	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1445	-	-	-	808
HCM Lane V/C Ratio	0.001	-	-	-	0.025
HCM Control Delay (s)	7.5	0	-	-	9.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Appendix G TURN LANE ANALYSIS WORKSHEETS

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Salkhatchie Road
Left Turn Movement:	Northbound Left-Turn Lane
Right Turn Movement:	Southbound Right-Turn Lane

Posted Speed Limit:	35 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	5	21
	Through	53	69
	Right	13	7
Opposing	Left	35	31
	Through	71	58
	Right	10	19

	AM	PM
Advancing Volume:	71	97
Opposing Volume:	116	108
Left Turn Volume:	5	21
% Left Turns in Advancing Volume:	7.0%	21.6%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	35	31
	Through	71	58
	Right	10	19

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	116	108
Right Turn Volume:	10	19

Turn Lane Warrant Met?

Left Turn Lane Warrant

Applicable Warrant Chart:	**Fig 9.5-G**
Warrant Satisfied:	**No**

Right Turn Lane Warrant

Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**

Recommended Turn Lane Length

Turning Truck%: 2%

Turning Truck%: 2%

Left Turn Lane

Storage Length (ft):	**N/A**	ft
Taper Length (ft):	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft

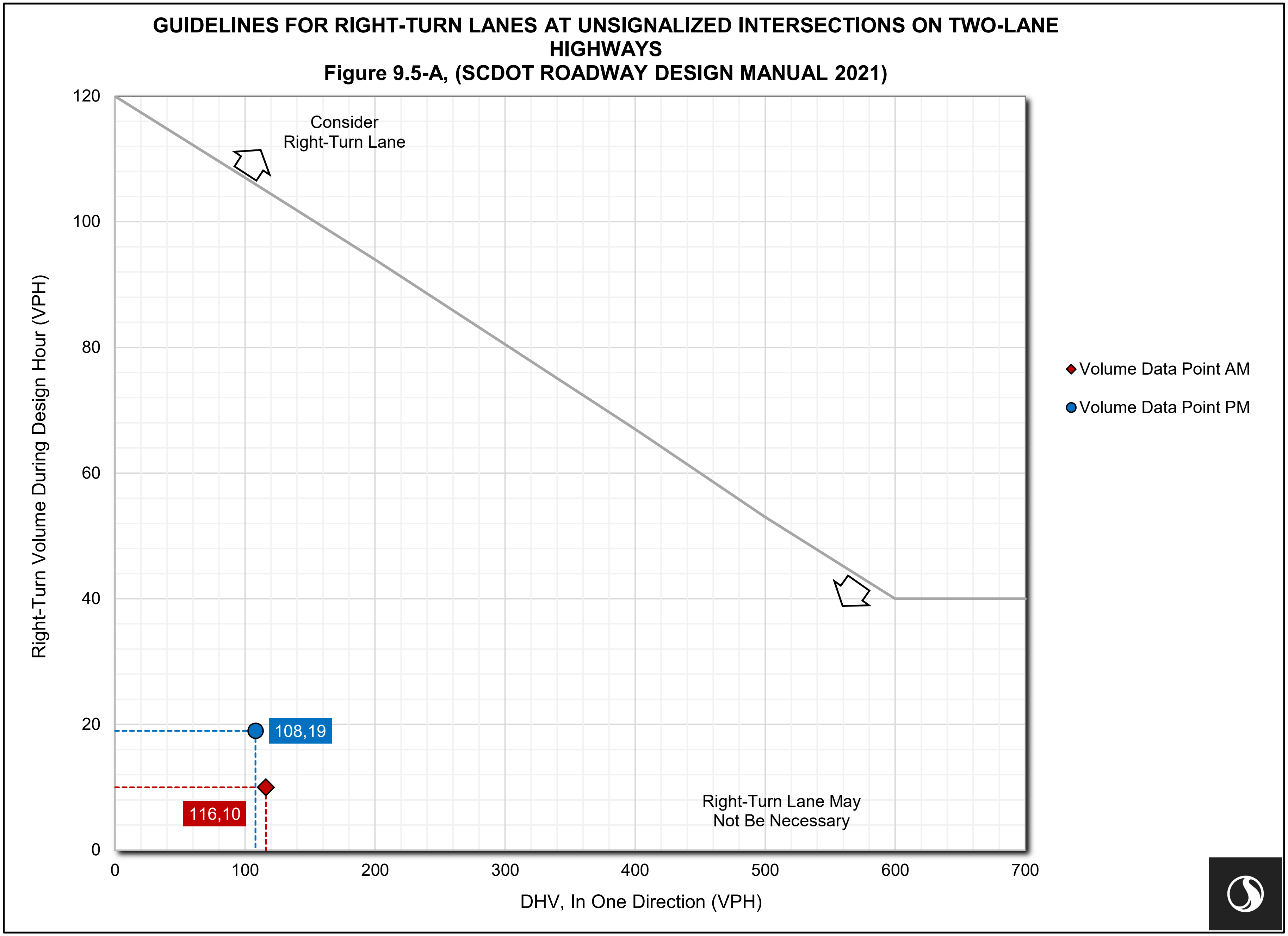
Right Turn Lane

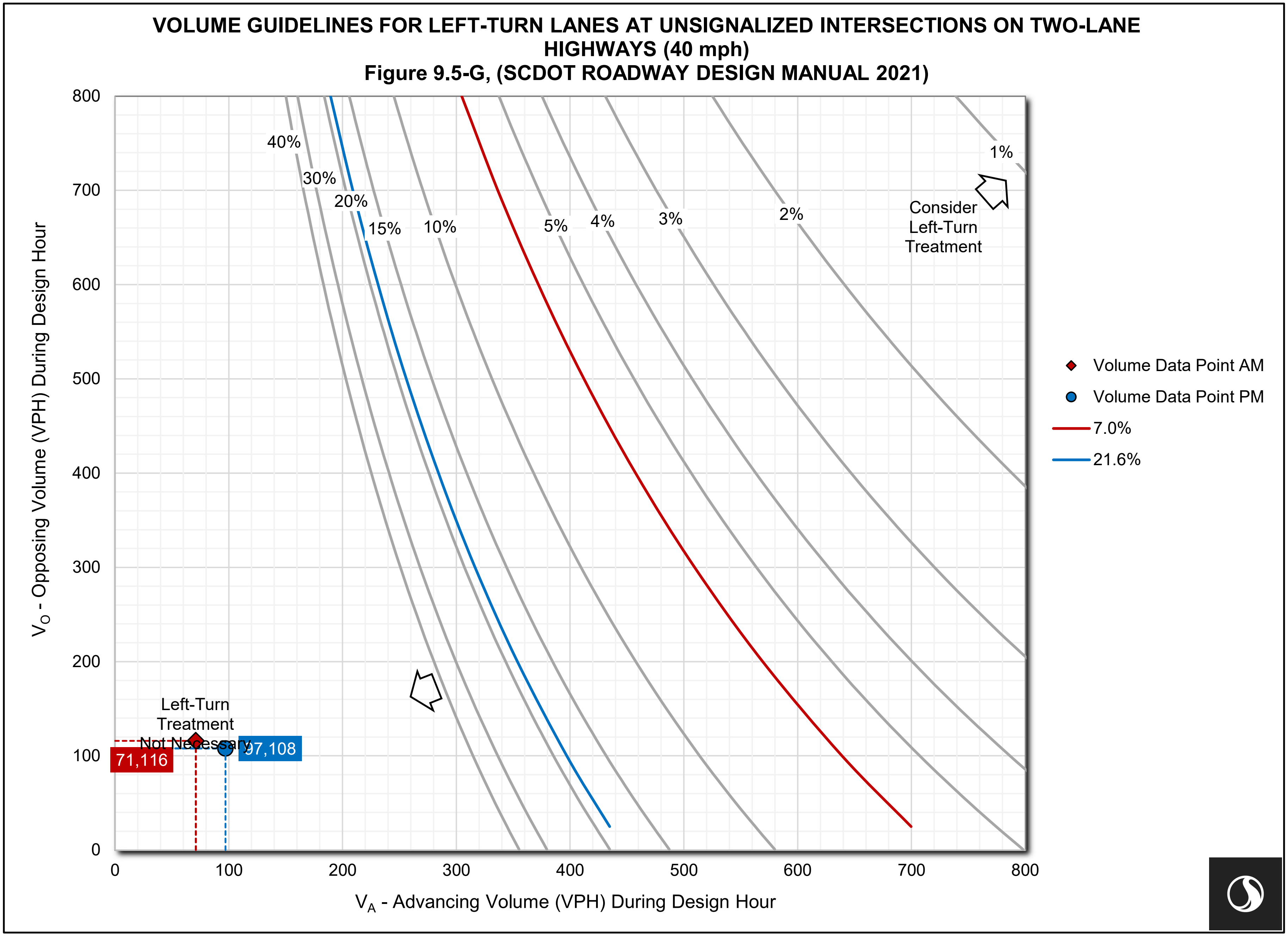
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.


GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Right-Turn Lane
Right-Turn Lane May Not Be Necessary
108,19
116,10
Volume Data Point AM
Volume Data Point PM
Right-Turn Volume During Design Hour (VPH)
DHV, In One Direction (VPH)
0
20
40
60
80
100
120
0
100
200
300
400
500
600
700



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G, (SCDOT ROADWAY DESIGN MANUAL 2021)
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
Consider Left-Turn Treatment
Left-Turn Treatment Not Necessary
71,116
97,108
Volume Data Point AM
Volume Data Point PM
7.0%
21.6%
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Pine St (Project Driveway #1)
Left Turn Movement:	Eastbound Left-Turn Lane
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	21	17
	Through	61	126
	Right	0	0
Opposing	Left	0	0
	Through	98	91
	Right	20	15

	AM	PM
Advancing Volume:	82	143
Opposing Volume:	118	106
Left Turn Volume:	21	17
% Left Turns in Advancing Volume:	25.6%	11.9%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	98	91
	Right	20	15

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	118	106
Right Turn Volume:	20	15

Turn Lane Warrant Met?

Left Turn Lane Warrant

Applicable Warrant Chart:	**Fig 9.5-F**
Warrant Satisfied:	**No**

Right Turn Lane Warrant

Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**

Recommended Turn Lane Length

Turning Truck%: 20%

Turning Truck%: 20%

Left Turn Lane

Storage Length (ft):	**N/A**	ft
Taper Length (ft):	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft

Right Turn Lane

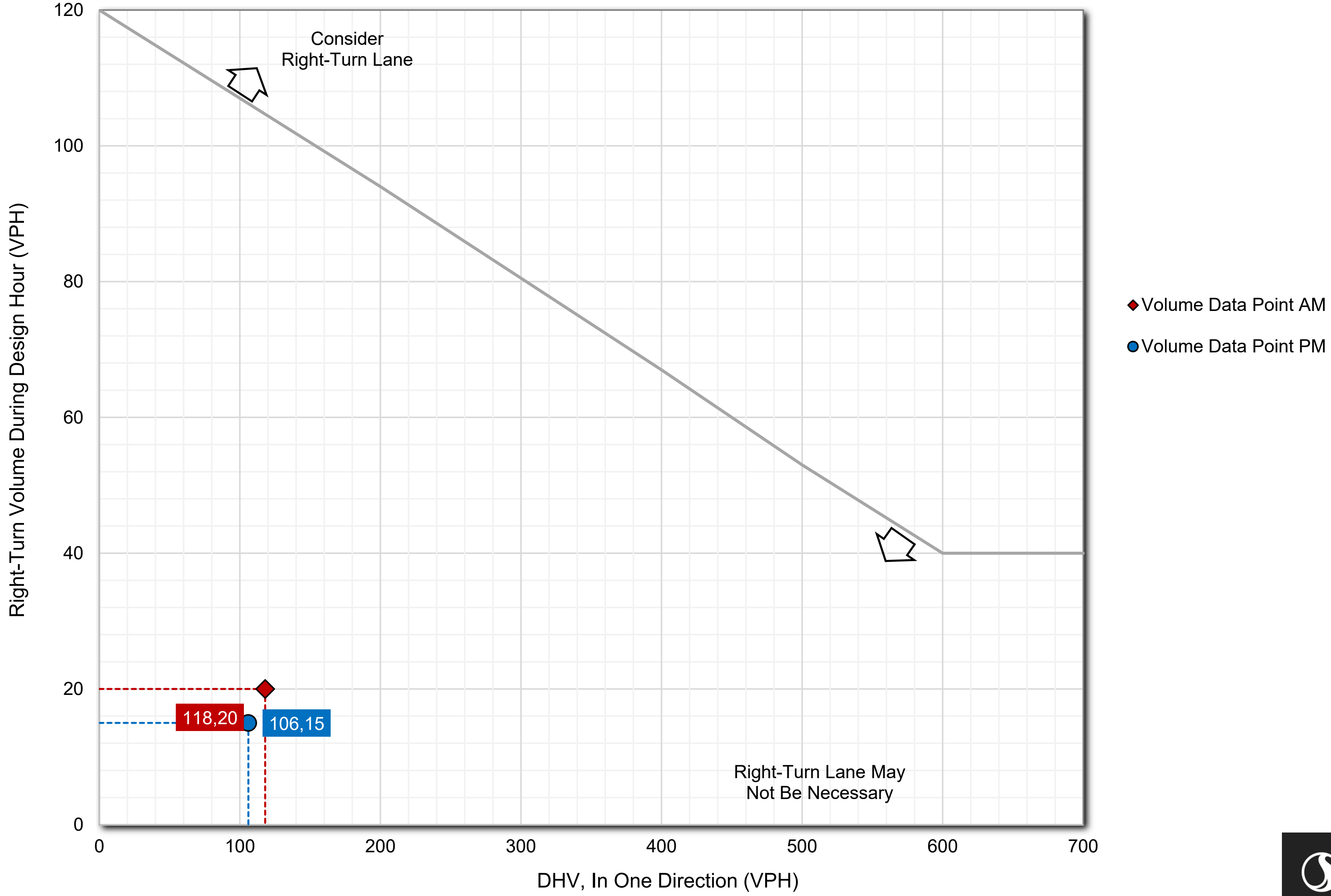
Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

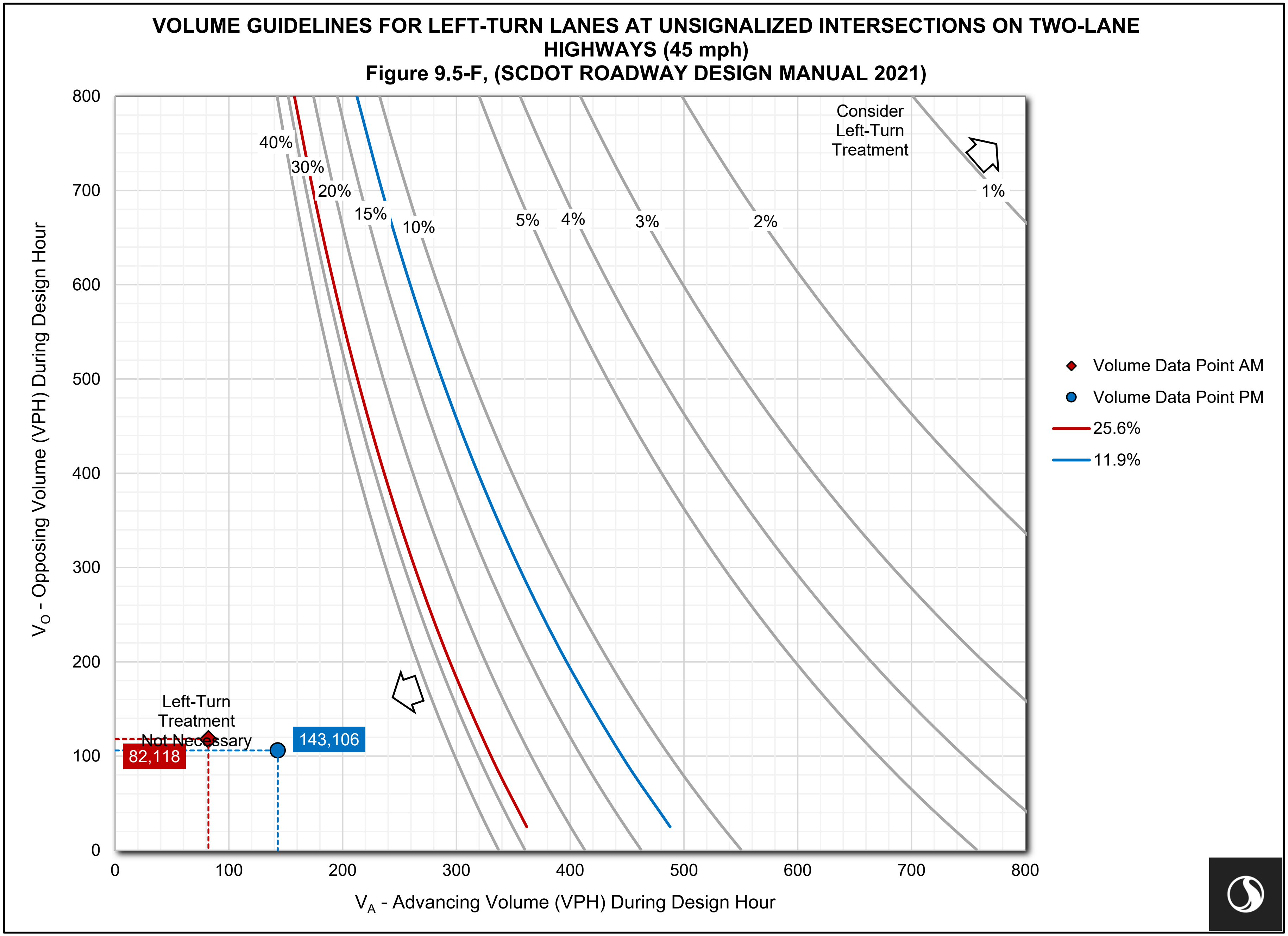
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.

GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)





VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Left-Turn Treatment
Left-Turn Treatment Not Necessary
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
82,118
143,106
Volume Data Point AM
Volume Data Point PM
25.6%
11.9%
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	Salkhatchie Rd & Pine St (Project Driveway #2)
Left Turn Movement:	Southbound Left-Turn Lane
Right Turn Movement:	Northbound Right-Turn Lane

Posted Speed Limit:	35 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	8	18
	Through	46	30
	Right	0	0
Opposing	Left	0	0
	Through	39	59
	Right	1	3

	AM	PM
Advancing Volume:	54	48
Opposing Volume:	40	62
Left Turn Volume:	8	18
% Left Turns in Advancing Volume:	14.8%	37.5%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	39	59
	Right	1	3

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	40	62
Right Turn Volume:	1	3

Turn Lane Warrant Met?

	Left Turn Lane Warrant	Right Turn Lane Warrant
Applicable Warrant Chart:	**Fig 9.5-G**	**Fig 9.5-A**
Warrant Satisfied:	**No**	**No**

Recommended Turn Lane Length

Turning Truck%: 80% Turning Truck%: 80%

Left Turn Lane

Storage Length (ft):	**N/A**	ft
Taper Length (ft):	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft

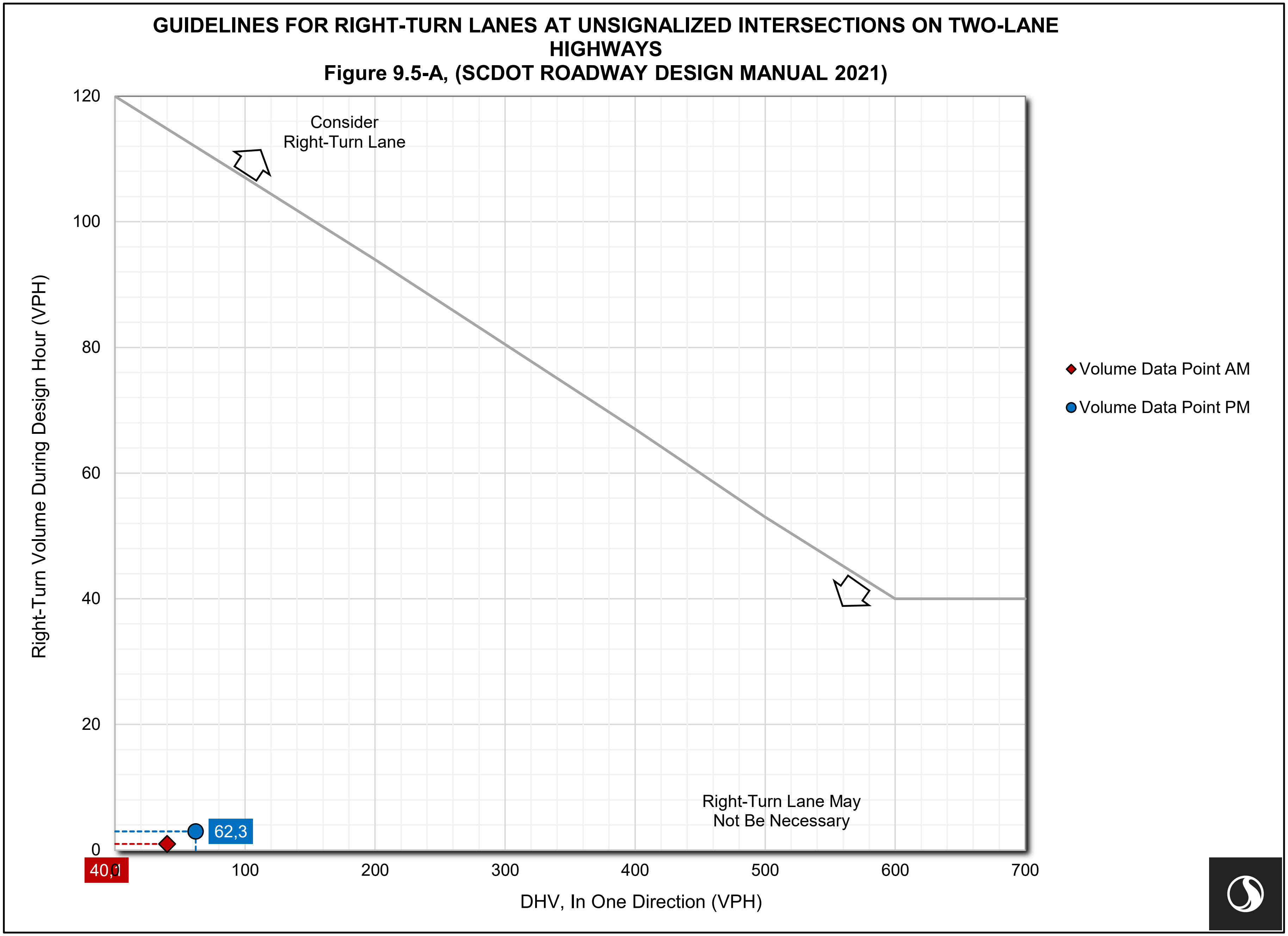
Right Turn Lane

Storage Length:	**N/A**	ft
Taper Length:	**N/A**	ft
Total Left Turn Lane:	**N/A**	ft

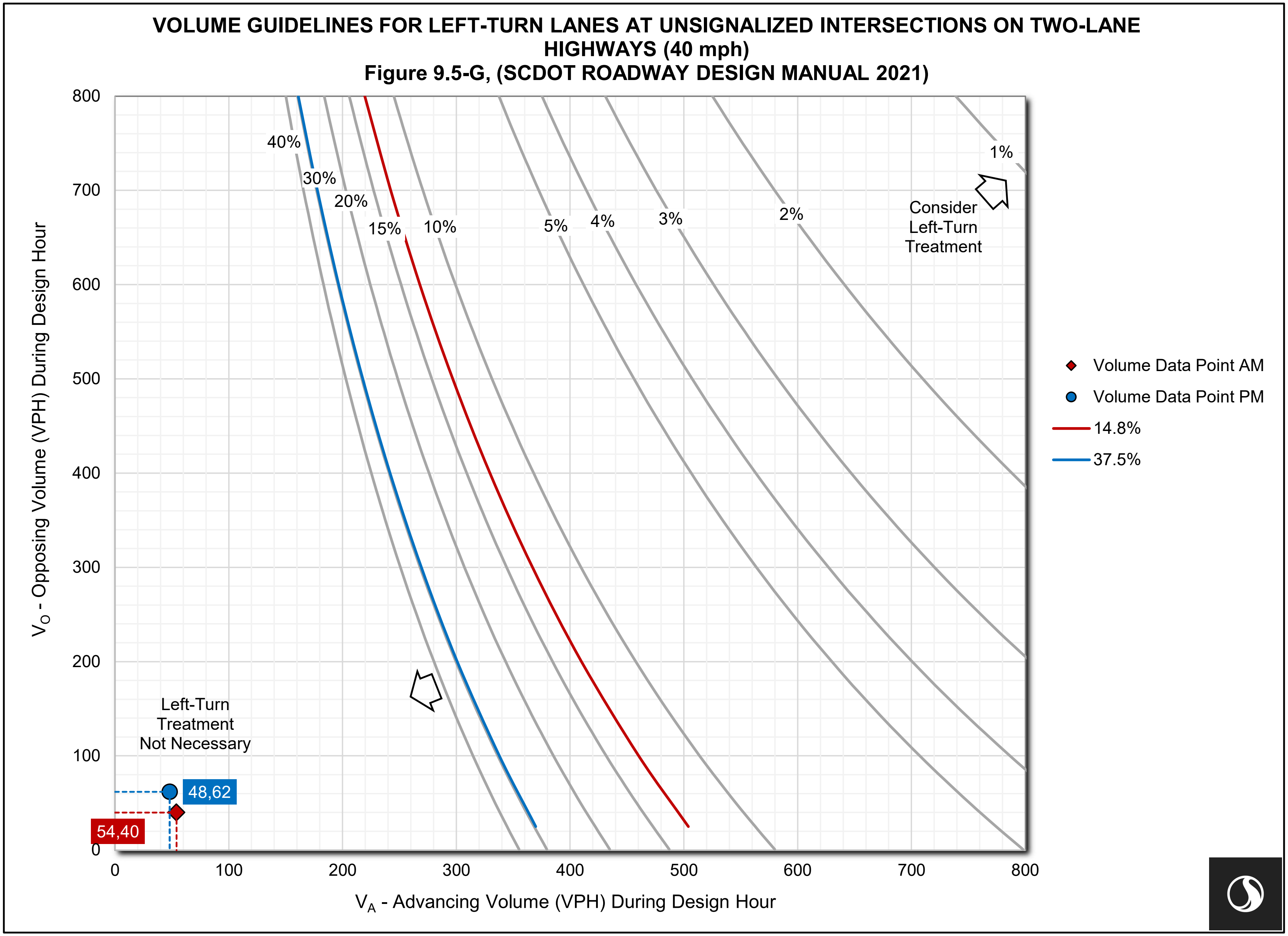
Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.



GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Right-Turn Lane
Right-Turn Lane May Not Be Necessary
Right-Turn Volume During Design Hour (VPH)
DHV, In One Direction (VPH)
0
20
40
60
80
100
120
100
200
300
400
500
600
700
62,3
40,1
Volume Data Point AM
Volume Data Point PM


VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (40 mph)
Figure 9.5-G, (SCDOT ROADWAY DESIGN MANUAL 2021)
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
Consider Left-Turn Treatment
Left-Turn Treatment Not Necessary
48,62
54,40
Volume Data Point AM
Volume Data Point PM
14.8%
37.5%

Stantec

Study Area Information

County:	Hampton County	Date:	11/10/2022
SCDOT Engineering District:	District 7	Analyst:	PC
Analysis Year:	2025	Agency:	**Stantec Consulting Services Inc.**

Intersection:	US 21 & Project Driveway #3
Left Turn Movement:	Eastbound Left-Turn Lane
Right Turn Movement:	Westbound Right-Turn Lane

Posted Speed Limit:	45 *mph*	Median:	Undivided
# of Approach Lanes:	1	Urban or Rural?	Rural

Volume Information & Calculations

Left Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	15	1
	Through	61	142
	Right	0	0
Opposing	Left	0	0
	Through	116	97
	Right	16	1

	AM	PM
Advancing Volume:	76	143
Opposing Volume:	132	98
Left Turn Volume:	15	1
% Left Turns in Advancing Volume:	19.7%	0.7%

Right Turn Lane Volume Calculations

Movement		Volume (vph) AM	Volume (vph) PM
Advancing	Left	0	0
	Through	116	97
	Right	16	1

Adjustment to Right Turn Volume[1] Include? No

	AM	PM
Advancing Volume:	132	98
Right Turn Volume:	16	1

Turn Lane Warrant Met?

Left Turn Lane Warrant		Right Turn Lane Warrant	
Applicable Warrant Chart:	**Fig 9.5-F**	Applicable Warrant Chart:	**Fig 9.5-A**
Warrant Satisfied:	**No**	Warrant Satisfied:	**No**

Recommended Turn Lane Length

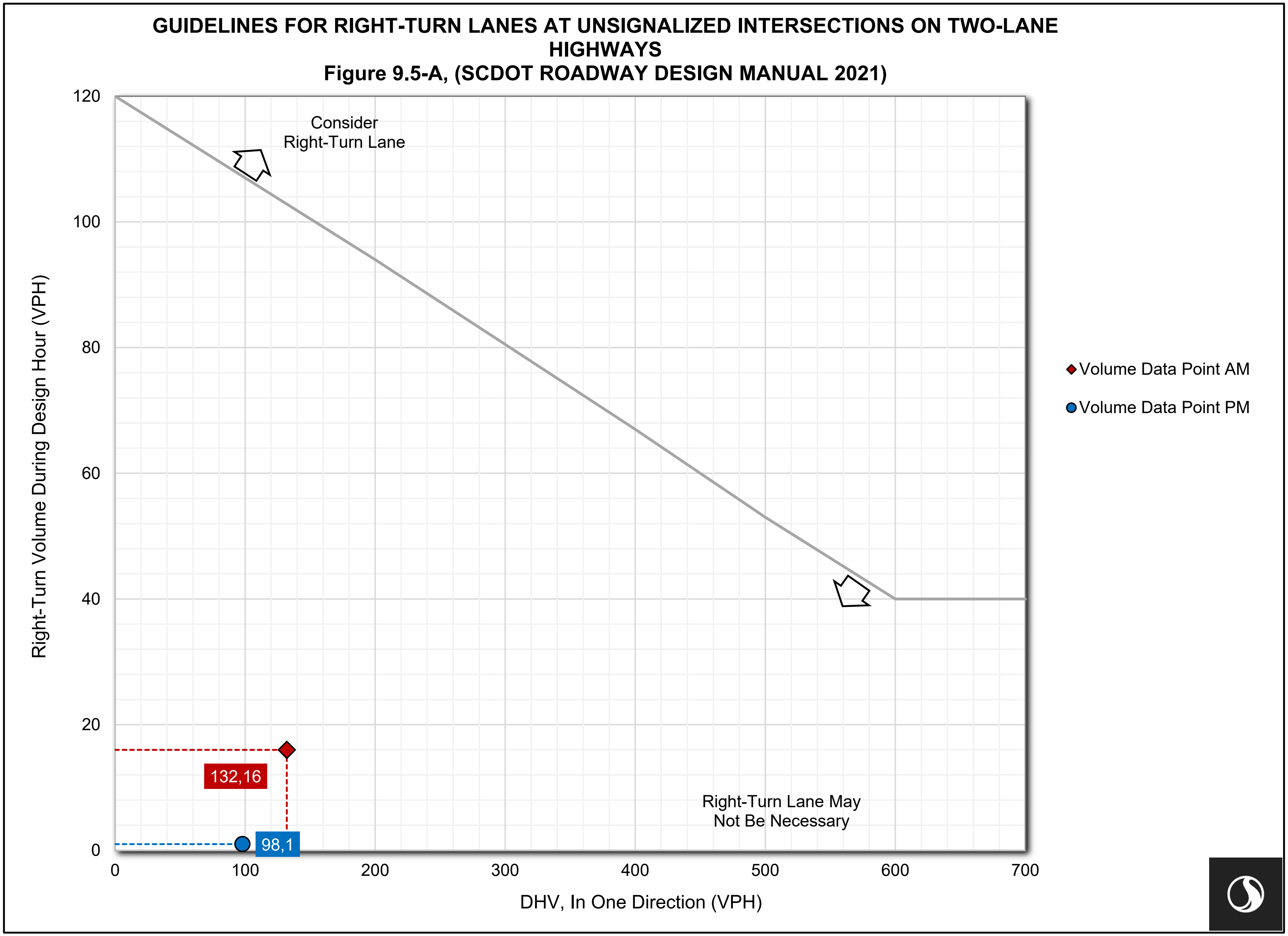
Turning Truck%: 20% Turning Truck%: 20%

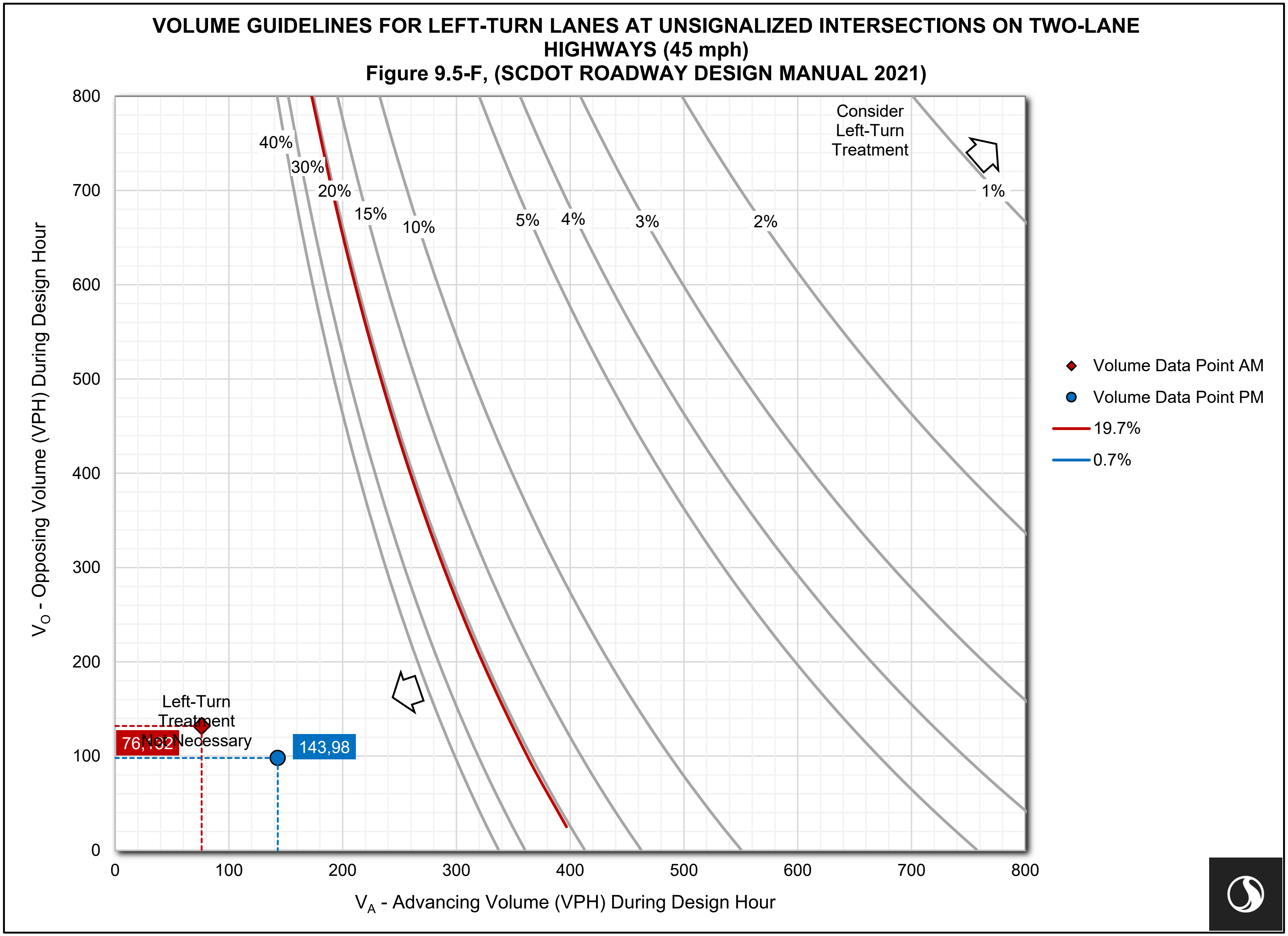
Left Turn Lane			Right Turn Lane		
Storage Length (ft):	**N/A**	ft	Storage Length:	**N/A**	ft
Taper Length (ft):	**N/A**	ft	Taper Length:	**N/A**	ft
Total Left Turn Lane (ft):	**N/A**	ft	Total Left Turn Lane:	**N/A**	ft

Consider providing dual-turn lanes if the turning volumes are greater than 300 vehicles per hour. A traffic analysis will be required if the turning volumes are greater than 300 vehicles per hour.

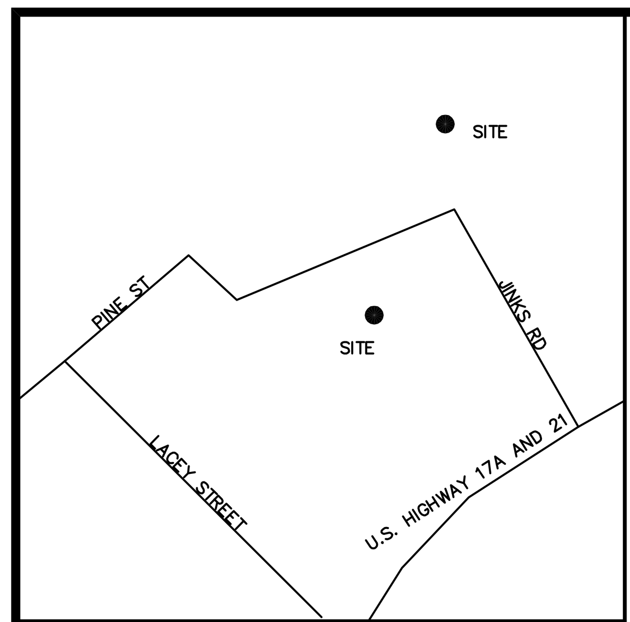
The traffic designer should review the design to determine if longer turn lane lengths are required.

Source: SCDOT Roadway Design Manual (2021), SCDOT Access and Roadside Management Standards (2008), and TRB Highway Research Record 211, Volume Warrants for Left Turn Storage Lanes at Unsignalized Grade Intersections.


GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS
Figure 9.5-A, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider
Right-Turn Lane
Right-Turn Lane May
Not Be Necessary
132,16
98,1
Right-Turn Volume During Design Hour (VPH)
DHV, In One Direction (VPH)
0
20
40
60
80
100
120
0
100
200
300
400
500
600
700
Volume Data Point AM
Volume Data Point PM



VOLUME GUIDELINES FOR LEFT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS (45 mph)
Figure 9.5-F, (SCDOT ROADWAY DESIGN MANUAL 2021)
Consider Left-Turn Treatment
40%
30%
20%
15%
10%
5%
4%
3%
2%
1%
Left-Turn Treatment Not Necessary
76,132
143,98
V_O - Opposing Volume (VPH) During Design Hour
V_A - Advancing Volume (VPH) During Design Hour
0
100
200
300
400
500
600
700
800
Volume Data Point AM
Volume Data Point PM
19.7%
0.7%



LOCATION MAP

NOTES

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THE VERTICAL DATUM FOR FLOOD ZONE INFORMATION AND TOPOGRAPHY IS NAVD 1988 AND WAS DETERMINED USING THE SC VRS NETWORK.

ZONING AND SETBACKS WERE NOT DETERMINED AT THIS TIME

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40

LINE	BEARING	DISTANCE
L1	S 54°02'11" W	119.41'
L2	N 38°18'44" W	245.26'
L3	S 54°42'38" E	194.73'
L4	N 43°12'39" W	208.73'
L5	S 50°45'40" W	183.01'
L6	S 60°26'56" W	50.00'
L7	S 60°26'56" W	113.82'
L8	N 48°49'06" E	209.73'
L9	N 40°27'17" W	46.59'
L10	N 40°17'13" W	188.93'
L11	S 44°28'33" E	131.17'
L12	S 49°42'44" W	278.85'
L13	N 85°17'14" W	47.50'
L14	N 40°27'17" W	28.68'
L15	N 44°27'15" W	147.62'
L16	N 43°09'46" W	270.15'
L17	N 40°17'13" W	178.04'
L18	N 60°40'02" E	63.84'
L19	N 29°20'29" W	244.09'
L20	S 29°24'03" E	243.34'
L21	N 59°36'32" E	50.25'
L22	N 29°20'15" W	146.49'
L23	N 29°33'44" W	7.70'

WETLANDS AREA TABLE

Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	1,186.4	7,907	0.18
Ditch C	1,682.5	9,786	0.22
Ditch D	1,499.7	11,460.52	0.26
Ditch E	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
Wetland B	172.52	1,661.23	0.04
Wetland C	1,241.41	33,650.55	0.77
Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
Wetland F	295.51	4,680.65	0.11
Total		2,916,081.36	66.92

AREA TABLE

AREA	TOTAL ACREAGE	SQ. FEET	WETLANDS ACREAGE	DITCH ACREAGE
A	46.31	2,017,286	46.20	0.00
B	33.96	1,479,297	17.00	0.31
C	12.70	553,115	2.42	0.27
D	2.50	108,809	0.00	0.00
E	1.00	43,567	0.11	0.03
F	7.98	347,487	0.19	0.42

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
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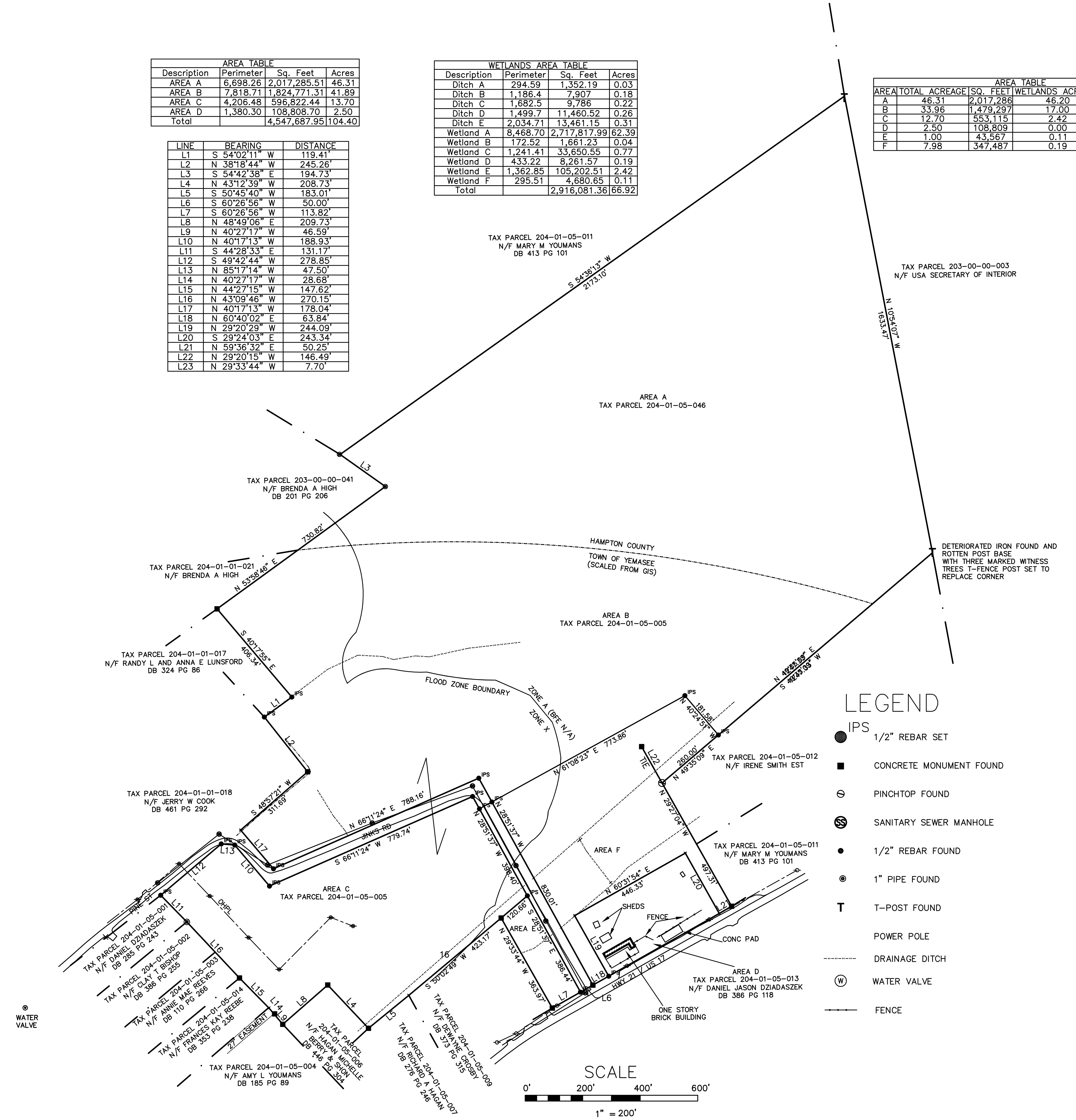


FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): A (BFE=NOT DETERMINED) AND X
COMMUNITY NAME: HAMPTON CO. UN INCORP./TOWN OF YEMASSEE
COMMUNITY #: 450095 / 450103
MAP #: 45049C0450C
PANEL #: 450 OF 550
PANEL DATE: SEPTEMBER 29, 2010
INDEX DATE: SEPTEMBER 29, 2010

THIS FLOOD ZONE DETERMINATION IS APPROXIMATE AND SHOULD BE VERIFIED BY THE APPROPRIATE BUILDING CODES OFFICE BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.

I HEREBY CERTIFY TO RAMSEY DEVELOPMENT THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "C" SURVEY AS SPECIFIED THEREIN, ALSO THERE ARE NO ENCROACHMENTS OR PROJECTIONS AFFECTING THE PROPERTY OTHER THAN THOSE SHOWN.

SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR LORICK V. FANNING PLS# 19882

SOUTH CAROLINA LAND CONSULTING GROUP, LLC No. C02082 CERTIFICATE OF AUTHORIZATION

LORICK V. FANNING, PLS 19882

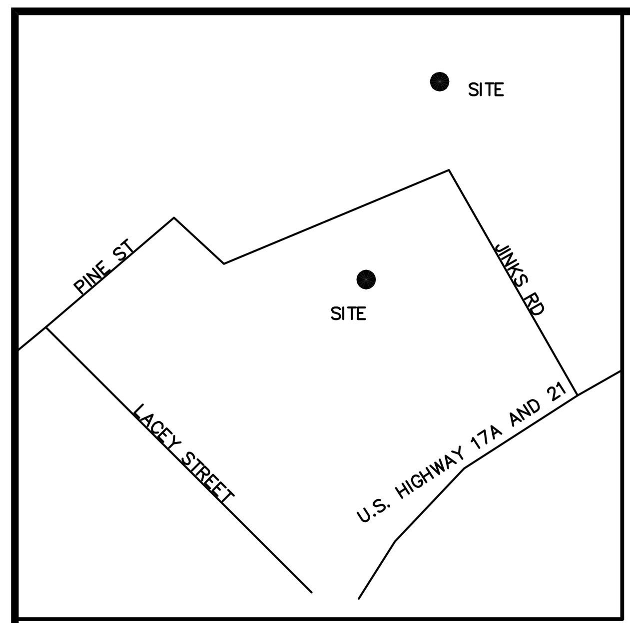
BOUNDARY SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
PB 21 PG 417 — PB 3 PG 127 — DB 484 PG 261
PB 32 PG 4 — PB 14 PG 64
PB 5 PG 96 — PB 3 PG 157

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206



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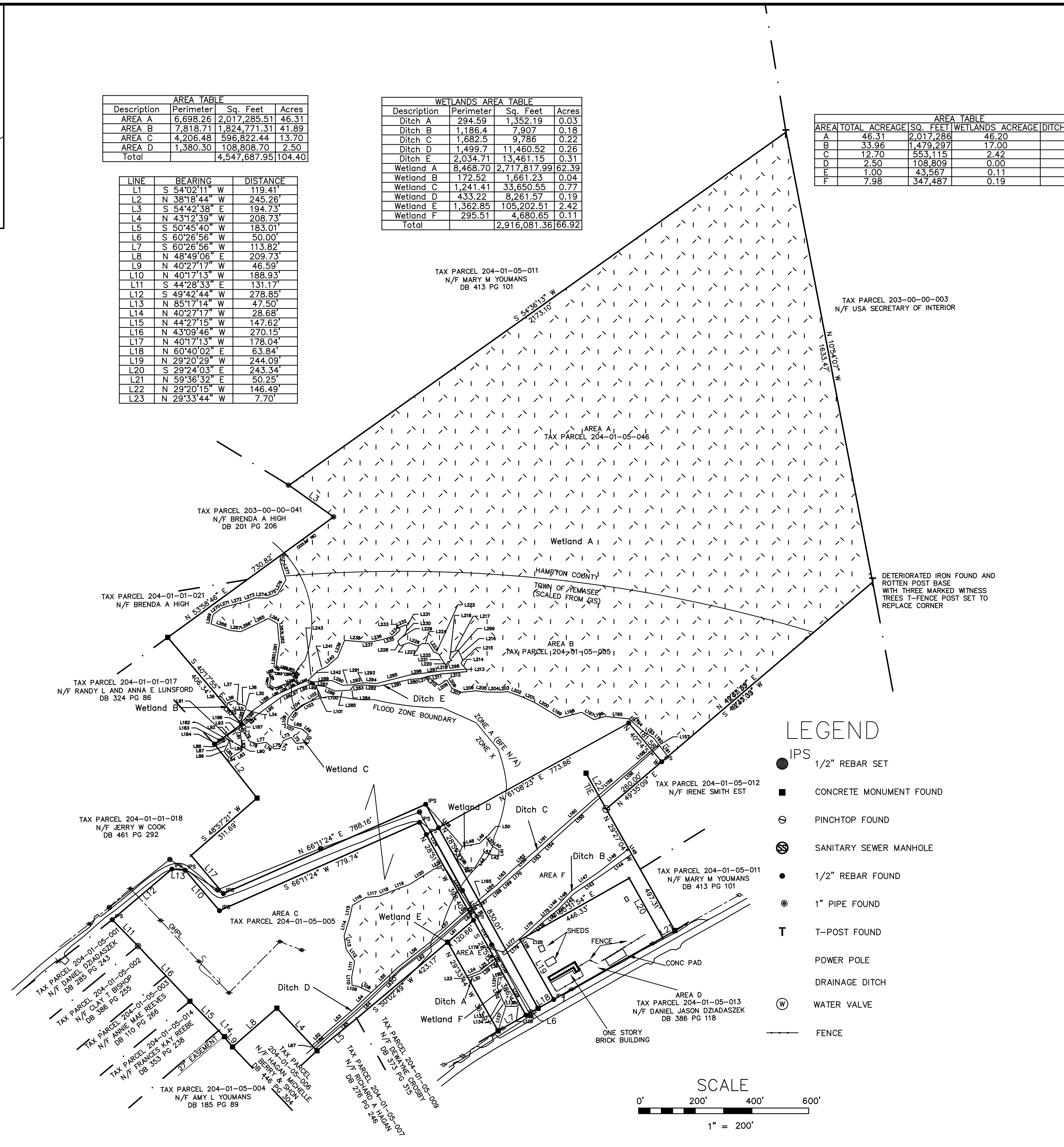


LEGEND

- IPS 1/2" REBAR SET
- CONCRETE MONUMENT FOUND
- PINCHTOP FOUND
- SANITARY SEWER MANHOLE
- 1/2" REBAR FOUND
- 1" PIPE FOUND
- T-POST FOUND
- POWER POLE
- DRAINAGE DITCH
- WATER VALVE
- FENCE

LINE	BEARING	DISTANCE
L24	N 67°42'26" E	48.34'
L25	N 54°21'03" E	48.16'
L26	N 51°56'55" E	37.48'
L27	S 24°45'48" E	10.12'
L28	S 54°10'28" W	43.47'
L29	S 53°39'09" W	41.93'
L30	S 69°33'31" W	47.29'
L31	S 45°26'11" E	20.80'
L32	N 80°47'05" E	16.25'
L33	S 85°54'34" E	33.94'
L34	N 35°39'44" E	8.66'
L35	N 16°42'56" W	10.01'
L36	N 71°04'53" W	20.57'
L37	N 58°10'23" W	23.55'
L38	S 72°04'53" W	24.22'
L39	S 17°29'54" W	14.53'
L40	S 59°00'43" E	27.91'
L41	S 03°43'59" W	18.54'
L42	N 85°21'48" W	28.81'
L43	N 71°24'10" W	24.80'
L44	S 31°17'53" W	64.38'
L45	N 87°55'49" W	38.43'
L46	N 39°46'17" W	39.56'
L47	N 23°22'06" E	49.29'
L48	N 80°03'53" E	62.15'
L49	N 45°48'46" E	36.64'
L50	S 09°47'09" W	7.63'
L51	S 36°37'00" E	35.07'
L52	N 47°22'29" E	71.33'
L53	N 49°20'42" E	124.90'
L54	N 46°45'02" E	87.15'
L55	N 46°54'03" E	131.98'
L56	N 51°53'20" E	158.18'
L57	N 49°11'48" E	134.60'
L58	N 52°35'15" E	44.45'
L59	S 26°15'28" E	10.24'
L60	S 44°58'35" W	44.45'
L61	S 49°15'06" W	129.16'
L62	S 52°49'21" W	160.08'
L63	S 45°15'56" W	125.22'
L64	S 46°36'31" W	96.13'
L65	S 49°23'09" W	123.17'
L66	S 47°28'45" W	71.50'
L67	N 43°12'39" W	16.72'
L68	S 75°42'22" E	39.79'
L69	S 47°42'55" E	28.12'
L70	S 30°00'38" W	34.07'
L71	S 85°30'03" W	26.16'
L72	N 40°10'52" W	28.21'
L73	S 67°00'10" W	30.17'
L74	S 25°46'25" W	31.86'
L75	S 89°35'21" W	18.54'
L76	N 52°40'38" W	37.56'
L77	S 80°42'07" W	31.23'
L78	N 71°39'20" W	29.80'
L79	N 32°15'32" W	38.93'
L80	N 84°05'10" W	11.13'
L81	S 05°55'48" E	19.67'
L82	S 05°15'18" E	48.04'
L83	S 57°24'44" W	42.27'
L84	S 83°21'44" W	12.57'
L85	N 37°53'20" W	25.30'
L86	N 17°42'44" E	6.92'
L87	N 26°07'09" E	34.76'
L88	N 44°59'37" W	17.32'
L89	S 55°25'46" E	30.30'
L90	N 28°48'00" E	3.50'
L91	N 48°18'36" W	29.18'
L92	N 47°21'22" E	11.99'
L93	N 59°28'59" E	53.34'
L94	N 51°49'16" E	52.38'
L95	N 53°30'51" E	128.47'
L96	N 67°02'28" E	19.22'
L97	N 64°50'13" E	43.63'
L98	N 69°36'55" E	39.80'
L99	S 83°16'17" E	24.23'
L100	S 15°20'50" E	22.83'
L101	S 05°13'27" E	15.41'
L102	S 55°44'53" W	34.59'
L103	S 65°09'54" W	32.60'
L104	S 53°37'04" W	37.93'
L105	S 37°41'27" W	30.65'
L106	S 08°25'45" W	21.73'
L107	S 63°23'37" E	17.39'
L108	N 64°47'59" W	52.39'
L109	N 80°14'52" W	21.35'
L110	N 02°49'10" W	28.63'
L111	N 10°53'49" E	57.42'
L112	N 34°56'36" W	53.29'
L113	N 08°41'36" W	48.42'
L114	N 17°13'24" E	71.54'
L115	N 11°28'09" E	40.93'
L116	N 60°11'12" E	56.68'
L117	N 84°41'06" E	46.26'
L118	N 68°00'42" E	48.12'
L119	N 69°25'09" E	68.12'
L120	N 57°59'53" E	98.97'

LINE	BEARING	DISTANCE
L121	N 62°44'02" E	39.83'
L122	S 28°51'37" E	173.30'
L123	N 41°01'08" W	198.85'
L124	N 28°51'37" W	172.06'
L125	N 60°31'54" E	31.30'
L126	N 29°20'29" W	6.54'
L127	S 28°51'37" E	152.55'
L128	N 57°43'22" E	13.88'
L129	N 28°51'37" W	112.46'
L130	S 77°06'49" W	23.30'
L131	S 06°19'37" W	32.81'
L132	S 23°43'28" E	31.29'
L133	S 20°12'57" E	16.72'
L134	S 27°21'57" E	26.91'
L135	N 89°48'01" E	38.14'
L136	N 28°51'37" W	51.89'
L137	S 17°30'58" W	91.85'
L138	S 55°06'41" W	50.28'
L139	N 48°40'20" E	77.22'
L140	N 51°01'32" E	49.92'
L141	N 48°42'14" E	22.63'
L142	N 44°09'09" E	71.27'
L143	N 56°18'05" E	123.64'
L144	N 55°02'21" E	127.02'
L145	N 29°27'04" W	21.90'
L146	S 52°09'46" W	132.15'
L147	S 55°24'42" W	121.99'
L148	S 43°33'57" W	74.50'
L149	N 49°53'42" E	10.51'
L150	N 48°23'00" E	19.15'
L153	N 48°05'39" E	45.23'
L154	N 47°33'09" E	109.69'
L155	N 47°54'31" E	177.29'
L156	N 48°53'08" E	299.37'
L157	N 37°44'23" W	5.32'
L158	S 49°34'21" W	147.54'
L159	S 49°55'40" W	154.36'
L160	S 49°01'31" W	180.73'
L161	S 48°11'40" W	104.12'
L162	S 50°08'54" W	100.36'
L163	S 46°03'39" W	81.49'
L164	S 48°47'37" W	57.76'
L165	S 46°54'27" W	23.59'
L166	S 29°57'09" E	10.47
L167	N 52°46'00" E	42.70'
L168	N 48°31'33" E	54.35'
L169	N 47°53'14" E	75.10'
L170	N 50°09'57" E	38.95'
L175	S 51°07'42" W	52.42'
L176	S 47°43'47" W	114.58'
L177	S 49°42'14" W	67.40'
L178	S 24°44'26" E	11.95'
L179	N 49°06'34" E	69.43'
L180	S 64°50'13" W	43.63'
L181	S 66°59'07" W	19.27'
L182	S 41°02'25" W	7.50'
L183	S 60°18'38" W	26.47'
L184	S 68°02'09" W	13.85'
L185	S 18°18'02" W	47.62'
L186	N 40°17'55" W	5.11'
L187	N 42°44'49" E	17.27'
L188	N 42°29'37" E	41.02'
L189	N 55°14'43" E	94.12'
L190	N 65°02'02" E	96.37'
L191	N 37°44'23" W	48.67'
L192	N 37°44'23" W	30.86'
L193	N 58°42'59" W	44.05'
L194	N 48°05'58" W	65.98'
L195	N 84°02'31" W	84.41'
L196	S 74°43'05" W	42.71'
L197	N 59°13'14" W	50.94'
L198	S 75°20'46" W	79.62'
L199	N 58°20'14" W	39.13'
L200	N 59°00'08" W	70.01'
L201	N 65°59'10" W	43.06'
L202	N 69°48'56" W	57.58'
L203	S 83°49'20" W	21.93'
L204	N 89°16'04" W	56.19'
L205	N 82°23'31" W	33.71'
L206	S 83°53'07" W	52.94'
L207	N 67°08'43" W	37.88'
L208	N 31°37'32" W	33.98'
L209	S 57°59'02" W	34.05'
L210	N 50°38'56" W	49.85'
L211	N 80°14'41" E	49.81'
L212	N 84°50'10" E	90.19'
L213	N 13°57'00" W	9.38'
L214	N 43°37'58" W	27.53'
L215	N 24°58'57" E	15.46'
L216	N 26°10'53" W	38.00'
L217	S 72°37'44" W	26.77'

LINE	BEARING	DISTANCE
L218	S 12°35'50" W	22.53'
L219	S 70°37'46" W	15.17'
L220	S 28°12'22" W	15.21'
L221	N 31°43'46" W	48.99'
L222	N 66°57'01" W	18.56'
L223	N 32°22'14" W	35.28'
L224	S 87°47'53" W	23.97'
L225	S 60°27'38" W	16.22'
L226	N 69°35'37" W	33.67'
L227	S 70°54'06" W	33.52'
L228	N 27°37'01" W	18.76'
L229	N 46°36'54" E	37.96'
L230	N 20°51'33" E	16.68'
L231	N 11°20'48" W	17.41'
L232	S 67°48'46" W	24.02'
L233	S 00°57'36" E	10.68'
L234	S 45°38'50" W	29.67'
L235	S 73°20'13" W	43.98'
L236	S 77°39'01" W	34.83'
L237	S 85°39'05" W	24.95'
L238	N 85°04'23" W	75.44'
L239	S 21°47'35" W	64.92'
L240	S 49°38'29" W	52.62'
L241	S 65°03'20" W	34.38'
L242	S 44°37'07" W	17.74'
L243	S 46°35'03" W	30.33'
L244	S 66°21'45" W	39.86'
L245	N 41°58'04" W	16.72'
L246	S 80°10'31" W	12.87'
L247	S 69°04'06" W	33.97'
L248	S 71°25'38" W	29.44'
L249	N 54°29'25" W	21.03'
L250	N 12°36'01" E	20.88'
L251	N 21°59'15" W	20.69'
L252	N 68°16'05" E	13.02'
L253	S 85°08'44" E	40.97'
L254	S 89°13'03" E	32.58'
L255	S 56°49'52" E	21.71'
L256	N 49°49'45" W	26.63'
L257	N 72°54'43" W	20.31'
L258	N 71°19'32" W	28.99'
L259	N 48°05'06" W	12.52'
L260	N 07°47'46" E	40.74'
L261	N 09°09'04" E	33.15'
L262	N 05°46'33" W	40.80'
L263	N 04°33'13" W	34.21'
L264	N 60°01'45" W	36.48'
L265	S 64°15'31" W	58.67'
L266	S 65°16'47" W	51.69'
L267	N 83°17'36" W	37.99'
L268	N 71°14'43" W	71.52'
L269	N 13°29'57" E	34.72'
L270	N 52°52'45" E	38.43'
L271	N 73°22'38" E	27.28'
L272	N 75°20'46" E	61.26'
L273	N 69°44'01" E	37.43'
L274	S 88°12'34" E	40.51'
L275	N 69°15'40" E	40.10'
L276	N 30°25'16" E	58.73'
L277	N 17°06'33" W	70.69'
L278	N 04°41'33" E	19.94'
L279	S 72°39'08" W	26.77'
L280	S 85°16'33" W	37.93'
L281	S 77°56'02" W	114.44'
L282	N 85°38'34" W	56.93'
L283	S 83°12'34" W	33.76'
L284	S 40°33'38" W	19.64'
L285	S 87°01'50" W	52.95'
L286	N 66°28'14" W	41.94'
L287	N 83°21'00" W	28.59'
L288	S 71°21'41" E	17.79'
L289	N 85°53'07" E	68.36'
L290	S 65°50'28" E	41.17'
L291	N 87°30'46" E	36.91'
L292	N 78°02'25" E	24.85'
L293	N 85°10'35" E	23.69'
L294	S 85°05'01" E	35.53'
L295	N 75°25'11" E	125.52'
L296	N 82°51'35" E	45.06'
L297	N 83°24'53" E	71.56'
L298	N 85°36'39" E	84.02'
L299	N 49°13'56" W	10.97'

FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): A (BFE=NOT DETERMINED) AND X
COMMUNITY NAME: HAMPTON CO. UN INCORP./TOWN OF YEMASSEE
COMMUNITY #: 450095 / 450103
MAP #: 45049C0450C
PANEL #: 450 OF 550
PANEL DATE: SEPTEMBER 29, 2010
INDEX DATE: SEPTEMBER 29, 2010

THIS FLOOD ZONE DETERMINATION IS APPROXIMATE AND SHOULD BE VERIFIED BY THE APPROPRIATE BUILDING CODES OFFICE BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.

I HEREBY CERTIFY TO RAMSEY DEVELOPMENT THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "C" SURVEY AS SPECIFIED THEREIN, ALSO THERE ARE NO ENCROACHMENTS OR PROJECTIONS AFFECTING THE PROPERTY OTHER THAN THOSE SHOWN.

SOUTH CAROLINA
LORICK V. FANNING
PLS# 19882
PROFESSIONAL LAND SURVEYOR

SOUTH CAROLINA
LAND CONSULTING GROUP, LLC
No. C02082
CERTIFICATE OF AUTHORIZATION

LORICK V. FANNING, PLS 19882

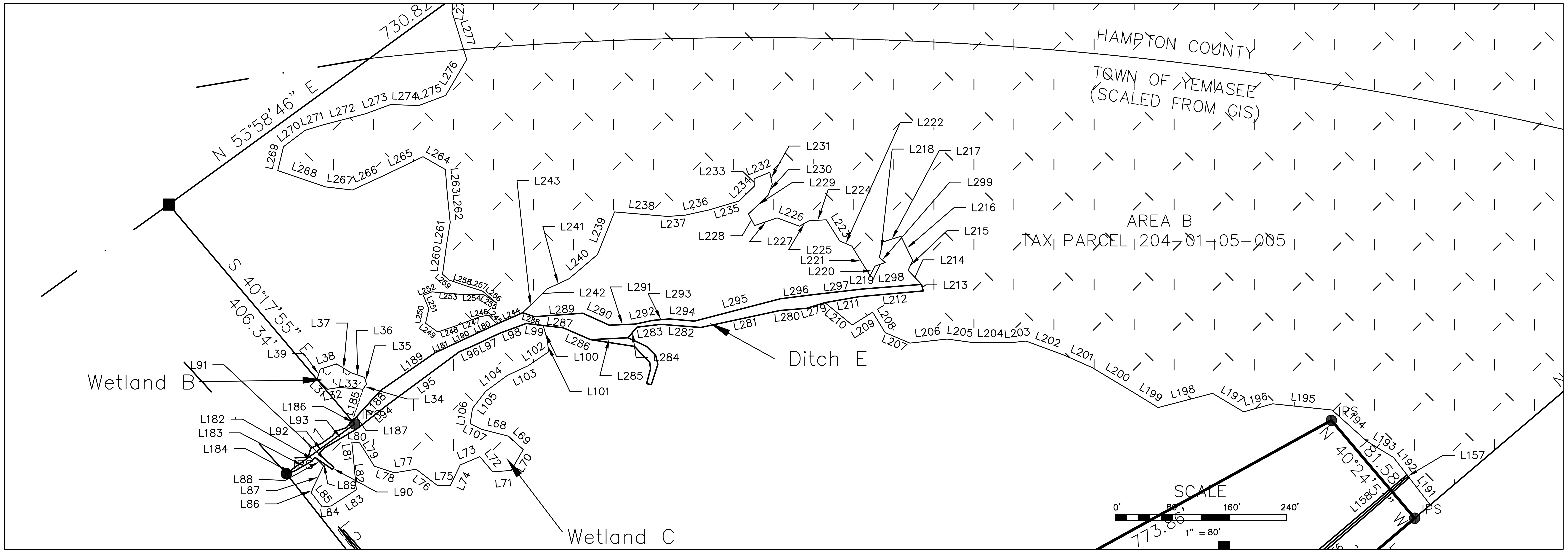
WETLANDS SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT
SHEET 1 OF 2

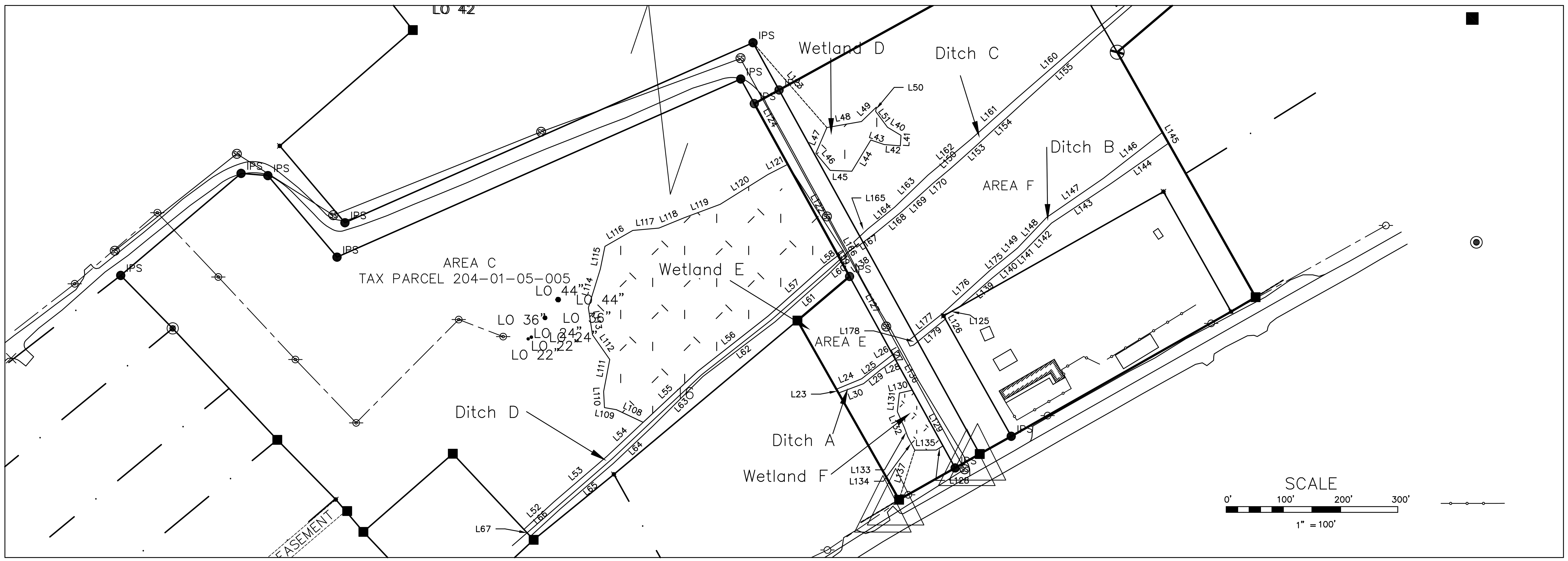
JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
PB 21 PG 417 PB 3 PG 127 DB 484 PG 261
PB 32 PG 4 PB 14 PG 64
PB 5 PG 96 PB 3 PG 157

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206





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SOUTH CAROLINA PROFESSIONAL LAND SURVEYOR
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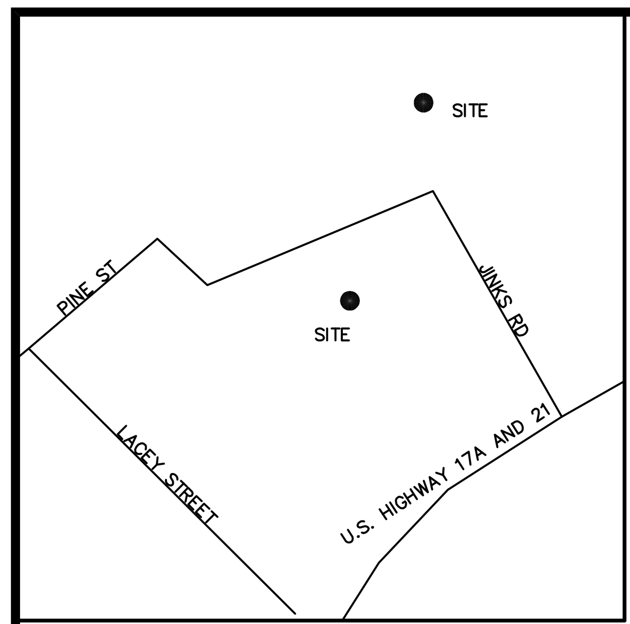


LOCATION MAP

NOTES

THIS PLAT DOES NOT CERTIFY THAT THE INFORMATION SHOWN HEREON COMPLIES WITH LOCAL ZONING REGULATIONS. THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF OVERLAY DISTRICTS OR SPECIAL HAZARD AREAS SUCH AS BUT NOT LIMITED TO AIRPORT AND AICUZ ZONES.

THIS PLAT REPRESENTS CONDITIONS FOUND ON 4/1/2022 AND DOES NOT REPRESENT CONDITIONS FOUND ON ANY OTHER DATE.

THIS PLAT WAS SURVEYED BASED ON REFERENCED DOCUMENTS AND WAS NOT SURVEYED IN COORDINATION WITH A TITLE EXAMINATION. THE SURVEYOR DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF EASEMENTS.

THE AREA CALCULATIONS SHOWN HEREON WERE DETERMINED BY THE COORDINATE METHOD.

THE PRESENCE OR ABSENCE OF REGULATED NATURAL RESOURCES (SUCH AS, BUT NOT LIMITED TO, CRITICAL AREAS, FRESHWATER WETLANDS, SPECIMEN TREES, AND HISTORICALLY SIGNIFICANT SITES AND CULTURAL RESOURCES) WAS NOT DETERMINED AT THIS TIME OTHER THAN THOSE SHOWN HEREON AND ACCOMPANIED BY THE CERTIFICATION OR APPROVAL OF APPROPRIATE REGULATORY AGENCY.

THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF UNDERGROUND FEATURES, (INCLUDING, BUT NOT LIMITED TO UTILITIES, STORAGE TANKS, AND SIMILAR).

THE VERTICAL DATUM FOR FLOOD ZONE INFORMATION AND TOPOGRAPHY IS NAVD 1988 AND WAS DETERMINED USING THE SC VRS NETWORK.

ZONING AND SETBACKS WERE NOT DETERMINED AT THIS TIME

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40

LINE	BEARING	DISTANCE
L1	S 54°02'11" W	119.41'
L2	N 38°18'44" W	245.26'
L3	S 54°42'38" E	194.73'
L4	N 43°12'39" W	208.73'
L5	S 50°45'40" W	183.01'
L6	S 60°26'56" W	50.00'
L7	S 60°26'56" W	113.82'
L8	N 48°49'06" E	209.73'
L9	N 40°27'17" W	46.59'
L10	N 40°17'13" W	188.93'
L11	S 44°28'33" E	131.17'
L12	S 49°42'44" W	278.85'
L13	N 85°17'14" W	47.50'
L14	N 40°27'17" W	28.68'
L15	N 44°27'15" W	147.62'
L16	N 43°09'46" W	270.15'
L17	N 40°17'13" W	178.04'
L18	N 60°40'02" E	63.84'
L19	N 29°20'29" W	244.09'
L20	S 29°24'03" E	243.34'
L21	N 59°36'32" E	50.25'
L22	N 29°20'15" W	146.49'
L23	N 29°33'44" W	7.70'

WETLANDS AREA TABLE

Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	1,186.4	7,907	0.18
Ditch C	1,682.5	9,786	0.22
Ditch D	1,499.7	11,460.52	0.26
Ditch E	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
Wetland B	172.52	1,661.23	0.04
Wetland C	1,241.41	33,650.55	0.77
Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
Wetland F	295.51	4,680.65	0.11
Total		2,916,081.36	66.92

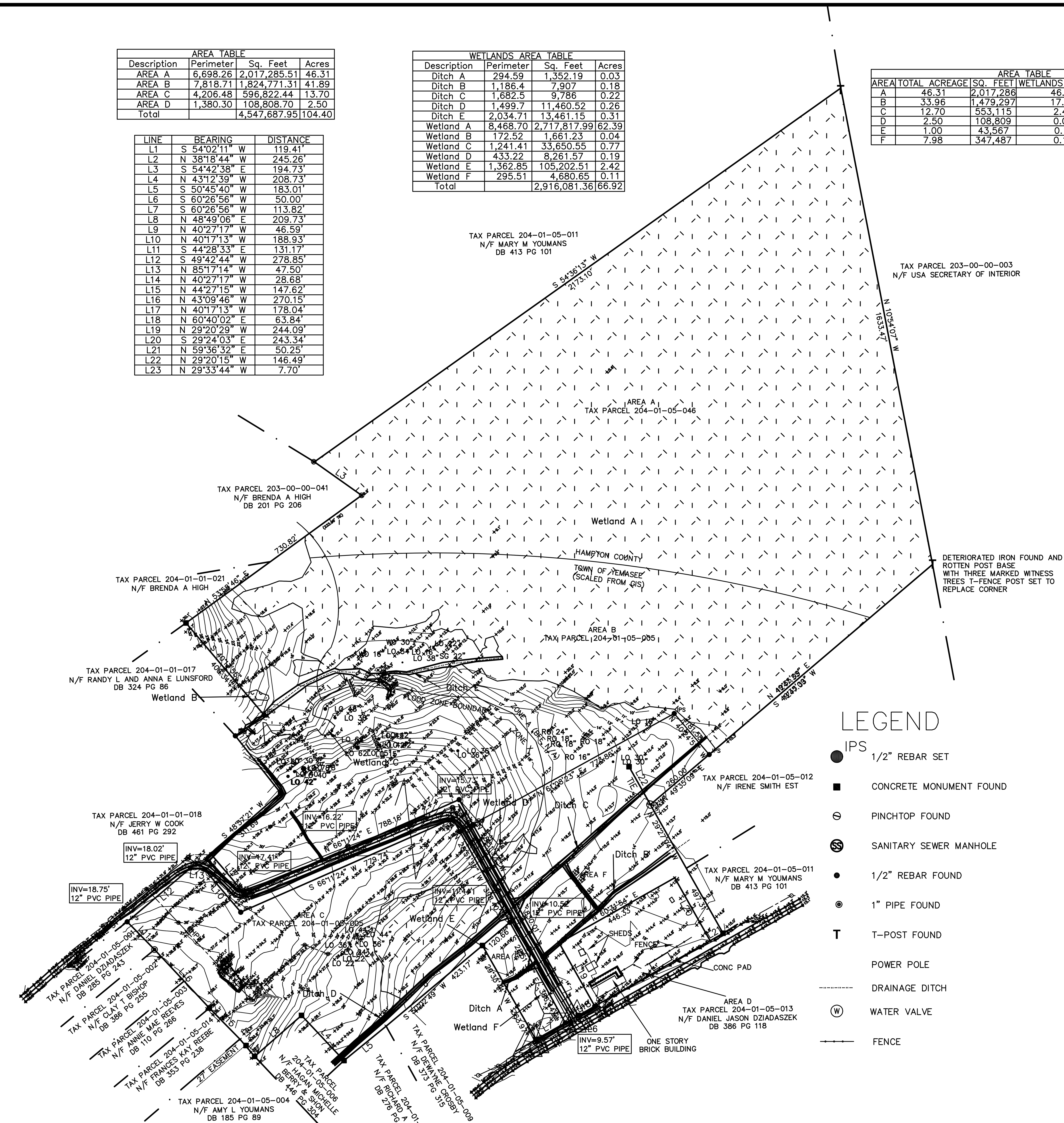
AREA TABLE

AREA	TOTAL ACREAGE	SQ. FEET	WETLANDS ACREAGE	DITCH ACREAGE
A	46.31	2,017,286	46.20	0.00
B	33.96	1,479,297	17.00	0.31
C	12.70	553,115	2.42	0.27
D	2.50	108,809	0.00	0.00
E	1.00	43,567	0.11	0.03
F	7.98	347,487	0.19	0.42

AREA TABLE

Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
AREA D	1,380.30	108,808.70	2.50
Total		4,547,687.95	104.40

LAND CONSULTING GROUP, LLC
Land Consulting Group, LLC



LEGEND

IPS	1/2" REBAR SET
	CONCRETE MONUMENT FOUND
	PINCHTOP FOUND
	SANITARY SEWER MANHOLE
	1/2" REBAR FOUND
	1" PIPE FOUND
T	T-POST FOUND
	POWER POLE
	DRAINAGE DITCH
	WATER VALVE
	FENCE

TREE LEGEND

DESCRIPTION	COMMONNAME	SCIENTIFICNAME
BG	BLACK GUM	*Nyssa sylvatica*
CE	RED CEDAR	*Juniperus virginiana*
CH	CHERRY	*Prunus spp*
DW	DOGWOOD	*Cornus florida*
GUM	SWEETGUM	*Liquidambar styraciflua*
HI	HICKORY	*Carya spp*
LO	LIVEOAK	*Quercus virginiana*
MA	MAPLE	*Acer spp*
MAG	MAGNOLIA	*Magnolia grandiflora*
MYRT	WAXMYRTLE	*Myrica cerifera*
O	OAK	*Quercus spp*
PA	PALMETTO	*Sabal palmetto*
PE	PECAN	*Carya illinoensis*
PN	PINE	*Pinus spp*
SUG	SUGARBERRY	*Nyssa sylvatica*
TA	TALLOW TREE	*Triadica Loureiro*

SCALE

0' 200' 400' 600'

1" = 200'

FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): A (BFE=NOT DETERMINED) AND X
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NOT FOR RECORDING

SOUTH CAROLINA
LORICK V. FANNING
PLS# 19882
PROFESSIONAL LAND SURVEYOR

SOUTH CAROLINA
LAND CONSULTING GROUP, LLC
No. C02082
CERTIFICATE OF AUTHORIZATION

LIMITED TREE AND TOPOGRAPHIC SURVEY OF CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

REFERENCES
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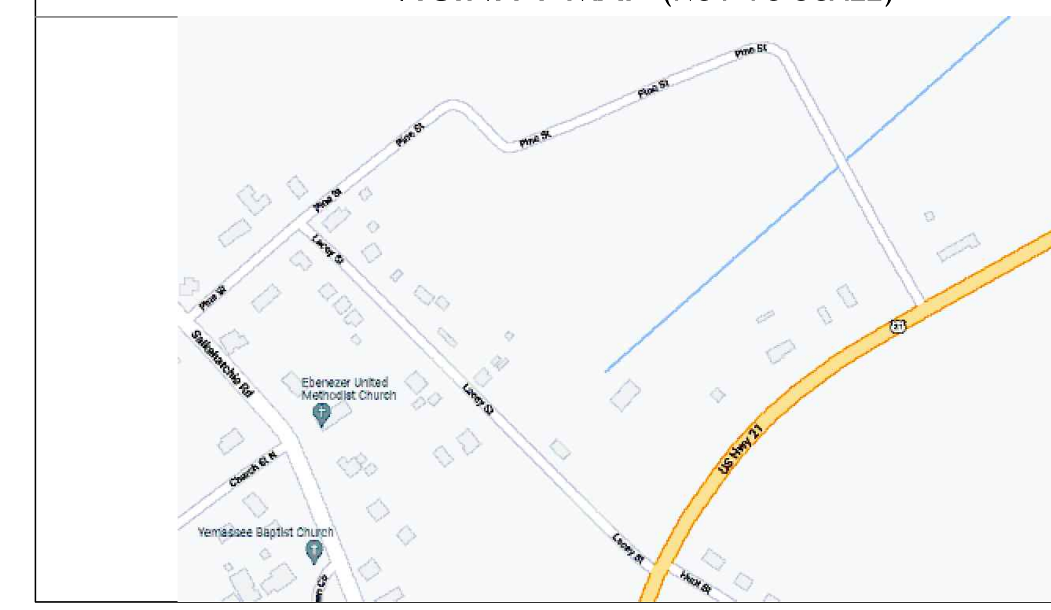
LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206

SITE DEVELOPMENT PLANS
FOR
IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA

VICINITY MAP (NOT TO SCALE)



NOT FOR CONSTRUCTION

GENERAL NOTES:
1. BOUNDARY INFORMATION PROVIDED BY LIMITED TREE & TOPOGRAPHIC SURVEY OF CORBETT TRACT, DATED 04/01/22, BY LAND CONSULTING GROUP, LLC.
2. TOPOGRAPHIC DATA PROVIDED BY LAND CONSULTING GROUP, LLC, DATED 04/01/22.
3. APPROXIMATE LOCATION OF CERTAIN EXISTING UNDERGROUND UTILITY LINES AND STRUCTURES ARE SHOWN ON THE PLANS FOR INFORMATION ONLY ADDITIONAL UNDERGROUND LINES OR STRUCTURES MAY EXIST THAT ARE NOT SHOWN. CALL SOUTH CAROLINA 811 AT 811 OR 1-888-721-7877 BETWEEN THE HOURS OF 7:00 AM AND 7:00 PM MONDAY THRU FRIDAY AT LEAST THREE WORKING DAYS BEFORE COMMENCING CONSTRUCTION. REQUEST UNDERGROUND UTILITIES TO BE LOCATED AND MARKED WITHIN AND NEAR THE CONSTRUCTION SITE.
4. COMPLY WITH "SOUTH CAROLINA UNDERGROUND FACILITY DAMAGE PREVENTION ACT (EFFECTIVE JUNE 7, 2012). NOTIFICATION OF INTENT TO EXCAVATE MAY BE GIVEN BY CALLING THE TOLL FREE NUMBER: 1-800-922-0983.
5. PROTECT BENCH MARKS AND PROPERTY MONUMENTS FROM DAMAGE DURING CONSTRUCTION OPERATIONS. REPLACE ANY BENCH MARKS OR MONUMENTS DAMAGED OR DESTROYED AS A RESULT OF CONTRACTOR'S OPERATIONS, AT NO COST TO THE OWNER, BY A LICENSED SURVEYOR IN THE STATE OF SOUTH CAROLINA.
6. OFF-STREET PARKING FOR THE CONTRACTOR'S EMPLOYEES AND AUTHORIZED VISITORS TO THE SITE MUST BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION.
7. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO WEIGHT LIMITS PRESCRIBED FOR ALL PUBLIC ROADS WHEN HAULING EQUIPMENT AND MATERIALS TO AND FROM THE PROJECT SITE. DAMAGES TO EXISTING PAVEMENT DUE TO THE CONTRACTOR'S CONSTRUCTION OPERATIONS OR IMPROPER TRANSPORTATION OF MATERIALS AND EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. AT LEAST ONE DRIVING LANE ON PUBLIC ROADS SHALL REMAIN OPEN TO TRAFFIC AT ALL TIMES. TRAFFIC LANES WILL ONLY BE CLOSED WITH THE EXPRESS WRITTEN CONSENT OF THE AGENCY HAVING JURISDICTION OVER THE ROADWAY. NOTIFY AGENCY HAVING JURISDICTION AT LEAST 5 DAYS BEFORE CLOSING ANY DRIVING LANES TO TRAFFIC. PROVIDE TRAFFIC CONTROL DEVICES, SIGNS AND FLAGMEN AS REQUIRED TO ENSURE PUBLIC SAFETY.
9. CONTRACTOR SHALL COORDINATE DEMOLITION, CLEARING AND CONSTRUCTION OF IMPROVEMENTS TO MINIMIZE INTERFERENCE WITH VEHICULAR AND PEDESTRIAN TRAFFIC AND WITH OPERATIONS OF EXISTING FACILITIES.

WORK ON SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY:
1. CONTRACTOR SHALL REVIEW AND COMPLY WITH ALL CONDITIONS AND SPECIAL PROVISIONS CONTAINED IN THE SCDOT ENCROACHMENT PERMIT(S) ISSUED FOR THIS PROJECT.
2. CONTRACTOR TO REFER TO THE MOST CURRENT EDITION OF THE SCDOT STANDARD DRAWINGS.
3. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING CONSTRUCTION NOTIFICATION FORM (48 HOUR MINIMUM) AND COORDINATION OF ALL WORK WITHIN SCDOT RIGHTS-OF-WAY WITH THE LOCAL AND/OR DISTRICT SCDOT ENGINEERING REPRESENTATIVE.
4. CONTRACTOR IS RESPONSIBLE FOR PREPARING AND SUBMITTING A TRAFFIC CONTROL PLAN TO SCDOT FOR APPROVAL MINIMUM 48 HOURS PRIOR TO CONDUCTING WORK IN THE RIGHT-OF-WAY. ALL TRAFFIC CONTROL PLANS SHALL CONFORM TO CURRENT MUTCD AND CURRENT SCDOT GUIDELINES AND SPECIFICATIONS.
5. ALL SIGNAGE, PAVEMENT MARKINGS, AND MARKERS SHALL CONFORM TO CURRENT MUTCD GUIDELINES AND CURRENT SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
6. ALL PAVING AND DRAINAGE CONSTRUCTION SHALL CONFORM TO CURRENT SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
7. ALL PAVEMENT MARKINGS IN SCDOT RIGHT-OF-WAY SHALL BE THERMOPLASTIC AND CONFORM TO CURRENT MUTCD GUIDELINES AND CURRENT SCDOT STANDARD SPECIFICATIONS AND DRAWINGS.
8. REMOVAL OF PAVEMENT MARKINGS SHALL CONFORM TO CURRENT SCDOT STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION SECTION 609.4.1.2.

