Subdivision Application submitted by Jessica Vick, Roberts Civil Engineering, LLC., on behalf of Landmark 24 Homes of Savannah, LLC., for PIN # 7-0906-01-031(Miller Park Circle) located in a P-R-M (Planned Residential Multifamily) Zoning District for a Final Plat of a Major Subdivision (Rice Creek Tract C-1 Phase V) for the purpose of Single-Family Homes

Issue/Item: Subdivision Application submitted by Jessica Vick, Roberts Civil Engineering, LLC., on behalf of Landmark 24 Homes of Savannah, LLC., for PIN # 7-0906-01-031(Miller Park Circle) located in a P-R-M (Planned Residential Multifamily) Zoning District for a Final Plat of a Major Subdivision (Rice Creek Tract C-1 Phase V) for the purpose of Single-Family Homes.

Background: This is the Final Plat Submittal for Rice Creek Tract C-1 Phase V. Phase V includes thirty-two (32) single-family lots on approximately 6.94 acres. The lots will be accessed off of Marsh Salt Lane and Sea Oats Drive. Phase V is served by City water and sanitary sewer utilities.

Facts and Findings: The construction of this phase complies with the City of Port Wentworth Development Standards, and all requirements of the Subdivision Ordinances have been met. The project area is in the Suburban character area according to the Port Wentworth 2021 - 2041 Comprehensive Plan. The project is located in Council District 1.

Funding: N/A

Recommendation: The Planning Commission will hear this application on Monday, April 10, 2023 at 3:30 P.M. **/ UPDATE: THE PLANNING COMMISSION VOTED UNANIMOUSLY TO APPROVE THE APPLICATION.**

ATTACHMENTS:

- RICE CREEK PH V 7-0906-01-031 FINAL PLAT 2023-Application (PDF)
- RICE CREEK PH V 7-0906-01-031 FINAL PLAT 2023-Timeline (DOCX)

DocuSign Envelope ID: ED35DF93-DF9D-4377-BF69-85FF6FDBDDBC

SUBDIVISION APPLICATION FORM
FOR THE
CITY OF PORT WENTWORTH

RECEIVED
FEB 13 2023
BY: SCook

Application Form Required

This application form is to accompany **all** subdivisions submitted for Port Wentworth Planning Commission review and is to be filled out in its **entirety**. Plats/subdivisions not accompanied by this application will not be accepted for processing. All subdivisions with their completed applications must be received by the City of Port Wentworth at least 20 business days prior to the Planning Commission meeting at which they are to be considered. Revisions to a subdivision under review by the Port Wentworth Planning Commission must be received 10 business days prior to the Port Wentworth Planning Commission at which each subdivision is scheduled to be heard.

Subdivision Name: ~~Rice Creek Phase V~~ Rice Creek Tract C-1 Phase V

Location: 0 Miller Park Circle, Port Wentworth, GA 31407

Number of Lots: 32 Number of Acres: 5.86

PIN #: 70906 01031 Current Zoning: PUD-M

Type of Subdivision: (Check applicable blanks from each column)

A.
- ____ Sketch Plan
- ____ Master Plan
- ____ Preliminary Plat
- ✓ Final Plat
- ____ Revision to a Recorded Plat

B.
- ✓ Major Subdivision (4 or more lots or a new road)
- ____ Minor Subdivision (3 or less lots & no new road)

Purpose of Subdivision:

- ✓ Single-Family
- ____ Multi-Family
- ____ Retail
- ____ Other Business
- ____ Industrial
- ____ Institutional
- ____ Other
- ____ Sign

Variances: (List all variances being requested)

None

DocuSign Envelope ID: ED35DF93-DF9D-4377-BF69-85FF6FDBDDBC

Georgia DOT Review

In all applications in which property being subdivided lies along a State Highway or access is needed from a State Highway, all applicants are required to submit a plat to the Georgia Department of Transportation for review. The subdivision application will not be considered by the Port Wentworth Planning Commission until the Georgia Department of Transportation has commented on the subdivision. The comments must accompany the application.

Previous Submittal

Has this tract of land being proposed for subdividing been submitted to the Port Wentworth Planning Commission under a different subdivision name?

Yes _____ No ✓

If yes, what name? _____

Date Submitted: _____ PWPC File No: _____

Number of Required Prints

All submittals, regardless of type, shall include fifteen (15) prints. **Final Plats must include a copy of the plat scanned to a CD along with the fifteen (15) printed copies. Stamp must be in contrasting ink.**

Statements as to Covenants/Deed Restrictions: (Check One)

_____ A copy of all existing deed restrictions or subdivision covenants applicable to this property are attached.

✓ There are no added restrictions or subdivision covenants on this property.

Contact Person (s): (Type or Print Legibly)

Engineer/Surveyor: Roberts Civil Engineering - Jessica Vick, P.E.

Address: 6001 Chatham Center Dr., Suite 255 Savannah, GA Zip Code: 31405

Phone #: 912-298-7006 Fax #: _____

Owner: Landmark 24 Homes of Savannah, LLC - Cole Chenowith

Address: 2702 Whatley Ave, Savannah, GA Zip Code: 31404

Phone #: 912-925-3440 Fax #: _____

Date of Submittal: 02/08/2023

DocuSign Envelope ID: ED35DF93-DF9D-4377-BF69-85FF6FDBDDBC

Please list all property owners that are adjacent to the parcel to be subdivided including those across the public right-of-way:

Please see the attached list

Certifications

1. I hereby certify that this proposed subdivision/plan does not violate any covenants or deed restrictions currently in effect for the property being subdivided.

2. I hereby certify that all taxes applicable to this property have been paid and that there are no delinquent taxes outstanding.

3. I hereby certify that I am the owner of the property being proposed for subdivision.

4. I hereby certify that all the information pertained in this application is true and correct.

DocuSigned by:
Cole Chenowith
134762830A304D3...
Signature of Owner

Comments: Place any pertinent comments you wish to make in the following space:

Submit this form along with the proposed subdivision and any accompanying information to:

CITY OF PORT WENTWORTH
7306 HIGHWAY 21, SUITE 301
PORT WENTWORTH, GEORGIA 31407

CITY OF PORT WENTWORTH
(912) 964-4379

REC#: 00389256 2/15/2023 1:56 PM
OPER: KS TERM: 055
REF#: 001338

TRAN: 112.0000 BLDG PERMIT
230083 1,921.00CR
LANDMARK 24 HOMES OF SAVANNAH
7-0906-01-031
I-SUBDIV 1,921.00CR

TENDERED: 1,921.00 CHECK
APPLIED: 1,921.00-

CHANGE: 0.00

WWW.CITYOFPORTWENTWORTH.COM

CITY OF PORT WENTWORTH
(912) 964-4379

REC#: 00389258 2/15/2023 1:58 PM
OPER: KS TERM: 055
REF#: 1406

TRAN: 112.0000 BLDG PERMIT
230083 50.00CR
LANDMARK 24 HOMES OF SAVANNAH
7-0906-01-031
I-SUBDIV 50.00CR

TENDERED: 50.00 CHECK
APPLIED: 50.00-

CHANGE: 0.00

WWW.CITYOFPORTWENTWORTH.COM

Adjacent Property Owners Within 250 Feet of the Project Property Lines

OWNER NAME	ADDRESS	PIN #
RICE CREEK INVESTORS NO 2 LLC	15 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16008
RICE CREEK INVESTORS NO 2 LLC	17 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16009
RICE CREEK INVESTORS NO 2 LLC	38 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16030
RICE CREEK INVESTORS NO 2 LLC	40 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16031
RICE CREEK INVESTORS NO 2 LLC	42 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16032
RICE CREEK INVESTORS NO 2 LLC	44 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16033
RICE CREEK INVESTORS NO 2 LLC	46 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16034
RICE CREEK INVESTORS NO 2 LLC	48 Marsh Salt Ln, PORT WENTWORTH, GA	70906C16035
DONNA EDWARDS, TRUSTEE, OR HER SUCCESSOR	87 BURNT OAK RD, PORT WENTWORTH, GA	70906C11031
KELLY BEULAH M.	92 BURNT OAK RD, PORT WENTWORTH, GA	70906C11051
RICE CREEK INVESTORS NO 2 LLC	94 BURNT OAK RD, PORT WENTWORTH, GA	70906C11050
HYMAN BRUCE MARTIN HYMAN NATALIE JEAN	96 BURNT OAK RD, PORT WENTWORTH, GA	70906C11049
FAMBLE WARREN & HUNTER TERADESHIA M	98 BURNT OAK RD, PORT WENTWORTH, GA	70906C11048
GARDENHIRE CANTON	100 BURNT OAK RD, PORT WENTWORTH, GA	70906C11047
PHILADELPHIA DENESHEA DANIELLE	102 BURNT OAK RD, PORT WENTWORTH, GA	70906C11046
BLUNT, SR BERNARD E. & BLUNT CYNTHIA B.	104 BURNT OAK RD, PORT WENTWORTH, GA	70906C11045
READY JAMECIA	106 BURNT OAK RD, PORT WENTWORTH, GA	70906C11044
PATTEN ZACHARY AARON & PATTEN CRYSTAL MICHELLE	108 BURNT OAK RD, PORT WENTWORTH, GA	70906C11043
JOHNSON JORDAN CHRISTOPHER & JOHNSON SARA EMILY	4 CORONEDO LANE, PORT WENTWORTH, GA	70906C11024
STARLING KENDRIC R.	6 CORONEDO LANE, PORT WENTWORTH, GA	70906C11025
BOPP JAMIE L & JAMIE LYNN *	7 CORONEDO LANE, PORT WENTWORTH, GA	70906C10014
DIXON VERONICA L	8 CORONEDO LANE, PORT WENTWORTH, GA	70906C11026
BOSTICK & BING ANTONIO & WHITNEY*	9 CORONEDO LANE, PORT WENTWORTH, GA	70906C10015
WARE PHILLIP	10 CORONEDO LANE, PORT WENTWORTH, GA	70906C11027
CAMPFIELD SAM II	11 CORONEDO LANE, PORT WENTWORTH, GA	70906C10016
LANDON JARVIS J	12 CORONEDO LANE, PORT WENTWORTH, GA	70906C11028
HERNDON JOHN HERNDON ANNA D.	13 CORONEDO LANE, PORT WENTWORTH, GA	70906C10017
TART JONATHAN LORENZO & FLOR M*	15 CORONEDO LANE, PORT WENTWORTH, GA	70906C10018

RENE RONALD & RENE MARIE CLAUDE	89 BURNT OAK RD, PORT WENTWORTH, GA	70906C11032
RAMOS JOSE E. & ALICEA-SOTO EDGARDO J.	91 BURNT OAK RD, PORT WENTWORTH, GA	70906C11033
ANCRUM DERRICK T.	93 BURNT OAK RD, PORT WENTWORTH, GA	70906C11034
GRAVES JENNIFER A.	95 BURNT OAK RD, PORT WENTWORTH, GA	70906C11035
COOPER DOMONICK L.	97 BURNT OAK RD, PORT WENTWORTH, GA	70906C11036
BRYANT JAMORI R.	99 BURNT OAK RD, PORT WENTWORTH, GA	70906C11037
GRACE AUNDRELL	101 BURNT OAK RD, PORT WENTWORTH, GA	70906C11038
SHELLMAN FELICIA	103 BURNT OAK RD, PORT WENTWORTH, GA	70906C11039
RICHEY LOREAL TIERA	105 BURNT OAK RD, PORT WENTWORTH, GA	70906C11040
LOPEZ JOMAR ACEVEDO	107 BURNT OAK RD, PORT WENTWORTH, GA	70906C11041
HUBERT KRISTEN NICOLE* & HUBERT DANIEL P.	109 BURNT OAK RD, PORT WENTWORTH, GA	70906C11042
RICE CREEK INVESTORS NO 7 LLC	0 Miller Park Circle, Port Wentworth, GA 31407	70906 01031
ROBERTS-SMITH LOUKISHA M	15 HERITAGE RD, Port Wentworth, GA 31407	70906C15015
BRISBON LASHAWN F	10 HERITAGE RD, Port Wentworth, GA 31407	70906C10004
BROWN GLORIA G	12 HERITAGE RD, Port Wentworth, GA 31407	70906C10003
BURNETT CYNTHIA R	14 HERITAGE RD, Port Wentworth, GA 31407	70906C10002
DAVIS CONSWEULO	16 HERITAGE RD, Port Wentworth, GA 31407	70906C10001
WALLACE & WALLACE-MILSON KENNETH & PHYLL	121 MILLER PARK CIR, PORT WENTWORTH, GA 31407	70906C09003
SAMS DARNIKI AISHA & JAMES	123 MILLER PARK CIR, PORT WENTWORTH, GA 31407	70906C09004
BAILEY DOUGLAS W. & BURGOA MELANIE F.	125 MILLER PARK CIR, PORT WENTWORTH, GA 31407	70906C09005
SCOTT DENISE PINCKNEY	127 MILLER PARK CIR, PORT WENTWORTH, GA 31407	70906C09006
BING PHILLIP REID	129 MILLER PARK CIR, PORT WENTWORTH, GA 31407	70906C09007

Project Timeline

Project Number: 230083

Project Name: RICE CREEK PH V 7-0906-01-031 FINAL PLAT 2023

Applicant / Engineer: Roberts Civil Engineering

Owner: Landmark 24 Homes of Savannah

City Review Engineer: City Staff – Omar Senati

- 02/13/2023 – Application received: Incomplete(sc)
- 02/14/2023 – Email sent to Jessica Vick with missing items-(3) sets of Final Plat Plans & $50 admin fee not included with application. (sc)
- 02/14/2023 – Email from Kennon Strowd acknowledging Plans & check to be delivered. (sc)
- 2/15/2023 – received plans and check [S.C.]
- 2/14/2023 – sent email to Omar that we needed plans reviewed. [S.C.]
- 2/22/2023 – sent email to Omar about when will review plans [M.E.]
- 3/1/2023 – sent email to Omar about when will review plans [M.E.]
- 3/13/2023 – Omar reviewed plans. [M.E.]
- 3/14/2023 – sent letter to Applicant for review notes. Picked up by Roberts Civil Engineering. [M.E.]
- 3/22/2023 – received resubmittal. Reviewed for completeness. [M.E.]
- 3/24/2023 – sent email to Savannah Kelly, Roberts Civil, stating we needed the original signed maintenance bonds and that this application would be scheduled for the April agendas. [M.E].
- 3/24/2023 – Public Hearing notice letters mailed [M.E.]
- 3/26/2023 – Public Hearing notice published in the Savannah Morning News. [M.E.]
- 4/10/2023 – The Planning Commission voted unanimously to approve the application.