SITE GRADING AND DRAINAGE:
1. ALL UTILITIES SHOWN ARE APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING 72-HOUR NOTICE TO ALL RESPECTIVE UTILITY COMPANIES FOR FIELD VERIFICATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY DAMAGES TO EXISTING UTILITIES DUE TO THIS CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
2. TEMPORARY CONTROL OF STORM WATER DRAINAGE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SEQUENCING AND CONSTRUCTION TECHNIQUES SHALL PREVENT OBSTRUCTION OF STORM SEWERS, PONDING IN TRAFFIC AREAS OR RISING OF WATER LEVELS WHICH WOULD ENTER ADJACENT BUILDINGS OR STRUCTURES.
3. FULL WIDTH OF STREET AND ROAD RIGHTS-OF-WAY MUST BE CLEARED AND GRADED AS SHOWN IN THE DETAILS ON THE DRAWINGS
4. SUBGRADE PREPARATION: TOP SOIL SHALL BE REMOVED FROM PAVED AREAS TO A MINIMUM DEPTH AS RECOMMENDED IN THE PROJECT'S GEOTECHNICAL REPORT. ALL EXCAVATION SHALL BE TO SUBGRADE LIMITS.
5. ALL UTILITY PIPE LINES, CONDUITS AND SLEEVES UNDER PAVED AREAS MUST BE IN PLACE PRIOR TO COMPLETION OF THE ROADWAY SUBGRADE COMPACTION.
6. FINISH GRADING SHALL INCLUDE THE PLACEMENT OF TOPSOIL OVER ALL UNPAVED AREAS NOT OCCUPIED BY BUILDINGS OR STRUCTURES AND FINE GRADING AROUND BUILDINGS, ADJACENT TO WALKS, CURBS, GUTTERS AND STRUCTURES TO ASSURE POSITIVE DRAINAGE.

SCDHEC/OCRM SEDIMENT AND EROSION CONTROL STANDARD NOTES (REVISED DEC-2012):
1. IF NECESSARY, SLOPES, WHICH EXCEED EIGHT (8) VERTICAL FEET SHOULD BE STABILIZED WITH SYNTHETIC OR VEGETATIVE MATS, IN ADDITION TO HYDROSEEDING. IT MAY BE NECESSARY TO INSTALL TEMPORARY SLOPE DRAINS DURING CONSTRUCTION. TEMPORARY BERMS MAY BE NEEDED UNTIL THE SLOPE IS BROUGHT TO GRADE.
2. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED, BUT IN NO CASE MORE THAN FOURTEEN (14) DAYS AFTER WORK HAS CEASED, EXCEPT AS STATED BELOW.
   A. WHERE STABILIZATION BY THE 14TH DAY IS PRECLUDED BY SNOW COVER OR FROZEN GROUND CONDITIONS STABILIZATION MEASURES MUST BE INITIATED AS SOON AS PRACTICABLE.
   B. WHERE CONSTRUCTION ACTIVITY ON A PORTION OF THE SITE IS TEMPORARILY CEASED, AND EARTH-DISTURBING ACTIVITIES WILL BE RESUMED WITHIN 14 DAYS, TEMPORARY STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE.
3. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED ONCE EVERY CALENDAR WEEK. IF PERIODIC INSPECTION OR OTHER INFORMATION INDICATES THAT A BMP HAS BEEN INAPPROPRIATELY, OR INCORRECTLY INSTALLED, THE PERMITTEE MUST ADDRESS THE NECESSARY REPLACEMENT OR MODIFICATION REQUIRED TO CORRECT THE BMP WITHIN 48 HOURS OF IDENTIFICATION.
4. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER THE UTILITY INSTALLATION. FILL, COVER, AND TEMPORARY SEEDING AT THE END OF EACH DAY ARE RECOMMENDED. IF WATER IS ENCOUNTERED WHILE TRENCHING, THE WATER SHOULD BE FILTERED TO REMOVE SEDIMENT BEFORE BEING PUMPED BACK INTO ANY WATERS OF THE STATE.
5. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
6. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO PAVED ROADWAY(S) FROM CONSTRUCTION AREAS AND THE GENERATION OF DUST. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM PAVEMENT, AS MAY BE REQUIRED.
7. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR OBTAIN APPROVAL OF AN INDIVIDUAL PLAN IN ACCORDANCE WITH S.C REG. 72-300 ET SEQ. AND SCR100000.
8. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT-LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.
9. ALL WATERS OF THE STATE (WOS), INCLUDING WETLANDS, ARE TO BE FLAGGED OR OTHERWISE CLEARLY MARKED IN THE FIELD. A DOUBLE ROW OF SILT FENCE IS TO BE INSTALLED IN ALL AREAS WHERE A 50-FOOT BUFFER CAN'T BE MAINTAINED BETWEEN THE DISTURBED AREA AND ALL WOS. A 10-FOOT BUFFER SHOULD BE MAINTAINED BETWEEN THE LAST ROW OF SILT FENCE AND ALL WOS.
10. LITTER, CONSTRUCTION DEBRIS, OILS, FUELS, AND BUILDING PRODUCTS WITH SIGNIFICANT POTENTIAL FOR IMPACT (SUCH AS STOCKPILES OF FRESHLY TREATED LUMBER) AND CONSTRUCTION CHEMICALS THAT COULD BE EXPOSED TO STORM WATER MUST BE PREVENTED FROM BECOMING A POLLUTANT SOURCE IN STORM WATER DISCHARGES.
11. A COPY OF THE SWPPP, INSPECTIONS RECORDS, AND RAINFALL DATA MUST BE RETAINED AT THE CONSTRUCTION SITE OR A NEARBY LOCATION EASILY ACCESSIBLE DURING NORMAL BUSINESS HOURS, FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION ACTIVITIES TO THE DATE THAT FINAL STABILIZATION IS REACHED.
12. INITIATE STABILIZATION MEASURES ON ANY EXPOSED STEEP SLOPE (3H:1V OR GREATER) WHERE LAND-DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED, AND WILL NOT RESUME FOR A PERIOD OF 7 CALENDAR DAYS.
13. MINIMIZE SOIL COMPACTION AND, UNLESS INFEASIBLE, PRESERVE TOPSOIL.
14. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM EQUIPMENT AND VEHICLE WASHING, WHEEL WASH WATER, AND OTHER WASH WATERS. WASH WATERS MUST BE TREATED IN A SEDIMENT BASIN OR ALTERNATIVE CONTROL THAT PROVIDES EQUIVALENT OR BETTER TREATMENT PRIOR TO DISCHARGE.
15. MINIMIZE THE DISCHARGE OF POLLUTANTS FROM DEWATERING OF TRENCHES AND EXCAVATED AREAS. THESE DISCHARGES ARE TO BE ROUTED THROUGH APPROPRIATE BMPS (SEDIMENT BASIN, FILTER BAG, ETC.).
16. THE FOLLOWING DISCHARGES FROM SITES ARE PROHIBITED:
   A. WASTEWATER FROM WASHOUT OF CONCRETE, UNLESS MANAGED BY AN APPROPRIATE CONTROL.
   B. WASTEWATER FROM WASHOUT AND CLEANOUT OF STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS.
   C. FUELS, OILS, OR OTHER POLLUTANTS USED IN VEHICLE AND EQUIPMENT OPERATION AND MAINTENANCE.
   D. SOAPS OR SOLVENTS USED IN VEHICLE AND EQUIPMENT WASHING.
17. AFTER CONSTRUCTION ACTIVITIES BEGIN, INSPECTIONS MUST BE CONDUCTED AT A MINIMUM OF AT LEAST ONCE EVERY CALENDAR WEEK AND MUST BE CONDUCTED UNTIL FINAL STABILIZATION IS REACHED ON ALL AREAS OF THE CONSTRUCTION SITE.
18. IF EXISTING BMPS NEED TO BE MODIFIED OR IF ADDITIONAL BMPS ARE NECESSARY TO COMPLY WITH THE REQUIREMENTS OF THIS PERMIT AND/OR SC'S WATER QUALITY STANDARDS, IMPLEMENTATION MUST BE COMPLETED BEFORE THE NEXT STORM EVENT WHENEVER PRACTICABLE. IF IMPLEMENTATION BEFORE THE NEXT STORM EVENT IS IMPRACTICABLE, THE SITUATION MUST BE DOCUMENTED IN THE SWPPP AND ALTERNATIVE BMPS MUST BE IMPLEMENTED AS SOON AS REASONABLY POSSIBLE.
19. A PRE-CONSTRUCTION CONFERENCE MUST BE HELD FOR EACH CONSTRUCTION SITE WITH AN APPROVED ON-SITE SWPPP PRIOR TO THE IMPLEMENTATION OF CONSTRUCTION ACTIVITIES. FOR NON-LINEAR PROJECTS THAT DISTURB 10 ACRES OR MORE THIS CONFERENCE MUST BE HELD ON-SITE UNLESS THE DEPARTMENT HAS APPROVED OTHERWISE.

DRY UTILITY CONDUITS FOR ELECTRIC, TELEPHONE AND CABLE TV:
1. ALL DRY UTILITY CONDUIT ENDS SHALL BE CAPPED AND MARKED WITH A STEEL REBAR STAKE IMBEDDED ONE (1) FOOT BELOW GROUND SURFACE.
2. 48" MINIMUM BURY DEPTH FOR ALL ELECTRICAL CONDUITS.
3. MAINTAIN MINIMUM 12" VERTICAL CLEARANCE WHEN CROSSING WATER, SEWER, AND STORM DRAIN LINES.
4. MAINTAIN MINIMUM 18" HORIZONTAL CLEARANCE WHEN PARALLELING WATER, SEWER AND STORM DRAIN LINES.
5. EXTEND CONDUIT BEYOND PAVEMENT, CURB, AND SIDEWALKS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF THE INSTALLATION OF ALL UTILITY SERVICE CONNECTIONS. REFER TO APPROVED BUILDING PLANS FOR THE EXACT LOCATION OF ALL SERVICE CONNECTIONS. THE CONTRACTOR MUST INSTALL ALL CONDUITS, AS SHOWN ON THE PLANS OR AS REQUIRED BY RESPECTIVE UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS WITH REGARDS TO THE INSTALLATION OF UTILITIES AND CONDUIT.
7. LOCATIONS SHOWN ON THE PLANS FOR PROPOSED DRY UTILITY CONDUITS ARE APPROXIMATE ONLY. ALL DIMENSIONING AND STAKING SHOULD BE BASED ON ECONOMICAL AND PRACTICAL CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE RESPECTIVE UTILITY REPRESENTATIVES, PRIOR TO ANY CONDUIT INSTALLATION.
8. TRANSFORMER PADS SHALL BE LOCATED AS DIRECTED BY THE RESPECTIVE UTILITY REPRESENTATIVE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE CODE REQUIREMENTS.
9. NOTIFY THE ENGINEER IF CONFLICTS WITH EXISTING OR PROPOSED STRUCTURES REQUIRE PROPOSED UTILITIES BE RELOCATED.

SITE CLEARING AND DEMOLITION:
1. NO CLEARING SHALL OCCUR WITHIN DESIGNATED BUFFER ZONES, TREE PROTECTION ZONES, OUTSIDE OF THE PROPERTY LINES OR BEYOND THE CLEARING LIMITS UNLESS OTHERWISE SPECIFICALLY SHOWN ON THE PLANS.
2. ONLY THOSE TREES DESIGNATED ON THE DRAWINGS FOR REMOVAL ARE TO BE REMOVED AS PART OF THE SITE CLEARING OPERATIONS.
3. THE CONTRACTOR SHALL INSTALL A CONTINUOUS LINE OF FLAGGING OR FENCING ALONG THE LIMITS OF CLEARING PRIOR TO COMMENCING ANY CLEARING, DEMOLITION, OR CONSTRUCTION WORK ON THE PROJECT.
4. EXERCISE CAUTION DURING CLEARING OPERATIONS TO AVOID FELLING TREES INTO DESIGNATED TREE PROTECTION ZONES.
5. NO BURNING WILL BE ALLOWED WITHIN 50 FEET OF A TREE PROTECTION ZONE OR TREE DRIP LINE. CONTRACTOR SHALL COORDINATE ANY BURNING OPERATIONS WITH LOCAL JURISDICTION AND FIRE DEPARTMENTS.
6. SELECTIVE CLEARING AREAS SHALL BE CLEARED OF ALL BRUSH AND UNDERSTORY GROWTH.

UTILITY CONTACTS:

PALMETTO ELECTRIC	843-208-5512	1 COOPERATIVE WAY, HARDEEVILLE, SC 29927
DOMINION ENERGY	800-251-7234	PO BOX 100255 COLUMBIA, SC 29202
LOWCOUNTRY REGIONAL WATER SYSTEM	803-943-1006	513 ELM STREET WEST, SC 29924
HARGRAY COMMUNICATIONS	843-815-1675	PO BOX 3380, BLUFFTON, SC 29910
TIME WARNER CABLE	843-913-7940	11 OFFICE PARK ROAD, HILTON HEAD, SC 29928
CENTURY LINK	843-525-0044	2127 BOUNDARY ST #16, BEAUFORT, SC 29902
SANTEE COOPER	843-761-8000	1 RIVERWOOD DRIVE, MONCKS CORNER, SC 29461

CONTRACTOR NOTE:
CONTRACTOR TO OBTAIN AND BECOME FAMILIAR WITH GEOTECHNICAL REPORT #12591408-00 PREPARED BY GHD.

ALL WORK MUST CONFORM TO PROJECT TECHNICAL SPECIFICATIONS FOR IRONLINE METALS PREPARED BY WARD EDWARDS ENGINEERING. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A COPY OF THE TECHNICAL SPECIFICATIONS IF NOT PROVIDED WITH THE DRAWINGS.

811 Know what's below. Call 811 before you dig.

PROJECT INFORMATION

DEVELOPER:
TIM HUBER
RAMSEY DEVELOPMENT
706 JEFFERSON STREET, TELL CITY, IN 47586
812.719.0008
THUBER@RAMSEYDEVELOPMENT.COM

SOURCE OF TITLE:
HAMPTON COUNTY REGISTER OF DEEDS,
DEED BOOK 484 PAGE 261

PROJECT STREET ADDRESS:
PINE STREET & HWY 21/17

PROPERTY IDENTIFICATION NO.:
County I.D. #: 204-01-05-005
204-01-05-013

DEVELOPMENT PERMIT JURISDICTION:
TOWN OF YEMASSEE

USE:
EXISTING: UNDEVELOPED
PROPOSED: INDUSTRIAL

REQUIRED SETBACKS:
FRONT: 100 FEET
REAR: 50 FEET
SIDE: 50 FEET

SURFACE COVERAGE:
MAX IMPERVIOUS ALLOWED: XX %
MIN OPEN SPACE REQUIRED: XX %
EXISTING IMPERVIOUS: 18,094 SQ. FT. (03 %)
PROPOSED IMPERVIOUS: 159,290 SQ. FT. (29 %)
OPEN SPACE PROVIDED: 381,453 SQ. FT. (71 %)
WETLANDS/NAT. RESOURCE: 21,736 SQ. FT. (04 %)

PARKING SUMMARY:
PARKING USE TYPES
USE TYPE = XX SPACES/XX SQ. FT.
PARKING REQUIRED:
USE TYPE = 30 SPACES
PARKING PROVIDED:
TOTAL = 30 SPACES
ACCESSIBLE PARKING REQUIRED: 30 SPACES
ACCESSIBLE PARKING PROVIDED: 30 SPACES

PROPERTY OWNER:
TIM HUBER
RAMSEY DEVELOPMENT
706 JEFFERSON STREET, TELL CITY, IN 47586
812.719.0008
THUBER@RAMSEYDEVELOPMENT.COM

LATITUDE / LONGITUDE:
N 32° 41' 56"
W 80° 50' 51"

FLOOD ZONE:
"A" & "X"

PROPERTY ZONING:
PUD

SITE AREA:
TOTAL: 101.9 ACRES
DISTURBED: 12.5 ACRES

REQUIRED BUFFERS:
FRONT: 40 FEET
REAR: 20 FEET
SIDE: 20 FEET

DESIGN TEAM

LAND SURVEYOR:
LAND CONSULTING GROUP, LLC
843.575.5206

ARCHITECT:
COURT ATKINS GROUP
843.815.2557

LANDSCAPE ARCHITECT:
WITMER, JONES, KEEFER LTD.
843.757.7411

GEOTECHNICAL ENGINEER:
GHD
843.815.5120

WETLAND CONSULTANT:
RESOURCE & LAND CONSULTANTS
912.443.5896

PERMITS

PERMIT	PERMIT #	ISSUED	EXPIRES
LOWCOUNTRY REGIONAL WATER SYSTEM			
FIRE MARSHAL			
SCDHEC/MS4 STORMWATER			
SCDHEC WATER			
SCDHEC WASTEWATER			
SCDOT ENCROACHMENT UTILITY			
SCDOT ENCROACHMENT DRIVEWAY			
MUNICIPALITY DEVELOPMENT			
USACE DETERMINATION			
USACE PERMIT			

SCHEDULE OF DRAWINGS

RELEASE SCHEDULE

RELEASE NO.	DESCRIPTION	DATE
A.	RELEASED FOR PERMITTING	12-27-22
B.	RELEASED FOR PERMITTING	12-29-22
C.	RELEASED FOR PERMITTING	02-20-23
D.	RELEASED FOR PERMITTING	02-24-23

SEQUENCE OF CONSTRUCTION ACTIVITIES
ESTIMATED START DATE: 04/15/2023 ESTIMATED COMPLETION DATE: 01/01/2023
ITEMS MUST OCCUR IN THE ORDER LISTED; ITEMS CANNOT OCCUR CONCURRENTLY UNLESS SPECIFICALLY NOTED.

PHASE 1: (INITIAL)
1. RECEIVE NPDES COVERAGE FROM DHEC.
2. HOLD PRE-CONSTRUCTION MEETING.
3. NOTIFY DHEC EQC REGIONAL OFFICE OR OCRM OFFICE 48 HOURS PRIOR TO BEGINNING LAND-DISTURBING ACTIVITIES.
4. INSTALLATION OF CONSTRUCTION ENTRANCE.
5. CLEARING & GRUBBING ONLY AS NECESSARY FOR INSTALLATION OF PERIMETER CONTROLS.
6. INSTALLATION OF PERIMETER CONTROLS (E.G. SILT FENCE).
7. INSTALL TREE PROTECTION.
8. INSTALL INLET PROTECTION.
9. INSTALL SEDIMENT TUBES.
10. CLEARING & GRUBBING ONLY IN AREAS OF BASIN.

PHASES 2 & 3: (INTERMEDIATE & FINAL)
11. INSTALLATION OF BASIN AND INSTALLATION OF DIVERSIONS TO THOSE STRUCTURES (OUTLET STRUCTURES MUST BE COMPLETELY INSTALLED AS SHOWN ON THE DETAILS BEFORE PROCEEDING TO NEXT STEP; AREAS DRAINING TO THESE STRUCTURES CANNOT BE DISTURBED UNTIL THE STRUCTURES & DIVERSIONS TO THE STRUCTURES ARE COMPLETELY INSTALLED). INSTALL SURFACE DEWATERING SKIMMER PRIOR TO MOVING TO NEXT STEP.
12. CLEARING & GRUBBING OF SITE OR DEMOLITION (SEDIMENT & EROSION CONTROL MEASURES FOR THESE AREAS MUST ALREADY BE INSTALLED).
13. ROUGH GRADING.
14. INSTALLATION OF STORM DRAIN SYSTEM AND PLACEMENT OF INLET PROTECTION AS EACH INLET IS INSTALLED.
15. INSTALL ALL REQUIRED UTILITIES AND CURBING.
16. FINE GRADING, PAVING, ETC.
17. PLACE TOPSOIL & ESTABLISH FINISH GRADES.
18. PERMEABLE PAVERS SHALL BE LAID WHEN ALL HEAVY CONSTRUCTION IS COMPLETED.
19. CLEAN-OUT OF DETENTION BASINS THAT WERE USED AS SEDIMENT CONTROL STRUCTURES AND RE-GRADING OF DETENTION POND BOTTOMS; IF NECESSARY, MODIFICATION OF SEDIMENT BASIN RISER TO CONVERT TO DETENTION BASIN OUTLET STRUCTURE.
20. INSTALL PERMANENT SEEDING.
21. FLUSH ANY SEDIMENT FROM STORM SEWER PIPES AND INLETS.
22. REMOVAL OF TEMPORARY SEDIMENT & EROSION CONTROL MEASURES (INCLUDING SKIMMER) AFTER ENTIRE AREA DRAINING TO THE STRUCTURE IS FINALLY STABILIZED (THE DEPARTMENT RECOMMENDS THAT THE PROJECT OWNER / OPERATOR HAVE THE SWPPP PREPARER OR REGISTRATION EQUIVALENT APPROVE THE REMOVAL OF TEMPORARY STRUCTURES).
23. PERFORM AS-BUILT SURVEYS OF ALL DETENTION STRUCTURES AND SUBMIT TO DHEC OR MS4 FOR ACCEPTANCE.
24. SUBMIT NOTICE OF TERMINATION (NOT) TO DHEC AS APPROPRIATE.

- NOTE: PERFORM WEEKLY SITE INSPECTIONS DURING LAND DISTURBING ACTIVITIES AND MAKE RECOMMENDATIONS FOR ADDITIONAL BMPs OR MAINTENANCE OF EXISTING BMPs
- NOTE: ALL PUMPED DEWATERING SHALL BE PERFORMED USING AN APPROPRIATELY SIZED PUMPED WATER FILTER BAG.

SCDHEC-OCRM CERTIFICATION:
"I HAVE PLACED MY SIGNATURE AND SEAL ON THE DESIGN DOCUMENTS SUBMITTED SIGNIFYING THAT I ACCEPT RESPONSIBILITY FOR THE DESIGN OF THE SYSTEM. FURTHER, I CERTIFY TO THE BEST OF MY KNOWLEDGE AND BELIEF THAT THE DESIGN IS CONSISTENT WITH THE REQUIREMENTS OF TITLE 48, CHAPTER 14 OF THE CODE OF LAWS OF SC, 1976 AS AMENDED, PURSUANT TO REGULATION 72-300 ET SEQ. (IF APPLICABLE), AND IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF SCR100000."

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED 02/24/23
SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
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7		

PLAN REVISIONS

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

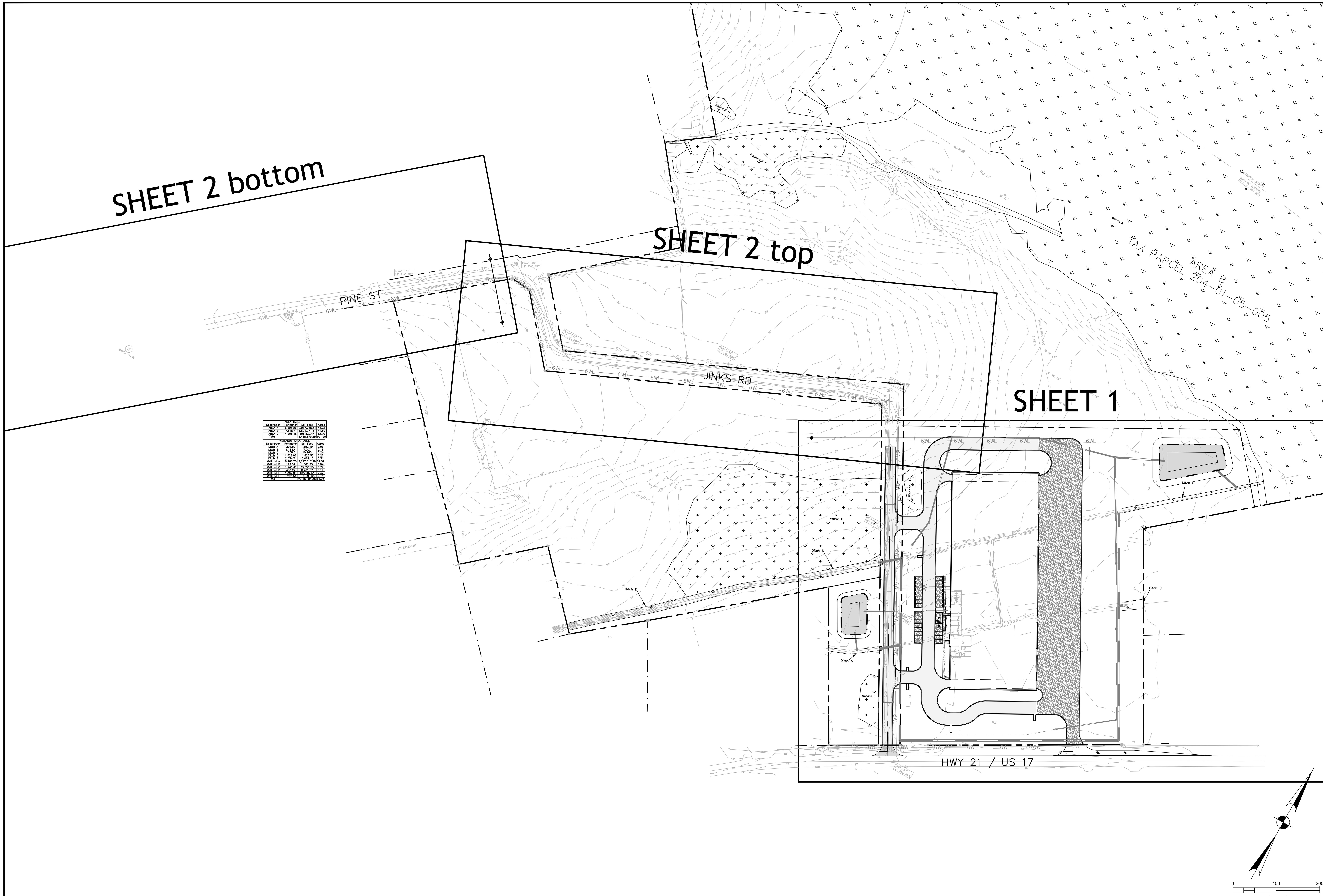
IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA
COVER SHEET & CONSTRUCTION NOTES

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET C001

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
AREA A	6,698.26	2,017,285.51	46.31
AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
Total		4,438,879.25	101.90

WETLANDS AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	1,186.4	7,907	0.18
Ditch C	1758.0	10,260	0.24
Ditch D	1,528.96	11,826.52	0.27
Ditch E	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
Wetland B	172.52	1,661.23	0.04
Wetland C	1,241.41	33,650.55	0.77
Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
Wetland F	295.51	4,680.65	0.11
Total		2,916,081.36	66.95

NOT FOR CONSTRUCTION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
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ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

SHEET INDEX

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C002

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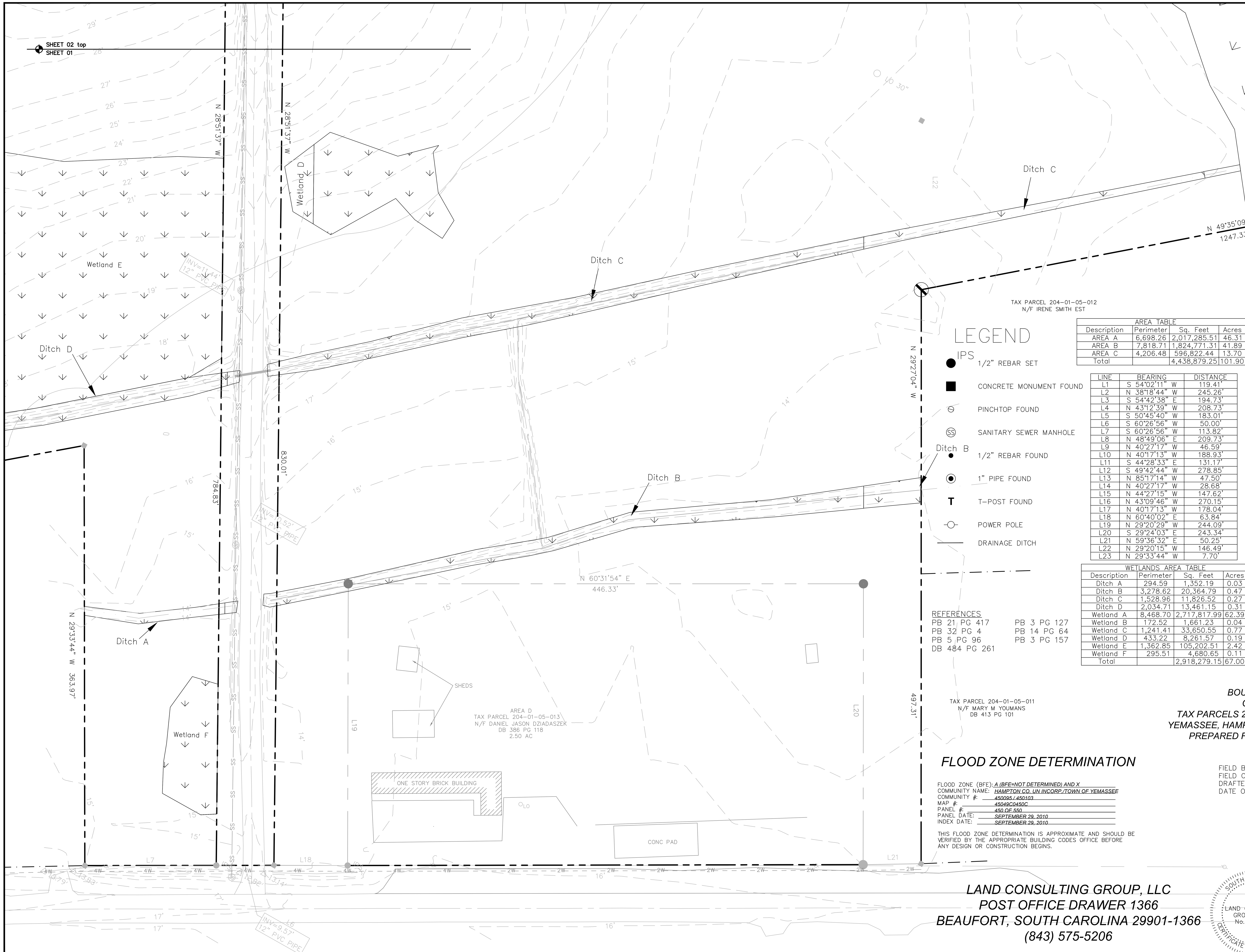

AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
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AREA B	7,818.71	1,824,771.31	41.89
AREA C	4,206.48	596,822.44	13.70
Total		4,438,879.25	101.90

LINE	BEARING	DISTANCE
L1	S 54°02'11" W	119.41'
L2	N 38°18'44" W	245.26'
L3	S 54°42'38" E	194.73'
L4	N 43°12'39" W	208.73'
L5	S 50°45'40" W	183.01'
L6	S 60°26'56" W	50.00'
L7	S 60°26'56" W	113.82'
L8	N 48°49'06" E	209.73'
L9	N 40°27'17" W	46.59'
L10	N 40°17'13" W	188.93'
L11	S 44°28'33" E	131.17'
L12	S 49°42'44" W	278.85'
L13	N 85°17'14" W	47.50'
L14	N 40°27'17" W	28.68'
L15	N 44°27'15" W	147.62'
L16	N 43°09'46" W	270.15'
L17	N 40°17'13" W	178.04'
L18	N 60°40'02" E	63.84'
L19	N 29°20'29" W	244.09'
L20	S 29°24'03" E	243.34'
L21	N 59°36'32" E	50.25'
L22	N 29°20'15" W	146.49'
L23	N 29°33'44" W	7.70'

WETLANDS AREA TABLE			
Description	Perimeter	Sq. Feet	Acres
Ditch A	294.59	1,352.19	0.03
Ditch B	3,278.62	20,364.79	0.47
Ditch C	1,528.96	11,826.52	0.27
Ditch D	2,034.71	13,461.15	0.31
Wetland A	8,468.70	2,717,817.99	62.39
Wetland B	172.52	1,661.23	0.04
Wetland C	1,241.41	33,650.55	0.77
Wetland D	433.22	8,261.57	0.19
Wetland E	1,362.85	105,202.51	2.42
Wetland F	295.51	4,680.65	0.11
Total		2,918,279.15	67.00

REFERENCES
PB 21 PG 417
PB 32 PG 4
PB 5 PG 96
DB 484 PG 261
PB 3 PG 127
PB 14 PG 64
PB 3 PG 157

THIS PLAT DOES NOT CERTIFY THAT THE INFORMATION SHOWN HEREON COMPLIES WITH LOCAL ZONING REGULATIONS. THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF OVERLAY DISTRICTS OR SPECIAL HAZARD AREAS SUCH AS BUT NOT LIMITED TO AIRPORT AND AICUZ ZONES.

THIS PLAT REPRESENTS CONDITIONS FOUND ON 4/1/2022 AND DOES NOT REPRESENT CONDITIONS FOUND ON ANY OTHER DATE.

THIS PLAT WAS SURVEYED BASED ON REFERENCED DOCUMENTS AND WAS NOT SURVEYED IN COORDINATION WITH A TITLE EXAMINATION. THE SURVEYOR DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF EASEMENTS.

THE AREA CALCULATIONS SHOWN HEREON WERE DETERMINED BY THE COORDINATE METHOD.

THE PRESENCE OR ABSENCE OF REGULATED NATURAL RESOURCES (SUCH AS, BUT NOT LIMITED TO, CRITICAL AREAS, FRESHWATER WETLANDS, SPECIMEN TREES, AND HISTORICALLY SIGNIFICANT SITES AND CULTURAL RESOURCES) WAS NOT DETERMINED AT THIS TIME OTHER THAN THOSE SHOWN HEREON AND ACCOMPANIED BY THE CERTIFICATION OR APPROVAL OF APPROPRIATE REGULATORY AGENCY.

THIS PLAT DOES NOT CERTIFY TO THE PRESENCE OR ABSENCE OF UNDERGROUND FEATURES, (INCLUDING, BUT NOT LIMITED TO UTILITIES, STORAGE TANKS, AND SIMILAR).

THE VERTICAL DATUM FOR FLOOD ZONE INFORMATION AND TOPOGRAPHY IS NAVD 1988 AND WAS DETERMINED USING THE SC VRS NETWORK.

ZONING AND SETBACKS WERE NOT DETERMINED AT THIS TIME

BOUNDARY SURVEY OF
CORBETT TRACT
TAX PARCELS 204-01-05-005 AND 203-00-00-046
YEMASSEE, HAMPTON COUNTY, SOUTH CAROLINA
PREPARED FOR RAMSEY DEVELOPMENT

JOB # 6024

FIELD BOOK: ELECTRONIC
FIELD CREW: LF/PW
DRAFTER: LF/PW
DATE OF FIELDWORK: 04/01/2022

FLOOD ZONE DETERMINATION

FLOOD ZONE (BFE): *A (BFE=NOT DETERMINED) AND X*
COMMUNITY NAME: *HAMPTON CO. UN INCORP./TOWN OF YEMASSEE*
COMMUNITY #: *450095 / 450103*
MAP #: *45049C0450C*
PANEL #: *450 OF 550*
PANEL DATE: *SEPTEMBER 29, 2010*
INDEX DATE: *SEPTEMBER 29, 2010*

THIS FLOOD ZONE DETERMINATION IS APPROXIMATE AND SHOULD BE VERIFIED BY THE APPROPRIATE BUILDING CODES OFFICE BEFORE ANY DESIGN OR CONSTRUCTION BEGINS.

LAND CONSULTING GROUP, LLC
POST OFFICE DRAWER 1366
BEAUFORT, SOUTH CAROLINA 29901-1366
(843) 575-5206

SOUTH CAROLINA LAND CONSULTING GROUP, LLC No. C02082 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE
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PLAN REVISIONS

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

EXISTING CONDITIONS PLAN

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C101

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NOT FOR CONSTRUCTION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED 02/24/23

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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PLAN REVISIONS

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
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WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

EXISTING CONDITIONS PLAN

VERTICAL DATUM:
NAVD88

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SHEET
C102

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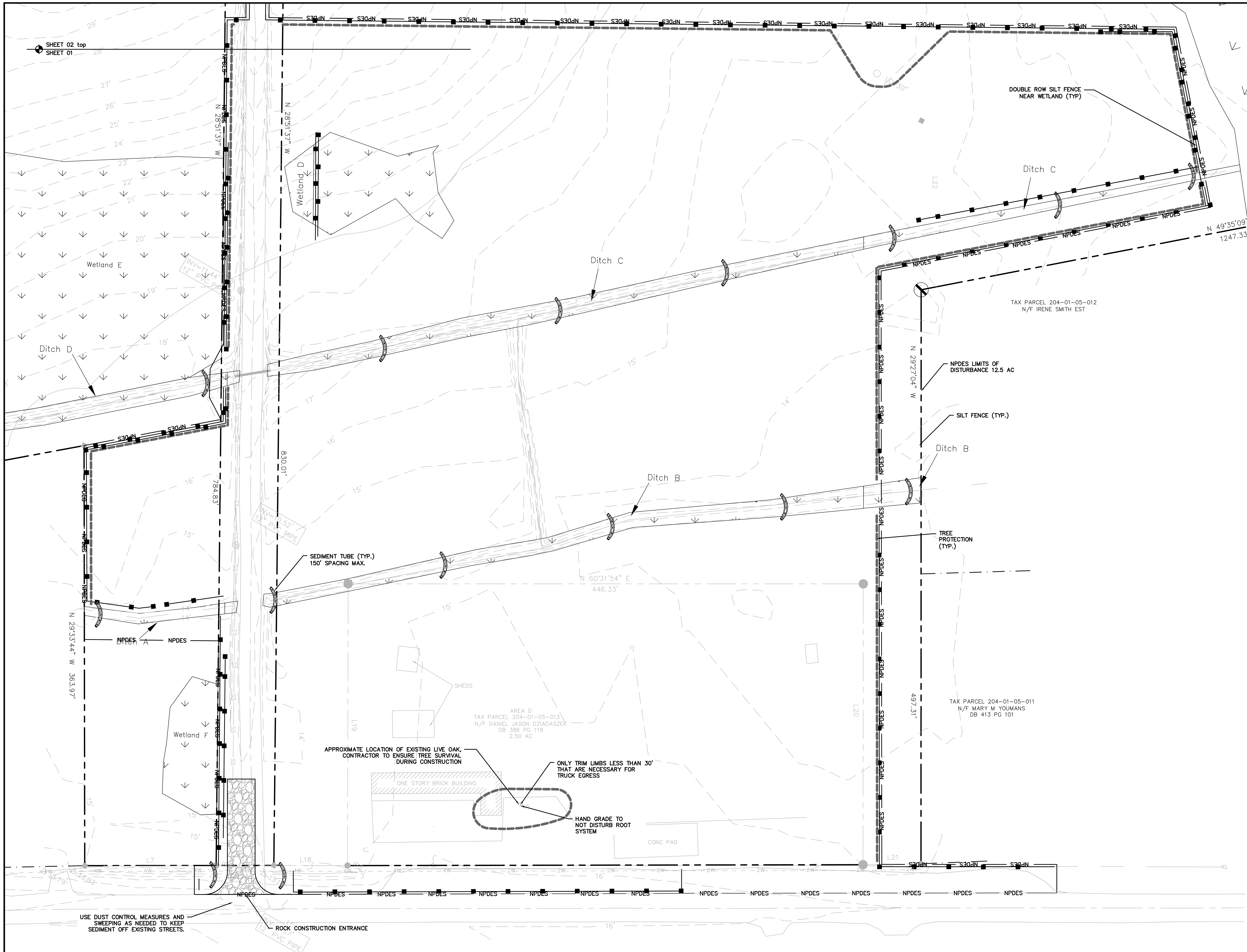

LIMITS OF DISTURBANCE:	NPDES

EROSION PREVENTION

LAND GRADING:	LG OR
SURFACE ROUGHENING:	
TOPSOILING:	
TEMPORARY SEEDING:	TS
MULCHING:	M
ECB OR TRM:	
FGM:	FGM
BFM:	BFM
PERMANENT SEEDING:	PS
SODDING:	SO
RIPRAP:	
OUTLET PROTECTION:	RIPRAP / ECB or TRM
DUST CONTROL:	DC
POLYACRYLAMIDE (PAM):	PAM

SEDIMENT CONTROL

SEDIMENT BASIN:	
TEMPORARY SEDIMENT TRAP:	
ROCK SEDIMENT DIKE:	
ROCK CHECK DAM:	OR
SEDIMENT TUBE:	
SILT FENCE:	
REINFORCED SILT FENCE:	
TYPE A–FABRIC INLET PROTECTION:	A
TYPE A–SEDIMENT TUBE INLET PROTECTION:	A
TYPE B – WIRE MESH AND STONE DROP INLET PROTECTION:	B
TYPE C – BLOCK AND GRAVEL INLET PROTECTION:	C
TYPE D – RIGID INLET FILTERS:	D
TYPE E – SURFACE COURSE CURB INLET FILTER:	E
TYPE F – INLET TUBE:	F
TYPE FC – FILTER BAG CURB INLET PROTECTION:	FC
TYPE FB – FILTER BAG GRATE INLET PROTECTION:	FG
CONCRETE WASHOUT	CWS

RUNOFF CONVEYANCE MEASURES

VEGETATED CHANNELS:	
RIPRAP–LINED CHANNELS:	
ECB OR TRM–LINED CHANNELS:	
PAVED CHANNELS:	PC PC PC
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	TD TD
PERMANENT DIVERSION DITCH:	PD PD
DIVERSION DIKE OR BERM:	DD DD
LEVEL SPREADER:	
SUBSURFACE DRAIN:	SSD SSD

NOT FOR CONSTRUCTION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
	PLAN REVISIONS	
1		
2		
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7		

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

INITIAL EROSION CONTROL PLAN

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C201

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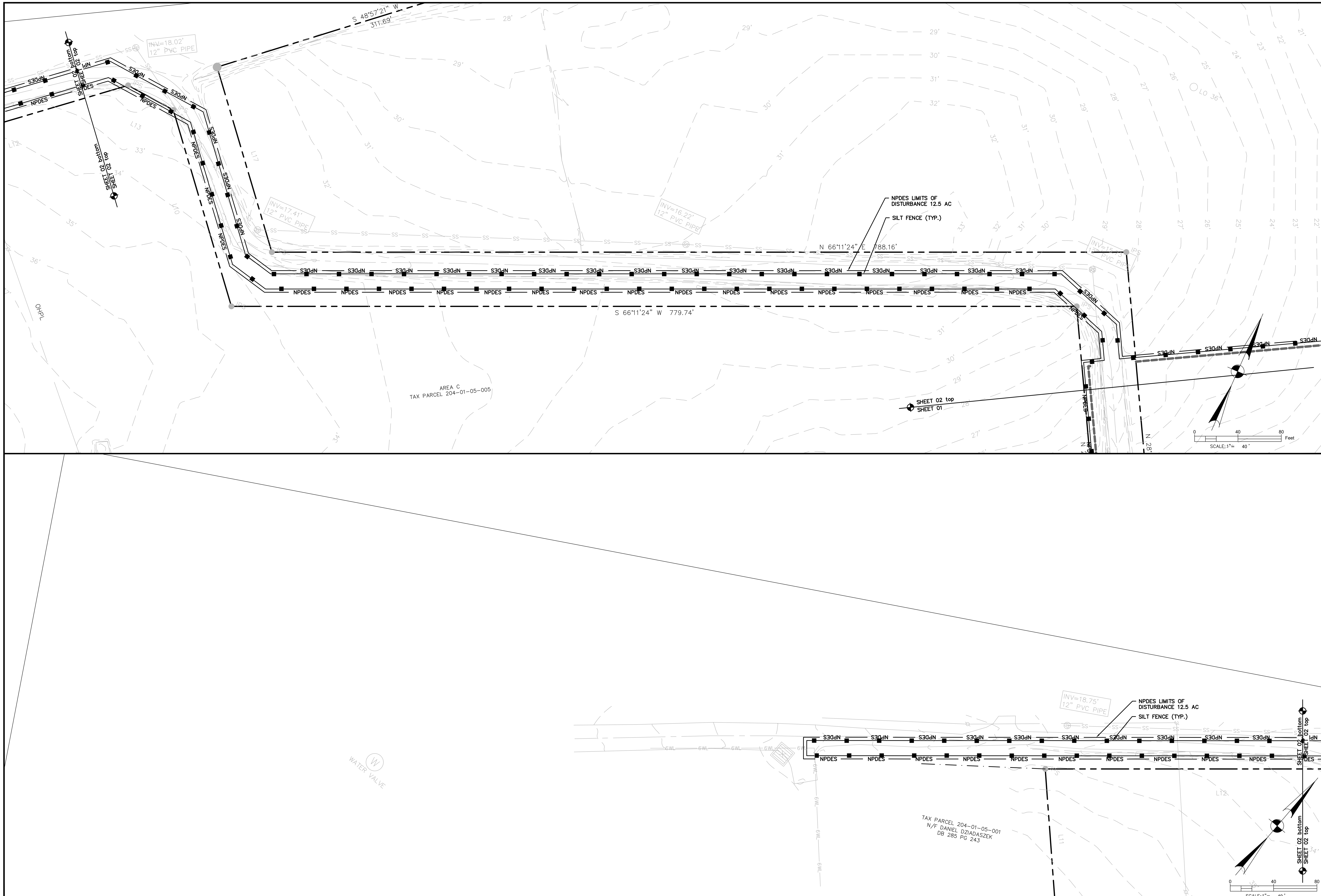

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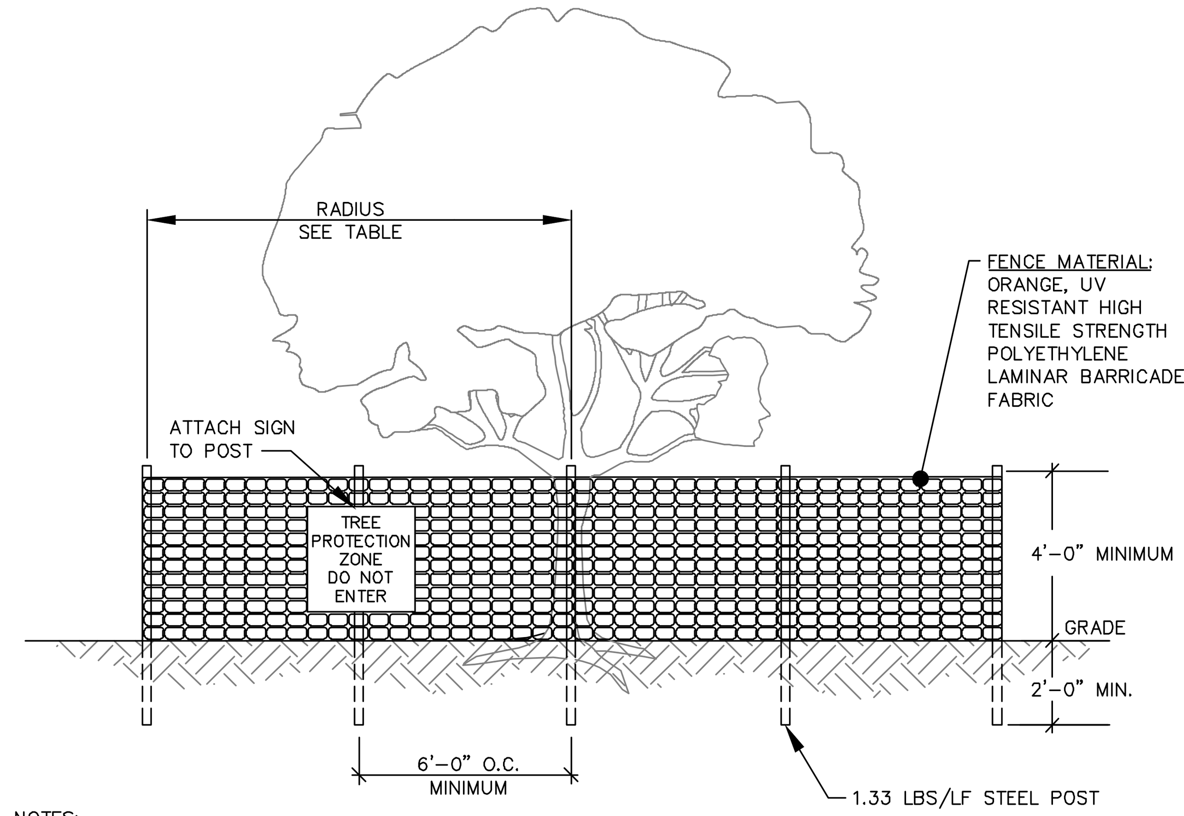


NOTES:
1. ALL TREES DESIGNATED TO BE SAVED SHALL BE PROTECTED BY FENCING.
2. INSTALL TREE PROTECTION FENCE TO RADIUS INDICATED IN TABLE UNLESS OTHERWISE INDICATED ON PLANS.
3. WARNING SIGNS TO BE MADE OF DURABLE WATERPROOF MATERIAL.
4. ALL WARNING SIGN LETTERS TO BE AT LEAST 3 INCHES HIGH, CLEARLY LEGIBLE AND SPACED A MINIMUM OF ONE EVERY 40 FT. FOR PROTECTION AREAS LESS THAN 40 FT IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER SIDE.
5. THE SIZE OF EACH WARNING SIGN MUST BE A MINIMUM OF 2' x 2' AND BE VISIBLE FROM BOTH SIDES OF THE FENCE.
6. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
7. THERE SHALL BE NO STORAGE OF MATERIAL WITHIN THE BOUNDARIES OF THE TREE PROTECTION FENCING.
8. TREE PROTECTION FENCING SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. FENCING MUST REMAIN UPRIGHT AND SLACK FREE.

TABLE – RADIUS OF TREE PROTECTION ZONE (TPZ)

JURISDICTION	RADIUS OF CIRCULAR TPZ
BEAUFORT COUNTY BEAUFORT CO. DEV. CODE 5.11.100	1 FOOT PER INCH OF TRUNK DBH
TOWN OF BLUFFTON UDO 5.3.3	1.5 FEET PER INCH OF TRUNK DBH OR 10 FEET WHICHEVER IS GREATER
TOWN OF HILTON HEAD LMO 16–6–104, J–3A	FENCING AT DRIP LINE FOR ALL TREES TO BE RETAINED
CITY OF BEAUFORT BEAUFORT CODE 5.3.3	0.5 FOOT PER INCH OF TRUNK DBH
JASPER COUNTY ZONING ORD. ART. 13.5	FENCING AT DRIP LINE FOR ALL TREES TO BE RETAINED
TOWN OF PORT ROYAL PORT ROYAL CODE 5.7.70	1.5 FEET PER INCH OF TRUNK DBH OR 5 FEET WHICHEVER IS GREATER
CITY OF HARDEEVILLE MZ&DO 4.8, F–3	FENCING AT DRIP LINE FOR ALL TREES TO BE RETAINED

DBH = TRUNK DIAMETER AT BREAST HEIGHT

TREE PROTECTION FENCE

DETAIL #02915-008

ADHESIVE	WATER DILUTION	NOZZLE TYPE	APPLICATION (GAL./ACRE)
ANIONIC ASPHALT EMULSION	7:1*	COARSE SPRAY	1,200
LATEX EMULSION	12.5:1*	FINE SPRAY	235
RESIN–IN–WATER EMULSION	4:1*	FINE SPRAY	300

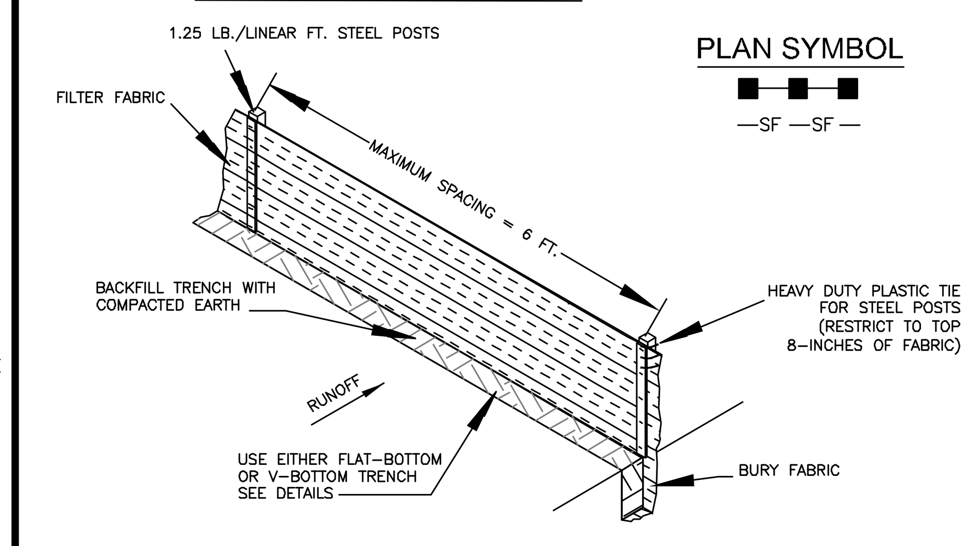
*USE MANUFACTURER'S RECOMMENDATIONS WHEN AVAILABLE.

MAINTENANCE:
- PROHIBIT TRAFFIC ON SURFACE AFTER SPRAYING.
- SUPPLEMENT SURFACE COVERING AS NEEDED.

INSTALLATION:
- APPLY ACCORDING TO APPROVED PLAN.
- MULCH DISTURBED AREAS AMD TACKIFY WITH RESINS SUCH AS ASPHALT, CURASOL OR TERRATACK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
- STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT VEGETATION.
- IRRIGATE DISTURBED AREAS UNTIL SURFACE IS WET.
- COVER SURFACES WITH CRUSHED STONE OR GRAVEL.
- APPLY CALCIUM CHLORIDE AT A RATE TO KEEP SURFACES MOIST.
- APPLY SPRAY–ON ADHESIVES TO MINERAL SOILS (NOT MUCK SOILS) AS DESCRIBED IN TABLE 1.

(DC) DUST CONTROL ON DISTURBED AREAS

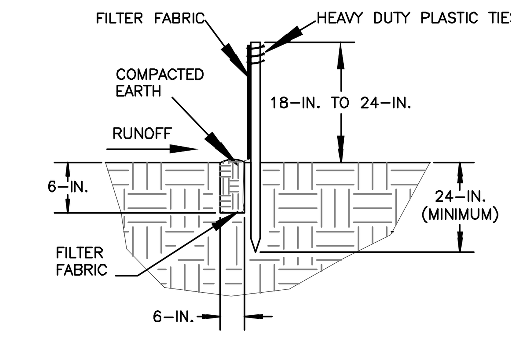
SILT FENCE INSTALLATION



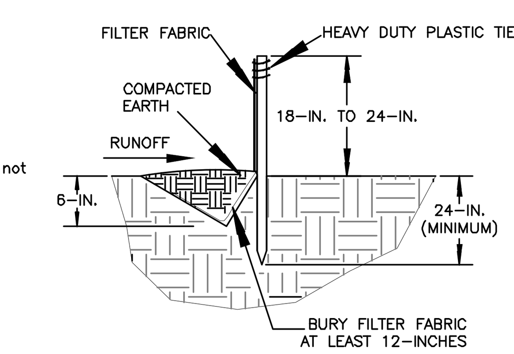
PLAN SYMBOL

—SF — SF —

FLAT-BOTTOM TRENCH DETAIL



V-SHAPED TRENCH DETAIL



SILT FENCE – GENERAL NOTES
1. Do not place silt fence across channels or in other areas subject to concentrated flows. Silt fence should not be used as a velocity control BMP. Concentrated flows are any flows greater than 0.5 cfs.
2. Maximum sheet or overland flow path length to the silt fence shall be 100–feet.
3. Maximum slope steepness (normal [perpendicular] to the fence line) shall be 2:1.
4. Silt fence joints, when necessary, shall be completed by one of the following options:
   – Wrap each fabric together at a support post with both ends fastened to the post, with a 1–foot minimum overlap;
   – Overlap silt fence by installing 3–feet passed the support post to which the new silt fence roll is attached. Attach old roll to new roll with heavy–duty plastic ties; or,
   – Overlap entire width of each silt fence roll from one support post to the next support post.
5. Attach filter fabric to the steel posts using heavy–duty plastic ties that are evenly spaced within the top 8–inches of the fabric.
6. Install the silt fence perpendicular to the direction of the stormwater flow and place the silt fence the proper distance from the toe of steep slopes to provide sediment storage and access for maintenance and cleanout.
7. Install Silt Fence Checks (Tie–Backs) every 50–100 feet, dependent on slope, along silt fence that is installed with slope and where concentrated flows are expected or are documented along the proposed/installed silt fence.

South Carolina Department of Health and Environmental Control
SILT FENCE
STANDARD DRAWING NO. SC–03 Page 1 of 2
NOT TO SCALE FEBRUARY 2014 DATE

SILT FENCE – POST REQUIREMENTS
1. Silt Fence posts must be 48–inch long steel posts that meet, at a minimum, the following physical characteristics.
   – Composed of a high strength steel with a minimum yield strength of 50,000 psi.
   – Include a standard "T" section with a nominal face width of 1.38–inches and a nominal "T" length of 1.48–inches.
   – Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Steel posts may need to have a metal soil stabilization plate welded near the bottom when installed along steep slopes or installed in loose soils. The plate should have a minimum cross section of 17–square inches and be composed of 15 gauge steel, at a minimum. The metal soil stabilization plate should be completely buried.
4. Install posts to a minimum of 24–inches. A minimum height of 1– to 2–inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
5. Post spacing shall be at a maximum of 6–feet on center.

SILT FENCE – FABRIC REQUIREMENTS
1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
   – Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
   – Free of any treatment or coating which might adversely alter its physical properties after installation;
   – Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
   – Have a minimum width of 36–inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12–inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24–inches above the ground.

SILT FENCE – INSPECTION & MAINTENANCE
1. The key to functional silt fence is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of silt fence shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.
3. Attention to sediment accumulations along the silt fence is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the silt fence.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the silt fence, or where the fence has sagged or collapsed due to runoff overtopping the silt fence. Install checks/tie–backs and/or reinstall silt fence, as necessary.
7. Check for tears within the silt fence, areas where silt fence has begun to decompose, and for any other circumstance that may render the silt fence ineffective. Removed damaged silt fence and reinstall new silt fence immediately.
8. Silt fence should be removed within 30 days after final stabilization is achieved and once it is removed, the resulting disturbed area shall be permanently stabilized.

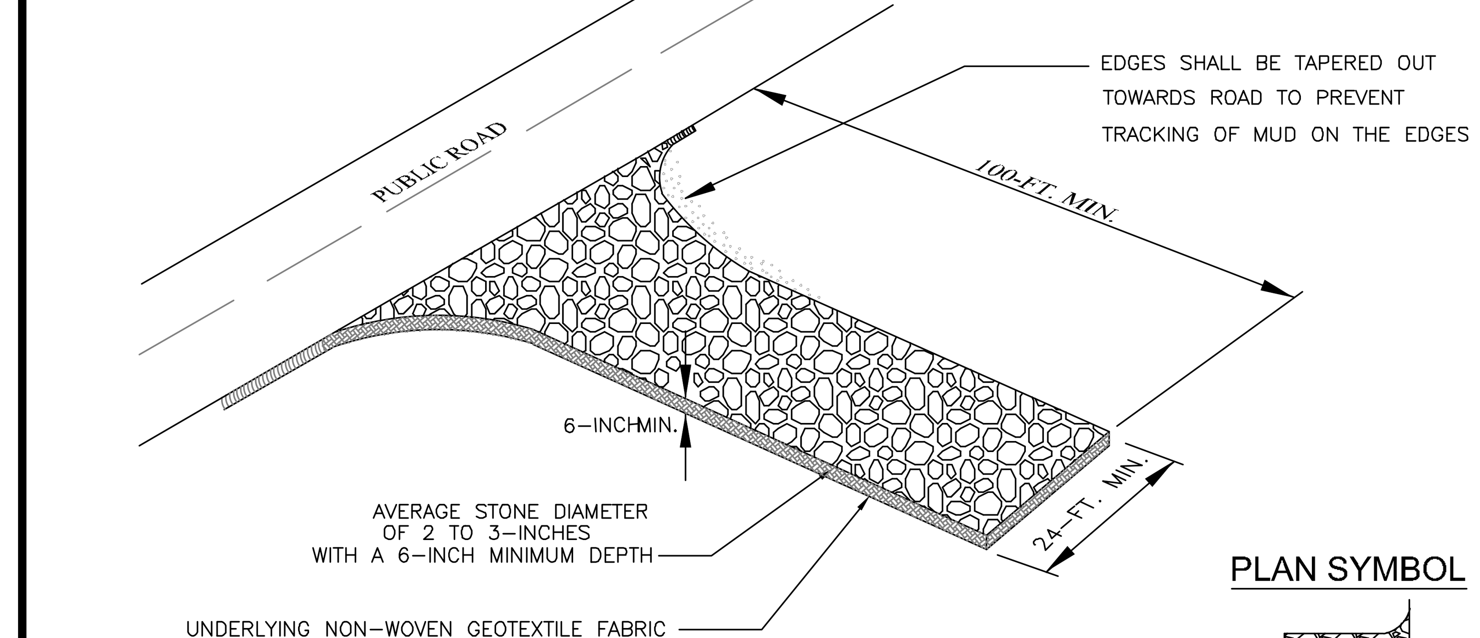
South Carolina Department of Health and Environmental Control
SILT FENCE
STANDARD DRAWING NO. SC–03 PAGE 2 of 2
GENERAL NOTES FEBRUARY 2014 DATE

TYPE A – FILTER FABRIC REQUIREMENTS
1. Silt fence must be composed of woven geotextile filter fabric that consists of the following requirements:
– Composed of fibers consisting of long chain synthetic polymers of at least 85% by weight of polyolefins, polyesters, or polyamides that are formed into a network such that the filaments or yarns retain dimensional stability relative to each other;
– Free of any treatment or coating which might adversely alter its physical properties after installation;
– Free of any defects or flaws that significantly affect its physical and/or filtering properties; and,
– Have a minimum width of 36–inches.
2. Use only fabric appearing on SC DOT's Qualified Products Listing (QPL), Approval Sheet #34, meeting the requirements of the most current edition of the SC DOT Standard Specifications for Highway Construction.
3. 12–inches of the fabric should be placed within excavated trench and toed in when the trench is backfilled.
4. Filter Fabric shall be purchased in continuous rolls and cut to the length of the barrier to avoid joints.
5. Filter Fabric shall be installed at a minimum of 24–inches above the ground.

TYPE A – POST REQUIREMENTS
1. Silt Fence posts must be 48–inch long steel posts that meet, at a minimum, the following physical characteristics.
– Composed of a high strength steel with a minimum yield strength of 50,000 psi.
– Include a standard "T" section with a nominal face width of 1.38–inches and a nominal "T" length of 1.48–inches.
– Weigh 1.25 pounds per foot (± 8%)
2. Posts shall be equipped with projections to aid in fastening of filter fabric.
3. Install posts to a minimum of 24–inches. A minimum height of 1– to 2– inches above the fabric shall be maintained, and a maximum height of 3 feet shall be maintained above the ground.
4. Post spacing shall be at a maximum of 3–feet on center.

TYPE A – INSPECTION & MAINTENANCE
1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of inlet protection shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.
3. Attention to sediment accumulations along the filter fabric is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the filter fabric. When a sump is installed in front of the fabric, sediment should be removed when it fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Check for areas where stormwater runoff has eroded a channel beneath the filter fabric, or where the fabric has sagged or collapsed due to runoff overtopping the inlet protection.
7. Check for tears within the filter fabric, areas where fabric has begun to decompose, and for any other circumstance that may render the inlet protection ineffective. Removed damaged fabric and reinstall new filter fabric immediately.
8. Inlet protection structures should be removed after all the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

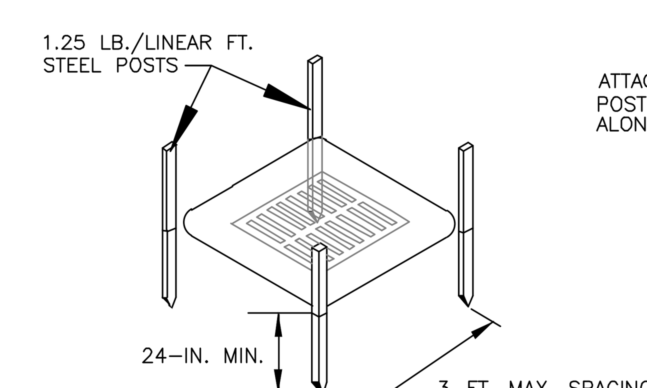
South Carolina Department of Health and Environmental Control
Type A
FILTER FABIC INLET PROTECTION
STANDARD DRAWING NO. SC–07 PAGE 2 of 2
GENERAL NOTES FEBRUARY 2014 DATE



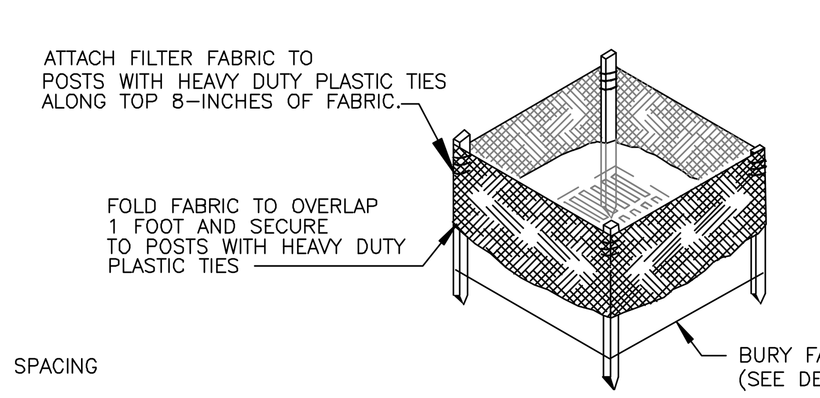
PLAN SYMBOL

SPECIFICATION	SIZE
ROCK PAD THICKNESS	6 INCHES
ROCK PAD WIDTH	24 FEET
ROCK PAD LENGTH	100 FEET
ROCK PAD STONE SIZE	D = 2–3 INCHES

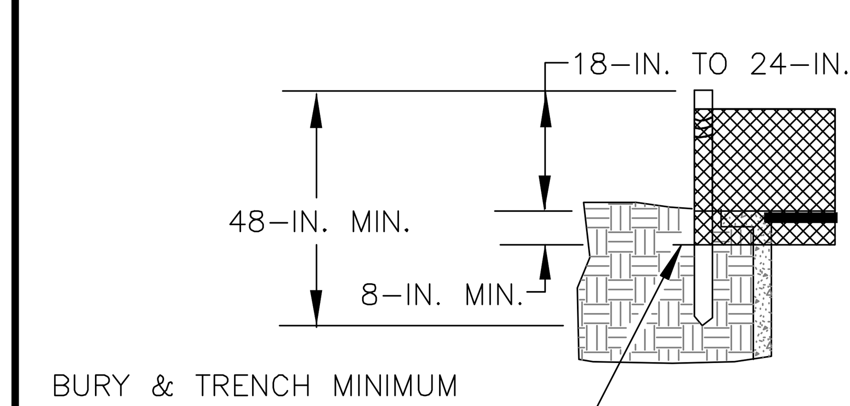
South Carolina Department of Health and Environmental Control
CONSTRUCTION ENTRANCE
STANDARD DRAWING NO. SC–06 PAGE 1 of 2
NOT TO SCALE FEBRUARY 2014 DATE



POST INSTALLATION DETAIL



FILTER FABRIC INSTALLATION DETAIL



FILTER FABRIC BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control
Type A
FILTER FABIC INLET PROTECTION
STANDARD DRAWING NO. SC–07 PAGE 1 of 2
NOT TO SCALE FEBRUARY 2014 DATE

CONSTRUCTION ENTRANCE – GENERAL NOTES
1. Stabilized construction entrances should be used at all points where traffic will egress/ingress a construction site onto a public road or any impervious surfaces, such as parking lots.
2. Install a non–woven geotextile fabric prior to placing any stone.
3. Install a culvert pipe across the entrance when needed to provide positive drainage.
4. The entrance shall consist of 2–inch to 3–inch D50 stone placed at a minimum depth of 6–inches.
5. Minimum dimensions of the entrance shall be 24–feet wide by 100–feet long, and may be modified as necessary to accommodate site constraints.
6. The edges of the entrance shall be tapered out towards the road to prevent tracking at the edge of the entrance.
7. Divert all surface runoff and drainage from the stone pad to a sediment trap or basin or other sediment trapping structure.
8. Limestone may not be used for the stone pad.

CONSTR. ENTRANCE – INSPECTION & MAINTENANCE
1. The key to functional construction entrances is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of construction entrances shall be conducted once every calendar week and, as recommended, within 24–hours after each rainfall even that produces 1/2–inch or more of precipitation.
3. During regular inspections, check for mud and sediment buildup and pad integrity. Inspection frequencies may need to be more frequent during long periods of wet weather.
4. Reshape the stone pad as necessary for drainage and runoff control.
5. Wash or replace stones as needed and as directed by site inspector. The stone in the entrance should be washed or replaced whenever the entrance fails to reduce the amount of mud being carried off–site by vehicles. Frequent washing will extend the useful life of stone pad.
6. Immediately remove mud and sediment tracked or washed onto adjacent impervious surfaces by brushing or sweeping. Flushing should only be used when the water can be discharged to a sediment trap or basin.
7. During maintenance activities, any broken pavement should be repaired immediately.
8. Construction entrances should be removed after the site has reached final stabilization. Permanent vegetation should replace areas from which construction entrances have been removed, unless area will be converted to an impervious surface to serve post–construction.

South Carolina Department of Health and Environmental Control
CONSTRUCTION ENTRANCE
STANDARD DRAWING NO. SC–06 PAGE 2 of 2
GENERAL NOTES FEBRUARY 2014 DATE

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

INITIAL EROSION CONTROL DETAILS

VERTICAL DATUM:
NAVD88

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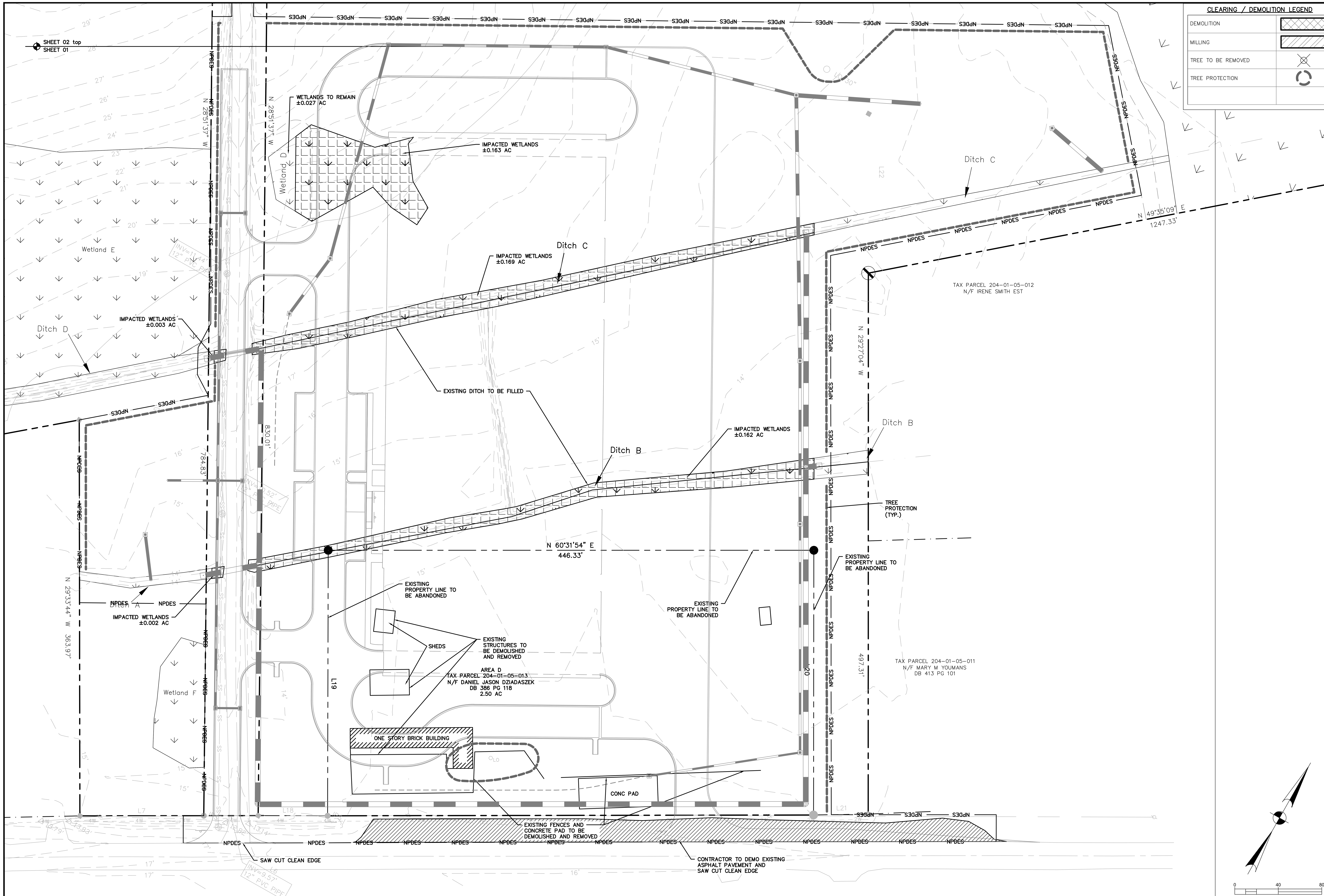

CLEARING / DEMOLITION LEGEND

DEMOLITION	
MILLING	
TREE TO BE REMOVED	
TREE PROTECTION	

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

CLEARING & DEMOLITION PLAN

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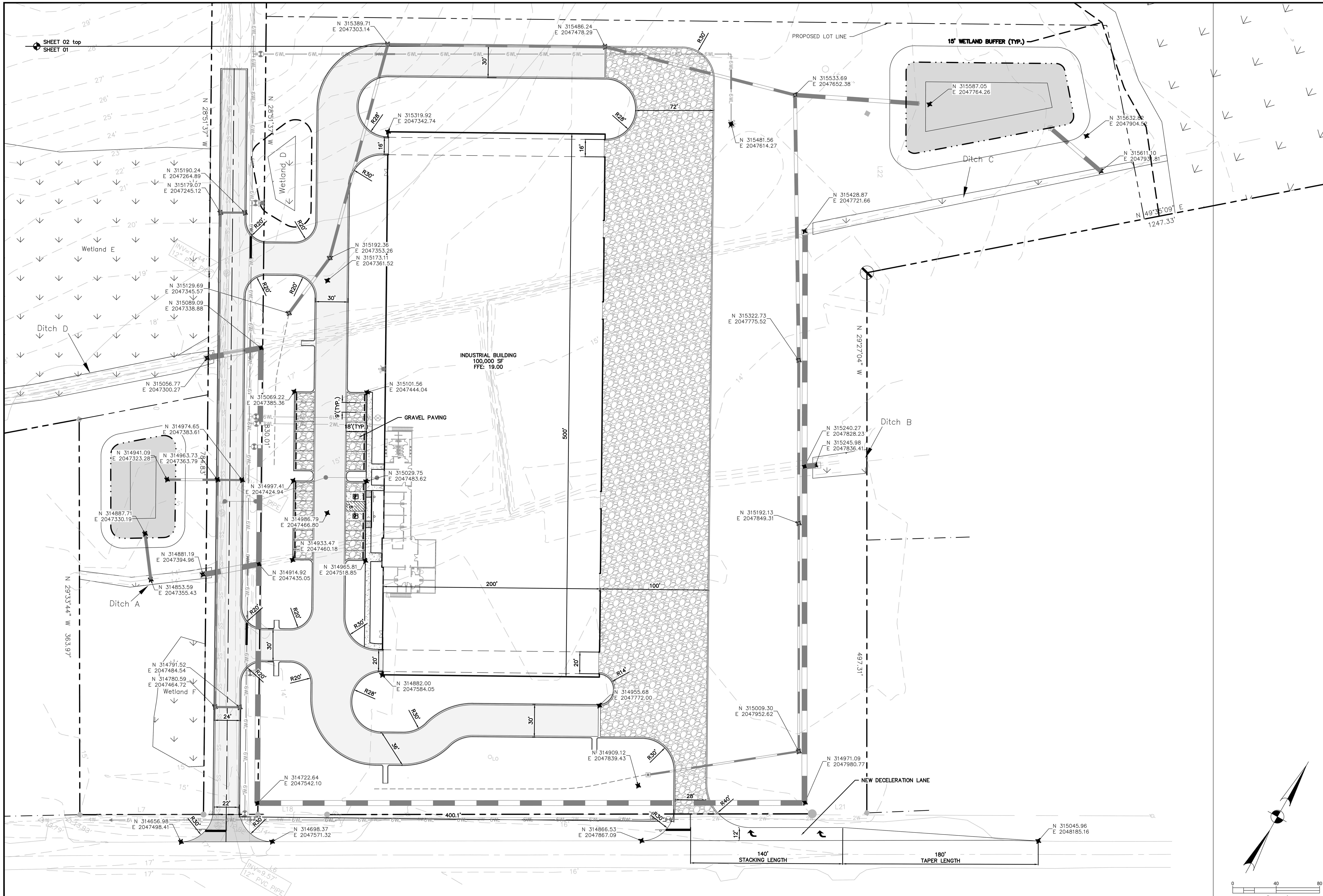

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SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE

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IRONLINE METALS

TOWN OF YEMASSEE, SOUTH CAROLINA

RAMSEY DEVELOPMENT, LLC

TELL CITY, INDIANA

SITE LAYOUT PLAN

VERTICAL DATUM: NAVD88

PROJECT #:	210148
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SHEET C401

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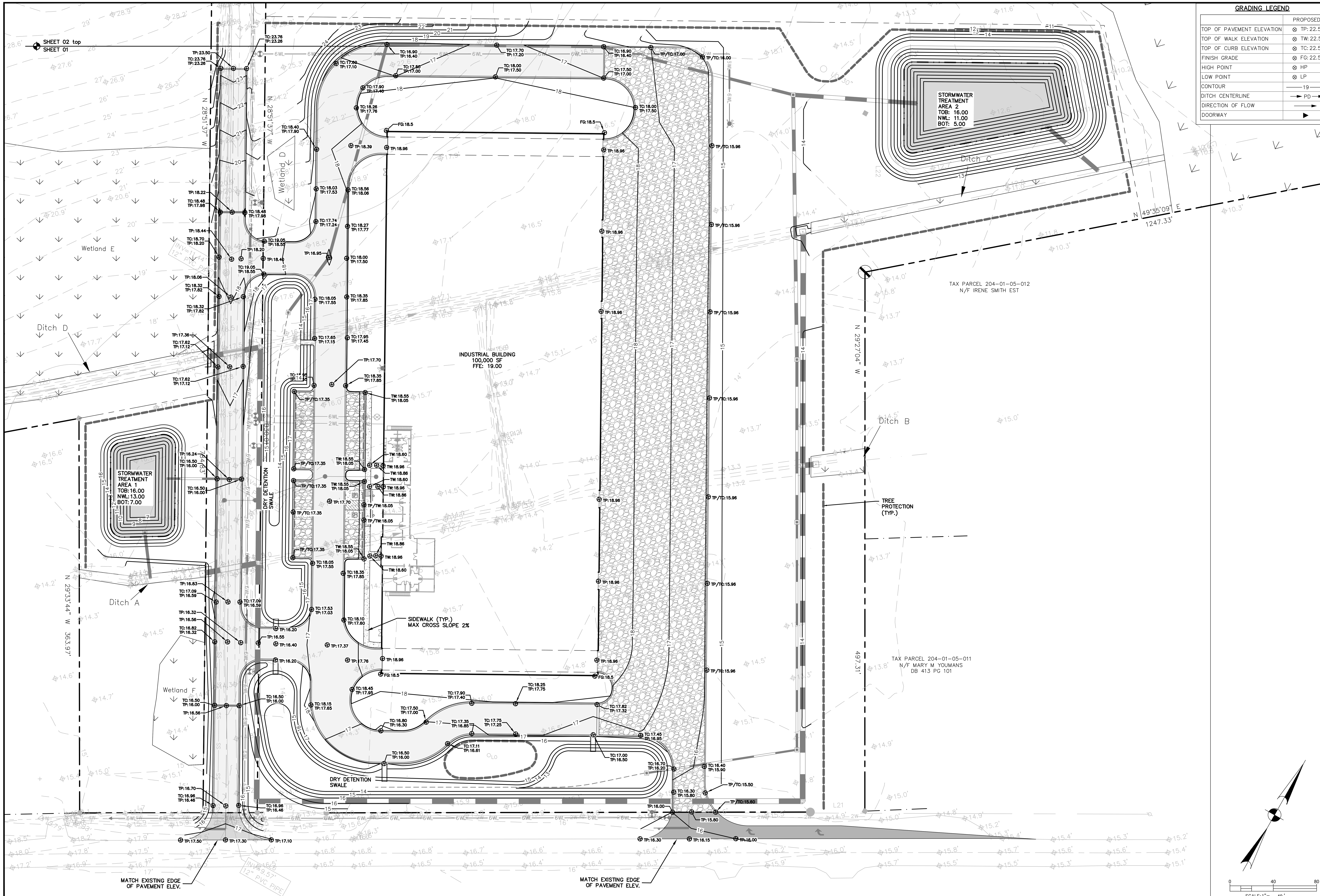

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA

RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

GRADING PLAN

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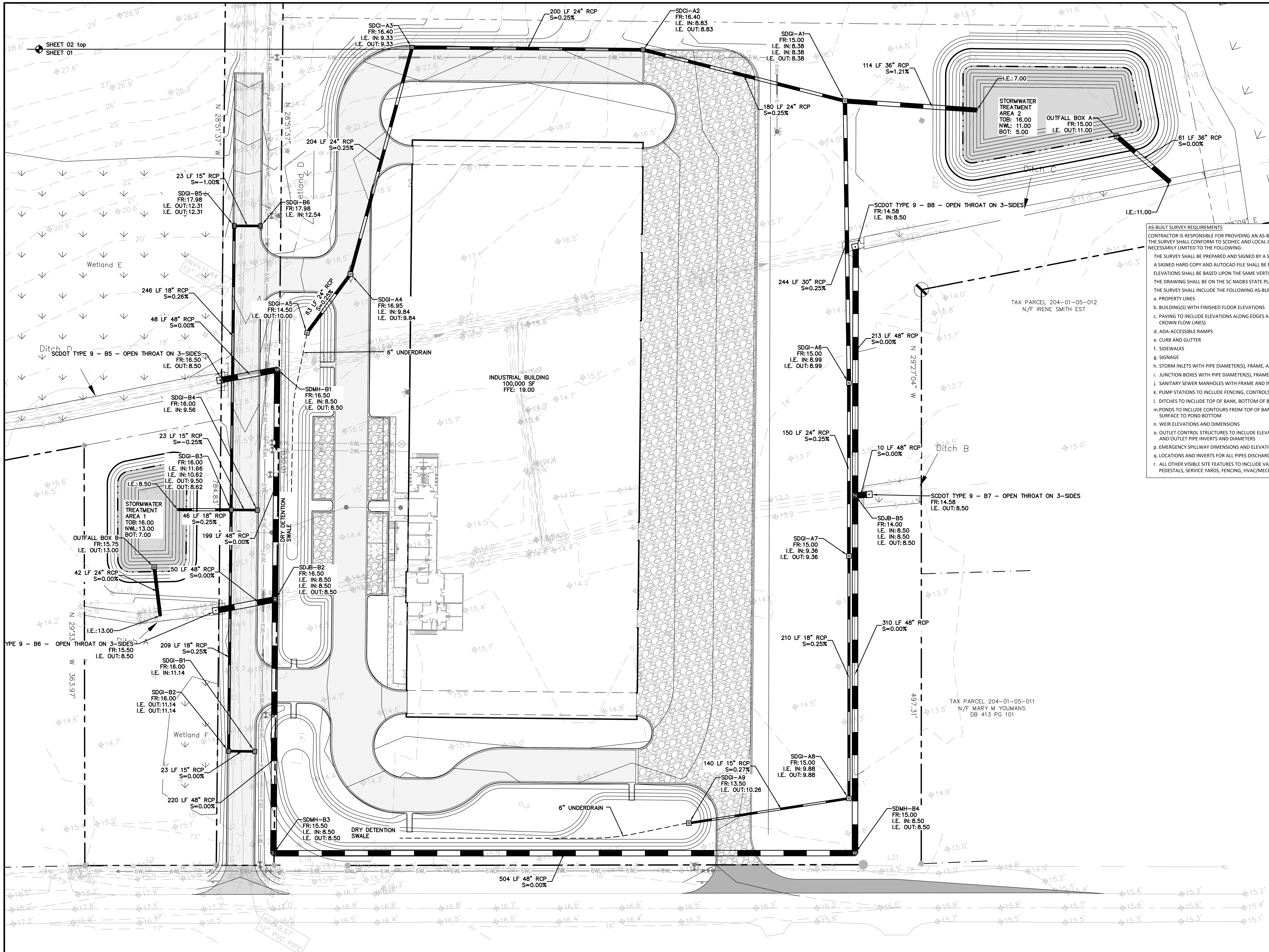

STORM SEWER/DRAINAGE LEGEND

	PROPOSED
DROP INLET	DI: A1
CURB INLET (WITH GRATE)	CI: A1
TYPE 16 CURB INLET	CI: A1
VALLEY GUTTER INLET	VI: A1
TRENCH DRAIN	TD: A1
WEIR INLET	WI: A1
YARD INLET	YI: A1
JUNCTION BOX	JB: A1
CLEANOUT	CO
DOWNSPOUT	
STORM DRAIN	
UNDERDRAIN	
ROOF DRAIN COLLECTOR	
FLARED END SECTION	
HEADWALL	
HEADWALL WITH WINGS	
OUTLET CONTROL STRUCTURE	
DITCH CENTERLINE	PD
DIRECTION OF FLOW	

AS-BUILT SURVEY REQUIREMENTS

CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN AS-BUILT TOPOGRAPHIC SURVEY OF THE CONSTRUCTED PROJECT SITE. THE SURVEY SHALL CONFORM TO SCDHEC AND LOCAL GOVERNMENT AS-BUILT REQUIREMENTS INCLUDING, BUT NOT NECESSARILY LIMITED TO THE FOLLOWING:

THE SURVEY SHALL BE PREPARED AND SIGNED BY A SOUTH CAROLINA LICENSED LAND SURVEYOR.

A SIGNED HARD COPY AND AUTOCAD FILE SHALL BE PROVIDED TO THE ENGINEER.

ELEVATIONS SHALL BE BASED UPON THE SAME VERTICAL DATUM USED IN THE ENGINEERING PLANS.

THE DRAWING SHALL BE ON THE SC NAD83 STATE PLANE COORDINATE SYSTEM.

THE SURVEY SHALL INCLUDE THE FOLLOWING AS-BUILT INFORMATION TO INCLUDE LOCATION AND ELEVATIONS:

a. PROPERTY LINES
b. BUILDING(S) WITH FINISHED FLOOR ELEVATIONS
c. PAVING TO INCLUDE ELEVATIONS ALONG EDGES AND INTERNAL RIDGES AND VALLEYS (I.E. ROAD CROWNS, INVERTED CROWN FLOW LINES)
d. ADA-ACCESSIBLE RAMPS
e. CURB AND GUTTER
f. SIDEWALKS
g. SIGNAGE
h. STORM INLETS WITH PIPE DIAMETER(S), FRAME, AND INVERT
i. JUNCTION BOXES WITH PIPE DIAMETER(S), FRAME, AND INVERT
j. SANITARY SEWER MANHOLES WITH FRAME AND INVERT
k. PUMP STATIONS TO INCLUDE FENCING, CONTROLS, DRIVEWAY, WETWELL TOP/BOTTOM ELEVATIONS
l. DITCHES TO INCLUDE TOP OF BANK, BOTTOM OF BANK, AND CENTERLINE
m. PONDS TO INCLUDE CONTOURS FROM TOP OF BANK TO WATER SURFACE AND MEASURED DEPTH FROM WATER SURFACE TO POND BOTTOM
n. WEIR ELEVATIONS AND DIMENSIONS
o. OUTLET CONTROL STRUCTURES TO INCLUDE ELEVATIONS AND DIMENSIONS OF ALL RISERS, GRATES, ORIFICES, WEIRS, AND OUTLET PIPE INVERTS AND DIAMETERS
p. EMERGENCY SPILLWAY DIMENSIONS AND ELEVATIONS
q. LOCATIONS AND INVERTS FOR ALL PIPES DISCHARGING INTO THE POND
r. ALL OTHER VISIBLE SITE FEATURES TO INCLUDE VALVES, FDCS, HYDRANTS, TRANSFORMERS, LIGHT POLES, CLEAN-OUTS, PEDESTALS, SERVICE YARDS, FENCING, HVAC/MECHANICAL DEVICES, AND BOLLARDS.