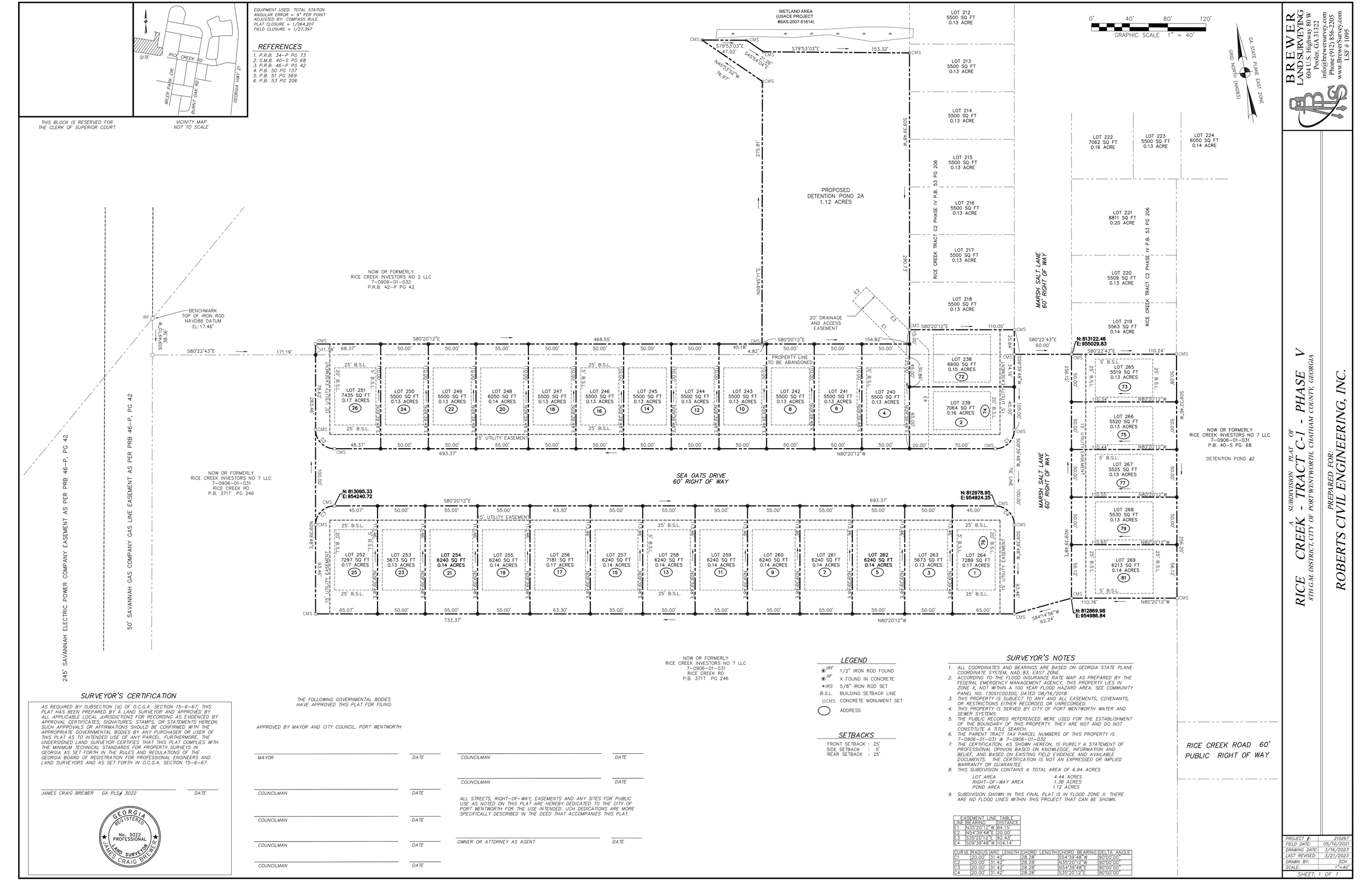
THIS BLOCK IS RESERVED FOR THE CLERK OF SUPERIOR COURT

VICINITY MAP
NOT TO SCALE

EQUIPMENT USED: TOTAL STATION
ANGULAR ERROR = 9" PER POINT
ADJUSTED BY: COMPASS RULE
PLAT CLOSURE = 1/264,207
FIELD CLOSURE = 1/27,397

REFERENCES

1. P.R.B. 34-P PG 73
2. S.M.B. 40-S PG 68
3. P.R.B. 46-P PG 42
4. P.B. 50 PG 137
5. P.B. 51 PG 569
6. P.B. 53 PG 206



SURVEYOR'S CERTIFICATION

AS REQUIRED BY SUBSECTION (d) OF O.C.G.A. SECTION 15-6-67, THIS PLAT HAS BEEN PREPARED BY A LAND SURVEYOR AND APPROVED BY ALL APPLICABLE LOCAL JURISDICTIONS FOR RECORDING AS EVIDENCED BY APPROVAL CERTIFICATES, SIGNATURES, STAMPS, OR STATEMENTS HEREON. SUCH APPROVALS OR AFFIRMATIONS SHOULD BE CONFIRMED WITH THE APPROPRIATE GOVERNMENTAL BODIES BY ANY PURCHASER OR USER OF THIS PLAT AS TO INTENDED USE OF ANY PARCEL. FURTHERMORE, THE UNDERSIGNED LAND SURVEYOR CERTIFIES THAT THIS PLAT COMPLIES WITH THE MINIMUM TECHNICAL STANDARDS FOR PROPERTY SURVEYS IN GEORGIA AS SET FORTH IN THE RULES AND REGULATIONS OF THE GEORGIA BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS AND AS SET FORTH IN O.C.G.A. SECTION 15-6-67.

JAMES CRAIG BREWER GA PLS# 3022 — DATE

GEORGIA REGISTERED No. 3022 PROFESSIONAL LAND SURVEYOR JAMES CRAIG BREWER

THE FOLLOWING GOVERNMENTAL BODIES HAVE APPROVED THIS PLAT FOR FILING:

APPROVED BY MAYOR AND CITY COUNCIL, PORT WENTWORTH

MAYOR — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

COUNCILMAN — DATE

ALL STREETS, RIGHT-OF-WAY, EASEMENTS AND ANY SITES FOR PUBLIC USE AS NOTED ON THIS PLAT ARE HEREBY DEDICATED TO THE CITY OF PORT WENTWORTH FOR THE USE INTENDED. UCH DEDICATIONS ARE MORE SPECIFICALLY DESCRIBED IN THE DEED THAT ACCOMPANIES THIS PLAT.

OWNER OR ATTORNEY AS AGENT — DATE

LEGEND

- IRF — 1/2" IRON ROD FOUND
- XF — X FOUND IN CONCRETE
- IRS — 5/8" IRON ROD SET
- B.S.L. — BUILDING SETBACK LINE
- CMS — CONCRETE MONUMENT SET
- ADDRESS

SETBACKS

FRONT SETBACK : 25'
SIDE SETBACK : 5'
REAR SETBACK : 25'

SURVEYOR'S NOTES

1. ALL COORDINATES AND BEARINGS ARE BASED ON GEORGIA STATE PLANE COORDINATE SYSTEM, NAD 83, EAST ZONE.
2. ACCORDING TO THE FLOOD INSURANCE RATE MAP AS PREPARED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY, THIS PROPERTY LIES IN ZONE X, NOT WITHIN A 100 YEAR FLOOD HAZARD AREA. SEE COMMUNITY PANEL NO. 13051C0030G, DATED 08/16/2018.
3. THIS PROPERTY IS SUBJECT TO ANY AND ALL EASEMENTS, COVENANTS, OR RESTRICTIONS EITHER RECORDED OR UNRECORDED.
4. THIS PROPERTY IS SERVED BY CITY OF PORT WENTWORTH WATER AND SEWER SYSTEMS.
5. THE PUBLIC RECORDS REFERENCED WERE USED FOR THE ESTABLISHMENT OF THE BOUNDARY OF THIS PROPERTY. THEY ARE NOT AND DO NOT CONSTITUTE A TITLE SEARCH.
6. THE PARENT TRACT TAX PARCEL NUMBERS OF THIS PROPERTY IS 7-0906-01-031 & 7-0906-01-032
7. THE CERTIFICATION, AS SHOWN HEREON, IS PURELY A STATEMENT OF PROFESSIONAL OPINION BASED ON KNOWLEDGE, INFORMATION AND BELIEF, AND BASED ON EXISTING FIELD EVIDENCE AND AVAILABLE DOCUMENTS. THE CERTIFICATION IS NOT AN EXPRESSED OR IMPLIED WARRANTY OR GUARANTEE.
8. THIS SUBDIVISION CONTAINS A TOTAL AREA OF 6.94 ACRES

LOT AREA	4.44 ACRES
RIGHT-OF-WAY AREA	1.38 ACRES
POND AREA	1.12 ACRES

9. SUBDIVISION SHOWN IN THIS FINAL PLAT IS IN FLOOD ZONE X. THERE ARE NO FLOOD LINES WITHIN THIS PROJECT THAT CAN BE SHOWN.

EASEMENT LINE TABLE		
LINE	BEARING	DISTANCE
E1	N35°20'12"W	84.15'
E2	N54°39'48"E	20.00'
E3	S35°20'12"E	92.43'
E4	S09°39'48"W	104.14'

CURVE TABLE					
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	20.00'	31.42'	28.28'	S54°39'48"W	90°00'00"
C2	20.00'	31.42'	28.28'	N35°20'12"W	90°00'00"
C3	20.00'	31.42'	28.28'	N54°39'48"E	90°00'00"
C4	20.00'	31.42'	28.28'	S35°20'12"E	90°00'00"

RICE CREEK ROAD 60'
PUBLIC RIGHT OF WAY

BREWER LANDSURVEYING
604 U.S. Highway 80 W
Pooler, GA 31322
info@brewersurvey.com
Phone (912) 856-2205
www.BrewerSurvey.com
LSF # 1095

A SUBDIVISION PLAT OF
RICE CREEK - TRACT C-1 - PHASE V
8TH G.M. DISTRICT, CITY OF PORT WENTWORTH, CHATHAM COUNTY, GEORGIA

PREPARED FOR:
ROBERTS CIVIL ENGINEERING, INC.

PROJECT #:	210267
FIELD DATE:	05/10/2021
DRAWING DATE:	3/16/2023
LAST REVISED:	3/21/2023
DRAWN BY:	SCH
SCALE:	1"=40'

SHEET: 1 OF 1

Lighting Services Agreement

Georgia Power

Customer Legal Name RICE CREEK INVESTORS NO2 LLC DBA

Service Address 02 BURNT OAK RD PORT WENTWORTH GA 31407 County Chatham - GA

Mailing Address 2702 WHATLEY AVE STE B1 SAVANNAH GA 31404

Email wseyle@landmark24.com Tel # 912-210-0569 Alt Tel #

Tax ID# 3803 Business Description Rice Creek Phase 5

Existing Customer Yes ☑ No ☐ If Yes (and if possible), does customer want the Service added to an existing account? Yes ☑ No ☐ If Yes, which Account Number? 67077-98003

Selected Components

Action	Qty	Wattage	Type	Description
INS	11	80	LED	Area

Service Cost ($)	Regulated Cost ($)*	Monthly Cost ($)*
$310.64	$29.92	$340.56

Term (Months)	24

* The actual Regulated Cost will be calculated using the tariffs approved by Georgia Public Service Commission at the time of billing. The estimate is based on Summer Rates in effect at the time of this proposal. Excludes applicable sales tax.

Project Notes:

Customer agrees to this Lighting Services Agreement with Georgia Power Company under the attached terms and conditions and authorizes all actions noted on this agreement.

Customer also agrees to allow removal of existing lights. Yes ☐ N/A ☐

Type	Customer	Tariff	Content
NESC	Non-Gov	EOL	

Pre-Payment ($)
$26,740.00

Customer recognizes that the individual signing this Agreement on its behalf has authority to do so.

Customer Authorization	Georgia Power Authorization
Signature: Cole Chenowith	**Signature:**
Print Name: Cole Chenowith	**Print Name:** Brian Rose
Print Title: Dev. Project Manager	**Print Title:** Account Exec
Date: 2/22/23	**Date:** 2/22/23

TERMS and CONDITIONS *(Lighting - Non-Governmental Service)*

1. **Agreement Scope.** This Lighting Services Agreement (**"Agreement"**) establishes the terms and conditions under which Georgia Power Company (**"GPC"**) will provide lighting and related service (collectively, the **"Service"**) to the customer identified on Page 1 (**"Customer"**) at the Service Address shown on Page 1 (the **"Premises"**). GPC may install, update, modify, or replace any GPC-owned pole, base, wiring, conduit, fixture, control, equipment, device, or related item at the Premises (collectively, **"GPC Assets"**) for any reason related to the Service or to use of GPC Assets.