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED 02/24/23

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION WARD EDWARDS, INC. No. C00152

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE
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2		
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PLAN REVISIONS

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

DRAINAGE PLAN

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C601

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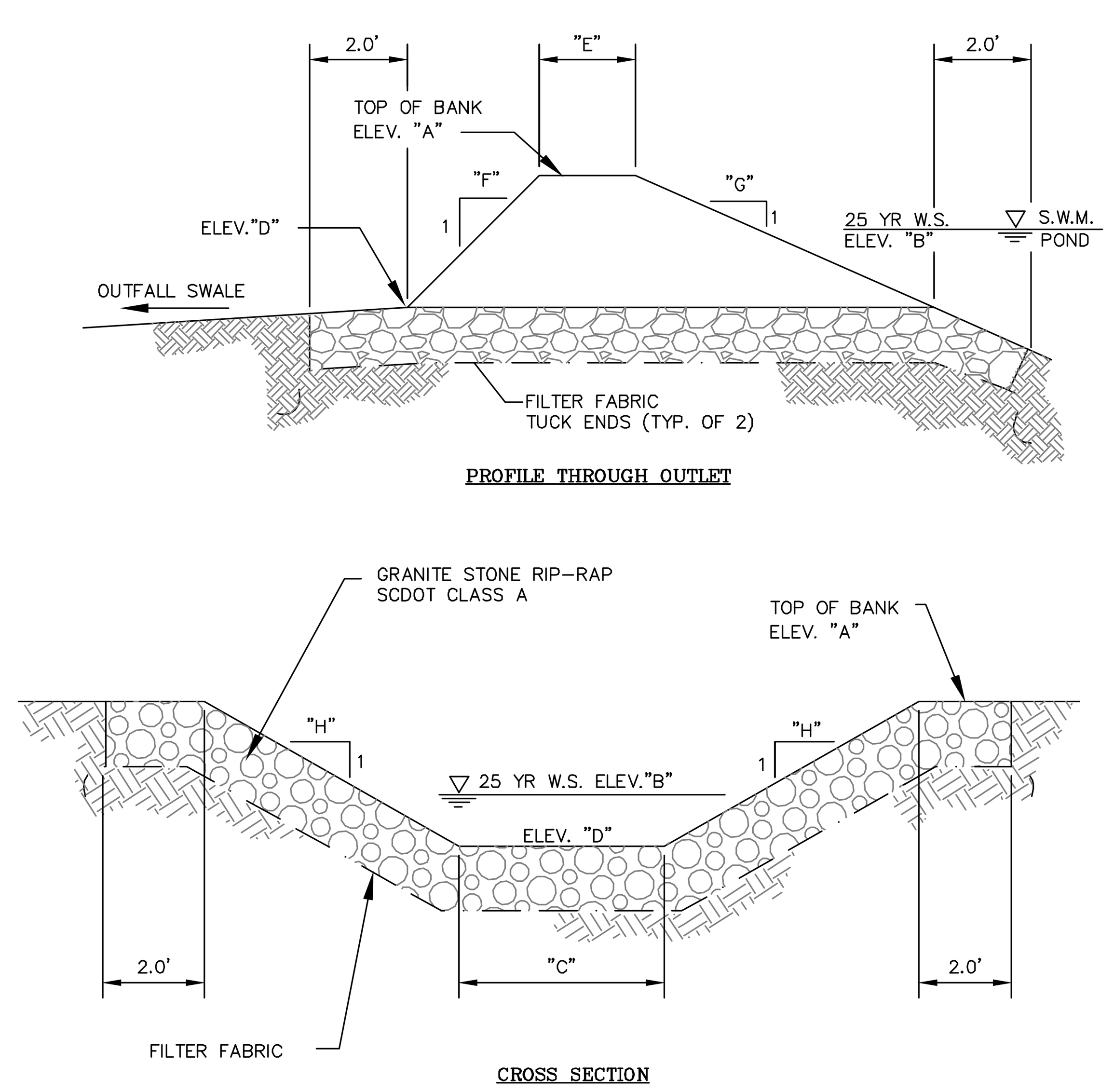
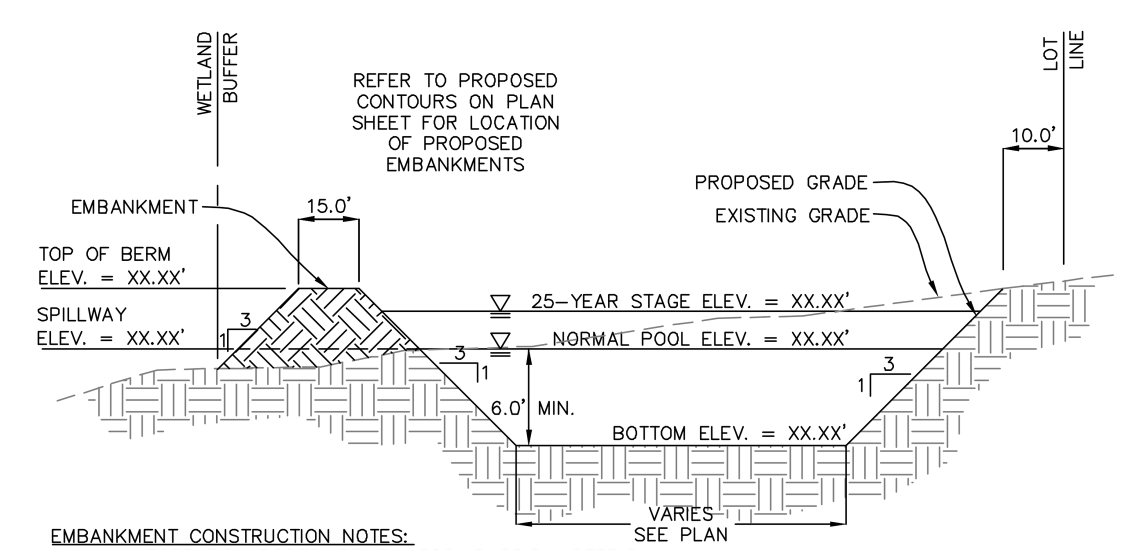
DIMENSION DATA

a	*.**'	top of bank
b	*.**'	25-yr. peak
c	*.**'	width of outlet weir
d	*.**'	Outlet weir elevation
e	*.**'	top width
f	*.**'	slope
g	*.**'	slope
H	*.**'	Slope



POND SPILLWAY DETAILS

DETAIL 02660-003

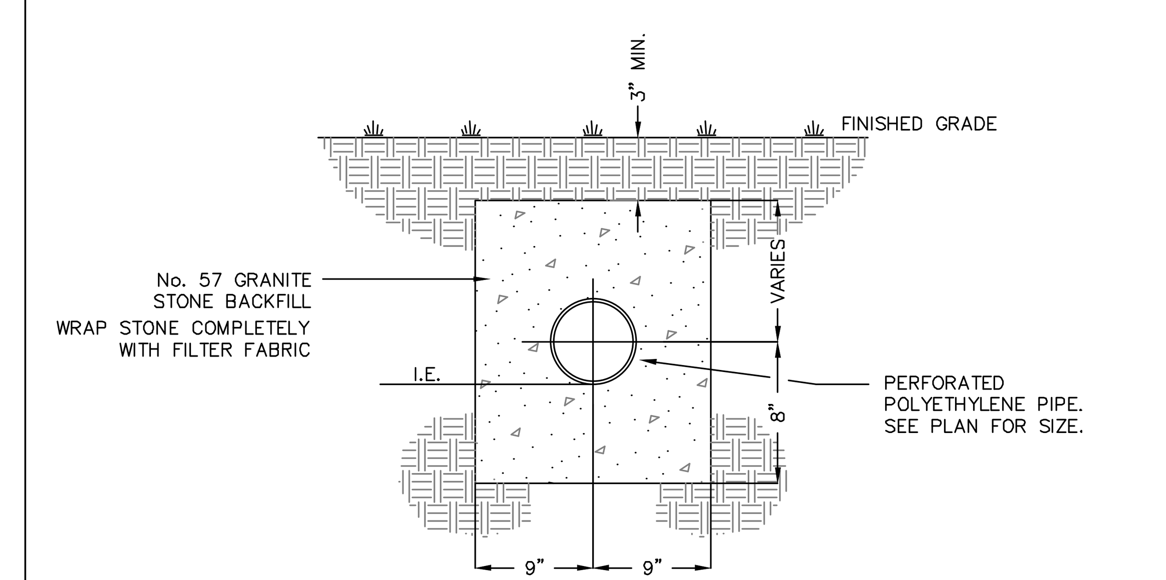


EMBANKMENT CONSTRUCTION NOTES:
1. ALL VEGETATION ROOTS, BRUSH, SOD, RUBBISH, DEBRIS, AND ALL OTHER UNSUITABLE MATERIALS SHALL BE STRIPPED AND REMOVED FROM THE LIMITS OF THE PROPOSED EMBANKMENT CONSTRUCTION.
2. THE MATERIAL FOR THE EMBANKMENT CONSTRUCTION SHALL CONSIST OF SAND-CLAY OR CLAYEY SAND. THE SOIL FILL SHALL BE FREE OF ORGANICS AND SENSITIVE CLAY MATERIALS.
3. THE EMBANKMENT AND BACKFILL MATERIAL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY, AS DETERMINED BY THE STANDARD PROCTOR TEST. ALL FILL SHALL BE COMPACTED TO THE LINES, DEPTHS, AND GRADES AS INDICATED. EXCESS EXCAVATION OF THE EXISTING SOILS MAY BE NECESSARY TO OBTAIN THE REQUIRED DENSITY AT THE LIMITS OF EXCAVATION.

EROSION & SEDIMENT CONTROL NOTE:
1. SEE PLANS FOR INDICATION OF EROSION CONTROL MEASURES AND SURFACE STABILIZATION METHOD TO BE USED

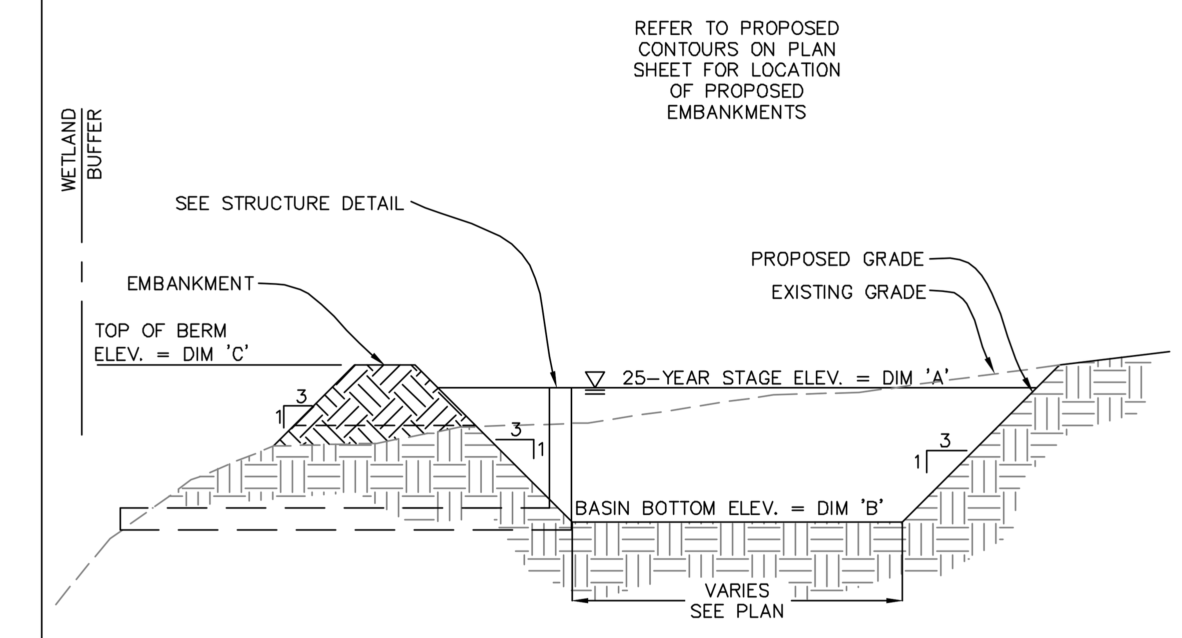
WET DETENTION BASIN WITH BERM CROSS SECTION

DETAIL 02630-033



SUBGRADE DRAIN

DETAIL 02630-014



DIMENSION DATA

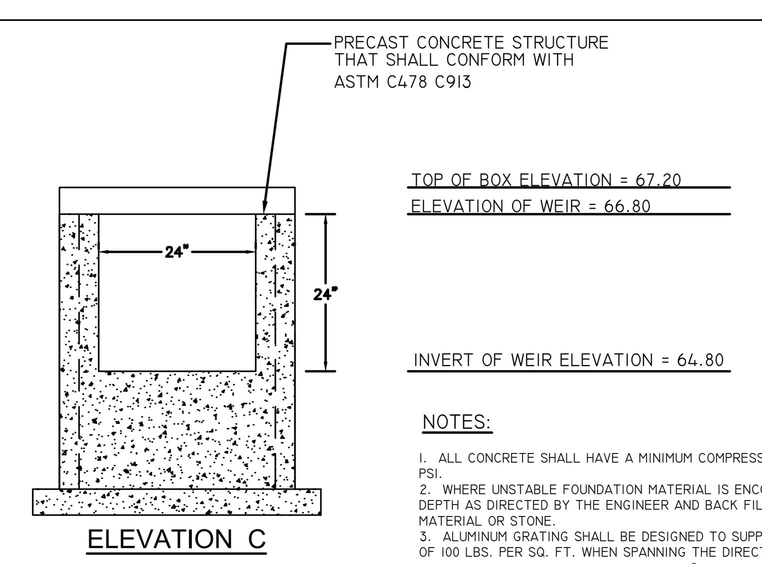
	BASIN 1	BASIN 2	
DIM 'A'	15.35'	17.11'	25 YR. PEAK
DIM 'B'	14.15'	16.25'	BOTTOM ELEV
DIM 'C'	16.00'	17.50'	TOP OF BERM

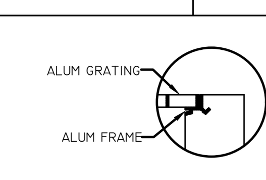
EMBANKMENT CONSTRUCTION NOTES:
1. ALL VEGETATION ROOTS, BRUSH, SOD, RUBBISH, DEBRIS, AND ALL OTHER UNSUITABLE MATERIALS SHALL BE STRIPPED AND REMOVED FROM THE LIMITS OF THE PROPOSED EMBANKMENT CONSTRUCTION.
2. THE MATERIAL FOR THE EMBANKMENT CONSTRUCTION SHALL CONSIST OF SAND-CLAY OR CLAYEY SAND. THE SOIL FILL SHALL BE FREE OF ORGANICS AND SENSITIVE CLAY MATERIALS.
3. THE EMBANKMENT AND BACKFILL MATERIAL SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY, AS DETERMINED BY THE STANDARD PROCTOR TEST. ALL FILL SHALL BE COMPACTED TO THE LINES, DEPTHS, AND GRADES AS INDICATED. EXCESS EXCAVATION OF THE EXISTING SOILS MAY BE NECESSARY TO OBTAIN THE REQUIRED DENSITY AT THE LIMITS OF EXCAVATION.

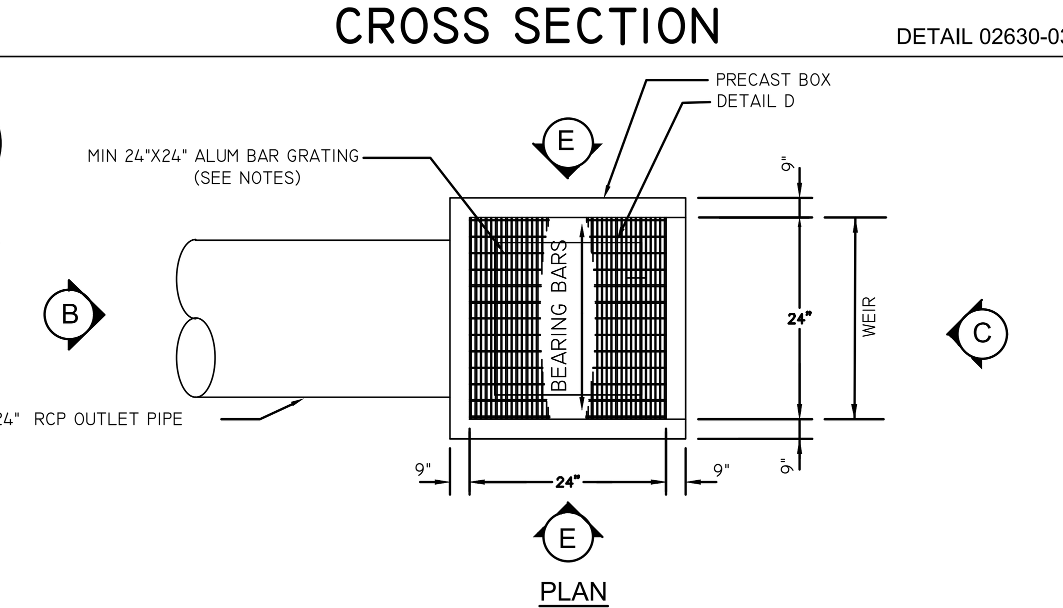
EROSION & SEDIMENT CONTROL NOTE:
1. SEE PLANS FOR INDICATION OF EROSION CONTROL MEASURES AND SURFACE STABILIZATION METHOD TO BE USED

DRY DETENTION BASIN CROSS SECTION

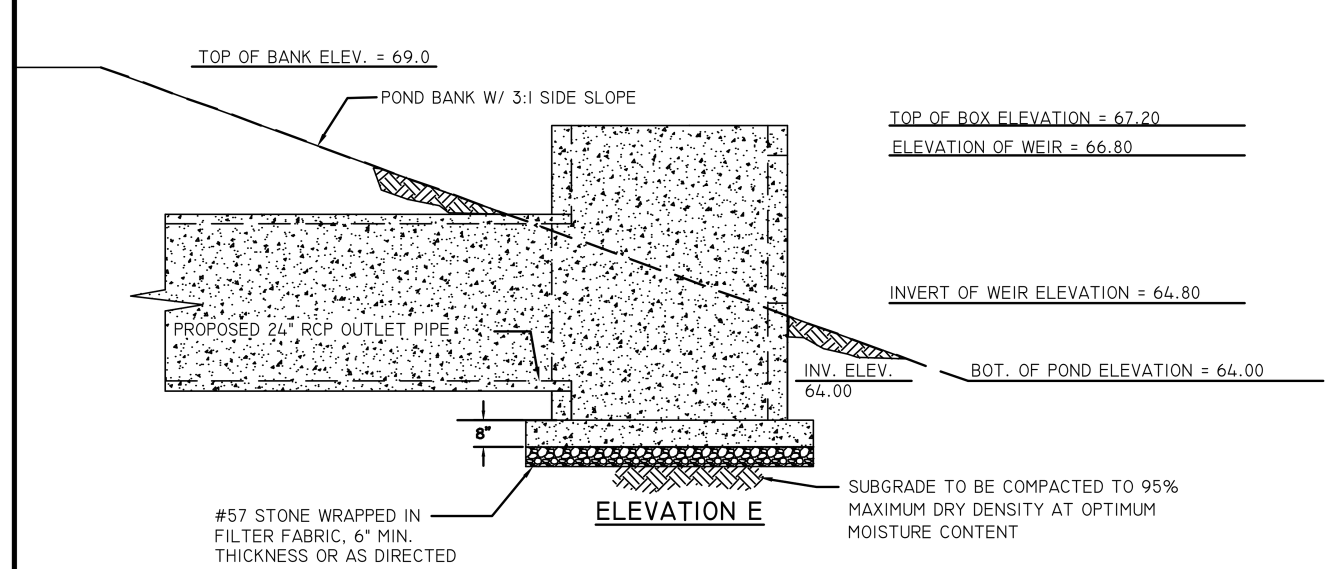
DETAIL 02630-033



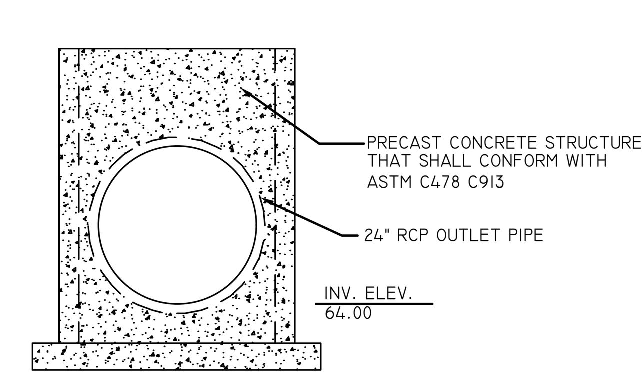




NOTES:
1. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI.
2. WHERE UNSTABLE FOUNDATION MATERIAL IS ENCOUNTERED, EXCAVATE TO DEPTH AS DIRECTED BY THE ENGINEER AND BACK FILL WITH ACCEPTABLE SOIL MATERIAL OR STONE.
3. ALUMINUM GRATING SHALL BE DESIGNED TO SUPPORT A UNIFORM LIVE LOAD OF 100 LBS. PER SQ. FT. WHEN SPANNING THE DIRECTION INDICATED. BEARING BARS SHALL BE PLACED NO MORE THAN 1 3/16" ON CENTER. CROSS BARS SHALL BE PLACED AT 4" ON CENTER.

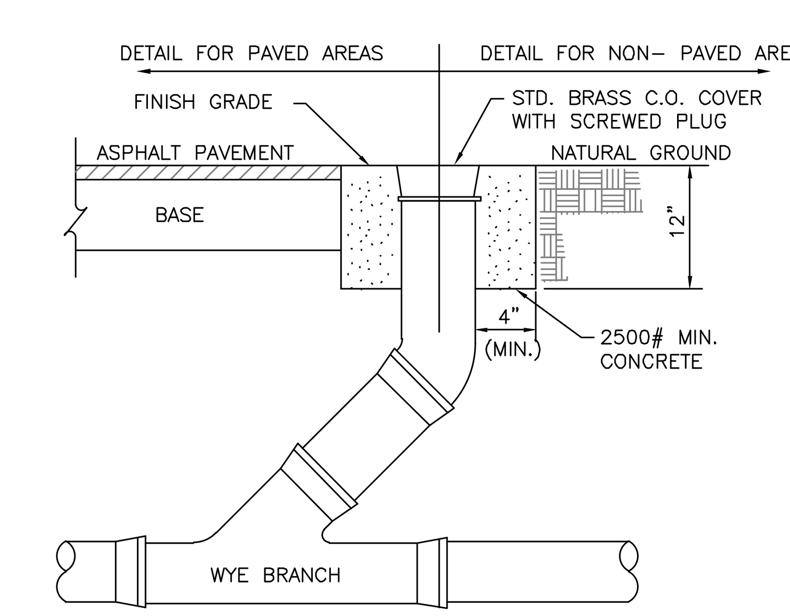


TOTAL:
(1) 24" X 24" VERTICAL RECTANGULAR WEIRS
(1) 24" X 24" HORIZONTAL RECTANGULAR WEIR
(1) 24" RCP OUTLET PIPE



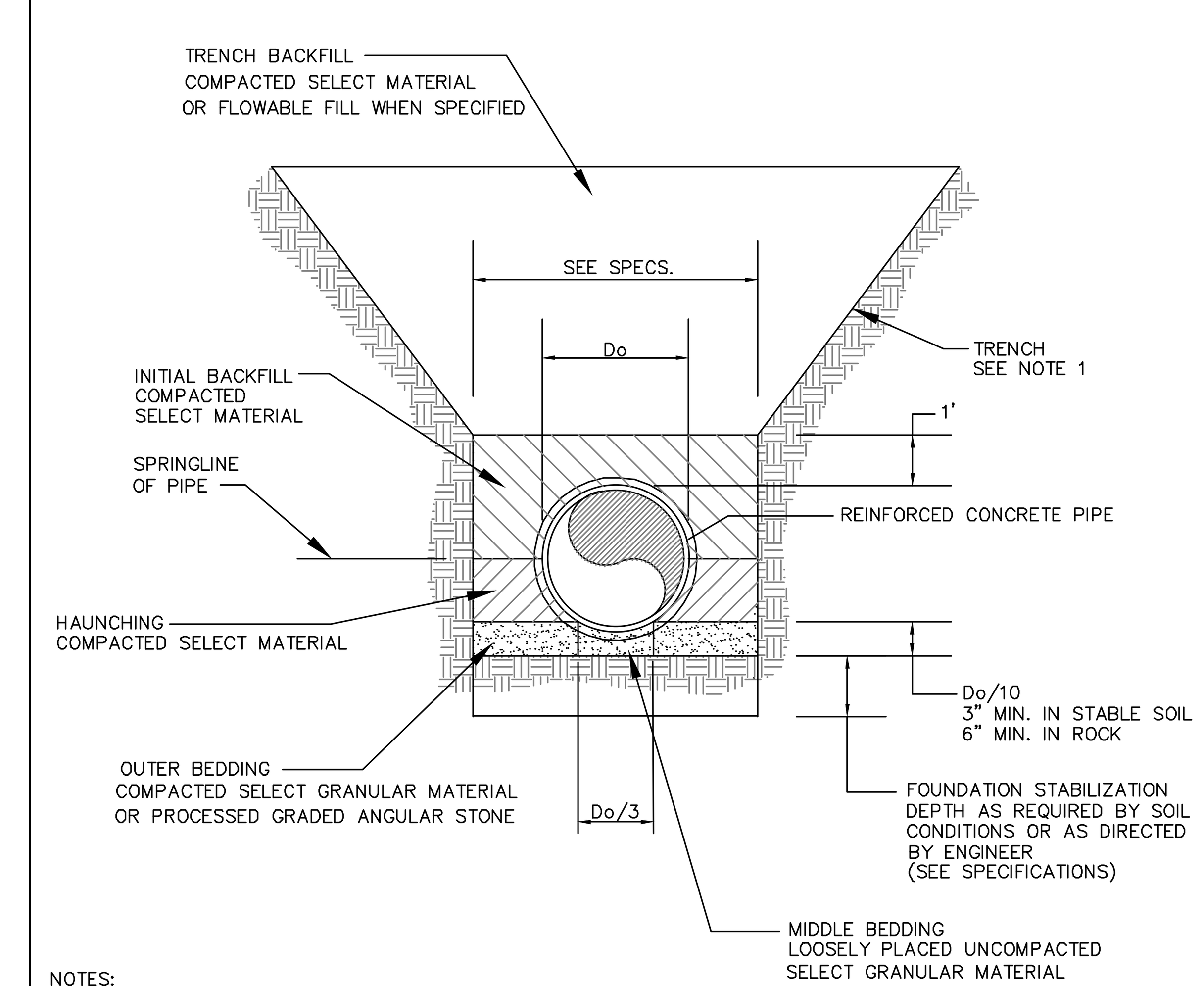
OUTLET CONTROL STRUCTURE # - POND

DETAIL 02630-031



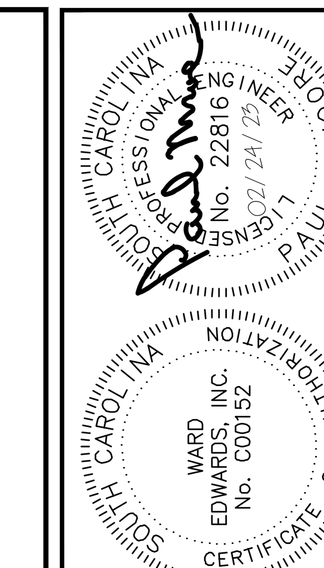
NOTE: USE EXPANSION JOINT MAT'L AROUND PAD IN CONCRETE PAVED AREAS.

CLEANOUT DETAIL



NOTES:
1: DEPTH OF VERTICAL TRENCH AND SIDE SLOPES OF TRENCH MAY VARY DEPENDING ON DEPTH OF EXCAVATION AND TRENCH PROTECTION SYSTEM USED. COMPLY WITH OSHA REGULATIONS (STANDARDS – 29 CFR) PART 1956 SUBPART P, EXCAVATIONS.
2. WHEN PROCESSED ANGULAR STONE IS USED FOR MIDDLE AND OUTER BEDDING, THE STONE SHALL BE COMPLETELY WRAPPED IN FILTER FABRIC TO PREVENT MIGRATION OF SURROUNDING SOILS.

EMBEDMENT DETAIL FOR REINFORCED CONCRETE PIPE



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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

DRAINAGE DETAILS

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C602

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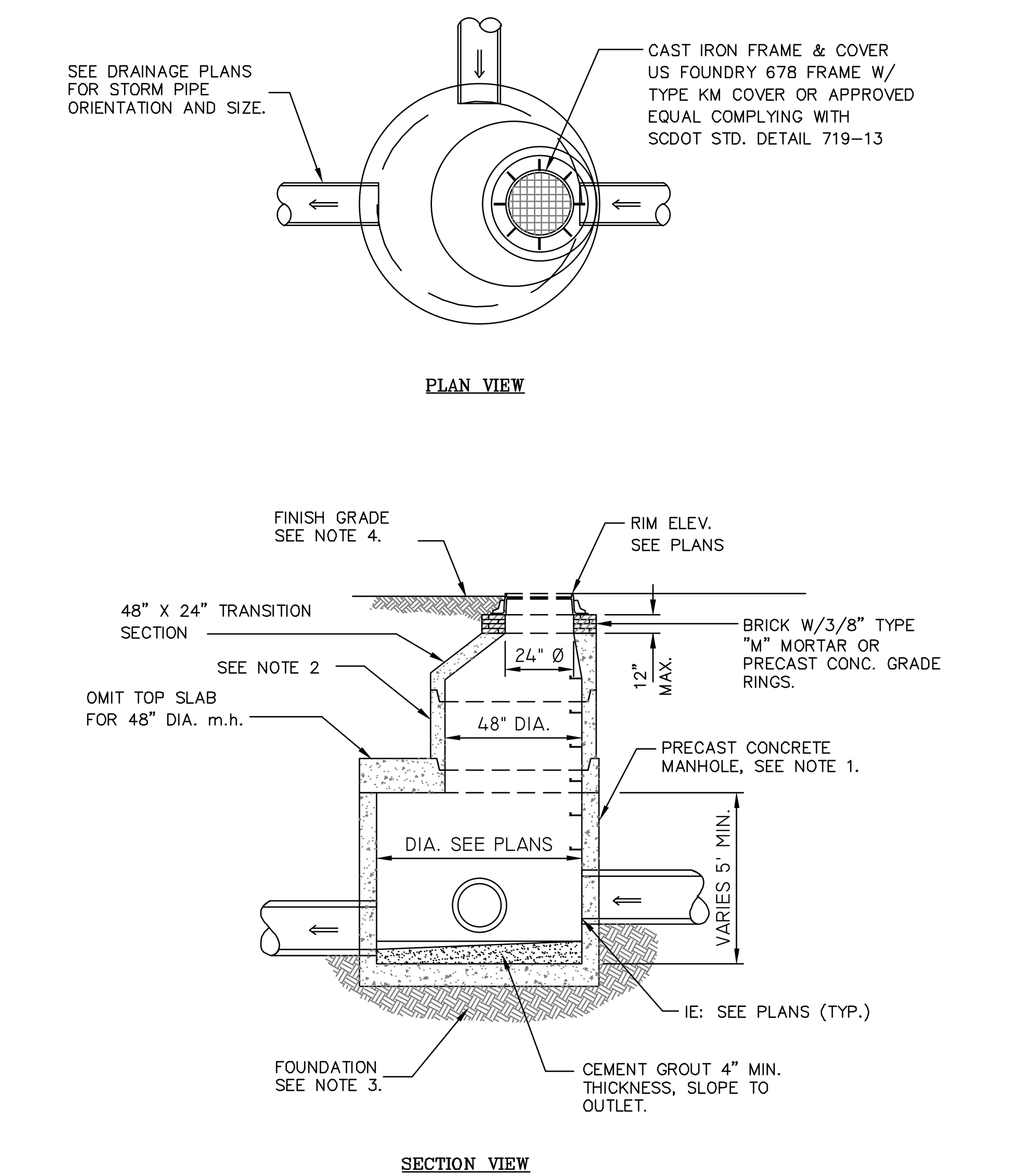
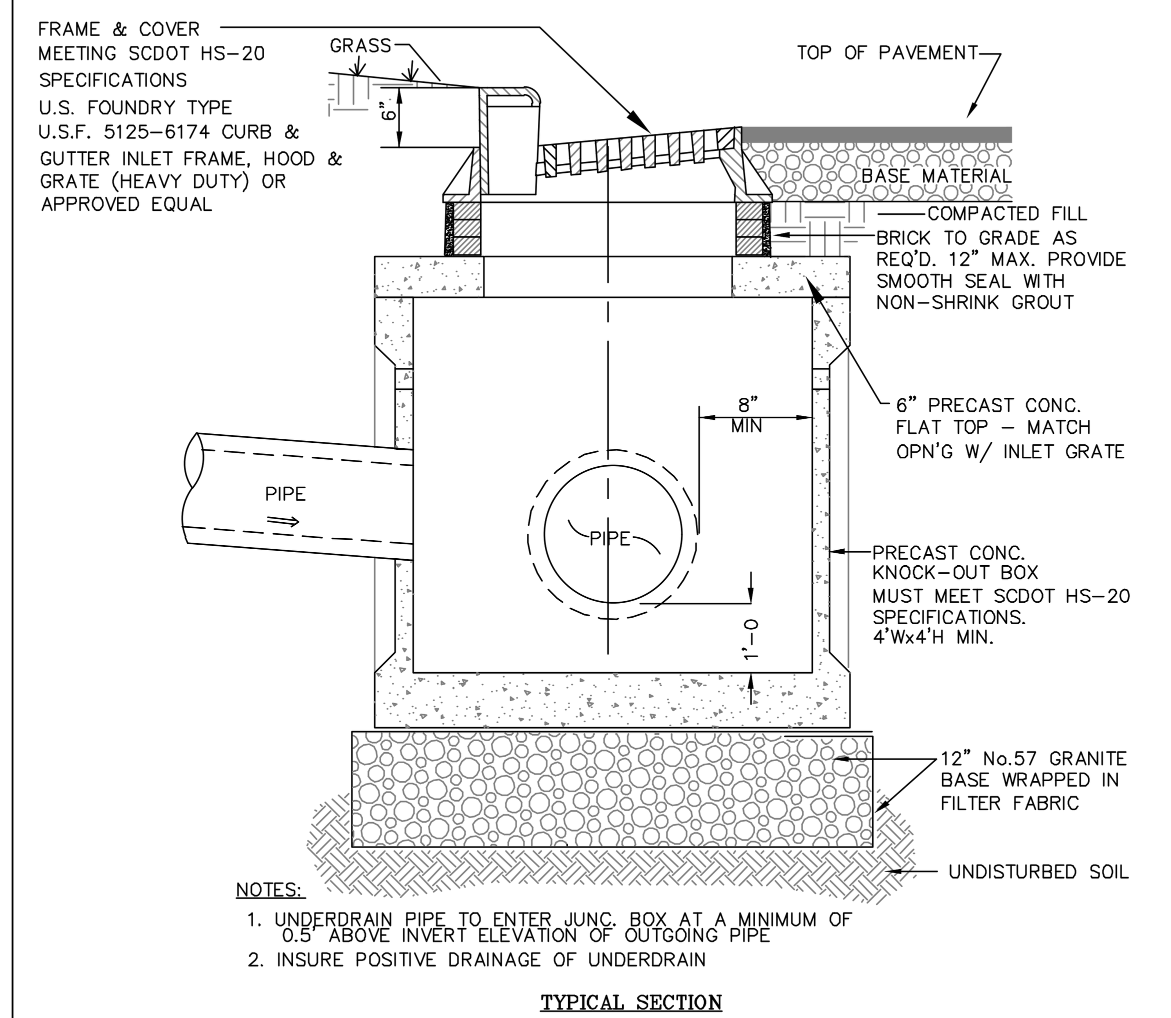


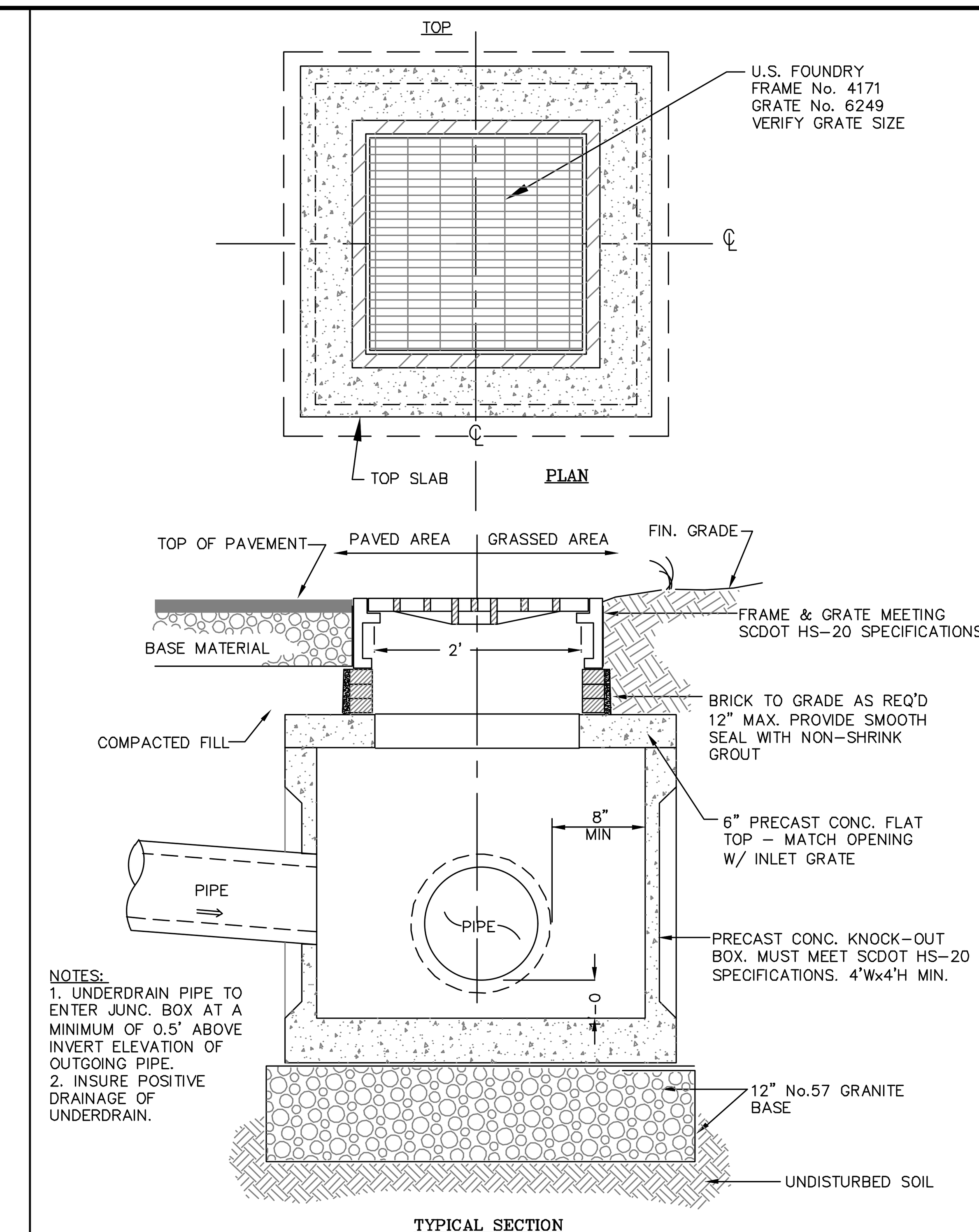
STORM DRAIN MANHOLE

DETAIL: 02630-037



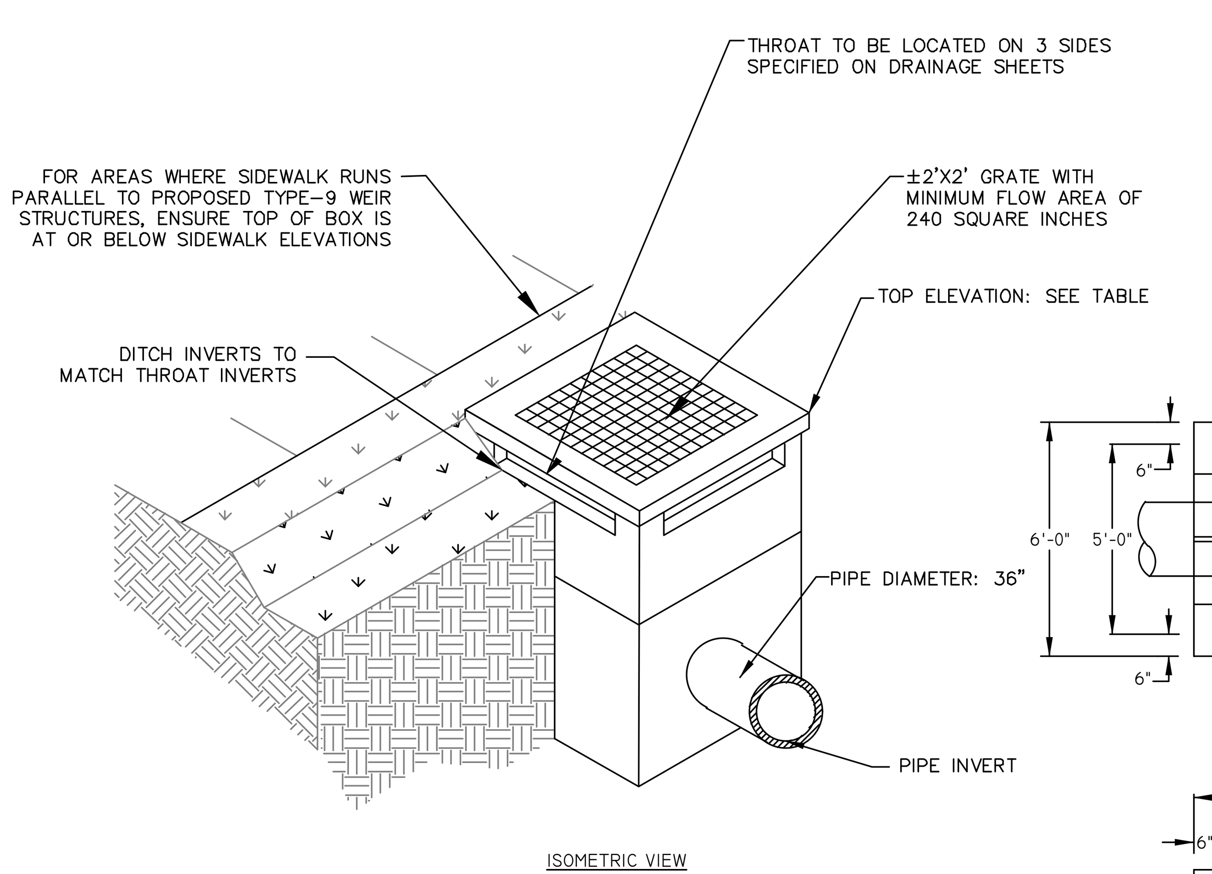
CURB INLET WITH FRAME AND COVER

DETAIL 02630-028



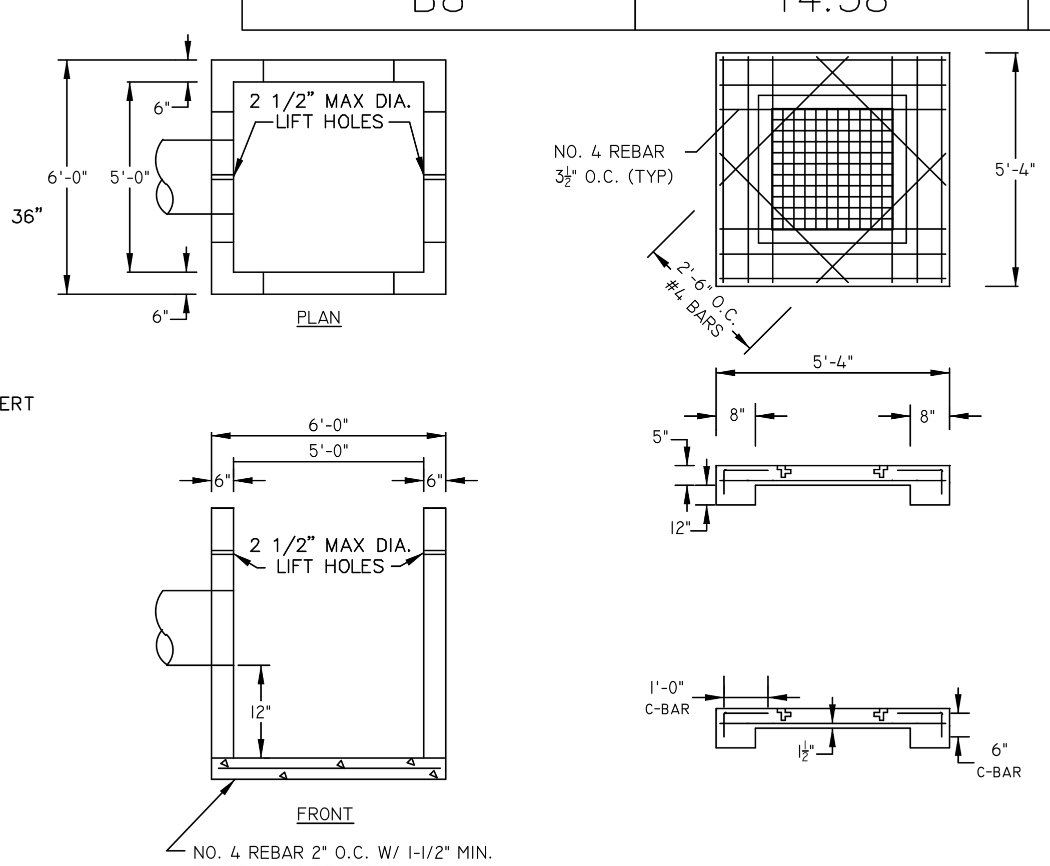
GRATE INLET

DETAIL 02630-027



TYPE 9 WEIR ELEVATIONS

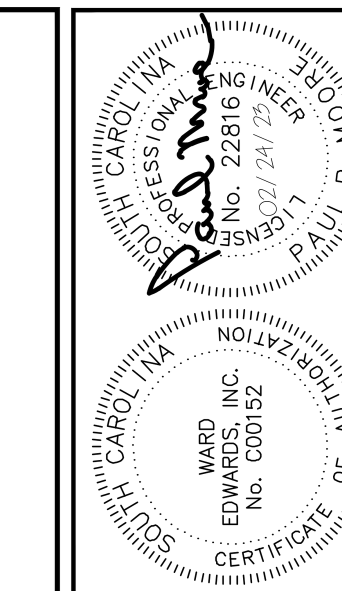
WEIR #	TOP FRAME ELEVATION (FT)	WEIR ELEVATION (FT)
B5	17.98	16.48
B6	15.50	14.00
B7	14.58	13.08
B8	14.58	13.08



NOTES:

1. REFER TO SCDOT STD DETAIL 719-009-01 FOR REINFORCEMENT SCHEDULE
2. ALL CATCH BASINS ARE TO BE PRECAST PRIOR TO INSTALLATION. THE USE OF PRECAST UNITS WILL NOT RELEVE THE CONTRACTOR OF THE RESPONSIBILTY OF OBTAINING SATISFACTORY INSTALLATIONS.
3. THE BOTTOM SLAB OF THE BOX SHALL BE A MINIMUM OF 6 IN. THICK, CLASS A CONCRETE WITH A REINFORCING STEEL AREA OF 0.20 SQ. IN. PER FOOT. WIRE MESH MAY BE USED IN LIEU OF STEEL BARS PROVIDED A MINIMUM OF 0.20 SQ. IN. PER FT. IS MET.
4. IF STRUCTURE DEPTH EXCEEDS 4'-6", METAL STEPS ARE TO BE PLACED ON THE WALL.
5. REINFORCING STEEL SHALL BE DEFORMED AND SHALL CONFORM TO AASHTO M 31. GRADE 60, WIRE MESH SHALL CONFORM TO AASHTO M 55 AND M 221.
6. THROAT OPENING SHALL BE 32" WIDE AND SHOULD BE BE AT ELEVATIONS AS SPECIFIED ON PLANS, ON THE NUMBER OF SIDES AS SPECIFIED ON PLANS.

DETAIL MODIFIED TYPE 9 WEIR OUTFALL



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PLAN REVISIONS

Ward Edwards
ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
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WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA

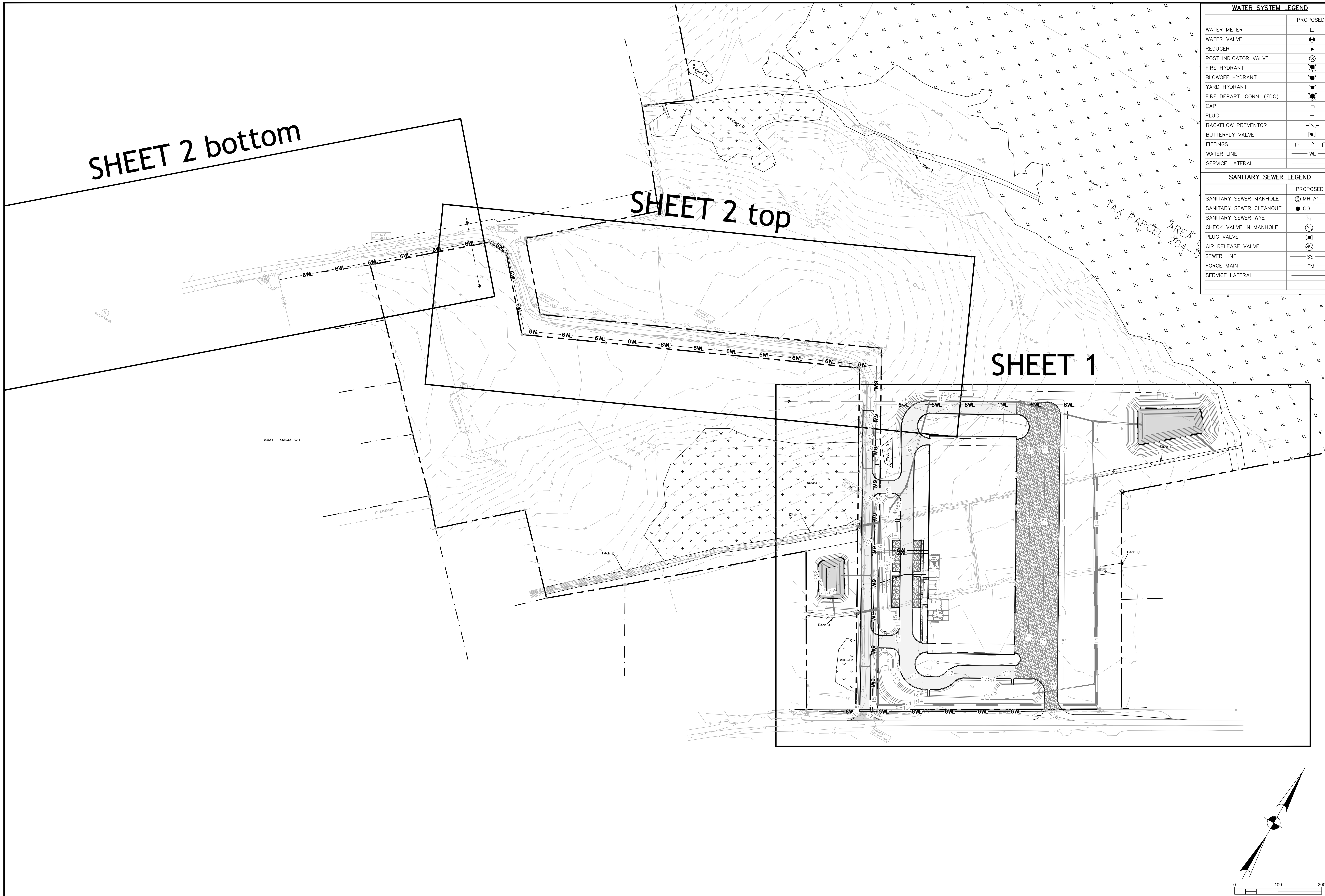
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

DRAINAGE DETAILS

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C603



WATER SYSTEM LEGEND

	PROPOSED
WATER METER	⊡
WATER VALVE	
REDUCER	▶
POST INDICATOR VALVE	⊗
FIRE HYDRANT	HYD
BLOWOFF HYDRANT	
YARD HYDRANT	
FIRE DEPART. CONN. (FDC)	FDC
CAP	
PLUG	
BACKFLOW PREVENTOR	
BUTTERFLY VALVE	
FITTINGS	
WATER LINE	—— WL ——
SERVICE LATERAL	

SANITARY SEWER LEGEND

	PROPOSED
SANITARY SEWER MANHOLE	Ⓢ MH: A1
SANITARY SEWER CLEANOUT	● CO
SANITARY SEWER WYE	
CHECK VALVE IN MANHOLE	
PLUG VALVE	
AIR RELEASE VALVE	ARV
SEWER LINE	—— SS ——
FORCE MAIN	—— FM ——
SERVICE LATERAL	

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION WARD EDWARDS, INC. No. C00152

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IRONLINE METALS

TOWN OF YEMASSEE, SOUTH CAROLINA

RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

OVERALL UTILITY PLAN

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
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SHEET
C700

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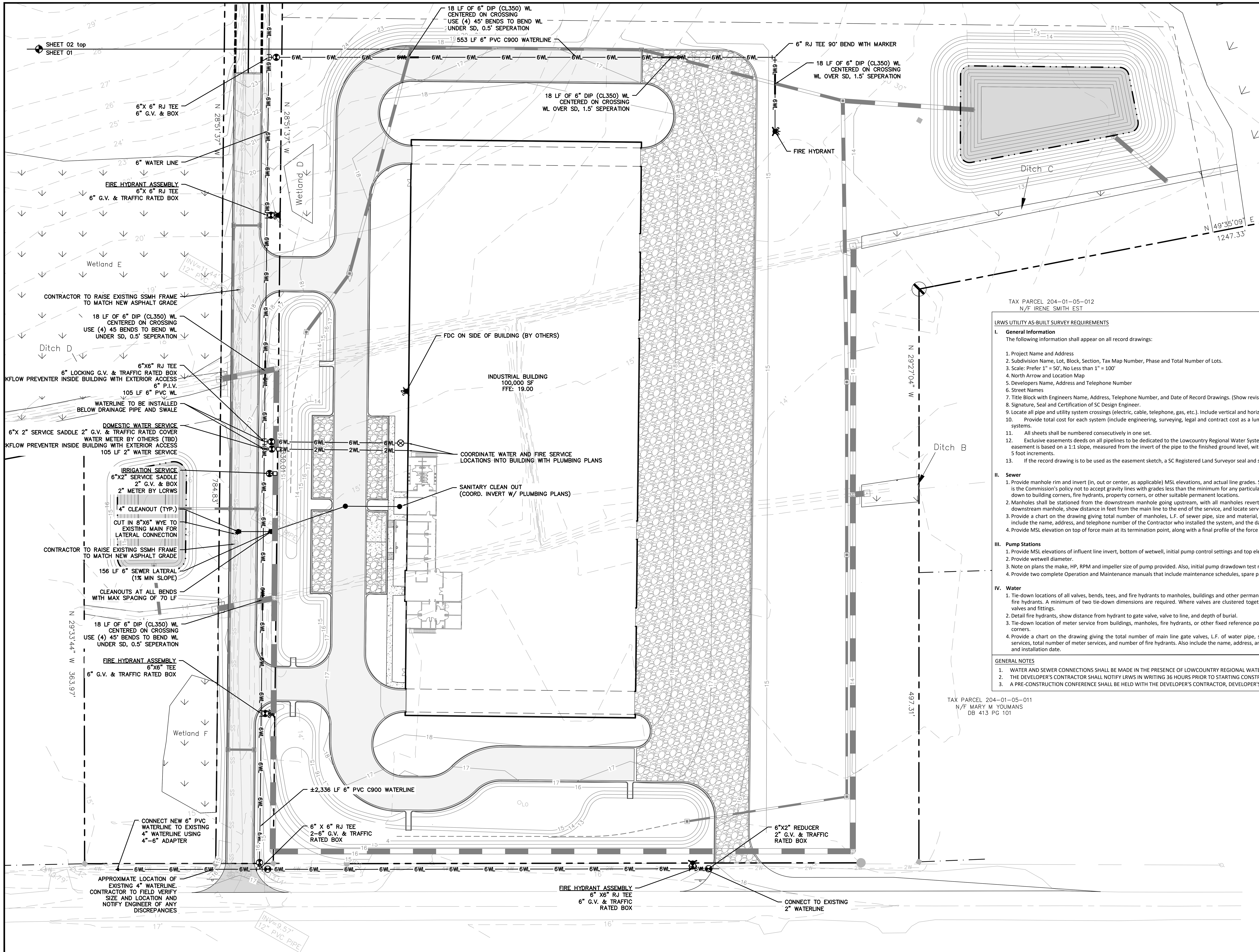

TAX PARCEL 204-01-05-012
N/F IRENE SMITH EST

TAX PARCEL 204-01-05-011
N/F MARY M YOUMANS
DB 413 PG 101

WATER SYSTEM LEGEND

	PROPOSED
WATER METER	
WATER VALVE	
REDUCER	
POST INDICATOR VALVE	
FIRE HYDRANT	
BLOWOFF HYDRANT	
YARD HYDRANT	
FIRE DEPART. CONN. (FDC)	
CAP	
PLUG	
BACKFLOW PREVENTOR	
BUTTERFLY VALVE	
FITTINGS	
WATER LINE	WL
SERVICE LATERAL	

SANITARY SEWER LEGEND

	PROPOSED
SANITARY SEWER MANHOLE	MH: A1
SANITARY SEWER CLEANOUT	CO
SANITARY SEWER WYE	
CHECK VALVE IN MANHOLE	
PLUG VALVE	
AIR RELEASE VALVE	ARV
SEWER LINE	SS
FORCE MAIN	FM
SERVICE LATERAL	

LRWS UTILITY AS-BUILT SURVEY REQUIREMENTS

I. General Information

The following information shall appear on all record drawings:

1. Project Name and Address
2. Subdivision Name, Lot, Block, Section, Tax Map Number, Phase and Total Number of Lots.
3. Scale: Prefer 1" = 50', No Less than 1" = 100'
4. North Arrow and Location Map
5. Developers Name, Address and Telephone Number
6. Street Names
7. Title Block with Engineers Name, Address, Telephone Number, and Date of Record Drawings. (Show revision dates also.)
8. Signature, Seal and Certification of SC Design Engineer.
9. Locate all pipe and utility system crossings (electric, cable, telephone, gas, etc.). Include vertical and horizontal separation distances, depth of cover and pipe materials.
10. Provide total cost for each system (include engineering, surveying, legal and contract cost as a lump sum). Give separate costs for water, sewer and pump station systems.
11. All sheets shall be numbered consecutively in one set.
12. Exclusive easements deeds on all pipelines to be dedicated to the Lowcountry Regional Water System (unless located in a public road right-of-way). The width of the easement is based on a 1:1 slope, measured from the invert of the pipe to the finished ground level, with a minimum of 15 feet. The easement width increase shall be in 5 foot increments.
13. If the record drawing is to be used as the easement sketch, a SC Registered Land Surveyor seal and signature is also required on the record drawing.

II. Sewer

1. Provide manhole rim and invert (in, out or center, as applicable) MSL elevations, and actual line grades. Show size, length (center to center), and material of pipe used. It is the Commission's policy not to accept gravity lines with grades less than the minimum for any particular pipe size, based on Ten State Standards. Manholes shall be tied down to building corners, fire hydrants, property corners, or other suitable permanent locations.
2. Manholes shall be stationed from the downstream manhole going upstream, with all manholes reverting to 0+00 for the next line segment. Station all services from downstream manhole, show distance in feet from the main line to the end of the service, and locate services from property corners.
3. Provide a chart on the drawing giving total number of manholes, L.F. of sewer pipe, size and material, number of single services and number of double services. Also, include the name, address, and telephone number of the Contractor who installed the system, and the date of installation.
4. Provide MSL elevation on top of force main at its termination point, along with a final profile of the force main from origin to termination.

III. Pump Stations

1. Provide MSL elevations of influent line invert, bottom of wetwell, initial pump control settings and top elevation of pump station slab.
2. Provide wetwell diameter.
3. Note on plans the make, HP, RPM and impeller size of pump provided. Also, initial pump drawdown test results and discharge/shutoff heads with date tested.
4. Provide two complete Operation and Maintenance manuals that include maintenance schedules, spare parts list and vendors/representative information.

IV. Water

1. Tie-down locations of all valves, bends, tees, and fire hydrants to manholes, buildings and other permanent structures. Valves, bends, and tees may also be tied-down to fire hydrants. A minimum of two tie-down dimensions are required. Where valves are clustered together, show distance between valves. Show depth of cover on all valves and fittings.
2. Detail fire hydrants, show distance from hydrant to gate valve, valve to line, and depth of burial.
3. Tie-down location of meter service from buildings, manholes, fire hydrants, or other fixed reference points. Give size of services. Locate end of services off of property corners.
4. Provide a chart on the drawing giving the total number of main line gate valves, L.F. of water pipe, size and material, number of single services, number of double services, total number of meter services, and number of fire hydrants. Also include the name, address, and telephone number of the Contractor who installed the system, and installation date.

GENERAL NOTES

1. WATER AND SEWER CONNECTIONS SHALL BE MADE IN THE PRESENCE OF LOWCOUNTRY REGIONAL WATER AND SEWER.
2. THE DEVELOPER'S CONTRACTOR SHALL NOTIFY LRWS IN WRITING 36 HOURS PRIOR TO STARTING CONSTRUCTION.
3. A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE DEVELOPER'S CONTRACTOR, DEVELOPER'S ENGINEER, AND LRWS REPRESENTATIVE.

NOT FOR CONSTRUCTION

NO.	DESCRIPTION PLAN REVISIONS	DATE
1		
2		
3		
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Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

UTILITY PLAN

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
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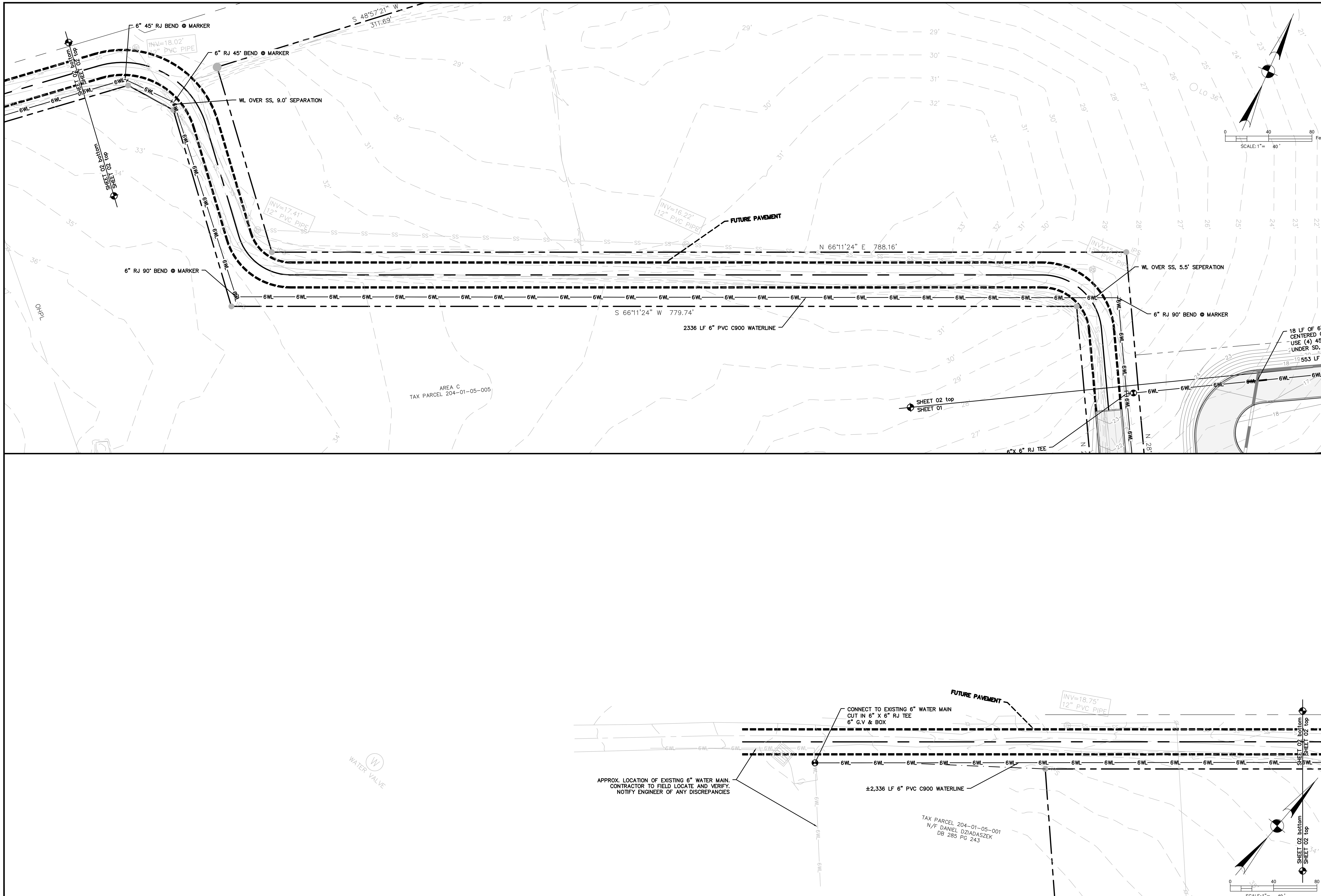
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C701



NOT FOR CONSTRUCTION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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TELL CITY, INDIANA

UTILITY PLAN

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SHEET
C702

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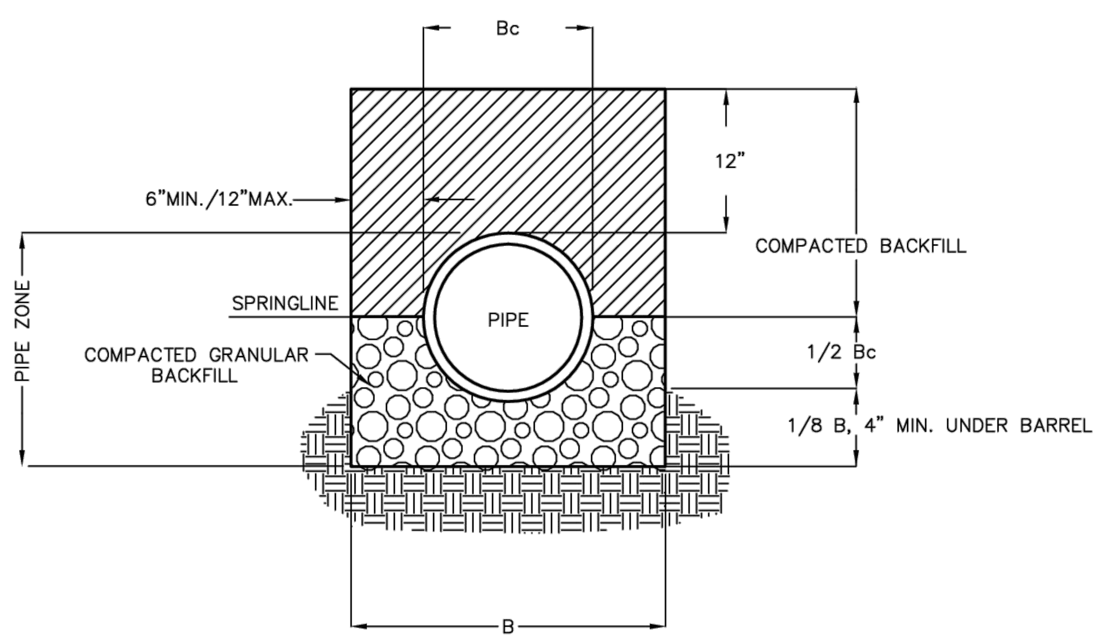
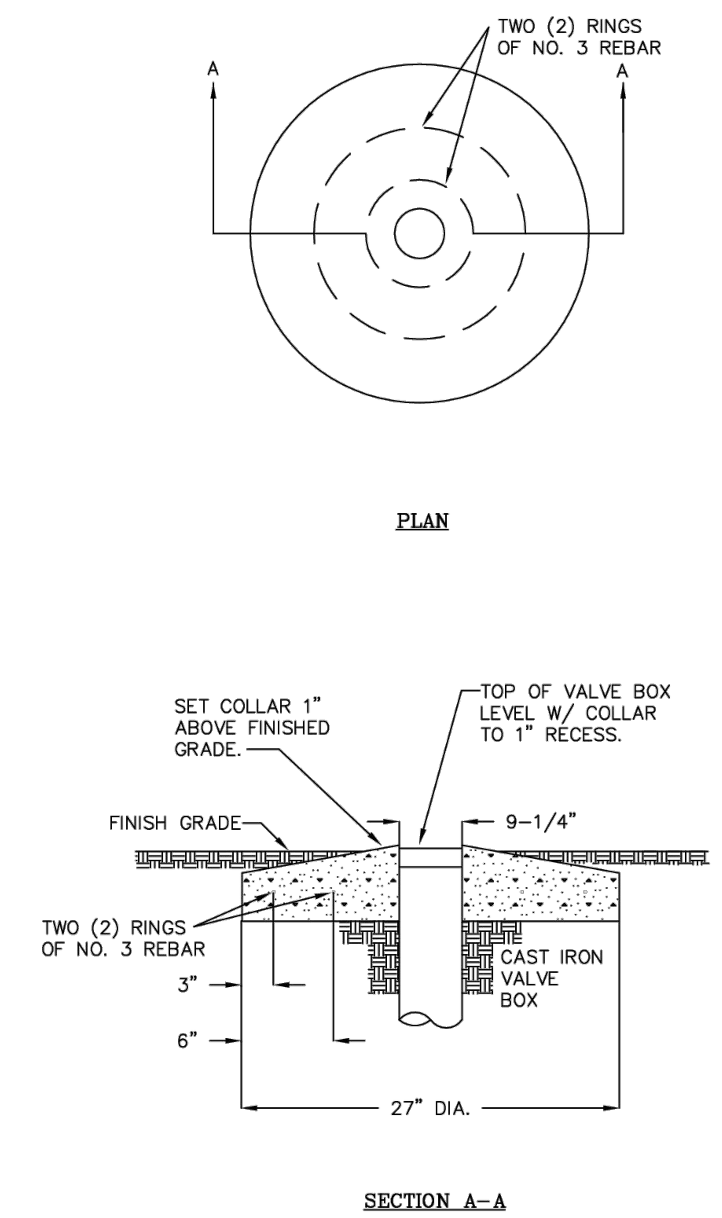


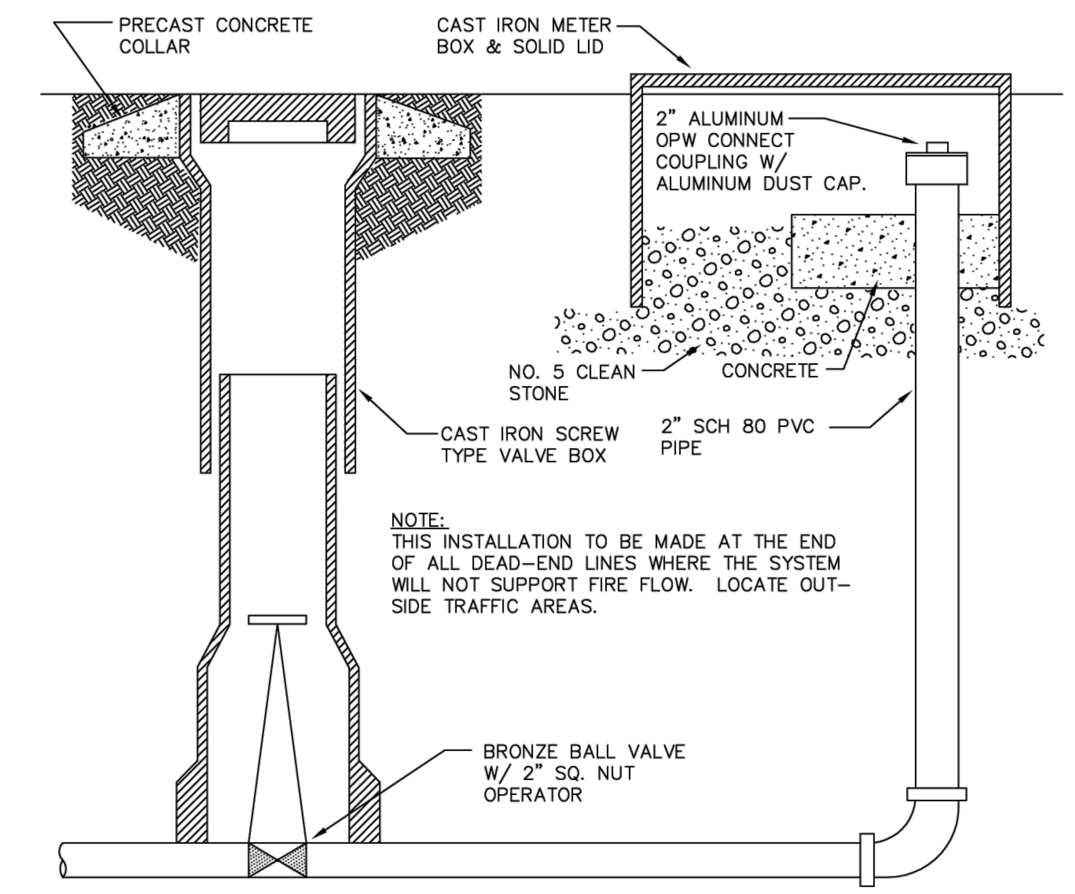
SANITARY SEWER BEDDING

DETAIL 02530-002



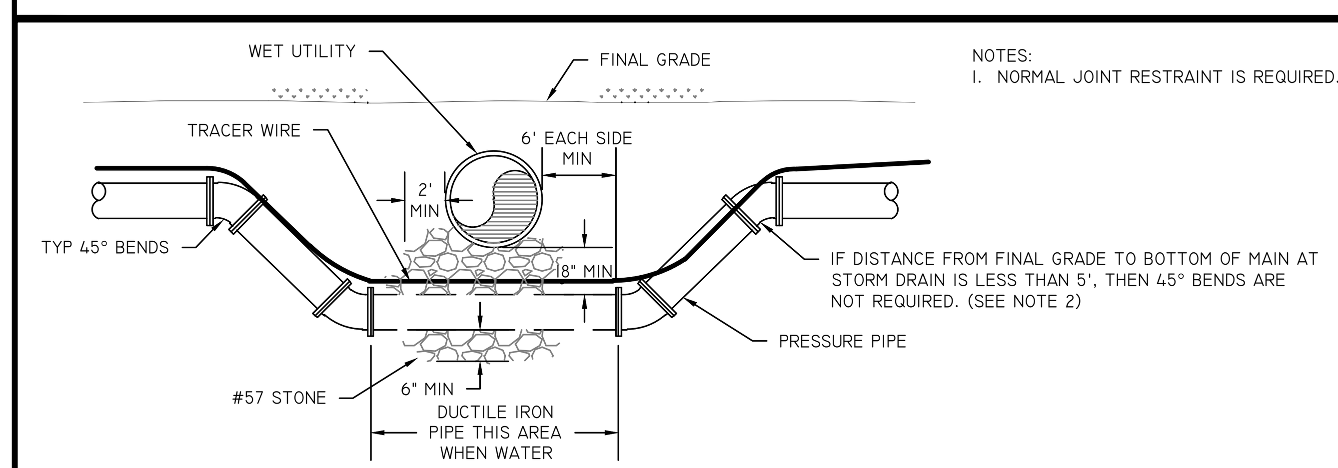
PRECAST CONCRETE COLLAR

DETAIL 02510-022



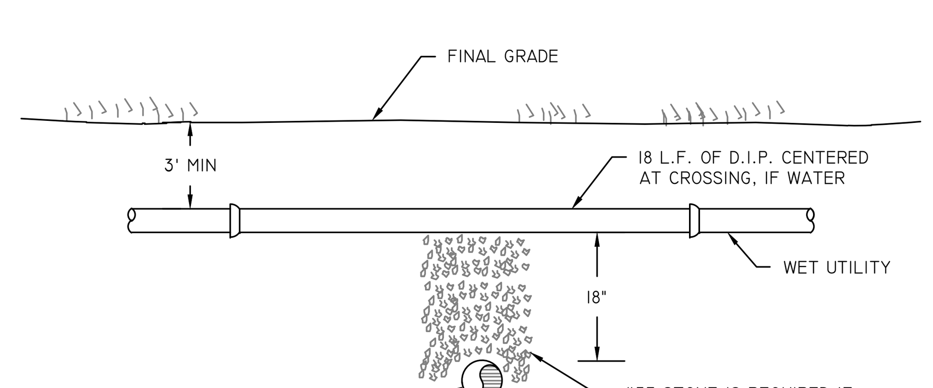
BLOW OFF DETAIL

DETAIL 02510-021



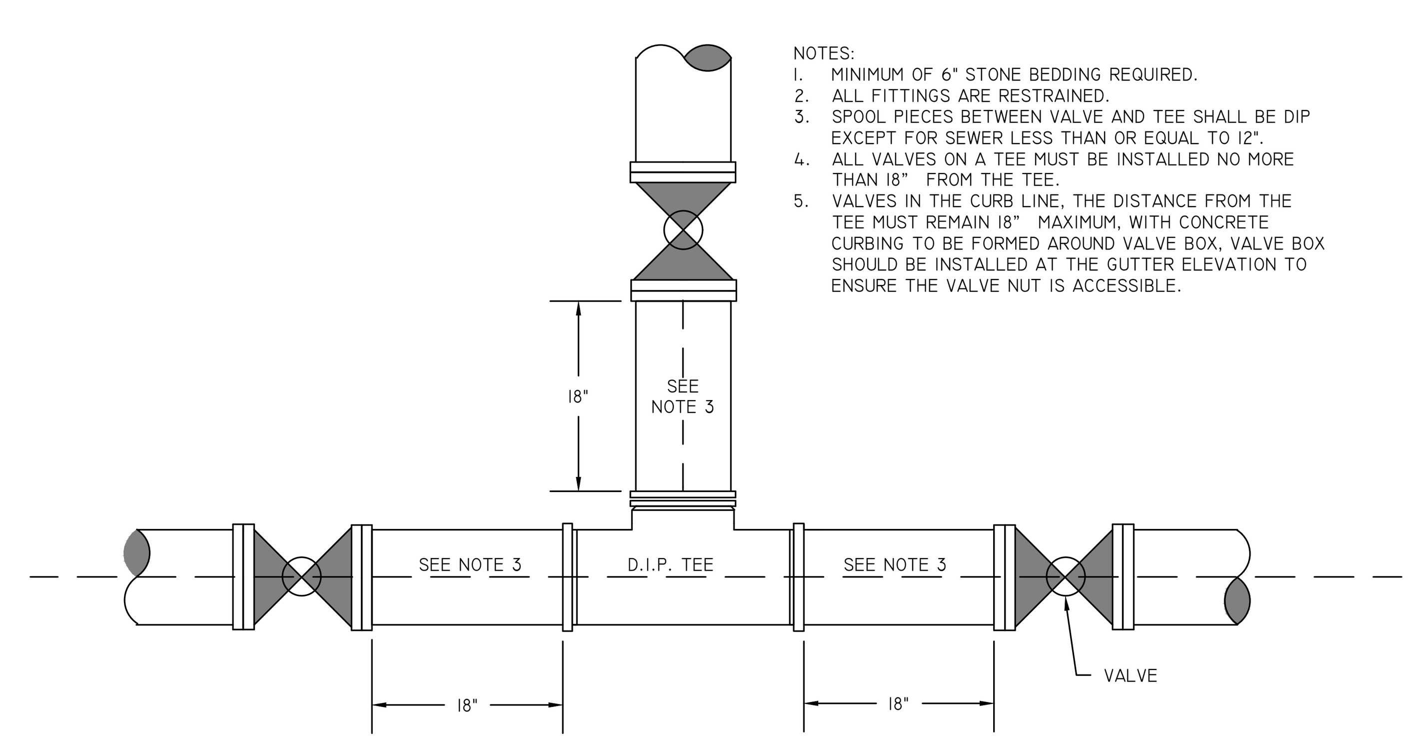
NOTES:
1. NORMAL JOINT RESTRAINT IS REQUIRED.

PRESSURE PIPE UNDER WET UTILITY
FOR FINAL DEPTH 5' OR GREATER



WET UTILITY CROSSING

WET UTILITY CROSSING



NOTES:
1. MINIMUM OF 6" STONE BEDDING REQUIRED.
2. ALL FITTINGS ARE RESTRAINED.
3. SPOOL PIECES BETWEEN VALVE AND TEE SHALL BE DIP EXCEPT FOR SEWER LESS THAN OR EQUAL TO 12".
4. ALL VALVES ON A TEE MUST BE INSTALLED NO MORE THAN 18" FROM THE TEE.
5. VALVES IN THE CURB LINE, THE DISTANCE FROM THE TEE MUST REMAIN 18" MAXIMUM, WITH CONCRETE CURBING TO BE FORMED AROUND VALVE BOX, VALVE BOX SHOULD BE INSTALLED AT THE GUTTER ELEVATION TO ENSURE THE VALVE NUT IS ACCESSIBLE.

TEE AND VALVES

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE
1		
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PLAN REVISIONS

Ward Edwards ENGINEERING
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WWW.WARDEDWARDS.COM

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

UTILITY DETAILS

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C703

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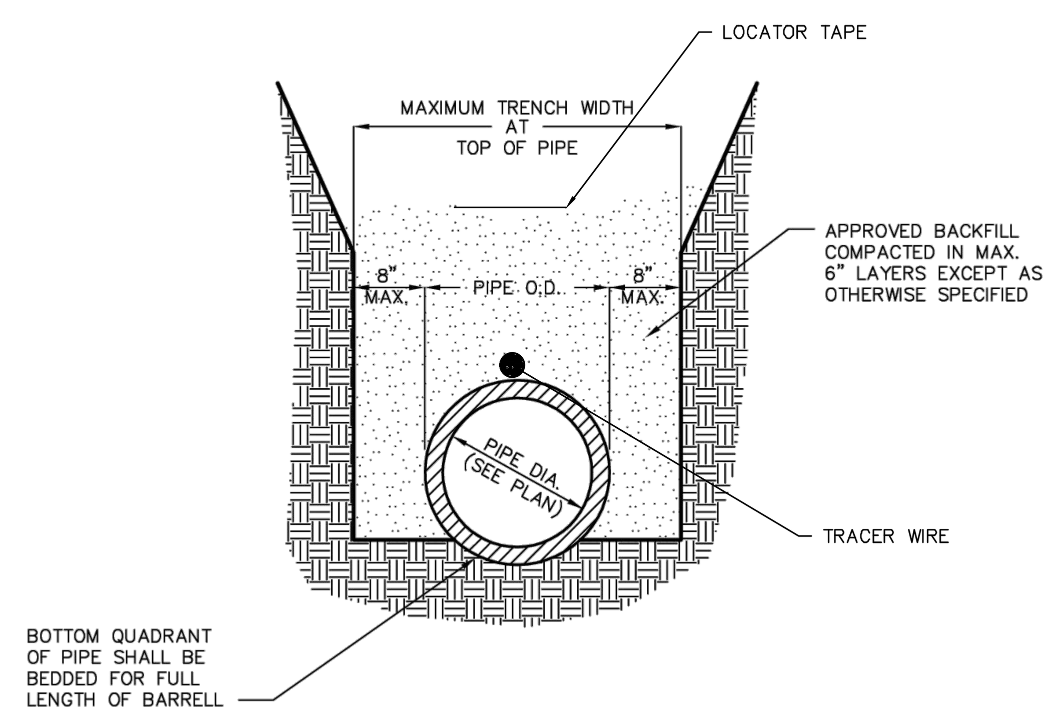
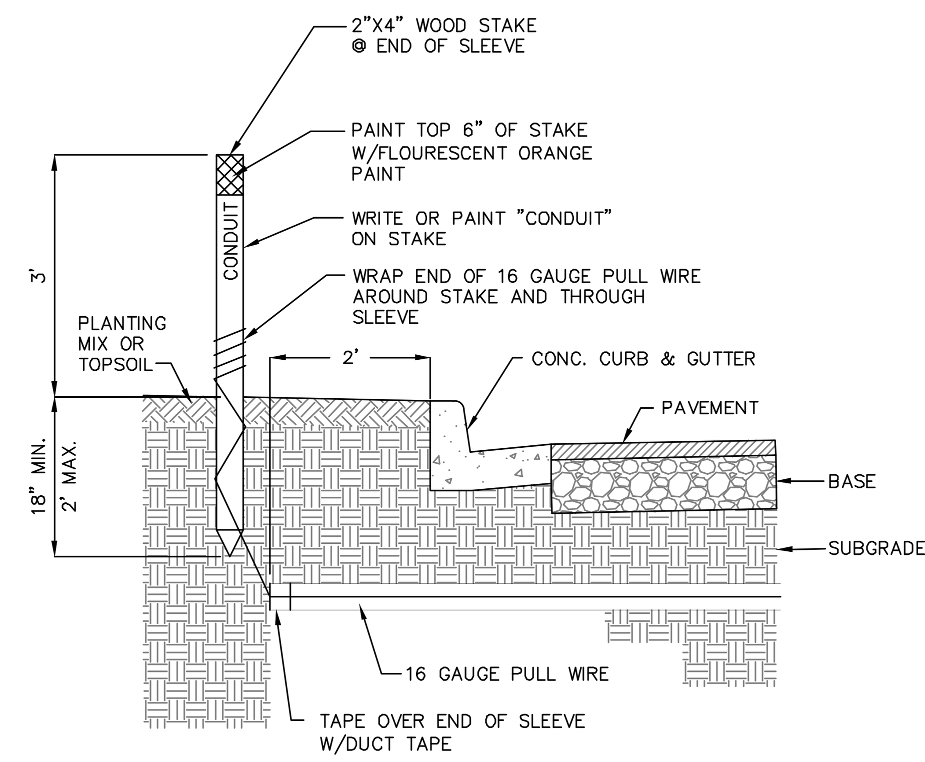


PIPE TRENCH BEDDING

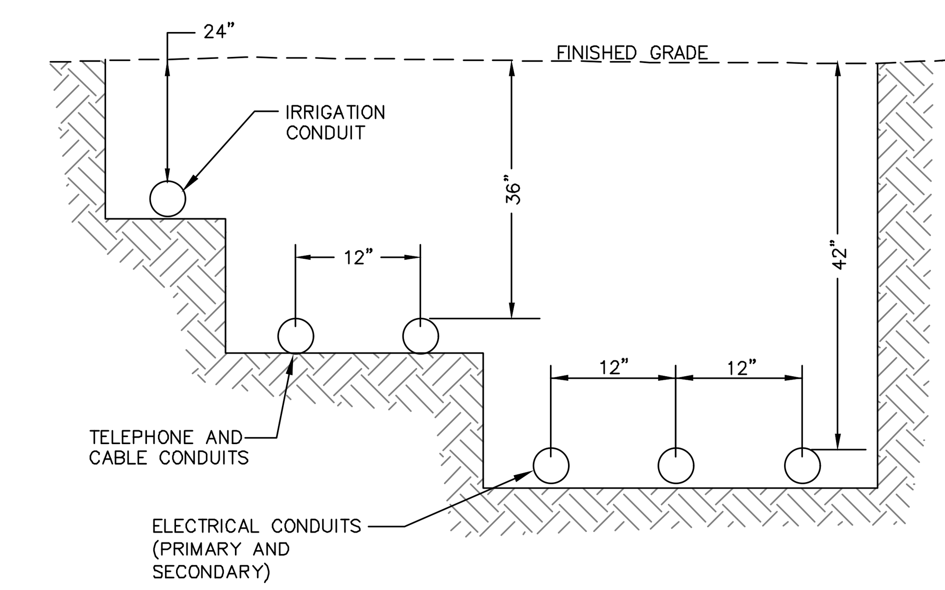
DETAIL 02510-004



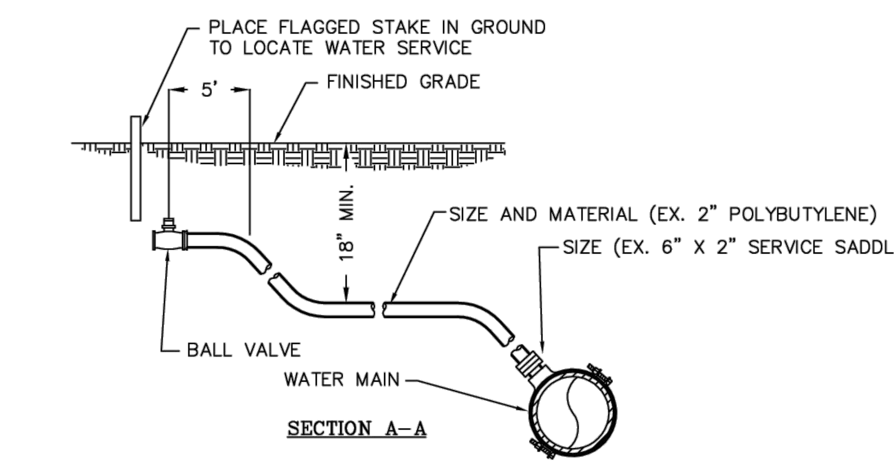
CONDUIT NOTES:

1. ALL CONDUIT ENDS SHALL BE CAPPED AND MARKED AS ILLUSTRATED.
2. ELECTRICAL CONDUIT: 42" BURY DEPTH, SCH 40 ELECTRICAL GRADE (N.E.C.) PVC
3. TELCO CONDUIT: 36" BURY DEPTH, SCH 40 ELECTRICAL GRADE (N.E.C.) PVC
4. IRRIGATION CONDUIT: 24" BURY DEPTH, SCH 40 PVC
5. MINIMUM 12" VERTICAL CLEARANCE WHEN CROSSING WATER, SEWER, AND DRAINAGE.
6. MINIMUM 18" HORIZONTAL CLEARANCE WHEN PARALLELING WATER, SEWER, AND DRAINAGE.
7. MINIMUM 12" HORIZONTAL SEPARATION BETWEEN CONDUIT.
8. CONDUIT MUST EXTEND BEYOND PAVEMENT, CURB, AND SIDEWALKS.
9. THE CONTRACTOR MUST INSTALL ALL CONDUITS, AS SHOWN ON THE PLANS OR AS REQUIRED BY DRY UTILITY COMPANIES. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND REGULATIONS WITH REGARDS TO THE INSTALLATION OF UTILITIES AND CONDUIT.
10. REFER TO PLANS FOR CONDUIT SIZE AND LOCATION. PLAN VIEW LOCATIONS OF CONDUIT ARE APPROXIMATE.
11. NO 90° OR 45° COUPLINGS TO BE USED ON CONDUIT.
12. CONDUIT MUST BE STRAIGHT TO ALLOW PIPE AND/OR WIRING BY UTILITY COMPANY AND IRRIGATION INSTALLER.
13. CONDUIT NOT INSTALLED AT PROPER DEPTH WILL BE REINSTALLED TO CONFORM TO DETAIL.
14. CONTRACTOR TO VERIFY CONDUIT INTEGRITY PRIOR TO FINAL PAVING.

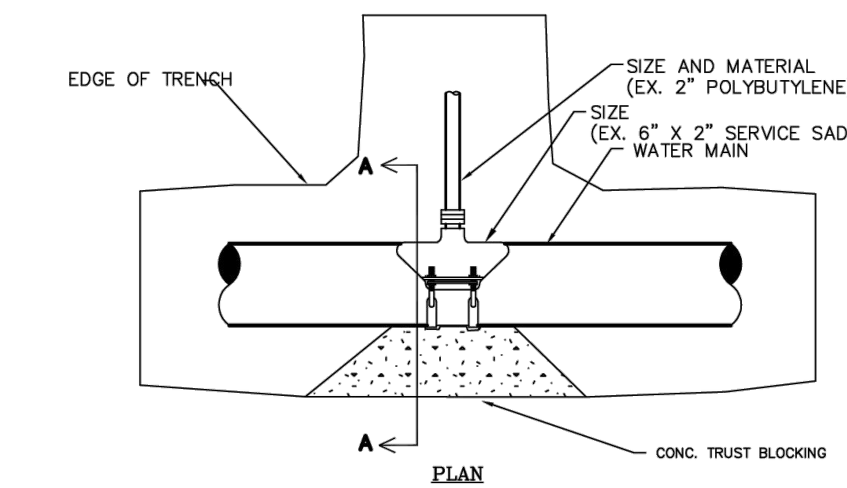
CONDUIT DETAIL



UTILITY CONDUIT TRENCH DETAIL

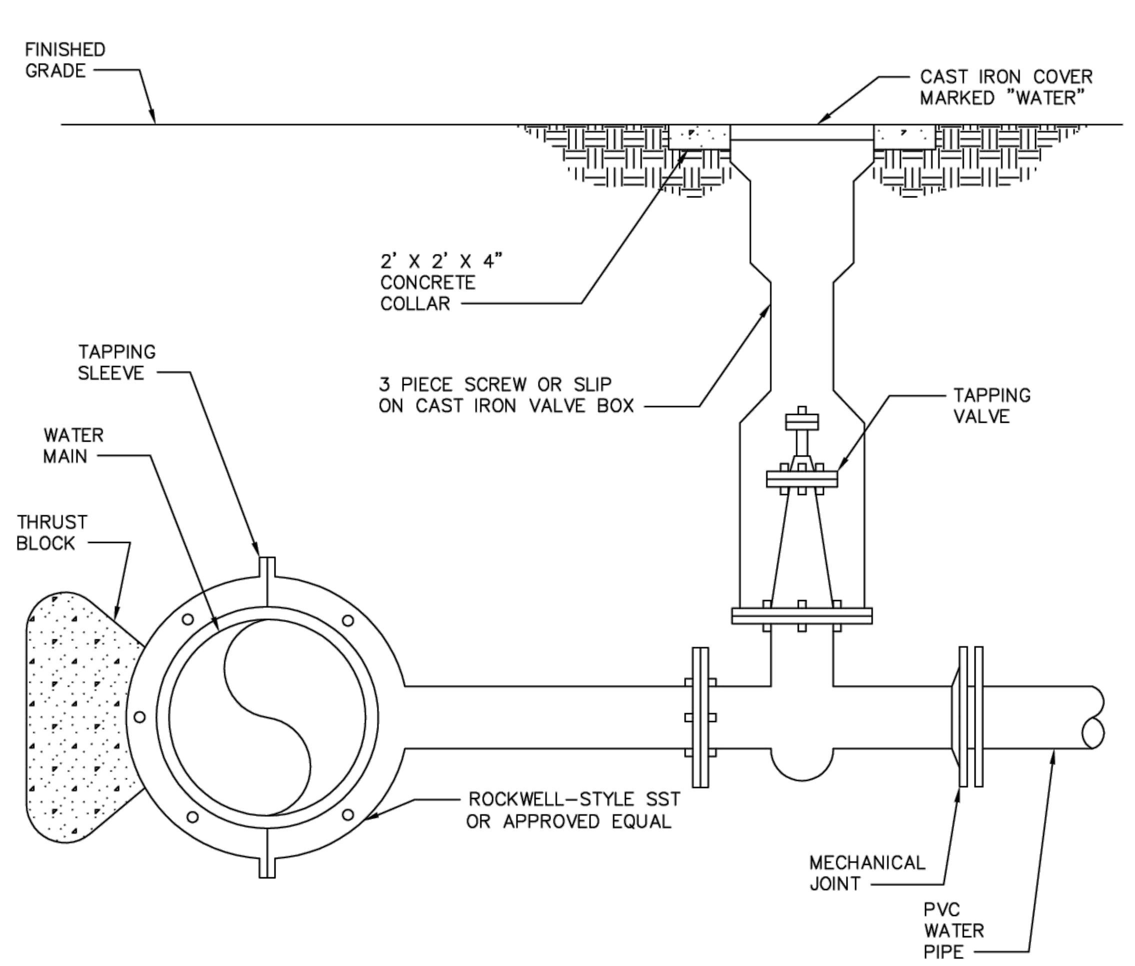


NOTE: CONTRACTOR TO INSTALL TRACER WIRE OVER PIPE



TYPICAL WATER SERVICE CONNECTION

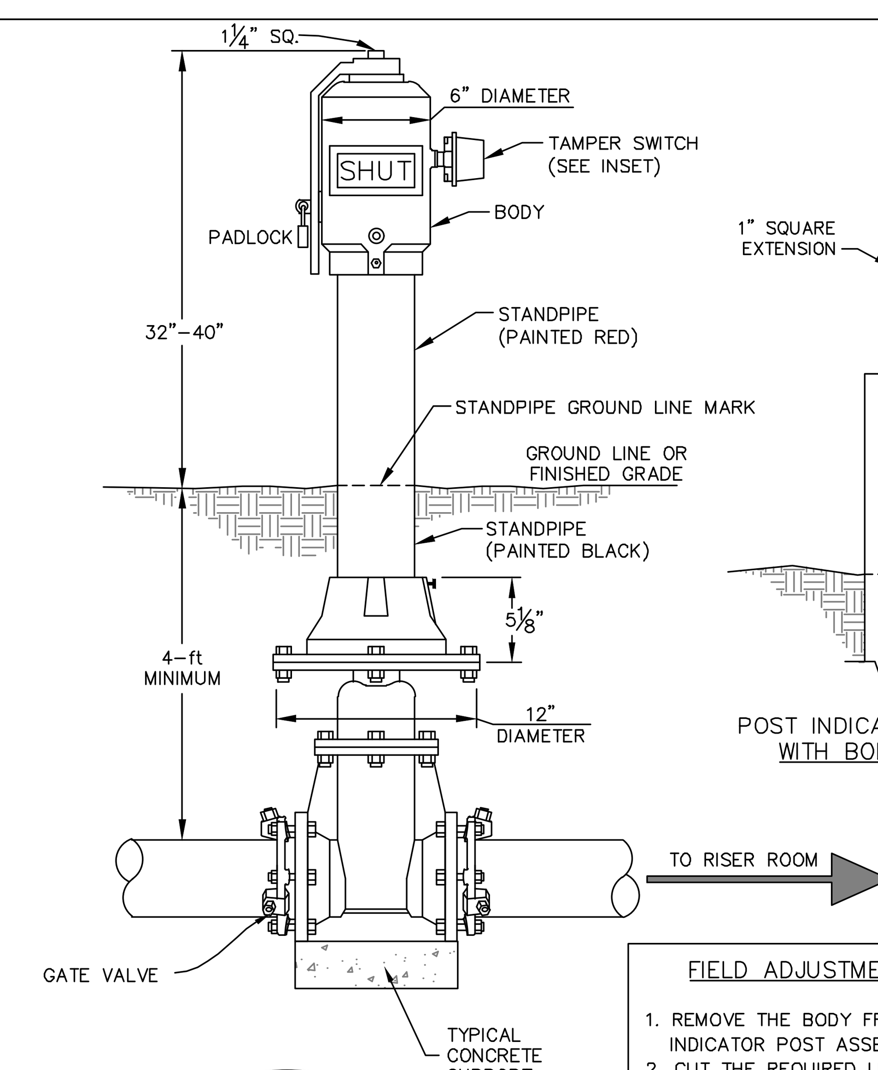
DETAIL 02510-001

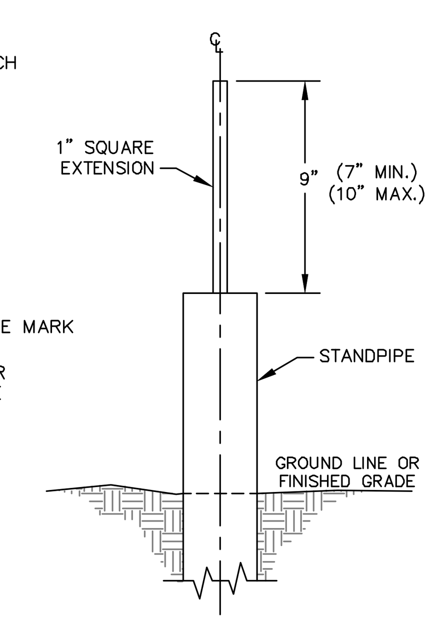


NOTE: CONTRACTOR TO INSTALL TRACER WIRE OVER PIPE

TAPPING SLEEVE AND VALVE

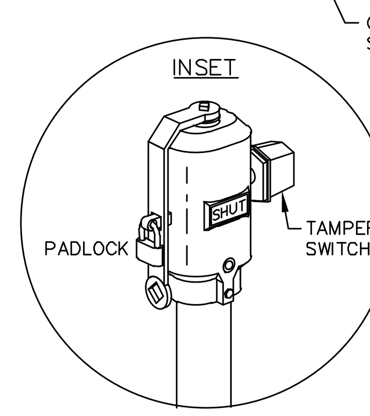
DETAIL 02510-006





POST INDICATOR ASSEMBLY WITH BODY REMOVED

INSET

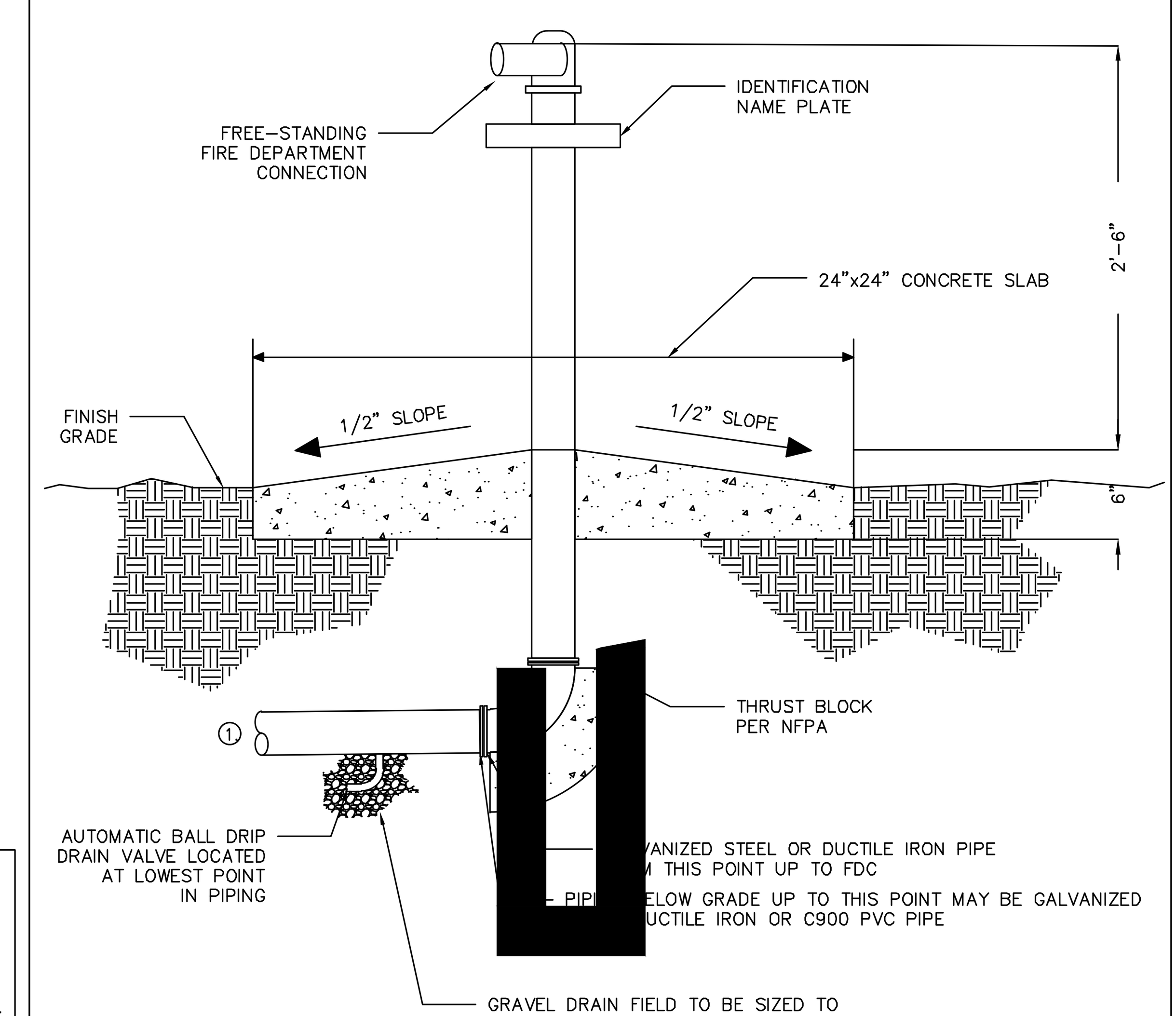


FIELD ADJUSTMENT INSTRUCTIONS

1. REMOVE THE BODY FROM THE TOP OF THE INDICATOR POST ASSEMBLY.
2. CUT THE REQUIRED LENGTH OFF THE BOTTOM OF THE STANDPIPE FOR THE GROUND LINE TO MATCH UP WITH STANDPIPE GROUND LINE MARK.
3. CUT THE 1" SQ. EXTENSION AT A DISTANCE OF 9" ABOVE THE TOP OF THE STANDPIPE.
4. SET THE "OPEN" AND "SHUT" TARGETS FOR THE APPROPRIATE VALVE SIZE.
5. RE-ATTACH THE BODY TO THE TOP OF THE INDICATOR POST ASSEMBLY.
6. ALL POST INDICATOR VALVES SHALL BE INSTALLED WITH AN ELECTRONIC UL LISTED TAMPER SWITCH.
7. THERE SHALL BE 36" OF UNOBSTRUCTED CLEARANCE AROUND THE PERIMETER OF ALL POST INDICATOR VALVES.
8. POST INDICATOR VALVE SHALL BE LOCATED AT A MINIMUM 40-FT FROM BUILDING.

STANDARD POST INDICATOR VALVE

DETAIL 02510-032A



NOTES:

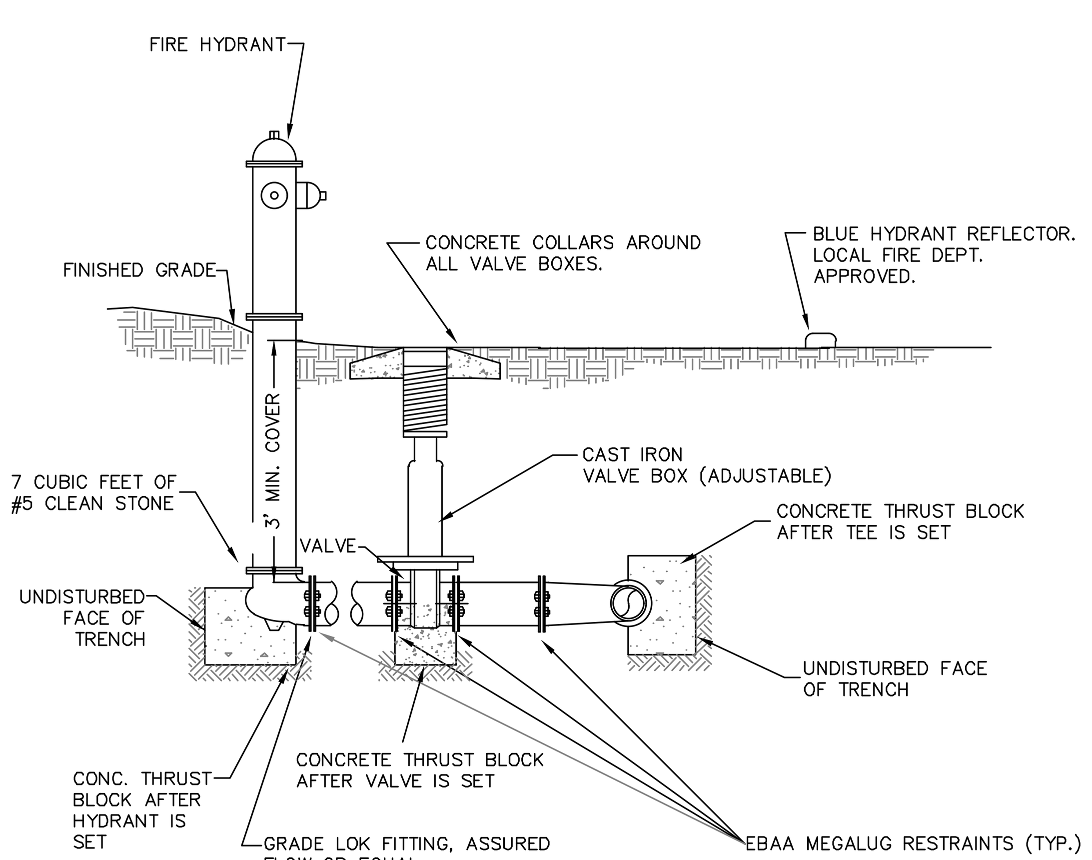
① WHERE GALVANIZED STEEL PIPE IS INSTALLED UNDERGROUND FOR FIRE DEPARTMENT CONNECTION PIPING, PIPING SHALL BE EXTERNALLY COATED AND WRAPPED INCLUDING ALL CLAMPS, TIE RODS AND BOLTED JOINT ACCESSORIES PER NFPA 13.

FREE STANDING FIRE DEPARTMENT CONNECTION DETAIL

NOT TO SCALE

NOTES:

1. ALL FIRE HYDRANT LEADS TO BE DUCTILE IRON WITH MECHANICAL JOINTS. HYDRANTS TO BE LOCATED 3' TO 10' BEHIND EDGE OF PAVEMENT OR 1' INSIDE RIGHT-OF-WAY AND ON PROPERTY LINE BETWEEN TWO LOTS. VERIFY LOCATION W/HILTON HEAD P.S.D..
2. ALL FITTINGS SHALL BE MECHANICAL JOINTS AT TEES, GATE VALVES & FIRE HYDRANTS.



FIRE HYDRANT VALVE AND TEE SETTING

DETAIL 02510-019

NOT FOR CONSTRUCTION

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PLAN REVISIONS

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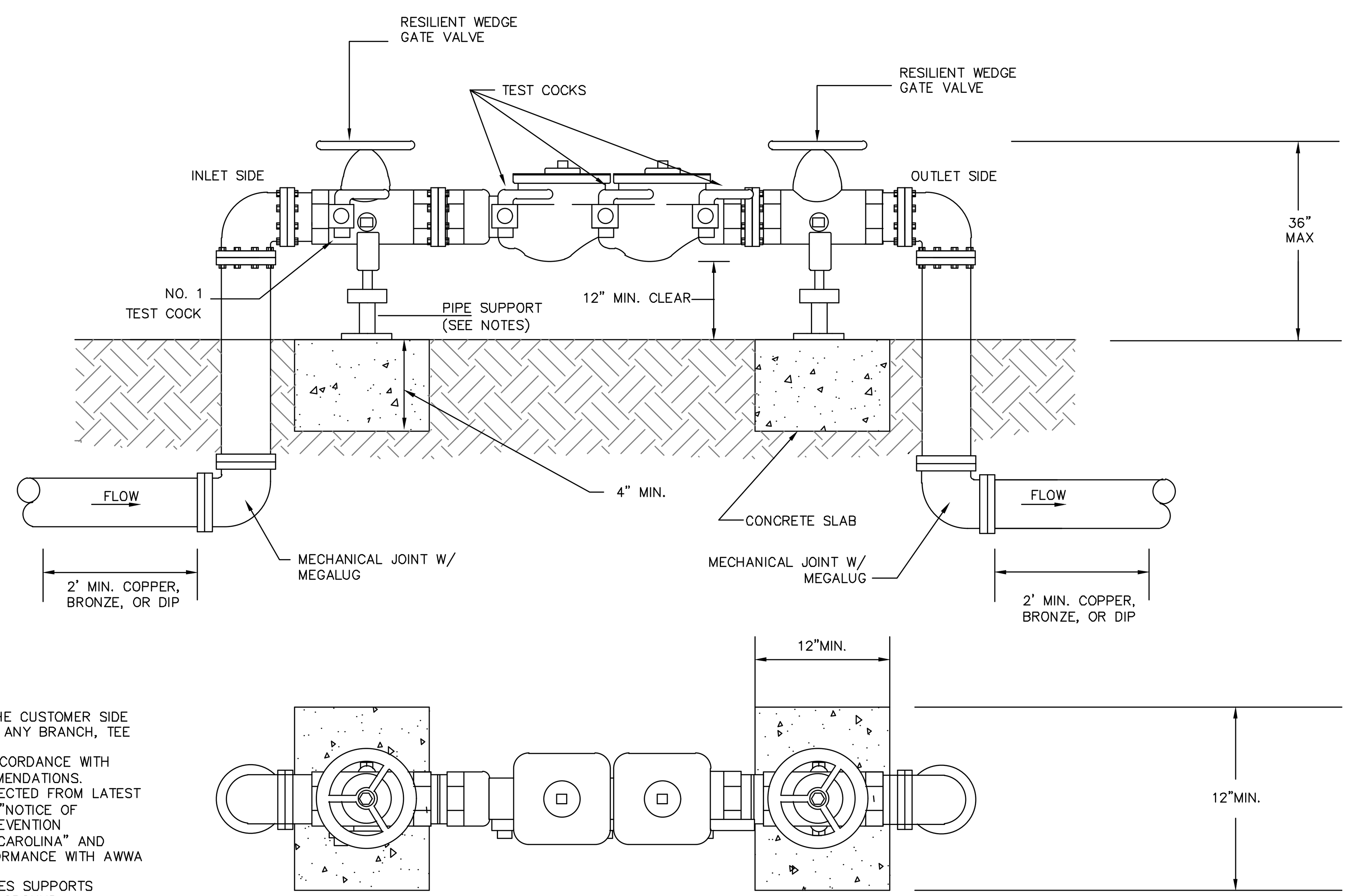
IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

UTILITY DETAILS

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

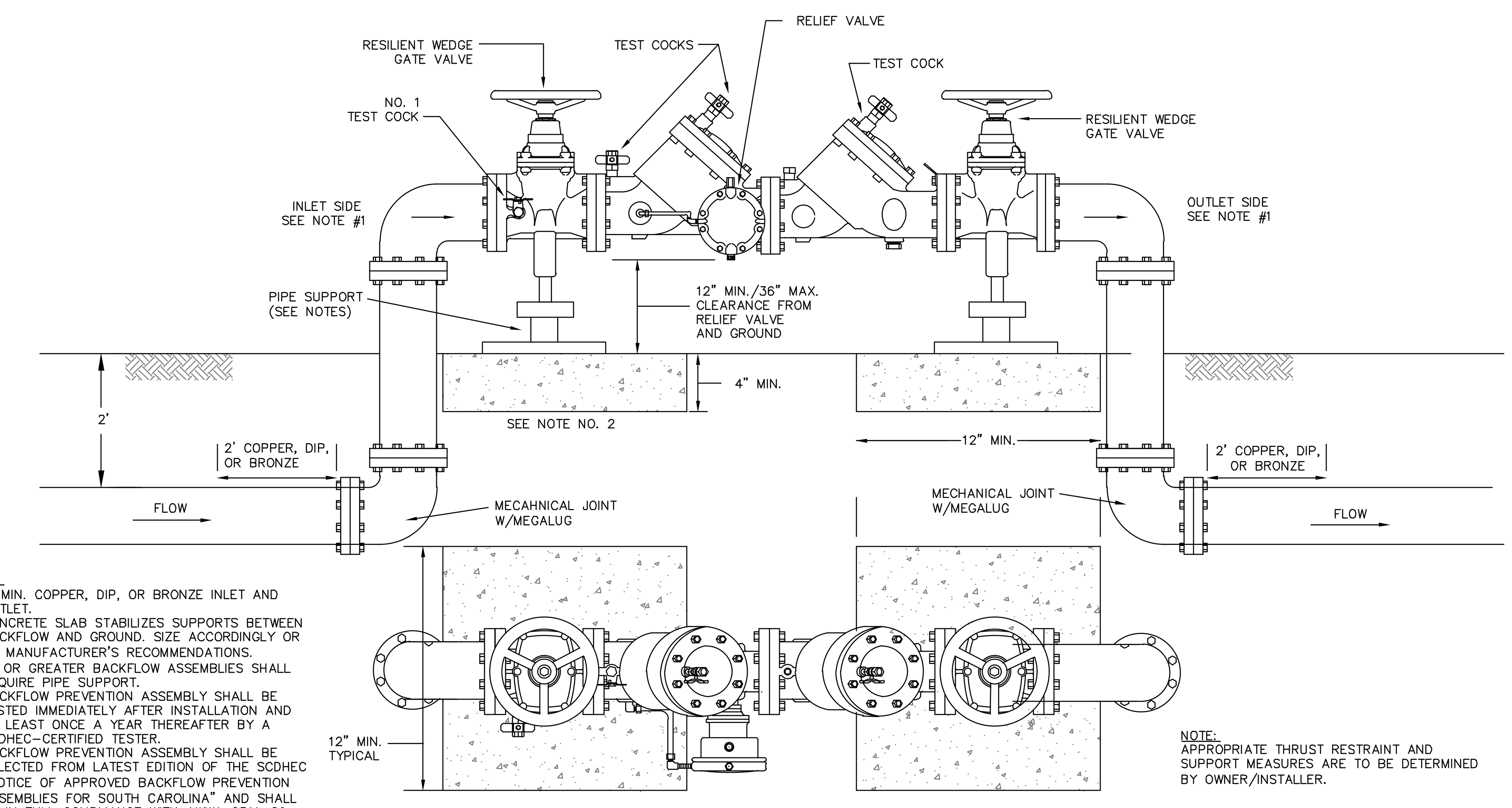
SHEET C704



NOTES:
1. INSTALL ASSEMBLY ON THE CUSTOMER SIDE OF THE METER PRIOR TO ANY BRANCH, TEE OR SERVICE CONNECTION.
2. INSTALL ASSEMBLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. ASSEMBLY SHALL BE SELECTED FROM LATEST EDITION OF THE SCDHEC "NOTICE OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOR SOUTH CAROLINA" AND SHALL BE IN FULL CONFORMANCE WITH AWWA C510–89.
4. CONCRETE SLAB STABILIZES SUPPORTS BETWEEN ASSEMBLY AND GROUND.
5. APPROPRIATE THRUST RESTRAINT AND SUPPORT MEASURES ARE TO BE DETERMINED BY THE OWNER/INSTALLER.
6. 4" OR GREATER ASSEMBLY SHALL REQUIRE PIPE SUPPORT
7. ASSEMBLY SHALL BE TESTED IMMEDIATELY AFTER INSTALLATION AND AT LEAST ONCE A YEAR THEREAFTER BY A SCDHEC–CERTIFIED TESTER.

DOUBLE CHECK VALVE ASSEMBLY (ABOVE GROUND)

DETAIL 02510-033



NOTE:
APPROPRIATE THRUST RESTRAINT AND SUPPORT MEASURES ARE TO BE DETERMINED BY OWNER/INSTALLER.

NOTES:
1. 2' MIN. COPPER, DIP, OR BRONZE INLET AND OUTLET.
2. CONCRETE SLAB STABILIZES SUPPORTS BETWEEN BACKFLOW AND GROUND. SIZE ACCORDINGLY OR BY MANUFACTURER'S RECOMMENDATIONS.
3. 4" OR GREATER BACKFLOW ASSEMBLIES SHALL REQUIRE PIPE SUPPORT.
4. BACKFLOW PREVENTION ASSEMBLY SHALL BE TESTED IMMEDIATELY AFTER INSTALLATION AND AT LEAST ONCE A YEAR THEREAFTER BY A SCDHEC–CERTIFIED TESTER.
5. BACKFLOW PREVENTION ASSEMBLY SHALL BE SELECTED FROM LATEST EDITION OF THE SCDHEC "NOTICE OF APPROVED BACKFLOW PREVENTION ASSEMBLIES FOR SOUTH CAROLINA" AND SHALL BE IN FULL COMPLIANCE WITH AWWA C511–89
6. BACKFLOW ASSEMBLY SHALL BE INSTALLED ON THE CUSTOMER SIDE OF THE METER PRIOR TO ANY BRANCH, TEE, OR SERVICE CONNECTION.
7. INSTALL ASSEMBLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. IF AN ABOVE–GROUND ENCLOSURE IS USED, PROVIDE MINIMUM 6" CLEARANCE ON ALL SIDES. PROVIDE TWO DRAIN HOLES, EQUAL IN SIZE TO THE RELIEVE VALVE VENT OPENING, AT THE BASE OF THE ENCLOSURE.

REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTION ASSEMBLY

DETAIL 02510-035

NOT FOR CONSTRUCTION

PLAN REVISIONS

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

UTILITY DETAILS

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
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SHEET
C705

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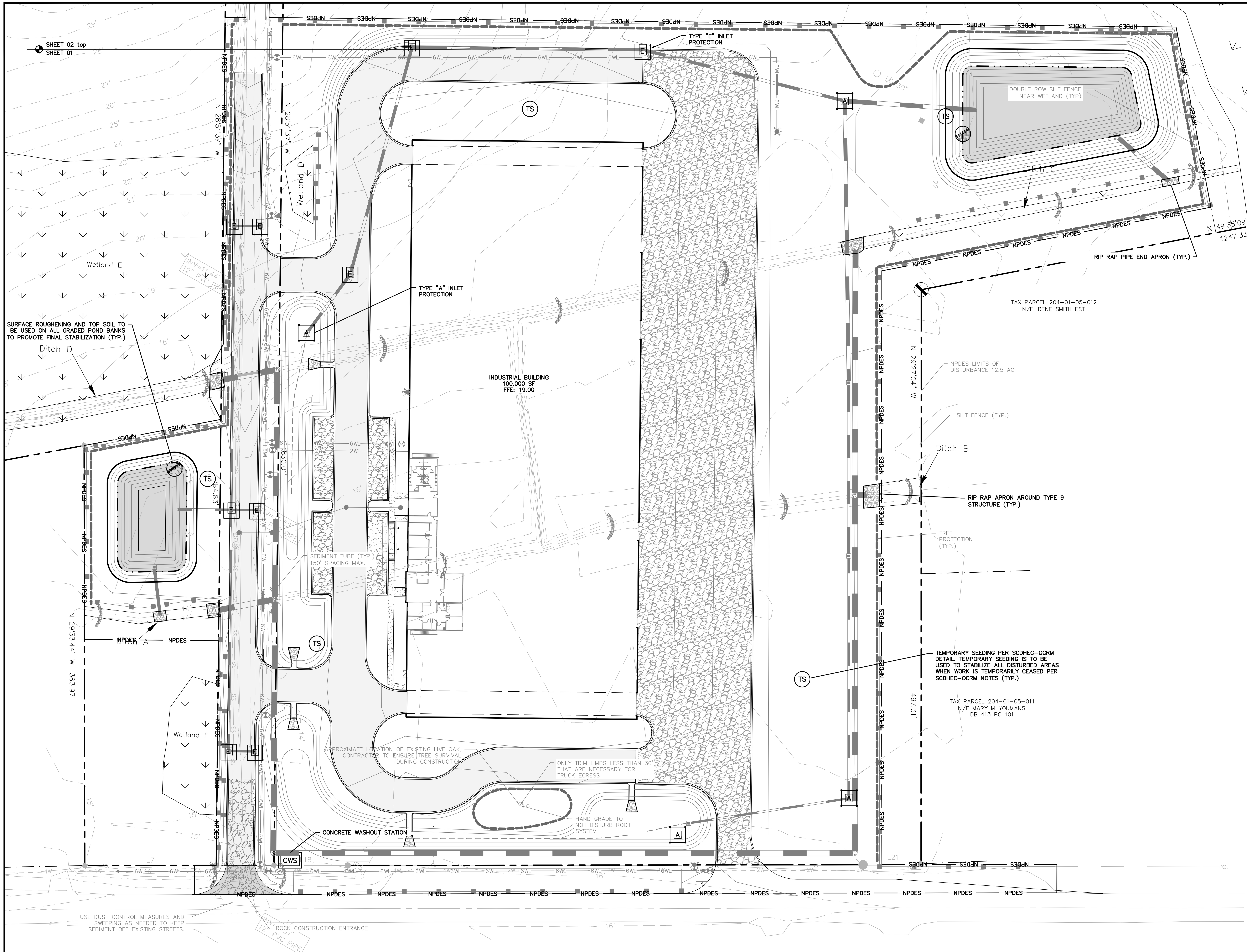

LIMITS OF DISTURBANCE:	NPDES

EROSION PREVENTION

LAND GRADING:	LG OR
SURFACE ROUGHENING:	
TOPSOILING:	
TEMPORARY SEEDING:	TS
MULCHING:	M
ECB OR TRM:	
FGM:	FGM
BFM:	BFM
PERMANENT SEEDING:	PS
SODDING:	SO
RIPRAP:	
OUTLET PROTECTION:	RIPRAP / ECB or TRM
DUST CONTROL:	DC
POLYACRYLAMIDE (PAM):	PAM

SEDIMENT CONTROL

SEDIMENT BASIN:	
TEMPORARY SEDIMENT TRAP:	
ROCK SEDIMENT DIKE:	
ROCK CHECK DAM:	OR
SEDIMENT TUBE:	
SILT FENCE:	
REINFORCED SILT FENCE:	
TYPE A–FABRIC INLET PROTECTION:	A
TYPE A–SEDIMENT TUBE INLET PROTECTION:	A
TYPE B – WIRE MESH AND STONE DROP INLET PROTECTION:	B
TYPE C – BLOCK AND GRAVEL INLET PROTECTION:	C
TYPE D – RIGID INLET FILTERS:	D
TYPE E – SURFACE COURSE CURB INLET FILTER:	E
TYPE F – INLET TUBE:	F
TYPE FC – FILTER BAG CURB INLET PROTECTION:	FC
TYPE FB – FILTER BAG GRATE INLET PROTECTION:	FB
CONCRETE WASHOUT	CWS

RUNOFF CONVEYANCE MEASURES

VEGETATED CHANNELS:	
RIPRAP–LINED CHANNELS:	
ECB OR TRM–LINED CHANNELS:	
PAVED CHANNELS:	PC PC PC
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	TD TD
PERMANENT DIVERSION DITCH:	PD PD
DIVERSION DIKE OR BERM:	DD DB
LEVEL SPREADER:	
SUBSURFACE DRAIN:	SSD SSD

NOT FOR CONSTRUCTION

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
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1		
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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

INTERMEDIATE EROSION CONTROL PLAN

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
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SHEET
C801

SCALE: 1"= 40'

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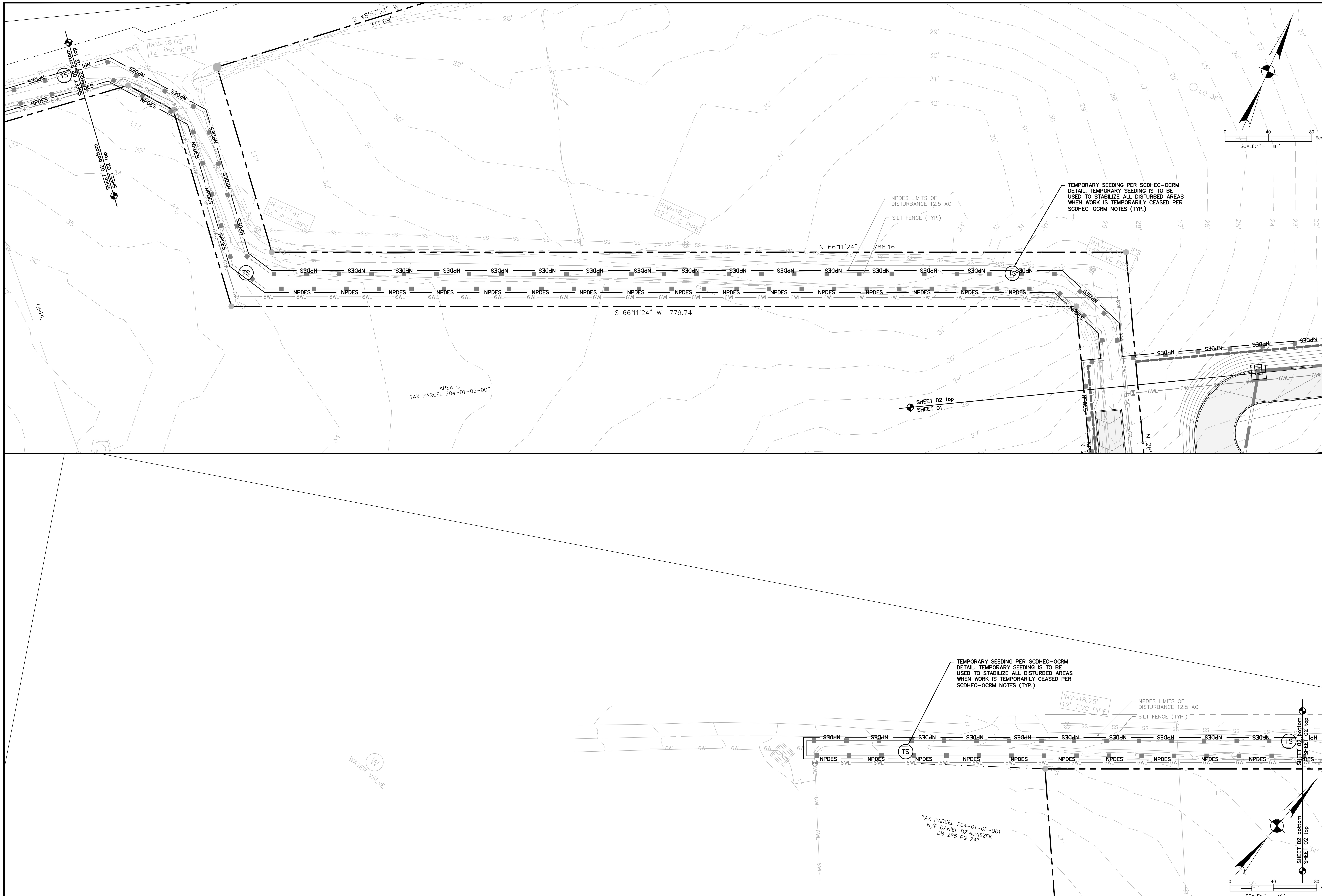

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SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
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TELL CITY, INDIANA

INTERMEDIATE EROSION CONTROL PLAN

VERTICAL DATUM: NAVD88

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SHEET
C802

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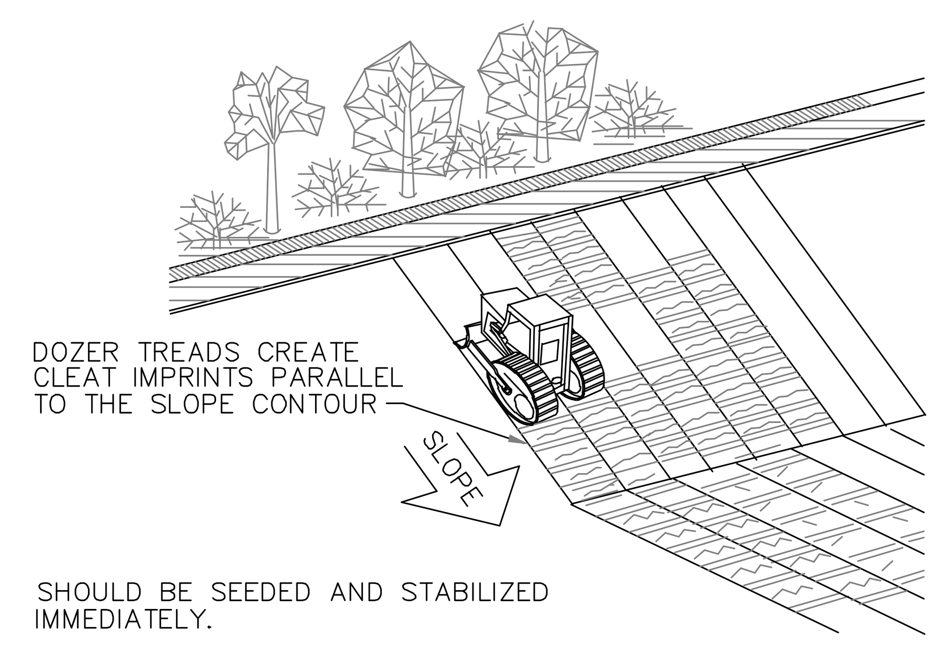
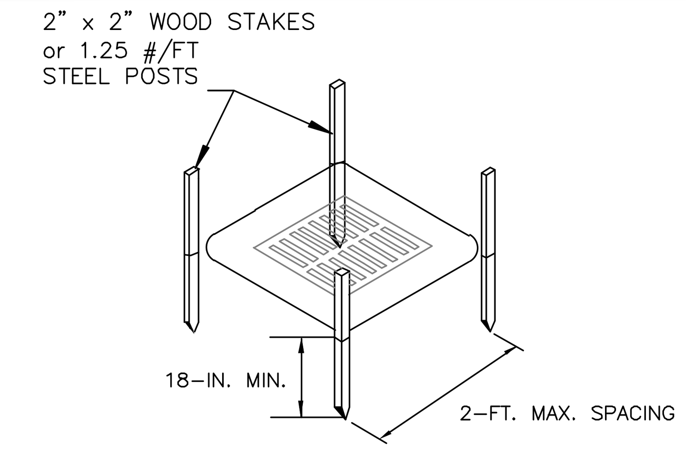
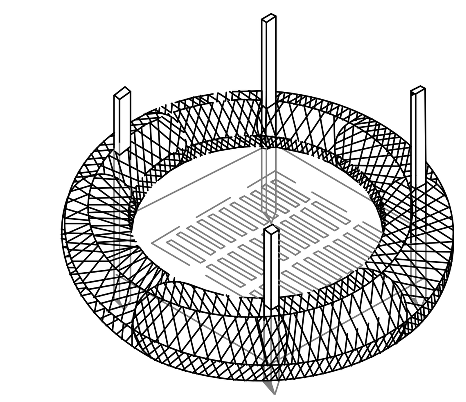


TRACKING

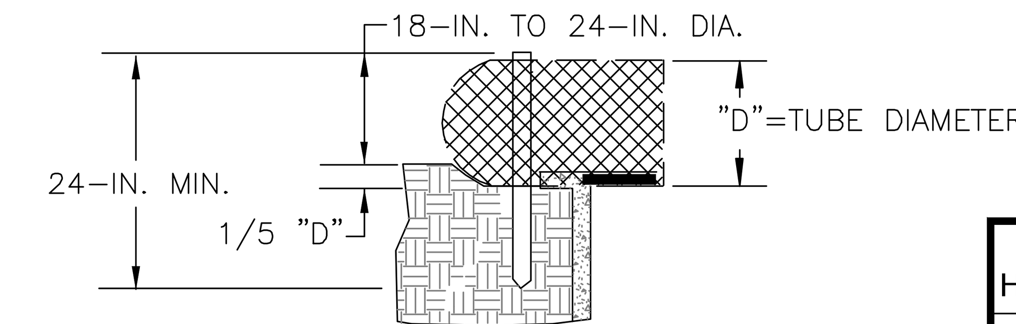
South Carolina Department of Health and Environmental Control
TRACKING
STANDARD DRAWING NO. EC-01 Page 1
APPROVED BY: SCDHEC AUGUST, 2005 DATE



POST INSTALLATION DETAIL



SEDIMENT TUBE INSTALLATION DETAIL



SEDIMENT TUBE BURIAL DETAIL

PLAN SYMBOL

A

South Carolina Department of Health and Environmental Control
Type A
SEDIMENT TUBE INLET PROTECTION
STANDARD DRAWING NO. SC-07A PAGE 1 of 2
NOT TO SCALE FEBRUARY 2014 DATE

TYPE A – SEDIMENT TUBE INLET PROTECTION

GENERAL NOTES

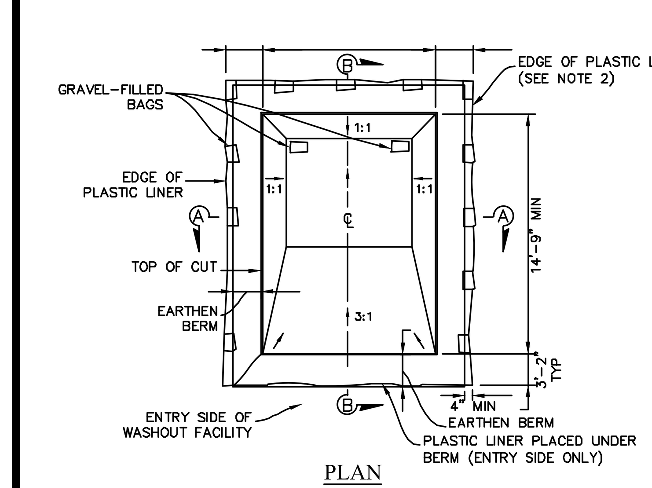
1. Sediment tubes are elongated tubes of compacted geotextiles, curled excelsior wood, natural coconut fiber, or hardwood mulch. Straw, pine needle, and leaf mulch-filled sediment tubes are not permitted.
2. The outer netting of the sediment tube should consist of seamless, high-density polyethylene photodegradable materials treated with ultraviolet stabilizers or a seamless, high-density polyethylene non-degradable material.
3. Sediment tube diameters shall range from 18-inches to 24-inches. Sediment tunes with smaller diameters are prohibited when used as inlet protection.
4. Curled excelsior wood, or natural coconut products that are rolled up to create a sediment tube are not allowed.
5. Sediment tubes should be staked using wooden oak stakes (2-inch X 2-inch) or steel posts (standard "U" or "T" sections with a minimum weight of 1.25 pounds per foot) at a minimum of 48-inches in length placed on 2-foot centers.
6. Install all sediment tubes to ensure that no gaps exist between the soil and the bottom of the tube. Manufactuer's recommendations should always be consulted before installation.
7. The ends of adjacent sediment tubes should be overlapped 6-inches to prevent flow and sediment from passing through the field joint.
8. Sediment tubes should not be stacked on top of one another.
9. Each sediment tube should be installed in a trench with a depth equal to 1/5 the diameter of the sediment tube.
10. Install stakes at a diagonal facing incoming runoff.

INSPECTION & MAINTENANCE

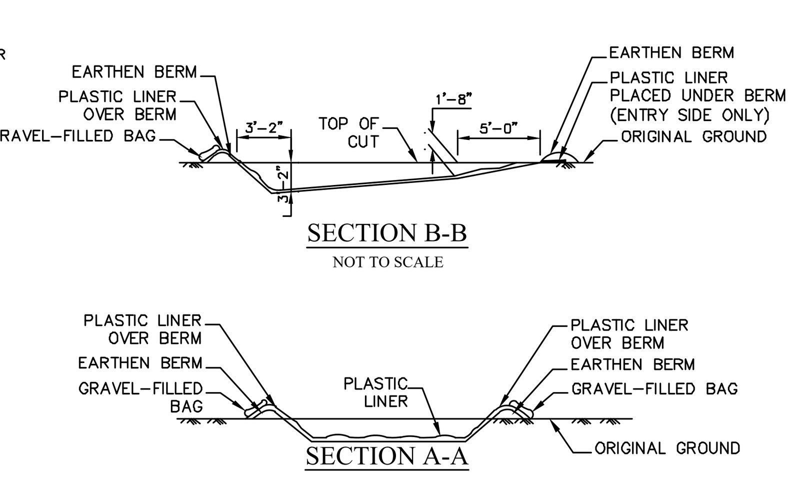
1. The key to functional inlet protection is weekly inspections, routine maintenance, and regular sediment removal.
2. Regular inspections of sediment tube inlet protection shall be conducted once every calendar week and, as recommended, within 24-hours after each rainfall even that produces 1/2-inch or more of precipitation.
3. Attention to sediment accumulations in front of the sediment tube is extremely important. Accumulated sediment should be continually monitored and removed when necessary.
4. Remove accumulated sediment when it reaches 1/3 the height of the sediment tube. When a sump is installed in front of the inlet protection, sediment shall be removed when if fills approximately 1/3 the depth of the sump.
5. Removed sediment shall be placed in stockpile storage areas or spread thinly across disturbed area. Stabilize the removed sediment after it is relocated.
6. Large debris, trash, and leaves should be removed from in front of tubes when found.
7. Inlet protection structures should be removed after the disturbed areas are permanently stabilized. Remove all construction material and sediment, and dispose of them properly. Grade the disturbed area to the elevation of the drop inlet structure crest. Stabilize all bare areas immediately.

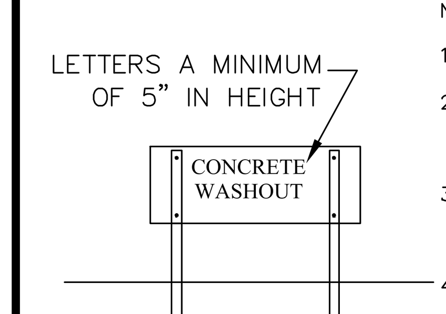
South Carolina Department of Health and Environmental Control
Type A
SEDIMENT TUBE INLET PROTECTION
STANDARD DRAWING NO. SC-07A PAGE 2 of 2
NOT TO SCALE FEBRUARY 2014 DATE

EXCAVATED PIT CONCRETE WASHOUT



PLAN
TYPE "EXCAVATED PIT"





CONCRETE WASHOUT SIGN DETAIL

NOTES:

1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

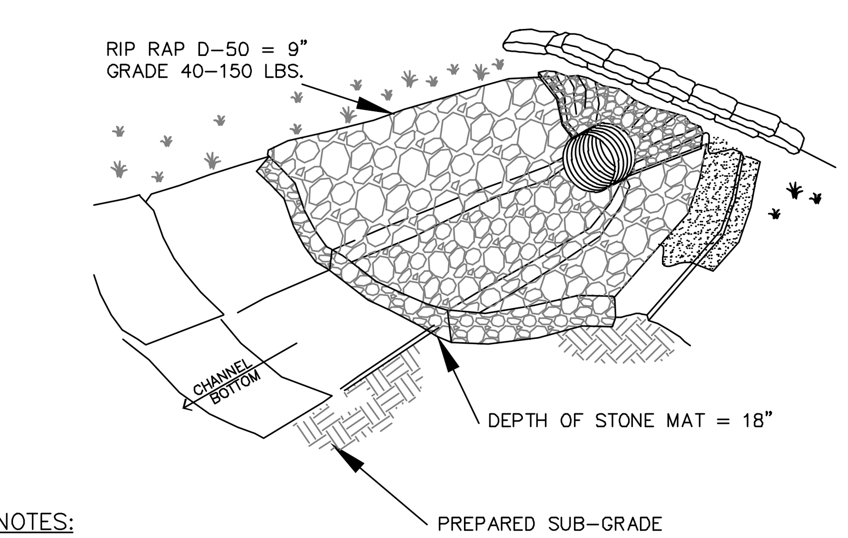
CWS

South Carolina Department of Health and Environmental Control
CONCRETE WASHOUT
EXCAVATED PIT
STANDARD DRAWING NO. RC-08 PAGE 1 of 1
NOT TO SCALE FEBRUARY 2014 DATE

TEMPORARY SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET	40 LBS/AC												
RYE, GRAIN	56 LBS/AC												
RYEGRASS	50 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET OR JAPANESE MILLET	40 LBS/AC												
RYE, GRAIN OR OATS	56 LBS/AC 75 LBS/AC												
RYEGRASS	50 LBS/AC												

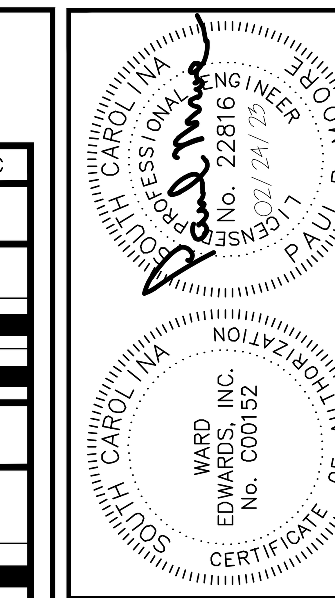
TS TEMPORARY SEEDING - COASTAL
DETAIL 02370-011



NOTES:

1. PLACE ALL RIP RAP ON 8 OUNCE NON-WOVEN FILTER CLOTH.
2. STAKING OF FILTER CLOTH PER MANUFACTURER'S SPECIFICATIONS.
3. LENGTH OF OUTLET STABILIZATION = 8 TIMES PIPE DIA.
TOP WIDTH OF OUTLET STABILIZATION = 3 TIMES PIPE DIA.
BOTTOM WIDTH OF OUTLET STABILIZATION = 6 TIMES PIPE DIA.

RIP RAP OUTLET STABILIZATION DETAIL
DETAIL #02370-009



NOT FOR CONSTRUCTION

NO.	DESCRIPTION	DATE
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PLAN REVISIONS

Ward Edwards
E N G I N E E R I N G
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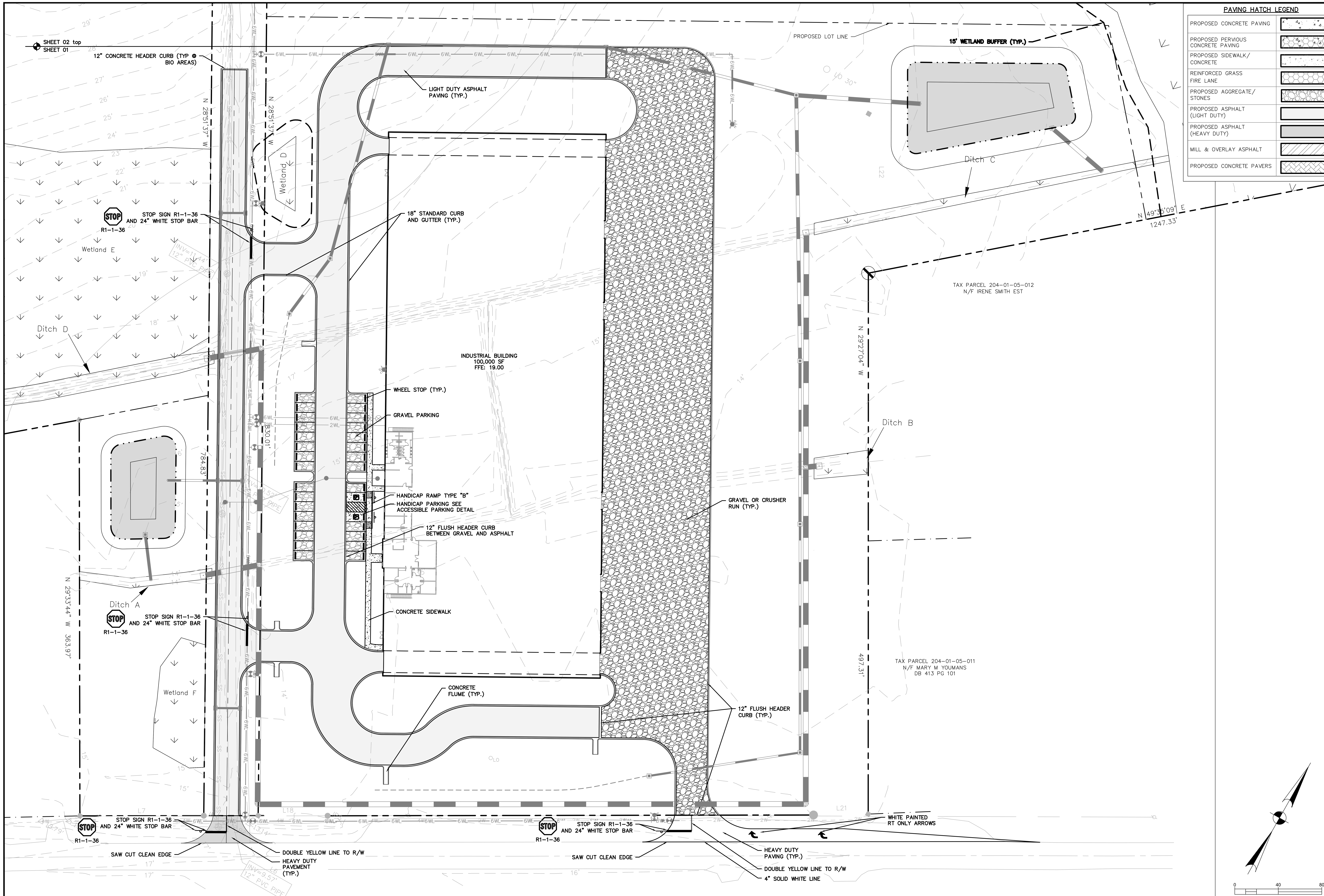
IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

INTERMEDIATE EROSION CONTROL DETAILS

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C803



PAVING HATCH LEGEND

PROPOSED CONCRETE PAVING
PROPOSED PERVIOUS CONCRETE PAVING
PROPOSED SIDEWALK/ CONCRETE
REINFORCED GRASS FIRE LANE
PROPOSED AGGREGATE/ STONES
PROPOSED ASPHALT (LIGHT DUTY)
PROPOSED ASPHALT (HEAVY DUTY)
MILL & OVERLAY ASPHALT
PROPOSED CONCRETE PAVERS

0 40 80 Feet
SCALE: 1"= 40'

NOT FOR CONSTRUCTION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
1	PLAN REVISIONS	
2		
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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

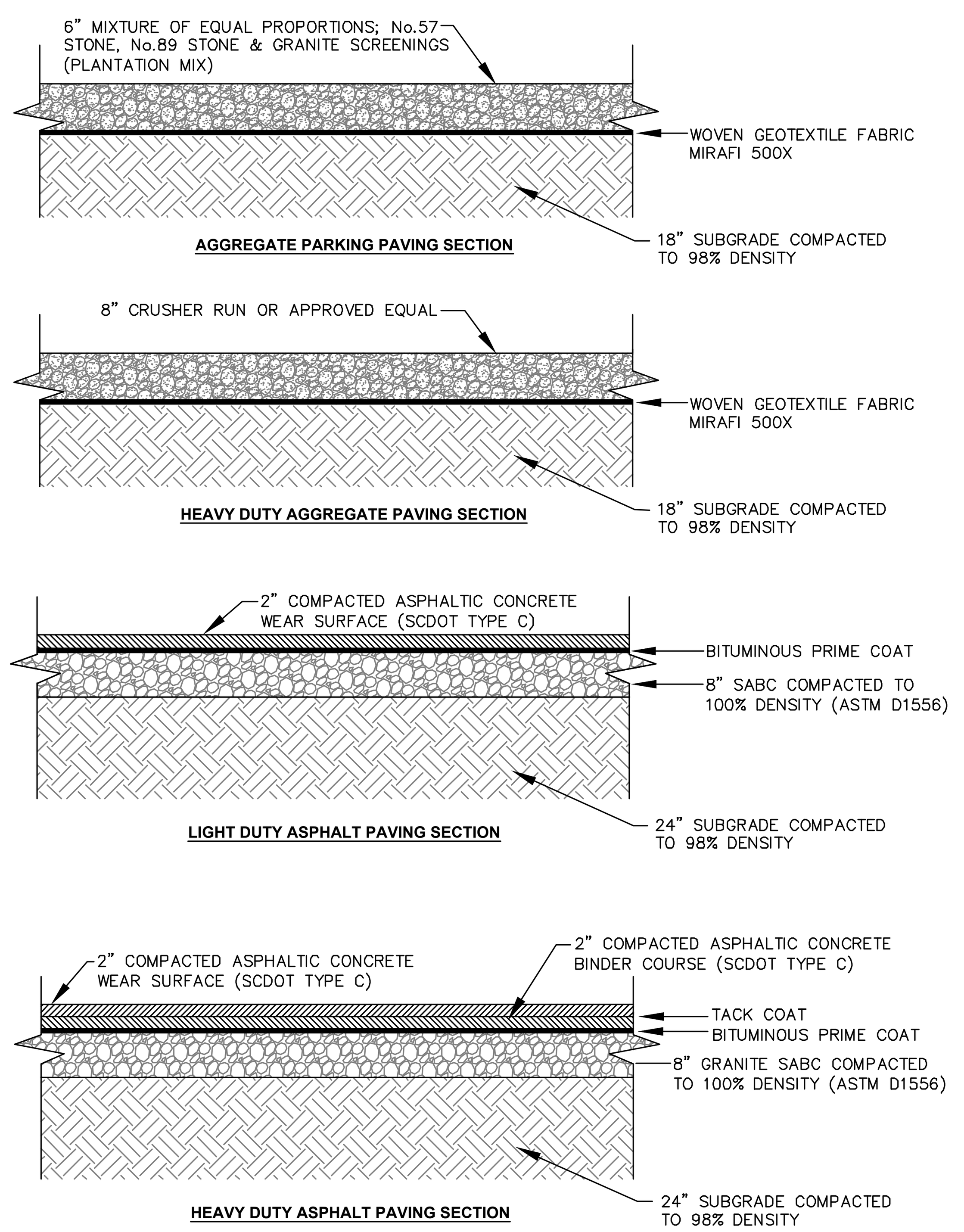
PAVING PLAN

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

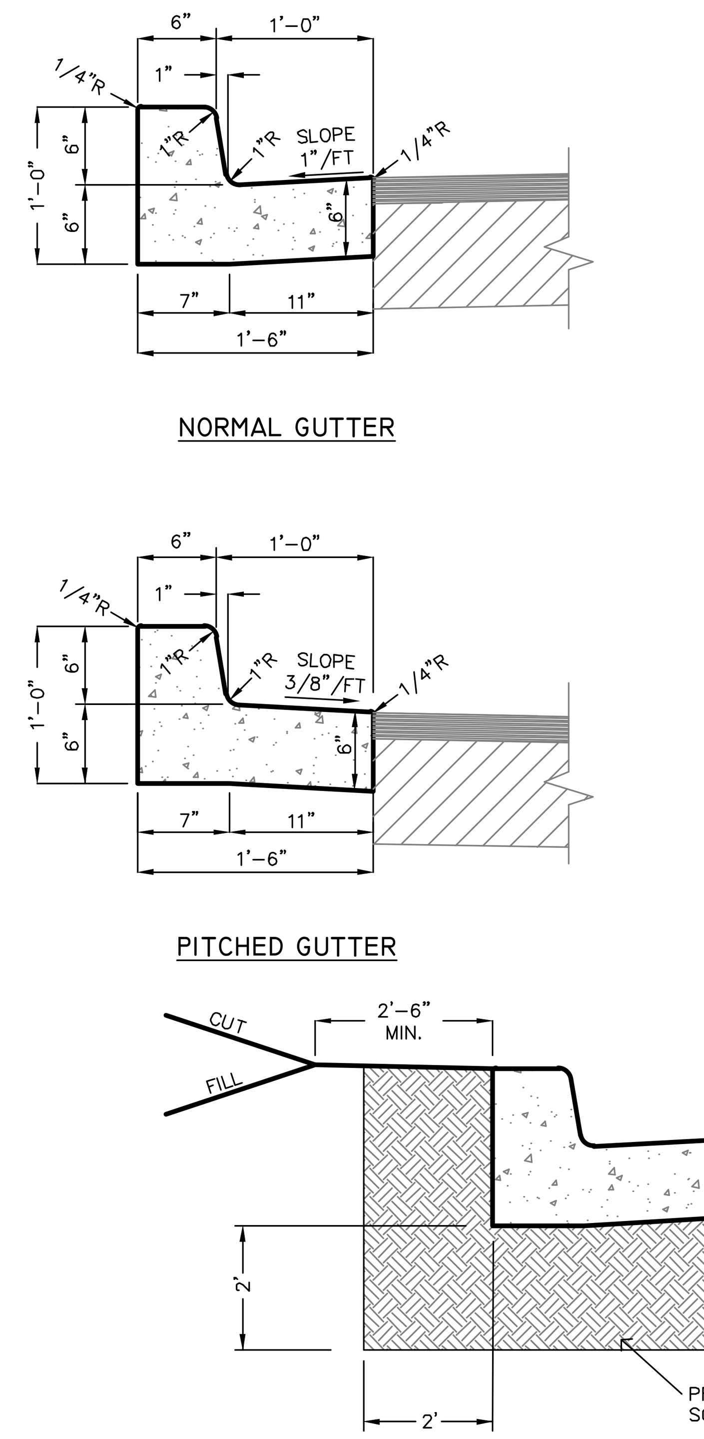
SHEET
C901

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



TYPICAL PAVING SECTIONS

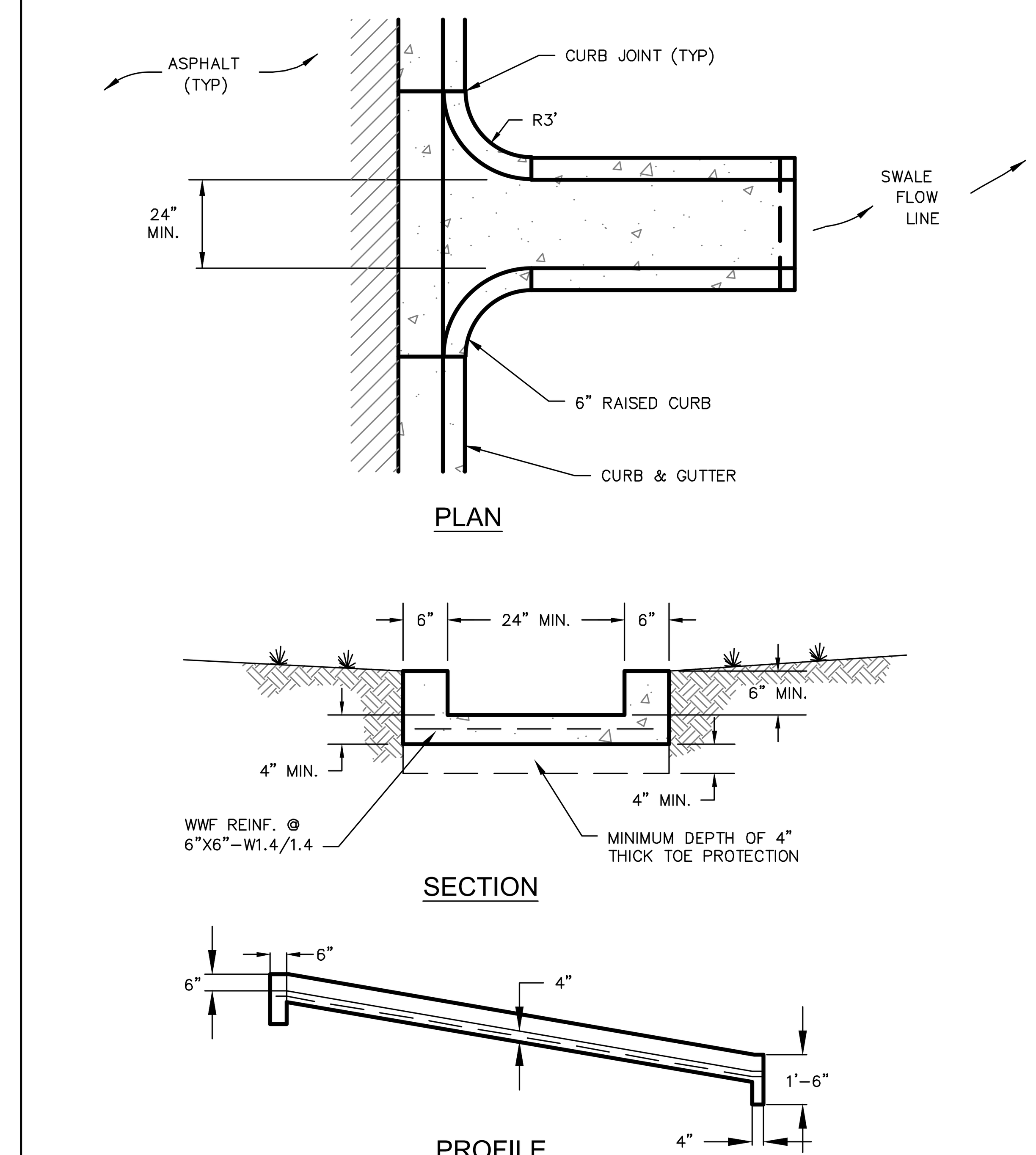
DETAIL 02740-016



NOTES:
1. USE NORMAL OR PITCHED GUTTER AS REQUIRED TO MATCH PAVING SLOPE.
2. ALL CONCRETE SHALL BE 3,000 PSI.
3. PROVIDE CONTRACTION JOINTS EVERY TEN FEET (10').
4. PROVIDE EXPANSION JOINTS EVERY FIFTY (50') FEET AND AT ALL TANGENT POINTS.
5. PROVIDE EXPANSION JOINTS WHERE CURB ABUTS SIDEWALKS OR OTHER RIGID STRUCTURES.
6. EXPANSION JOINTS SHALL BE 1/2" WITH PRE-MOLDED JOINT FILLER.
7. TOOL ALL EXPOSED EDGES & JOINTS TO 1/4" RADIUS.
8. PROVIDE LIGHT BROOM FINISH.

18" CURB AND GUTTER

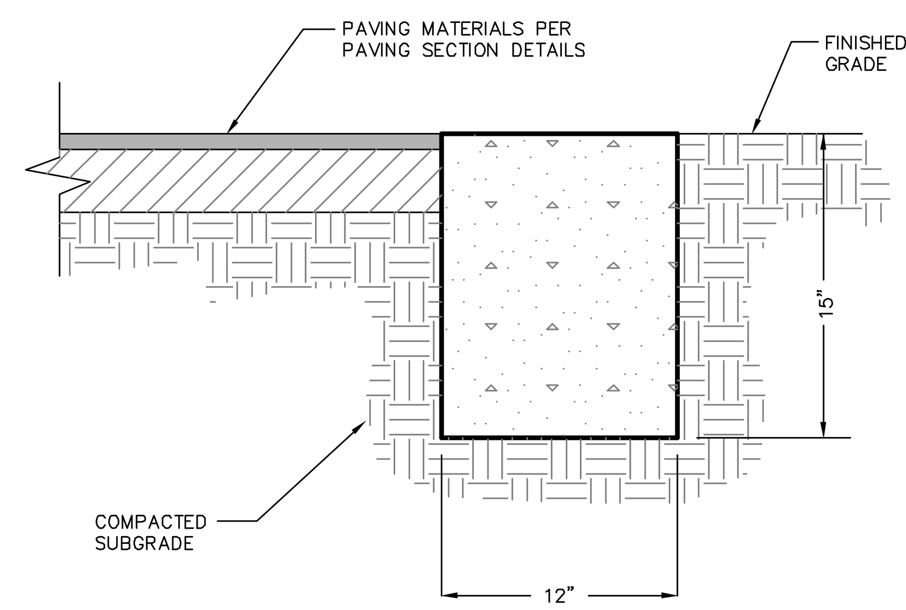
DETAIL 03300-004A



NOTES:
1. DRAINAGE FLUME SHALL EXTEND DOWN TO THE BOTTOM OF THE POND OR SWALE.
2. TO BE USED ON GRADUAL SLOPES OF 3:1 OR LESS.

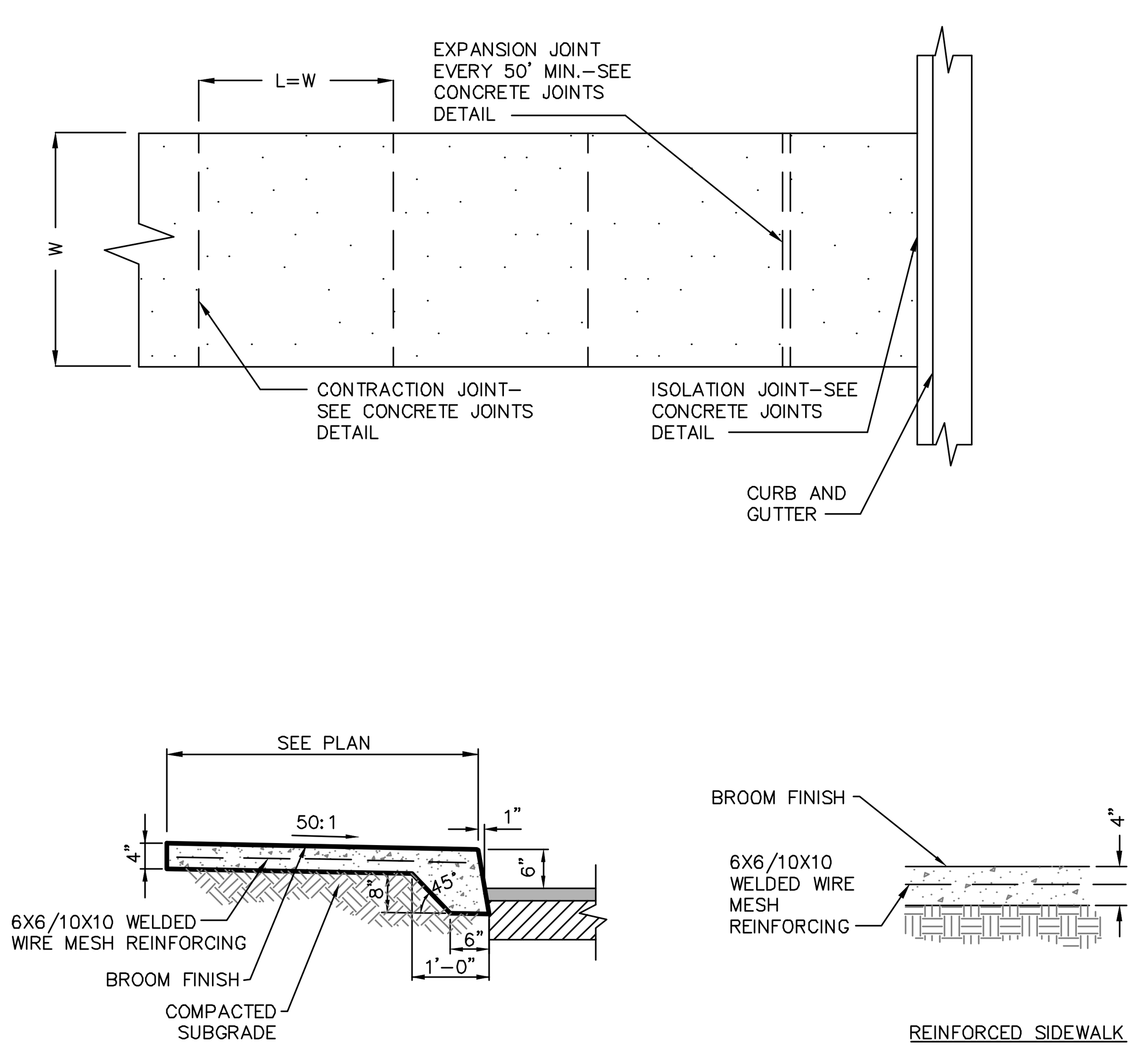
CONCRETE FLUME - TYPE A

NOTES:
1. ALL CONCRETE SHALL BE 3,000 PSI.
2. PROVIDE CONTRACTION JOINTS EVERY TEN FEET (10').
3. PROVIDE EXPANSION JOINTS EVERY FIFTY (50') FEET AND AT ALL TANGENT POINTS.
4. PROVIDE EXPANSION JOINTS WHERE CURB ABUTS SIDEWALKS OR OTHER RIGID STRUCTURES.
5. EXPANSION JOINTS SHALL BE 1/2" WITH PRE-MOLDED JOINT FILLER.
6. TOOL ALL EXPOSED EDGES & JOINTS TO 1/4" RADIUS.
7. PROVIDE LIGHT BROOM FINISH.



FLUSH HEADER CURB

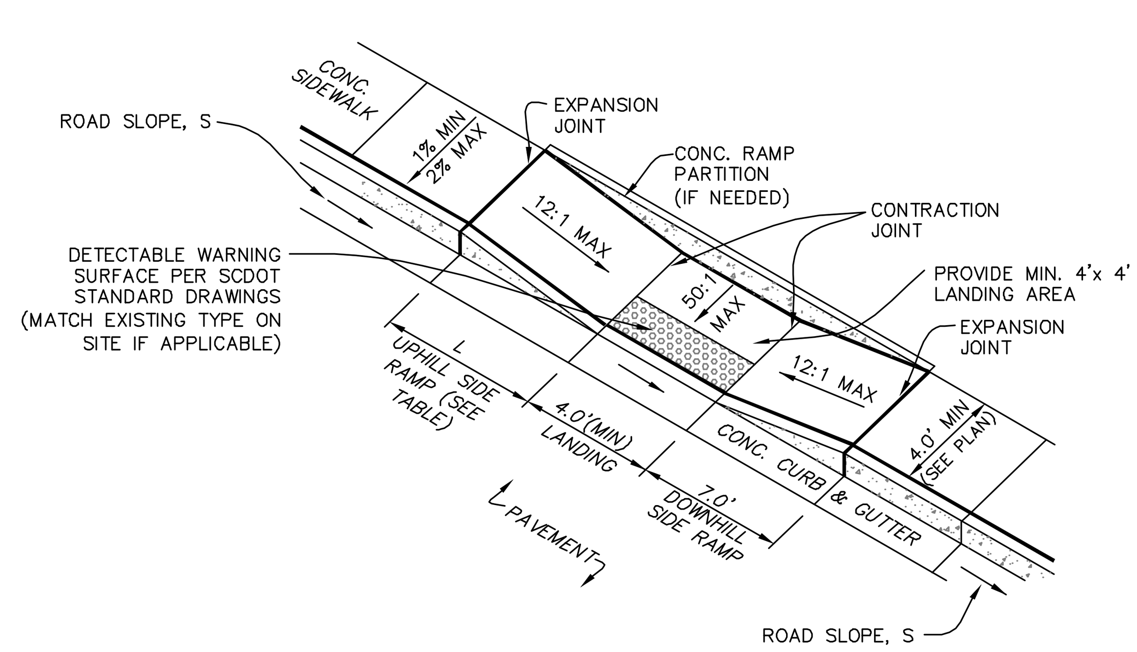
DETAIL 03300-005



NOTES:
1. W = VARIES, REFER TO STAKING PLAN FILL IN BASED ON SITE PLAN
2. L = WIDTH OF PAVING UNLESS OTHERWISE INDICATED ON PLAN.
3. SLOPE = AS INDICATED ON GRADING PLAN, NOT TO EXCEED 2% CROSS OF 8.33% LONGITUDINAL
4. ALL CONCRETE SHALL BE CLASS A 3000 PSI
5. FINISH BROOM WITH HAND TOOLED JOINTS AND EDGES.

CONCRETE SIDEWALK

DETAIL 03300-006

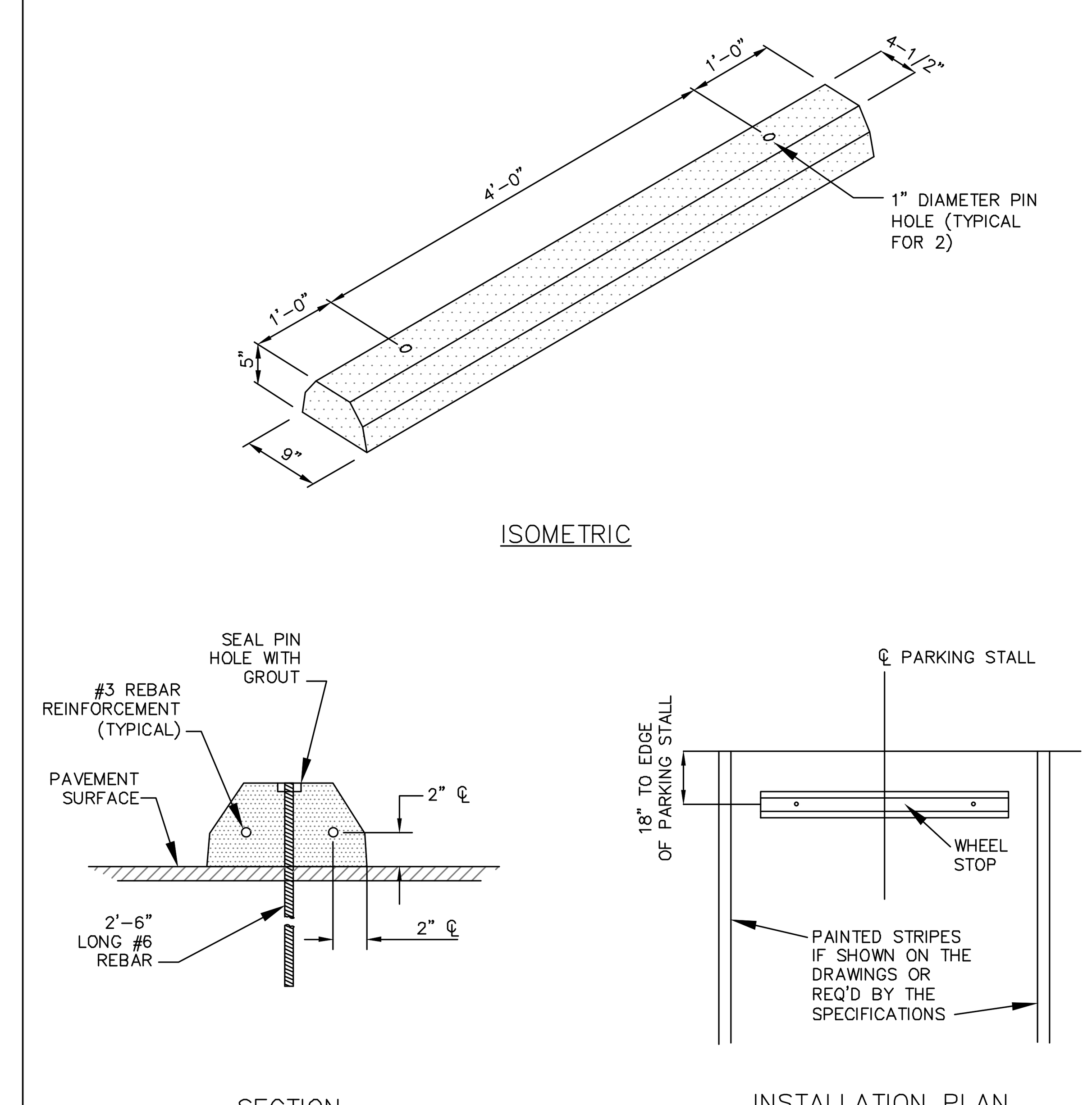


ROAD SLOPE, S (%)	L, (UPHILL SIDE RAMP), [FT]
S ≤ 1%	7'-0"
1% < S ≤ 3%	10'-0"
S > 3%	15'-0"

NOTES:
1. ALL CONCRETE SHALL BE CLASS A, 3,000 PSI.
2. REFER TO STANDARD DETAILS FOR SIDEWALKS, CURB & GUTTER, AND CONCRETE JOINTS.
3. CURB RAMP SHALL BE BROOM-FINISHED TO PROVIDE A ROUGH, SKID-RESISTANT SURFACE. ALL JOINTS AND EDGES SHALL BE HAND TOOLED.
4. GUTTER FLOW LINE AND PLAN PROFILE SHALL BE MAINTAINED THROUGH THE RAMP AREA. THE SURFACE OF THE RAMP SHALL BE FLUSH WITH THE FLOWLINE OF THE CURB AND GUTTER.
5. PLACE DETECTABLE WARNING IN LINE AND FLUSH WITH BACK OF "DROPPED CURB".
6. SIDE SLOPES OF THE RAMP ARE NOT TO EXCEED 12:1 (8.33%) AT ANY LOCATION WHERE PEDESTRIAN TRAFFIC CROSSES THE RAMP.
7. CROSS SLOPES OF SIDEWALK, RAMP, AND LANDING TO BE BETWEEN 100:1 (1%) AND 50:1 (2%).

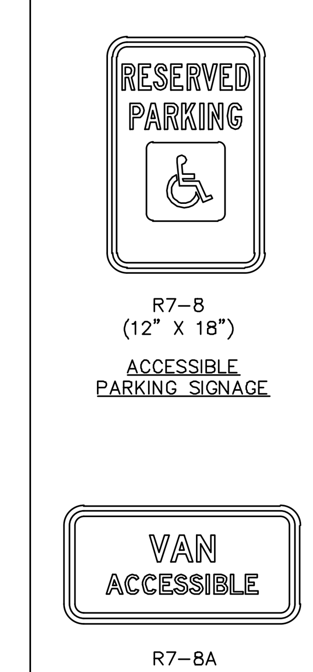
CONCRETE CURB RAMP TYPE-B

DETAIL 03300-029A

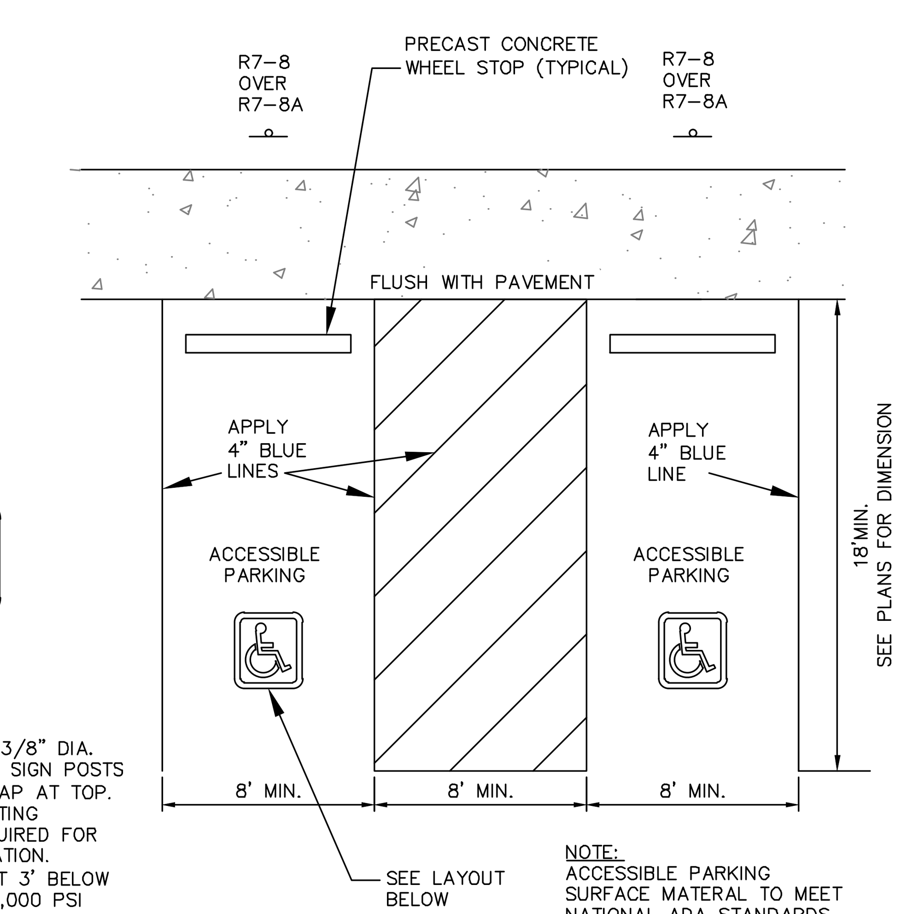


NOTES:
1. WHEEL STOPS SHALL BE STEEL REINFORCED PRECAST UNITS CONSISTING OF SCDOT CLASS 3000 CONCRETE, MINIMUM. ALTERNATE MATERIAL COMPOSITION MUST BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
2. WHEEL STOPS SHALL BE INSTALLED PERPENDICULAR TO PARKING STALL AND SHALL BE PLACED A MINIMUM OF 18" FROM END OF PARKING STALL OR OBSTRUCTION.
3. ANCHORING PINS SHALL BE DRIVEN FLUSH TO THE TOP OF THE WHEEL STOP AND PIN HOLES SHALL BE GROUTED UPON INSTALLATION.