2. **Term and Termination.** The initial Agreement term is stated on Page 1, calculated from the date of the first bill. After the initial term, this Agreement automatically renews on a month-to-month basis until terminated by either party by providing written notice of intent to terminate to the other party (in accordance with the notice provisions of the *Miscellaneous* section below) at least 30 days before the desired termination date. The initial term and any renewal term or terms are collectively the **"Term."**

3. **Intent and Title.** This Agreement governs GPC's provision of the Service to Customer and is not a sale, lease, or licensing of goods, equipment, property, or assets of any kind. GPC retains the sole and exclusive right, title, and interest in and to all GPC Assets. Customer acknowledges that GPC Assets, although attached to real property, always will remain the exclusive personal property of GPC and that GPC may remove GPC Assets upon Agreement termination. **GPC makes no representation or warranty regarding treatment of this transaction by the Internal Revenue Service or the status of this transaction under any federal or state tax law. Customer enters into this Agreement in sole reliance upon its own advisors.**

4. **Payment.** GPC will invoice Customer monthly for the Monthly Cost as described on Page 1. The Service Cost portion of the Monthly Cost will renew at the amount shown on Page 1, but the Regulated Cost portion will be determined by the applicable Georgia Public Service Commission-approved tariff at the time of billing. Customer agrees to pay the total amount billed in full by the invoice due date. If a balance is outstanding past the due date, Customer agrees to pay a 1.5% late fee on the unpaid balance and acknowledges that GPC may require Customer to pay a deposit of up to two times the Estimated Monthly Charge in order to continue Service. If applicable, Customer must provide a copy of its Georgia sales tax exemption certificate. Customer must pay costs associated with any Customer-initiated change to the Service after the date of this Agreement.

5. **Premises Activity.** Customer hereby grants to GPC and its contractors, agents, and representatives the right and license to enter the Premises at any time to perform any activity related to the Service or to GPC's use of the GPC Assets, including the right to access the Premises with vehicles, GPC Assets, or other tools or equipment, and to survey, dig, or excavate, in order to: (i) install and connect GPC Assets, provide Service, or provide or install any other service; (ii) inspect, maintain, test, replace, repair, disconnect, or remove GPC Assets; (iii) install additional equipment or devices on GPC Assets; or (iv) conduct any other activity reasonably related to the Service or GPC Assets (collectively, **"GPC Activity"**). Customer represents or warrants that it has the right to permit GPC to provide the Service and to perform the GPC Activity upon the Premises and, if applicable, has obtained express written authority and required permission from all Premises owners, and any other person or entity with rights in the Premises, to enter into this Agreement and to authorize the GPC Activity and the Service.

6. **Installation and Underground Work.** Customer recognizes that the Service requires installation of GPC Assets. Customer warrants or covenants that: (i) the Premises' final grade will vary no more than six inches from the grade existing at the time of installation; and (ii) if applicable and required for proper installation, Premises property lines will be clearly marked before installation.

   A. **Customer Work.** If GPC, upon Customer's request, allows Customer, itself or through a third party, to perform any activity related to installation of GPC Assets (including trenching), Customer warrants or covenants that the work will meet GPC's installation specifications (which GPC will provide to Customer and which are incorporated by this reference). Customer must provide GPC at least 10 days' prior written notice of its schedule for the work, so that GPC can schedule GPC's installation work promptly thereafter. Customer will be responsible for any additional costs arising from non-compliance with GPC's specifications, Customer's failure to complete Customer's work by the agreed completion date, or failure to provide GPC timely notice of any schedule change.

   B. **Underground Facility/Obstruction Not Subject to Dig Law.** Because GPC Activity may require excavation not subject to the Georgia Utility Facility Protection Act (O.C.G.A. §§25-9-1 – 25-9-13) **("Dig Law"), Customer must mark any private utility or facility (e.g., gas/water/sewer line; irrigation facility; fiber/data/communication line) or other underground obstruction at the Premises that is not subject to the Dig Law.** If GPC causes or incurs damage due to Customer's failure to mark a private facility or obstruction before GPC commences GPC Activity, Customer is responsible for all damages and any loss or damage resulting from any such delay.

   C. **Unforeseen Condition.** The estimated charges shown on Page 1 include no allowance for subsurface rock, wetland, underground stream, buried waste, unsuitable soil, underground obstruction, archeological artifact, burial ground, threatened or endangered species, hazardous substance, or similar condition **("Unforeseen Condition").** If GPC encounters an Unforeseen Condition in connection with any GPC Activity, GPC, in its sole discretion, may stop all GPC Activity until Customer either remedies the condition or agrees to reimburse all GPC costs arising from the condition. Customer is responsible for all costs of modification or change to GPC Assets requested by Customer or dictated by an Unforeseen Condition or circumstance outside GPC's control.

7. **GPC Asset Protection and Damage.** Throughout the Term, in the event of any work or digging near GPC Assets, Customer (or any person or entity working on Customer's behalf) must: (i) provide notices and locate requests to the Georgia Utilities Protection Center (**"UPC"**) and other utility owners or operators as required by the then-current Dig Law; (ii) coordinate with the UPC and any utility facility owner/operator as required by the Dig Law; and (iii) comply with the High-voltage Safety Act (O.C.G.A. §§46-3-30 -- 46-3-40). As between Customer and GPC, Customer is responsible for any damage arising from failure to comply with applicable law or for damage to GPC Assets caused by anyone other than GPC or a GPC contractor, agent, or representative.

8. **Pole Attachments.** Nothing in this Agreement conveys to Customer any right to attach or affix anything to any GPC Asset. Customer agrees that it will not, and will not permit others to, rearrange, disconnect, remove, relocate, repair, alter, tamper with, or otherwise interfere with any GPC Asset. If Customer desires to attach or affix anything to GPC Assets, Customer must first obtain GPC's written consent. Customer may call GPC Lighting and Smart Services business unit at 1-888-660-5890 to request consent.

9. **Interruption of Service.** Customer understands that Service is provided on an "as is" and "as available" basis and may be interrupted. If there is a Service interruption, Customer must notify GPC. Following notice, GPC will restore Service, at no cost to Customer. Customer may notify GPC by either calling 1-888-660-5890 or by reporting online at: https://www.georgiapower.com/community/outages-and-stormcenter/power-outage-overview/street-light-outage.html.

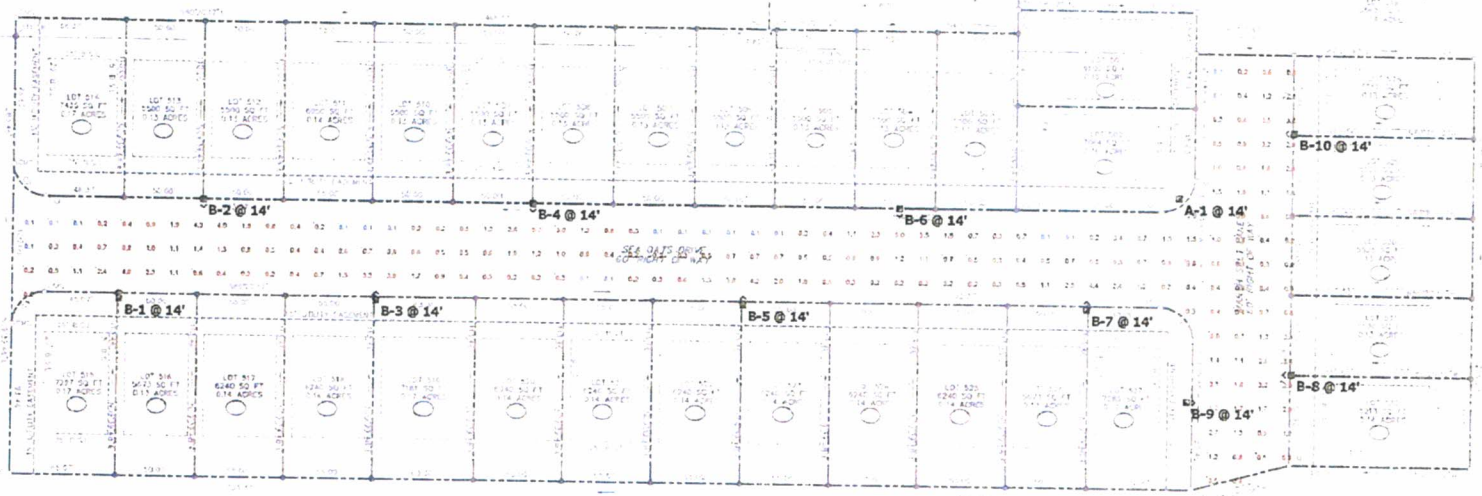
10. **Disclaimer; Damages. GPC makes no covenant, warranty, or representation of any kind (including warranty of fitness for a particular purpose, merchantability, or non-infringement) regarding Service, GPC Assets, or any GPC Activity.** Customer acknowledges that, due to the unique characteristics of the Premises, Customer's needs, or selection of GPC Assets, the Service may not follow IESNA guidelines. **Customer waives any right to consequential, special, indirect, treble, exemplary, incidental, punitive, loss of business reputation, interruption of Service or loss of use (including loss of revenue, profits, or capital costs) damages in connection with the loss or interruption of Service, GPC Assets, or this Agreement, or arising from damage, hindrance, or delay involving the Service, GPC Assets, or this Agreement, whether or not reasonable, foreseeable, contemplated, or avoidable.** To the extent GPC is liable under this Agreement, and to the extent allowed by applicable law, GPC's liability is expressly limited to: (i) with respect to the Service purchased by Customer, the annual amount paid by Customer for the Service; or (ii) with respect to any other liability, to proven direct damages in an amount not to exceed $100.00. Customer is solely responsible for safety of the Premises; Customer agrees that GPC has no obligation to ensure safety of the Premises and that GPC has no liability for any personal injury, real or personal property damage or loss, or negative impact to Customer or any third party that occurs at the Premises.

11. **Risk Allocation.** Each party will be responsible for its own acts and the results of its acts, except as otherwise described in this Agreement.

12. **Default.** Customer is in default if Customer: (i) does not pay the entire amount owed to GPC within 45 days after the due date; (ii) terminates this Agreement without proper notice and prior to the end of the then-current Term; or (iii) breaches any material term, warranty, covenant, or representation of this Agreement. GPC's waiver of a past or concurrent default will not waive any other default. If a default occurs, GPC may: (a) immediately terminate this Agreement; (b) remove any GPC Asset from the Premises; or (c) seek any available remedy provided by law, including the right to collect any past due amount, late fee, or any amount due for the Service during the remaining Term.

13. **Miscellaneous.** This Agreement contains the parties' entire agreement relating to the Service, GPC Assets, and GPC Activity and replaces any prior agreement, written or oral. Subject to applicable law, GPC may modify the terms of this Agreement by providing 30 days' prior written notice of such modification to Customer. If Customer uses the Service or makes any payment for the Service on or after the modification effective date, Customer accepts the modification. GPC's address for notice is 1790 Montreal Circle, Tucker, GA 30084-6801; Customer's address for notice is stated on Page 1. Either party may update administrative or contact information (e.g., address, phone, website) at any time by written notice to the other. Customer will not assign, in whole or in part, this Agreement or any right or obligation it has under this Agreement; any such assignment without GPC's prior written consent will be void and of no effect. In this Agreement: (i) **"include(ing)"** means "include, but are not limited to" or "including, without limitation"; (ii) **"or"** means "either or both" ("A or B" means "A or B or both A and B"); (iii) "e.g." means "for example, including, without limitation"; and (iv) **"written"** or **"in writing"** includes email communication. Georgia law governs this Agreement. If a court rules an Agreement provision unenforceable to any extent, the rest of that provision and all other provisions remain effective.

Lighting Layout Not Valid Without Executed Lighting Agreement From Georgia Power



Plan View
Scale = 1" = 30ft

Symbol	Label	QTY	Catalog Number	Description	Lamp(s)	Lamp Lumens	LLF	Wattage
	A	1	VTLD-FA2-70-740-UNV-EMG	TRADITIONAIRE LED DOWNLIGHT LUMINAIRE (1) 70 CRI, 4000K, 93MMA LIGHT ENGINE WITH 24 LEDS AND TYPE V WIDE OPTICS.	24	379	0.912	74
	D	10	VTLD-FA2-70-740-U-T2	TRADITIONAIRE LED DOWNLIGHT LUMINAIRE (1) 70 CRI, 4000K, 93MMA LIGHT ENGINE WITH 24 LEDS AND TYPE II OPTICS.	24	381	0.912	74

Statistics	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.8 fc	3.3 fc	0.1 fc	33.0:1	18.0:1

Notes
1. Readings are shown in units of maintained footcandles.
2. Total Light Loss Factor (LLF) = .912 LLF for LED
3. Test Plane = 0' Above grade
4. Fixture Mounting Height = See Plan view.
5. Fixture Spacing = See Plan view.
6. This photometric layout was calculated using specific criteria. Any deviation from stated parameters will affect actual performance.
7. These lighting calculations are not a substitute for independent engineering analysis of lighting system suitability and safety.

Disclaimer
This lighting design is not a professional engineering drawing and is provided for informational purposes only, without warranty as to accuracy, completeness, reliability or otherwise. Frazier Photometrics is not responsible for specifying the lighting or illumination requirements for any specific project. It is the obligation of the end-user to consult with a professional engineering advisor to determine whether this lighting design meets the applicable project requirements for lighting system performance, safety, suitability and effectiveness for use in a particular application. End-user environment and application (including, but not limited to, voltage variation and dirt accumulation) can cause actual field performance to differ from the calculated photometric performance represented in this lighting design. In no event will Frazier Photometrics be held responsible for any loss resulting from any use of this lighting design.

SouthCon

Rice Creek - Phase 5

Designer
Date
Scale
Drawing No.
Summary

DocuSign Envelope ID: 3E61855E-A0B1-4189-B3B1-8F65C6F37D1C

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www.robertscivilengineering.com

Infrastructure Maintenance Agreement

The owner, **Landmark 24 Homes of Savannah, LLC,** or successive owner of **Rice Creek Phase V (32 Lots)** will be responsible for maintaining all facilities unless assumed by the City of Port Wentworth. If portions of the development site are sold or otherwise transferred, legally binding arrangements shall be made to pass responsibility for the operation and maintenance of the stormwater management system to the appropriate successors in title; these arrangements shall designate, for each portion of the stormwater management system, the person(s) to be permanently responsible for its inspection and maintenance.