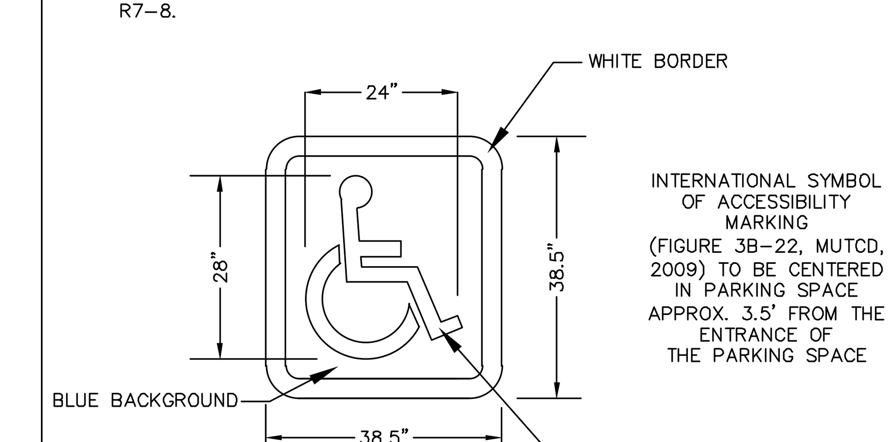
PRECAST CONCRETE WHEEL STOP



SIGN NOTES
1. MOUNT SIGN TO 2-3/8" DIA. GALVANIZED ROUND SIGN POSTS (TYP) WITH POST CAP AT TOP.
2. PROVIDE ALL MOUNTING HARDWARE AS REQUIRED FOR COMPLETE INSTALLATION.
3. POST SHALL BE SET 3' BELOW GRADE IN 0.2 CY 4,000 PSI CONCRETE.
4. MOUNTING HEIGHT 60" FROM GRADE TO BOTTOM EDGE OF R7-8.



NOTE:
ACCESSIBLE PARKING SURFACE MATERIAL TO MEET NATIONAL ADA STANDARDS



ACCESSIBLE PARKING DETAIL

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE LICENSED 02/24/23

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

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PLAN REVISIONS

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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

PAVING DETAILS

VERTICAL DATUM: NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C902

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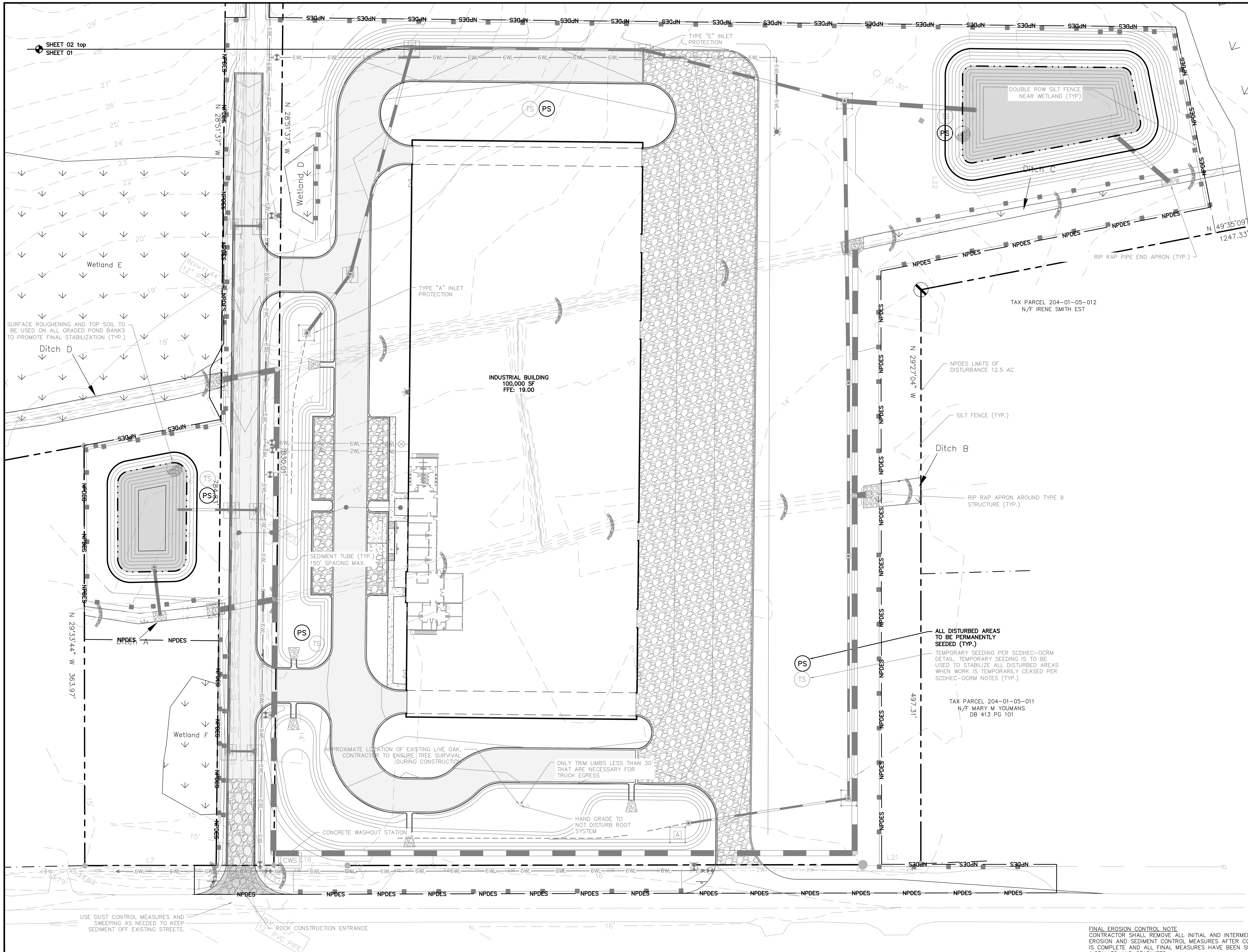

LIMITS OF DISTURBANCE: NPDES

EROSION PREVENTION

LAND GRADING:	LG or
SURFACE ROUGHENING:	
TOPSOILING:	
TEMPORARY SEEDING:	TS
MULCHING:	M
ECB OR TRM:	
FGM:	FGM
BFM:	BFM
PERMANENT SEEDING:	PS
SODDING:	SO
RIPRAP:	
OUTLET PROTECTION:	RIPRAP / ECB or TRM
DUST CONTROL:	DC
POLYACRYLAMIDE (PAM):	PAM

SEDIMENT CONTROL

SEDIMENT BASIN:	
TEMPORARY SEDIMENT TRAP:	
ROCK SEDIMENT DIKE:	
ROCK CHECK DAM:	OR
SEDIMENT TUBE:	
SILT FENCE:	
REINFORCED SILT FENCE:	
TYPE A–FABRIC INLET PROTECTION:	A
TYPE A–SEDIMENT TUBE INLET PROTECTION:	A
TYPE B – WIRE MESH AND STONE DROP INLET PROTECTION:	B
TYPE C – BLOCK AND GRAVEL INLET PROTECTION:	C
TYPE D – RIGID INLET FILTERS:	D
TYPE E – SURFACE COURSE CURB INLET FILTER:	E
TYPE F – INLET TUBE:	F
TYPE FC – FILTER BAG CURB INLET PROTECTION:	FC
TYPE FB – FILTER BAG GRATE INLET PROTECTION:	FG
CONCRETE WASHOUT	CWS

RUNOFF CONVEYANCE MEASURES

VEGETATED CHANNELS:	
RIPRAP–LINED CHANNELS:	
ECB OR TRM–LINED CHANNELS:	
PAVED CHANNELS:	PC PC PC
PIPE SLOPE DRAINS:	
TEMPORARY STREAM CROSSING:	
TEMPORARY DIVERSION DITCH OR SWALE:	TD TD
PERMANENT DIVERSION DITCH:	PD PD
DIVERSION DIKE OR BERM:	DD DB
LEVEL SPREADER:	
SUBSURFACE DRAIN:	SSD SSD

FINAL EROSION CONTROL NOTE
CONTRACTOR SHALL REMOVE ALL INITIAL AND INTERMEDIATE EROSION AND SEDIMENT CONTROL MEASURES AFTER CONSTRUCTION IS COMPLETE AND ALL FINAL MEASURES HAVE BEEN SUCCESSFULLY INSTALLED AND STABILIZED.

0 40 80 Feet
SCALE: 1" = 40'

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE 02/24/23

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IRONLINE METALS
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RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

FINAL EROSION CONTROL PLAN

VERTICAL DATUM:
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SHEET
C1001

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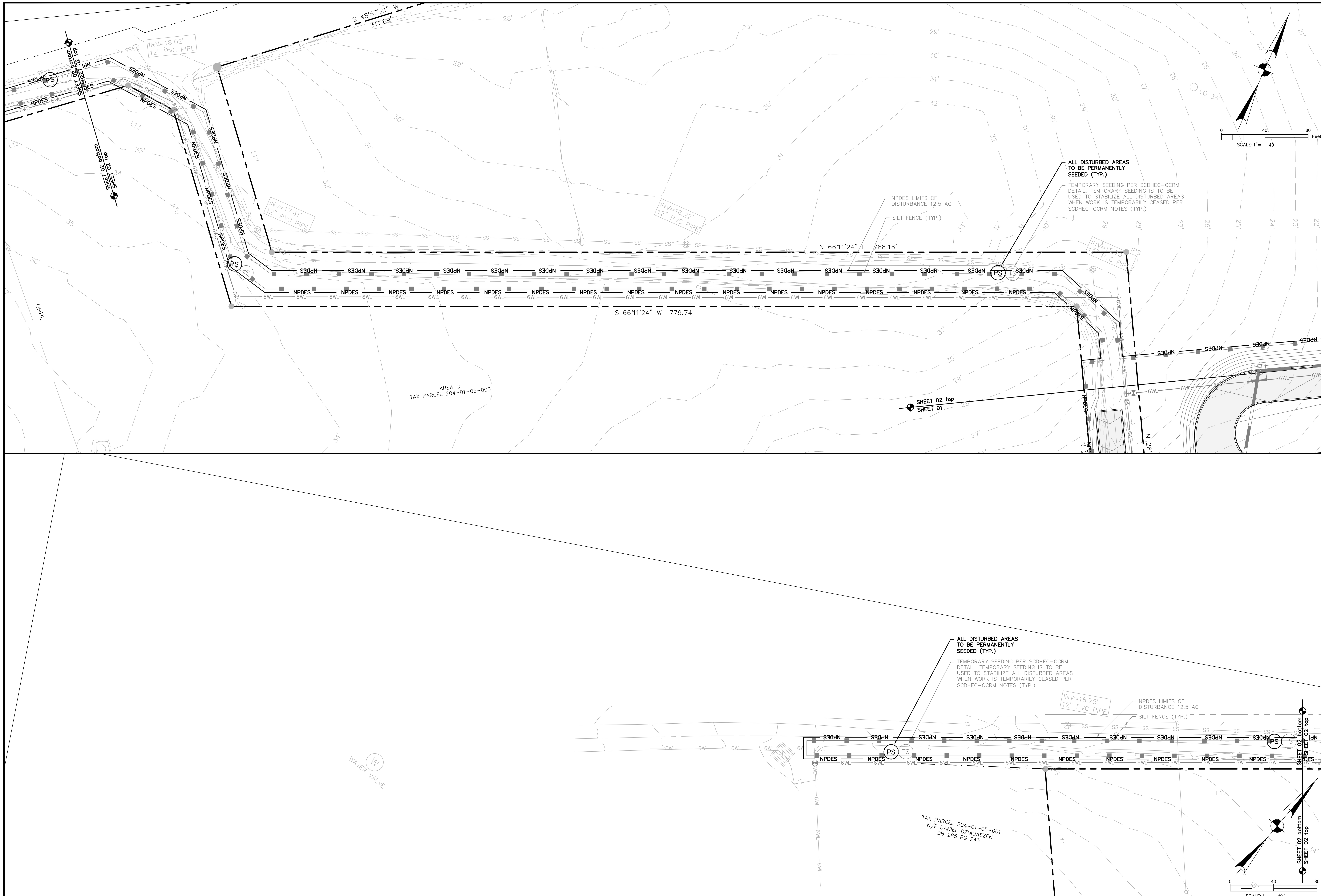

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SOUTH CAROLINA
PROFESSIONAL ENGINEER
LICENSED
No. 22816
02/24/23
PAUL R. MOORE

SOUTH CAROLINA
WARD
EDWARDS, INC.
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SHEET
C1002

PERMANENT SEEDING – COASTAL

SPECIES	LBS/AC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
SANDY, DROUGHTY SITES													
BROWNTOP MILLET BAHIAGRASS	10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BAHIAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET ATLANTIC COASTAL PANICGRASS	10 LBS/AC 15 LBS/AC PLS												
BROWNTOP MILLET SWITCHGRASS (ALAMO) LITTLE BLUESTEM SERICEA LESPEDEZA	10 LBS/AC 8 LBS/AC PLS 4 LBS/AC 20 LBS/AC												
BROWNTOP MILLET WEEPING LOVEGRASS	10 LBS/AC 8 LBS/AC												
WELL DRAINED, CLAYEY/LOAMEY SITES													
BROWNTOP MILLET BAHIAGRASS	10 LBS/AC 40 LBS/AC												
RYE, GRAIN BAHIAGRASS CLOVER, CRIMSON (ANNUAL)	10 LBS/AC 40 LBS/AC 5 LBS/AC												
BROWNTOP MILLET BAHIAGRASS SERICEA LESPEDEZA	10 LBS/AC 30 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 10 LBS/AC 40 LBS/AC												
BROWNTOP MILLET BERMUDA, COMMON KOBE LESPEDEZA (ANNUAL)	10 LBS/AC 12 LBS/AC 10 LBS/AC												
BROWNTOP MILLET BAHIAGRASS BERMUDA, COMMON SERICEA LESPEDEZA	10 LBS/AC 20 LBS/AC 6 LBS/AC 40 LBS/AC												
BROWNTOP MILLET SWITCHGRASS LITTLE BLUESTEM INDIANGRASS	10 LBS/AC 8 LBS/AC PLS 3 LBS/AC PLS 3 LBS/AC PLS												

PS PERMANENT SEEDING - COASTAL

DETAIL 02370-010

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 22816 LICENSED PAUL R. MOORE 02/24/23

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SHEET
C803

FLAGGING OPERATIONS GENERAL NOTES

(ALL NOTES, SPECIFICATIONS AND REQUIREMENTS ON THIS STANDARD DRAWING APPLY TO ALL SUBSEQUENT STANDARD DRAWINGS REGARDING FLAGGING OPERATIONS UNLESS OTHERWISE NOTED)

FLAGGING OPERATIONS -

SIGNS AND TRAFFIC CONTROL DEVICES -

NIGHTTIME FLAGGING OPERATIONS -

BUFFER SPACE -

ADVANCE WARNING ARROW PANEL -

TRUCK MOUNTED ATTENUATOR -

GENERAL -

1. CONDUCT THE WORK IN SUCH A MANNER SO AS NOT TO ENCROACH ONTO THE ADJACENT TRAVEL LANE OPEN TO TRAFFIC. INSTALL, MAINTAIN AND ADJUST THE TRAFFIC CONTROL DEVICES AS NECESSARY TO ENSURE PROPER DELINEATION OF THE WORK AREA.
2. IF WORK IS BEING CONDUCTED AT TWO DIFFERENT LOCATIONS AT THE SAME TIME, SEPARATE THE TWO LOCATIONS BY NO LESS THAN 2 MILES FROM THE LAST TRAFFIC CONTROL DEVICE IN THE "DOWNSTREAM TAPER" OF THE FIRST LANE CLOSURE TO THE FIRST TRAFFIC CONTROL DEVICE IN THE "APPROACH TAPER" OF THE SECOND LANE CLOSURE ENCOUNTERED BY A MOTORIST UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
3. THE DEPARTMENT RESERVES THE RIGHT TO RESTRICT WORK OPERATIONS AND/OR WITHHOLD THE MONTHLY ESTIMATE IF THE TRAFFIC CONTROL IS NOT PROPERLY INSTALLED AND MAINTAINED AS DIRECTED BY THE STANDARD SPECIFICATIONS, THE SPECIAL PROVISIONS, THE STANDARD DRAWINGS, THE PLANS AND/OR THE ENGINEER.

TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	✳
# ≤ 35 MPH LOW SPEED	200
# 40 - 50 MPH INTERMEDIATE SPEED	350
# 55 MPH HIGH SPEED	500

\# REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE 7/27/15 DATE

SCDOT

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY PRIMARY & SECONDARY ROUTES

610-005-00

EFFECTIVE LETTING DATE JAN 2016 THIS DRAWING IS NOT TO SCALE

DRAWING 610-005-10 NOTES

1. SEE STANDARD DRAWING NO. 610-005-00 FOR ALL GENERAL NOTES AND REQUIREMENTS.

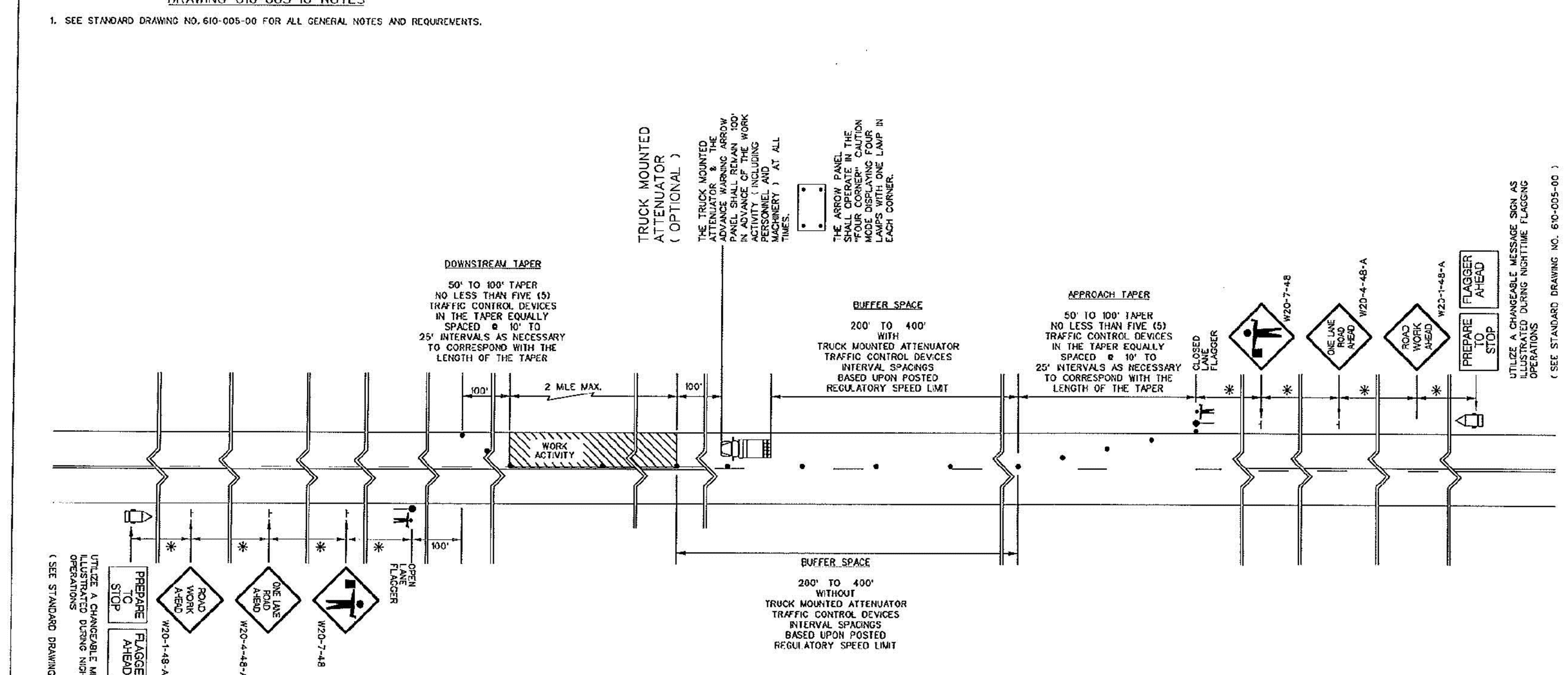


TABLE A

SIGN PLACEMENT INTERVALS	
SPEED LIMIT	✳
# ≤ 35 MPH LOW SPEED	200
# 40 - 50 MPH INTERMEDIATE SPEED	350
# 55 MPH HIGH SPEED	500

\# REGULATORY POSTED SPEED LIMIT PRIOR TO BEGINNING WORK

TABLE B

TRAFFIC CONTROL DEVICE SPACING INTERVALS WORK ACTIVITY / BUFFER SPACE AREAS	
SPEED LIMIT	SPACING INTERVALS
≤ 35 MPH	25 FEET
40 - 55 MPH	50 FEET

REFERENCES

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE 7/27/15 DATE

SCDOT

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

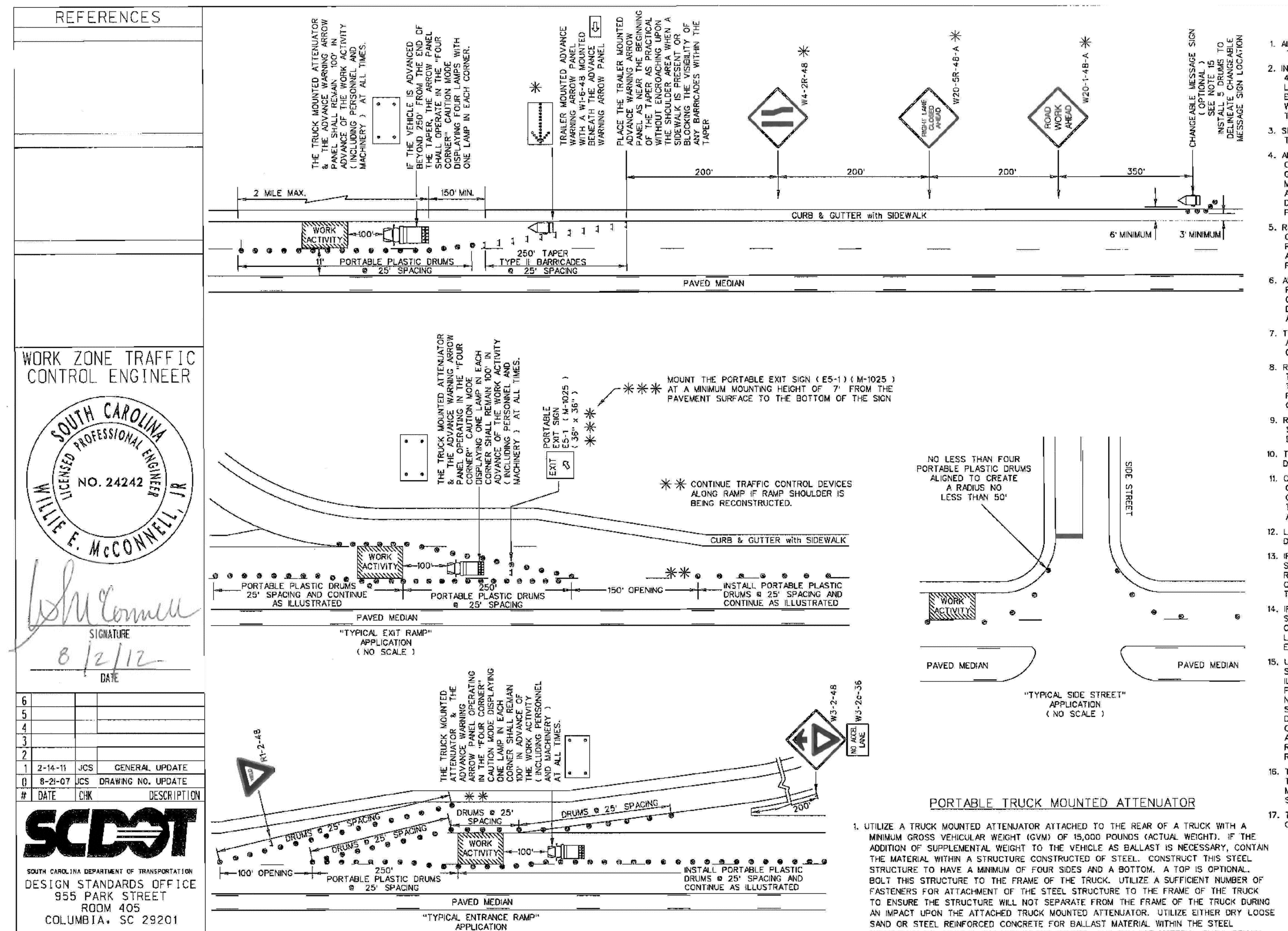
STANDARD DRAWING

FLAGGING OPERATIONS TWO-LANE TWO-WAY ROADWAYS WITHOUT INTERSECTIONS

610-005-10

EFFECTIVE LETTING DATE JAN 2016 THIS DRAWING IS NOT TO SCALE

REFERENCES



GENERAL NOTES

PORTABLE TRUCK MOUNTED ATTENUATOR

ADVANCE WARNING ARROW PANEL

✳ LEFT LANE CLOSURE

WORK ZONE TRAFFIC CONTROL ENGINEER

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER NO. 24242 WILLIE E. McCONNELL, JR.

SIGNATURE 8/2/12 DATE

SCDOT

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

LANE CLOSURE NIGHTTIME URBAN LOW SPEED ≤ 35 MPH

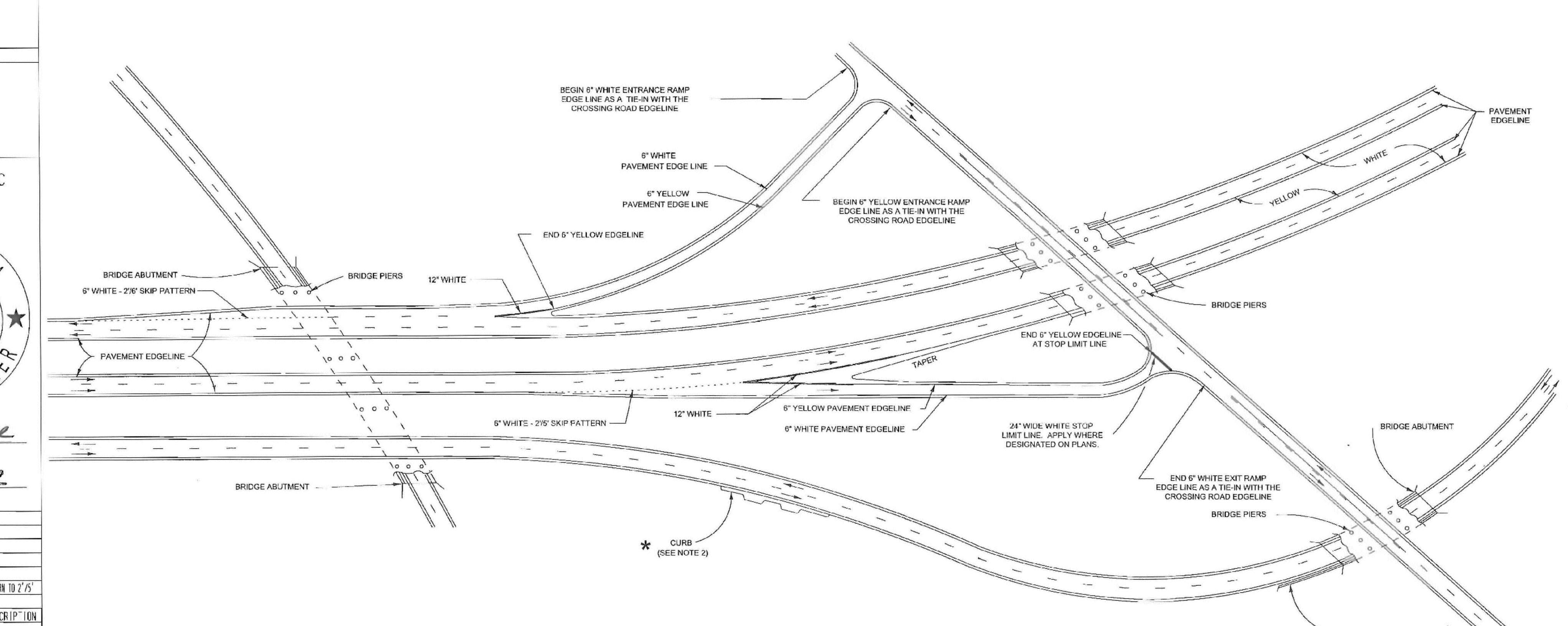
610-015-00

EFFECTIVE LETTING DATE JAN 2015 THIS DRAWING IS NOT TO SCALE

REFERENCES

STANDARD PAVEMENT MARKINGS

PAVEMENT EDGE MARKING AND STOP LIMITS



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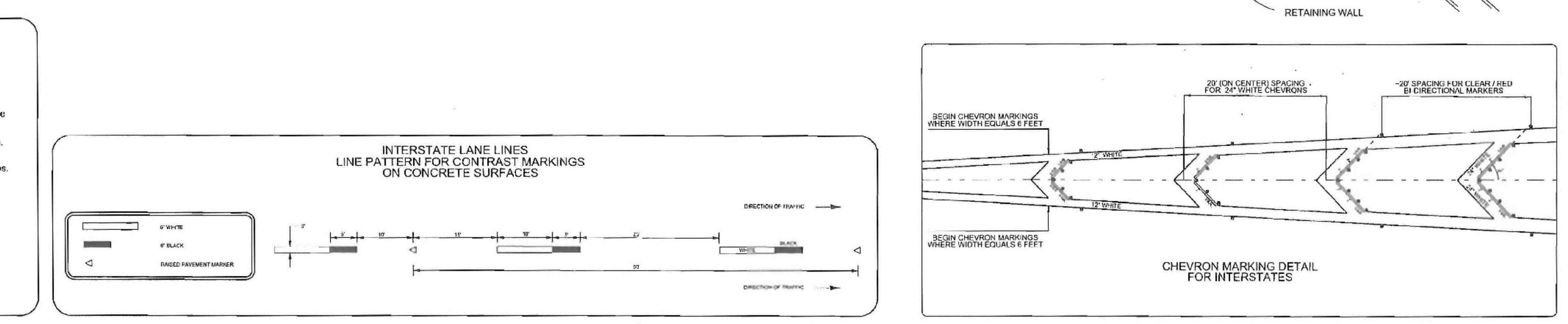

STATE TRAFFIC OPERATIONS ENGINEER

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER NO. 17609 JOHN N. BOOZER

SIGNATURE 8-29-2012

SCDOT

DESIGN STANDARDS OFFICE
955 PARK STREET
ROOM 405
COLUMBIA, SC 29201

STANDARD DRAWING

PAVEMENT EDGE MARKING AND STOP LIMITS

625-105-00

EFFECTIVE LETTING DATE JANUARY 2013 THIS DRAWING IS NOT TO SCALE

NOT FOR CONSTRUCTION

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 22816 PAUL R. MOORE

SOUTH CAROLINA WARD EDWARDS, INC. No. C00152 CERTIFICATE OF AUTHORIZATION

NO.	DESCRIPTION	DATE
	PLAN REVISIONS	

Ward Edwards ENGINEERING
P.O. BOX 381, BLUFFTON, SOUTH CAROLINA 29910
PH (843) 837-5250 / FAX (843) 837-2558
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IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

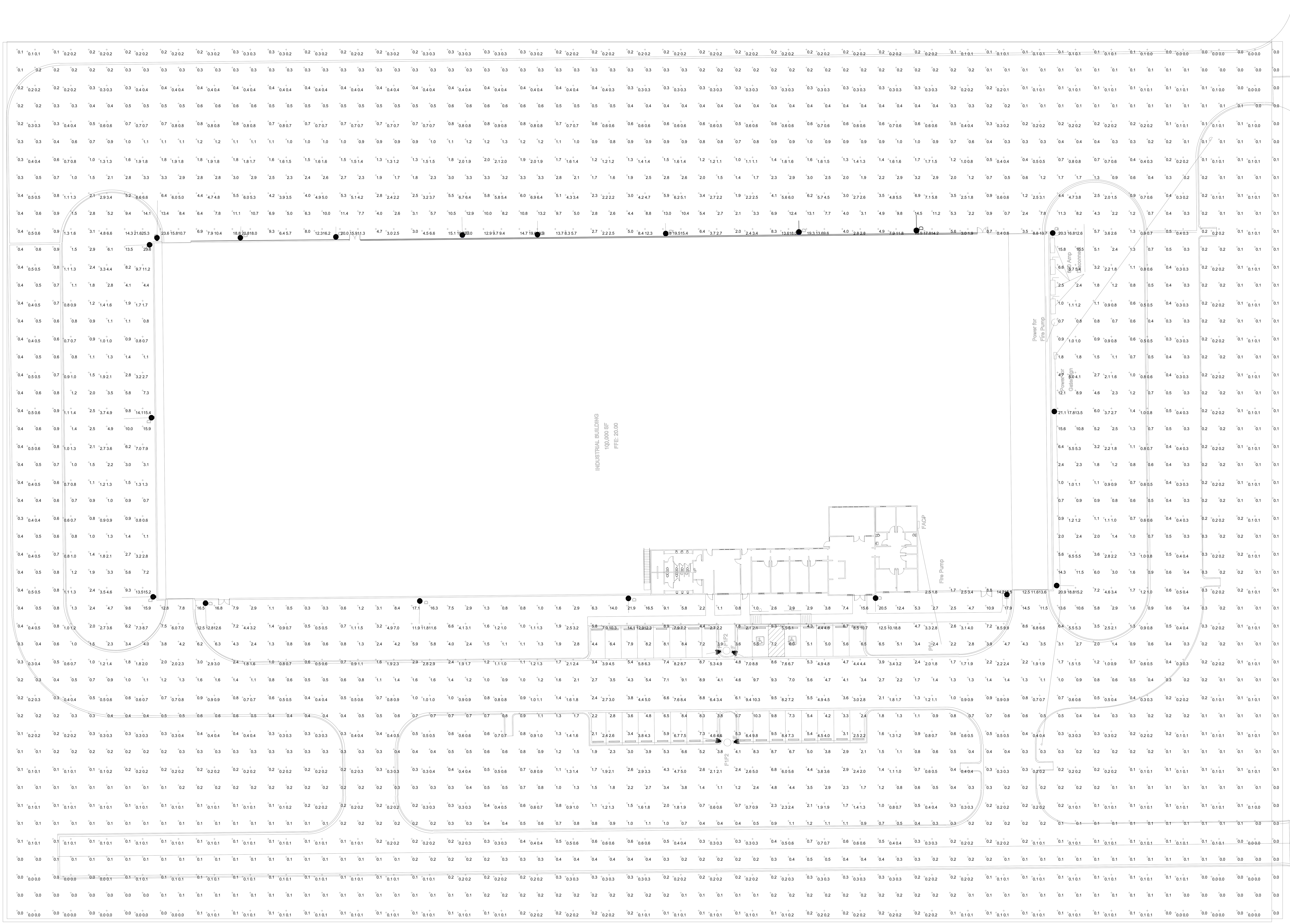
SCDOT DETAILS

VERTICAL DATUM:
NAVD88

PROJECT #:	210148
DATE:	02/24/23
DESIGNED BY:	BMT
CHECKED BY:	CPB

SHEET
C1102

IF THIS SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT, SCALE ACCORDINGLY



Plan View
Scale - 1" = 25ft

ES-CF

COMPREHENSIVE SWPPP (C-SWPPP)

IRONLINE METALS

Prepared for Town of Yemassee
Yemassee, South Carolina

12/21/2022

Ward Edwards ENGINEERING
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SWPPP Preparer:
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WE Project: 210148

Paul Moore, PE
South Carolina P.E. No. 22816

Comprehensive Stormwater Pollution Prevention Plan (C-SWPPP) For Construction Activities:

Project/Site Name:

Ironline Metals

Project Owner:
Ramsey Development
706 Jefferson Street
Tell City, IN, 47586
thuber@ramseydevelopment.com
812-719-0008

Project Address/Location:
Pine Street & HWY 21/17
Yemassee, South Carolina, 29945

Primary Permittee:

Ironline Metals

Permittee/Owner Contact:
706 Jefferson Street
Tell City, IN, 47586
thuber@ramseydevelopment.com
812-719-0008

SWPPP Preparer:

Ward Edwards Engineering
Paul Moore, PE
PO Box 381
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pmoore@wardedwards.com

Day-to-Day Operator:

To Be Determined

(Leave Blank if not known.)

C-SWPPP Preparation Date:

12/21/2022

Modification Dates:
Modification I: __ __ / __ __ / __ __ __ __
Modification II: __ __ / __ __ / __ __ __ __

Table of Contents

C-SWPPP is acronym for Comprehensive Storm Water Pollution Prevention Plan
*****OS-SWPPP is acronym for On-Site Storm Water Pollution Prevention Plan***

Certification Statement

I have placed my signature and seal on the design documents submitted signifying that I accept responsibility for the design of the system. Further, I certify to the best of my knowledge and belief that the design is consistent with the requirements of Title 48, Chapter 14 of the Code of Laws of SC, 1976 as amended, pursuant to Regulation 72-300 et seq. (if applicable), and in accordance with the terms and conditions of SCR100000.

Name: Paul Moore, PE

Title: Project Manager

Date : 12/21/2022

Section 1 — PROJECT OVERVIEW

1.1 Narrative

The proposed project is located at Pine Street & HWY 21/17 in the Town of Yemassee and is identified by tax map numbers 204-01-05-013 & 204-01-05-005. The Site is bound by Pine Street to the West and US Hwy 21 to the South. Currently, the site is undeveloped, except for the existing dirt road and residence on the southern portion of the property. There will be an increase in impervious area with the proposed development, to be routed to onsite detention ponds, that will discharge along the existing outfall path at a rate less than or equal to existing conditions, to ultimately outfall to the Combahee River. See Appendix A for the site vicinity map.

Based on the soils report, the soils found onsite are Argent loamy fine sand and Emporia loamy sand, which are classified as HSG C/D and C respectively. See Appendix A, Exhibit 3 for the soils map and Appendix G, Geotechnical Report.

Pre-Development Conditions

The site is currently mostly undeveloped wooded area with runoff directed east towards the large wetland area, and ultimately to the Combahee River. Onsite elevations range from to 10 to 30 feet, and the undeveloped portions of the site were analyzed as fair condition woods/grass combination which can be seen in Appendix D. There are two ditches bisecting the site, that drain from west to east.

To determine the pre-development runoff, the site was analyzed in the model as two drainage basins. The following table summarizes the pre-development basin input data. See Appendix A, Exhibit 5 for the basin boundaries and Appendix C for the complete TR-55 basin analysis.

Table 1 - Pre-Development Basin Information

Pre-Development Basin	Basin Area (AC)	Curve Number	Time of Concentration (min)
Pre 1	22.37	78	39
Pre 2	8.23	77	15

The following table shows the results of the pre-development runoff calculations for the four design storms. See Appendix C for the complete results.

Table 2 - Pre-Development Runoff Results

Design Storm	Pre-Development Runoff (cfs)
2 Year	28.55
10 Year	56.00
25 Year	74.22
100 Year	105.82

Post-Development Conditions

The proposed development will include the construction of a large industrial building, associated parking, and improvements to an existing dirt road. The dirt road will be paved with asphalt to create a crowned road with curb and gutter. The front portion of the onsite parking lot will also be paved with asphalt, while the rear portion will be paved with granite aggregate. A wet detention pond will be constructed to the west of the paved road to handle stormwater attenuation and water quality treatment from the road improvements. Onsite, dry detention BMPs and a wet detention pond on the eastern portion of the site will be used for stormwater treatment from the remaining proposed development.

The two existing ditches that bisect the site will be isolated from the post-development runoff and will piped through the site to follow existing drainage flow patterns. The pipes will be sized to make sure there is no impact to the offsite, upstream property.

To analyze the post-development conditions, the site was divided into seven basins. The proposed wet and dry detention ponds were modeled in ICPR to determine the post development peak runoff and to make sure they have the capacity to meet water quality treatment and water quantity attenuation requirements. The following table summarizes the post-development basin input data.

Table 3 - Post-Development Basin Information

Post-Development Basin	Basin Area (AC)	Curve Number	Time of Concentration (min)
Post 1	11.62	77	32
Post 2	1.19	88	6
Post 3	0.60	80	13
Post 4	0.60	86	6
Post 5	1.74	94	6
Post 6	6.62	89	8
Post 7	8.23	77	15

The following table shows the results of the runoff calculations and the total post-development discharge for the design storms. It can be seen that the peak runoff for the post-development conditions will be less than or equal to the pre-development conditions. See Appendix B for the complete results.

Table 4 - Pre-Post Runoff Comparison

Design Storm	Pre-Development Runoff BNDY(cfs)	Post-Development Discharge BNDY (cfs)
2 Year	28.55	24.79
10 Year	56.00	48.69
25 Year	74.22	60.71
100 Year	105.82	93.28

The following table shows the lowest water level for the BMPs under normal conditions, the maximum stage reached during a 100-year storm, and the maximum water level allowed before over topping occurs.

Table 5 - Water Level Stages

BMP Structure	BMP Starting Elevation (NWL or bottom)	100-Year Max Stage	Top of Bank
Dry Detention 1	13	16.45	17
Dry Detention 2	13	16.46	17
Wet Pond 1	13	15.62	16
Wet Pond 2	11	15.64	16

All stormwater pipes were modeled using Hydraflow Storm Sewers. To assure the proposed site will not be inundated with excessive ponding of runoff, the stormwater routing model was run using the 25-yr 24 hr. design storm. The max water surface elevation, 25-year Staging Elevation ft, of the SWM facility for the 25-year storm event was used as the starting tail water. The peak water level off the storm collection system was checked against grate inlets, edged of pavement, and the building finished floor elevations to help assure these items do not see flooding or surcharging.

Flooding Issues

The site can be found on FEMA Panels 45049C0450C and is located within Zone A, which are unstudied areas of with an estimated 1% risk of annual flooding. Zone A has no established base flood elevation due to being unstudied. The site naturally drains from west to east, toward the Combahee River, which is approximately 1 mile away.

Due to the topographic relief across the property and naturally sandy soils, there are no known flooding issues on this site or caused by this site.

1.2 Stormwater Management and Sediment Control

Erosion Prevention BMPs

As the existing site is cleared, grubbed and graded to the proposed contours shown on the construction site plans, erosion prevention BMPs shall be placed throughout the construction site to aid in the prevention of sediment-laden stormwater runoff. These BMPs shall be focused in areas with high potential of erosion, areas preceding infiltration practices, and shall be applied to all steep slopes. That is slopes equal to or greater than 3H:1V.

Each erosion prevention measure shall be selected on a site-specific basis and details have been provided on the construction site plans. The plans identify all proposed Erosion Prevention BMPs and the recommended installation, maintenance, and inspection procedures.

Examples of Erosion Prevention BMPs are, but are not limited to, surface roughening, temporary seeding, erosion control blankets, turf reinforcement mats, sodding, riprap, outlet protection, dust control, and polyacrylamide (PAM). Information on the design and proper use of Erosion Prevention BMPs can be located in the SC DHEC's BMP Handbook.

Sediment Control BMPs

Sediment Control BMPs are designed to remove some of the sediment accumulated within stormwater runoff, to the best extent practicable. These BMPs help prevent sediment impacts to adjacent properties and water bodies from stormwater discharges originating from construction sites.

Typically these BMPs are placed near each of the site's outfalls and are installed prior to clearing and grubbing of the site (before large areas of soil are exposed). However, these BMPs can also be located throughout the construction site and, in these circumstances, are installed after mass grading has occurred. Placement, sizing and modifications of Sediment Control BMPs should be left to the SWPPP preparer and/or the Site Engineer. Contractors must consult the SWPPP Preparer as listed at the front of this SWPPP before making any significant changes to these BMPs.

Each sediment control BMP shall be selected on a site-specific basis. Examples of Sediment Control BMPs are, but are not limited to sediment traps, sediment basins, silt fence, rock check dams, rock sediment dikes, sediment tubes, and inlet protection. Please consult SC DHEC's BMP Handbook for more information on Sediment Control BMPs.

Structural Control BMPs and Floodplain Placement

This site-specific SWPPP utilizes the following structural control BMPs: dry detention ponds, wet detention ponds, and storm sewer systems. These practices have been designed to either divert flows from exposed soils, to retain/detain flows, and to otherwise limit the runoff and the discharge of pollutants from disturbed areas of the construction site.

Throughout the lifespan of the construction project these BMPs will be installed and maintained, as required by the SWPPP and the construction site plans, until final stabilization has been achieved for the areas draining to each BMP. Upon final stabilization, each structural control BMP must be modified to the post-construction conditions shown within the approved construction site plans or removed, if the structural BMP was a temporary structure.

Construction Entrances and Dust Control

All access areas into and out of the limits of disturbance, as shown on the construction site plans, are required to be equipped with a construction entrance. The use of this BMP will limit the amount of sediment being transported by construction vehicles onto existing roadways or other impervious areas. Any tracked sediment, along with any attached pollutants, deposited on impervious areas could be washed downstream during the next rain event. Each construction entrance must be installed as shown in the details section of the construction site plans.

If a new entrance or exit is required, that is not shown on the plans, install the construction entrance as noted by the construction entrance detail, mark the location on the plans and make a record of this minor modification in the SWPPP's modification log, which is located within one of the appendices of the On-site SWPPP.

Each stabilized construction entrance should be used in conjunction with Street Sweeping measures if it becomes apparent that sediment is still being tracked onto adjacent impervious areas, even with the use of the construction entrance.

During extremely dry conditions, drought, and/or excessive winds, the construction site should be treated for dust control to prevent the suspension of fine sediment particles into the air, being carried offsite, and deposited on adjacent properties or surface waters. This practice may not be directly called out for on the construction site plans. A water tanker used to spray the soil down may be an effective way to prevent excessive dust at a construction site.

Water Quality BMPs During Construction

Site-specific water quality BMPs (e.g., sediment basins, sediment traps, rock check dams, and rock sediment dikes) must be installed prior to the mass clearing, grubbing and grading of the site, and must be kept in functioning order throughout the lifespan of all construction activities. Each of these BMPs must be maintained and inspected until all areas draining to these BMPs have reached final stabilization, approved by the construction site inspector or the SWPPP Preparer, and recorded within the stabilization log located as an appendix of the On-site SWPPP.

The location, installation procedures, and maintenance procedures for each water quality BMP can be found within the approved construction site plans.

Post-Construction Water Quality

All construction sites must be designed to treat water quality post-construction. These water quality controls must be installed and stabilized prior to terminating coverage under the CGP. These controls will require routine maintenance to remain functional; this is to be conducted by the Primary Permittee or the entity that accepts responsibility for these structures once construction has been completed. Additional information, including permanent maintenance and inspection procedures, can be found in Appendix E of the OS-SWPPP or within the construction site plans.

Upon final stabilization, each construction site will have to make the transition from temporary BMPs to permanent BMPs. This transition may include the conversion of a sediment basin to a detention basin, a sediment trap to a bioretention area, or diversion swales to permanently vegetated swales. All post-construction (permanent) water quality and water quantity BMPs are identified in the final phase of the Erosion and Sediment Control located within the construction site plans.

Other Stormwater Management Procedures

All parties conducting work at this construction site must be informed of and make note of pollutant sources, both industrial and construction, at this site, and be informed of all controls and measures the will be implemented to prevent the discharge of these pollutants in stormwater runoff.

Based on the nature, conditions, and/or procedures associated with this construction site, the following items must be followed and adopted by all those conducting land disturbing activities at this site:

Dewatering

Non-stormwater may not discharge from the site unless it is considered clean and uncontaminated water.

Any construction water discharging from the site must originate from a public water supply or private well approved by the State Health Department. No water used for construction that does not originate from an approved public water supply may discharge from the site.

Groundwater or surface water encountered and removed during grading and excavation must be filtered to remove sediments before discharged off–site. Surface water will be filtered with Sediment Traps as shown on the plans and details. A pump intake should have a float device or placed in a gravel filter bed to prevent dredging. Discharged water must be routed through an energy dissipater and/or sediment trap. Direct pumping to lakes, rivers and streams must be avoided.

Storage of Stockpiled Materials

All construction debris must be stockpiled in designated areas, which have been provided with the proper BMPs to prevent the discharge of pollutants through stormwater runoff from building or other similar materials off-site or into surface waters.

Any additional waste material or stockpile material (i.e., soil and mulch) must also be stored in the designated areas as shown on the Construction Site Plans or as the contractor, responsible for day-day activities at this site, deems appropriate. Silt fence or an approved equal shall surround all stockpiled materials.

Solid Waste Disposal

All solid wastes, including garbage, recyclables, compostable materials, and cooking grease containers, shall be collected and stored in suitable non-leaking containers. Solid waste containers shall be inspected for damage on a regular basis, and shall be replaced if they are leaking, corroded, or otherwise deteriorating. The containers shall be emptied and hauled offsite when 95% full, or as necessary, by a certified waste disposal service. Covers for the containers shall be provided as practicable, or as required, to prevent stormwater contact and pollutant discharges.

Storage areas shall be swept or cleaned frequently to collect all loose solids for proper disposal in a waste container. Any water used during cleaning operations shall be contained and properly disposed so that no wash water is discharged from the site.

Should a spill occur, it must be contained and disposed of so that the spill does not enter groundwater or discharge from the site, even if requires removal, treatment, and disposal of soil. Contaminated soil shall be buried or paved over during construction operations.

Solid waste materials shall not be buried or disposed of onsite.

Sanitary Facilities
All personnel involved with construction activities must comply with state and local sanitary sewer regulations. Temporary sanitary facilities shall be provided at the site throughout the construction phase. Temporary sanitary facilities shall be used by all construction personnel and will be serviced by a licensed commercial operator.

Portable toilets must be securely anchored to prevent overturning and must not be located within 30-feet of stormwater collection systems or within 50-feet of federal, state, or locally defined protected wetlands or Waters of the State.

Concrete Wastes and Washouts
Discharge of excess waste and/or wash water from concrete trucks will only be allowed within designated washout areas, in accordance with SCDHEC-OCRM details as shown on the drawings. Washout areas may be aboveground portable concrete washout containers or lined and diked areas prepared to prevent contact between the concrete waste and stormwater that will be discharged from the site.

The cured residue from concrete waste may be useful for onsite concrete products or shall be disposed of in accordance with applicable federal, state, and local regulations.

The location of concrete washout areas shall be shown on the drawings, and must not be located within 50-feet of stormwater collection systems, in accordance with SCDHEC-OCRM regulations.

Process Water
Process water such as power washing and concrete cutting must be collected for treatment and disposal. It is not to be flushed into the site storm drain system.

Temporary On-site Storage Tanks
On-site fueling tanks (except double walled tanks), chemicals, liquid products, petroleum products, and other materials that have the potential to pose a threat to human health or the environment shall have a secondary containment, in accordance with federal, state, and local regulations.

The secondary containment shall be capable of storing 110% of the volume of the largest tank within the containment area, and shall be constructed of materials of sufficient thickness, density, and composition so as to not be structurally weakened as a result of contact with the material stored within the tanks.

On-site storage tanks shall be in sound condition, free of rust or damage which might compromise containment. Fuel storage areas shall meet all EPA, OSHA, and other federal, state, and local requirements for signage, fire extinguisher, etc.

A Spill Prevention, Control, and Countermeasure (SPCC) Plan must be developed if the total aggregate capacity of aboveground oil storage containers is greater than 1,320 gallons, or as specified by SCDHEC for specific projects. Containers less than 55 gallons, permanently closed containers, motive power containers, or storage containers used exclusively for wastewater treatment should not be included when calculating site storage capacity.

Hazardous Material Management and Spill Reporting Plan

The Site Stormwater Representative is responsible for the implementation of spill prevention plan and control for any given project site. Where a release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117 or 40 CFR Part 302, occurs during a 24–hour period:

1. You must notify the SCDHEC's Emergency Response Section at (803) 253–6488 and the National Response Center (NRC) (800) 424–8802 in accordance with the requirements of 40 CFR Part 110, 40 CFR Part 117 and 40 CFR Part 302 as soon as Site staff have knowledge of the discharge; and
2. You must modify the SWPPP within 14 calendar days of knowledge of the release to: provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, you must review your SWPPP to identify measures to prevent the reoccurrence of such releases and to respond to such releases, and you must modify your SWPPP where appropriate.

   Reportable quantities can be found in Appendix G.

This Spill Prevention and Control Plan (SPCP) as a component of the SWPPP is intended to prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, and properly disposing of spill materials, and training employees.

General:

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater run–off during rainfall to the extent that it doesn't compromise clean–up activities.
- Do not bury or wash spills with water.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Response:

Minor Spills

Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled by the first responder at the discovery of the spill. Use absorbent materials on small spills rather than hosing down or burying the spill. Absorbent materials should be promptly removed and disposed of properly. Follow the practice below for a minor spill:

1. Contain the spread of the spill.
2. Recover spilled materials.
3. Clean the contaminated area and properly dispose of contaminated materials.

Moderate Spills

Moderate spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately:

1. Contain spread of the spill.
2. Notify the project foreman immediately.
3. If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
4. If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
5. If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Significant/Hazardous Spills

For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:

1. Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper local officials. It is the contractor's responsibility to have all emergency phone numbers at the construction site.
2. Notify SCDHEC's Emergency Response Section at (803) 253–6488.
3. For spills of federal reportable quantities, in conformance with the requirements in 40 CFR parts 110,119, and 302, the contractor should notify the National Response Center at (800) 424–8802.
   Notification should first be made by telephone and followed up with a written report. The services of a spills contractor or a Haz–Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.

Spill Record Keeping:

All spills and BMPs employed shall be documented to prevent a reoccurrence of the event. This SWPPP shall be updated as necessary to prevent the reoccurrence of a spill event according to the provisions of SWPPP updates. All spills shall be recorded on the Hazardous Substance/Oil Spill Discharge Event form and kept in Appendix H.

Illicit Discharges

Any additional non-stormwater discharges, as referenced in the CGP, should be eliminated or reduced to the maximum extent feasible. All unpreventable non-stormwater discharges shall be treated through the approved stormwater management system before release off-site. Following is a list of allowable non-stormwater discharges:

- Fire hydrant flushing
- Wash water without detergents
- Water used for dust control
- Potable water
- Building wash down water without detergents
- Uncontaminated pavement wash water
- Uncontaminated condensation from mechanical equipment
- Uncontaminated ground or spring water
- Water from foundation of footing drains
- Uncontaminated excavation dewatering
- Landscape irrigation
- Dechlorinated swimming pool discharges.

1.3 Sequence of Construction

The construction sequence for this project has been provided on the construction site plans. Each item/step of that construction sequence has been listed is the sequence that they should be implemented.

For additional information or questions on the sequencing please contact the SWPPP Preparer or the Permittee referenced on the cover of this SWPPP.

1.4 Non-Numeric Effluent Limits

Stormwater Volume and Velocity Control

During the implementation of construction activities, all parties performing work at this construction site whose work may affect the implementation of the SWPPP must be informed of and directed on how to comply with this Non-Numeric Effluent Limit, which requires the management of stormwater runoff within the construction site and at each outfall. The purpose of this requirement is to control the stormwater volume and velocity at these locations to minimize erosion.

Specifically, each responsible party should be made aware of the practices that have been or should be implemented at the construction site to accomplish these particular stormwater management practices. Below is a list of practices that may be utilized within the disturbed area and at each outfall at construction sites to control stormwater volume and velocity:

Volume Control

- Limiting the amount of disturbed area and exposed soils
- Staging and/or Phasing of the Construction Sequence;
- Sediment Basins and Sediment Traps
- Diverting off-site flow around the construction site;
- Controlling the Drainage Patterns within the Construction Site;
- Temporary Stabilization of Disturbed Areas.

Velocity Control

- Surface Roughening and/or other Slope Stabilization Practices;
- Level Spreaders, Riprap Plunge Pools and/or other Velocity Dissipation BMPS located at the Construction Site's and Sediment Basin Outfalls.
- Use of Rock Checks, Sediment Tubes, Etc. in Temporary Diversions Swales and Ditches.
- Use of Erosion Control Blankets, Turf Reinforcement Mats, and other Non-Vegetative BMPs that can be used to Quickly Stabilize Disturbed Areas.

The SWPPP Preparer/Engineer should approve any modifications (Additional BMPs or Changes to Existing BMPs) to address the management of stormwater volume and velocity prior to implementation. All approved SWPPPs that were issued coverage under the CGP should include ample BMPs and other control measures to address this specific Non-Numeric Effluent Limit.

Soil Exposure, Compaction and Preservation

Throughout construction activities, the amount of soil exposed during construction should be kept to a minimum. This may be accomplished by minimizing the amount the disturbed area within the permitted Limits of Disturbance (shown on the approved construction site plans) to only that which is necessary to complete the proposed work. For areas that have already been disturbed and where construction activities will not begin for a period of 14 days or more, temporary stabilization techniques must be implemented.

Prior to implementation of any major grading activities, topsoil is to be preserved by placing it in areas designated for stockpiling until final grades are reached. Each stockpile must be equipped with proper sediment and erosion controls to preserve the topsoil and protect adjacent areas from impacts. Once final grades have been reached, the preserved topsoil should be utilized to apply to areas identified for stabilization. Topsoil contains nutrients and organisms that aid in the growth of vegetation.

The Compaction of Soil should also be minimized to the degree practicable during grading activities. This is especially important during the replacement of topsoil to aid in a quick establishment of vegetative cover. Compaction of soil may also reduce rainfall's ability to infiltrate into the soil, increasing the amount of stormwater runoff.

Soil Stabilization

Throughout construction activities, soil stabilization techniques are to be initiated as soon as practicable whenever any clearing, grading, excavating, or other land-disturbing activities have permanently or temporarily ceased on any portion of the construction site and will not resume for a period exceeding 14 calendar days. For areas where initiating stabilization measures is infeasible, (e.g., where snow cover, frozen ground, or drought conditions preclude stabilization), initiate vegetative or non-vegetative stabilization measures as soon as practicable.

Steep Slopes (Slopes of 30% grade or greater)

All disturbed steep slopes (30% grade, ~3H:1V, or greater), and steep slopes to be created through grading activities must be managed in a fashion that limits the potential of erosion along the slopes. All parties whose work is/was responsible for the creation/disturbance of steep slopes must comply with the following items:

- Minimize the Disturbance of all steep slopes, when possible.
- Divert Concentrated or Channelized Flows of stormwater away from and around steep slope disturbances.
- Use Specialized BMP Controls including temporary and permanent seeding

with soil binders, erosion control blankets, surface roughening, reducing continuous slope length with terracing or diversions, gradient terraces, interceptor dikes and swales, grass-lined channels, pipe slope drains, subsurface drains, level spreaders, check dams, seep berms, and triangular silt dikes to minimize erosion.

- Initiate Stabilization Measures as soon as practicable on any disturbed steep slope areas where construction activities have permanently or temporarily ceased, and will not resume for a period exceeding 7 calendar days.
- A Vegetative and/or Non-Vegetative Cover must be established within 3 working days from the time that stabilization measures were initiated.

Stabilization of steep slopes should be a priority for those performing work at the construction site. At the very least, runoff control BMPs should be implemented to transport stormwater runoff from the top of the slope to the toe of the slope. An example of this is to install diversion swales along the top of slope and direct the runoff towards pipe slopes drains to transports the runoff to the toe of the slope. All pipe slope drain outlets are to be equipped proper outlet protection.

Sediment Discharge Minimization

Permittees, Contractors, and all other parties responsible for conducting land-disturbing activities are required to install and maintain all erosion and sediment BMPs that are identified on the approved construction site plans. These BMPs have been designed and approved to address such factors as the amount, frequency, intensity and duration of precipitation, the nature of resulting stormwater runoff, and soil characteristics, including the range of soils particle sizes expected to be present on the construction site. Proper installation, inspection, and maintenance will allow these BMPs to operate at maximum efficiencies in order to minimize sediment discharges to the maximum extent practical.

Pollutant Discharge Minimization

Permittees, Contractors, and all other parties responsible for conducting land-disturbing activities are required to install, implement, and maintain effective pollution prevention measures to minimize the discharge of pollutants. At a minimum, the following items must be implemented:

- Minimize the discharge of pollutants from dewatering trenches and excavations by managing runoff with the appropriate controls. Otherwise these discharges are prohibited;
- Minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters. Wash waters must be treated in a

sediment basin or alternative control that provides equivalent or better treatment prior to discharge;

- Minimize the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste and other materials present on the site to precipitation and to stormwater; and
- Minimize the discharge of pollutants from spills and leaks and implement chemical spill and leak prevention and response procedures.

Prohibited Discharges

Permittees, Contractors, and all other responsible parties for conducting land-disturbing activities are prohibited to discharges, from the construction site, the following items:

- Wastewater from washout of concrete, unless managed by an appropriate control;
- Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;
- Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance; and
- Soaps or solvents used in vehicle and equipment washing.

1.5 Buffer Zone Management

Section 3.2.4.C.I of the 2012 NPDES General Permit for Stormwater Discharges from Construction Activities requires a 30-foot, natural (undisturbed) buffer zone during construction between surface waters and the outermost sediment and erosion controls of the construction site. Compliance with Section 3.2.4.C.I offers three options: maintaining the full buffer width, reducing the buffer width, and eliminating the buffer width.

The proposed development will maintain the required 30-ft natural buffer during construction.

The following information will serve as the Surface Water Protection Plan:

Controls:

Temporary & Permanent Grassings

The site is proposed to be treated with both temporary and permanent seeding measures during construction.

Temporary Sediment and Erosion Control Practices

Silt fencing will be used to control sediment transport during construction. Double row silt fencing is proposed to be installed within the 30-foot buffer zone of the jurisdictional wetland.

In addition to silt fencing, there will also be inlet protection and long, overland flows utilized to prevent sediment transport.

Onsite Stormwater BMPs

Runoff from the proposed site is proposed to sheet flow across lawn areas until it is collected in an underground, piped conveyance system to the proposed onsite stormwater BMP where it will be treated for Volume Control and SCDHEC-OCRM water quality and quantity control.

Sequence:

- Hold Onsite Pre-Construction Conference
- Install perimeter silt fence adjacent to jurisdictional wetland line prior to land disturbing activities
- Perform weekly site inspections during land disturbing activities and make recommendations for additional BMPs or maintenance of existing BMPs
- Install site drainage features, including inlets and pipes
- Install inlet protection over proposed inlets
- Permanently seed, sod, and/or landscape areas for remaining disturbed areas
- Remove remainder of site BMPs once permanent stabilization has been achieved

Section 2

SITE FEATURES AND SENSITIVE AREAS

2.1 Sources of Pollution

Throughout construction activities, each permittee, contractor, and person responsible for conducting work will need to ensure that sources of pollution are managed to prevent their discharge from the construction site. Expected pollution sources during construction have been identified in **Table 2.1-A (below)**, but due to the nature of construction activities, it is often tough to predict all pollution sources that may appear throughout the life of a construction project. For that reason, the following table has also been provided to help all those performing work at this construction site identify possible sources of pollution

Stormwater runoff subjected to the identified pollution sources must be treated by the appropriate BMPs as directed by this SWPPP.

In the event that any additional sources of pollution are identified during construction, the person(s) with day-to-day operational control at the site is to add the new source(s) to **Table 2.1-A** and consult with the SWPPP Preparer to properly address this source and to prevent the discharge of its pollutant through stormwater runoff.

Table 2.1-A: Potential Sources of Pollution

Source	Material or Chemical	Location*	Appropriate Control Measures
Loose soil exposed/disturbed during clearing, grubbing and grading activities	Sediment	All areas within the Limits of Disturbance	As directed by the construction Plans. This includes Silt Fence, sediment tubes, sediment basins, and sediment traps.
Areas where construction equipment are cleaned, a.k.a. concrete washout	Heavy Metals & pH	Located adjacent to each construction entrance	Concrete Washout Basin as shown on sheet C-8 of the plans.
Water encountered during trenching	Nutrients & Sediment	In and around any trenching activities.	Direct water into impoundments such as basins or traps to allow for the sedimentation of the listed pollutants.
Paving Operations	Sediment & Trash	All areas to be paved.	Inlet protection.
Material Delivery and Storage Areas	Nutrients, pH, Sediment, Heavy Metals, oils & grease	All areas used as storage areas	Silt fence and/or sediment dikes
Equipment fueling and maintenance areas	Metals, hydrocarbons, oils and greases	Areas surrounding fuel tanks	Provide secondary containments, locate in upland areas. Repair leaking and broken hoses.

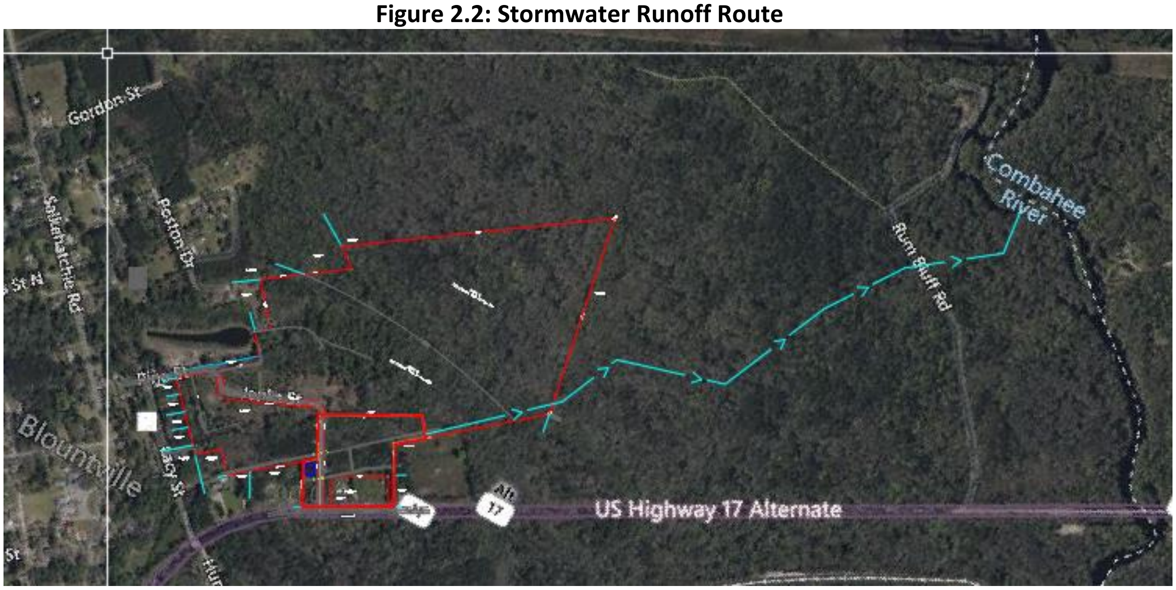
2.2 Surface Waters

Stormwater runoff from the proposed construction site discharges to one location as outlined in **Figure 2.2**, leading south ultimately reaching the Combahee River.

As outlined above in Section 1.5, there are onsite wetlands. As discussed, the required 30-ft undisturbed construction buffer will be provided.

No additional Federal, State, or Local permits are required other than the SCDHEC-OCRM land disturbance permits.

Figure 2.2: Stormwater Runoff Route



2.3 Impairments and TMDLs

Some Waters of the State (WoS) have been identified as not meeting the State's water quality standards for recreational swimming, fish consumption, aquatic life use, and/or shellfish harvesting for one or more pollutants even after controls for point and nonpoint source pollution have been put in place. These waterbodies have been classified as "impaired." Once these waterbodies have been identified they are listed on the State's 303(d) List of Impaired Waterbodies. South Carolina lists impairments as "stations" where samples were taken along a waterbody.

The most recently-approved 303(d) list can be found at the following link:

http://www.scdhec.gov/environment/water/tmdl/index.htm#4

After a pre-determined period of time, DHEC is obliged to develop a Total Maximum Daily Load (TMDL) for the pollutant of concern for each impaired station listed on the 303(d) List. A TMDL is the amount of a single pollutant (such as bacteria, nutrients, metals) that can enter a waterbody on daily basis and that waterbody still meet water quality standards. "TMDL" refers to both a calculation of a pollutant entering a waterbody as well as the document containing this calculation along with source assessments, watershed and land use information, reductions and allocations information, implementation and other relevant information, maps, figures, and pictures.

Once a TMDL has been developed and approved by the EPA, the impaired WoS is removed from the 303(d) list. A separate list is maintained for WoS with approved TMDLs.

Any construction site whose discharges are released into a WoS listed on the 303(d) List or for which an EPA-approved TMDL has been developed must address the specific pollutant set forth in the TMDL and/or potential pollutants for the impairment. The SWPPP must include a description of BMPs to address these pollutants.

A TMDL has not been developed for the receiving waterbody for this project.

2.4 Critical Areas (CZC only)

No Critical Areas are located within and/or directly adjacent to the proposed disturbed area and construction site.

Section 3

Compliance Requirements

3.1 SWPPP Availability

A copy of the OS-SWPPP, as defined by Section 3.1.1.H of the 2012 Construction General Permit, must be retained at the construction site or a nearby location easily accessible during normal business hours, from the date of commencement of construction activities to the date that final stabilization is reached.

If a location within the construction site is unavailable to store the On-Site SWPPP when no personnel are present, notice of the plan's location, along with any updated contact information, must be posted near the main entrance at the construction site.

Contractors and/or Builders, who have day-to-day operational control over OS-SWPPP implementation, must have a copy of this SWPPP available at a central location within the construction site for the use by all those identified as having responsibilities under the OS-SWPPP.

For linear construction of roads and utilities (i.e., electrical power lines, gas lines, main sewer trunk lines, and water distribution lines), which are not part of a LCP, where it is not practical to have the OS-SWPPP on location, the Permittee and/or Operator must upon request make the OS-SWPPP available by the end of normal business hours, or by the following business day under extenuating circumstances.

On-Site SWPPPs must be made available upon request and at the time of a construction site inspection by EPA; DHEC; a tribal or an entity delegated under Regulation 72-300; local government officials; and the Operator of a Municipal Separate Storm Sewer System (MS4) receiving discharges from the construction site to the requestor.

3.2 Pre-Construction Conferences

A. A pre-construction conference must be held for each construction project or site with an approved On-Site Stormwater Pollution Prevention Plan (OS-SWPPP). Each contractor, subcontractor, blanket utility provider, etc., who will work at a site must attend this conference in person. The primary purpose of this conference is for:

    I. The preparer of the SWPPP or someone with a registration equivalent to that of the preparer of the SWPPP; and/or
    II. The person with operational control of the plans and specifications (the Primary or Secondary Permittee) or their duly authorized representative (as defined in Section 122.22(b) of SC Regulation 61-9))

    to review and explain the On-Site SWPPP (OS-SWPPP) so that all are aware of the requirements before they start performing construction-related (land disturbing) activities that may affect the implementation of the approved OS-SWPPP. This conference may be held simultaneously with all contractors and builders present or may be conducted separately with one or more contractors, subcontractors, etc. present.

B. Linear construction of roads or utilities (such as roads and utility construction including electrical power lines, gas lines, main sewer trunk lines, and water distribution lines) that are not part of a Larger Common Plan (i.e., subdivision or other type of development) are considered to be linear construction projects or linear construction sites under this permit. Linear construction performed as a part of or within a LCP project or site, is considered to be linear construction activities under this permit and not linear construction projects or sites. (See Appendix A, Definitions.)

C. Pre-construction conference location requirements are defined below.

    I. For non-linear construction projects/sites that disturb 10 acres or more, the preconstruction conference must be held on-site unless it is justified in the SWPPP and approved by the Department to conduct the conference off-site.
    II. For non-linear construction projects/sites that disturb less than 10 acres, conferences may be held off-site unless specifically required in writing or as a condition of the approved OS-SWPPP by the Department or the respective MS4 to be conducted onsite.

III. For linear construction projects/sites that are not part of a Larger Common Plan (LCP), subdivision or other type of development, conferences may be held off-site unless specifically required in writing or as a condition of the approved OS-SWPPP by the Department or the respective MS4 to be conducted on-site.

IV. For linear construction activities (within a LCP), conferences must be held in accordance with disturbed area (10 acres) criterion established for non-linear projects/sites in Items C.I and C.II above.

V. In addition, person(s) conducting the conference (Owner/Operator) may choose, at their discretion, to hold a conference normally held off-site, on-site.

D. Each pre-construction conference must also specifically address Section 3.1.7, Modifications, detailing how each type of modification, Major and Minor, will be addressed and processed at the construction site to maintain compliance with this permit.

E. Persons conducting this conference must document each contractor, subcontractor, blanket utility, etc., attending the conference. This documentation must be maintained with the On-Site SWPPP (OS-SWPPP), and include dates, locations, times, as well as, identification of those in attendance.

3.3 Inspection Requirements

Scope

Construction Site Inspections are to be conducted on a routine basis, as outlined in Section 4.2.B, and must include all areas disturbed by construction activity, including perimeter BMPs and areas used for storage of materials that are exposed to precipitation.

Each Inspection must look for the evidence of, or the potential for, inefficiencies within the implemented OS-SWPPP, whether the inefficiencies are a direct result of improper design, installation or maintenance, by inspecting, at a minimum, the following:

I. All areas of the site disturbed by construction activity and areas used for storage of materials that are exposed to precipitation;

II. All stormwater conveyance systems for any evidence of, or the potential for, pollutants entering these systems;

III. All BMPs identified in the OS-SWPPP;

IV. All discharge locations to ascertain whether the implemented BMPs are effective in preventing the discharge of sediment from the site. Where discharge locations are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable; and

V. Locations where vehicles enter or exit the site must be inspected for evidence of off-site sediment tracking.

If inspection responsibilities are not shared between the Primary and Secondary Permittees, each secondary permittee must provide their own inspections for the portions of the site for which their coverage includes.

Frequency

After construction activities begin, inspections must be conducted at a minimum of at least once every calendar week and must be conducted until final stabilization is reached on all areas of the construction site. An inspection is recommended within 24 hours of the end of a storm event of 0.5 inches or greater.

The Department on a case-by-case basis may require any permittee who has coverage under this CGP to conduct inspections on a more frequent basis than prescribed in this CGP. Examples include, but are not limited to, permittees who have compliance problems and permittees whose construction site’s Stormwater discharges to Sensitive Waters (such as waters classified as Trout Waters, Outstanding Resource Waters, Shellfish Harvesting Waters, etc.).

Inspection frequencies for portions of the construction site that have reached temporary or final stabilization may be reduced to at least once every month, as long as the stabilization is maintained and there is no additional disturbance in these areas. Once a definable area has reached final stabilization, you may mark this on your On-Site SWPPP and no further inspection requirements apply to that portion of the Site (e.g., land-disturbing activities around one of three buildings in a complex are completed and the disturbed area has reached final stabilization, one mile of a roadway or pipeline Project is completed and the disturbed area has reached final stabilization, etc). Inspection of common BMPs, such as sediment basins, sediment traps, may be required to resume if areas that drain to them become disturbed during future construction.

Linear Site Inspection Frequency

Utility line installation, pipeline construction, and other examples of long, narrow, linear construction activities may limit the access of inspection personnel to the areas described in Section 4.2.A above. Inspection of these areas could require that vehicles compromise temporarily or even permanently stabilized areas, cause additional disturbance of soils, and increase the potential for erosion.

In these circumstances, controls must be inspected on the same frequencies as other construction Projects, but representative inspections may be performed. For representative inspections, personnel must inspect controls along the construction Site for 0.25 mile above and below each access point where a roadway, undisturbed right-of-way, or other similar feature intersects the construction Site and allows access to the areas described above.

The conditions of the controls along each inspected 0.25 mile segment may be considered as representative of the condition of controls along that reach extending from the end of the 0.25 mile segments to either the end of the next 0.25 mile inspected segment, or to the end of the construction site, whichever occurs first. Representative inspections must include any areas where Stormwater discharges to Sensitive Waters (such as waters classified as Trout Waters, Outstanding Resource Waters, Shellfish Harvesting Waters, etc.).

Rain Gauge

Permittees shall either maintain an on-site rain gauge or use data from a certified weather record (such as a personal weather station or an airport) located within a reasonable proximity of the construction site, to record rainfall records from any significant rainfall event, 0.5 inches or greater. These recorded rainfall amounts must be maintained in a Rain Log located in the on-site SWPPP. Rainfall records for the day of an inspection and any significant rainfall events since the last inspection must be reported on each weekly inspection report.

Inspector Qualifications

Inspections must be conducted by qualified personnel (provided by the Permittee) as outlined by the following:

I. For Projects that disturb more than 2 acres, "Qualified personnel" means a person knowledgeable in the principles and practice of erosion and sediment controls who possesses the skills to assess conditions at the construction site that could impact Stormwater quality and to assess the effectiveness of any BMPs selected to control the quality of Stormwater discharges from the construction site.

   This person must be either the preparer of the C-SWPPP or an individual who is under the direct supervision of the preparer of the approved C-SWPPP and who meets the requirements in this paragraph or an individual who has been certified through a Construction Site Inspector Certification Course that has been approved by DHEC.

   Inspections may also be conducted by a person with a registration equivalent to the registration of the preparer of the C-SWPPP and who meets the qualifications of this paragraph or an individual who is under the direct supervision of the person with an equivalent registration and who meets the requirements in this paragraph.

II. For Projects that disturb 2 acres or less, and that are not part of a Larger Common Plan, the Permittee or his designee may perform these inspections provided the preparer of the C-SWPPP or someone with a registration equivalent to that of the preparer of the C-SWPPP explains the OS-SWPPP including implementation along with the inspection requirements to the person who will be conducting the inspections.

III. The Department and Regulated MS4s reserves the right to require that inspections be performed by an inspector meeting the requirements of 4.2.E.I for construction sites less than two acres in size that drain to Sensitive Waters, when deemed necessary.

Inspection Reports

Refer to Appendix E for an approved Inspection Report Template

Monthly Reports

DHEC may require on a case-by-case basis that the Permittee submit a monthly report summarizing the inspections at the site and any associated maintenance activity.

Inspection Records

A record of each inspection and of any actions taken in accordance with this Section must be retained as part of the On-site SWPPP for at least three years from the date that permit coverage expires or is terminated. The qualified inspector, as identified in section 4.2.E, must sign the inspection report.

Primary Permittees

Primary Permittees. Inspectors employed by the Primary Permittee retain the authority to inspect, report, and document areas of the construction site that are under direct control of the Secondary Permittee, but only when a lack of compliance by the Secondary Permittee inhibits the Primary Permittee’s ability to maintain compliance with the overall OS-SWPPP or this permit.

3.4 Maintenance Requirements

Construction Maintenance

All BMPs and other protective measures identified in the OS-SWPPP must be maintained in effective operating condition. If site inspections required by Section 4.2 identify BMPs that are not operating effectively, maintenance must be performed within seven (7) calendar days, before the next inspection, or as reasonably possible, and before the next storm 59 event whenever practicable to maintain the continued effectiveness of Stormwater controls.

If periodic inspection or other information indicates that a BMP has been used inappropriately, or incorrectly, the Permittee must address the necessary replacement or modification required to correct the BMP within a time frame of 48 hours of identification.

If existing BMPs need to be modified or if additional BMPs are necessary to comply with the requirements of this permit and/or SC's Water Quality Standards, implementation must be completed before the next storm event whenever practicable. If implementation before the next storm event is impracticable, the situation must be documented in the OS-SWPPP and alternative BMPs must be implemented as soon as reasonably possible.

Sediment from sediment traps or sedimentation basins must be removed as indicated in the OS-SWPPP or when the design capacity has been reduced by 50 percent, which ever occurs first.

Sediment collected by Silt Fence, or another sediment control measure, must be removed when the deposited sediment reaches 1/3 of the height of the aboveground portion of these BMPs, or before it reaches a lower height based on the manufacturer's specifications.

Permanent Maintenance

Permanent Stormwater management structures must be routinely maintained to operate per design. The Department requires inclusion of a Permanent Stormwater Management Maintenance Agreement and a Maintenance Plan to ensure proper operation. Provide a detailed proposed maintenance plan for permanent stormwater management structures proposed for your project in the Narrative. The maintenance agreement and maintenance plan, when required, must be identified and located in the C-SWPPP.

Maintenance Agreements

A copy of a notarized Maintenance Agreement in accordance with Section 4.3.C of the Construction General Permit has been provided In Appendix E.

For additional information or questions on the Maintenance Agreement please contact the SWPPP Preparer or the Permittee referenced on the cover of this SWPPP.

Maintenance Plans

A copy of a Maintenance Plan in accordance with Section 4.3.D of the Construction General Permit has been provided In Appendix E.

For additional information or questions on the Maintenance Plan please contact the SWPPP Preparer or the Permittee referenced on the cover of this SWPPP.

3.5 Record Keeping

All logs necessary to track the progress, compliance, modifications and those associated with the construction site, in accordance with Section 3.1.1.H.V.(h) of the Construction General Permit, are provided in Appendices F-H.

For additional information or questions on Record Keeping please contact the SWPPP Preparer or the Permittee referenced on the cover of this SWPPP.

3.6 Final Stabilization

Coverage under the Construction General Permit must be maintained until all portions of the site achieve Final Stabilization as defined in Appendix A of the Construction General Permit.

Final Stabilization means that all land-disturbing activities at the construction site have been completed and that on all areas not covered by permanent structures, either (1) a uniform (e.g., evenly distributed, without large bare areas) vegetative cover with a density of 70 percent of the natural background vegetative cover has been established excluding areas where no natural background vegetative cover is possible (e.g., on a beach), or (2) equivalent permanent stabilization measures (such as the use of landscaping mulch, riprap, pavement, and gravel) have been implemented to provide effective cover for exposed portions of the construction site not stabilized with vegetation.

All temporary structural BMPs must be removed after Final Stabilization has been accomplished.

Once Final Stabilization has been achieved on all portions of the construction site, a Notice of Termination (NOT) may be submitted.

No post-construction discharges that originate from the construction site after land-disturbing activities have been completed and the site has achieved Final Stabilization are permitted.

Appendix A

Site Maps

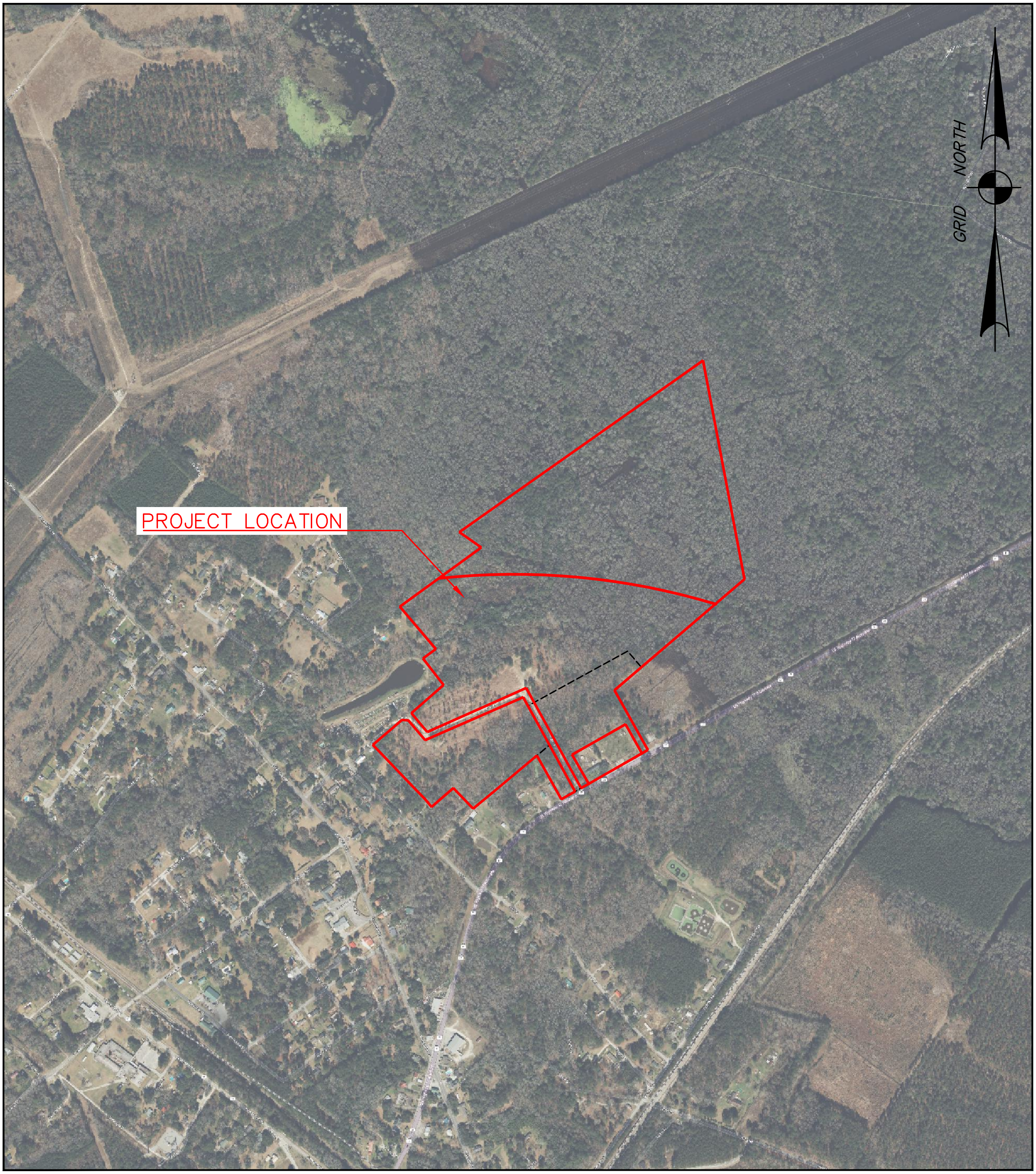
To develop a site-specific SWPPP for a construction map, an assortment of site maps must be used in addition to an on-site assessment to develop an effective stormwater sediment and erosion control plan. The maps located in this appendix have been obtained from various sources, or have been developed by the SWPPP Preparer. Listed below are the type of maps found within this Appendix.