City of Port Wentworth/Chatham County or a legal entity having authority over stormwater runoff controls, easements and drainage facilities may perform or require the owner to take action under the following conditions:

(1) If normal maintenance is not performed and it is adversely affecting drainage flow.
(2) To alleviate flooding or other drainage problems upstream or downstream of the property.

The City Manager of Port Wentworth or his/her designee shall be allowed to enter the property at reasonable times and in a reasonable manner for the purpose of inspection. These terms include the right to enter the property when the City Manager or his/her designee has a reason to believe that a violation of this approved stormwater management system inspection and maintenance agreement and plan has occurred and when it is necessary for abatement of a public nuisance or correction of a violation of the City's ordinance or approved stormwater management system inspection and maintenance agreement and plan.

The following schedule shall be used as a minimum requirement to help ensure proper operation for all stormwater management facilities.

DocuSign Envelope ID: 3E61855E-A0B1-4189-B3B1-8F65C6F37D1C

Maintenance Schedule

Semi-Annual: Inspect all culverts, inlets, manholes for debris and obstructions.

The undersigned agrees to the full terms of this Infrastructure Maintenance Agreement and Maintenance Plan Agreement and Schedule.

Signature Cole Chanowith

Cole Chanowith
Print Name

Project Manager
Title

11/7/22
Date

NOTICE OF INTENT

GAR3909FA-V1

Permittee NOI Number

VERSION September 24, 2018

State of Georgia
Department of Natural Resources
Environmental Protection Division

3/7/2022

Application Submittal Date

For Coverage Under the 2018 Re-Issuance of the NPDES General Permits To Discharge Storm Water Associated With Construction Activity

THESE PERMITS EXPIRE JULY 31, 2023

Facility Information

Facility Name: Rice Creek Phase V

Mailing Address 1: _____ Mailing Address 2: _____

County: _____ City: _____ State: GA Zip Code: _____

Facility/Property Address 1: Sea Oats Drive Address 2: _____

County: Chatham City: Port Wentworth State: GA Zip Code: 31407

Latitude: 32.23192 Longitude: -81.20022

PRIMARY PERMITTEE

NOTICE OF INTENT:

☑ Initial Notification ☐ Re-Issuance Notification ☐ Change of Information

☐ Change of Owner/Operator: Formerly Known As: _____

I. SITE/OWNER/OPERATOR INFORMATION

Facility Ownership Type: Corporation

Common Development Name: Rice Creek Phase V

City: Port Wentworth County or Counties: Chatham Construction Site Zip Code: 31407

Owner's Name: Landmark 24 Homes of Savannah, LLC Phone: 912-925-3440

Email Address: cchenowith@landmark24.com Address: 2702 Whatley Ave

City: Savannah State: GA Zip Code: 31404

Duly Authorized Representative(s): _____ Phone: _____

Email Address: _____

Operator's Name: _____ Phone: _____

Email Address: _____ Address: _____

City: _____ State: GA Zip Code: _____

Facility/Construction Site Contact: Cole Chenowith Phone: 912-925-3440

Email Address: chenowith@landmark24.com

II. CONSTRUCTION SITE ACTIVITY INFORMATION AND FEE CALCULATONS

Start Date: 05/01/2022 Completion Date: 11/01/2022

Regulated by a certified Local Issuing Authority (LIA): ☐ Yes ☑ No

Name of Local Issuing Authority: _____

☑ Acres Disturbed (to the nearest tenth (1/10th) acre) 6.3 X $80/acre = 504

In an area with no certified Local Issuing Authority

TOTAL FEE SUBMITTED = 504

Number of Secondary Permittees: 1

Does the Erosion, Sedimentation and Pollution Control Plan (Plan) provide for disturbing more than 50 acres at any one time for each individual permittee (i.e., primary, secondary or tertiary permittees), or more than 50 contiguous acres total at any one time ?

☐ YES - _____ Date of EPD Written Authorization

☑ NO

☐ N/A - if construction activities are covered under the General NPDES Permit No. GAR100002 for Infrastructure construction projects

Construction Activity Type:

☐ Commercial ☐ Industrial ☐ Municipal/Institutional ☐ Mixed Use

☐ Water Quality/Aquatic Habitat Restoration ☐ Linear ☐ Utility ☑ Residential

☐ Agricultural Buildings ☐ Other: _____

III. RECEIVING WATER INFORMATION

A. Name of Initial Receiving Water(s): Black Creek

☐ Trout Stream ☑ Water Supporting Warm Water Fisheries

B. Name of MS4 Receiving Waters: _____

☑ N/A ☐ Trout Stream ☐ Water Supporting Warm Water Fisheries

Name of MS4 Owner/Operator: _____

C. Sampling of Receiving Stream(s):

☐ Trout Stream (Δ 10 NTU) ☐ Water Supporting Warm Water Fisheries (Δ 25 NTU)

D. Sampling of Outfall(s):

☐ N/A

☐ Trout Stream

☐ Water Supporting Warm Water Fisheries

A summary chart (if applicable) delineating the following information for each outfall must be attached:

Number of Sampling Outfalls: _____ Construction Site Size (acres): _____

Appendix B NTU Value: _____ Surface Water Drainage Area (square miles): _____

E. Does the facility/construction site discharge storm water into an Impaired Stream Segment, or within one (1) linear mile upstream of and within the same watershed as, any portion of an Impaired Stream Segment identified as “not supporting” its designated use(s), as shown on Georgia’s most current “305(b)/303(d) List Documents (Final)” listed for the criteria violated, “Bio F” (Impaired Fish Community) and/or “Bio M” (Impaired Macroinvertebrate Community), within Category 4a, 4b or 5, and the potential cause is either “NP” (nonpoint source) or “UR” (urban runoff) ?

☑ No ☐ Yes, Name of Impaired Stream Segment(s): _____

F. Does the facility/construction site discharge storm water into an Impaired Stream Segment where a Total Maximum Daily Load (TMDL) Implementation Plan for “sediment” was finalized at least six (6) months prior to the submittal of the Initial NOI ?

☑ No ☐ Yes, Name of Impaired Stream Segment(s): _____

IV. CERTIFICATIONS:

☑ I certify that to the best of my knowledge and belief, that the Erosion, Sedimentation and Pollution Control Plan (Plan) was prepared by a design professional, as defined by this permit, that has completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission in accordance with the provisions of O.C.G.A. 12-7-19 and that I will adhere to the Plan and comply with all applicable requirements of this permit.

☑ I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that certified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Responsible Official: Colton Chenowith

Email: cchenowith@landmark24.com

City of Port Wentworth
305 South Coastal Highway, GA 31407

To: The City of Port Wentworth
7306 Highway 21, Suite 301
Port Wentworth, GA. 31407

From: Roberts Civil Engineering
301 Sea Island Rd
St Simons Island, GA 31522

Date: 3/15/2023

Project Name: Rice Creek Phase V

Designed Storage Volume: 115,174 RCE design

As-Built Storage Volume: 114,005 cf per Michael Hussey Surveyor of Record

Designed Outlet Device Type: Trapezoidal Weir per RCE design

As-Built outlet Type: Trapezoidal Weir per Michael Hussey Surveyor of Record

Designed Outlet Device Dimensions: Inv: 12.09, Bot: 4.3',Top: 18.7' per RCE design

As-Built Outlet Device Dimensions: Inv: 12.09, Bot: 4.3',Top: 18.7' per Michael Hussey Surveyor of Record

By placing my professional stamp and signature on this paper, I certify that this detention pond is constructed according to the approved design on file with the City of Port Wentworth at the above address. I further certify that all the drainage area designed to drain to this pond in fact does drain to said pond and the outflow from the pond is equal to or less than the maximum outflow as approved by the City of Port Wentworth. Calculations to determine the As-Built Storage Volume must be kept in your file in the event they are needed by the City of Port Wentworth to verify this volume.

Signature and Seal

GEORGIA REGISTERED No. 034205 PROFESSIONAL ENGINEER JONATHAN ROBERTS

[ABOVE SPACE RESERVED FOR RECORDING INFORMATION]

After recording return to:
Stuart R. Halpern, Esq.
Weiner, Shearouse, Weitz,
Greenberg & Shawe, LLP
P.O. Box 10105
Savannah, GA 31412-0305

STATE OF GEORGIA)
) **RIGHT OF WAY DEED**
COUNTY OF CHATHAM)

THIS INDENTURE, made and executed this _____ day of _____, 20_____, between **RICE CREEK INVESTORS NO. 2, LLC**, a Georgia limited liability company, as party of the first part (hereinafter called "Grantor") and the **CITY OF PORT WENTWORTH**, a Georgia municipal corporation, as party of the second part (hereinafter called "Grantee") (the words "Grantor" and "Grantee" to include their respective heirs, successors and assigns where the context requires or permits).

WITNESSETH that: Grantor, for and in consideration of the sum of One and 00/100 ($1.00) and other valuable considerations, receipt whereof is hereby acknowledged, does hereby grant, bargain, convey, release and forever quit claim unto Grantee, its heirs, successors and assigns, the following described property, to-wit;

> Those certain road right-of-ways lying and being in the 8th G.M. District, City of Port Wentworth, Chatham County, Georgia, being designated as **"SEA OATS DRIVE"** and **"MARSH SALT LANE"**, each being a 60' Public Right of Way, all being more particularly described and shown on that certain Major Subdivision Plat titled "A SUBDIVISION PLAT OF RICE CREEK – TRACT C-1 – PHASE V 8TH G.M. DISTRICT, CITY OF PORT WENTWORTH, CHATHAM COUNTY, GEORGIA," prepared by Brewer Land Surveying, bearing the seal and certification of James Craig Brewer, Georgia Registered Land Surveyor No. 3022, dated October 31, 2022, and being recorded in Plat Book _____, Page _____ in the Office of the Clerk of the Superior Court of Chatham County, Georgia, said map being incorporated herein and made a part hereof by specific reference.

TITLE HAS NOT BEEN EXAMINED NOR CERTIFIED BY THE PREPARER OF THIS INSTRUMENT.

TO HAVE AND TO HOLD the said described premises, together with all and singular the rights, members, hereditaments, improvements, easements and appurtenances thereunto belonging or in anywise appertaining unto the Grantee, its successors and assigns, so that neither Grantor nor any person or persons claiming under Grantor shall at any time, by any means or ways, have, claim or demand any right or title to said premises or appurtenances, or any rights thereof.

IN WITNESS WHEREOF, Grantor has hereunto set Grantor's hand and seal this day and year first above written.

Signed, sealed and delivered
in the presence of:

RICE CREEK INVESTORS NO. 2, LLC

_____
Witness

By: _____
Name: _____
Title: _____

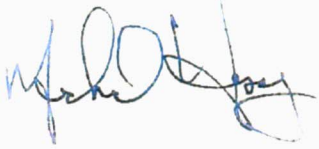
_____
Notary Public
My commission expires: _____

[NOTARIAL SEAL]

5.1.3 Surveyor's Certification:

I hereby state 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 GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

SURVEYOR'S SIGNATURE 

GA RLS NUMBER **2509**

DATE **1-25-2023**

ROBERTS
CIVIL ENGINEERING

St Simons Island | Savannah | Jacksonville | Charleston
www.robertscivilengineering.com

Final Acceptance Inspection

Date of Visit: 1/24/2023
Project: Rice Creek Phase V
Location: Port Wentworth
Contractor: Curtis Kimbrell
Weather/Conditions: Cloudy 63°F

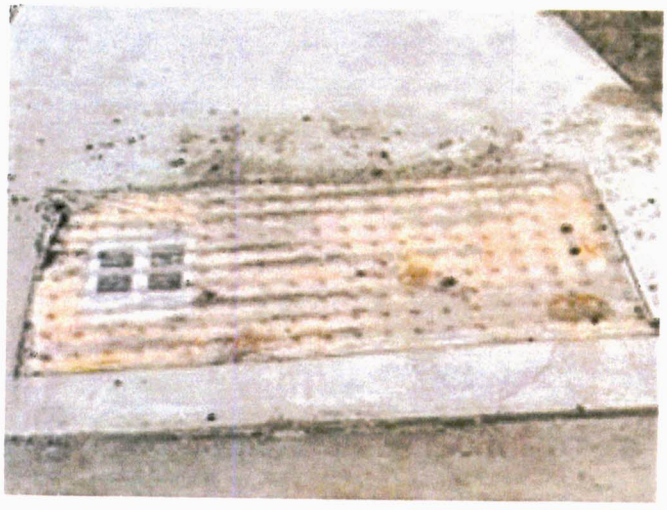
Observation Report:

At the request of The Contractor, a representative of Roberts Civil Engineering (RCE) was present on site to perform a final acceptance inspection. Our finding are as follows:

- The sidewalk on the southeast quadrant of the intersection of Marsh Salt Lane and Sea Oats drive is cracked, replacement needed.

No other items were observed at the time of our inspection.

(1) Photo to follow:
The sidewalk on the southeast quadrant of the intersection of Marsh Salt Lane and Sea Oats Drive, Crack bottom right corner of picture.



GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Watershed Protection Branch
Coastal District Office
400 Commerce Center Drive
Brunswick, Georgia 31523-8251
Phone: 912-264-7284; Fax: (912) 262-3160

December 22, 2021

Rice Creek Investors #7
c/o Cole Chenowith
chenowith@landmark24.com

Re: Proposed Land Disturbing Activity
Rice Creek Phase 5
Chatham County, Georgia
File: SW-025-04-159

Dear Mr. Chenowith:

In accordance with the General NPDES Permit No. GAR100003 for Storm Water Discharges Associated with Construction Activities for Common Developments, issued by the Georgia Environmental Protection Division (EPD) in August 2018, this Project has been reviewed for deficiencies in the identification of waters of the state and potential encroachment of land disturbing activities within 25 foot immediately adjacent and upland of the identifiable point from which the State mandated buffer is measured.

Based upon this review, the EPD has determined the following:

(1) The project does **not** have deficiencies in the identification of waters of the state.

(2) The project will **not** require a buffer variance from the EPD.

However, the EPD reserves the right to change this determination if information that conflicts with the original submittal is obtained during a later site inspection.

Additionally, in accordance with the General NPDES Permit No. GAR100003, each Erosion, Sedimentation and Pollution Control Plan (ESPCP) submittal shall include a completed and applicable ESPCP Checklist established by the Georgia Soil and Water Conservation as of January 1 of the year in which the land-disturbing activity was permitted.

A deficient ESPCP is a violation of the NPDES Permit. If violations occur on the proposed project site and enforcement actions become necessary, a deficient ESPCP may increase the fines incurred. The applicable Checklist as well as a guidance document are available on the Georgia EPD website @ http://epd.georgia.gov.

Based upon this review, EPD has determined the following:

(1) The ESPCP for this Project does **not** have deficiencies.

If additional information is required, please contact me at 912-230-4880.

Sincerely,

Shannon K. Winsness
Environmental Specialist

cc: Robert Civil Engineering
c/o Jessica Vick
jvick@robertscivilengineering.com

Alice Vick
EPD Coastal District Office
400 Commerce Center Drive
Brunswick, GA 31523-8251

File: SW-025-04-159

ROBERTS
CIVIL ENGINEERING

Bond Calculations

Project Name: Rice Creek Phase V

Project Number: 21507

Based on Civil Design Plans dated 04/29/2022

Date of OPC: 2022-11-28

Paving

1	18" Roll Curb	2,020	LF	15.00	30,300.00
2	4" GAB	1,110	SY	14.75	16,372.50
3	8" GAB	2,750	SY	26.75	73,562.50
4	2" Asphalt	2,750	SY	18.75	51,562.50
5	Handicap Ramps	6	EA	1,550.00	9,300.00
6	Concrete Sidewalks	17	SY	48.00	816.00
7	Striping & Signage	1	LS	6,350.00	6,350.00
				Subtotal	188,263.50

Drainage System

8	18" RCP	32	LF	62.50	2,000.00
9	24" RCP	152	LF	78.25	11,894.00
10	30" RCP	40	LF	102.00	4,080.00
11	36" RCP	272	LF	125.00	34,000.00
12	48" RCP	200	LF	185.00	37,000.00
13	48" FES	1	EA	4,410.00	4,410.00
14	Storm Manhole 48" RCP	1	LF	5,235.00	5,235.00
15	GDOT 1019A 48" RCP	1	EA	6,200.00	6,200.00
16	GDOT 1019A 18-36" RCP	5	EA	4,650.00	23,250.00
17	6" Underdrain (50' Each Side of Inlet)	600	LF	26.00	15,600.00
18	Stone for Pipe Bedding	200	TN	65.00	13,000.00
19	Sellect Fill	160	CY	20.00	3,200.00
20	Testing (No CCTV)	1	LS	2,380.00	2,380.00
				Subtotal	162,249.00

Water System

21	Connect to Existing 8" (w/ Temp Backflow)	1	EA	1,765.00	1,765.00
22	8"x6" MJ Tee	1	EA	650.00	650.00
23	Fire Hydrant Assembly	2	EA	5,470.00	10,940.00
24	8" MJ Tee	1	EA	760.00	760.00
25	8" MJ valve (Incl MH)	5	EA	3,825.00	19,125.00
26	Temp Blow Off Hyrdant	2	EA	1,300.00	2,600.00
27	8" MJ Cap	1	EA	265.00	265.00
28	8"x1" Saddle	32	EA	175.00	5,600.00
29	1" Corp Stop	32	EA	130.00	4,160.00
30	1" Curb Stop	32	EA	175.00	5,600.00
31	1" Service Tubing	1,500	LF	10.00	15,000.00
32	8" C-900 PVC	1,040	LF	45.00	46,800.00
33	8" MJ 45° Bend	8	EA	445.00	3,560.00
34	8" Ductile Iron	60	LF	71.00	4,260.00
35	8" Joint Restraints	24	EA	171.00	4,104.00
36	6" Ductile Iron for Fire Hydrant	40	LF	56.00	2,240.00
37	8" MJ Sleeve	2	EA	445.00	890.00
38	Select Fill	120	CY	20.00	2,400.00
39	Testing & Chlorination	2,510	LS	3.00	7,530.00
				Subtotal	138,249.00

Reuse System

40	Connect to Existing 4" Main	1	EA	880.00	880.00
41	4" MJ Sleeve	1	EA	295.00	295.00
42	4" MJ 45° Bend	12	EA	265.00	3,180.00
43	4" MJ valve (w/ Box)	3	EA	1,030.00	3,090.00
44	4" MJ Tee	1	EA	460.00	460.00
45	4" Blow Off Hyrdant	2	EA	2,200.00	4,400.00
46	4" MJ Cap	2	EA	230.00	460.00
47	4"x1" Saddle	32	EA	150.00	4,800.00
48	1" Corp Stop	32	EA	130.00	4,160.00
49	1" Curb Stop	32	EA	175.00	5,600.00
50	4" C-900 Purple PVC	1,040	LF	25.00	26,000.00
51	1" Service Tubing	1,500	LF	10.00	15,000.00
52	4" Ductile Iron	60	LF	58.00	3,480.00
53	Select Fill	120	CY	20.00	2,400.00
54	Testing & Chlorination	1	LS	3,675.00	3,675.00
				Subtotal	77,880.00

Sewer System

55	Connect to Existing Manhole w/ core 6-8'	1	EA	3,235.00	3,235.00
56	Core Drill Existing Manhole w/ 4" core	2	EA	880.00	1,760.00
57	8" SDR-26 PVC (0-6')	791	LF	45.00	35,595.00
58	8" SDR-26 PVC (6-8')	283	LF	48.50	13,725.50
59	4' Dia Manhole (0-6')	2	EA	3,700.00	7,400.00
60	4' Dia Manhole (6-8')	4	EA	4,300.00	17,200.00
61	8"x4" SDR-26 PVC 45° TYE Fitting	32	EA	176.00	5,632.00
62	8"x4" SDR-26 PVC 45° Fitting	64	EA	59.00	3,776.00
63	4" Cleanout Assembly	32	EA	442.00	14,144.00
64	4" SDR-26 PVC Lateral	1,250	LF	18.00	22,500.00
65	Stone Bedding - Mains	300	TN	65.00	19,500.00

66	Stone Bedding - Lateral	200	TN	65.00	13,000.00
67	Select Fill	370	CY	20.00	7,400.00
68	Testing	1	LS	8,500.00	8,500.00
				Subtotal	173,367.50

Maintenance and Bond Calculation

Paving & Drainage Maintenance Bond (25%)	**$87,628.13**
Water, Reuse, Sewer Maintenance Bond (10%)	**$38,949.65**

All bond amounts will be no less than $50,000

MAINTENANCE BOND

Bond No. 0249958

KNOW ALL MEN BY THESE PRESENTS, Preferred Site Construction, LLC, as Principal, and Berkley Insurance Company, 475 Steamboat Road, Greenwich, CT 06830, a corporation organized under the laws of the State of Delaware, and licensed to transact business in the State of GA, as Surety, are held and firmly bound unto City of Port Wentworth, as Obligee, in the penal sum of Fifty Thousand & 00/100 Dollars ($50,000.00), lawful money of the United States of America, for which payment, well and truly to be made, Principal and Surety bind themselves, their legal representatives, successors, or assigns, jointly and severally, firmly by these presents.

WHEREAS, on Preferred Site Construction, LLC the Principal entered into a written contract with the said Obligee for Rice Creek Tract C-1 Phase V, Project 21507, Water, Reuse Water, & Sewer Maintenance, and

WHEREAS, the Obligee requires that these presents be executed on or before the final completion and acceptance of said Contract, and

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall remedy, without cost to the Obligee, any defects caused by defective or inferior materials or workmanship, which may develop during a period of 2 years from the date of completion and acceptance of the work performed under the contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

Any suit under this bond must be instituted before the expiration of one year from completion of the maintenance period.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of the Obligee.

SIGNED, SEALED AND DATED this day of , 20 .

Preferred Site Construction, LLC

_____
Matt Hilton

Berkley Insurance Company

By:_____
Christy Lackey, Attorney-in-Fact

Ed 01/14

MAINTENANCE BOND

Bond No. 0249957

KNOW ALL MEN BY THESE PRESENTS, Preferred Site Construction, LLC, as Principal, and Berkley Insurance Company, 475 Steamboat Road, Greenwich, CT 06830, a corporation organized under the laws of the State of Delaware, and licensed to transact business in the State of Berkley Insurance Company, as Surety, are held and firmly bound unto City of Port Wentworth, as Obligee, in the penal sum of Eighty Seven Thousand Six Hundred Twenty Eight & 13/100 Dollars ($87,628.13), lawful money of the United States of America, for which payment, well and truly to be made, Principal and Surety bind themselves, their legal representatives, successors, or assigns, jointly and severally, firmly by these presents.

WHEREAS, on Preferred Site Construction, LLC the Principal entered into a written contract with the said Obligee for Rice Creek Tract C-1 Phase V, Project 21507 Paving & Drainage, and

WHEREAS, the Obligee requires that these presents be executed on or before the final completion and acceptance of said Contract, and

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Principal shall remedy, without cost to the Obligee, any defects caused by defective or inferior materials or workmanship, which may develop during a period of 2 years from the date of completion and acceptance of the work performed under the contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

Any suit under this bond must be instituted before the expiration of one year from completion of the maintenance period.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Obligee named herein or the heirs, executors, administrators or successors of the Obligee.

SIGNED, SEALED AND DATED this day of Click here to enter text., 20Click here to enter text. .

Preferred Site Construction, LLC

_____
Matt Hilton

Berkley Insurance Company

By:_____
Christy Lackey, Attorney-in-Fact

Ed 01/14

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3604

April 26, 2022

Regulatory Division
SAS-2007-01614

Mr. Cole Chenowith
Landmark 24, LLC.
2702 Whatley Avenue
Suite B-1
Thunderbolt, Georgia 30404

Dear Mr. Chenowith:

I refer to a letter submitted on your behalf by Simkins Environmental, LLC., requesting a delineation of aquatic resources for your 12.2 acre site located within Rice Mill Subdivision, along Highway 21, in the City of Port Wentworth, Chatham County, Georgia (Latitude 32.2331, Longitude -81.2006). This project has been assigned number SAS-2007-01614 and it is important that you refer to this number in all communication concerning this matter.

The enclosed exhibit entitled, “Wetland Exhibit, Rice Creek Subdivison, Port Wentworth, Prepared For: Landmark 24, LLC, Project Number: 21507”, dated April 19, 2022, identifies the delineation limits of all aquatic resources within the project area. The wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual,” as amended by the most recent regional supplements to the manual.

If you intend to sell property that is part of a project that requires Department of the Army Authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

This communication does not relieve you of any obligation or responsibility for complying with the provisions of any other laws or regulations of other federal, state or local authorities. It does not affect your liability for any damages or claims that may arise as a result of the work. It does not convey any property rights, either in real estate or material, or any exclusive privileges. It also does not affect your liability for any interference with existing or proposed federal projects. If the information you have submitted and on which the Corps bases its determination is later found to be in error, this determination may be subject to modification, suspension, or revocation.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you have interaction with our office.

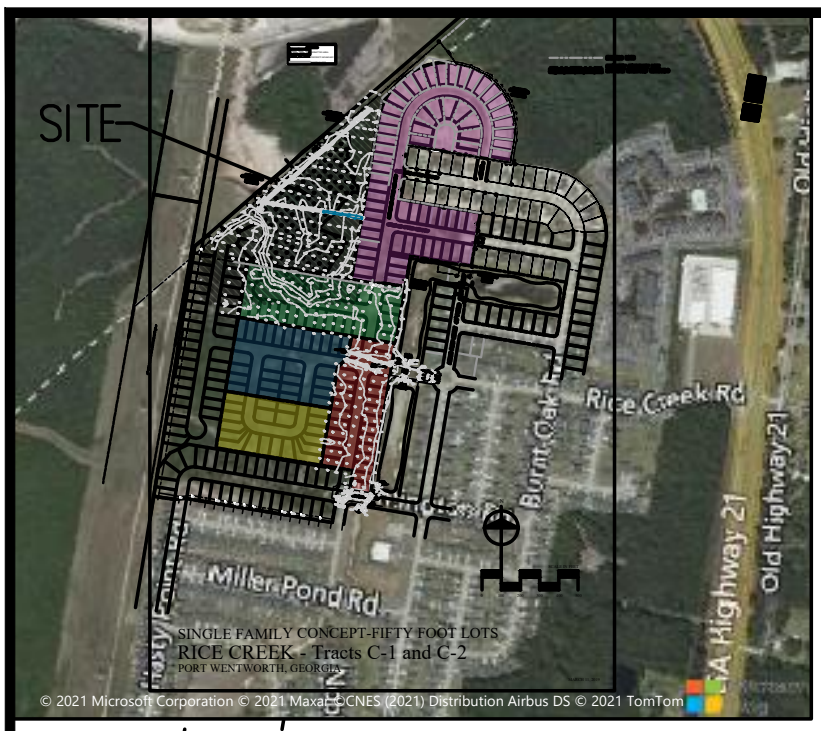
If you have any questions, I can be contacted via telephone at 912-652-5139 or email at tyler.j.brock@usace.army.mil.

Sincerely,

Tyler J. Brock
Regulatory Specialist, Coastal Branch

Copy Furnished: Mr. Hamp Simkins, Simkins Environmental, LLC.