Site Vicinity Map

USGS Quad Map

Soils Maps

Floodway Maps



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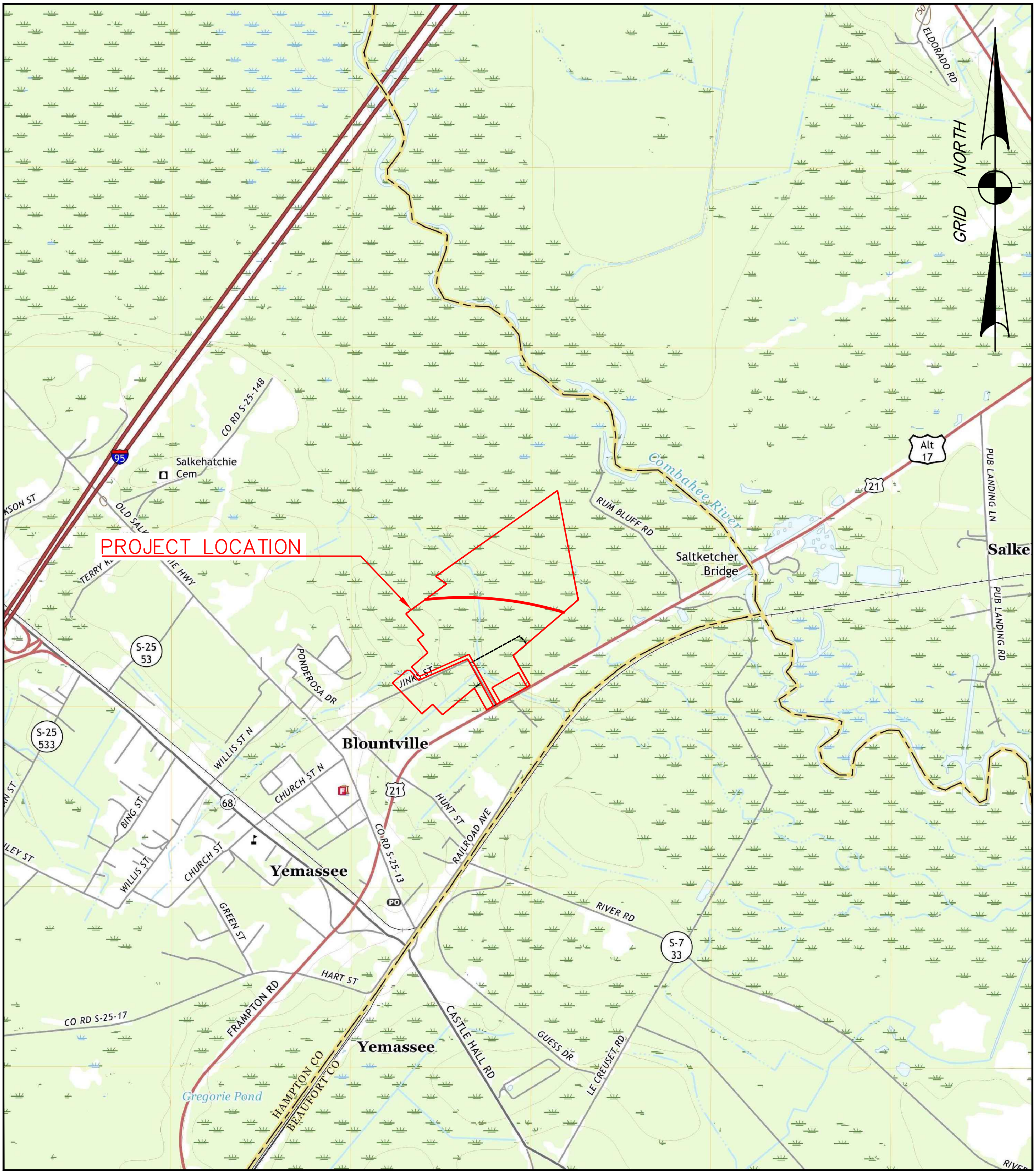
VICINITY MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=1,000'



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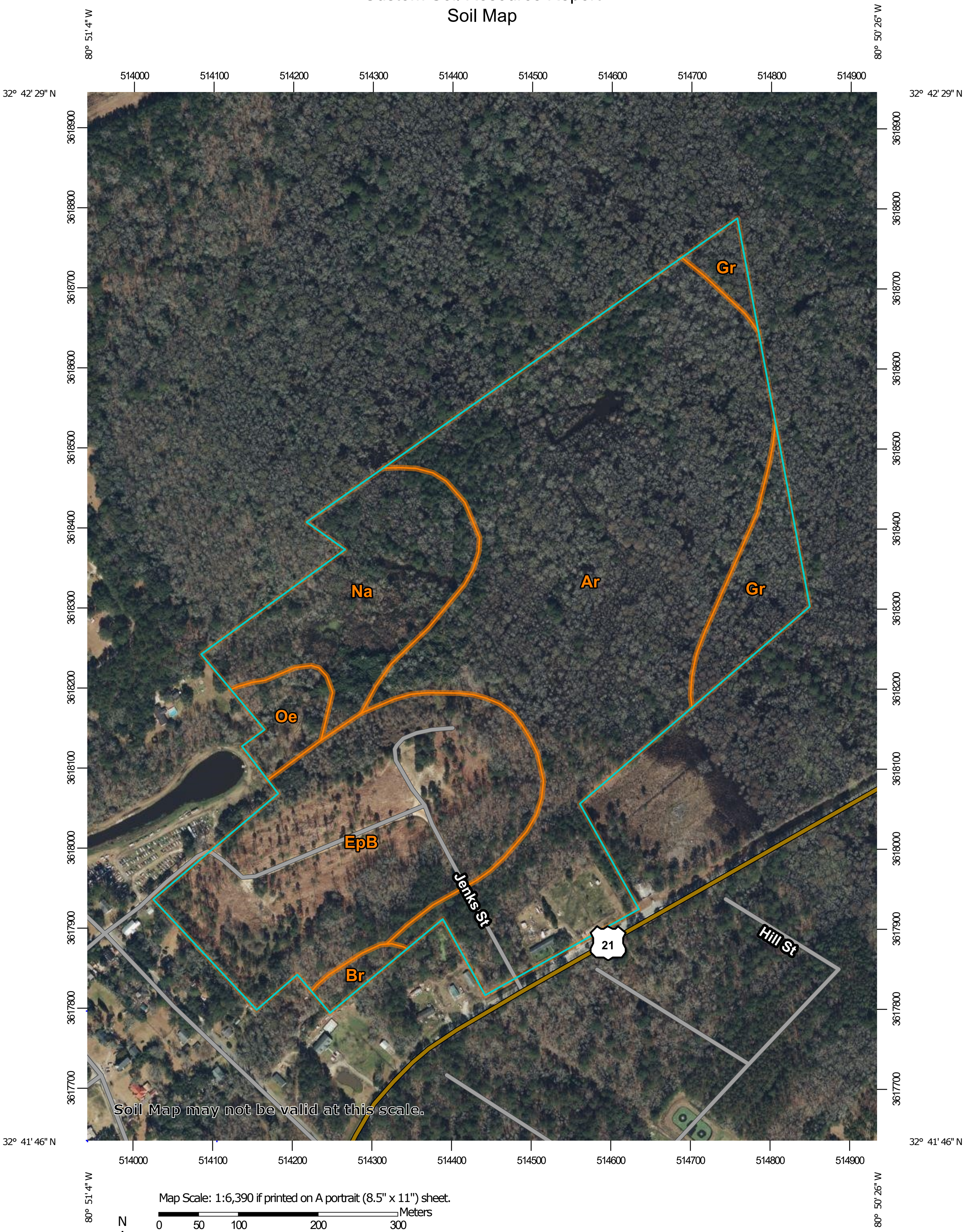
QUAD MAP

PINE STREET DEVELOPMENT

LOCATION: YEMASSEE, SC
DATE: 10/25/2022
PROJECT #: 210148
SCALE: 1"=2000'

Soil Map



Map Scale: 1:6,390 if printed on A portrait (8.5" x 11") sheet.

Meters: 0, 50, 100, 200, 300

Feet: 0, 300, 600, 1200, 1800

N

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

National Flood Hazard Layer FIRMette

FEMA

80°50'44"W 32°42'26"N

80°50'6"W 32°41'56"N

Feet 1:6,000

0 250 500 1,000 1,500 2,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- B 20.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- 8 Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 10/27/2022 at 5:25 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix B

Drainage Maps

Drainage maps become an essential tool when both developing and reviewing hydrology models of a construction site during the various phases of developing such a site (i.e. pre-development conditions, construction conditions, and post-development conditions). Typically these maps are enhanced site maps that add the features of drainage basins outlines and their respective outfall markers. Each SWPPP must contain, at a minimum, a pre-development and a post-development drainage map for the entire on-site area and adjacent off-site areas that contribute runoff to any of the marked outfall locations.

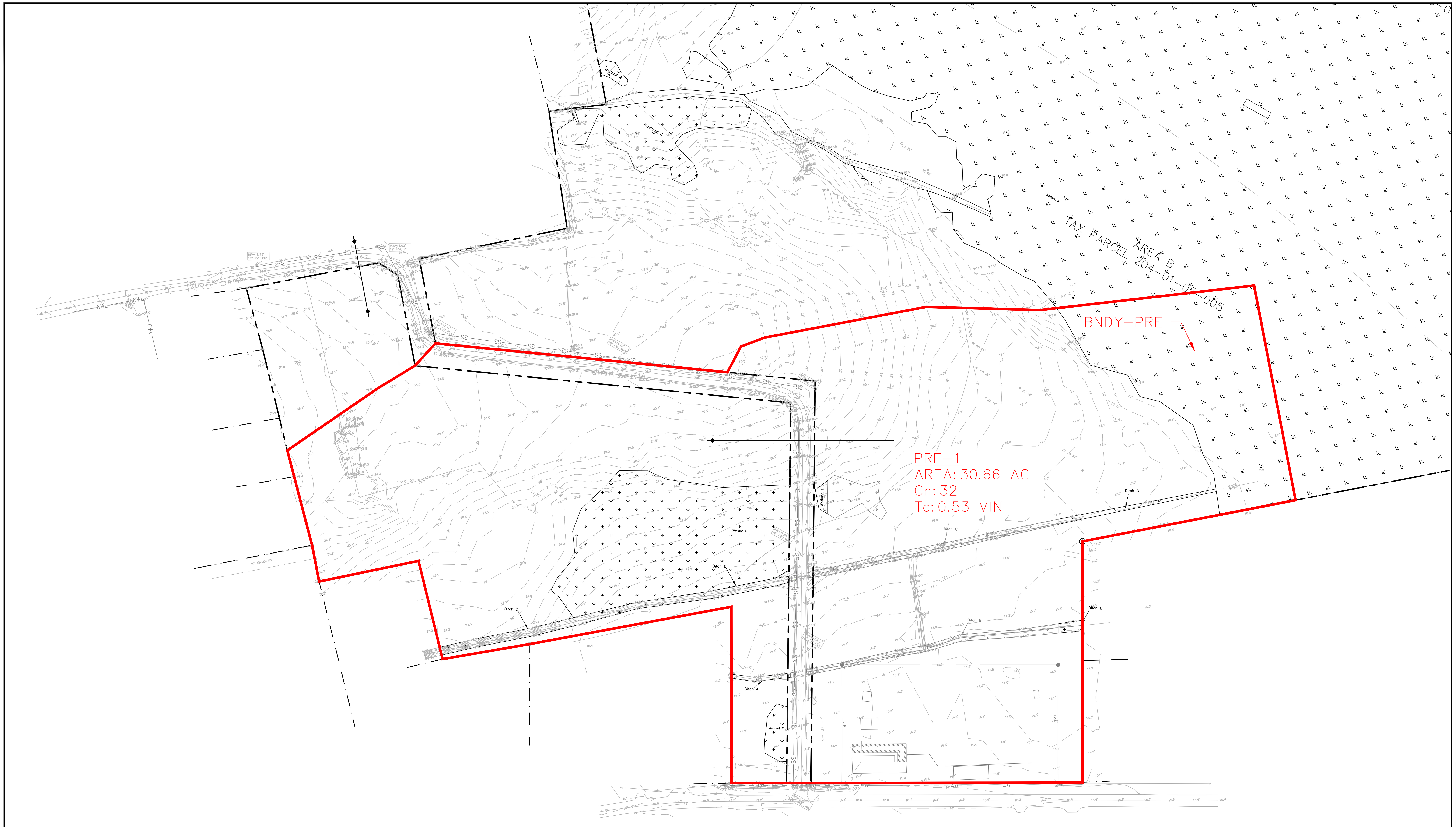
Additional drainage maps should also be included for any sediment control BMP in which sediment trapping efficiency calculations are required to be submitted. A drainage map for "During Construction" conditions should also be included if the basin and subbasin drainage patterns differ from both the pre-development and post-development patterns.

All provided drainage maps must clearly correspond to any calculations submitted for review, the outfall locations chosen for comparing runoff rates and the total drainage area analyzed (from pre- to post-development conditions) may not change. However, the immediate drainage areas contributing to each outfall location may shift.

Each Drainage Map should be provide on an 11x17 sheet and must show the contours for the specific stage of construction each map represents.

Pre-Development Drainage Area Map

Post-Development Drainage Area Map



VICINITY MAP
Not To Scale

PRE DEVELOPMENT DRAINAGE EXHIBIT

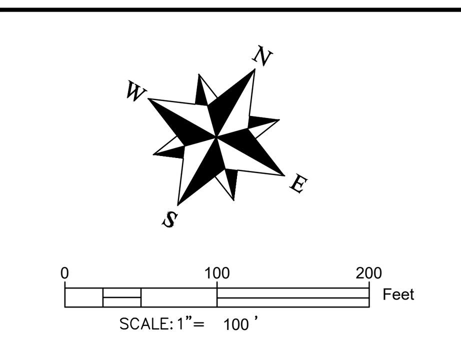
IRONLINE METALS

TOWN OF YEMASSEE, SOUTH CAROLINA

PREPARED FOR:
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

LEGEND
PROPERTY BOUNDARY
DRAINAGE BASIN AREA
ANALYSIS POINT
FLOW

DOCUMENT IS CONCEPTUAL AND SUBJECT TO CHANGE. WARD EDWARDS INC. ASSUMES NO LIABILITY FOR ACCURACY OR DECISIONS MADE BY THE USER BASED UPON INFORMATION CONTAINED HEREIN.



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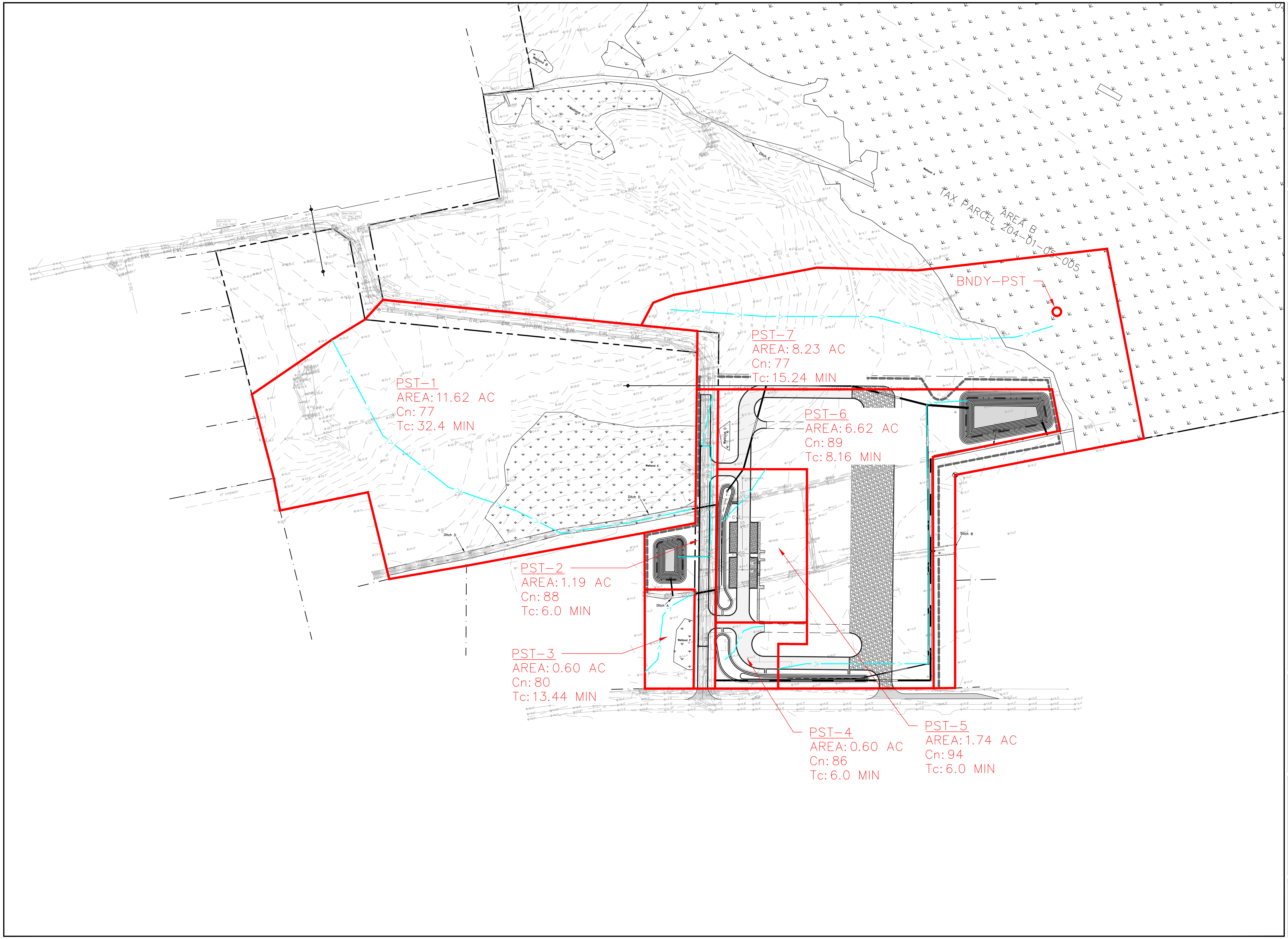
PROJECT #:	210148
DATE:	12/05/22
PREPARED BY:	BMT
SHEET NUMBER:	1 OF 1



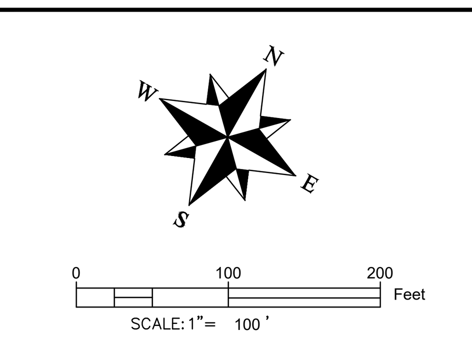
VICINITY MAP
Not To Scale

POST DEVELOPMENT DRAINAGE EXHIBIT

IRONLINE METALS
TOWN OF YEMASSEE, SOUTH CAROLINA

PREPARED FOR:
RAMSEY DEVELOPMENT, LLC
TELL CITY, INDIANA

LEGEND
PROPERTY BOUNDARY
DRAINAGE BASIN AREA
ANALYSIS POINT
FLOW



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WWW.WARDEDWARDS.COM

PROJECT #:	210148
DATE:	12/05/22
PREPARED BY:	BMT
SHEET NUMBER:	1 OF 1

Appendix C

Additional Approvals/Certifications

This appendix has been provided as a catchall to store any additional correspondences that may be required to either obtain coverage under the current CGP or to implement land-disturbing activities at a construction.

Coastal Zone Consistency Certification

Appendix D

Engineering Reports

Hydrologic Analysis

Each hydrologic analysis was performed in a manner consistent with SC Regulations 72-300 and the SC DHEC Stormwater Management BMP Handbook. Each analysis, at a minimum, meets the following requirements or guidelines:

- Analysis Points (Outfalls) for comparing runoff rates and the total drainage area analyzed do not change from pre- to post-development conditions (although the immediate drainage areas contributing to each analysis point my shift);
- Post-development and Construction runoff peak discharges are less then Pre-Development peak discharges at **each** outfall for the following design storms:
    - 2-year, 24 hour (4.2-inches)
    - 10-year, 24 hour (6.4-inches)
    - 25-year, 24 hour (7.8-inches)
    - 100-year, 24 hour (10.2-inches)
- Post-development runoff rate for the 100-yr 24 hr. design storm (10.2-inches) to ensure adequate freeboard;
- Each analysis was performed using a SCS Type III 24-hour storm event using an SCS Peaking Factor of 323;
- TR-55 methodology was utilized to determine the runoff index (curve number – CN) and the time of concentration (Tc);
- The composite curve number for each Basin was determined using the most prevalent hydrologic soil type.

Detention Analysis

Each detention structure analysis was performed using the Advanced Interconnected Channel and Pond Routing (ICPR) computer model by Streamline Technologies. If a rating curve for the outlet structure had to be generated externally from the modeling software, the data and equations used to rate the outlet structure are included in the appendix.

Water Quality Analysis

To ensure compliance with State and Local Water Quality Requirements, the following analyses were performed:

- SCDHEC First Flush
- Event of Excess of Design Storm

The proposed stormwater BMPs will handle water quality treatment in addition to the water quantity attenuation.

The water quality analysis for this project involves addressing the SCDHEC first flush requirements. The proposed BMPs will handle water quality treatment in addition to the water quantity attenuation. The following tables summarize the stage-area relationships for the proposed BMPs.

Table 6a – Pond 1 Stage Volume Relationship

Wet Pond 1				
Stage (ft)	Elevation (ft)	Area (ft^2)	Volume (ft^3)	∑ Volume (ft^3)
0	13	5,362	0	0
1	14	6,180	5,771	5,771
2	15	7,113	6,647	12,418
3	16	8,101	7,607	20,025

Table 6b – Pond 2 Stage Volume Relationship

Wet Pond 2				
Stage (ft)	Elevation (ft)	Area (ft^2)	Volume (ft^3)	∑ Volume (ft^3)
0	11	13,937	0	0
1	12	15,503	14,720	14,720
2	13	17,125	16,314	31,034
3	14	18,804	17,965	48,999
4	15	20,540	19,672	67,671
5	16	22,333	21,436	90,107

Table 6c – Dry Pond 1 Stage Volume Relationship

Dry Pond 1				
Stage (ft)	Elevation (ft)	Area (ft^2)	Volume (ft^3)	∑ Volume (ft^3)
0	13	1,380	0	0
1	14	4,175	2,778	2,778
2	15	6,032	5,104	7,882
3	16	7,946	6,989	14,871

Table 6d – Dry Pond 2 Stage Volume Relationship

Dry Pond 2				
Stage (ft)	Elevation (ft)	Area (ft^2)	Volume (ft^3)	∑ Volume (ft^3)
0	14	1,097	0	0
1	15	5,683	3,390	3,390
2	16	8,222	6,953	10,343
3	17	10,818	9,520	19,863

For each BMP, the low-flow drawdown weir was set to the bottom or normal water level. The low-flow drawdown will retain the first flush volume and draw it down over 24-hours.

SCDHEC First Flush Analysis

The following SCDHEC Water Quality Analysis applies to the entirety of the site

Section 72-307.C.5 of the standards for Stormwater Management and Sediment Reduction, implemented as part of the Stormwater Management and Sediment Reduction Act, requires the following:

a) Permanent water quality ponds having a permanent pool shall be designed to store and release the first ½ inch of runoff from the site over a 24-hour period. The storage volume shall be designed to accommodate, at least, ½ inch of runoff from the entire site. For the purposes of this calculation, the offsite, undeveloped areas were excluded from the "Project Site". The following calculations are for the basin areas draining to Pond 1 & Pond 2.

   <u>Pond 1:</u>
   (0.5 in) × (Area of Project Site draining to the BMP)
   (0.5 in) × (1.19 ac) x (43,560 sf/ac) x (1 ft/12 in) = **2,160 ft^3**

   Please note the initial outfall weir is set at elevation 14.0. The volume within the pond at this elevation is 5,771 CF, which is larger than the required First Flush volume outlined above. This volume will be discharged through a low-flow 3" wide weir over the course of 24 hours, as shown in the attached drawdown graph.

Pond 2:

(0.5 in) × (Area of Project Site draining to the BMP)
(0.5 in) × (8.96 ac) x (43,560 sf/ac) x (1 ft/12 in) = **16,262 ft^3**
Please note the initial outfall weir is set at elevation 12.1. The volume within the pond at this elevation is 16,351 CF, which is larger than the required First Flush volume outlined above. Although the dry-detention basins have additional volume capacity, they ultimately drain through Pond-2 and are incorporated in the 8.96 ac area. This volume will be discharged through a low-flow 4" wide weir over the course of 24 hours, as shown in the attached drawdown graph.

SCDHEC Trapping Efficiency Calculation

Appendix B of the South Carolina Stormwater Management and Sediment Control Handbook for Land Disturbance Activities (Aug 2003) states that land disturbing activities which disturb ten acres or more must have a sediment basin designed to meet a removal efficiency of 80 percent for suspended solids, or 0.5 ML/L peak settleable concentration, whichever is less. The project will disturb 12.5 acres. As such, this report will analyze sediment calculations to ensure the two wet detention ponds capable of serving as sediment basins for the site. The smallest soil particle size on-site was used within each basin area in order to provide the required trapping efficiency for the most limiting site condition.

According to the settling velocity and trapping efficiency graphs attached, both ponds will provide a trapping efficiency greater than the required 80% prior to discharging.

Additional sediment control measures are shown on the construction plans and include the following:

A. Construction entrance/exit will be used to minimize the effects of sediment movement due to construction traffic, and
B. Silt fencing will be used around the perimeter of the site to allow for sediment control during construction.
C. Inlet protection for all existing and proposed drainage structures.
D. Sediment Tubes will be placed in the swales.
E. Rip-rap outlet protection will be used at all pipe ends.
F. Temporary and permanent seeding for all disturbed areas.

Event of Excess of Design Storm

To assure the proposed site will not be inundated with excessive ponding of runoff, the stormwater routing model was run using the 100-yr 24 hr. design storm. The peak water level to the pond during the 100 year event was checked against grate inlet, edge of pavements, and building finished floor elevations to assure these items would not overtop. The proposed emergency overflow was adjusted appropriately to control the peak water elevation. See Appendix C for the model results.

Appendix E

Maintenance Agreements/Plans

Attachment 1: ICPR Model Input

Attachment 2: TR-55 Curve Number and Tc Determination

Attachment 3: ICPR Link Node Map

Attachment 4: ICPR Hydrology – Basin Summary

Attachment 5: ICPR Hydraulics Output

Attachment 6: ICPR WQ Drawdown Graphs

Attachment 7: Sedimentology Graphs

Attachment 8: Geotechnical Report

```
========================================================================================
==== Basins ============================================================================
========================================================================================

         Name: PRE-2                    Node: Pre BNDY              Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
               Area(ac): 8.230                   Time Shift(hrs): 0.00
           Curve Number: 77.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


----------------------------------------------------------------------------------------------------
         Name: PRE1                     Node: Pre BNDY              Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 39.00
               Area(ac): 22.370                  Time Shift(hrs): 0.00
           Curve Number: 78.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


----------------------------------------------------------------------------------------------------
         Name: PST-1                    Node: DB-1                  Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 32.00
               Area(ac): 11.620                  Time Shift(hrs): 0.00
           Curve Number: 77.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


----------------------------------------------------------------------------------------------------
         Name: PST-2                    Node: Pond 1                Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 6.00
               Area(ac): 1.190                   Time Shift(hrs): 0.00
           Curve Number: 88.00              Max Allowable Q(cfs): 999999.000
                DCIA(%): 0.00


----------------------------------------------------------------------------------------------------
         Name: PST-3                    Node: Ditch A               Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 13.00
               Area(ac): 0.600                   Time Shift(hrs): 0.00
```

```
          Curve Number: 80.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
         Name: PST-4                    Node: Dry Detention 2        Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 6.00
               Area(ac): 0.600                   Time Shift(hrs): 0.00
          Curve Number: 86.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
         Name: PST-5                    Node: Dry Detention 1        Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 6.00
               Area(ac): 1.740                   Time Shift(hrs): 0.00
          Curve Number: 94.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
         Name: PST-6                    Node: Pond 2                 Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 8.00
               Area(ac): 6.620                   Time Shift(hrs): 0.00
          Curve Number: 89.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
         Name: PST-7                    Node: Post BNDY              Status: Onsite
        Group: BASE                     Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
               Area(ac): 8.230                   Time Shift(hrs): 0.00
          Curve Number: 77.00              Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

==========================================================================================
==== Nodes ===============================================================================
==========================================================================================

      Name: DB-1               Base Flow(cfs): 0.000         Init Stage(ft): 15.000
     Group: BASE                                             Warn Stage(ft): 22.000
```

Type: Stage/Area

Stage(ft)	Area(ac)
15.000	0.1000
16.000	0.2500
17.000	0.3700
18.000	0.6200
19.000	1.0200
20.000	1.4500
21.000	1.9100
22.000	2.2600

Name: Ditch A   Base Flow(cfs): 0.000   Init Stage(ft): 12.000
Group: BASE   Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)

Name: Dry Detention 1   Base Flow(cfs): 0.000   Init Stage(ft): 13.000
Group: BASE   Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
13.000	0.0320
14.000	0.0960
15.000	0.1380
16.000	0.1820

Name: Dry Detention 2   Base Flow(cfs): 0.000   Init Stage(ft): 14.000
Group: BASE   Warn Stage(ft): 17.000
Type: Stage/Area

Stage(ft)	Area(ac)
14.000	0.0250
15.000	0.1300
16.000	0.1890
17.000	0.2480

Name: Pond 1   Base Flow(cfs): 0.000   Init Stage(ft): 13.000
Group: BASE   Warn Stage(ft): 16.000
Type: Stage/Area

Stage(ft)	Area(ac)
13.000	0.1230

```
        14.000          0.1420
        15.000          0.1630
        16.000          0.1860

------------------------------------------------------------------------------------------
      Name: Pond 2             Base Flow(cfs): 0.000         Init Stage(ft): 11.000
     Group: BASE                                             Warn Stage(ft): 16.000
      Type: Stage/Area


      Stage(ft)        Area(ac)
--------------- ---------------
         11.000          0.3200
         12.000          0.3560
         13.000          0.3930
         14.000          0.4320
         15.000          0.4720
         16.000          0.5130

------------------------------------------------------------------------------------------
      Name: Post BNDY          Base Flow(cfs): 0.000         Init Stage(ft): 11.000
     Group: BASE                                             Warn Stage(ft): 14.000
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          11.000
          24.00          11.000

------------------------------------------------------------------------------------------
      Name: Pre BNDY           Base Flow(cfs): 0.000         Init Stage(ft): 11.000
     Group: BASE                                             Warn Stage(ft): 14.000
      Type: Time/Stage


      Time(hrs)       Stage(ft)
--------------- ---------------
           0.00          11.000
          30.00          11.000

==========================================================================================
==== Pipes ===============================================================================
==========================================================================================

         Name:  Ditch A-BNDY       From Node: Ditch A          Length(ft): 1289.00
        Group: BASE                  To Node: Post BNDY             Count: 1
                                                        Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                Solution Algorithm: Most Restrictive
     Geometry: Circular      Circular                                Flow: Both
     Span(in): 36.00         36.00                     Entrance Loss Coef: 0.00
     Rise(in): 36.00         36.00                         Exit Loss Coef: 1.00
   Invert(ft): 13.200        12.000                        Bend Loss Coef: 0.00
  Manning's N: 0.013000      0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000         0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000         0.000                      Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

```
Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall



----------------------------------------------------------------------------------------------------
         Name: POST 1:BNDY         From Node: DB-1              Length(ft): 1508.00
        Group: BASE                  To Node: Post BNDY              Count: 1
                                                          Friction Equation: Automatic
               UPSTREAM       DOWNSTREAM                 Solution Algorithm: Most Restrictive
     Geometry: Circular       Circular                                 Flow: Both
     Span(in): 24.00          24.00                      Entrance Loss Coef: 0.00
     Rise(in): 24.00          24.00                          Exit Loss Coef: 1.00
   Invert(ft): 15.000         12.000                         Bend Loss Coef: 0.00
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                       Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall



==========================================================================================
==== Channels ============================================================================
==========================================================================================

          Name:                     From Node:                  Length(ft): 0.00
         Group: BASE                  To Node:                       Count: 1

                UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
      Geometry: Trapezoidal    Trapezoidal               Solution Algorithm: Automatic
    Invert(ft): 0.000          0.000                                   Flow: Both
 TClpInitZ(ft): 9999.000       9999.000                    Contraction Coef: 0.100
   Manning's N: 0.000000       0.000000                      Expansion Coef: 0.300
  Top Clip(ft): 0.000          0.000                     Entrance Loss Coef: 0.000
  Bot Clip(ft): 0.000          0.000                         Exit Loss Coef: 0.000
     Main XSec:                                            Outlet Ctrl Spec: Use dc or tw
  AuxElev1(ft):                                             Inlet Ctrl Spec: Use dc
     Aux XSec1:                                           Stabilizer Option: None
  AuxElev2(ft):
     Aux XSec2:
 Top Width(ft):
     Depth(ft):
 Bot Width(ft): 0.000          0.000
  LtSdSlp(h/v): 0.00           0.00
  RtSdSlp(h/v): 0.00           0.00


==========================================================================================
==== Drop Structures =====================================================================
==========================================================================================

         Name: Dry1-Pond2          From Node: Dry Detention 1    Length(ft): 750.00
        Group: BASE                  To Node: Pond 2                   Count: 1

               UPSTREAM       DOWNSTREAM                  Friction Equation: Automatic
```

```
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                   Flow: Both
     Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.000
   Invert(ft): 10.000         7.000                         Exit Loss Coef: 1.000
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure Dry1-Pond2 ***
                                                                             TABLE
                  Count: 1                    Bottom Clip(in): 0.000
                   Type: Horizontal              Top Clip(in): 0.000
                   Flow: Both                  Weir Disc Coef: 3.200
               Geometry: Rectangular        Orifice Disc Coef: 0.600

               Span(in): 24.00                     Invert(ft): 13.500
               Rise(in): 24.00               Control Elev(ft): 13.500

----------------------------------------------------------------------------------------------------
         Name: Dry2-Pond2         From Node: Dry Detention 2    Length(ft): 850.00
        Group: BASE                 To Node: Pond 2                  Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
     Geometry: Circular       Circular                  Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                   Flow: Both
     Rise(in): 36.00          36.00                     Entrance Loss Coef: 0.000
   Invert(ft): 10.260         7.000                         Exit Loss Coef: 1.000
  Manning's N: 0.013000       0.013000                    Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                        Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                          Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 1 for Drop Structure Dry2-Pond2 ***
                                                                             TABLE
                  Count: 1                    Bottom Clip(in): 0.000
                   Type: Horizontal              Top Clip(in): 0.000
                   Flow: Both                  Weir Disc Coef: 3.200
               Geometry: Rectangular        Orifice Disc Coef: 0.600

               Span(in): 24.00                     Invert(ft): 14.500
               Rise(in): 24.00               Control Elev(ft): 14.500

----------------------------------------------------------------------------------------------------
         Name: Pond 2-BNDY        From Node: Pond 2             Length(ft): 34.00
        Group: BASE                 To Node: Post BNDY               Count: 1

               UPSTREAM       DOWNSTREAM                 Friction Equation: Automatic
```

```
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 36.00          36.00                                  Flow: Both
     Rise(in): 36.00          36.00                    Entrance Loss Coef: 0.000
   Invert(ft): 11.000         11.000                       Exit Loss Coef: 1.000
  Manning's N: 0.013000       0.013000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall



*** Weir 1 of 3 for Drop Structure Pond 2-BNDY ***
                                                                                       TABLE
                  Count: 1                    Bottom Clip(in): 0.000
                   Type: Horizontal              Top Clip(in): 0.000
                   Flow: Both                  Weir Disc Coef: 3.200
               Geometry: Rectangular         Orifice Disc Coef: 0.600

               Span(in): 36.00                      Invert(ft): 15.000
               Rise(in): 36.00                Control Elev(ft): 15.000

*** Weir 2 of 3 for Drop Structure Pond 2-BNDY ***
                                                                                       TABLE
                  Count: 1                    Bottom Clip(in): 0.000
                   Type: Vertical: Mavis         Top Clip(in): 0.000
                   Flow: Both                  Weir Disc Coef: 3.200
               Geometry: Rectangular         Orifice Disc Coef: 0.600

               Span(in): 4.00                       Invert(ft): 11.000
               Rise(in): 13.20                Control Elev(ft): 11.000

*** Weir 3 of 3 for Drop Structure Pond 2-BNDY ***
                                                                                       TABLE
                  Count: 1                    Bottom Clip(in): 0.000
                   Type: Vertical: Mavis         Top Clip(in): 0.000
                   Flow: Both                  Weir Disc Coef: 3.200
               Geometry: Rectangular         Orifice Disc Coef: 0.600

               Span(in): 15.00                      Invert(ft): 12.100
               Rise(in): 34.80                Control Elev(ft): 12.100


----------------------------------------------------------------------------------------------------
         Name: Pond1-BNDY         From Node: Pond 1           Length(ft): 1858.00
        Group: BASE                 To Node: Post BNDY             Count: 1

               UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
     Geometry: Circular       Circular                 Solution Algorithm: Most Restrictive
     Span(in): 18.00          18.00                                  Flow: Both
     Rise(in): 18.00          18.00                    Entrance Loss Coef: 0.000
   Invert(ft): 13.200         12.000                       Exit Loss Coef: 1.000
  Manning's N: 0.013000       0.013000                   Outlet Ctrl Spec: Use dc or tw
 Top Clip(in): 0.000          0.000                       Inlet Ctrl Spec: Use dc
 Bot Clip(in): 0.000          0.000                         Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
```

```
Circular Concrete: Square edge w/ headwall


*** Weir 1 of 3 for Drop Structure Pond1-BNDY ***
                                                                                     TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Horizontal                 Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 36.00                       Invert(ft): 15.000
               Rise(in): 36.00                 Control Elev(ft): 15.000

*** Weir 2 of 3 for Drop Structure Pond1-BNDY ***
                                                                                     TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 3.00                        Invert(ft): 13.000
               Rise(in): 12.00                 Control Elev(ft): 13.000

*** Weir 3 of 3 for Drop Structure Pond1-BNDY ***
                                                                                     TABLE
                  Count: 1                       Bottom Clip(in): 0.000
                   Type: Vertical: Mavis            Top Clip(in): 0.000
                   Flow: Both                     Weir Disc Coef: 3.200
               Geometry: Rectangular           Orifice Disc Coef: 0.600

               Span(in): 12.00                       Invert(ft): 14.000
               Rise(in): 12.00                 Control Elev(ft): 14.000


==========================================================================================
==== Weirs ===============================================================================
==========================================================================================

         Name: Pond2-BNDY-W        From Node: Pond 2
        Group: BASE                  To Node: Post BNDY
         Flow: Both                    Count: 1
         Type: Vertical: Fread      Geometry: Trapezoidal

            Bottom Width(ft): 15.00
        Left Side Slope(h/v): 3.00
       Right Side Slope(h/v): 3.00
                  Invert(ft): 15.250
       Control Elevation(ft): 15.250
      Struct Opening Dim(ft): 9999.00
                                                    TABLE
             Bottom Clip(ft): 0.000
                Top Clip(ft): 0.000
         Weir Discharge Coef: 3.200
      Orifice Discharge Coef: 0.600


==========================================================================================
==== Hydrology Simulations ===============================================================
==========================================================================================

         Name: 002
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\210148-Hydrology Simulation.R32
```

```
      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 4.20

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

----------------------------------------------------------------------------------------------------
         Name: 010
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\10.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 6.40

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

----------------------------------------------------------------------------------------------------
         Name: 025
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\25.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 7.80

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

----------------------------------------------------------------------------------------------------
         Name: 050
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\50.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 9.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

----------------------------------------------------------------------------------------------------
         Name: 100
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\100.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 10.20

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

----------------------------------------------------------------------------------------------------
         Name: 95th
```

```
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\95th.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Scsiii
    Rainfall Amount(in): 1.95

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

===========================================================================================
==== Routing Simulations ==================================================================
===========================================================================================

         Name: 002                 Hydrology Sim: 002
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\002.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: 010                 Hydrology Sim: 010
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\010.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes

----------------------------------------------------------------------------------------------------
         Name: 025                 Hydrology Sim: 025
```

```
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\025.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: 050                Hydrology Sim: 050
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\050.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: 100                Hydrology Sim: 100
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\100.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000
```

```
Group           Run
--------------- -----
BASE            Yes


----------------------------------------------------------------------------------------------------
         Name: 95th                Hydrology Sim: 95th
     Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\ICPR\95th.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                     Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                     End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes
```

WinTR-55 Current Data Description

--- Identification Data ---

User: BMT
Project: Pine Street Development
SubTitle: 210148
State: South Carolina
County: Beaufort
Filename: O:\Data\Projects\210148-Pine Street Development\2-Design\2-Reports\Stormwater\TR-55\210148-TR55

Date: 12/22/2022
Units: English
Areal Units: Acres

--- Sub-Area Data ---

Name	Description	Reach	Area(ac)	RCN	Tc
PRE 1			22.37	78	.648
POST DB 1			11.62	77	.54
POST DB 2			1.19	88	0.1
POST DB 3			0.6	80	.224
POST DB 4			0.6	86	0.1
POST DB 5			1.74	94	0.1
POST DB 6			6.62	89	.136
POST DB 7			8.23	77	.254
PRE-2			8.23	77	.254

Total area: 61.20 (ac)

--- Storm Data --

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
4.5	5.9	6.8	7.8	8.8	10.0	3.7

Storm Data Source: Beaufort County, SC (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

Pine Street Development
210148
Beaufort County, South Carolina

Storm Data

Rainfall Depth by Rainfall Return Period

2-Yr (in)	5-Yr (in)	10-Yr (in)	25-Yr (in)	50-Yr (in)	100-Yr (in)	1-Yr (in)
4.5	5.9	6.8	7.8	8.8	10.0	3.7

Storm Data Source: Beaufort County, SC (NRCS)
Rainfall Distribution Type: Type III
Dimensionless Unit Hydrograph: <standard>

Pine Street Development
210148
Beaufort County, South Carolina

Sub-Area Summary Table

Sub-Area Identifier	Drainage Area (ac)	Time of Concentration (hr)	Curve Number	Receiving Reach	Sub-Area Description
PRE 1	22.37	0.648	78		
POST DB 1	11.62	0.540	77		
POST DB 2	1.19	0.100	88		
POST DB 3	.60	0.224	80		
POST DB 4	.60	0.100	86		
POST DB 5	1.74	0.100	94		
POST DB 6	6.62	0.136	89		
POST DB 7	8.23	0.254	77		
PRE-2	8.23	0.254	77		

Total Area: 61.20 (ac)

Pine Street Development
210148
Beaufort County, South Carolina

Sub-Area Time of Concentration Details

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
PRE 1							
SHEET	100	0.0130	0.400				0.359
SHALLOW	1915	0.0130	0.050				0.289
				Time of Concentration			.648
POST DB 1							
SHEET	100	0.0120	0.400				0.370
SHALLOW	480	0.0193	0.050				0.059
CHANNEL	800					2.000	0.111
				Time of Concentration			.54
POST DB 2							
SHEET	100	0.0400	0.011				0.013
SHALLOW	374	0.0211	0.025				0.035
				Time of Concentration			0.1
POST DB 3							
SHEET	100	0.0080	0.150				0.199
SHALLOW	138	0.0092	0.050				0.025
				Time of Concentration			.224
POST DB 4							
SHEET	100	0.1200	0.011				0.008
SHALLOW	30	0.0923	0.050				0.002
				Time of Concentration			0.1
POST DB 5							
SHEET	100	0.0500	0.011				0.012
SHALLOW	58	0.0316	0.050				0.006
				Time of Concentration			0.1
POST DB 6							
SHEET	100	0.0100	0.011				0.022
SHALLOW	957	0.0132	0.025				0.114
				Time of Concentration			.136
POST DB 7							
SHEET	100	0.0350	0.240				0.160
SHALLOW	300	0.0302	0.050				0.030
SHALLOW	500	0.0180	0.050				0.064
				Time of Concentration			.254
PRE-2							
SHEET	100	0.0350	0.240				0.160
SHALLOW	300	0.0302	0.050				0.030
SHALLOW	500	0.0180	0.050				0.064

Sub-Area Time of Concentration Details (continued)

Sub-Area Identifier/	Flow Length (ft)	Slope (ft/ft)	Mannings's n	End Area (sq ft)	Wetted Perimeter (ft)	Velocity (ft/sec)	Travel Time (hr)
					Time of Concentration		.254
							========

Sub-Area Land Use and Curve Number Details

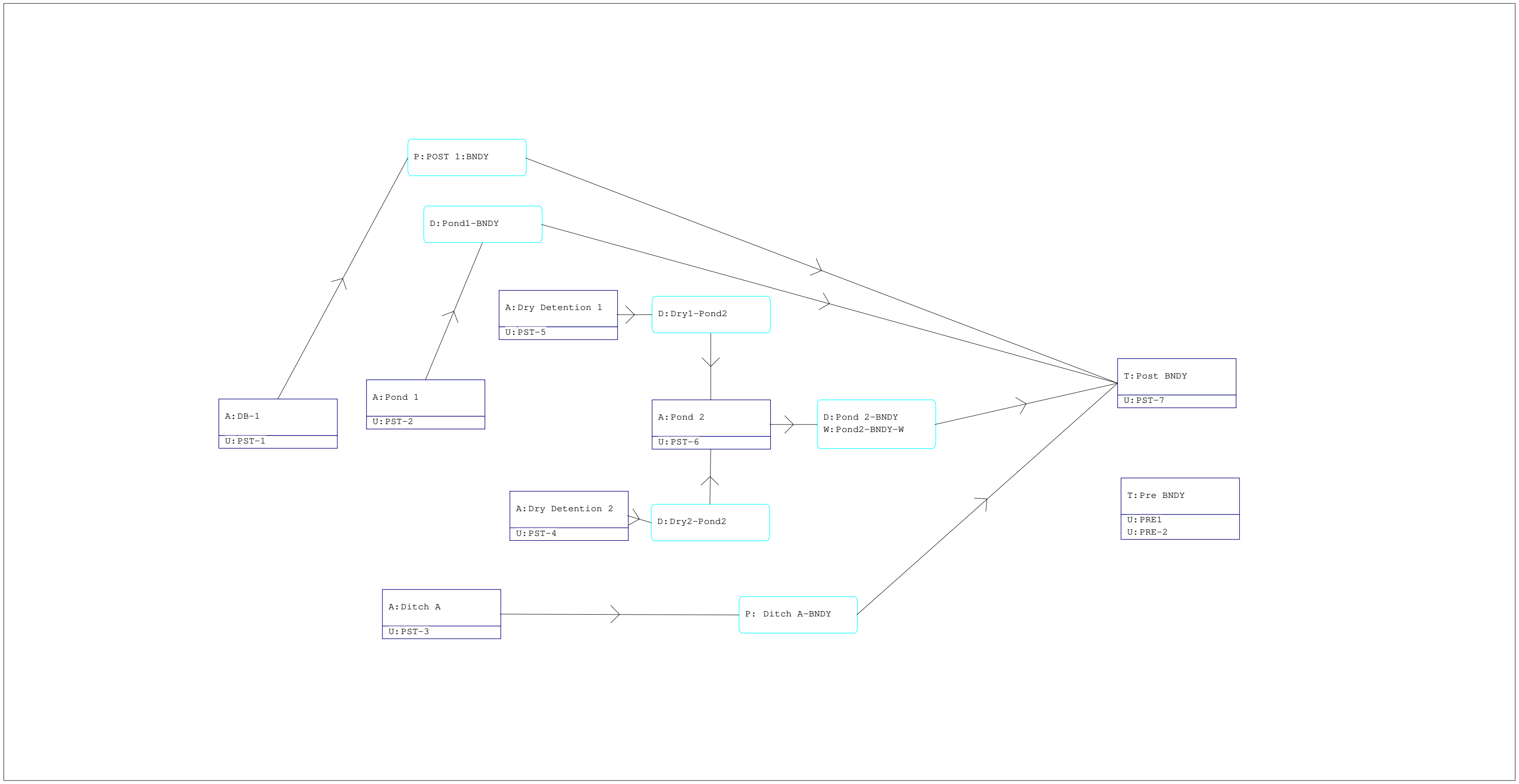
Sub-Area Identifier	Land Use		Hydrologic Soil Group	Sub-Area Area (ac)	Curve Number
PRE 1	Open space; grass cover > 75%	(good)	D	2.525	80
	Paved parking lots, roofs, driveways		D	.15	98
	Dirt (w/ right-of-way)		D	.629	89
	Woods	(good)	D	19.07	77
	Total Area / Weighted Curve Number			22.37	78
				=====	==
POST DB 1	Dirt (w/ right-of-way)		D	.306	89
	Woods	(good)	D	11.314	77
	Total Area / Weighted Curve Number			11.62	77
				=====	==
POST DB 2	Open space; grass cover > 75%	(good)	D	.663	80
	Paved parking lots, roofs, driveways		D	.527	98
	Total Area / Weighted Curve Number			1.19	88
				====	==
POST DB 3	Open space; grass cover > 75%	(good)	D	.6	80
	Total Area / Weighted Curve Number			.6	80
				==	==
POST DB 4	Open space; grass cover > 75%	(good)	D	.396	80
	Paved parking lots, roofs, driveways		D	.204	98
	Total Area / Weighted Curve Number			.6	86
				==	==
POST DB 5	Open space; grass cover > 75%	(good)	D	.433	80
	Paved parking lots, roofs, driveways		D	1.307	98
	Total Area / Weighted Curve Number			1.74	94
				====	==
POST DB 6	Open space; grass cover > 75%	(good)	D	3.157	80
	Paved parking lots, roofs, driveways		D	3.463	98
	Total Area / Weighted Curve Number			6.62	89
				====	==
POST DB 7	Woods - grass combination	(good)	D	1.79	79
	Woods	(good)	D	6.44	77
	Total Area / Weighted Curve Number			8.23	77
				====	==
PRE-2	Woods - grass combination	(good)	D	1.79	79
	Woods	(good)	D	6.44	77
	Total Area / Weighted Curve Number			8.23	77
				====	==

210148-Node Map

Nodes
A Stage/Area
V Stage/Volume
T Time/Stage
M Manhole

Basins
O Overland Flow
U SCS Unit CN
S SBUH CN
Y SCS Unit GA
Z SBUH GA

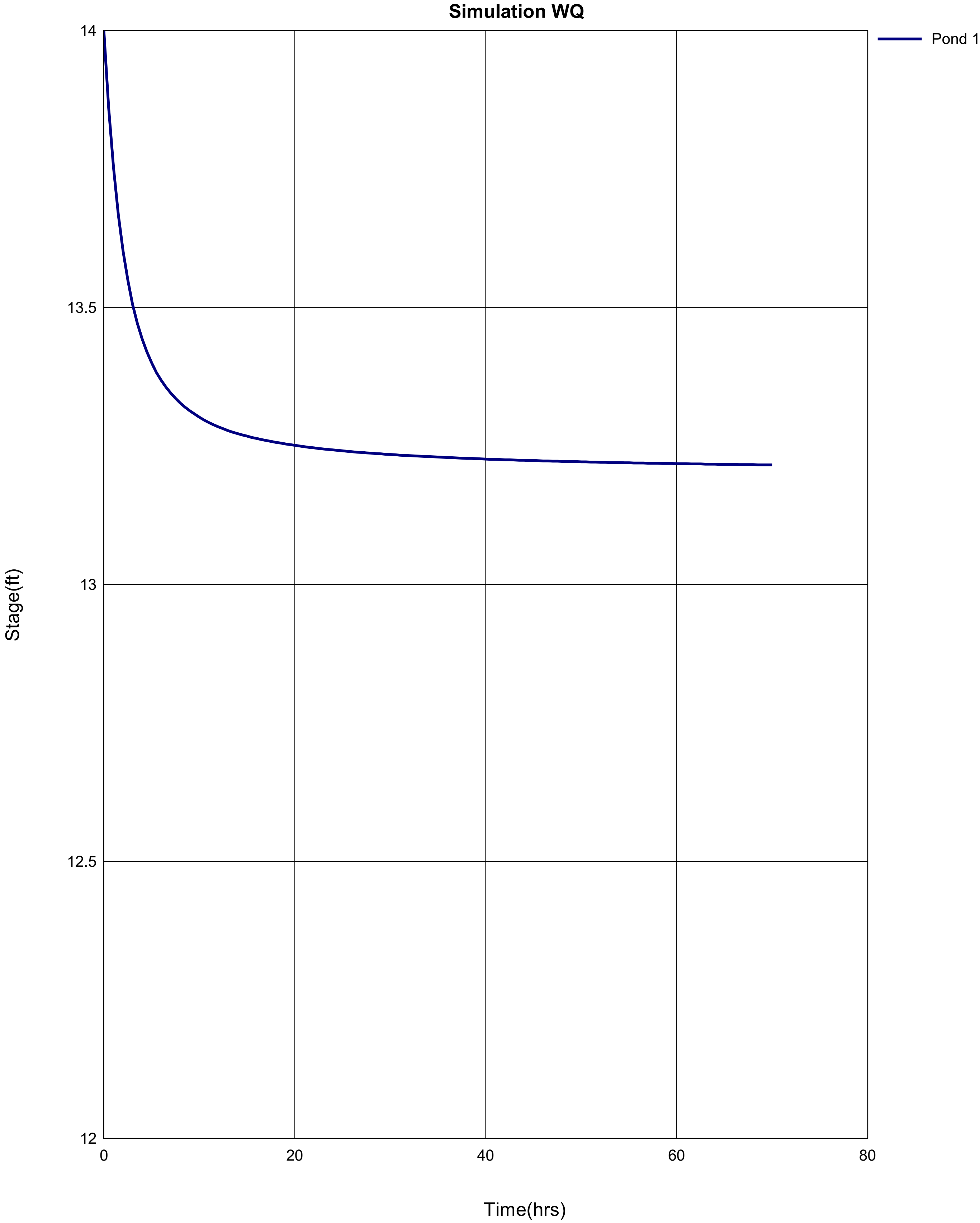
Links
P Pipe
W Weir
C Channel
D Drop Structure
B Bridge
R Rating Curve
H Breach
E Percolation
F Filter
X Exfil Trench



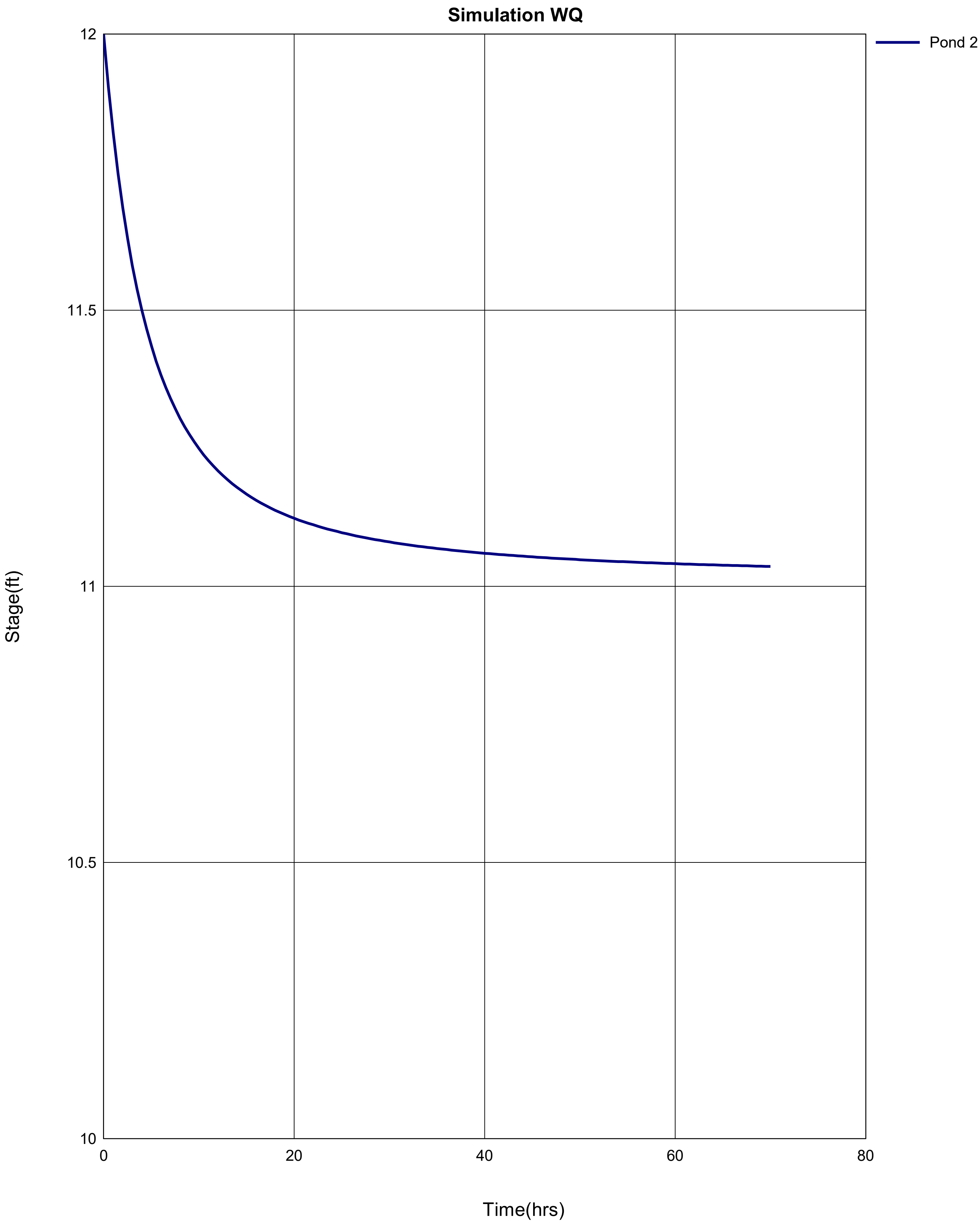
```
        Name: PRE-2                   Node: Pre BNDY              Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File: Scsiii               Storm Duration(hrs): 24.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 15.00
              Area(ac): 8.230                    Time Shift(hrs): 0.00
          Curve Number: 77.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
        Name: PRE1                    Node: Pre BNDY              Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File: Scsiii               Storm Duration(hrs): 24.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 39.00
              Area(ac): 22.370                   Time Shift(hrs): 0.00
          Curve Number: 78.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
        Name: PST-1                   Node: DB-1                  Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File: Scsiii               Storm Duration(hrs): 24.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 32.00
              Area(ac): 11.620                   Time Shift(hrs): 0.00
          Curve Number: 77.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
        Name: PST-2                   Node: Pond 1                Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File: Scsiii               Storm Duration(hrs): 24.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 6.00
              Area(ac): 1.190                    Time Shift(hrs): 0.00
          Curve Number: 88.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00

----------------------------------------------------------------------------------------------------
        Name: PST-3                   Node: Ditch A               Status: Onsite
       Group: BASE                    Type: SCS Unit Hydrograph CN

       Unit Hydrograph: Uh323                   Peaking Factor: 323.0
         Rainfall File: Scsiii               Storm Duration(hrs): 24.00
   Rainfall Amount(in): 0.000                  Time of Conc(min): 13.00
              Area(ac): 0.600                    Time Shift(hrs): 0.00
          Curve Number: 80.00                Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

```
-----------------------------------------------------------------------------------------------------
         Name: PST-4                     Node: Dry Detention 2        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 6.00
               Area(ac): 0.600                   Time Shift(hrs): 0.00
          Curve Number: 86.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-----------------------------------------------------------------------------------------------------
         Name: PST-5                     Node: Dry Detention 1        Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 6.00
               Area(ac): 1.740                   Time Shift(hrs): 0.00
          Curve Number: 94.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-----------------------------------------------------------------------------------------------------
         Name: PST-6                     Node: Pond 2                 Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 8.00
               Area(ac): 6.620                   Time Shift(hrs): 0.00
          Curve Number: 89.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00


-----------------------------------------------------------------------------------------------------
         Name: PST-7                     Node: Post BNDY              Status: Onsite
        Group: BASE                      Type: SCS Unit Hydrograph CN

        Unit Hydrograph: Uh323                    Peaking Factor: 323.0
          Rainfall File: Scsiii              Storm Duration(hrs): 24.00
    Rainfall Amount(in): 0.000                 Time of Conc(min): 15.00
               Area(ac): 8.230                   Time Shift(hrs): 0.00
          Curve Number: 77.00               Max Allowable Q(cfs): 999999.000
               DCIA(%): 0.00
```

Name	Group	Simulation	Max Time Stage hrs	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Time Inflow hrs	Max Inflow cfs	Max Time Outflow hrs	Max Outflow cfs
DB-1	BASE	002	12.89	16.51	22.00	0.0031	14896	12.42	11.10	12.89	7.25
Ditch A	BASE	002	12.36	13.69	16.00	-1.2000	1468	12.25	0.97	12.36	0.88
Dry Detention 1	BASE	002	12.25	13.82	16.00	0.0034	3684	12.25	4.70	12.25	4.66
Dry Detention 2	BASE	002	12.26	14.64	17.00	0.0023	4004	12.25	1.38	12.26	1.30
Pond 1	BASE	002	12.57	14.10	16.00	0.0025	6273	12.25	2.87	12.57	0.70
Pond 2	BASE	002	12.50	13.59	16.00	0.0050	18113	12.25	21.84	12.50	8.51
Post BNDY	BASE	002	0.00	11.00	14.00	0.0000	172	12.36	24.61	0.00	0.00
Pre BNDY	BASE	002	0.00	11.00	14.00	0.0000	0	12.42	28.55	0.00	0.00
DB-1	BASE	010	13.27	17.83	22.00	-0.0049	25547	12.42	21.90	13.27	9.53
Ditch A	BASE	010	12.34	13.87	16.00	-1.2000	1649	12.25	1.79	12.34	1.68
Dry Detention 1	BASE	010	12.45	14.62	16.00	-0.0032	5311	12.25	7.35	12.03	6.33
Dry Detention 2	BASE	010	12.26	14.70	17.00	0.0024	4281	12.25	2.32	12.26	2.26
Pond 1	BASE	010	12.42	14.61	16.00	0.0027	6746	12.25	4.73	12.42	1.93
Pond 2	BASE	010	12.45	14.58	16.00	0.0050	19837	12.12	31.63	12.45	15.82
Post BNDY	BASE	010	0.00	11.00	14.00	0.0000	172	12.33	48.55	0.00	0.00
Pre BNDY	BASE	010	0.00	11.00	14.00	0.0000	0	12.33	56.00	0.00	0.00
DB-1	BASE	025	13.47	18.55	22.00	-0.0050	36934	12.42	29.05	13.47	10.48
Ditch A	BASE	025	12.34	13.96	16.00	-1.2000	1725	12.25	2.33	12.34	2.19
Dry Detention 1	BASE	025	12.44	15.09	16.00	0.0037	6191	12.25	9.02	11.96	6.44
Dry Detention 2	BASE	025	12.45	15.05	17.00	0.0024	5792	12.25	2.91	12.17	2.73
Pond 1	BASE	025	12.41	14.91	16.00	0.0029	7020	12.25	5.90	12.41	2.42
Pond 2	BASE	025	12.43	15.04	16.00	0.0050	20631	12.18	37.50	12.43	19.96
Post BNDY	BASE	025	0.00	11.00	14.00	0.0000	172	12.33	60.56	0.00	0.00
Pre BNDY	BASE	025	0.00	11.00	14.00	0.0000	0	12.33	74.22	0.00	0.00
DB-1	BASE	050	13.60	19.06	22.00	-0.0050	45897	12.42	35.24	13.60	11.14
Ditch A	BASE	050	12.33	14.04	16.00	-1.2000	1776	12.25	2.79	12.33	2.64
Dry Detention 1	BASE	050	12.40	15.41	16.00	0.0043	6798	12.25	10.45	11.94	6.22
Dry Detention 2	BASE	050	12.41	15.32	17.00	0.0031	6487	12.25	3.42	12.10	3.01
Pond 1	BASE	050	12.44	15.18	16.00	0.0029	7283	12.25	6.89	12.44	2.61
Pond 2	BASE	050	12.39	15.31	16.00	0.0050	21108	12.13	41.73	12.39	28.18
Post BNDY	BASE	050	0.00	11.00	14.00	0.0000	172	12.33	75.21	0.00	0.00
Pre BNDY	BASE	050	0.00	11.00	14.00	0.0000	0	12.33	89.99	0.00	0.00
DB-1	BASE	100	13.72	19.51	22.00	-0.0050	54323	12.42	41.46	13.72	11.73
Ditch A	BASE	100	12.33	14.11	16.00	-1.2000	1819	12.25	3.25	12.33	3.08
Dry Detention 1	BASE	100	12.37	15.66	16.00	0.0040	7282	12.25	11.87	12.42	6.49
Dry Detention 2	BASE	100	12.37	15.50	17.00	0.0029	6939	12.25	3.92	12.04	3.20
Pond 1	BASE	100	12.46	15.45	16.00	0.0029	7550	12.25	7.89	12.46	2.80
Pond 2	BASE	100	12.35	15.48	16.00	0.0050	21411	12.25	46.79	12.35	38.77
Post BNDY	BASE	100	0.00	11.00	14.00	0.0000	172	12.33	93.90	0.00	0.00
Pre BNDY	BASE	100	0.00	11.00	14.00	0.0000	0	12.33	105.81	0.00	0.00
DB-1	BASE	95th	13.22	15.51	22.00	0.0028	8986	12.50	1.98	13.22	1.14
Ditch A	BASE	95th	12.45	13.42	16.00	-1.2000	1063	12.33	0.22	12.45	0.17
Dry Detention 1	BASE	95th	12.25	13.68	16.00	0.0050	3280	12.25	1.94	12.25	1.90
Dry Detention 2	BASE	95th	14.52	14.51	17.00	0.0029	3434	12.25	0.44	14.52	0.04
Pond 1	BASE	95th	14.57	13.43	16.00	0.0020	5715	12.25	0.98	14.57	0.08
Pond 2	BASE	95th	13.26	12.07	16.00	0.0050	15615	12.25	7.40	13.26	0.99
Post BNDY	BASE	95th	0.00	11.00	14.00	0.0000	172	12.34	3.17	0.00	0.00
Pre BNDY	BASE	95th	0.00	11.00	14.00	0.0000	0	12.50	5.26	0.00	0.00



Pine Street Development



Pine Street Development

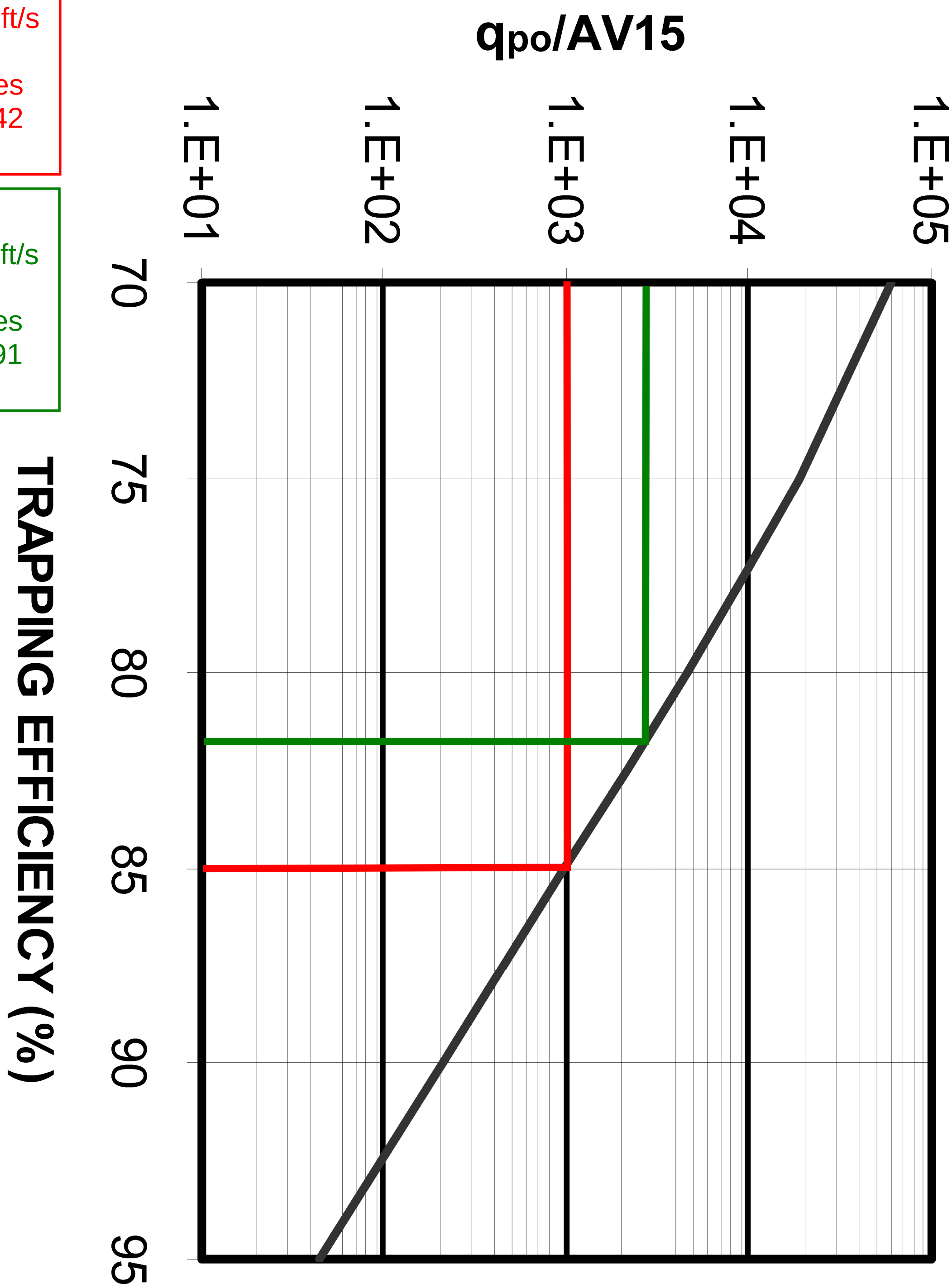
South Carolina
Department of Health
and Environmental Control

FIGURE SB-2
TRAPPING EFFIENCY FOR BASINS IN LOW LYING AREAS

EFFECTIVE DATE: AUGUST, 2005

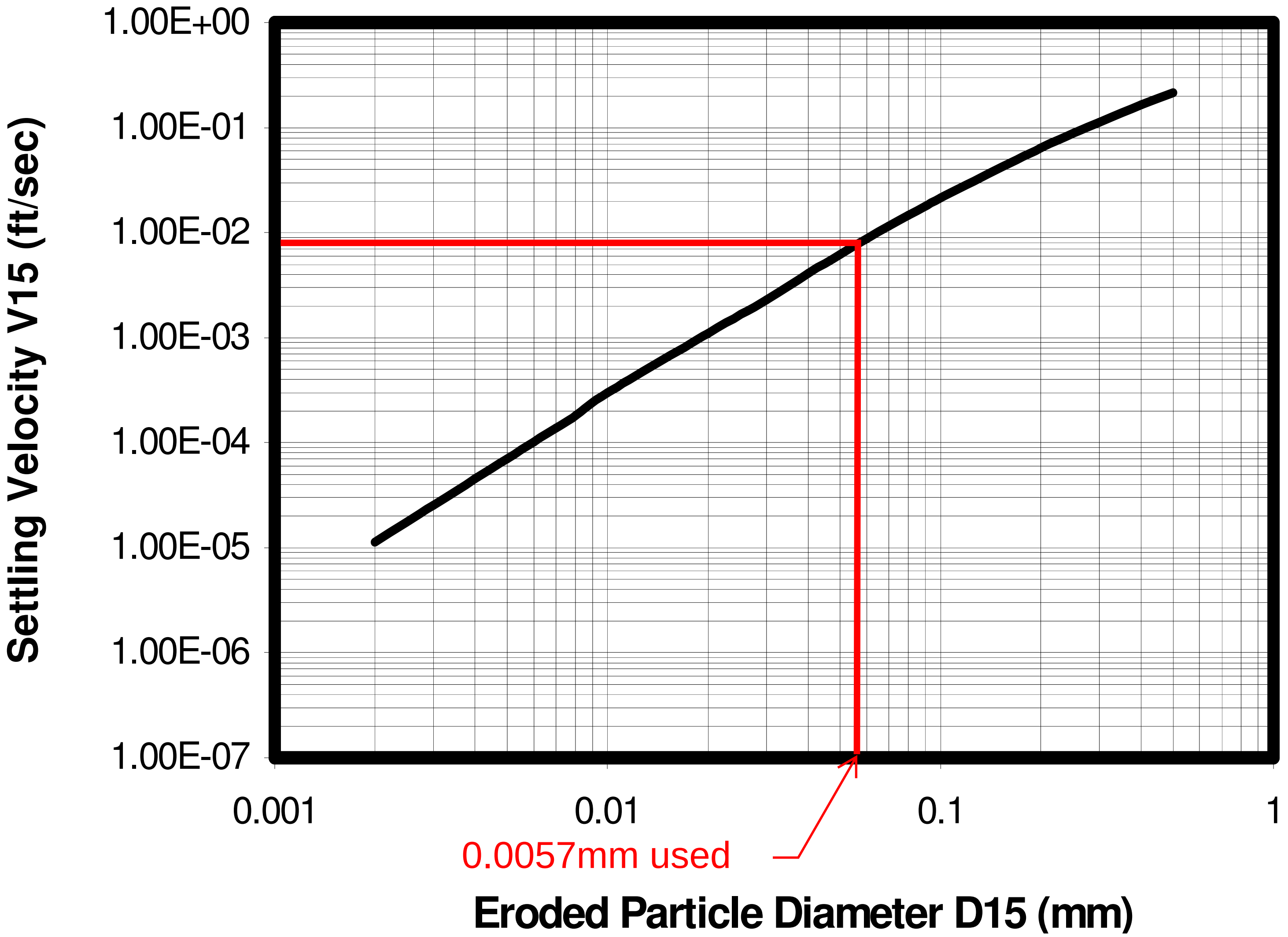
Pond-1
V15 = 0.008 ft/s
q = 1.0 cfs
A = 0.12 acres
q/(AV) = 1,042

Pond-2
V15 = 0.008 ft/s
q = 7.4 cfs
A = 0.32 acres
q/(AV) = 2,891



DESIGN AID FOR ESTIMATING TRAPPING EFFICIENCY FOR SEDIMENT BASINS LOCATED IN LOW LYING AREAS AND/OR HAVING A HIGH WATER TABLE

FIGURE SV-1
CHARACTERISTIC SETTLING VELOCITY AS A FUNCTION OF ERODED PARTICLE DIAMETER



Emporia D15 K = 0.0098mm
Argent D15 K = 0.0057mm

57-C Sheridan Park Circle
Bluffton, South Carolina 29910
United States
www.ghd.com

Our ref: 12591408-00 | Pine Street Industrial Building

October 06, 2022

Mr. Tim Huber
Ironline LLC
300 Technology Drive
Walterboro, South Carolina 29488

Report of Subsurface Exploration and Geotechnical Evaluation

Dear Mr. Huber:

GHD is pleased to present the results of our subsurface exploration and geotechnical evaluation for the above-referenced project. Our services were performed in general accordance with our Proposal No. 12591408 dated August 10, 2022.

1. Site Description / Project Understanding

GHD has received project information via email correspondence with you beginning July 29, 2022. Project information provided to us and referenced in our evaluation includes a preliminary site plan drawing titled ‘Conceptual Plan for Pine Street Residential’ prepared by Witmer-Jones-Keefer, Ltd. and dated July 7, 2022.

The subject property is an approximately rectangular shaped parcel located in the northeast quadrant of the intersection of Highway 17/21 and Pine Street in Yemassee, South Carolina. The south approximate half (2.5 acres) of the property is identified by street address as 311 US Highway 21 and includes an existing single multi-family residence structure fronting on Highway 17/21 in the southwest corner, a concrete parking slab adjacent to the highway right-of-way in the central portion, and the balance is cleared of significant vegetation with visual evidence of widespread past ground disturbance. Multiple small piles of miscellaneous household debris, multiple abandoned vehicles, and several used vehicle tires were observed at widespread locations throughout this south portion of the overall property. In addition, review of historic aerial images available through Google Earth reveals that the concrete parking slab adjacent to the highway (described above) was associated with a structure (visible in a 1994 aerial image) that has been demolished and removed in the past. Further, it is our understanding that it has been reported that there may be buried debris within the south portion of the subject property.

The north portion of the subject property was observed to be vegetated with moderate density mature trees and moderate to dense underbrush. Two approximately parallel southwest/northeast oriented drainage ditches cross the subject property diagonally, one separating the south and north approximate halves and the second, further north, subdividing the northern portion into approximately equal halves. In addition, the two ditches detailed above are connected by a generally north/south oriented ditch in the central portion of the overall site.

We observed that the property is generally flat but with multiple isolated lower elevated areas throughout much of both the south and north portions. At the time of our clearing for drill rig access and excavation of the test pits, as well as at the time our soil test borings were performed, we observed significant flow of water within the drainage ditches described above as well as ponded surface water within the isolated lower elevated areas.

The conceptual site plan provided to us indicates that the existing multi-unit residence structure is to be removed and that new development is to include an industrial building having initial footprint dimensions of 200 feet by 500 feet and with an anticipated future expansion along the east side of an additional width of approximately 100 feet. As requested, our evaluation addresses the entire anticipated 300 feet by 500 feet footprint of the future building. The conceptual plan also indicates that the development will include paved entrances, drives and parking along the north, west and south sides of the proposed building.

Details of the proposed new structure have not been provided to us for reference in our analyses and evaluation. It is our assumption, and our evaluation is based upon our assumption, that the structure will be of some conventional combination of concrete masonry unit (CMU), steel frame, and/or wood frame design and that the preferred foundation system will be conventional shallow spread column/continuous wall footings and soil supported concrete floor slabs. We have assumed, as stated in our proposal to perform these services, for the purpose of our analyses, that the maximum design loads for isolated column footings and/or continuous strip foundations will not exceed 60 kips and 3.5 kips per linear foot, respectively. Further, we anticipate fill thicknesses of not greater than approximately 18 inches will be required in order to bring the building floor slab to the desired elevation.

With regard to paved access drives and parking areas, we anticipate that heavy duty pavements will be required for the main entrances and access drives and that light duty pavements will be sufficient for the parking areas.

It is our understanding that the purposes of this geotechnical site investigation are generally to explore and evaluate the underlying in situ soils and groundwater conditions to provide site preparation and shallow foundation design recommendations for the proposed new structure (including potential ‘static’ settlement estimates, seismic design parameters, and potential liquefaction induced settlement estimates) as well as site preparation and preliminary cross-section design recommendations for conventional asphalt pavements.

2. Subsurface Exploration

Our scope of services has included eight (8) soil test borings at widely dispersed locations throughout the footprint area of the proposed new structure and four (4) hand-auger borings at widely dispersed locations throughout the paved portions of the site as indicated on the preliminary conceptual site plan provided to us, as well as test pit excavations at thirteen (13) locations within the south portion of the property.

The locations of the soil test borings, hand-auger borings, and test pit excavations in **Figure 1**. A GHD professional positioned the explorations in the field utilizing a hand-held GPS device. Given the method of locating the explorations in the field, the locations indicated on **Figure 1** should be considered approximate.

2.1 SPT Soil Test Borings

The eight soil test borings (designated B-1 through B-8) were performed on September 14 and 15, 2022. Current International Building Code (IBC) requirements dictate that the geotechnical evaluation/foundation design process include a seismic analysis; which requires at least one boring be performed to sufficient depth to provide the necessary subsurface soils parameter information. Therefore, one of the borings (B-6) was advanced to a depth of 50 feet below the existing ground surface. The other borings were each advanced to a depth of 25 feet. The borings were advanced utilizing mud-rotary drilling equipment/methods. Closely spaced soil sampling was performed in the upper ten feet and at five-foot intervals thereafter in each boring. During the sampling procedure, Standard Penetration Tests (SPT’s) were conducted in general accordance with ASTM D1586 to obtain the standard penetration value of the soil. The standard penetration value (N) is defined as the number of blows of a 140-pound hammer, falling thirty inches, required to advance the split spoon sampler one foot. The sampler is lowered to the bottom of the drill hole and the number of blows recorded for each of three successive increments of six inches penetration. The "N" value is obtained by adding the second and third incremental values. The "N" values are reported on each boring log. The results of the SPT testing indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating relative strength and compressibility of the soil profile components. The logs of each of the soil test borings are presented as **Appendix A, Soil Test Boring Logs**.

2.2 Hand-auger Borings

The four (4) hand-auger borings (designated HA-1 through HA-4) were performed on September 20, 2022. Each hand-auger boring was manually advanced to a depth of approximately 4 feet below the existing ground surface using a steel auger. The soils encountered were examined by retrieving samples of the auger cuttings at regular depth intervals during boring advancement. Our personnel visually classified the soils encountered in the field. The logs of the hand-auger borings are presented as **Appendix B, Hand-Auger Boring Logs**.

2.3 Test Pits

The test pit excavations (designated TP-1 through TP-13, but with five (A – E) excavations in close proximity to each other at location TP-3 and three (A-C) at TP-9) were performed on September 7, 2022 to depths varying from approximately 3.5 to 11 feet below the existing ground surface. The soils encountered at each test pit location were examined and visually classified during the excavation of each test pit and representative samples of the various strata encountered were collected. The logs of the test pits are presented as **Appendix C, Test Pit Logs.**

2.4 Soil Sample Handling

The soils from each soil boring sample/SPT test, selected hand-auger boring cuttings, and the representative test pit excavation samples were placed in individual containers, properly sealed and marked for identification, and transported to our laboratory for analysis and/or final classification by a GHD staff professional in accordance with the Unified Soil Classification System (USCS).

2.5 Laboratory Analyses

Selected samples of the soils obtained from the test pit excavations were tested in our laboratory to determine their percent fines (ASTM D1140) and natural moisture content (ASTM D2216). The laboratory data was used to aid in the classification of the soils in accordance with ASTM D2487 and to determine their engineering characteristics. The laboratory test results are included in the logs of test pit excavations in **Appendix C**.

3. Subsurface Stratigraphy/Conditions Encountered

A GHD professional developed the final boring log and test pit excavation log information from the field logs and visual review of the soil samples delivered to our laboratory. Similar soils were grouped into strata, with each stratum described in general accordance with the nomenclature used in ASTM D2487. Although indicated on the boring and test pit logs as distinct changes, the transition from one soil type or stratum to another may be gradual or may occur at slightly differing elevations than indicated between soil samples. Soil conditions may also vary from our findings at locations in areas of the site not explored.

The following discussion of the subsurface conditions encountered highlights the generalized major subsurface stratification encountered during our fieldwork. For more detailed descriptions of the subsurface conditions encountered at each location, please refer to the **Appendices A, B and C** to this report. The logs include the SPT "N" values (soil test borings), Unified Soil Classification System (USCS) symbols and groundwater levels at the time of our study.

3.1 Subsurface Soil Stratigraphy

The specific soil types, stratifications and consistencies encountered varied significantly both with depth within individual explorations and between the exploration locations. However, a generalized description of the soil profile encountered throughout the majority of the overall property includes a thin surface veneer of organic topsoil, a surficial layer of clayey to very clayey fine sand (SC), sometimes including fine roots, to depths of approximately 1.5 to 2.5 feet, then varied strata of clays with varying fine sand content and fine sands of varying clay content (CL, CH, SC, SP-SC, SP) through the depth of the explorations.

Within the south portion of the property that had been previously cleared of significant vegetation, and from within which a previous structure had apparently been removed, our test pit excavations identified as TP-3 (A – E), TP-9 (A- C), and TP-11 all encountered significant quantities of miscellaneous household and/or construction debris to depths varying from approximately 1.5 to 3.5 feet below the existing ground surface, abandoned shallow concrete foundations, and an undocumented sewer pipe. The deeper soils at those three locations generally consisted of fine very sandy clay (CL). Within the remainder of the south portion of the property the explorations encountered surficial grass root mass and/or topsoil underlain by a shallow layer of clayey fine sand (SC) then fine very sandy clay (CL) or underlain directly by the fine very sandy clay.

3.2 Groundwater

The depth to groundwater in the soil test borings measured after a stabilization period in excess of 24 hours varied from approximately 1 to 3 feet below the existing ground surface. No groundwater was encountered at the hand-auger locations. At test pit location TP-1, although moist soils were encountered beginning at depths of approximately 7 to 9 feet below the existing ground surface, no significant water inflow was observed.

The soil conditions observed at the exploration locations generally consisted of relatively permeable surficial and shallow subgrade soils having moderate clay content directly underlain by much less permeable very sandy clay or very clayey sand. These soil conditions are conducive to development of a ‘perched’ water condition within the near surface soils. A ‘perched’ condition occurs when surface water is not readily drained from the site and becomes ponded and/or permeates an upper more permeable soil strata while an underlying relatively impervious stratum prevents any further downward migration of the water, thus creating the ‘perched’ condition. The magnitude of ‘perched’ water is related to surficial soil permeability, lateral surface drainage onto and across the subject site, and the amount and duration of recent precipitation. The ‘perched groundwater’ may often be non-existent.

In general, we believe the variation in depth to stabilized groundwater levels in our soil test borings can be somewhat correlated to the topographic variation across the site. Also, there are a number of possible reasons why the groundwater depths vary, including localized perching within surficial sandy soils above clayey soils with low permeability and the effects of drainage feature installations and ground surface grading modifications within and/or in the vicinity of the site. We also expect groundwater levels will fluctuate depending upon the season, recent rainfall quantities in the area, and other factors.

4. Conclusions and Recommendations

4.1 General

The following conclusions and recommendations are based on the project characteristics previously described, the data obtained in our field explorations, and our experience with similar subsurface conditions and development projects. If the final design grades are to be significantly different from our understanding as stated earlier, or if subsurface conditions different from those disclosed by the soil test borings, hand-auger borings, and/or test pit excavations are encountered during site preparation, we should be notified so that we might review the following preliminary recommendations in light of such additional information and/or changed conditions.

In general, it is our opinion that the subsurface conditions encountered by the soil test borings are suitable for support of the proposed structures using conventional shallow foundations following implementation of the site preparation and design recommendations discussed in the following sections of this report.

Further, our analyses indicate that, if liquefaction did occur, the magnitude of potential total settlement of the subgrade soils within the site could be on the order of 1 inch or less. Therefore, ‘improvement’ of the subsurface soils to a degree sufficient to reduce the magnitude of potential liquefaction induced settlement of the proposed structure to a lesser magnitude would likely not be warranted.

4.2 Site Preparation Recommendations

4.2.1 Moisture Control

Our explorations encountered moisture sensitive clayey soils at or very near the existing ground surface throughout the proposed structure/pavement areas. Strict moisture control will need to be maintained to avoid destabilization of the surficial and/or shallow subgrade soils during site preparation in these areas. Failure to control moisture in clayey soils may result in the need for removal and replacement of otherwise stable soils. Moisture control methods should also be implemented even where more favourable soils are located within the upper two feet. Moisture control methods should include, but are not necessarily be limited to:

- Staging the work to avoid excessive exposure to inclement weather;
- Installing drainage features such as ditches and ponds prior to initiating site clearing and grubbing;
- Maintaining positive drainage at the end of each work day or prior to inclement weather;
- Using a smooth drum roller or bulldozer to seal areas to facilitate runoff;
- And minimizing/limiting rubber-tired vehicle traffic by utilizing low contact pressure or tracked equipment whenever possible across the work area.

We highly recommend that surface water across the area be managed prior to, during and after stripping and grubbing operations to avoid excessive surface moisture which can lead to an unstable working surface and thus, undue mixing of the organic debris with the underlying soils. Therefore, it may be necessary to drain ponded surface water and to reduce the moisture content of the surficial and shallow subgrade soils prior to initiating general site preparation procedures.

4.2.2 Stripping and Grubbing / Uncontrolled Fill/Backfill Removal

Site preparation should include the complete clearing, stripping and removal of all vegetation (including trees, underbrush, grasses/weeds, etc.), surficial topsoil, surficial and subgrade soils containing organic material and/or other debris, and other deleterious materials from within and to a minimum distance of five (5) feet beyond the perimeter of the structure footprints and pavement areas.

The depth to which topsoil, organic laden soils, miscellaneous debris, abandoned foundations and utilities, etc. was encountered at our exploration locations was generally on the order of a few inches to approximately 3.5 feet. It should be anticipated that the required depth of removal of deleterious materials and/or abandoned structures/utilities may be greater within un-explored portions of the site. During site clearing and earthwork operations, and while excavating for site utilities and foundations, the excavated and exposed soils should be observed for the presence of excessive organic and/or deleterious materials and debris that could be detrimental to building foundations, floor slabs and/or pavements. We recommend that an experienced soils engineering technician be present on site during the stripping, grubbing and uncontrolled fill/backfill removal process in order to determine which surficial and/or subgrade soils must be removed and replaced.

4.2.3 Exposed Subgrade Soils Proofrolling

After stripping and grubbing, and removal of debris/deleterious materials where necessary, GHD should inspect the disturbed surficial soils in structural (building and pavement) areas. Where practical, structural areas of the site should be proofrolled utilizing a loaded tri-axle dump truck, or other heavily loaded construction equipment. The purpose of the proofrolling will be to detect any areas where unstable soils are present. Materials that yield excessively during the proofrolling should be investigated via shallow test pits to verify the absence of organic laden soils, debris, or other deleterious materials. Where deleterious materials are not present, prior to fill placement, the soils should be over-excavated and replaced with structural fill soils meeting the material type and compaction requirements as outlined herein. GHD can recommend the nature and extent of any such remedial work.

4.2.4 Backfill/Fill Placement

4.2.4.1 Building Footprint Areas

All fill within the proposed building footprint area should be inorganic, granular soils (clean to silty/clayey sands) with a maximum of 25 percent silt and/or clay. Backfill/fill should be placed in level lifts not to exceed 12 inches loose thickness and compacted to a minimum of 95 percent of the soil's "Modified" Proctor maximum dry density as determined by ASTM D1557.