Enclosure



LEGEND

PERMITTED AREA

PROPERTY BOUNDARY

EXISTING LOTS

0' 100' 200'

GRAPHIC SCALE
1" = 100'

N

NOW OR FORMERLY
SFG CH MASTER DEVCO LLC
04860008A02
S. HIGHWAY 21
P.B. 28 PG. 379

150' POWER EASEMENT

50' GAS EASEMENT

EFFINGHAM COUNTY

CHATHAM COUNTY

N 43°06'28" E

R IS THE COUNTY LINE

1640.86'

WETLAND BOUNDARY

b29\a7 a8 a9 a10 a11 a12 a6 a5 a4 a3 a2 a1

EXISTING RICE CREEK SUBDIVISION

MARSH SALT LANE 60' PUBLIC RIGHT OF WAY

CORONEDO LANE

FUTURE LOTS

WETLAND EXHIBIT

Rice Creek Subdivision
Port Wentworth

PREPARED FOR:
Landmark 24, LLC

ROBERTS
CIVIL ENGINEERING
ST. SIMONS ISLAND | SAVANNAH | JACKSONVILLE | CHARLESTON
WWW.ROBERTSCIVILENGINEERING.COM

DATE: 04/19/22

PROJECT NUMBER: 21507

5.1.4 Engineer's Certification

The following statements shall appear on all record drawings and shall be signed by the engineer of record, and show their registration information:

These record drawings have been prepared based upon information provided by our periodic observations. The horizontal position of all objects is correctly located based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88). maintaining a minimum accuracy of 0.2 feet horizontal and 0.01 feet vertical. (ENGINEERING FIRM NAME) has reviewed this information and to the best of our information, knowledge and belief these Record Drawings represent the approved site development plans.

ENGINEER'S NAME (PRINTED) Jessica Vick, PE

ENGINEER'S SIGNATURE *Jessica Vick*

GA PE NUMBER 046602

DATE 01/25/2023

SEAL:

GEORGIA No. 046602 PROFESSIONAL ENGINEER

5.1.3 Surveyor's Certification:

I hereby state 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 GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

SURVEYOR'S SIGNATURE

GA RLS NUMBER **2509**

DATE **1-25-2023**

RECORD DRAWINGS OF RICE CREEK - TRACT C1 PHASE V

PREPARED FOR:
RICE CREEK INVESTORS #2, LLC
2702 WHATLEY AVE.
SAVANNAH, GA 31404

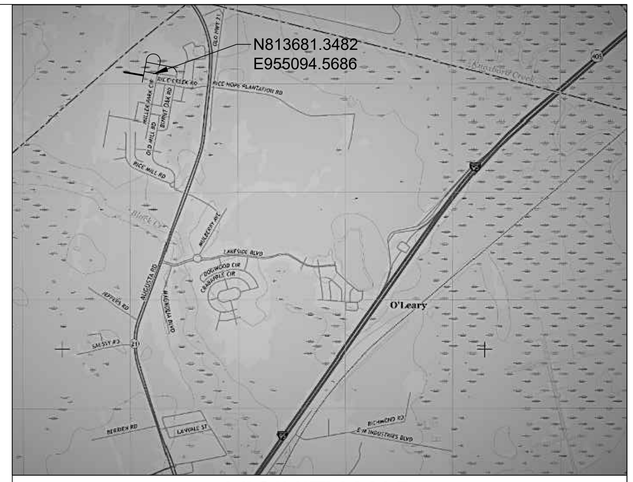
ROBERTS
CIVIL ENGINEERING
WWW.ROBERTSCIVILENGINEERING.COM

301 SEA ISLAND ROAD, SUITE 10
ST. SIMONS ISLAND, GA 31522
912-638-9681

6001 CHATHAM CENTER DRIVE, SUITE 255
SAVANNAH, GA 31405
912-298-7006

RECORD DRAWING NOTES

- ALL MEASUREMENTS AND COORDINATES SHOWN USE THE US SURVEY FOOT DEFINITION
- THE PARENT TRACT TAX PARCEL NUMBER OF THIS PROPERTY IS 7-0906-01-032
- ALL PIPE SIZES, CLASSES, AND OTHER MATERIALS WERE INSTALLED BY PREFERRED SITE CONSTRUCTION, PER APPROVED CONSTRUCTION PLAN BY ROBERTS CIVIL ENGINEERING, AND ALL COORDINATES AND LOCATIONS OF INSTALLED MATERIALS ARE LOCATED BASED OFF THE STATE PLANE COORDINATE SYSTEM
- SUBDIVISION SHOWN IN THESE RECORD DRAWINGS ARE IN ZONE X. THERE ARE NO DELINEATION LINES TO BE SHOWN, AS THEY ARE OUTSIDE THE AREAS DEPICTED IN THESE DRAWINGS.



VICINITY MAP NTS

PORT WENTWORTH, GA

RICE CREEK PHASE 5

OWNER
RICE CREEK INVESTORS #2, LLC
2702 Whatley Ave, Suite B-1
Savannah, GA 31404

ENGINEER
JOHNATHAN ROBERTS, PE
ROBERTS CIVIL ENGINEERING
6001 CHATHAM CENTER DRIVE, STE 255
SAVANNAH, GA 31405
JROBERTS@ROBERTSCIVILENGINEERING.COM
912-298-7006 OFFICE

CONTRACTOR
MATT R. HILTON
PREFERRED SITE CONSTRUCTION, LLC
9521 HWY 301 SOUTH
STATESBORO, GA 30458
912-988-9854 OFFICE
912-663-3312 CELL

CONTENTS

SHEET		DATE
0	COVER	03/16/23
R1	PAVING AND DRAINAGE RECORD DRAWING	03/16/23
R2	UTILITY PLAN RECORD DRAWING	03/16/23
R3	SANITARY SEWER PROFILES RECORD DRAWING	03/16/23
R4	STORM DRAINAGE PROFILES RECORD DRAWING	03/16/23

COVER

5.1.4 Engineer's Certification

The following statements shall appear on all record drawings and shall be signed by the engineer of record, and show their registration information:

These record drawings have been prepared based upon information provided by our periodic observations. The horizontal position of all objects is correctly located based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88). maintaining a minimum accuracy of 0.2 feet horizontal and 0.01 feet vertical. (ENGINEERING FIRM NAME) has reviewed this information and to the best of our information, knowledge and belief these Record Drawings represent the approved site development plans.

ENGINEER'S NAME (PRINTED) Jessica Vick, PE

ENGINEER'S SIGNATURE *Jessica Vick*

GA PE NUMBER 046602

DATE 01/25/2023

SEAL: GEORGIA No. 046602 PROFESSIONAL ENGINEER JESSICA VICK

5.1.3 Surveyor's Certification:

I hereby state 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 GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

SURVEYOR'S SIGNATURE

GA RLS NUMBER **2509**

DATE **1-25-2023**

RECORD DRAWING NOTES

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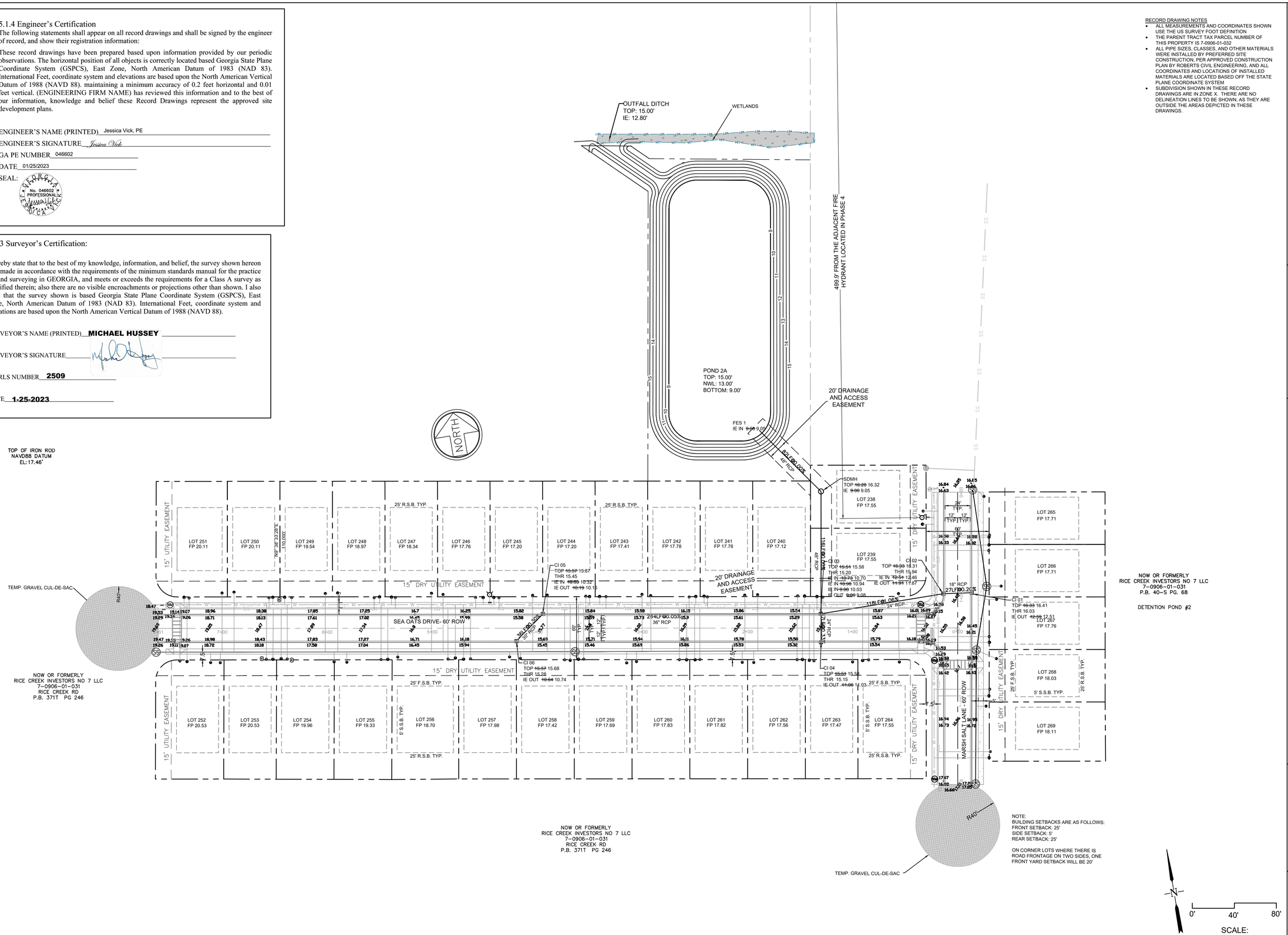


NOTE:
BUILDING SETBACKS ARE AS FOLLOWS:
FRONT SETBACK: 25'
SIDE SETBACK: 5'
REAR SETBACK: 25'

ON CORNER LOTS WHERE THERE IS ROAD FRONTAGE ON TWO SIDES, ONE FRONT YARD SETBACK WILL BE 20'

RECORD DRAWINGS

ROBERTS CIVIL ENGINEERING
ST. SIMONS ISLAND | SAVANNAH
WWW.ROBERTSCIVILENGINEERING.COM

PAVING AND DRAINAGE RECORD DRAWING

RICE CREEK-TRACT C1-PHASE V
PORT WENTWORTH, GA

PREPARED FOR:
RICE CREEK INVESTORS #2, LLC

RECORD DATE: 03/16/23
PROJECT NUMBER: 21507
DRAWN BY: JLV
CHECKED BY: JLV
SCALE: 1" = 40'

R1

SHEET:

5.1.4 Engineer's Certification

The following statements shall appear on all record drawings and shall be signed by the engineer of record, and show their registration information:

These record drawings have been prepared based upon information provided by our periodic observations. The horizontal position of all objects is correctly located based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88). maintaining a minimum accuracy of 0.2 feet horizontal and 0.01 feet vertical. (ENGINEERING FIRM NAME) has reviewed this information and to the best of our information, knowledge and belief these Record Drawings represent the approved site development plans.

ENGINEER'S NAME (PRINTED) Jessica Vick, PE

ENGINEER'S SIGNATURE *Jessica Vick*

GA PE NUMBER 046602

DATE 01/25/2023

SEAL: GEORGIA No. 046602 PROFESSIONAL ENGINEER Jessica Vick USA

5.1.3 Surveyor's Certification:

I hereby state 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 GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

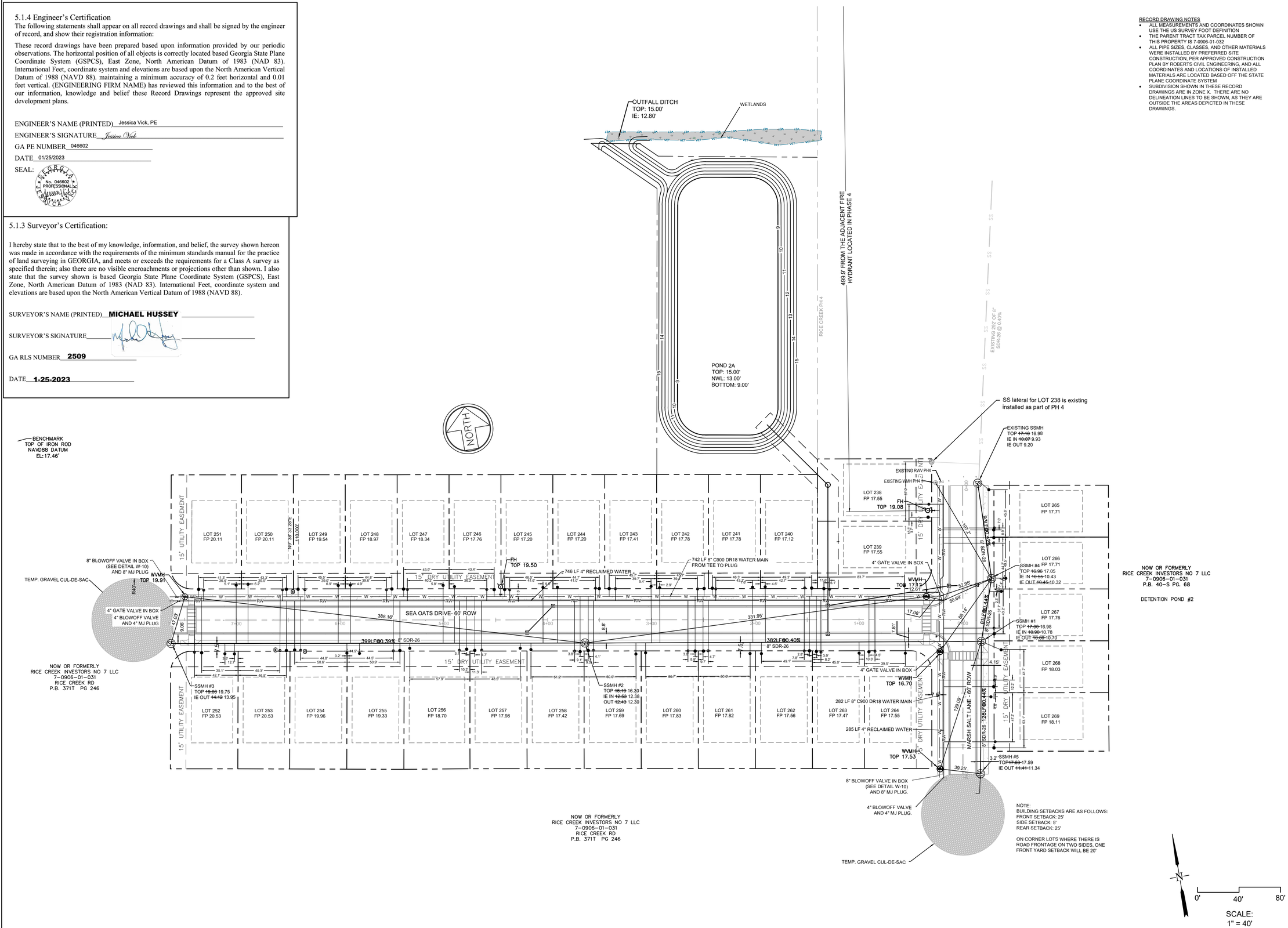
SURVEYOR'S SIGNATURE

GA RLS NUMBER **2509**

DATE **1-25-2023**

RECORD DRAWING NOTES

- ALL MEASUREMENTS AND COORDINATES SHOWN USE THE US SURVEY FOOT DEFINITION
- THE PARENT TRACT TAX PARCEL NUMBER OF THIS PROPERTY IS 7-0906-01-032
- ALL PIPE SIZES, CLASSES, AND OTHER MATERIALS WERE INSTALLED BY PREFERRED SITE CONSTRUCTION, PER APPROVED CONSTRUCTION PLAN BY ROBERTS CIVIL ENGINEERING, AND ALL COORDINATES AND LOCATIONS OF INSTALLED MATERIALS ARE LOCATED BASED OFF THE STATE PLANE COORDINATE SYSTEM
- SUBDIVISION SHOWN IN THESE RECORD DRAWINGS ARE IN ZONE X. THERE ARE NO DELINEATION LINES TO BE SHOWN, AS THEY ARE OUTSIDE THE AREAS DEPICTED IN THESE DRAWINGS.



RECORD DRAWINGS

ROBERTS CIVIL ENGINEERING
ST. SIMONS ISLAND | SAVANNAH
WWW.ROBERTSCIVILENGINEERING.COM

UTILITY PLAN RECORD DRAWING

RICE CREEK-TRACT C1-PHASE V
PORT WENTWORTH, GA

PREPARED FOR:
RICE CREEK INVESTORS #2, LLC

RECORD DATE: 03/16/23
PROJECT NUMBER: 21507
DRAWN BY: JLV
CHECKED BY: JLV
SCALE: 1" = 40'

SHEET: R2

5.1.4 Engineer's Certification

The following statements shall appear on all record drawings and shall be signed by the engineer of record, and show their registration information:

These record drawings have been prepared based upon information provided by our periodic observations. The horizontal position of all objects is correctly located based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88). maintaining a minimum accuracy of 0.2 feet horizontal and 0.01 feet vertical. (ENGINEERING FIRM NAME) has reviewed this information and to the best of our information, knowledge and belief these Record Drawings represent the approved site development plans.

ENGINEER'S NAME (PRINTED) Jessica Vick, PE

ENGINEER'S SIGNATURE *Jessica Vick*

GA PE NUMBER 046602

DATE 01/25/2023

SEAL:

GEORGIA * No. 046602 * PROFESSIONAL ENGINEER Jessica Vick USA

5.1.3 Surveyor's Certification:

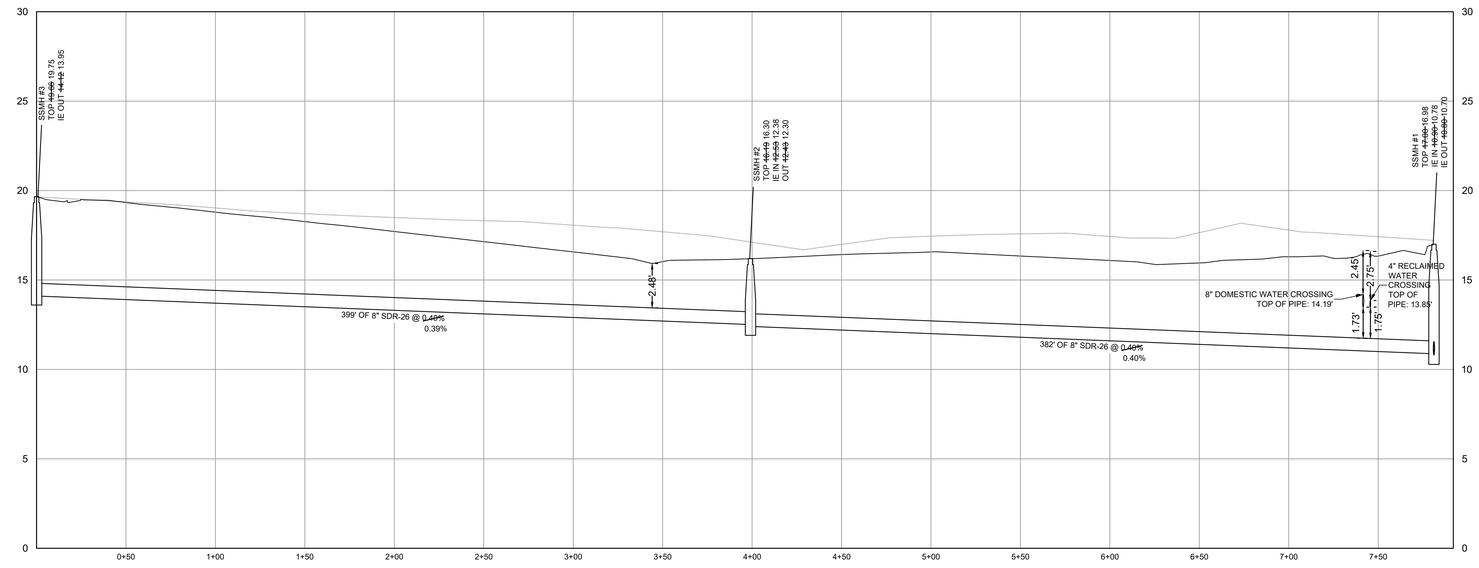
I hereby state that to the best of my knowledge, information, and belief, the survey shown hereon was made in accordance with the requirements of the minimum standards manual for the practice of land surveying in GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

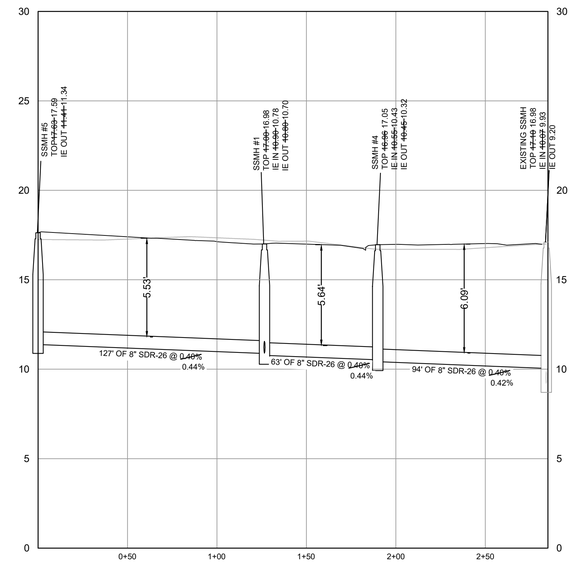
SURVEYOR'S SIGNATURE

GA RLS NUMBER **2509**

DATE **1-25-2023**



SEWER 100
Vertical Scale: 1" = 4 ft
Horizontal Scale: 1" = 40 ft



SEWER 200
Vertical Scale: 1" = 4 ft
Horizontal Scale: 1" = 40 ft

RECORD DRAWING NOTES
- ALL MEASUREMENTS AND COORDINATES SHOWN USE THE US SURVEY FOOT DEFINITION
- THE PARENT TRACT TAX PARCEL NUMBER OF THIS PROPERTY IS 7-0906-01-032

RECORD DRAWINGS

ROBERTS CIVIL ENGINEERING
ST. SIMONS ISLAND | SAVANNAH
WWW.ROBERTSCIVILENGINEERING.COM

AS-BUILT SANITARY SEWER PROFILES

RICE CREEK-TRACT C1-PHASE V
PORT WENTWORTH, GA

PREPARED FOR:
RICE CREEK INVESTORS #2, LLC

RECORD DATE: 03/16/23
PROJECT NUMBER: 21507
DRAWN BY: JLV
CHECKED BY: JLV
SCALE: AS SHOWN

R3

SHEET:

5.1.4 Engineer's Certification

The following statements shall appear on all record drawings and shall be signed by the engineer of record, and show their registration information:

These record drawings have been prepared based upon information provided by our periodic observations. The horizontal position of all objects is correctly located based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88). maintaining a minimum accuracy of 0.2 feet horizontal and 0.01 feet vertical. (ENGINEERING FIRM NAME) has reviewed this information and to the best of our information, knowledge and belief these Record Drawings represent the approved site development plans.

ENGINEER'S NAME (PRINTED) Jessica Vick, PE

ENGINEER'S SIGNATURE *Jessica Vick*

GA PE NUMBER 046602

DATE 01/25/2023

SEAL:

GEORGIA No. 046602 PROFESSIONAL ENGINEER Jessica Vick

5.1.3 Surveyor's Certification:

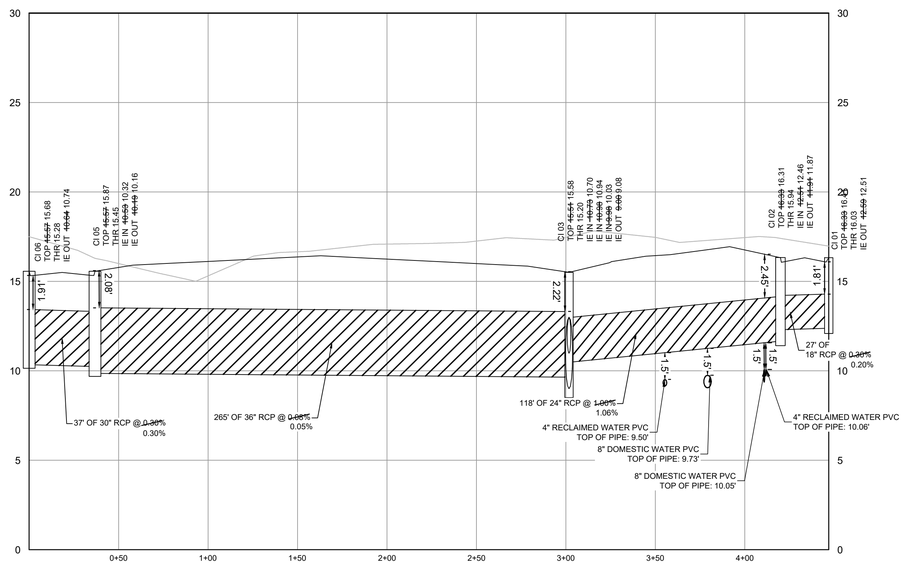
I hereby state that to the best of my knowledge, information, and belief, the survey shown hereon was made in accordance with the requirements of the minimum standards manual for the practice of land surveying in GEORGIA, and meets or exceeds the requirements for a Class A survey as specified therein; also there are no visible encroachments or projections other than shown. I also state that the survey shown is based Georgia State Plane Coordinate System (GSPCS), East Zone, North American Datum of 1983 (NAD 83). International Feet, coordinate system and elevations are based upon the North American Vertical Datum of 1988 (NAVD 88).

SURVEYOR'S NAME (PRINTED) **MICHAEL HUSSEY**

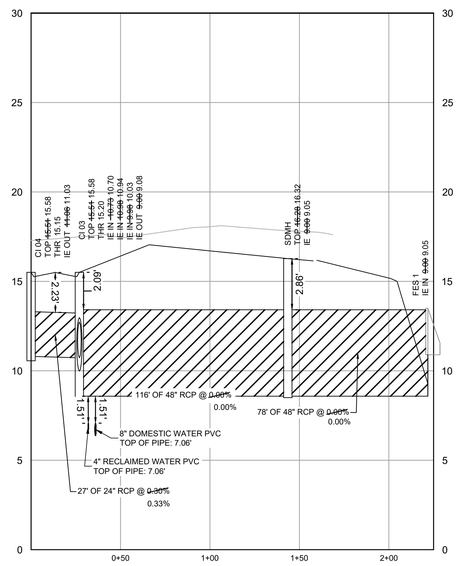
SURVEYOR'S SIGNATURE

GA RLS NUMBER **2509**

DATE **1-25-2023**



STORM 100
Vertical Scale: 1" = 4 FT
Horizontal Scale: 1" = 40 FT



STORM 200
Vertical Scale: 1" = 4 FT
Horizontal Scale: 1" = 40 FT

RECORD DRAWING NOTES
- ALL MEASUREMENTS AND COORDINATES SHOWN USE THE US SURVEY FOOT DEFINITION
- THE PARENT TRACT TAX PARCEL NUMBER OF THIS PROPERTY IS 7-0906-01-032

RECORD DRAWINGS

ROBERTS CIVIL ENGINEERING
ST. SIMONS ISLAND | SAVANNAH
WWW.ROBERTSCIVILENGINEERING.COM

AS-BUILT STORM DRAINAGE PROFILES

RICE CREEK-TRACT C1-PHASE V
PORT WENTWORTH, GA
PREPARED FOR:
RICE CREEK INVESTORS #2, LLC

RECORD DATE: 03/16/23
PROJECT NUMBER: 21507
DRAWN BY: JLV
CHECKED BY: JLV
SCALE: AS SHOWN

R4

SHEET:

Site Plan Review Application submitted by Claret Communities, LLC., for PIN # 7-0976-02-027 (Highway 30) for a Specific Development Site Plan to allow a Multi-family Development (Noble Vines Phase 2) in a P-RIP (Planned Residential Institutional) Zoning District

Issue/Item: Site Plan Review Application submitted by Claret Communities, LLC., for PIN # 7-0976-02-027 (Highway 30) for a Specific Development Site Plan to allow a Multi-family Development (Noble Vines Phase 2) in a P-RIP (Planned Residential Institutional) Zoning District.