4.2.4.2 Conventional (Non-Permeable) Pavement Areas

Below 24 inches of Subgrade Elevation: All backfill/fill placed in conventional non-permeable paved parking and access drive areas at depths of 24 inches or deeper below pavement base should be inorganic, granular soils (clean to silty/clayey sands) with a maximum of 30 percent passing the No. 200 sieve. All backfill placed in undercut areas deeper than 24 inches below the pavement base course should be placed in level lifts not to exceed 12 inches in loose thickness and should be compacted to a minimum of 95 percent of the soil's maximum dry density as determined by ASTM D1557.

Upper 24 inches of Subgrade: Fill/backfill for the upper 24 inches in conventional non-permeable paved parking and access drive areas should be inorganic, granular soil (clean to silty / clayey sands) with a maximum of 20 percent passing the No. 200 sieve. Backfill/Fill within the upper 24 inches of the subgrade should be placed in level lifts not to exceed 12 inches in loose thickness and should be compacted to a minimum of 98 percent of the soil's maximum dry density as determined by ASTM D1557.

4.2.4.3 General

In-place density tests should be performed on each lift by an experienced engineering technician working under the direction of a licensed geotechnical engineer to verify that the recommended degree of compaction has been achieved.

The top surface of the fill should extend a minimum of 3 feet beyond the perimeters of the structures/pavements and fill slopes should not exceed 2 horizontal to 1 vertical to prevent possible erosion or undermining of slabs, shallow footings and/or pavements. Shallower slopes may be dictated by site grading requirements.

4.3 Shallow Foundation / Floor Slab Design and Construction

4.3.1 Foundation Design / Dimensioning

When structural loads comply with the earlier stated assumed criteria, the footings may be proportioned for a maximum allowable bearing pressure of 2000 pounds per square foot (psf). To provide an adequate factor of safety against a shearing failure in the subsoils: (1) all foundations should be founded at a depth of not less than 18 inches below the adjacent ground surface or floor slab elevation; (2) continuous footings should be at least 18 inches wide; and (3) isolated foundations should not be less than 24 inches in their least dimension.

4.3.2 Foundation Construction

All foundation elements should be excavated, formed if necessary, and have their concrete cast in the dry. Care should also be taken when scheduling the excavation of foundations to avoid inclement weather as rain will make it necessary to control stormwater and/or 'perched' water that may infiltrate the exposed bearing soils. Any sandy soils at the bottom of the foundation excavations disturbed during the excavation process should be re-densified prior to placement of reinforcement steel. Any disturbed and/or softened clayey/silty soils should be removed and replaced with properly compacted structural fill or graded aggregate prior to placement of reinforcement steel. If this issue is encountered during construction, the geotechnical engineer should be consulted to evaluate the field conditions and to determine the extent of the required undercutting and appropriate alternatives for backfill. We also recommend that probing and/or dynamic cone penetrometer (DCP) testing be performed in the foundation excavations where the footings bear in or just above in-situ soils.

4.3.3 Floor Slab Design Recommendations

A modulus of subgrade reaction of 200 psi/inch may be used for design of the floor slabs bearing on properly compacted structural fill. We recommend the placement of a vapor barrier below the floor slab(s). We suggest the use of polyethylene sheeting of at least 10-mil thickness for this purpose. Nevertheless, selection of the vapor barrier should consider the anticipated moisture conditions, flooring types and other applicable considerations.

The structural fill soils as specified herein for use in constructing the building pad are considered to be relatively free-draining soils. It is our opinion that these soils would be classified as "drainable" and that an additional aggregate material to act as a capillary barrier immediately below the floor slab would not be required.

Note that all downspouts/roof drains should be positioned such that stormwater is directed away from the structure and that the site should be constructed to meet the construction grading requirements.

4.3.4 Settlement

Column and continuous wall foundations designed and constructed in the recommended manner are estimated to be subject to a maximum potential total settlement of less than about 0.5 inch, in the absence of a significant seismic event.

4.4 Seismic Considerations

4.4.1 Liquefaction Potential

The subject property is located within an active seismic zone with its center in the Charleston, South Carolina area. Although the area has not experienced significant earthquake events in the recent past, evidence of seismic event induced liquefaction has been found and geologists have mapped this area as having the potential for recurrence(s) of such an event. Considerable research is ongoing to better determine which local soils are truly liquefiable and the magnitude of settlement that might occur as a result of their liquefaction during a significant seismic event.

Based on our review of soil and groundwater conditions at the subject site, we believe there is a risk for liquefaction settlement to occur during a significant seismic event. Utilizing 'LiquefyPro' modelling software, we have performed a liquefaction analysis of the subject site considering the 'general' subsurface soil and groundwater conditions encountered and, in reference to the 2018 International Building Code (2018 IBC), utilizing the Maximum Considered Earthquake Geometric Mean (MCE_G) and Peak Ground Acceleration (PGA_M) which considers the soil characteristics of the site (Site Class effects). As previously stated, our analysis of the potential magnitude of settlement due to liquefaction indicates that following completion of the site preparation recommendations detailed above, settlement would be on the order of 1.0 inch or less within the area of the proposed structure. The potential liquefaction induced settlement would be due generally to the consolidation of the loose to medium dense saturated sand soils below the water table encountered at various depths below the existing ground surface. Due to the depth below the ground surface to the upper boundary of liquefiable soils, we estimate that differential liquefaction induced settlement within the building footprint would be on the order of 25 percent or less of the total.

4.4.2 Seismic Design Parameters

Based upon the soil conditions encountered, our procedure for determining the site specific seismic design parameters follows that which is outlined in the 2018 International Building Code with reference to ASCE 7-16 for a default Seismic Site Class “D”. Values for Spectral Response Acceleration for short periods (0.2 seconds), S_s, and for long periods (1 second), S_1, were obtained from the Applied Technology Council (ATC) ‘Hazards by Location’ online tool which queries the United States Geological Survey (USGS) web servers and retrieves the seismic design variables in a report format. The values are expressed as a multiple of the acceleration of gravity. The design parameters generated are presented in **Appendix D, Seismic Design Parameters**.

4.5 Pavement Recommendations

The following pavement design guidelines are made without the benefit of specific traffic information and/or reference to any local minimum section standards, and are intended as a general guide for the design engineer’s evaluation. Site design decisions may dictate alterations to certain aspects of these guidelines.

4.5.1 Conventional (Non-Pervious) Pavements

The following recommendations assume that site preparation procedures, including removal and replacement of unsuitable near surface soils/debris and proper proofrolling of subgrade soils detailed in earlier sections of this report, will have been completed where necessary. All conventional asphalt pavements and base courses should be constructed in accordance with the guidelines of the latest applicable South Carolina Department of Transportation Specifications.

Entrance Drives & Truck Corridors: We recommend an asphalt pavement section consisting of 3½ inches of asphaltic concrete (2 inches intermediate course + 1½ inches surface course) over 8 inches of graded aggregate base course. The pavement section should be underlain by a 24-inch sand subbase (with a maximum of 20 percent by weight passing the No. 200 sieve).

Personal Vehicle Corridors & Parking Areas: We recommend an asphalt pavement section consisting of 2 inches of asphaltic concrete (Type C) over 6 inches of graded aggregate base course. The pavement section should be underlain by a 24-inch sand subbase (with a maximum of 20 percent by weight passing the No. 200 sieve).

Suitability of In Situ Soils: Beneath the surficial organic debris/topsoil and shallow subgrade soils consisting of fine sand of varying clay content and/or very sandy clay, our explorations generally encountered unsuitable clay of varying fine sand content and/or very clayey fine sand at depths of less than 24 inches below the existing ground surface. These unsuitable soils will require removal and replacement with suitable select fill as detailed above to the depths necessary to provide the 24-inch sand subbase included in the recommended pavement section.

5. Limitations

This report: has been prepared by GHD for Ironline LLC and may only be used and relied on by Ironline LLC and their selected consultants for the purposes agreed between GHD and Ironline LLC as set out in this report.

GHD otherwise disclaims responsibility to any person other than Ironline LLC arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report). GHD disclaims liability arising from any of the assumptions being incorrect.

GHD's scope of work for this project has not included investigation, detection, or evaluation related to the presence of any biological pollutants. The term 'biological pollutants' includes, but is not limited to, mold, fungi, spores, bacteria, and viruses, and the by products of any such biological organisms. Further, evaluation or review to determine compliance with State and/or Federal regulatory requirements, assessment of potential contamination migration from or onto the subject site, and/or any similar environmental analyses were beyond the scope of this study.

This report has been prepared with the intent that it not be separated. Information from this report should not be distributed or made available to designers or contractors in partial form. This report should be made available to prospective contractors for information only, and not as a warranty of subsurface conditions.

6. Closure

We appreciate the opportunity to work with you on this project. We trust that the information provided in the report is clear and understandable. Should it require any clarification or amplification, however, please contact us at (843) 815-5120.

Regards

W. Chuck Rushing, P.E.
843.815.0263
Chuck.Rushing@ghd.com

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 10300 W. CHUCK RUSHING

10-6-22

Sean M. McCubbins, LEED® AP
843.815.0268
Sean.McCubbins@ghd.com

Appendix A

Soil Test Boring Logs

Key to Soil Classification

Correlation of Penetration Resistance with Relative Density and Consistency

Sands and Gravels

No. of Blows, N	Relative Density
0 – 4	Very loose
5 – 10	Loose
11 – 30	Medium dense
31 – 50	Dense
Over 50	Very dense

Silts and Clays

No. of Blows, N	Relative Density
0 – 2	Very soft
3 – 4	Soft
5 – 8	Firm
9 – 15	Stiff
16 – 30	Very stiff
31 – 50	Hard
Over 50	Very hard

Particle Size Identification (Unified Classification System)

Boulders:	Diameter exceeds 8 inches
Cobbles:	3 to 8 inches diameter
Gravel:	**Coarse** - 3/4 to 3 inches diameter
	Fine - 4.76 mm to 3/4 inch diameter
Sand:	**Coarse** - 2.0 mm to 4.76 mm diameter
	Medium - 0.42 mm to 2.0 mm diameter
	Fine - 0.074 mm to 0.42 mm diameter
Silt and Clay:	Less than 0.07 mm (particles cannot be seen with naked eye)

Modifiers

The modifiers provide our estimate of the amount of silt, clay or sand size particles in the soil sample.

Approximate Content	Modifiers
≤ 5%:	Trace
5% to 12%:	Slightly silty, slightly clayey, slightly sandy
12% to 30%:	Silty, clayey, sandy
30% to 50%:	Very silty, very clayey, very sandy

Field Moisture Description	
Saturated:	Usually liquid; very wet, usually from below the groundwater table
Wet:	Semisolid; requires drying to attain optimum moisture
Moist:	Solid; at or near optimum moisture
Dry:	Requires additional water to attain optimum moisture

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-1
DATE DRILLED: September 14, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 3'	

Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	11			SC	Medium dense tan to tan orange and brown clayey fine SAND
					2.8	7	▼		CL	Firm gray orange tan and brown fine very sandy CLAY with soft lense at 4' - 5.5'
					4.2					
					5.6	3				
					7	8				
					8.4				CH	Soft light gray CLAY
					9.8	3				
					11.2					
					12.6				SP	Medium dense tan fine to medium SAND
					14					
					15.4	19				
					16.8					
					18.2				SP-SC	Loose tannish gray slightly clayey fine SAND
					19.6	9				
					21					
					22.4				SC	Loose dark gray very clayey fine SAND
					23.8					
					25.2	5				Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT:		LOG OF BORING:
Pine Street Industrial Building		B-2
DATE DRILLED: *September 14, 2022*	DRILLER: *A. Nelson*	GROUND ELEVATION:
DRILLING METHOD: *Mud Rotary*	BORING DEPTH: *25.00 Feet*	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): *2.5'*	

Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	USCS	GEOLOGIC DESCRIPTION
					0				4" Topsoil
					1.4	6		SC	Loose gray and dark gray clayey fine SAND with fine roots
					2.8	8	▼	CL	Firm gray tan and orange fine very sandy CLAY
					4.2			SC	Loose gray very clayey fine SAND
					5.6	8			
					7	20		SC	Medium dense light gray and tan clayey fine SAND
					8.4	11			
					9.8				
					11.2				
					12.6				
					14				
					15.4	11			
					16.8			SC	Loose dark gray very clayey fine SAND
					18.2				
					19.6	5			
					21				
					22.4			SC	Medium dense dark gray and gray clayey fine SAND
					23.8				
					25.2	12			Boring terminated at 25 feet
					26.6				
					28				
					29.4				
					30.8				
					32.2				
					33.6				
					35				
					36.4				
					37.8				
					39.2				
					40.6				
					42				
					43.4				
					44.8				
					46.2				
					47.6				
					49				
					50.4				
					51.8				
					53.2				

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-3
DATE DRILLED: September 14, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 2.5′	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	5			SC	Loose dark gray and brown clayey fine SAND with decayed organics
					2.8	8	▼		CL	Firm brown gray and orange fine very sandy CLAY
					4.2					
					5.6	7				
					7	8				
					8.4	6			CH	Firm light gray CLAY with thin clayey fine sand seams
					9.8					
					11.2					
					12.6					
					14					
					15.4	5				
					16.8				SC	Loose to medium dense dark gray slightly clayey fine SAND
					18.2					
					19.6	10				
					21					
					22.4					
					23.8	15				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT:		LOG OF BORING:
Pine Street Industrial Building		B-4
DATE DRILLED: *September 15, 2022*	DRILLER: *A. Nelson*	GROUND ELEVATION:
DRILLING METHOD: *Mud Rotary*	BORING DEPTH: *25.00 Feet*	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): *2.5′*	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	5			SC	Loose gray tan orange and brown very clayey fine SAND with fine roots
					2.8	13	▼		CL	Stiff brown tan and orange fine very sandy CLAY
					4.2					
					5.6	9				
					7	33			SC	Dense gray light gray orange and tan very clayey fine SAND
					8.4				CH	Stiff gray CLAY with thin clayey fine sand seams
					9.8	15				
					11.2					
					12.6					
					14					
					15.4	9				
					16.8				CH	Stiff greenish gray CLAY
					18.2					
					19.6	9				
					21					
					22.4				SC	Medium dense dark gray very clayey fine SAND
					23.8					
					25.2	12				Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-5
DATE DRILLED: September 15, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 25.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 3'	

ANALYSIS										
Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					6" Topsoil
					1.4	4			SC	Very loose gray tan orange and light gray clayey fine SAND
					2.8	10	▼		SC	Loose gray tan and orange very clayey fine SAND
					4.2					
					5.6	12			CL	Stiff to very stiff gray and tan fine very sandy CLAY
					7	21				
					8.4	14			SC	Medium dense tan and orange clayey fine SAND
					9.8					
					11.2					
					12.6					
					14	11				
					15.4					
					16.8				SC	Loose to medium dense gray and dark gray clayey fine SAND
					18.2					
					19.6	9				
					21					
					22.4					
					23.8	16				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: Pine Street Industrial Building		LOG OF BORING: B-6
DATE DRILLED: September 15, 2022	DRILLER: A. Nelson	GROUND ELEVATION:
DRILLING METHOD: Mud Rotary	BORING DEPTH: 50.00 Feet	Notes:
WATER LEVEL:	WATER LEVEL (24-HRS): 3′	

Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					6" Topsoil
					1.4	4			SC	Very loose gray brown and tan very clayey fine SAND with fine roots
					2.8	9	▼		SC	Loose to medium dense gray tan orange and red very clayey fine SAND
					4.2					
					5.6	7				
					7	17				
					8.4	10			CL	Stiff greenish gray fine very sandy CLAY
					9.8					
					11.2					
					12.6				SP-SC	Medium dense light gray and tan slightly clayey fine SAND
					14					
					15.4	11				
					16.8					
					18.2				SC	Loose gray and dark gray very clayey fine SAND
					19.6	9				
					21					
					22.4				SC	Medium dense dark greenish gray very clayey fine SAND with thin clay seams
					23.8					
					25.2	12				
					26.6					
					28					
					29.4	14				
					30.8					
					32.2				SC	Medium dense dark gray clayey fine SAND
					33.6					
					35	17				
					36.4					
					37.8					
					39.2					
					40.6	15				
					42				SC	Medium dense dark gray very clayey fine SAND
					43.4					
					44.8	12				
					46.2					
					47.6					
					49					
					50.4	17				Boring terminated at 50 feet
					51.8					
					53.2					

PROJECT: *Pine Street Industrial Building*	GHD	**LOG OF BORING:** B-7
DATE DRILLED: *September 15, 2022*	**DRILLER:** *A. Nelson*	**GROUND ELEVATION:**
DRILLING METHOD: *Mud Rotary*	**BORING DEPTH:** *25.00 Feet*	**Notes:**
WATER LEVEL:	**WATER LEVEL (24-HRS):** *1'*	

ANALYSIS: Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0				SC	4" Topsoil
					1.4	6	▼		CL	Loose gray light gray tan orange and red clayey fine SAND with fine roots
					2.8	15				Stiff to firm gray orange and red fine very sandy CLAY
					4.2					
					5.6	8				
					7	18			CH	Very stiff light gray and gray CLAY with thin clayey fine sand seams
					8.4	22			SC	Medium dense light gray and tan clayey fine SAND
					9.8					
					11.2					
					12.6				SC	Medium dense gray very clayey fine SAND
					14	14				
					15.4					
					16.8				SC	Medium dense dark gray clayey fine SAND
					18.2					
					19.6	12				
					21					
					22.4					
					23.8	12				
					25.2					Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

PROJECT: *Pine Street Industrial Building*	GHD	**LOG OF BORING:** B-8
DATE DRILLED: *September 15, 2022*	**DRILLER:** *A. Nelson*	**GROUND ELEVATION:**
DRILLING METHOD: *Mud Rotary*	**BORING DEPTH:** *25.00 Feet*	**Notes:**
WATER LEVEL:	**WATER LEVEL (24-HRS):** *2'*	

Moisture Content	% Passing 200 Sieve	Organic Content	Liquid Limit	Plasticity Index	Depth feet	BLOW COUNTS	GROUND WATER	GRAPHIC LOG	USCS	GEOLOGIC DESCRIPTION
					0					4" Topsoil
					1.4	10	▼		SC	Loose gray tan and orange very clayey fine SAND
					2.8	19			CL	Very stiff to stiff gray tan and red fine sandy CLAY
					4.2					
					5.6	14				
					7	16			SP-SC	Medium dense light gray and tan slightly clayey fine SAND
					8.4	12				
					9.8					
					11.2					
					12.6				SP	Medium dense gray fine to medium SAND with thin slightly clayey fine sand seams
					14	12				
					15.4					
					16.8				SC	Loose to medium dense gray and dark gray clayey fine SAND
					18.2					
					19.6	8				
					21					
					22.4					
					23.8					
					25.2	18				Boring terminated at 25 feet
					26.6					
					28					
					29.4					
					30.8					
					32.2					
					33.6					
					35					
					36.4					
					37.8					
					39.2					
					40.6					
					42					
					43.4					
					44.8					
					46.2					
					47.6					
					49					
					50.4					
					51.8					
					53.2					

Appendix B

Hand-auger Boring Logs

B-1 Log of Hand-Auger Borings

Project: Pine Street Industrial Building | Date: September 20, 2022

Personnel: C. Rushing | Reference No: 12591408-00

Location: See Figure

Location	Depth Below Ground Surface	Soil Description
HA-1	0 – 6”	Topsoil
	6” – 14”	Gray and brown slightly clayey fine SAND (SP-SC)
	14” – 22”	Gray orange and tan very clayey fine SAND (SC)
	22” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-2	0 – 14”	Topsoil and roots
	14” – 18”	Gray orange and tan very clayey fine SAND (SC)
	18” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-3	0 – 4”	Topsoil
	4” – 8”	Tan clayey fine SAND (SC)
	8” – 14”	Gray orange and tan very clayey fine SAND (SC)
	14” – 48”	Gray orange tan and red fine very sandy CLAY (CL)
HA-4	0 – 3”	Topsoil
	3” – 8”	Gray orange and tan very clayey fine SAND (SC)
	8” – 48”	Gray orange tan and red fine very sandy CLAY (CL)

Comments:

Appendix C

Test Pit Excavation Logs

C-1 Log of Test Pits

Project: Pine Street Industrial Building
Date: September 7, 2022
Personnel: C. Rushing
Reference No: 12591408-00
Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-1	0 – 2”	Topsoil		
	2” – 14”	Gray to tan slightly clayey fine SAND (SP-SC)		
	14” – 32”	Gray and tan very clayey fine SAND (SC)		
	32” – 8.5’	Gray orange and tan fine very sandy CLAY (CL) *<Water inflow at 8.5’>*	35.1	67.9
	8.5’ – 11’	Light gray and tan clayey fine AND (SC)	23.6	16.8
Test pit terminated at 11’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-2	0 – 4”	Topsoil		
	4” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-3 (A-E)	0 – 6”	Topsoil		
	6” – 2.5’	Gray and tan slightly clayey fine SAND (SP-SC) and debris (shingles/metal/PVC/bricks)		
	2.5’ – 6’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 6’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-4	0 – 4”	Topsoil		
	4” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-5	0 – 3”	Topsoil		
	3” – 10”	Gray slightly clayey fine SAND (SP-SC)		
	10” – 4’	Gray orange and tan fine very sandy CLAY (CL)	30.6	65.4
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-6	0 – 4”	Topsoil		
	4” – 14”	Gray to tan slightly clayey fine SAND (SP-SC)		
	14” – 3’	Gray and tan very clayey fine SAND (SC)		
	3’ – 5’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 5’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-7	0 – 5”	Topsoil		
	5” – 14”	Gray slightly clayey fine SAND (SP-SC)		
	14” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-8	0 – 8”	Topsoil and debris (bricks/plastic/gravel)		
	8” – 16”	Gray slightly clayey fine SAND (SP-SC)		
	16” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-9 (A-C)	0 – 14"	Topsoil and debris (bricks/plastic/gravel/clay pipe/strip foundation)		
	14" – 20"	Gray slightly clayey fine SAND (SP-SC)		
	20" – 4'	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4'				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-10	0 – 4"	Topsoil		
	4" – 14"	Gray slightly clayey fine SAND (SP-SC) with few bricks and roots		
	14" – 3'	Gray orange and tan fine very sandy CLAY (CL)	33.8	66.0
Test pit terminated at 4' *Note: Test pit located under current debris pile*				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-11	0 – 4"	Topsoil		
	4" – 16"	Gray and tan slightly clayey fine SAND (SP-SC)		
	16" – 3.5'	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 3.5' *Note: Encountered cast iron pipe oriented parallel to highway at 3.5'*				

C-1 Log of Test Pits

Project: Pine Street Industrial Building

Date: September 7, 2022

Personnel: C. Rushing

Reference No: 12591408-00

Location: See Figure 1

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-12	0 – 2”	Topsoil		
	2” – 14”	Tan slightly clayey fine SAND (SP-SC)		
	14” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Location	Depth Below Ground Surface	Soil Description	Natural Moisture Content (%)	Percent Finer than #200 Sieve
TP-13	0 – 2”	Topsoil		
	2” – 16”	Tan slightly clayey fine SAND (SP-SC)		
	16” – 4’	Gray orange and tan fine very sandy CLAY (CL)		
Test pit terminated at 4’				

Appendix D

Seismic Design Parameters

This is a beta release of the new ATC Hazards by Location website. Please contact us with feedback.

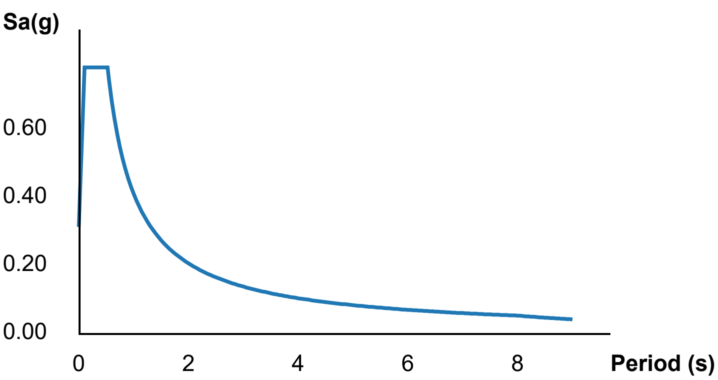
The ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

ATC Hazards by Location

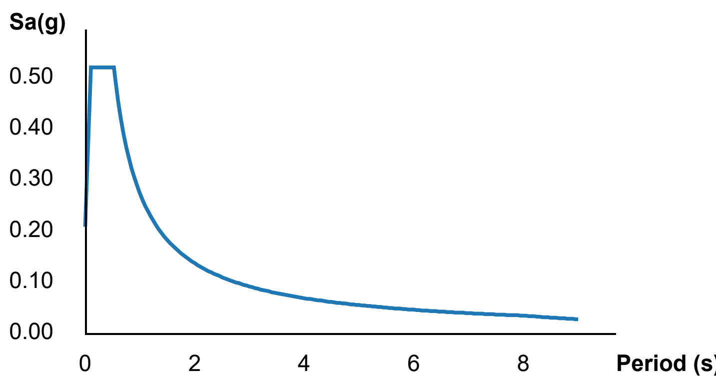
Search Information

Address:	311 US-17 ALT, Yemassee, SC 29945, USA
Coordinates:	32.6985622, -80.84510920000001
Elevation:	16 ft
Timestamp:	2022-10-05T17:46:28.305Z
Hazard Type:	Seismic
Reference Document:	ASCE7-16
Risk Category:	II
Site Class:	D-default

MCER Horizontal Response Spectrum



Design Horizontal Response Spectrum



Basic Parameters

Name	Value	Description
S_S	0.587	MCE_R ground motion (period=0.2s)
S_1	0.184	MCE_R ground motion (period=1.0s)
S_{MS}	0.781	Site-modified spectral acceleration value
S_{M1}	0.41	Site-modified spectral acceleration value
S_{DS}	0.52	Numeric seismic design value at 0.2s SA
S_{D1}	0.273	Numeric seismic design value at 1.0s SA

Additional Information

Name	Value	Description
SDC	D	Seismic design category

F_a	1.331	Site amplification factor at 0.2s
F_v	2.233	Site amplification factor at 1.0s
CR_S	0.899	Coefficient of risk (0.2s)
CR_1	0.908	Coefficient of risk (1.0s)
PGA	0.344	MCE_G peak ground acceleration
F_{PGA}	1.256	Site amplification factor at PGA
PGA_M	0.432	Site modified peak ground acceleration
T_L	8	Long-period transition period (s)
SsRT	0.587	Probabilistic risk-targeted ground motion (0.2s)
SsUH	0.653	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	1.5	Factored deterministic acceleration value (0.2s)
S1RT	0.184	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.202	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.6	Factored deterministic acceleration value (1.0s)
PGAd	0.5	Factored deterministic acceleration value (PGA)

The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.

Please note that the ATC Hazards by Location website will not be updated to support ASCE 7-22. Find out why.

Disclaimer

Hazard loads are provided by the U.S. Geological Survey Seismic Design Web Services.

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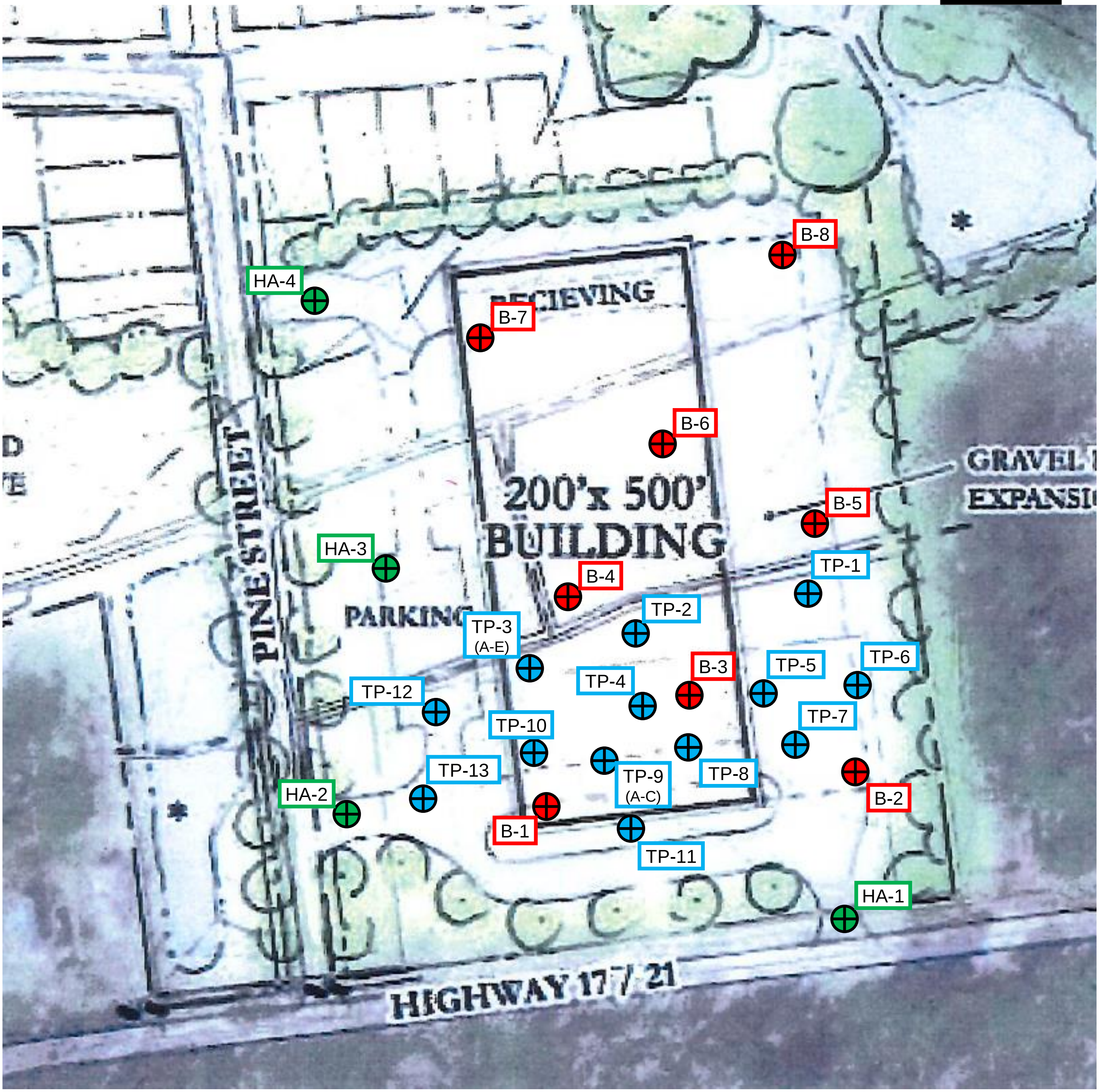
Appendix E

Figure



B-# Designation / approximate location of Standard Penetration Test (SPT) Boring

HA-# Designation / approximate location of Hand-Auger Boring

TP-# Designation / approximate location of Test Pit Excavation

Figure 1: Location Plan

Pine Street Industrial Building

Prepared By:
S. Thompson
Date: 10-5-2022

Checked By:
C. Rushing
Date: 10-5-2022

GHD | Ironline, LLC | 12591408-00 | Subsurface Exploration and Geotechnical Evaluation

Appendix F

Inspection Log and Reports

SWPPP Inspection Log

Name of Construction Site	Location of Construction Site		
Date of Inspection	**Inspector Name**	**Does Inspection Report require maintenance of installed BMPs?**	
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No

SWPPP Inspection Log (Continued)			
Date of Inspection	**Inspector Name**	**Does Inspection Report require maintenance of installed BMPs?**	
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No
		☐ Yes	☐ No

Appendix G

Rainfall Log and Reports

SWPPP Rainfall Records (January - June)								Year:			
January	Rainfall	**February**	Rainfall	**March**	Rainfall	**April**	Rainfall	**May**	Rainfall	**June**	Rainfall
1		**1**		**1**		**1**		**1**		**1**	
2		**2**		**2**		**2**		**2**		**2**	
3		**3**		**3**		**3**		**3**		**3**	
4		**4**		**4**		**4**		**4**		**4**	
5		**5**		**5**		**5**		**5**		**5**	
6		**6**		**6**		**6**		**6**		**6**	
7		**7**		**7**		**7**		**7**		**7**	
8		**8**		**8**		**8**		**8**		**8**	
9		**9**		**9**		**9**		**9**		**9**	
10		**10**		**10**		**10**		**10**		**10**	
11		**11**		**11**		**11**		**11**		**11**	
12		**12**		**12**		**12**		**12**		**12**	
13		**13**		**13**		**13**		**13**		**13**	
14		**14**		**14**		**14**		**14**		**14**	
15		**15**		**15**		**15**		**15**		**15**	
16		**16**		**16**		**16**		**16**		**16**	
17		**17**		**17**		**17**		**17**		**17**	
18		**18**		**18**		**18**		**18**		**18**	
19		**19**		**19**		**19**		**19**		**19**	
20		**20**		**20**		**20**		**20**		**20**	
21		**21**		**21**		**21**		**21**		**21**	
22		**22**		**22**		**22**		**22**		**22**	
23		**23**		**23**		**23**		**23**		**23**	
24		**24**		**24**		**24**		**24**		**24**	
25		**25**		**25**		**25**		**25**		**25**	
26		**26**		**26**		**26**		**26**		**26**	
27		**27**		**27**		**27**		**27**		**27**	
28		**28**		**28**		**28**		**28**		**28**	
29		**29**		**29**		**29**		**29**		**29**	

30				**30**		**30**		**30**		**30**	
31				**31**		**31**		**31**		**31**	

SWPPP Rainfall Records (July - December)								**Year:**			
July	Rainfall	**August**	Rainfall	**September**	Rainfall	**October**	Rainfall	**November**	Rainfall	**December**	Rainfall
1		**1**		**1**		**1**		**1**		**1**	
2		**2**		**2**		**2**		**2**		**2**	
3		**3**		**3**		**3**		**3**		**3**	
4		**4**		**4**		**4**		**4**		**4**	
5		**5**		**5**		**5**		**5**		**5**	
6		**6**		**6**		**6**		**6**		**6**	
7		**7**		**7**		**7**		**7**		**7**	
8		**8**		**8**		**8**		**8**		**8**	
9		**9**		**9**		**9**		**9**		**9**	
10		**10**		**10**		**10**		**10**		**10**	
11		**11**		**11**		**11**		**11**		**11**	
12		**12**		**12**		**12**		**12**		**12**	
13		**13**		**13**		**13**		**13**		**13**	
14		**14**		**14**		**14**		**14**		**14**	
15		**15**		**15**		**15**		**15**		**15**	
16		**16**		**16**		**16**		**16**		**16**	
17		**17**		**17**		**17**		**17**		**17**	
18		**18**		**18**		**18**		**18**		**18**	
19		**19**		**19**		**19**		**19**		**19**	
20		**20**		**20**		**20**		**20**		**20**	
21		**21**		**21**		**21**		**21**		**21**	
22		**22**		**22**		**22**		**22**		**22**	
23		**23**		**23**		**23**		**23**		**23**	
24		**24**		**24**		**24**		**24**		**24**	
25		**25**		**25**		**25**		**25**		**25**	

26		**26**		**26**		**26**		**26**		**26**	
27		**27**		**27**		**27**		**27**		**27**	
28		**28**		**28**		**28**		**28**		**28**	
29		**29**		**29**		**29**		**29**		**29**	
30		**30**		**30**		**30**		**30**		**30**	
31		**31**				**31**				**31**	

Appendix H

Additional Site Logs and Records

SWPPP Pre-Construction Conference Attendance Log

Date & Time	Description/Outline and Name of the Presenter of SWPPP and Site Requirements

Name	Company	Signature

SWPPP Pre-Construction Conference Attendance Log (Continued)

Name	Company	Signature

SWPPP Contractor & Sub-Contractor Log

Name of Construction Site	Location of Construction Site

Company/Individual Name		Work Responsibilities
1.)		
Start Date:		
Completion Date:		
2.)		
Start Date:		
Completion Date:		
3.)		
Start Date:		
Completion Date:		
4.)		
Start Date:		
Completion Date:		
5.)		
Start Date:		
Completion Date:		
6.)		
Start Date:		
Completion Date:		
7.)		
Start Date:		
Completion Date:		
8.)		
Start Date:		
Completion Date:		
9.)		
Start Date:		
Completion Date:		
10.)		
Start Date:		
Completion Date:		

SWPPP Contractor & Sub-Contractor Log (Continued)		
11.)		
Start Date:		
Completion Date:		
12.)		
Start Date:		
Completion Date:		
13.)		
Start Date:		
Completion Date:		
14.)		
Start Date:		
Completion Date:		
15.)		
Start Date:		
Completion Date:		
16.)		
Start Date:		
Completion Date:		
17.)		
Start Date:		
Completion Date:		
18.)		
Start Date:		
Completion Date:		
19.)		
Start Date:		
Completion Date:		
20.)		
Start Date:		
Completion Date:		
21.)		
Start Date:		
Completion Date:		

SWPPP Modification Log

Name of Construction Site	Location of Construction Site

Type of Modification		Description of Modification		Location of Modification
☐ Major ☐ Minor				
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major ☐ Minor				
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major ☐ Minor				
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major ☐ Minor				
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	
Type of Modification		**Description of Modification**		**Location of Modification**
☐ Major ☐ Minor				
Start Date:				
Completion Date:				
Reason for Modifications:			Approved/Implemented By:	

SWPPP Modification Log (Continued)

Name of Construction Site	Location of Construction Site

Type of Modification		Description of Modification	Location of Modification
☐ Major ☐ Minor			
Start Date:			
Completion Date:			
Reason for Modifications:		Approved/Implemented By:	

Type of Modification		Description of Modification	Location of Modification
☐ Major ☐ Minor			
Start Date:			
Completion Date:			
Reason for Modifications:		Approved/Implemented By:	

Type of Modification		Description of Modification	Location of Modification
☐ Major ☐ Minor			
Start Date:			
Completion Date:			
Reason for Modifications:		Approved/Implemented By:	

Type of Modification		Description of Modification	Location of Modification
☐ Major ☐ Minor			
Start Date:			
Completion Date:			
Reason for Modifications:		Approved/Implemented By:	

Type of Modification		Description of Modification	Location of Modification
☐ Major ☐ Minor			
Start Date:			
Completion Date:			
Reason for Modifications:		Approved/Implemented By:	

SWPPP Soil Stabilization Log

Name of Construction Site	Location of Construction Site

Type of Stabilization		Description of Stabilization		Location of Stabilization
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	

SWPPP Modification Log (Continued)

Name of Construction Site	Location of Construction Site

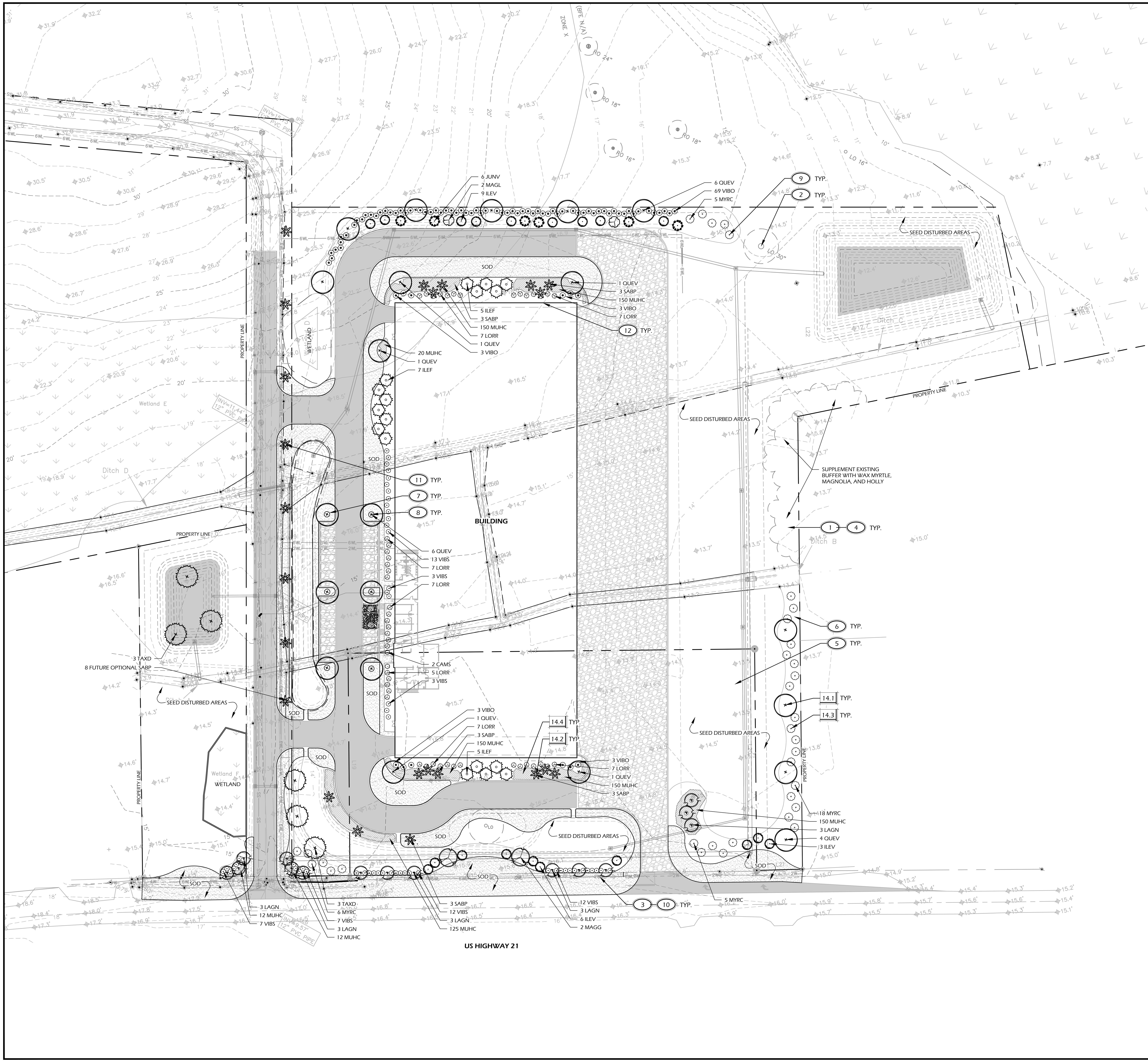
Type of Stabilization		Description of Stabilization		Location of Stabilization
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	
Type of Stabilization		**Description of Stabilization**		**Location of Stabilization**
☐ Final ☐ Temporary				
Initiate Date:				
Completion Date:				
Additional work proposed for this area:			Inspection Frequency for Stabilized Area:	

Appendix I

Construction General Permit SCR100000

A copy of the NPDES General Permit for Stormwater Discharges from Construction Activities (SCR100000) can be found at the following address:

http://www.scdhec.gov/environment/water/swater/docs/CGP-permit.pdf



PLANTING DETAILS

CALL-OUT	DESCRIPTION	DETAIL
14.1	TREE PLANTING	X/L50X
14.2	PALM TREE PLANTING	X/L50X
14.3	SHRUB PLANTING	X/L50X
14.4	GROUND COVER PLANTING	X/L50X
14.5	ROOT BARRIER	X/L50X

PLANT KEY LEGEND

Abbrev	Botanical Name	Common Name
TREES		
JUNV	Juniperus virginiana	Eastern Red Cedar
MAGG	Magnolia grandiflora	Southern Magnolia
QUEV	Quercus virginiana	Live Oak
SABP	Sabal palmetto	Cabbage Palm
TAXD	Taxodium distichum	Bald Cypress
UNDERSTORY TREES		
ILEF	Ilex x attenuata 'Fosteri'	Fosters Holly
ILEV	Ilex vomitoria 'Shadows Female'	Shadows Female Yaupon Holly
LAGN	Lagerstroemia indica x fauriei 'Natchez'	Natchez Crape Myrtle
MAGL	Magnolia grandiflora 'Little Gem'	Little Gem Magnolia
MYRC	Myrica cerifera	Wax Myrtle
SHRUBS		
CAMS	Camellia sasanqua	Sasanqua Camellia
LORR	Loropetalum chinense 'Ruby'	Ruby Fringe Flower
VIBO	Viburnum odoratissimum	Sweet Viburnum
VIBS	Viburnum suspensum	Sandankwa Viburnum
ORNAMENTAL GRASSES & FERNS		
MUHC	Muhlenbergia capillaris	Pink Muhly Grass

PLANTING REFERENCE NOTES:

1. EXISTING VEGETATION TO REMAIN.
2. EXISTING TREES TO REMAIN.
3. EXISTING OVERHEAD UTILITY LINE TO REMAIN. DO NOT DISTURB. NO TREES SHALL BE PLANTED UNDER THIS LINE.
4. UNDISTURBED BUFFER.
5. REVEGETATE DISTURBED AREAS, DUE TO CONSTRUCTION, WITH NATIVE LANDSCAPE PLANTINGS (SEED MIXES).
6. MULCH DISTURBED AREAS DUE TO CONSTRUCTION.
7. MULCH RING, TYP.
8. ALL PARKING LOT MEDIAN PLANTINGS SHALL BE 12"-18" OFF EDGE OF ROAD / PARKING AREA AT TIME OF MATURITY.
9. CAREFULLY EXCAVATE SHRUB PITS IN VICINITY OF EXISTING TREES, WITHOUT DISTURBING TREE ROOTS.
10. COORDINATE SHRUB LAYOUT WITH EXISTING UTILITIES. REPORT ANY CONFLICTS TO LANDSCAPE ARCHITECT.
11. FIELD ADJUST SABP PER PROPOSED UTILITIES.
12. COORDINATE IRRIGATION CONTROLLER LOCATION WITH CIVIL ENGINEER (WARD EDWARDS).

Scale 1" = 40'

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landscape architecture
land planning
www.wjkltd.com
23 Promenade Street, Suite 201 ♦ Bluffton, South Carolina ♦ 29910 ♦ ph 843.757.7411

SITE DEVELOPMENT PLANS FOR IRONLINE
YEMASSEE, SOUTH CAROLINA

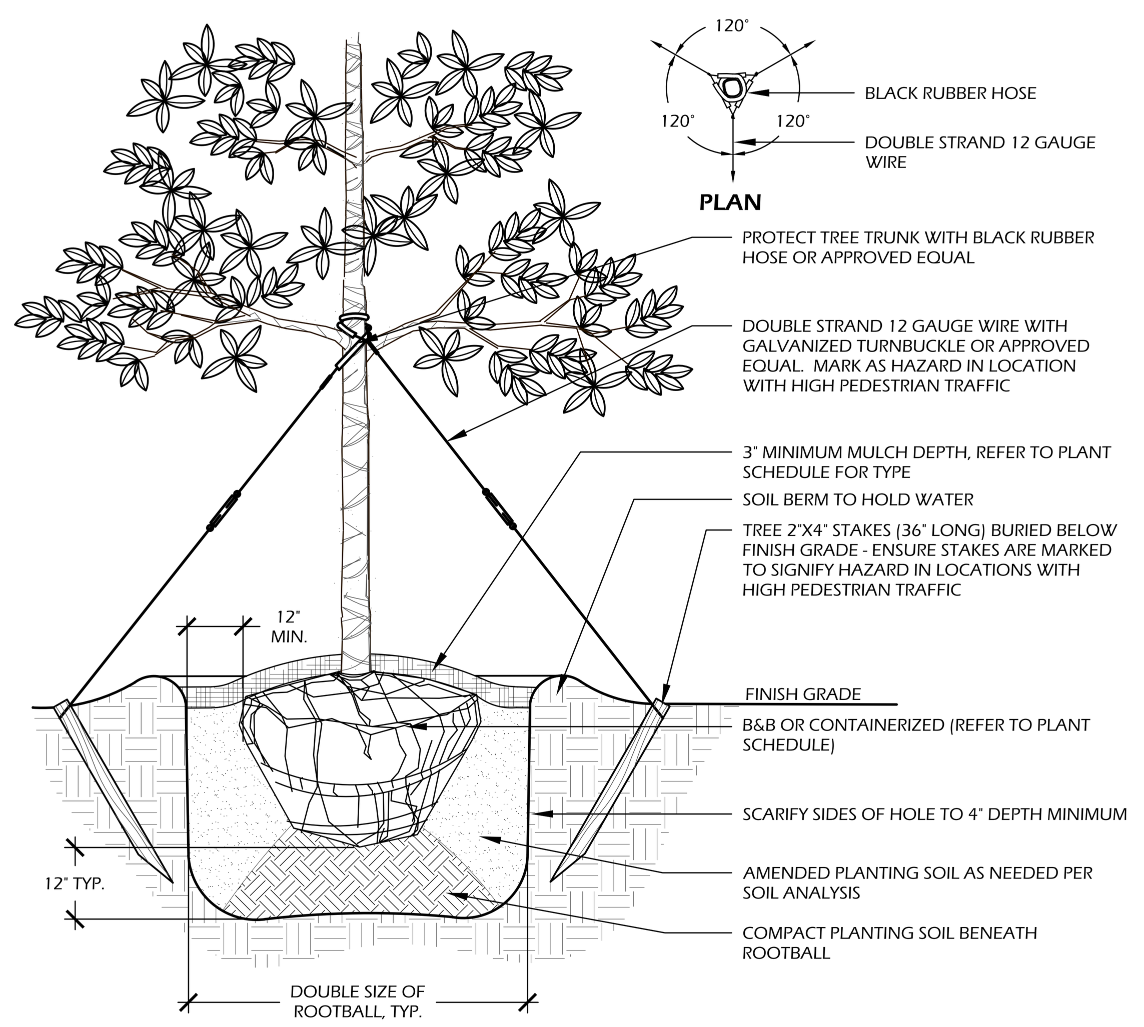
DATE:	MAR. 01, 2023
PROJECT NO.:	22024.01
DRAWN BY:	MC
CHECKED BY:	DK

PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

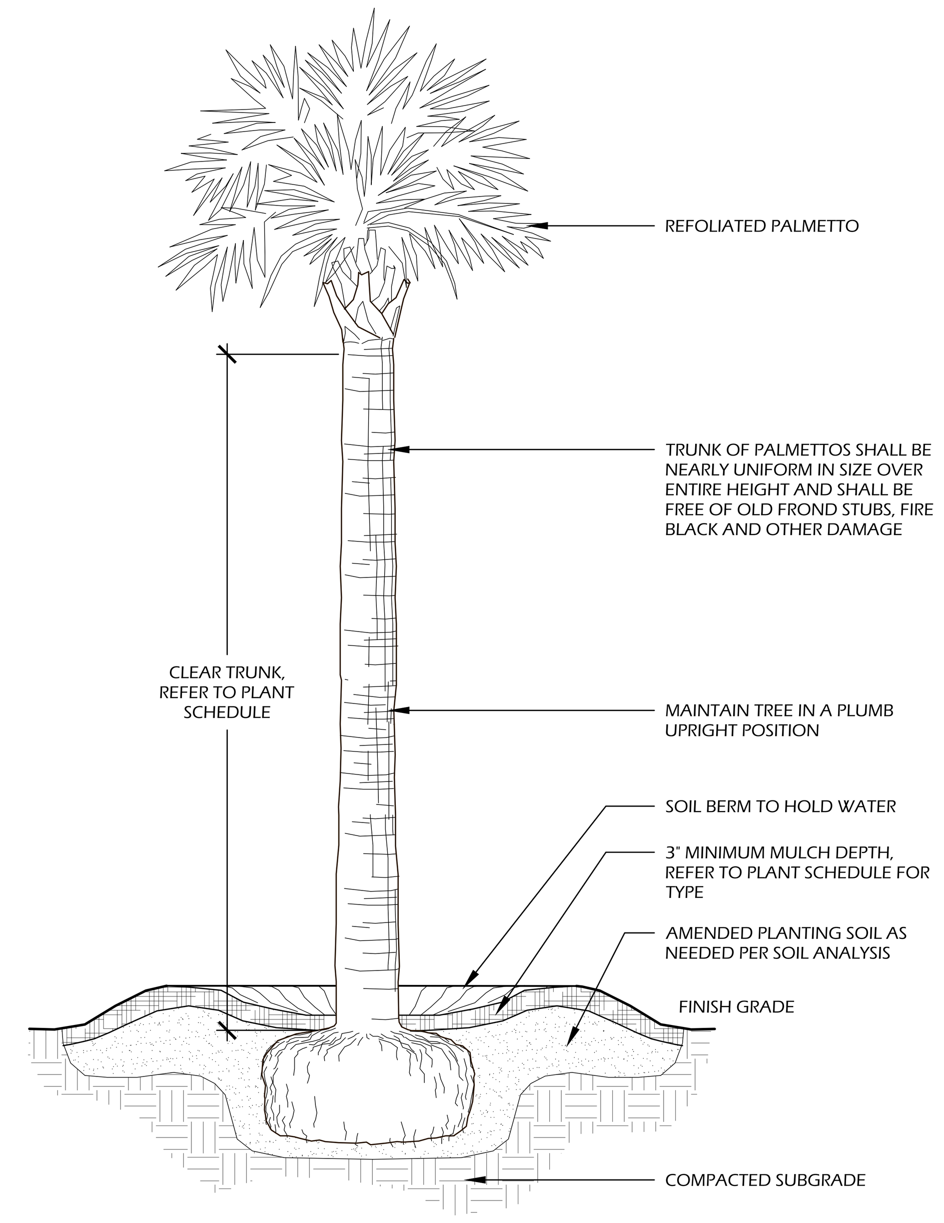
DRAWING TITLE
PLANTING PLAN

DRAWING NUMBER
L500



NOTES:
1. TREE STAKING OPTIONAL, HOWEVER, LANDSCAPE CONTRACTOR RESPONSIBLE FOR MAINTAINING TREES IN AN UPRIGHT (90 DEGREE/ PERPENDICULAR) POSITION FOR 1 YEAR AFTER PLANTING IS COMPLETE OR UNTIL TREE ROOT SYSTEM IS FULLY ESTABLISHED AND STURDY. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER'S REPRESENTATIVE.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. IN SEMI-IMPERVIOUS SOIL CONDITIONS, ROOTBALL ELEVATION SHALL BE 2" ABOVE FINISH GRADE. COORDINATE WITH OWNER'S REPRESENTATIVE PRIOR TO SETTING ROOTBALL ELEVATIONS.

1 // L501 **TREE PLANTING**
SCALE: N.T.S.

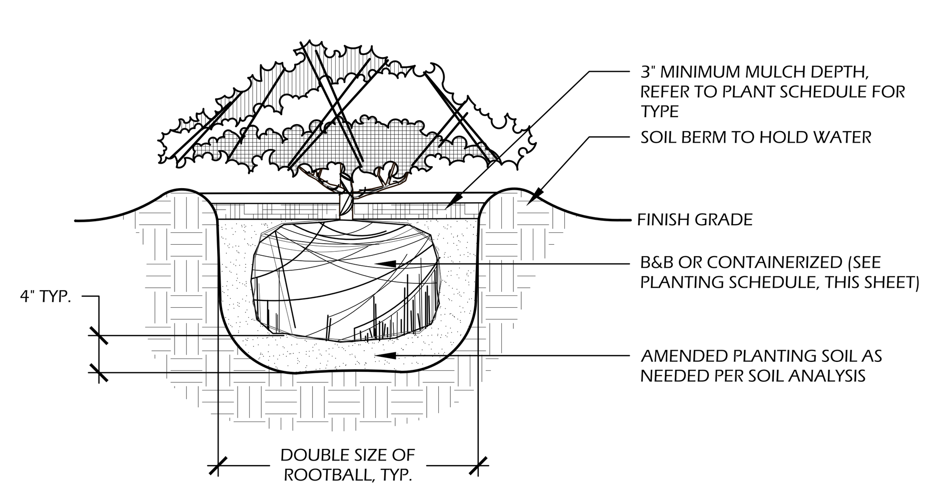


NOTES:
1. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. SABAL PALMETTOS SHALL BE REFOLIATED, PROTECT CABBAGE HEAD FROM DAMAGE.

2 // L501 **PALM TREE PLANTING**
SCALE: N.T.S.

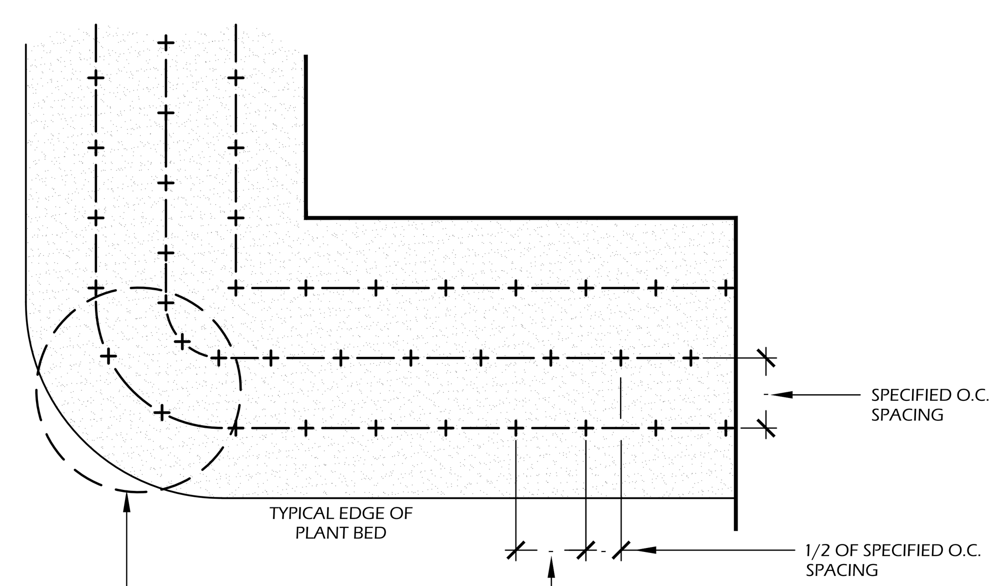
PLANT SCHEDULE:

Quantity	Abbrev	Botanical Name	Common Name	Height	Spread	Container	Cal./Spacing	Notes
TREES								
6	JUNV	Juniperus virginiana	Eastern Red Cedar	4'-6'	2'-3'	Cont.	-	Full to ground
2	MAGG	Magnolia grandiflora	Southern Magnolia	8'-10'	3'-4'	Cont.	-	Full to ground
21	QUEV	Quercus virginiana	Live Oak	8'-10'	3'-4'	Cont.	2.5"	Full
15	SABP	Sabal palmetto	Cabbage Palm	12'-16'	-	Cont.	-	Refoliated, full clear trunk, refer to plan for heights
6	TAXD	Taxodium distichum	Bald Cypress	8'-10'	3'-4'	Cont.	2.5"	Full
UNDERSTORY TREES								
17	ILEF	Ilex x attenuata 'Fosteri'	Fosters Holly	6'-7'	3'-4'	15 gal.	-	Full
18	ILEV	Ilex vomitoria 'Shadows Female'	Shadows Female Yaupon Holly	3'-4'	2'-3'	7 gal.	-	Tree form, Multi-stem, Full
15	LAGN	Lagerstroemia indica x fauriei 'Natchez'	Natchez Crape Myrtle	8'-10'	3'-4'	30 gal.	-	Full
2	MAGL	Magnolia grandiflora 'Little Gem'	Little Gem Magnolia	6'-7'	3'-4'	15 gal.	-	Full
34	MYRC	Myrica cerifera	Wax Myrtle	3'-4'	2'-3'	7 gal.	-	Full
SHRUBS								
2	CAMS	Camellia sasanqua	Sasanqua Camellia	30"-36"	24"-30"	7 gal.	-	Full
47	LORR	Loropetalum chinense 'Ruby'	Ruby Fringe Flower	30"-36"	24"-30"	7 gal.	-	Full
81	VIBO	Viburnum odoratissimum	Sweet Viburnum	12"-18"	12"-18"	3 gal.	-	Full
57	VIBS	Viburnum suspensum	Sandankwa Viburnum	30"-36"	24"-30"	7 gal.	-	Full
ORNAMENTAL GRASSES & FERNS								
919	MUHC	Muhlenbergia capillaris	Pink Muhly Grass	14"-16"	10"-16"	1 gal.	30" O.C.	Full
SOD & MULCH								
50,000	SOD-SF	-	Empire Zoysia Sod	-	-	-	-	-
165,000	SEED	-	Centipede Seed or Approved Equal	-	-	-	-	-
49,000	BIOSEED	-	Coastal Plain Detention Basin Seed Mix #230/ or Approved Equal	-	-	-	-	-
52,000	MULCH-SF	Pine Straw - all disturbed areas	Pine Straw	-	-	-	-	-



NOTES:
1. WHEN GROUNDCOVERS AND SHRUBS ARE USED IS MASSES, ENTIRE BED TO BE EXCAVATED TO RECEIVE PLANTING SOIL AND PLANT MATERIAL.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. IN SEMI-IMPERVIOUS SOIL CONDITIONS, ROOTBALL ELEVATION SHALL BE ±2" ABOVE FINISH GRADE. COORDINATE WITH OWNER'S REPRESENTATIVE PRIOR TO SETTING ROOTBALL ELEVATIONS.

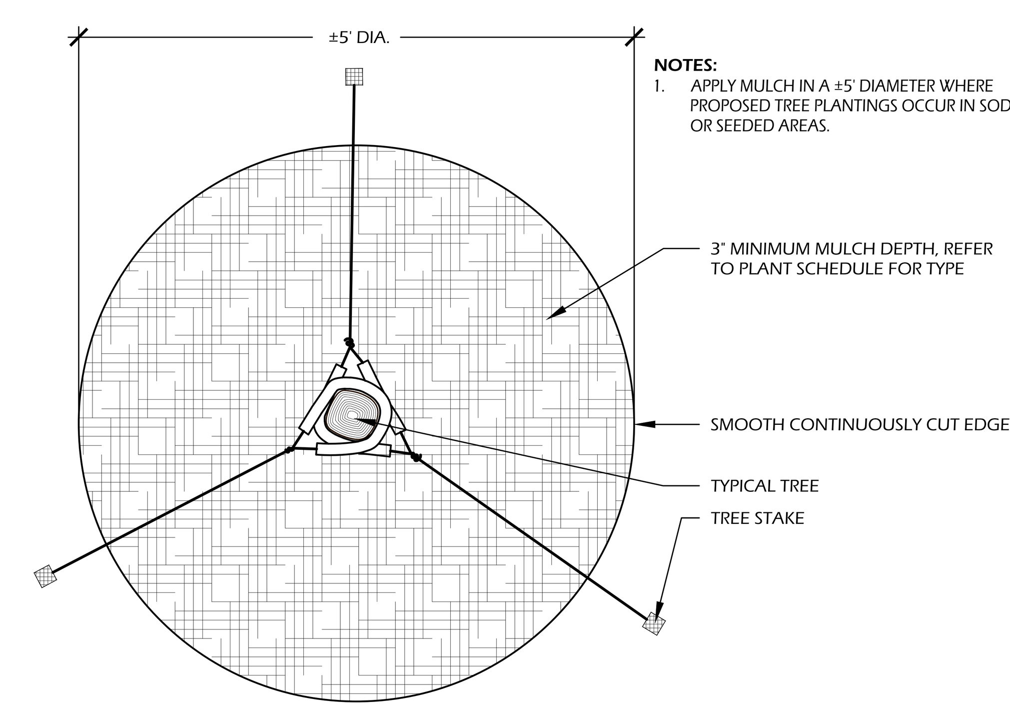
3 // L501 **SHRUB PLANTING**
SCALE: N.T.S.



ATYPICAL SPACING IN CURVILINEAR PLANT BEDS. OUTSIDE ROW TO FOLLOW CURVE AS SHOWN ON PLAN

SPECIFIED O.C. SPACING
NOTE:
1. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER PLANTING TO A DEPTH OF 12"

4 // L501 **GROUND COVER PLANTING**
SCALE: N.T.S.



NOTES:
1. APPLY MULCH IN A ±5' DIAMETER WHERE PROPOSED TREE PLANTINGS OCCUR IN SOD OR SEEDED AREAS.

5 // L501 **TREE STAKING**
SCALE: N.T.S.

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SITE DEVELOPMENT PLANS
FOR
IRONLINE
YEMASSEE, SOUTH CAROLINA

DATE:	MAR. 01, 2023
PROJECT NO.:	22024.01
DRAWN BY:	MC
CHECKED BY:	DK

PRELIMINARY SUBMITTAL PLAN, NOT FOR CONSTRUCTION

REVISIONS:

DRAWING TITLE
PLANT SCHEDULE AND DETAILS

DRAWING NUMBER
L501

Town of Yemassee Administration Department
Rezoning Analysis (ZONE-03-23-1023)
203-00-00-046, 204-01-05-013 & 204-01-05-046 (Hampton County)
Meeting Date: March 14, 2023

Applicant: Ironline Metals, LLC.

Owner: Ironline Metals, LLC.

Address(es): Jinks St & U.S. Highway 17A

Tax Map Number(s): 203-00-00-046, 204-01-05-013 & 204-01-05-046

County: Hampton

Site Description: The three parcels total approximately 104.4 acres located northwest of the intersection of U.S. Highway 17A and Jinks Street while the southern portion of the tract is directly north of Lacey Street.

Present Zoning and Existing Conditions:
Currently each parcel has a different zoning designation:

204-01-05-005 – Current Zoning: Residential ¼ Acre
204-01-05-013 - Current Zoning: Office Commercial District
203-00-00-046 – Current Zoning: Conservation Preservation District

Portions of parcels 204-01-05-005 & 204-01-05-013 abut U.S. Highway 17A and accordingly, portions of the properties are within the boundaries of the Highway Corridor Overlay District (HCOD) and are currently subjected to the requirements outlined in the Yemassee Zoning Ordinance pertaining to the HCOD.

Land Use Compatibility: The eastern border of the property is adjacent to U.S. Highway 17A, a north/south artery that traverses the Beaufort and Hampton County portions of the Town of Yemassee before crossing the Combahee River and entering Colleton County. The applicant is seeking to construct a 100,000sqft manufacturing operation near the intersection of U.S.

Highway 17A and Jinks Street – adjacent to the main thoroughfare. The applicant is seeking an encroachment permit from SCDOT to add a deceleration lane for truck access into the property heading southbound, roughly 500ft north of the existing Jinks Rd intersection. The existing Jinks Road would be improved and side roads leading to residential neighborhoods.

Environmental Issues: The project is adjacent to the Ace Basin Wildlife Refuge and a significant portion of parcel 203-00-00-046 is wetland and within a floodplain which is non-conducive to development. The balance of the property towards Lacey Street is uplands with an assortment of trees. The applicant will employ stormwater BMP's and a series of detention ponds to handle runoff.

Public Service Issues: None noted.

Letters were sent by certified mail to all adjacent property owners to the development advising them of the application.

Staff Review: Overall, Staff support the proposed rezoning to PUD which would allow a mix of housing units and a manufacturing operation which would bring an influx of jobs into the Town. Staff have no objection to the four requested modifications deviating from current zoning ordinances within the existing zoning ordinance. The Traffic Impact Analysis was reviewed and projected trips would not warrant a traffic control device at this time.

Town of Yemassee Public Hearing

NOTICE IS HEREBY GIVEN that the Town of Yemassee Planning Commission will hold a Public Hearing on Tuesday, April 4, 2023, at 3:00 PM at the Yemassee Municipal Complex, 101 Town Cir, Yemassee, SC 29945, for the purpose of soliciting input on the following:

ZONE-03-23-1023 by Ironline Metals, LLC., for a request for a Zoning Map Amendment for three parcels of land totaling approximately 104.40 acres of land located at the northwest corner of U.S. Highway 17A and Jinks Street, Hampton County from their current zoning designations to a designation of Planned Unit Development. The subject parcels are further identified by Hampton County Tax Map Number(s): 204-01-05-013, 204-01-05-005 & 203-00-00-046.

Persons with comments or questions should contact the Town of Yemassee Administration Department at (843) 589-2565 Ext. 3. Persons requiring special services to attend the meeting should call to make arrangements.

THANK YOU for your legal submission!

Your legal has been submitted for publication. Below is a confirmation of your legal placement. You will also receive an email confirmation.

ORDER DETAILS

Order Number:
IPL0113606
Parent Order #:
IPL0101153
Order Status:
Submitted
Classification:
Legals & Public Notices
Package:
HHI - Legal Ads
Final Cost:
55.62
Payment Type:
Account Billed
User ID:
IPL0026087

ACCOUNT INFORMATION

TOWN OF YEMASSEE IP
101 Town Cir
YEMASSEE, SC 29945-3363
803-589-2565
mattgarnes@townofyemassee.org
TOWN OF YEMASSEE

TRANSACTION REPORT

Date
March 9, 2023 4:18:18 PM EST
Amount:
55.62

SCHEDULE FOR AD NUMBER IPL01136060

March 12, 2023
The Island Packet (Hilton Head)

PREVIEW FOR AD NUMBER IPL01136060

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Richard A. Hagan
279 U.S. Highway 17A
Yemassee, SC 29945-5066

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Hilton Head Island, SC 29926-3411

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USA Secretary of Interior
P.O. Box 848
Hollywood, SC 29449

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Daniel Dziadaszek
52 Lacey St
Yemassee, SC 29945-5038

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Edith G. Lane Trustee
P.O. Box 428
Yemassee, SC 29945-0428

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Ironline Metals, LLC.
1515 Ormsby Station Ct
Louisville, KY 40223-5032

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Randy & Anna Lunsford
37 Poston Dr
Yemassee, SC 29945-3330

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Annie M. Reeves
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Yemassee, SC 29945-1074

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Postage $ $0.87

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P.O. Box 733
Yemassee, SC 29945-0733

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Irene Smith Estate of
309 Lafayette Ave, Apt 9M
Brooklyn, NY 11238-1268

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Providence Solutions, LLC.
7087 Rivers Ave
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513 Elm St W
Hampton, SC 29924-3101

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Postage $ $0.87

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Sent To / Street / City, State:
Mary M. Youmans
P.O. Box 128
Yemassee, SC 29945-0128

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Postage $ $0.87

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Total Postage and Fees $ $8.37

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Hampton County Building Department
Attn: Randy Crews
201 Jackson Ave W
Hampton, SC 29924-3256

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Postage $ $0.63

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Sent To / Street / City, State:
Clay T. Bishop
2281 Ficken Rd
Early Branch, SC 29916-3325

PS Form ... Instructions

TOWN OF YEMASSEE
Ordinance No. 23-09

AN ORDINANCE TO APPROVE AN AMENDMENT TO THE TOWN OF YEMASSEE ZONING MAP TO DESIGNATE CERTAIN REAL PROPERTY OWNED BY IRONLINE METALS, LLC., THE SAME CONTAINING APPROXIMATELY 104.4 ACRES, MORE OR LESS, LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF U.S. HIGHWAY 17 A & JINKS STREET, AND BEARING HAMPTON COUNTY TAX MAP NUMBERS: 203-00-00-046, 204-01-05-013 & 204-01-05-046 AS PLANNED UNIT DEVELOPMENT PERSUANT TO THE TOWN OF YEMASSEE ZONING ORDINANCE

WHEREAS, THE Town of Yemassee has received a request from the applicant (Ironline Metals, LLC.) for a Zoning Map Amendment for three parcels of land that it is the One Hundred percent (100%) owner of, within the Town of Yemassee; and

WHEREAS, the Town of Yemassee Planning Commission reviewed a request for a Planned Unit Development (PUD) Concept Plan at their January 3, 2023, meeting. The plan included a proposed development of up to two hundred thousand (200,000) square feet of industrial occupancy and up to one hundred and seven (107), single family residences; and

WHEREAS, the Planning Commission voted to recommend approval of the PUD Concept Plan with the condition that a Traffic Impact Analysis be conducted to determine the potential impacts of traffic on surrounding roadways at full buildout; and

WHEREAS, the Town Council of the Town of Yemassee reviewed the request and recommendation of the Planning Commission at their January 10, 2023, meeting and approved the PUD Concept Plan application with the recommendations forwarded from the Planning Commission, and scheduled a Public Hearing; and

WHEREAS, the Town Council of the Town of Yemassee conducted a Public Hearing on the PUD Concept Plan at their February 17, 2023 Town Council Meeting to gather public input; and

WHEREAS, the applicant submitted a PUD Master Plan Application and a Preliminary Development Plan Application which were reviewed and approval recommended at the March 7, 2023 Planning Commission meeting; and

WHEREAS, concurrently the applicant submitted a Zoning Map Amendment for the subject parcels which was reviewed at the March 7, 2023, Planning Commission meeting with an approval to advance the application, schedule a Public Hearing and forward to Town Council; and

WHEREAS, a Public Hearing is set for the Zoning Map Amendment Application at the April 4, 2023, Planning Commission meeting to gather public input; and

WHEREAS, the Town Council of the Town of Yemassee concur with the Planning Commission's recommendations; and

WHEREAS, the Town Council of the Town of Yemassee finds it to be in the Town's best interest to amend the Zoning Map and designate the Properties as "Planned Unit Development".

NOW THEREFORE, BE IT ENACTED BY THE TOWN COUNCIL OF THE TOWN OF YEMASSEE, SOUTH CAROLINA:

The Town of Yemassee, South Carolina hereby amends the Zoning Map and designates that certain property owned by Ironline Metals, LLC., the same consisting of a total of 104.4 acres, more or less, being described as Hampton County Tax Map Numbers: 203-00-00-046, 204-01-05-013 & 204-01-05-046, as Planned Unit Development pursuant to the Town of Yemassee's Zoning Ordinance with the usage and densities listed below permitted within the PUD.

I. Up to two-hundred thousand (200,000) square feet of industrial / manufacturing occupancies in the areas designated on the Master Plan map.
II. Up to one-hundred-seven (107) single-family dwelling units with a minimum lot size of 6,000 square feet per dwelling unit, a minimum front yard setback of ten (10) feet from the street right-of-way line and a minimum side yard setback of five (5) feet from the lot lines.
III. Said manufacturing use is entitled to any use currently permitted within the Light Industrial District chapter of the Town of Yemassee Zoning Ordinance and is permitted to conduct operations including the manufacturing of light gauge steel framing products including steel studs for residential and commercial buildings.
IV. The minimum distance required between entrances for areas of the PUD within the Highway Corridor Overlay District is four hundred (400) feet between all access points to the corridor, including private driveways, roads, and public right-of-way. Spacing will be measured from the midpoint of each driveway. If the existence of jurisdictional wetlands precludes compliance with this provision, the Planning Commission shall have discretion as to the placing of an alternative access point; however, no additional curb cuts on the subject parcel should result from having the alternative access point.
V. The minimum lot width at the building setback line for newly created parcels shall be a distance of one hundred fifty (150) feet. Newly created parcels are subject to the four hundred (400) foot distance requirement between access points from the highway.
VI. Newly created subdivisions are subject to the four hundred (400) foot distance requirement between access points from the highway. No subdivision of land which would create parcels fronting on the highway shall be approved unless it is established prior to subdivision approval how access will be provided to each parcel in compliance with the four hundred (400) distance requirement, (i.e., frontage roads, shared access drives, and others);
VII. Prior to any phase of development commencing, the applicant shall have submitted a Final Development Plan for the respective Phase and receive a Development Permit for the respective Phase. Each Development Permit granted is valid for two (2) years from the date of issue.

DONE, RATIFIED AND ENACTED THIS _______ DAY OF ______________, 2023.

This Ordinance was read and passed at First Reading on: ________________

_________________________	_________________________________
Colin J. Moore, Mayor	ATTEST: Matthew E. Garnes, Town Administrator
_________________________	_________________________________
Peggy O'Banner, Mayor Pro Tem	David Paul Murray, Councilmember
_________________________	_________________________________
Alfred Washington, Council Member	Stacy Pinckney, Councilmember

A Public Hearing on this Ordinance was held on: ____________________________

_________________________	_________________________________
Colin J. Moore, Mayor	ATTEST: Matthew E. Garnes, Town Administrator

This Ordinance was read and passed at Second and Final Reading held on: _________________

_________________________	_________________________________
Colin J. Moore, Mayor	ATTEST: Matthew E. Garnes, Town Administrator
_________________________	_________________________________
Peggy O'Banner, Mayor Pro Tem	David Paul Murray, Councilmember
_________________________	_________________________________
Alfred Washington, Council Member	Stacy Pinckney, Councilmember

(seal)

Recommended Motion

(Zoning Map Amendment – Ironline)

"I move to approve the first reading of the Zoning Map Amendment and to schedule a Public Hearing for three parcels of land owned by Ironline Metals, LLC., located at the intersection of U.S. Highway 17A & Jinks Street in Hampton County, and identified by Tax Map Numbers: 203-00-00-046, 204-01-05-013 & 204-01-05-046 from their current zoning designations to a Zoning Designation of Planned Unit Development pursuant to the Town of Yemassee Zoning Ordinance with conditions and entitlements listed in Ordinance 23-09 which include:

I. Up to two-hundred thousand (200,000) square feet of industrial / manufacturing occupancies in the areas designated on the Master Plan map.

II. Up to one-hundred-seven (107) single-family dwelling units with a minimum lot size of 6,000 square feet per dwelling unit, a minimum front yard setback of ten (10) feet from the street right-of-way line and a minimum side yard setback of five (5) feet from the lot lines.

III. Said manufacturing use is entitled to any use currently permitted within the Light Industrial District chapter of the Town of Yemassee Zoning Ordinance and is permitted to conduct *operations including the manufacturing of light gauge steel framing products including steel studs for residential and commercial buildings.*

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THANK YOU for your legal submission!

Your legal has been submitted for publication. Below is a confirmation of your legal placement. You will also receive an email confirmation.

ORDER DETAILS

Order Number:
IPL0113606
Parent Order #:
IPL0101153
Order Status:
Submitted
Classification:
Legals & Public Notices
Package:
HHI - Legal Ads
Final Cost:
55.62
Payment Type:
Account Billed
User ID:
IPL0026087

ACCOUNT INFORMATION

TOWN OF YEMASSEE IP
101 Town Cir
YEMASSEE, SC 29945-3363
803-589-2565
mattgarnes@townofyemassee.org
TOWN OF YEMASSEE

TRANSACTION REPORT

Date
March 9, 2023 4:18:18 PM EST
Amount:
55.62

SCHEDULE FOR AD NUMBER IPL01136060

March 12, 2023
The Island Packet (Hilton Head)

PREVIEW FOR AD NUMBER IPL01136060

Town of Yemassee Public Hearing

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Unlikely contender Griffin clubhouse leader at delayed Players

BY EDGAR THOMPSON
Orlando Sentinel

PONTE VEDRA BEACH, FLA.
If you ask Ben Griffin, scaling PGA Tour leaderboards beats weighing some rising interest rates.

"They're too high if you're trying to buy a house," the former loan officer said after going low for the second day at TPC Sawgrass.

Griffin's decision to give up his day job for his dream looks wiser by the day.

In the mix after 36 holes of his first Players Championship, Griffin became a mortgage-loan officer a little more than two years ago after he lost his playing status.

"I thought I was done," he said.

Griffin hopes he's just getting started at TPC Sawgrass.

At 6-under par, he was the clubhouse leader and 2 shots behind South Africa's Christiaan Bezuidenhout and Canada's Adam Svensson, who each had holes remaining when bad weather suspended play at 4:27 p.m. Friday. Collin Morikawa and Min Woo Lee also were on the course at 6-under.

Griffin realizes much golf remains during two days on a daunting course with winds forecast for 15-to-20 mph. The 26-year-old also recognizes his good fortune.

Even after a double-bogey 6 on the 18th hole undercut Friday's steady round, Griffin was all smiles after he signed for a 1-under-par 71 a day after he carded 67.

"To be bogey-free through 17 holes I thought was pretty freaking good," he exclaimed. "It was a grind, and unfortunately I didn't finish the way I wanted to, but the 18th hole is probably the toughest hole all day. I'm not going to be the first guy to make a double there."

Griffin was not.

Griffin likely is the only golfer in the field who gave up the game to help couples purchase their dream homes. A 2018 graduate of North Carolina, Griffin went to work for a Chapel Hill company after he lost his playing status following the 2019 Korn Ferry Tour season and failed to emerge from Q-school.

The bills were piling up and Griffin's confidence was at an ebb.

"You have a lot of credit-card debt and you're trying to figure out how to make ends meet," he said.

The support of his parents helped. No one but Griffin would be able to figure out his golf future.

During his roughly six-month stint in the residential mortgage industry, Griffin Monday-qualified for a Korn Ferry Tour event in Missouri. As his form returned, Griffin received the financial backing to give him a second chance.

Griffin now dons the logo for Lord Abbett, an investment group headed by Doug Sieg, and credits the company for removing the biggest worry facing all fledgling pros.

"He offered to pay all of my expenses for two years to play professional golf," Griffin said of Sieg. "When you're starting up, that is a humongous sigh of relief and huge for your confidence and everything because you don't have to think about anything but winning.

"Before I'm thinking: 'All right, how am I going to pay my rent? How am I going to pay for my food?' It's stuff like that that's real."

Griffin is living a fantasy at TPC Sawgrass and is two rounds from becoming the first golfer since Craig Perks in 2004 to win his first Players. In 2010, Tim Clark also made the Players his first win on Tour.

To become the prestigious tournament's next surprise winner, Griffin will have to stay grounded. He led by 2 shots with seven holes to play in Oct. 30 in Bermuda but was 6-over par from there and fell short.

"I didn't finish it off, and short-sided myself a few too many times there on the back nine and left myself a lot of shots that were downwind with not a lot of green to work with," he explained. "I just need to be a little bit better with my misses – because I am going to miss shots – where you can get up-and-down and save the par and make birdies when I can."

Missed shots are a given for everyone who reaches the weekend.

Designer Pete Dye's famed course played 2 strokes over par Friday and is unlikely to let up. The conditions and course led to many rounds exceeding 5 hours and had pushed Thursday's first round into Friday.

SATURDAY CUT

Field Level Media reported Canada's Adam Svensson held a two-shot lead following the completion of the second round Saturday morning. The second round at TPC Sawgrass was completed Saturday at 10:16 a.m. ET with 75 players making the cut at 2-over 146.

The third round began at 10:30 a.m. ET.

Svensson, playing in the event for the first time, posted a 5-under 67 to move to 9 under.

Northern Ireland's Rory McIlroy, the 2019 Players champion, missed the cut for the sixth time in 13 starts at the tournament. He followed an opening-round 76 with a 73 to finish at 5 over.

Jerry Kelly, 56, became the oldest player ever to make the cut in this event. He was on the cut line at 2 over after a second-round 72.

SAM GREENWOOD TNS

Ben Griffin of the United States plays his shot from the fifth tee during Friday's second round of The Players Championship in Ponte Vedra Beach, Fla.

Legals

PUBLIC NOTICE

County Council of Beaufort County hereby notifies all interested citizens that Public Hearings will be held on March 27, beginning at 5:00 p.m. This meeting will be held at **Council Chambers, 100 Ribaut Road, Beaufort, SC,** and virtually through Zoom. Please be aware that there is limited seating available for the in-person meeting.

PUBLIC HEARING OF A RESOLUTION AUTHORIZING THE COUNTY ADMINISTRATOR TO ENTER INTO A LEASE AGREEMENT WITH BEAUFORT MEMORIAL HOSPITAL, OR ITS DESIGNEE, THE REAL PROPERTY LOCATED AT 114 ELLIOTT STREET
IPL0113466
Mar 12 2023

Abandon Vehicle Notice

2001 Cadillac Deville
VIN# 1G6KD54Y01U191099

If anyone owns or has a lien on this vehicle, please contact Kim Barrineau at 843-707-0390. The vehicle is located at Hilton Head Buick GMC Cadillac at 1090 Fording Island Rd. Bluffton, SC 29910.
IPL0110610
Feb 26,Mar 5,12 2023

If the following vehicles are not picked up by the owner in the next 30 days they will be sold at Auction: A 2010 Audi A4, VIN WAUDFAFL2AN033798, owner Tyler Carroll; A 1992 Chevy S10, VIN 1GCCS14R0N8140533, owner German Solorio Jr; and A 2014 Volkswagen Jetta, VIN 3VWD17AJXEM240012, owner Joel Smith. Located at Broad River Towing 843-379-0869
IPL0112695
Mar 12,19,26 2023

NOTICE OF APPLICATION

Notice is hereby given that The Salty Oyster Company intends to apply to the South Carolina Department of Revenue for a license and/or permit that will allow the sale and Off premises consumption of Beer and Wine at 103 Buckthorn Ln, Suite 103 Daufuskie Island, SC 29915. To object to the issuance of this license and/or permit, you must submit Form ABL-20, postmarked no later than March 19, 2023.
Mail protests to:
SCDOR, ABL Section,
PO Box 125,
Columbia, SC 29214-0907
or email to ABL@dor.sc.gov
IPL0111405
Feb 26,Mar 5,12 2023

NOTICE OF APPLICATION

Notice is hereby given that The Whales Tail LLC intends to apply to the South Carolina Department of Revenue for a license and/or permit that will allow the sale and On premises consumption of Beer, Wine and Liquor at 95 Mathews Drive, Suite E1, Hilton Head SC 29926. To object to the issuance of this license and/or permit, you must submit Form ABL-20, postmarked no later than March 15, 2023.
Mail protests to:
SCDOR, ABL Section,
PO Box 125,
Columbia, SC 29214-0907
or email to ABL@dor.sc.gov
IPL0111427
Feb 26,Mar 5,12 2023

STATE OF SOUTH CAROLINA COUNTY OF DORCHESTER IN THE COURT OF COMMON PLEAS FIRST JUDICIAL CIRCUIT CIVIL ACTION #2022-CP-18-00248

Timothy A. Dake, Plaintiff,
vs.
Marisol Uresti and Javier Arellano Garcia, Defendants.
TO THE DEFENDANTS, ABOVE-NAMED:
YOU ARE HEREBY SUMMONED and required to answer the Complaint in this action, a copy of which is herewith served upon you, and to serve a copy of your Answer to the said Complaint on the subscriber, William J. Clifford, at his office at the address below, within thirty (30) days after the service hereof, exclusive of the day of such service;
YOU ARE HEREBY GIVEN NOTICE FURTHER that if you fail to appear and defend and fail to answer the Complaint as required by this Summons within thirty (30) days after the service hereof, exclusive of the day of such service, judgment by default will be entered against you for the relief demanded in the Complaint.
s/William J. Clifford
SC Bar #1286
Attorney for Plaintiff
2175 Ashley Phosphate Road, Suite F
North Charleston, SC 29406
(843) 764-0100
wjc@cliffordcharleston.com
Filed: February 7, 2022
IPL0112569
Mar 5,12,19 2023

Town of Yemassee Public Hearing

NOTICE IS HEREBY GIVEN that the Town of Yemassee Planning Commission will hold a Public Hearing on Tuesday, April 4, 2023, at 3:00 PM at the Yemassee Municipal Complex, 101 Town Cir, Yemassee, SC 29945, for the purpose of soliciting input on the following:

ZONE-03-23-1023 by Ironline Metals, LLC., for a request for a Zoning Map Amendment for three parcels of land totaling approximately 104.40 acres of land located at the northwest corner of U.S. Highway 17A and Jinks Street, Hampton County from their current zoning designations to a designation of Planned Unit Development. The subject parcels are further identified by Hampton County Tax Map Number(s): 204-01-05-013, 204-01-05-005 & 203-00-00-046.

Persons with comments or questions should contact the Town of Yemassee Administration Department at (843) 589-2565 Ext. 3. Persons requiring special services to attend the meeting should call to make arrangements.
IPL0113606
Mar 12 2023

SHELLFISH CULTURE PERMIT

Application has been made by Anthony Cole Doscher for the permitting of shellfish beds or bottoms situated in Beaufort County as follows: The permit will include shorelines and bottoms of C-049, an area adjacent to Mackey Creek and unnamed tributaries of Mackey Creek in Beaufort County. (Approximately 20.1 intertidal acres). Structures or pens are not to be permitted. Any comments concerning the issuance of this permit be received in writing by the Shellfish Permit Committee, Department of Natural Resources, P.O. Box 12559, Charleston, SC 29422 on or before March 31, 2023.
IPL0111597
Feb 28-Mar 3,5-10,12-16,19-21 2023

Animals

Dogs

Bichon Frise, Miniature Schnauzers, Morkie, Minuet Persian 912-826-5172 State Licensed. Rincon GA

Merchandise

Miscellaneous

NEW AD!

GOLD UNDER SPOT
GOLD FOR SALE BELOW SPOT - LTD QTY

KRUGERRANDS (1OZ) $100 UNDER SPOT

OFFER ENDS MARCH 15TH OR WHILE SUPPLIES LAST
CALL 1-800-862-4237

OR VISIT US ONLINE AT VISTABULLION.COM

Real Estate

For Rent

145 Fripp Point Rd. Saint Helena Island
Private RV lot
6 miles from Hunting Island Beach. Power, water, septic.
843-812-4652 **$400**

Employment

TATTOO ARTIST: Create, update and design tattoo designs. $57,304/yr HILTON HEAD, SC Mail Resume: Island Tattoo Company Inc 115 Arrow Rd, #1, Hilton Head Island, SC 29928

Service Directory

Home & Business Improvement

Need a Handyman?
Walsh Services LLC, 843-941-5730, walshservices-sc.com, Free Estimates

Employment

DISCOUNT FURNITURE & MATTRESS OUTLET
Is looking for a
SALESPERSON
Part-time or Full-time.
No experience required. We will train.
Apply in person Mon. - Fri. 11am - 4pm
118 Mathews Dr. (across from Palmetto Electric), Hilton Head Island, SC

Greater Bluffton Jasper County
VOLUNTEERS IN MEDICINE
Bluffton Jasper Volunteers In Medicine is seeking a
RESOURCE DEVELOPMENT DIRECTOR
with the responsibility of raising funds to support a six figure budget.
THE WORK WEEK IS 32 HOURS.
Email cover letter & resume to: ptoneybjvim@gmail.com

Colin J. Moore
Mayor

Peggy Bing-O'Banner
Mayor Pro Tempore

Matthew Garnes
Town Administrator

Council Members
Alfred Washington
Stacy Pinckney
David Paul Murray

Planning Commission Agenda Item

Subject: A request for a recommendation of approval for the annexation of an approximately1.39-acre parcel located off Cochran Street, Hampton County, and further identified by Hampton County Tax Map Number: 198-00-00-095.

Meeting Date: April 4, 2023

Submitted by: Matthew Garnes, Town Administrator

Attachments:

	Draft Ordinance		Resolution		Other
√	Support Documents		Motion		

Summary: Staff received a petition for annexation for a single parcel of land totaling 1.39 acres of land located off Cochran Street. The parcel is undeveloped and has no current plans for development. The applicant is seeking a zoning designation of General Residential per the Town of Yemassee Zoning Ordinance.

Recommended Action: Recommend advancing petition and scheduling a public hearing.

Commission Action:
____ Approved as Recommended
____ Approved with Modifications
____ Disapproved
____ Tabled to Time Certain
____ Other

Colin J Moore
Mayor

Peggy Bing-O'Banner
Mayor Pro Tempore

Matthew Garnes
Town Administrator

Council Members
Alfred Washington
Stacy Pinckney
David Paul Murray

Town of Yemassee Administration Department
Annexation Analysis (ANNX-03-23-1026)
Smith Tract, Cochran St (Hampton County)

Applicant: Rosalyn Smith

Owner: Roslyn Smith

Address(es): Unaddressed parcel on Cochran Street

Tax Map Number(s): 198-00-00-095

County: Hampton

Site Description: This project contains a single parcel of uplands on the west side Cochran Street and just east of Interstate 95. The property is a rectangular parcel of land totaling 1.39 acres of land. If developed, access would be off Solomon Street which would require an extension.

Present Zoning and Existing Conditions: The parcel is undeveloped with no improvements. As the parcel is currently located within unincorporated Hampton County, the parcel is subject to the Hampton County Zoning Ordinance. These parcels are currently zoned "General Development" under the County code. The applicant is requesting a zoning designation of General Residential (GR) under the Yemassee Zoning Ordinance. The Town of Yemassee Zoning Ordinance defines its General Residential District as to be "designed to provide for a variety of residential uses, including single-family, two (2) family, and mobile home dwellings. The intent of the district is to provide areas primarily for residential uses, and to discourage any encroachment by uses which may be incompatible with such residential use."

The surrounding properties were annexed in July 2018 with the Cochran / Bing / Riley Street residential annexations. The property owner was originally contacted to notify them of the surrounding annexations and inviting them to complete an application in 2018, however a response was not received by Staff. This has created the existing donut hole involving this parcel and four more adjacent properties.

Zoning Comparison:

	General Development Hampton County	General Residential (GR) Town of Yemassee
Maximum Density:	One (1) Dwelling unit per acre	Three (3) Dwelling unit per acre
Permitted Uses:	• Forestry • Clearcutting • Agricultural Support Services • Automobile Service station and/or Garage • Cemetery • Church • Community and Child Care Centers • Dwelling including mobile homes. • Family Day Care Home • Home Occupation • Schools • Equestrian uses • Flea Markets • Outdoor Recreation • Retail Store • Roadside stand • Recreational Vehicle Park • Automotive Racetrack • Public Utilities • Stockyards • Landfills • Recycling Centers • Marinas & Piers	• Single-Family Dwelling (Stick-Built home) • Two (2) Family Dwelling • Mobile Home Dwelling • Church, Civic or Institutional Use • Home Occupation • Family Day Care Home
Minimum Lot Size:	Not listed in Zoning Ordinance	14,520sqft
Maximum Building Height:	Not listed in Zoning Ordinance	35ft
Setbacks:	Not listed in Zoning Ordinance	Front Yard: Five (5) ft Side & Rear: Five (5)

Utilities / Public Services:

Should the property be developed, the property would be served by the following utilities and public services:

- **Electric:** Dominion Energy
- **Telecommunications:** Century Link and Comcast/Xfinity
- **Fire Protection:** Hampton County Fire District
- **Emergency Medical Services:** Hampton County Emergency Medical Services
- **Law Enforcement:** Currently Hampton County Sheriff's Office, upon annexation primary response would become the Town of Yemassee Police Department while Hampton County Sheriff's Office would be utilized on an as needed, mutual-aid basis.
- **Water/Wastewater:** Lowcountry Regional Water System (LRWS) is the franchised water and wastewater provider within the Town of Yemassee and upon annexation the parcel would be theoretically served by LRWS if there was infrastructure in the area. Preliminary review indicates water available on Cochran Street, but infrastructure would need to be established prior to servicing the parcel. There is currently no sewer available on Cochran Street and a private septic permitted through SC DHEC would be required.

Analysis:

The following analysis has been conducted on the parcels petitioning annexation:

1. ***Is the application in the best interests of the Town of Yemassee and its residents?***
   a. **Finding:** The application will expand the footprint of the Town which directly affects funding and representation for the Town at state and federal levels. Any vehicles or personal/business property taxed by Hampton County will be subjected to the town tax rate imposed for FY2023 which is 74.00 mills in Hampton County. Additionally, the parcel will close a donut hole within the Cochran Street community.

2. ***Does the Annexation have the potential to create a tax burden or measurably reduce the level of service(s) provided to existing services and property owners?***
   a. **Finding:** Based on the current use of the property and the maximum allowed development under the proposed zoning of

General Residential, a tax burden is not created and a reduction in the level of service is not anticipated.

3. ***Has the full impact of the proposed Annexation on Law Enforcement been considered?***
    a. **Finding:** Administration Staff have consulted with Chief Alexander who advised annexation of this parcel will not have a negative impact on services offered by the Yemassee Police Department. Upon annexation, the primary response agency for law enforcement issues would be the Yemassee Police Department, with backup provided on an as-needed basis from the Hampton County Sheriff's Office. This parcel would fall within Zone A for police response.
4. ***Does the Petitioner understand all potential costs & benefits associated with the Annexation?***
    a. **Finding:** The applicant has been provided with an estimated tax bill for the year following annexation. As of this report, there has been no additional questions from the petitioner regarding the information provided.

Adjacent Properties and Jurisdictions:

Direction	Tax Map Number / Owner & Address	Jurisdiction
West	Hampton County / 198-00-00-112 783 Riley St St. Jude Church	Town of Yemassee
North	Hampton County / 198-00-00-101 000 Oliver Dr Frances Parker	Town of Yemassee
East	Hampton County / 198-00-00-252 000 Cochran St Jalil E. Muhammed	Hampton County
South	Hampton County / 198-00-00-094 000 Cochran St Alfred Miles Jr ETAL	Hampton County

Staff Review: Staff have reviewed the application and requested zoning and concur with the request of General Residential.

Staff Recommendation: Staff request approval of the annexation.

This document is for reference only. Please contact the Town of Yemassee Planning & Zoning Department for specific ordinance language

General Residential (GR) Zoning District

The General Residential District is designed to provide for a variety of residential uses, including single-family, two (2) family and mobile home dwellings. The intent of the district is to provide areas primarily for residential uses, and to discourage any encroachment by uses which may be incompatible with such residential use.

Section 5.5, Town of Yemassee Zoning Ordinance

Standards for the GR District 5.5.1

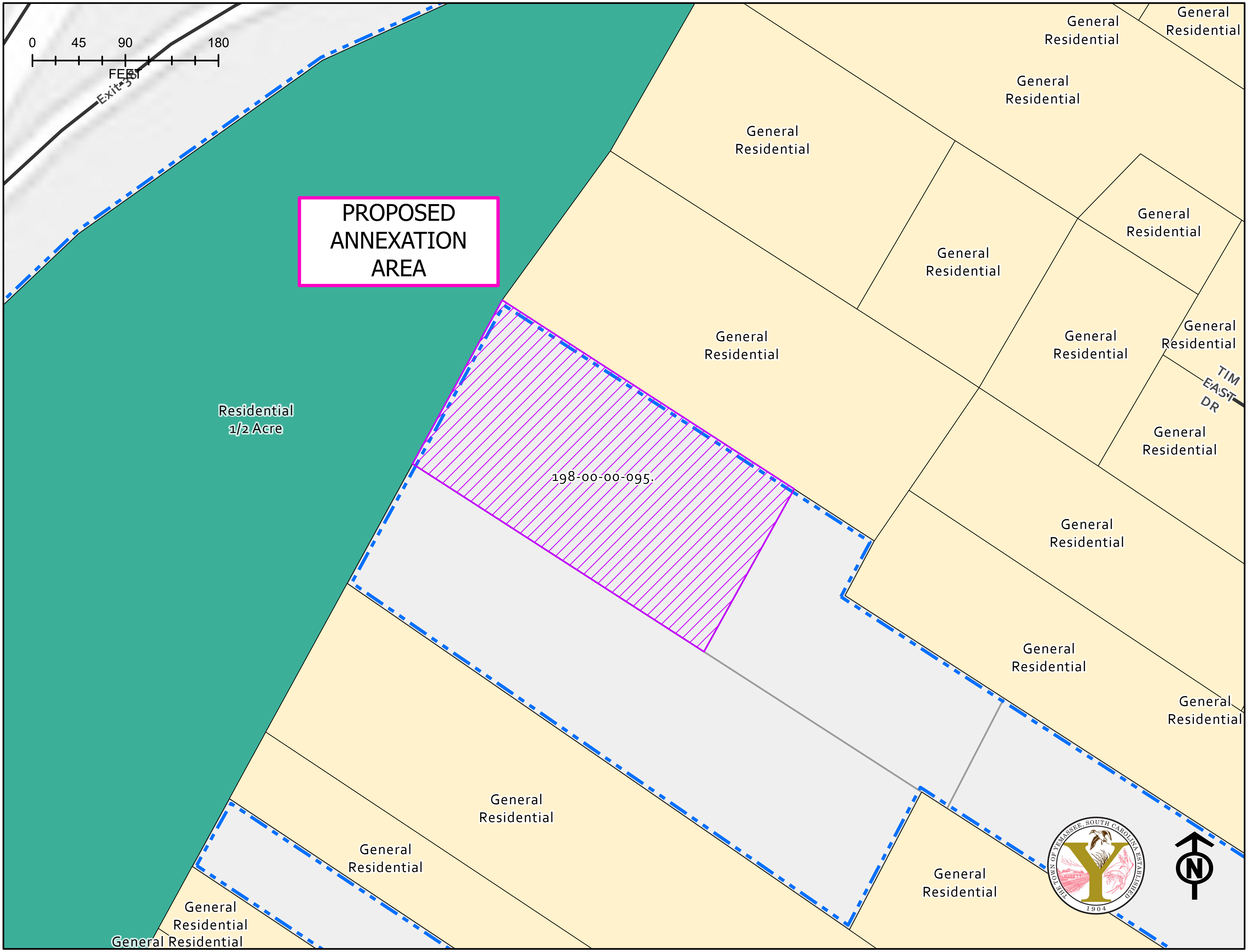
- Maximum Density: Three (3) dwelling units per acre
- Minimum Lot Size: 14,520 square feet per dwelling unit.
- Maximum building height: Thirty-Five (35') feet or three (3) stories, whichever is less; excluding church spires, belfries, cupolas, monuments, chimneys, or flagpoles
- Minimum front yard setback: Five (5) feet from the street right-of-way line.
- Minimum side and rear yard setbacks: Five (5) feet from lot lines

Permitted Uses for the GR District 5.5.2

- Single-Family dwelling (Stick built home)
- Mobile Home dwelling (provided the home is under skirted around its base with an appropriate material sufficient to provide a visual screen for the underpinnings of the mobile home.
- Church, Civic or Institutional use
- Home Occupations are permitted if there is no exterior evidence of the home occupation.
- Family Day Care Home (Consult Town of Yemassee Zoning Ordinance, Article X, Definitions)
- Two (2) family dwelling

Prohibited Uses for the GR District 5.3.3

- Adult Entertainment Establishments
- Any business, person, entity, or service offering Adult Entertainment



0 45 90 180
FEET
Exit 3
PROPOSED ANNEXATION AREA
Residential 1/2 Acre
198-00-00-095.
General Residential
TIM EAST DR
THE TOWN OF YEMASSEE, SOUTH CAROLINA ESTABLISHED 1904
N

qPublic.net™ Hampton County, SC

Summary

Parcel Number	198-00-00-095.
Tax District	County (District N)
Location Address	
Town Code	
Class Code (NOTE: Not Zoning Info)	206-Residential Lot Vacant
Acres	1.39
Description	
Record Type	Residential
Town Code / Neighborhood	
Owner Occupied	

View Map

Note: Acres will not display correctly if any or all of the parcel is classed as exempt. (Exempt acreage will not calculate in total acreage.)

Owners

SMITH ROSALYN
1280 CLARK STREET
RAHWAY NJ
07065

2022 Value Information

Land Market Value	$10,500
Improvement Market Value	$0
Total Market Value	$10,500
Taxable Value	$7,700
Total Assessment Market	$460

Note: Values will not display correctly if any or all of the parcel is classed as exempt. (Exempt building values will not display nor calculate in totals.)

Sales Information

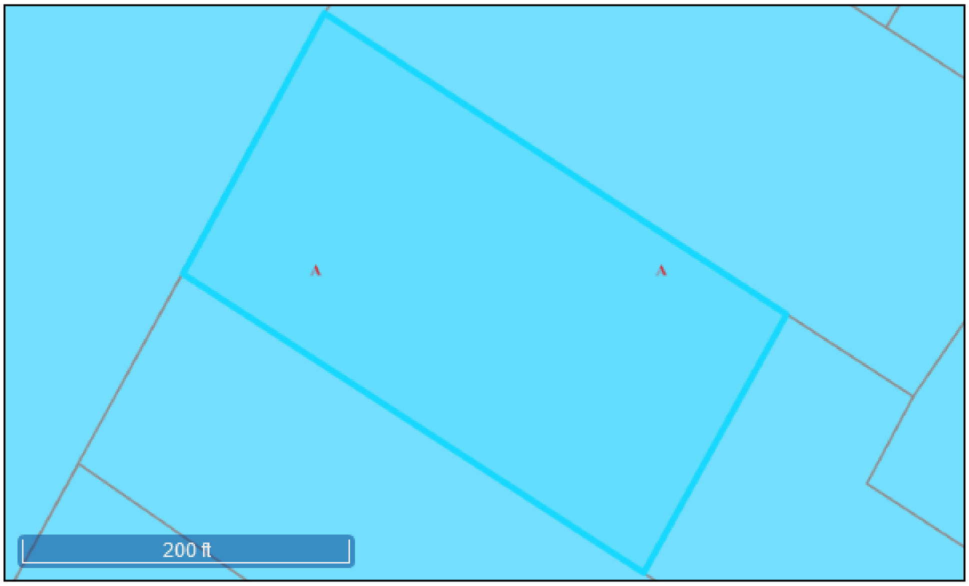
Sale Date	Price	Deed Book	Plat Book	Grantor
7/11/1996	$5	194 327	20 701	MCCLENDON MAE C
5/26/1970	Not Available	59 230	Not Available	Not Available

No data available for the following modules: Building Information, Lot Size Information (Dimensions in Feet).

Town of Yemassee

Flood Zone Report - Hampton

2 Apr 2023



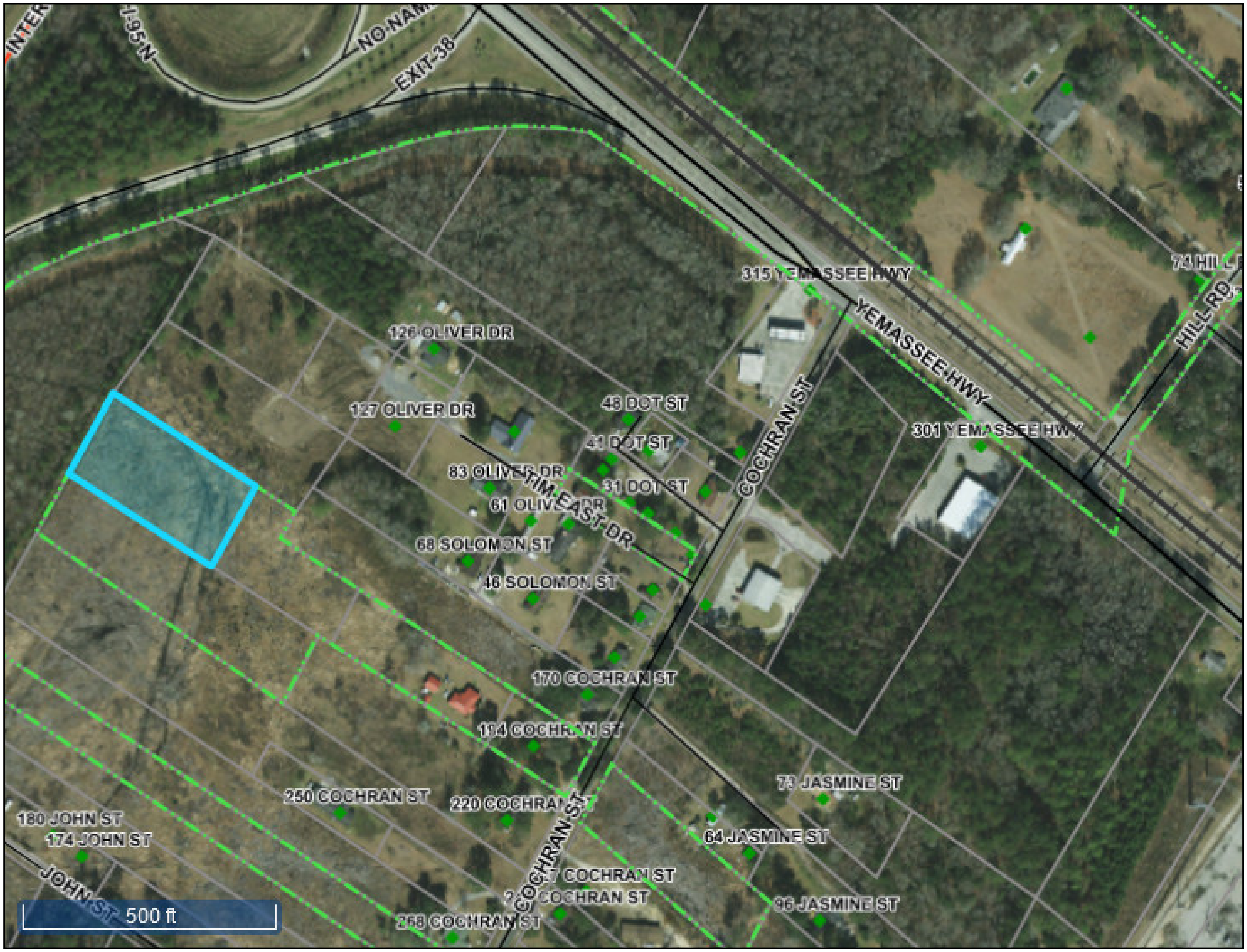
Parcels Hampton

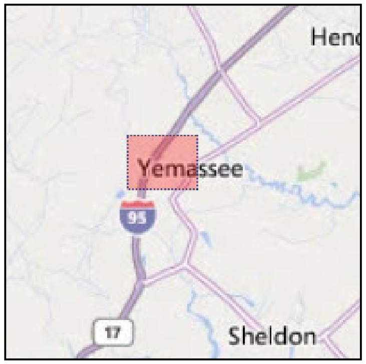
TMS:	198-00-00-095.
Owner City State ZIP Code:	RAHWAY NJ 07065
Owner:	SMITH ROSALYN
Owner Street Address:	1280 CLARK STREET RAHWAY NJ
Parcel Street Address:	

Flood Zones 2010

	Count	Zone and Subtype	Overlapping Quantities
1.	2	A	121,027.1sf (2.78acres)

Rosalyn Smith





Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Road Names

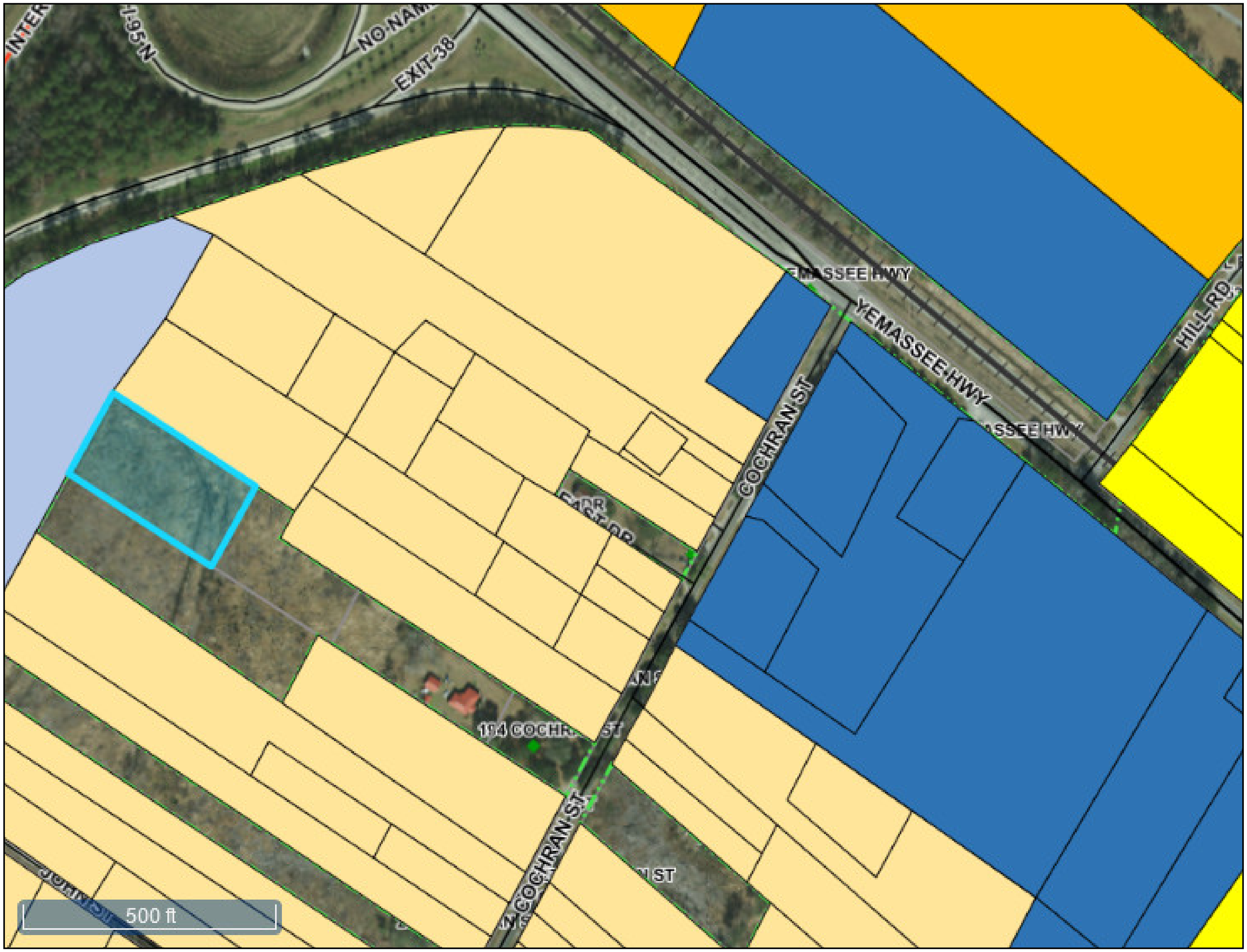
Roads
- Roads
- Major Roads
- Interstate
- Road Names Jasper

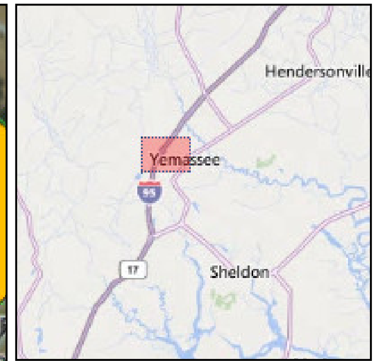
Roads Jasper
- Roads
- Major Roads
- Interstate
- Railroads
- County Boundary Beaufort
- County Boundary Hampton
- County Boundary Jasper
- Yemassee Boundary

2 Apr, 2023

Note:
Area map with satellite view.

Rosalyn Smith





Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper

Zoning

- Office Commercial District
- Conservation Preservation District
- General Residential
- Residential 1 Acre
- Residential 1/2 Acre
- Residential 1/3 Acre
- Residential 1/4 Acre
- Village Commercial District
- Mixed Use
- Light Industrial District
- Agricultural
- Telecommunications Tower
- Transitional
- Utility
- General Residential Townhouse
- Regional Commercial District
- Planned Unit Development
- To Be Determined

Road Names

Roads

- Roads
- Major Roads
- Interstate

Road Names Jasper

Roads Jasper

- Roads
- Major Roads
- Interstate

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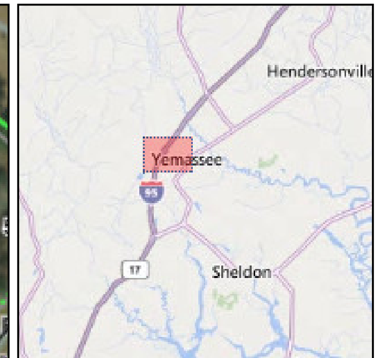
2 Apr, 2023

Note:
Zoning of surrounding parcels

Rosalyn Smith



Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Annexations 2005
- Annexations 2012
- Annexations 2015
- Annexations 2016
- Annexations 2017
- Annexations 2018
- Annexations 2019
- Annexations 2020
- Annexations 2021
- Annexations 2022
- Road Names

Roads

- Roads
- Major Roads
- Interstate
- Road Names Jasper

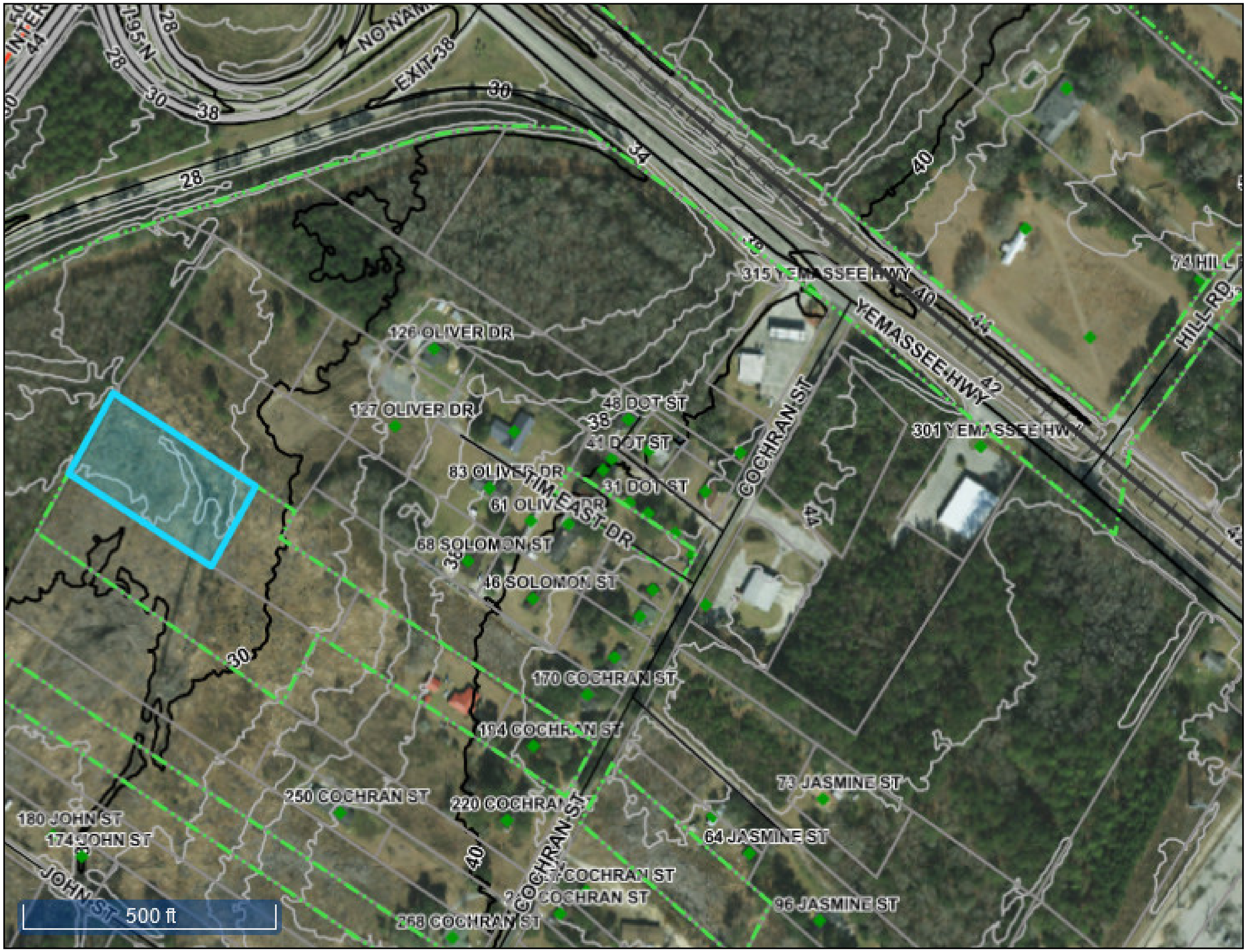
Roads Jasper

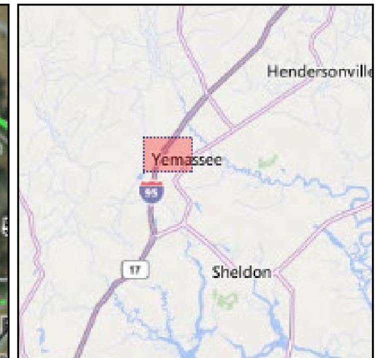
- Roads
- Major Roads
- Interstate
- Railroads
- County Boundary Beaufort
- County Boundary Hampton
- County Boundary Jasper
- Yemassee Boundary

2 Apr, 2023

Note:
Surrounding parcels Annexation History

Rosalyn Smith





Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Road Names

Roads

- Roads
- Major Roads
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Roads Jasper

- Roads
- Major Roads
- Interstate
- Railroads
- County Boundary Beaufort
- County Boundary Hampton
- County Boundary Jasper
- Yemassee Boundary
- Contour Labels Hampton

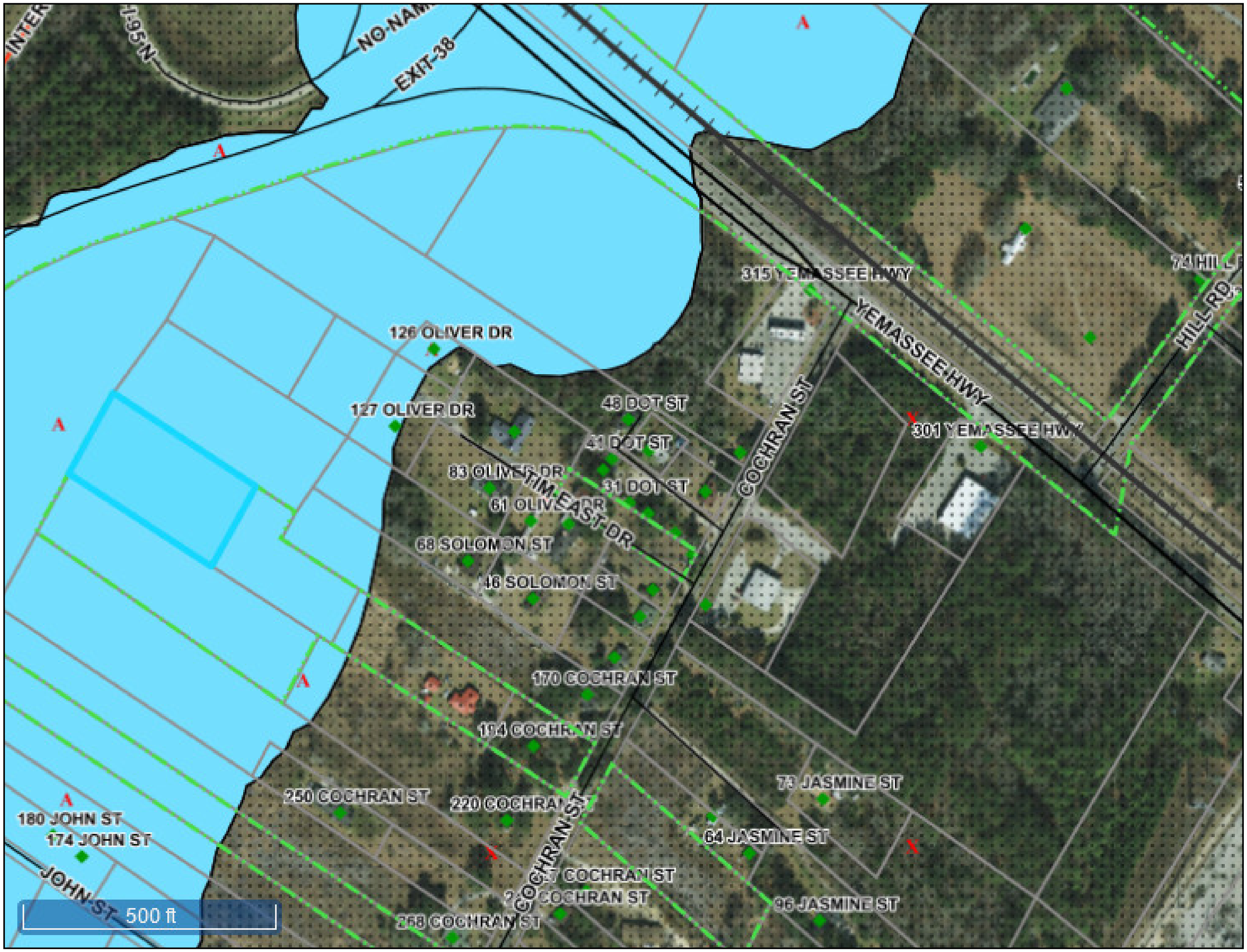
Contours Hampton

- Major
- Minor

2 Apr, 2023

Note:
Elevation Contours

Rosalyn Smith



Legend

Address Points Beaufort
Parcels Beaufort
Address Points Hampton
Parcels Hampton
Address Points Jasper
Parcels Jasper
Road Names

Roads
- Roads
- Major Roads
- Interstate

Road Names Jasper

Roads Jasper
- Roads
- Major Roads
- Interstate

Railroads
County Boundary Beaufort
County Boundary Hampton
County Boundary Jasper
Yemassee Boundary
Flood Line
Base Flood Elevations

Flood Zones 2010
- 1% Annual Chance Flood Hazard - Zones A, AE, A99, AO, AH, AR, V, VE
- Regulatory Floodway - Zone AE
- 0.2% Annual Chance Flood Hazard - Zone X
- Future Conditions 1% Annual Chance Flood Hazard - Zone X
- Area with Reduced Risk Due to Levee - Zone X
- Area of Minimal Flood Hazard - Zone X

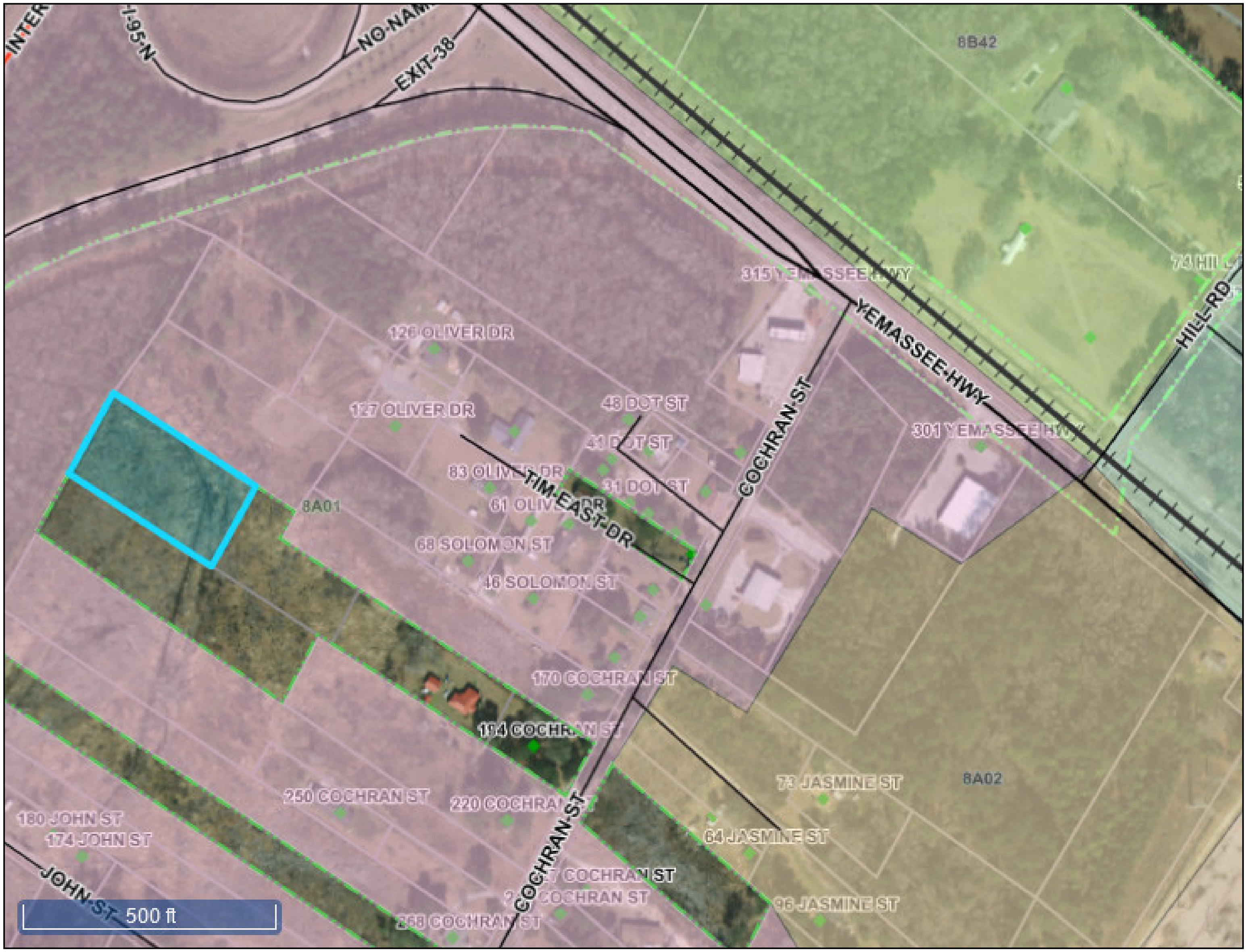
...

2 Apr, 2023

Note:
FEMA Floodplains

This map is a user generated static output from rightspot.spateng.com website and is for reference use only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Rosalyn Smith



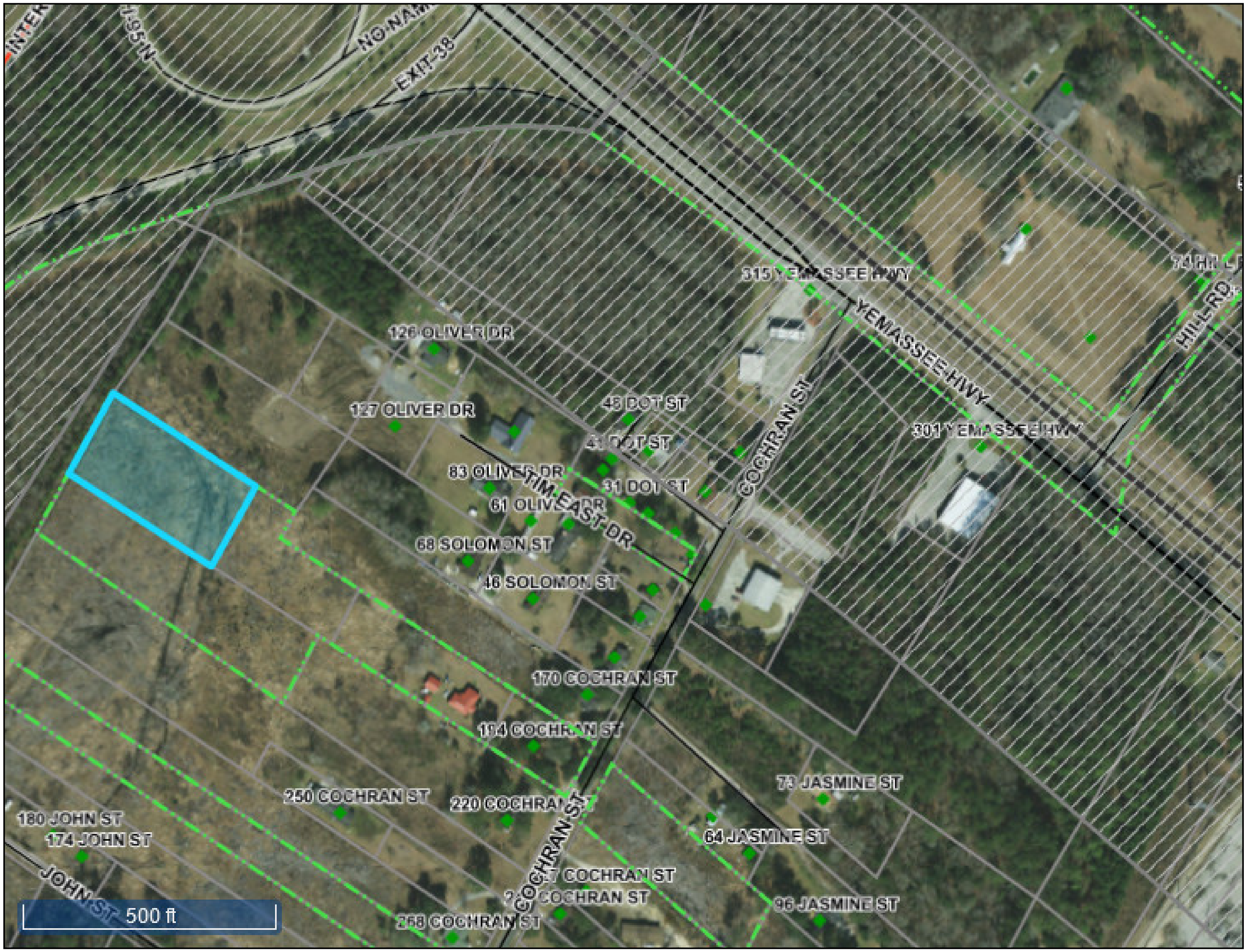
Legend

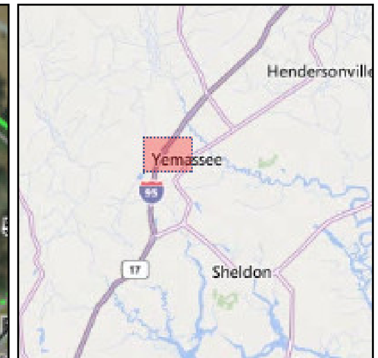
- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper ...

2 Apr, 2023

Note:
Surrounding parcels police patrol grids

Rosalyn Smith





Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Highway Corridor Overlay District
- Road Names

Roads
- Roads
- Major Roads
- Interstate

Road Names Jasper

Roads Jasper
- Roads
- Major Roads
- Interstate

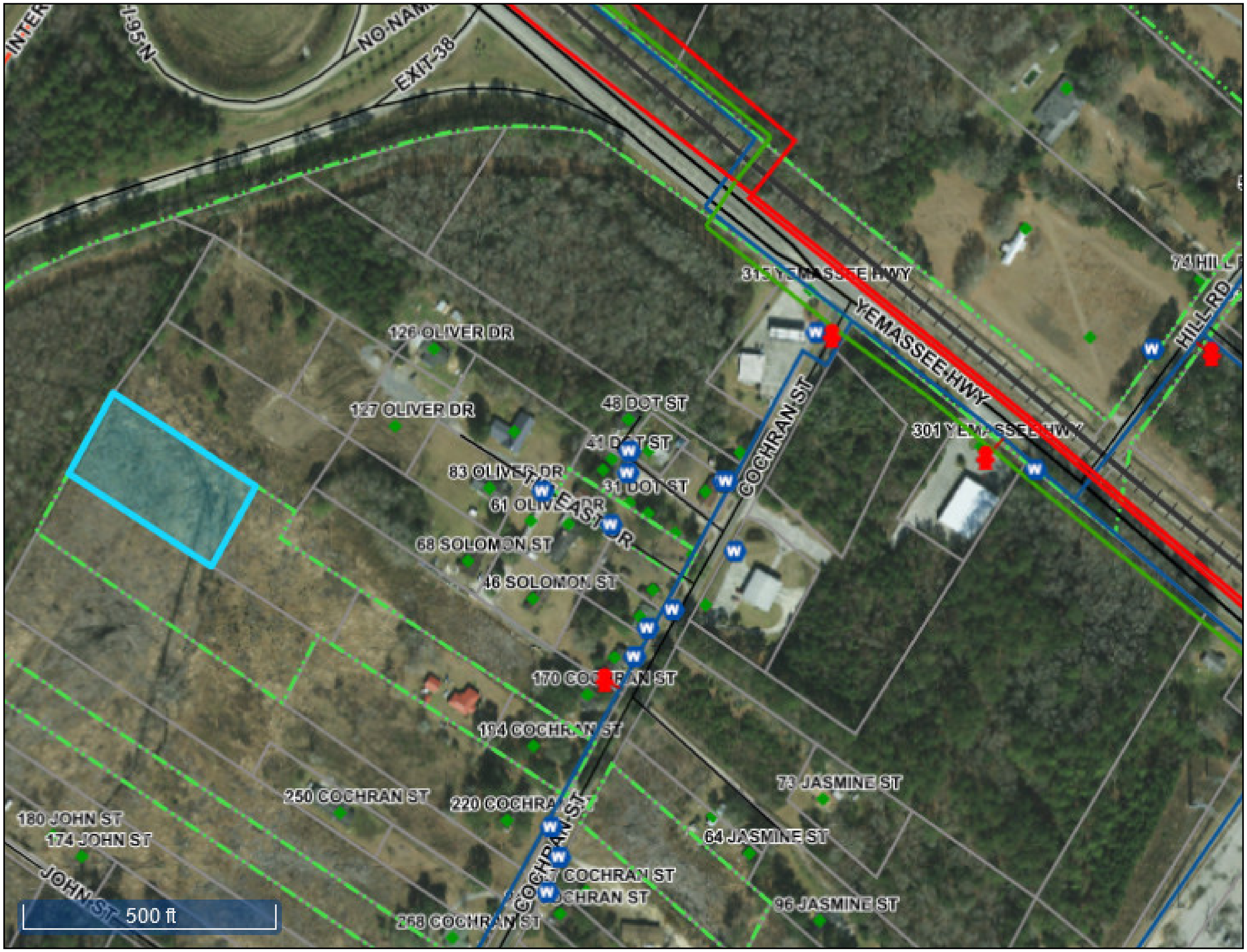
- Railroads
- County Boundary Beaufort
- County Boundary Hampton
- County Boundary Jasper
- Yemassee Boundary

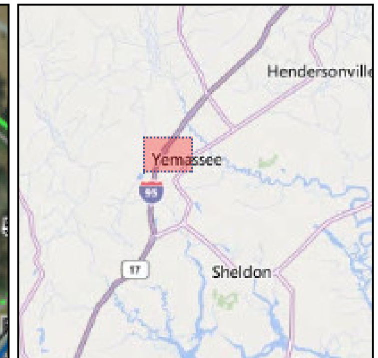
2 Apr, 2023

Note:
Highway Corridor Overlay District

This map is a user generated static output from rightspot.spateng.com website and is for reference use only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

Rosalyn Smith





Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Sewer Lift Stations

Sewer Lines
- Service
- Main
- Force main
- Fire Hydrants
- Water Meters

Water Lines
- Water Main Line
- Water Service Line
- Water Fire Line

Road Names

Roads
- Roads
- Major Roads
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2 Apr, 2023

Note:
Water and wastewater infrastructure near property

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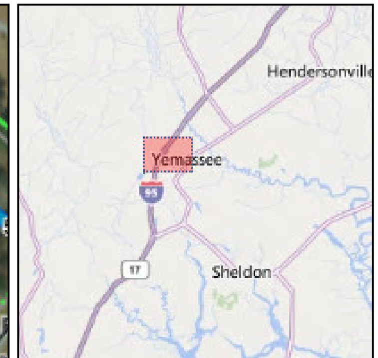

Legend

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- Parcels Hampton
- Address Points Jasper
- Parcels Jasper
- Road Names

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- Roads
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- Road Names Jasper

Roads Jasper

- Roads
- Major Roads
- Interstate
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NWI

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

2 Apr, 2023

Note:
National Wetland Inventory

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Legend

- Address Points Beaufort
- Parcels Beaufort
- Address Points Hampton
- Parcels Hampton
- Address Points Jasper
- Parcels Jasper

Police Patrol Zones
- Zone A
- Zone B
- Zone C - Yemassee Core
- Zone C - Sheldon
- Zone D

Road Names

Roads
- Roads
- Major Roads
- Interstate

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2 Apr, 2023

Note:
Surrounding parcels police patrol zones

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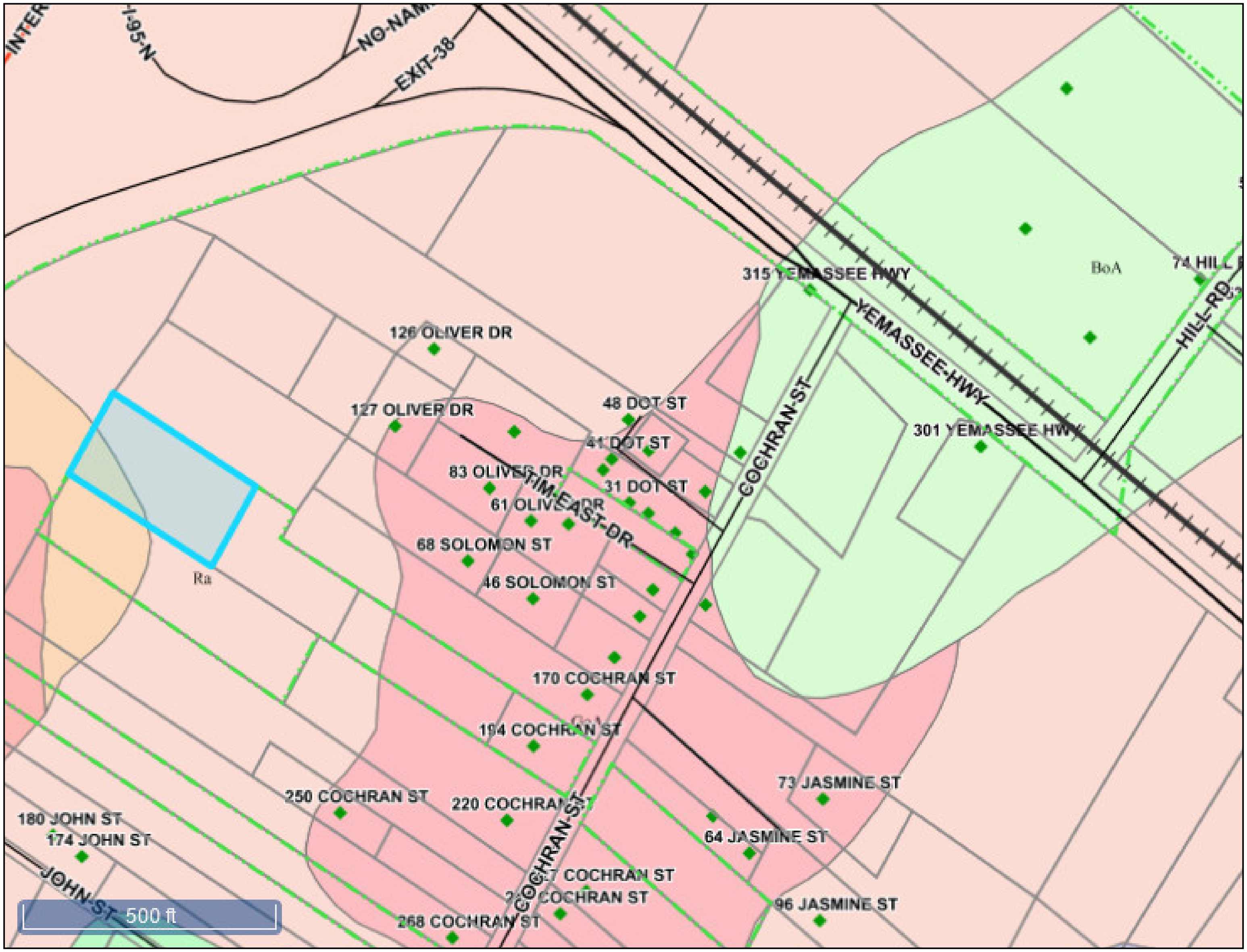

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- County Boundary Hampton
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- Yemassee Boundary ...

2 Apr, 2023

Note:
Soil Classifications

Colin J. Moore
Mayor
Peggy Bing-O'Banner
Mayor Pro Tempore
Matthew Garnes
Town Administrator

Council Members
Alfred Washington
Stacy Pinckney
David Paul Murray

Planning Commission Agenda Item

Subject: Comprehensive Plan Update

Meeting Date: April 4, 2023

Submitted by: Matthew Garnes, Town Administrator

Attachments:

	Draft Ordinance		Resolution		Other
√	Support Documents		Motion		

Summary: Town Council accepted a proposal from MRB Group for drafting of the Town of Yemassee Comprehensive Plan. The Town Administrator will present an update.

Recommended Action:

Commission Action:
____ Approved as Recommended
____ Approved with Modifications
____ Disapproved
____ Tabled to Time Certain
____Other

Town of Yemassee

Proposal For Services:
Comprehensive Plan Update

Prepared for:
Town of Yemassee
Matthew Garnes, Town Clerk
101 Town Circle
Yemassee, SC 29945-3363

March 8, 2023

March 2, 2023

Matthew Garnes
Town Clerk
Town of Yemassee
101 Town Circle
Yemassee, SC 29945-3363

Dear Mr. Garnes,

By way of the RFP for the Comprehensive Plan Update, the Town of Yemassee has demonstrated a commitment to the future of Yemassee. A strong comprehensive plan should provide strategic guidance in all areas of operations- economic and community development, healthy neighborhoods, sound infrastructure, managed growth, and access to valued community services. Refocusing the framework of this plan regularly presents the opportunity to enhance quality of life and economic vitality through a stronger focus on economic revitalization, infrastructure investment, and sound planning practices. A refreshed comprehensive plan will synthesize these clear priorities, create actionable strategies to advance you toward your vision, and identify initial policy and investment decisions to continue moving your community forward.

MRB Group, and our local government services team, represent a collection of practitioners in the field of local government—former County Administrators, City Managers, Planners, Economic Developers, and elected officials. We build plans with an intense focus on implementation—ensuring that our recommendations result in actionable strategies for Yemassee to drive progress for the next decade.

Headquartered in Rochester, New York, MRB Group has spent decades working across New York State supporting communities in their infrastructure and community development needs. Building our presence in South Carolina since 2020, we bring this wealth of experience to a team of professionals with Lowcountry roots who themselves have contributed years of experience to the economic and municipal development of communities, identifying challenges and capitalizing on opportunities facing South Carolina's towns and cities.

Our Senior Planning Associate Riccardo Giani will serve as the project manager for this effort. He and his team will execute this project from our office in Charleston. Riccardo can be reached at any time via email (riccardo.giani@mrbgroup.com) or by phone (843-608-1913). We are excited to support this project and look forward to discussing the opportunity further.

Sincerely,

Heather Simmons Jones
Director of Southeast Operations

David M. Doyle, P.E.
Vice President

Table of Contents

MRB group

1 Project Team

Introduction and Qualifications

MRB Group's long-range planning team specializes in providing comprehensive and strategic planning, implementation, and related advisement services to communities. Behind our planning and economic practitioners the rest of the team - over 160 multi-disciplined professionals and support staff with specialized expertise - stand ready to assist every day.

Many of our staff members have worked as municipal administrators, which gives them a deep understanding of the operational, financial, and logistical challenges that towns face on a regular basis. This team of practitioners provides recommendations that are tailored to implementation, giving town officials what they need to properly execute their plans.

Working with S.C. Local Governments

Matt Horn is an experienced community leader. He has facilitated the development of community vision and values in support of long-range planning in numerous communities. As former Assistant City Manager of Beaufort, SC, Matt oversaw the planning and implementation of a 4,000 acre annexation plan where he assisted in the development of "smart growth" zoning strategies, ultimately providing for the conservation of thousands of acres of Intercoastal Waterway shoreline.

Heather Simmons Jones is a known entity in economic development of the Southeast, and a Hampton County native. Her experience as an administrator in both urban and rural S.C. areas provides her with a unique perspective into the challenges and opportunities ahead of Yemassee. Her former roles included serving as Executive Director of the Greater Beaufort-Hilton Head Economic Partnership, Allendale County Administrator, Anderson County Assistant County Administrator, McCormick County Director of Economic Development, CEO of Greenwood Partnership Alliance.

Ms. Simmons Jones has worked on key projects in South Carolina including:

- Connect SC - Broadband Planning, Statewide
- Medical Innovation District Creation, Land Use, and Strategic Planning - Greenwood, SC
- Sustainable Economic Development Planning - Sustain SC (formerly Palmetto Green)

Hillsboro, TX, Strategic Plan Public Engagement Session

MRB Group has most recently been engaged in development work across Beaufort County on projects such as:

- City of Beaufort- Assessment & Planning Transition Services, Municipal Executive Searches, City, Interim Planning Services, Site Development Regulations
- Port Royal- grant services and organizational assessment
- Hilton Head- economic development services, grant services, and code writing services
- Local Option Sales Tax Referendum- county-wide public education campaign

Communities in the process of implementing comprehenseive plans face numerous challenges the MRB Group team of South Carolina has been able to answer.

In following pages outlining MRB Group's 'Relevant Experience' you will find details of our in-depth work with local S.C. communities in drafting, updating, and advancing comprehensive plans, particularly in the Town of Clover. But our depth of knowledge and breadth of service goes beyond the confines of the comprehensive plan to include the detailed implementation of those key opportunities.

In the Town of Chapin, the comprehensive plan informed the process of defining a Unified Development Ordinance (UDO)- throughout 2022 MRB Group engaged the chartering committee, key stakeholders, and general public through a formalized process to draft an ordinance that answered multiple needs in promoting the public health, safety, convenience, order, appearance, prosperity, and general welfare of Chapin residents and businesses,

And currently, MRB Group is at work in Anderson County's Town of Pendleton, a community of approximately 3,500 residents, where we are developing another Unified Zoning & Development Ordinance. This work will preceed a comprehensive plan effort, where the process of defining goals, deliverables, stakeholders, and branding is expected to facilitate the next community-wide undertaking.

MRB Group stands ready, with all of this experience in supporting the planning efforts of South Carolina communities and more, to continue our record of reliable service to energize and unite the Town of Yemassee into the future.

MRB Group led community engagement session

Town of Yemassee
— South Carolina —
The focal point of the four counties

Matt Horn
Director of Municipal Services
Technical Advisor

Heather Simmons Jones
Director of Southeast Operations
Client Manager

Riccardo Giani
Senior Planning Associate
Project Manager

Project Team Members

Michael N'dolo
Housing & Economic Analyst

Britton Corbin, P.E.
Transportation / Priority Investment Analyst

HEATHER SIMMONS JONES, SCCED

Director of Southeast Operations

MRB group

Heather has spent 20 years in South Carolina's rural communities and urbanized multi-county regions working as strategic advisor, public administrator, non-profit leader, and economic development practitioner. A vast majority of Heather's experience is in start-up, stand-up, and funding strategies for public-private partnerships and community organizations for economic and workforce development.

She provides value-added, actionable leadership on how to create viable growth strategies, sustain healthy organizations, and facilitates community-wide conversations on what is required for communities to thrive amongst the competition.

Education

M.A. Human Resources Development, Clemson University

B.A., Clemson University

Professional Affiliations

South Carolina Certified Economic Developer

South Carolina Economic Developers Association

SC Executive Institute, Harvard Business School

Diversity Leaders Initiative, Furman University

Local Government Leadership Institute (SC)—Advanced Programming

Experience

Community Development – Heather has led cultural programming development, streetscape projects, façade improvements, and transportation infrastructure development and enhancement. As a trained, skilled facilitator and consensus builder, Heather has pulled together communities around polarizing topics to yield positive outcomes.

Key Projects

Sustainable Economic Development Planning — Sustain SC (formerly Palmetto Green)*

- As a strategic advisor to this non-profit organization, guided its transition from a volunteer board to a formal board structure that allowed for committees with a peer-to-peer membership base. Contributed to all aspects of this transition, including amendment of key documents and the creation of job descriptions, committee missions, and marketing plans.
- Played a leading role in successfully relaunching the organization under a new name and brand, heightening statewide understanding of the need for Sustain SC's critical work at the intersection of commerce and sustainability, and resulting in an increased donor and membership base as well as publicity.

Broadband Planning — Connect SC*

- Developed and managed a federally-funded statewide initiative to assess broadband connectivity in each of South Carolina's counties, creating over 40 data-driven local technology action plans.
- Built consensus among a broad base of stakeholder groups, many of which had not worked together, facilitating the development of common goals and a unified vision.
- Led evaluation, mapping, and planning for broadband services, which in several communities brought funding and internet connectivity to businesses whose productivity was hampered by inadequate access, and to previously underserved residents, with the attendant benefits in such areas as education, employment, and health outcomes.

Projects listed performed by Ms. Jones under former employment.

MATHEW D. HORN

Director of Municipal Services

MRB group

Former City Manager and municipal operations expert with a strong background in infrastructure planning, strategic development, and community engagement. Extensive experience in municipal budgeting and finance, collaborative service delivery, comprehensive planning, downtown revitalization and economic development.

Municipal consulting background includes internal process auditing, public relations assistance and guidance, and development of local government management capacity, as well as long-term strategic planning for community growth.

Experience

Community Planning/Enhanced Management Capacity – As former municipal consultant for Washington-based local government support services firm, worked closely with the International City-County Managers Association, National League of Cities, and other government leadership associations. Supported community development efforts and developed strategic plans to address service delivery challenges, public works and aging infrastructure, parks and recreation services, and public safety, as well as other critical municipal services for more than 50 clients.

Strategic Development – Engaged with client communities to conduct a range of studies and identify best practices and implement solutions to address challenges and support long-term community sustainability. Developed feasible implementation plans for innovative approaches, based on direct knowledge of municipal operations and unique familiarity with local government fiscal constraints, regulatory requirements, labor impacts, and statutory guidelines.

Regional/Shared Services Approaches – As City Manager, worked to establish collaborative relationships and develop a shared-services approach to municipal and community service needs. Coordinator of data-driven implementation of integrated staffing and program management, including completion of workflow analysis and workload assessment.

Hands-on Municipal Management/Innovative Leadership – Worked directly with municipal officials to implement community goals through strong team leadership and successful management of personnel across departments and disciplines.

Education

BS, Public Administration; Public Management Concentration

Political Science Minor, James Madison University

Professional Affiliations

Credentialed Manager, International City-County Managers Association

Named to 2016-2017 "Top 100 Local Government Influencers"; Engaging Government Leaders

Member, Local Leaders Council, Smart Growth America

Key Projects

Innovation in in Infrastructure Financing

- Utilized public-private partnerships and developed a performance-based contracting model
- Facilitated data-driven facilities and infrastructure analysis, developed detailed scopes of work
- Engaged City Council in infrastructure management processes including finance deliberations and performance contract reviews

- Reduced first-floor vacancies from 50% to less than 15% in just five years
- Facilitated public and business engagement, and established a multi-year, grass roots redevelopment effort for the central business district

Innovation in in Infrastructure Financing

- Utilized public-private partnerships and developed a performance-based contracting model
- Facilitated data-driven facilities and infrastructure analysis, developed detailed scopes of work
- Engaged City Council in infrastructure management processes including finance deliberations and performance contract reviews

Permit and Financial Software Review

- Facilitated conversion of City's financial, planning and permitting software from legacy and proprietary systems to a single source provider with a unified, comprehensive database and open software architecture, reducing customization and update costs
- Coordinated workflow analysis in impacted departments, developed system specifications, facilitated selection and procurement, coordinated deployment, adaptation and personnel training

Comprehensive Plans

- Town of Fayette, NY- Comprehensive Plan
- Town of Lyons, NY- Comprehensive Plan
- Town of Ontario, NY- Comprehensive Plan
- Village of Clyde, NY- Comprehensive Plan
- Village of Geneseo, NY- Comprehensive Plan Update

Economic Development

- Town of Bristol, NH- Economic Development Consulting
- City of Geneva, NY- Economic Development Services
- Livingston County, NY- Economic Development (Econ. Dev. and Tourism Plan)
- Village of Perry, NY- Economic Resilience Plan--New York Main Street
- Village of West Carthage, NY- Economic Resilience Plan
- Canandaigua Local Development Corporation, NY- Economic Development Services/Executive Management
- Geneva Local Development Corporation, NY - Economic Development Services FY2022
- City of Greenville, SC- Land Management Ordinance Update

RICCARDO GIANI

Senior Planning Associate

MRB group

Offers a passion for planning rooted in a desire to see natural and man-made systems form a sustainable and cohesive relationship. Advancement and innovative use of the built environment to provide dynamic solutions to complex issues relating to social, economic, and environment needs.

Knowledgeable of real estate development and planning practices, with the ability to comprehend and solve complex development related issues. Demonstrated proficiency in streamlining processes and creating synergies between historic preservation and economic development.

Experience

Planning and Zoning - Approximately 10 years of planning and zoning experience including over 5 years as Director of Planning and Zoning for the City of Natchez, Mississippi. Provided streamlined and constructive oversight to hundreds of applications involving public hearings and administrative reviews. Instrumental to the implementation of multiple new and revised ordinances, city-issued RFPs and software applications.

Master Planning - Facilitated numerous stakeholder meetings during visioning sessions for a downtown revitalization planning effort, that led to identification of multiple code constraints. Held hearings before the Planning Commission and Board of Alderman to adopt Downtown Revitalization Plan. Utilized the adopted plan to push for code revisions and tax abatement incentives to reduce vacancy in Downtown Natchez.

Code Revision - Due to the update to the existing Comprehensive Plan for the Downtown District, significant rewrite to the City's Development Code was needed. Created a concise and easy-to-read table format. Worked to modernize the City with the revisions of existing and implementations of new codes and processes, including ordinances for the "Go-Cup" district and Mobile Food Vending, a waste collection RFP for the reestablishment of recycling in the community, and the implementation of cloud-based permitting software.

Education

B.S. Urban Planning, Minor in Sustainability, Arizona State University

Professional Affiliations

American Planning Association, member

MICHAEL N'DOLO, CEcD

Director of Economic Development

MRB group

Strategic advisor, executive, and economic development practitioner. Michael is a nationally-recognized expert on economic development trends and programs, and has supported communities in over half of the states in the U.S., across a range of community typography, from diverse, multi-county regions to individual rural villages. With experience in private sector real estate development, Michael brings a unique insight to our client-communities—providing valuable, actionable advice on how best to diversify the local economy, and facilitating communitywide conversations on development.

Education

M.P.A., Maxwell School, Syracuse University

B.A. University of Minnesota, Morris

Professional Affiliations

Certified Economic Developer, International Economic Development Council

New York State Economic Development Council

Experience

Target Industry and Cluster Analysis – Developed and analyzed critical data supporting communities in attraction, expansion, and retention activities for targeted industries, and provided clients with a roadmap toward economic development objectives.

Real Estate Development and Reuse – Supported public and private sector clients in development of feasibility and development/reuse planning analyses to address goals associated with economic productivity of specific, targeted real estate assets. Provided competitiveness analysis and recommended uses and prospects for prospective sites and evaluation of incentives offered.

Economic / Fiscal Impact Analysis – Evaluated specific projects and general sectors for impacts associated with attraction, expansion, and/or retention of key employers and other economic assets. Provided cost-benefit analysis for incentives and other programs.

Key Projects

Economic and Fiscal Impact Studies—Industrial Development Agencies

•Provided expert analysis of the economic and fiscal impacts of potential projects seeking incentive programs from IDAs for over a decade

•Created a standardized cost-benefit analysis model for use by the majority of IDAs across New York State

Comprehensive and Strategic Planning

•Supported development of an Organizational Strategic Plan for the New York State Economic Development Council; encouraging a pivot toward the organization's embracing of integration of traditional and non-traditional economic development approaches

•Developed Comprehensive Economic Development Strategies (CEDS) for North Central Region of New Jersey, GO Virginia Region 8, the Central Texas Council of Governments and other regional organizations.

BRITTON CORBIN, P.E.

Senior Project Manager

MRB group

Senior Civil Engineer with experience in designing and managing large civil infrastructure projects and associated project teams. Areas of expertise includes all aspects of planning, designing, construction oversight, and commissioning of projects up to $200 million. Design experience includes water distribution and wastewater conveyance, civil site design associated with land development, aviation terminal layout and design, airfield pavements, building layout and design, and MEP coordination.

Education

M.S., Civil Engineering, Clemson University, 2002

B.S., Civil Engineering, The Citadel, 2001

Professional License

Professional Engineer:
South Carolina 25068
Georgia PE049748
Florida 95695

Experience

Civil Engineering

Consulting Engineer of Record for commercial, industrial, and municipal projects. Areas of expertise include water and wastewater design as well as civil site design associated with land development. Additional duties include, permitting, project management, client management, billing and oversight of staff engineers.

Project Programming

Extensive knowledge of planning and programming of infrastructure projects, including facilitating design charrettes, preliminary planning, gathering stakeholder input, alternative analysis, cost estimating, and evaluating contract executing strategies. Planning and programming experience includes establishing project requirements, gathering stakeholder input, alternative analysis, and contract execution strategies.

Key Projects

Municipal Site Planning/Design

- South Carolina State Ports Authority, Container Yard Modifications, Charleston, SC (Project Manager)
- South Carolina State Ports Authority, Reefer Facilities- Charleston, SC (Project Manager)
- South Carolina State Ports Authority Columbus Street Terminal Water Service Addition- Charleston, SC (Project Manager, Construction Management)
- South Carolina State Ports Authority, Building 311 Electrical Service- Charleston, SC (Project Manager)
- South Carolina State Ports Authority, Installation of Yard Management System- Charleston, SC (Project Manager)
- South Carolina State Ports Authority, Security Improvements to Georgetown Terminal- Georgetown, SC (Project Manager)

2

Understanding & Approach

MRB group

Project Understanding

The Town of Yemassee is within the heart of South Carolina's Lowcountry, an environment with rich history and diverse ecosystems. Our firm has a strong history within the region working with adjacent communities; we understand how critical this plan will be for the future of the Town and the implications in the region.

Why Plan?

A comprehensive plan is a multi-year road map, designed to support a community in managing growth and development, and ensuring that local government operations are designed to support an overarching community vision.

No matter where you are, communities are experiencing market pressures. In many communities, the pressures are downward—population and investment loss. In more fortunate communities, development pressure means addressing a high level of investor interest and significant demand relative to population growth.

In both cases (and everywhere in between), communities must be intentional. Great places don't happen by accident. A strong comprehensive plan will identify the assets and challenges ahead of your community, and outline a set of strategies to deal with whatever market pressure you are facing.

Comprehensive Plan Pillars

The MRB Group planning approach stands on three critical planning pillars:

- ***A Strong Base of Data:*** A plan that is built on strong, reliable data is already halfway home to achieving its vision. MRB Group invests heavily in demographic and market data sets to provide the community with clarity around market position and demographic trends.

- ***Shaped by Public Engagement:*** Authentic, robust, meaningful public engagement will create plan champions in the community, and make implementation efforts smooth and effective.

- ***A Relentless Focus on Implementation:*** The MRB Group team is practitioner based—which is to say that we have been in decision making seats for most of our careers. We are former local government managers, planners, economic developers, finance officers, and elected officials. With every recommendation, we ask ourselves— "how will the community get this done at the ground level?" Our team of experienced community planners and local government practitioners will facilitate the update of the comprehensive plan by performing the Scope of Services detailed below.

VISION

An authentic but aspirational statement about the ideal condition of the community spanning years into the future.

CORE VALUES

A set of measures by which you will evaluate all future projects, programs, and investments. The community's DNA.

KEY INTIATIVES

Priority policy areas that require the most focus during implementation.

Our Approach

The MRB Group general approach to comprehensive planning leans on the experience of our team who understands the operational, financial, and logistical challenges local governments face. Recommendations are tailored to implementation, providing for the specific needs of the community.

PROJECT CHARTERING	Create a charter to serve as a guide for the project to include: schedule, key milestones, deliverable descriptions, communication plan, and steering committee matrix.
INVENTORY & ANALYSIS	Collect demographic and market data, review recent and other relevant plans, interview key stakeholders, and gain Town leadership perspectives.
PUBLIC ENGAGEMENT	Develop a public engagement plan to include: community surveying, digital/social media platforms, public forums, public events, and an app for instant input.
VISION & VALUES	Identify a unified vision for the future of the Town and identify core values against which leadership can assess future opportunities.
STRATEGIES & KEY INITIATIVES	Develop overarching strategies to address key initiatives identified by the Town.
IMPLEMENTATION STRATEGY	Identify specific policies, programs, and projects that can be initiated in the first five years of the planning horizon, creating initial momentum.
INITIAL DRAFT PLAN	Assemble elements from prior tasks to create a draft plan, host a public forum to showcase plan elements and catalogue any public feedback.
FINAL DRAFT PLAN	Synthesize comments from Town leadership to prepare the final plan for adoption.

Scope of Services

As outlined in the RFP, MRB Group proposes the following Scope of Services.

A. Project Chartering

The successful execution of any planning effort is built upon a shared set of expectations relative to project delivery. The project chartering effort is designed to familiarize the entire project team with the project approach and to gain an agreement amongst all project partners on how to proceed.

Deliverables:

1. Kickoff Meeting: Project chartering will commence with a virtual kickoff meeting of the project stakeholders, including key Town staff, Town Officials and representatives of the MRB project team.

2. Steering Committee: With the help of the Town staff, MRB Group will facilitate the formation of project Steering Committee, if desired by the Town. Town Staff or the selected Steering Committee will be the primary point of contact and recipient of project deliverables.

B. Inventory and Analysis

Our team of local government management professionals will work with Town Staff to compile all relevant documents, past plans, and current data for the community to develop a clear picture of current conditions in the Town of Yemassee.

Deliverables:

1. Planning Foundations Report: Our team will perform a review of the local and regional long-range planning documents mentioned above to develop a picture of congruence with development goals outlined in the Town of Yemassee's current Comprehensive Plan.

C. Public Engagement Session

We will work with Town Staff to identify a convenient, accessible space to schedule one (1) public engagement session with a visioning component. We will work with the Town to advertise the session through multiple mediums so the largest sample of the population is engaged. The information gained at this in-person community meeting will provide us with an expansive data set from which the challenges, issues, opportunities, goals and objectives will be envisioned within a Comprehensive Plan.

Deliverables:

1. Public Forum: MRB Group has developed a broad catalogue of public engagement exercises which we will review with Town staff. At the public engagement session, MRB staff will detail the objectives of the session and engage the public in exercises to solicit feedback from the public.

2. Visioning Session: During the public forum, a visioning session will be conducted, as key stakeholders, town officials, staff, and the general public will be able to voice the most urgent community issues and challenges. At that time the public will be encouraged to come and learn about how the Comprehensive Plan will affect them and how their voice is valuable in the process.

3. Public Engagement Session Report: Included with the Comprehensive Plan and drafts will be a report based on information gained during the public engagement portion of this project. This report will include the main issues and recommendations gathered at the public forum. Each issue and recommendation will be accompanied by an assessment by MRB staff to gauge its merit and applicability.

D. Initial Development of Plan Elements

We will synthesize the recommendations and comments received by Town staff, Town Council, Steering Committee, and the public engagement and visioning sessions, to develop the initial drafts for the Comprehensive Plan.

Deliverables:

1. Comprehensive Plan Draft: Using information and data gained from previous steps, our team will compose a draft plan that complies with the South Carolina Local Government Comprehensive Enabling Act of 1994 and latest legislative requirements. The draft plan will provide a statement of needs, goals, and objectives; implementation strategies; and timelines for the following elements:

- Executive Summary
- Overview and brief history of the Town of Yemassee
- Inventory of existing conditions
- Population
- Economic Development
- Natural Resources
- Cultural Resources
- Community Facilities
- Housing
- Land Use
- Transportation
- Priority Investment
- Resiliency

E. Refining Drafts

Working with the Steering Committee, we will refine the draft plan so that current issues and opportunities are addressed and the Comprehensive Plan paints a vision that reflects the goals and objectives of the community.

Deliverables:

1. Second Draft of Comprehensive Plan: The second draft will be a synthesized version, encapsulating all applicable inputs of data and recommendations. The text, visuals, and data will be organized in a manner that can be understood by planning professionals, as well as the general public.

2. Final Edits: After review of the second draft, any additional revisions to the document will be done and submitted to staff to be reviewed and approved by the Town.

Additional Services

The following items, not included in the above services can be provided on a personnel time-charge basis, but would only be performed upon receipt of your authorization.

A. Adoption support (Visits to Yemassee)

B. Drafting amendments to zoning ordinances

C. Town Council or Commission training

D. Additional public engagement sessions

3 Schedule & Fees

Inventory & Analysis	**Months 1-3**	A deep study of the demographic and market data that will help establish a starting point from which to plan.
Community Visioning	**Months 4-5**	Creating a clear, unified picture of where the community should be ten years into the future.
Key Initiative Development	**Months 6-7**	A series of larger, policy area goals on which the community should focus to accelerate you toward realizing your vision.
Implementation Strategy	**Month 8**	The what, who, and when—what you should do, who should lead the effort, and when should it be achieved.
Adoption	**Months 9-11**	Getting the plan formally on the books and ready for implementation.

Task	Cost
1. Project Chartering	
Kick-off Meeting Steering Committee Formation	$2,285
2. Inventory and Analysis	
Review of all agreements, current land use plans, local tax structure, and any other documents relevant to current conditions Planning Foundations Report	$3,975
3. Public Engagement Session	
Public Forum Visioning Session Public Engagement Sessions Report	$16,390
4. Initial Development of Plan Elements	
Comprehensive Plan Draft	$12,060
5. Refining Drafts	
Second Draft of Comprehensive Plan Final Edits	$5,290
Total Compensation	**$40,000**

The cost figures shown above represent our lump sum amount. Any additional work beyond this fee and outside the scope of this proposal would be reviewed with the Client. MRB Group shall submit monthly statements for services rendered during each invoicing period based on the efforts performed during that period. MRB Group Standard Rates are subject to annual adjustment.

4 Relevant Experience

MRB group

TOWN OF CLOVER, SC

Description

MRB Group has been selected (January 2023) to partner with the Town of Clover to update the Housing and Land Use Elements of the Town of Clover Comprehensive Plan. Our team of experienced community planners and local government practitioners will facilitate the update through tasks that include reviewing conditions and previous planning efforts, organizing public participation, developing the required plan elements, and providing deliverables in tandem with efforts of the Catawba Regional Council of Governments.

Specific services will include:

- Project Chartering- kickoff meetings, steering committee formation
- Inventory and Analysis- planning foundation reports
- Public Engagement Sessions- public forums, charette sessions, public engagements sessions report, regulatory strategy report
- Initial Development of Plan Efforts- housing element draft, land use element draft (including second drafts)
- Delivery and Adoption Support- final edits and presentation to Town Council

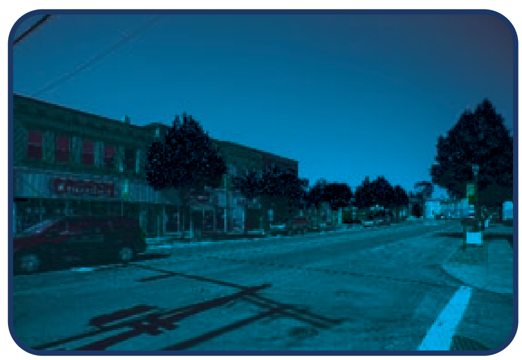
Client Contact

Allison Harvey, Town Administrator
E: aharvey@cloversc.org
P: 803-222-9495

VILLAGE OF HILTON, NY

Description

MRB Group's familiarity and long-standing relationship with the Village of Hilton made our professional staff uniquely qualified to assist in updating the Village's Comprehensive Plan.



Village leadership identified a critical need to update the community's Comprehensive Plan, adopted in the late 1970's. MRB Group's local government services team worked with a special steering committee to design a process for updating the Village's Comprehensive Plan; providing a shared vision for the future of the community.

The Village of Hilton Comprehensive Plan process developed a clear course for Hilton's future. The planning framework consisted of a strong vision and core values supported by realistic principles, goals, and objectives.

A central component of the plan includes targeted area plans – detailed plans for five different locations in the village that the community would like to see re-envisioned. These spaces included neighborhood village mixed-use, trail corridors, infill redevelopment, and streetscape design. Each area plan was featured on a project page with supporting narrative, graphics, description of key elements, and timeline for implementation.

ENVISION HILTON 2030 *(CONTINUED)*

The Village engaged residents throughout the life of the planning process. As part of the community engagement process, the Steering Committee and MRB Group developed a robust Public Participation Plan to ensure community participation in establishing a community vision and long-range plan for all aspects of community development.

The comprehensive plan update process, guided by a diverse representation of the community, and supported by MRB Group's robust planning, engineering, and local government operations expertise, successfully:

- Identified key community stakeholders to ensure strong engagement throughout development of the plan;
- Created a set of feedback loops, including a dedicated project website, interactive community forums, and a community survey specifically designed to support this project;
- Facilitated a community visioning process that identifies a unified, long-range vision for the community, a set of core values to guide decision making, and a series of key area plans to ensure progress toward the community vision;
- Developed a StoryMap – a visual journey of the planning process, targeted area plans, and outcomes.

ONLINE PLAN: www.hiltonny.org

Client Contact

Shari Pierce, Village Administrator
Ph: (585) 392-4144
envisionhilton2030.org

Services

- Comprehensive Plan
- Public Engagement
- Strategic Planning

TOWN OF OVID, NY

MRB Group was selected to assist the Town of Ovid in developing a new Comprehensive Plan for the community. In partnership with Environmental Design and Research (EDR), a firm specializing in waterfront resources, MRB Group continues to work closely with a Steering Committee appointed by the Town Board.

In hopes of addressing a decade-long debate among residents over the proposed use of zoning in the Town, the plan's community outreach revealed a near-even split in public opinion. Ultimately, it was determined that the community was not yet ready to embrace zoning as a means of regulating land use.

MRB Group's clear process path facilitated creation of implementable goals and objectives. Deliverables included public presentations, and a multi-media outreach plan, including a dedicated webpage and communication portal for enhanced participation.

RESULTS

The plan was adopted by the Town in the fall of 2018. The process provided:

- Consensus on community character, and a clear understanding of core values and strengths.
- A vision for the future of Ovid, helping the community attract and encourage development.
- Examination of existing land use, infrastructure capacity, and current challenges, along with recommendations for:
  - -a mechanism for notification to Town personnel regarding proposed development
  - -attention to the Town's most significant assets (waterfronts along both Cayuga Lake and Seneca Lake)
  - -support for Smart Growth principles
- Recommendations to explore local government initiatives and potential external funding resources to encourage community investment.
- A concise, understandable, dynamic Comprehensive Plan document – that will serve as a "litmus test" for Town and Planning Board decision-making, and a marketing tool for future development.

Client Contact

Joseph Borst,
Town Councilman
Ph: (607) 882-1102
www.townofovidcomprehen-siveplan.org

CITY OF HILLSBORO, TX

Description

Located in the Heart of Texas, the City of Hillsboro continues to grow. Its location on the I-35 corridor and proximity to larger cities and amenities makes Hillsboro sought after by people looking to move away from larger metropolitan areas. Because the City recognized the importance of being proactive in managing the impact of this new growth, it partnered with MRB Group to write and facilitate the City's first Strategic Plan.

MRB led a planning effort that reflected a community-driven process which was the backbone for developing the Plan and, ultimately, the actions that the City will use to carry it forward. Using the community's input, MRB worked with Council and Staff Leadership to develop a consensus on a three-to-five-year Plan that establishes the purpose of the City, its vision for the future, how it does business, and citywide goals.

- *Community Snapshot*. MRB conducted a **market analysis** for the City to determine current economic conditions and a **subsequent workshop** with Staff Leadership to discuss current issues that they encounter during day-to-day operations. Finally, they developed a cohesive direction as a leadership team.

- *Community Survey and Public Meetings*. The Team distributed a **community survey** allowing citizens to provide feedback on various topics, including their vision for Hillsboro, their values, and the strengths and weaknesses of the City. **The purpose of this meeting was to communicate the strategic planning process and receive input from the community.** In addition, the Team held a second public meeting to report the results from the survey and the first meeting and provide another opportunity for their input.

- *Council and Staff Leadership Workshops*. MRB facilitated two workshops with the Council and Staff Leadership where the City reviewed the input from the community and worked together to develop a **Vision and Mission Statement**, identify **Core Values,** and discuss **Goals**, **Strategies**, and **Actions**. The City also collaborated to **prioritize and develop a consensus** on the Plan's strategies and actions.

The City adopted the Plan on June 21, 2022.

Client Contact

Megan Henderson, City Manager
P: 254-582-3271

Services

- Targeted Market Analysis
- Public Engagement
- Strategic Planning

CITY OF BEAUFORT, SC

DESCRIPTION

The City of Beaufort offers residents an attractive quality of life, and a vibrant commercial landscape within a notable historical district. A magnet for families, military, and retirees alike, Beaufort is a noted destination for business, living, and recreation, and the operations of their municipal services supports this continued appeal.

With the loss of the Community Development Director, the City wanted to take a measured approach to selecting the right candidate, but did not have the luxury of losing the capacity of service, as there were also other vacancies in the department. MRB Group was able to offer a solution in filling this critical staff role of Community Development Director while also supporting a thorough search for qualified applicants to the positions of both the Director and Senior Planner.

Fulfilling a contract for 'Interim Planning Services,' one of MRB Group's Senior Planning Associates acts as the Administrator, performing duties as laid out in the Beaufort City Code and supporting normal day-to-day operations of the Planning Department which includes, but is not limited to:

- Implementation of key long-range planning principles, goals, and objectives in the City's Civic Master Plan, Strategic Plan, and Comprehensive Plan.
- Coordinating with the daily onsite department supervisor.
- Acting as Administrator on pending and incoming projects.
- Reviewing staff reports for technical accuracy.
- Attend committee, board, and commission meetings either virtually or in person as required, keeping the City Manager and Deputy fully informed of any recommendations.

Client Contact

Reece Bertholf,
Deputy City Manager
City of Beaufort
Ph: 843-379-7525

Services

- Interim Administrative Duties
- Transition Assistance

March 28, 2023

Matthew Garnes, Town Administrator
Town of Yemassee
101 Town Circle
Yemassee, SC 29945

RE: TOWN OF YEMASSEE – PROJECT SCHEDULE
MRB GROUP PROJECT NO. 3950.23005.000

Mr. Garnes:

To set clear expectations and ensure that the project stays on track, this letter includes a project schedule. The draft schedule is as follows below.

Project Step	Deliverable(s)	Deadline Date
Kick-off Meeting	Project Schedule	4/3/23
Inventory and Analysis	Planning Foundations Report	5/31/23
Public Engagement	Public Engagement	July 2023 (Exact date TBD)
Analysis of Public Engagement	Analysis of Charrette Sessions	August 2023
Initial Draft of Plan Elements	Draft Plan Elements	September – November 2023
Refining of Plan Elements	Second Draft of Plan Elements	November – December 2023
Delivery and Adoption Support	Final Plan Elements	January – February 2024

MRB Group understands that the development of these critical documents takes careful planning, review and consideration. The deadlines and dates are subject to change, but only upon a mutual agreement between the MRB Group Project Manager and Town Staff.

If you have any questions or comments about the project schedule or any other information, please reach out to us.

Sincerely,

Riccardo Giani
Senior Planning Associate

c: Heather Simmons Jones – Director of Southeast Operations