Background: The subject property is currently vacant woodland. There are no buildings or structures on the subject property. A general development plan for this property was approved during the June 23, 2022 City Council meeting.

Facts and Findings: This is specific site development plan for Phase 2 of the Noble Vines development. The site plan consist of 60 Townhome Buildings and amenity building. The main entrance for the development will be on GA Highway 30. The site plan also includes associated parking, utilities, drainage and infrastructure improvements. This application received Engineer Concurrence by the City Engineer's TR Long Engineering on February 21, 2023. The project area is in the Rural Neighborhood character area according to the Port Wentworth 2021 - 2041 Comprehensive Plan. The project is located in Council District 1.

Funding: N/A

Recommendation: The Planning Commission will hear this application on Monday, April 10, 2023 at 3:30 PM. **/ UPDATE: THE PLANNING COMMISSION VOTED UNANIMOUSLY TO APPROVE THE APPLICATION.**

ATTACHMENTS:

- Site Plan Review Noble Vines Ph 2 2023 - Application (PDF)
- Site Plan Review Noble Vines Ph 2 2023 - Timeline (DOCX)
- Site Plan Review Noble Vines Ph 2 2023 - Concurrence Letter TR Long 2.21.23 (PDF)

Project # 220474

City of Port Wentworth
▪7224 Highway 21 ▪ Port Wentworth ▪ Georgia ▪ 31407 ▪ 912-999-2084

RECEIVED
SEP 01 2022
BY: KS

Site Plan Review Application

Site Plan Application is required for all new construction in a "P" or "MPO" zone as defined in the Zoning Ordinance of the City of Port Wentworth.

Site Plan Type (*Check One*): ☐ General / Concept ☒ Specific Development

Site Plan Address: Hwy 30, Port Wentworth, GA 31407

PIN #(s): 7-0976-02-027

Zoning: P-RIP Estimated Cost of Construction: $

Type of Construction: Multifamily Residential

Applicant's Name: Claret Communities, LLC

Mailing Address: 5553 Peachtree Road, Suite 170
Chamblee, GA 30341

Phone #: 404-308-5507 Email: mruskin@claretcommunities.com

Owner's Name (If Different form Applicant): Claret Communities, LLC

Mailing Address: 5553 Peachtree Road, Suite 170
Chamblee, GA 30341

Phone #: 404-308-5507 Email: mruskin@claretcommunities.com

I hereby acknowledge that the above information is true and correct.

Applicant's Signature — Lee N. Terry, Managing Member — Date: 8-12-2022

Owner's Signature (If Different form Applicant) — Date

Please see page 2 for required submittal checklist

City of Port Wentworth
▪7224 Highway 21 ▪ Port Wentworth ▪ Georgia ▪ 31407 ▪ 912-999-2084

Site Plan Review Application Submittal Checklist

Documentation below is required for a complete submittal.

- ☒ Signed and Completed Application
- ☒ 3 Full size sets of site plan civil drawings or concept plan (depending on type of site plan)
- ☒ 15 half size (11" X 17") sets of site plan civil drawings or concept plan (depending on type of site plan)
- ☒ 2 copies of hydrology reports (if applicable)
- ☒ Names, mailing address, and PIN number of all property owners within 250 feet of all property lines
- ☒ 1 8 ½" X 11" of site plan civil drawings or concept plan (depending on type of site plan)
- ☒ PDF of entire submittal (either flash drive or CD)
- ☒ Other Engineering details or reports may be required once submittal has been received
- ☒ Site plan review fee check
  - ~~No Land Disturbance- $206.00 Site Plan Fee + $50.00 Admin Fee = Total $256.00~~
  - With Land Disturbance - $836.00 Site Plan Fee + $50.00 Admin Fee = Total $886.00

Additional Fee Statement: If engineer review cost to the City exceeds the site plan review fee that is paid at the time of initial application submittal, you may be required to pay additional review cost.

I have read and agree to the above additional fee statement

Applicant's Signature

Lee N. Terry
Managing Member

8·16·2022
Date

Noble Vines – Phase 2
City of Port Wentworth

Concept Plan Project Narrative
J – 28896.0003
November 2021

Claret Communities, LLC (applicant) proposes the development of Noble Vines Phase 2, a ±11.7 acre townhome development in the City of Port Wentworth. The proposed site is located on Parcel A of the included plat, with Phase 1 of the project consisting of ±21.3 acres. The parcel is approximately half a mile southwest of GA Highway 21 on Piedmont Avenue. The Property PIN number is 7-0976-02-027.

Noble Vines Phase 2 consists of 60 townhomes. The project is zoned Residential-Industrial (P-RIP). On-site elevations range from approximately 17.3– 25.0, NAVD 88. The property lies in flood zone X as shown on the Chatham County Flood Insurance Rate Map (FIRM) panel 13051C0030G, effective date August 16, 2018. The site is wooded with a mixture of hardwoods and planted pines. Soils on site are predominately hydrologic soil group C/D, with minor area of B/D type soil as well. There is an isolated pocket of wetlands to the northeast as shown on the approved Jurisdictional Determination.

Access to the Noble Vines Phase 2 will be from an access drive west of Newport Boulevard, directly across from the Stop N Store access. The anticipated site improvements include roadway, parking areas, townhomes, an access point along Piedmont Avenue, an amenity area, and associated infrastructure to accommodate the development.

Existing water and sewer service is available along Piedmont Avenue and Berrien Road and will be provided by the City of Port Wentworth. Connections to the existing water and sewer systems will be extended to service the proposed site. Gas service shall be provided by Atlanta Gas Light Company, with electric and communications services provided by Georgia Power Company and Hotwire Communications, respectively. Fire protection will be provided by the Port Wentworth Fire Department.

The majority of the existing stormwater runoff flow will be captured by inlets and is piped to the interconnected proposed ponds. One of the proposed ponds will outfall through the crossing pipes under Highway 30 into the Newport drainage system. Newport discharges to Black Creek and continues southeast approximately 21,500 feet and ultimately discharges to the Savannah River.

Sedimentation and Erosion Control measures will be installed prior to and concurrent with construction. Sedimentation and Erosion Control devices will conform to the latest Georgia manual for erosion and sediment control in Georgia. Permanent grassing will be established to provide final stabilization for the area.

THOMAS & HUTTON

Port Wentworth – Claret Communities

Properties within 250' of 7-0976-02-027

1. PIN #: 7-0976C-01-004

   Owner(s) Name: R&R Property Ventures, LLC

   Mailing Address: 9710 Stirling Road, Unit 104, Hollywood, FL 33024-8018

2. PIN #: 7-0976-02-038

   Owner(s) Name: Varnedoe, Sam L

   Mailing Address: PO Box 2379, Tybee Island, GA 31328-2379

3. PIN #: 7-0976-02-045

   Owner(s) Name: Graham, Kevin and Graham, Bryan

   Mailing Address: 601 E 7th Street, Vidalia, GA 30474-5316

4. PIN #: 7-0976-02-046

   Owner(s) Name: Graham, Rosetta Foreman

   Mailing Address: 601 E 7th Street, Vidalia, GA 30474-5316

5. PIN #: 7-0976-02-005

   Owner(s) Name: Williams, Alvin

   Mailing Address: PO Box 786, Savannah, GA 31402-0786

6. PIN #: 7-0976-02-008

   Owner(s) Name: Mucha, Zachary D

   Mailing Address: 188 Jamestown Dr., Rincoln, GA 31326-5649

THOMAS & HUTTON

7. PIN #: 7-0976-02-035

   Owner(s) Name: Varnedoe, Sam L

   Mailing Address: PO Box 2379, Tybee Island, GA 31328-2379

8. PIN #: 7-0976A-01-001

   Owner(s) Name: Benton, Georgia W

   Mailing Address:120 E 31st Street, Savannah, GA 31401-7303

9. PIN #: 7-0976A-01-002

   Owner(s) Name: McCall, Flossie

   Mailing Address: 7412 GA Highway 21, Port Wentworth, GA 31407-9717

10. PIN #: 7-0976A-01-003

    Owner(s) Name: Rovolis, William

    Mailing Address: PO Box 15054, Savannah, GA 31416-1754

11. PIN #: 7-0976A-01-026

    Owner(s) Name: Eason, Freddie Allen

    Mailing Address: 665 Sam Smart Rd, Clyo, GA 31303-2827

12. PIN #: 7-0976A-01-027

    Owner(s) Name: City of Port Wentworth

    Mailing Address: 304 S Coastal Highway, Port Wentworth, GA 31407-2010

13. PIN #: 7-0976A-01-006

    Owner(s) Name: Steele, Glenn A and Steele, Anthony

    Mailing Address: 207 Stephanie Ave, Rincoln, GA 31326-9666

14. PIN #: 7-0976A-01-007

    Owner(s) Name: Steele, Glenn A and Steele, Anthony

    Mailing Address: 207 Stephanie Ave, Rincoln, GA 31326-9666

15. PIN #: 7-0976-02-028

    Owner(s) Name: City of Port Wentworth

    Mailing Address: 305 S Coastal Highway, Port Wentworth, GA 31407-2001

16. PIN #: 7-0976B-01-003

    Owner(s) Name: Steele, Elnora Sweet and Steele, Will

    Mailing Address: 52 Leon Village Dr, Savannah, GA 31408-2704

17. PIN #: 7-0976B-01-014

    Owner(s) Name: Price, Shirley

    Mailing Address: 522 W Victory Drive, Savannah GA 31405-1724

18. PIN #: 7-0976-02-034

    Owner(s) Name: Brady-Hohnerlein, Colleen Lynette

    Mailing Address: 13 Putters Pl, Savannah, GA 31419-6067

19. PIN #: 7-0976-02-033

    Owner(s) Name: Floyd, James Hugh

    Mailing Address: 744 Omaha Dr, Norcross, GA 30093-4922

20. PIN #: 7-0976-02-026

    Owner(s) Name: Paderewski, Jules B

    Mailing Address: PO Box 9087, Savannah, GA 31412-9087

THOMAS & HUTTON

21. PIN #: 7-0976-02-025

    Owner(s) Name: Coopers Hill, LLC

    Mailing Address: Port Wentworth, GA 31407

22. PIN #: 7-0976-02-024

    Owner(s) Name: City of Port Wentworth

    Mailing Address: 305 S Coastal Highway, Port Wentworth, GA 31407-2001

23. PIN #: 7-0976-02-023

    Owner(s) Name: Paderewski, Jules B

    Mailing Address: PO Box 9087, Savannah, GA 31412-9087

24. PIN #: 7-0978-05-011

    Owner(s) Name: Stop N Store, LLC

    Mailing Address: 9100 White Bluff Road, Unit 502, Savannah, GA 31406-4672

25. PIN #: 7-0976C-01-003

    Owner(s) Name: Works Inez Keller

    Mailing Address: 390 N Orange Ave, Unit 1285, Orlando, FL 32801-1674

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3604

JUNE 28 2017

Regulatory Branch
SAS-2016-00851

Mr. Iraj Shambayati
S & I Cleaning, Inc.
554 Suncrest Boulevard
Savannah, Georgia 31410

Dear Mr. Shambayati:

I refer to a letter dated September, 2016, submitted on your behalf by Ms. Elaine Ceccacci of Environmental Services, Inc., requesting our verification of a delineation of aquatic resources for your site located adjacent to State Route 30 west of State Route 21 in Chatham County, Georgia (Latitude 32.1983, Longitude -81.2056). This project has been assigned number SAS-2016-00851 and it is important that you refer to this number in all communication concerning this matter.

The enclosed exhibit entitled, "Wetlands Plat Heritage Point", dated March 10, 2017, identifies the delineation limits of all aquatic resources within the review area. The wetlands were delineated in accordance with criteria contained in the 1987 "Corps of Engineers Wetland Delineation Manual," as amended by the most recent regional supplements to the manual. This delineation will remain valid for a period of 5 years unless new information warrants revision prior to that date.

Please be advised, aquatic resources that are under the jurisdiction of Section 404 of the Clean Water Act (33 United States Code § 1344) and/or Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) may require a permit for the placement of dredged or fill material or mechanized land clearing of those aquatic resources may require prior Department of the Army authorization pursuant to Section 404.

If you intend to sell property that is part of a project that requires Department of the Army Authorization, it may be subject to the Interstate Land Sales Full Disclosure Act. The Property Report required by Housing and Urban Development Regulation must state whether, or not a permit for the development has been applied for, issued or denied by the U.S. Army Corps of Engineers (Part 320.3(h) of Title 33 of the Code of Federal Regulations).

This communication does not convey any property rights, either in real estate or material, or any exclusive privileges. It does not authorize any injury to property, invasion of rights, or any infringement of federal, state or local laws, or regulations. It

does not obviate your requirement to obtain state or local assent required by law for the development of this property. If the information you have submitted, and on which the U.S. Army Corps of Engineers has based its determination is later found to be in error, this decision may be revoked.

A copy of this letter is being provided to the following parties: Ms. Elaine Ceccaci, Environmental Services, Inc., 101 B Estus Drive, Savannah, Georgia 31404.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you have interaction with our office.

If you have any questions, please call me, at (912) 652-5893.

Sincerely,

William M. Rutlin
Chief, Coastal Plain Field Office

Enclosures

Reference

1. Plat recorded at Subdivision Map Book 28-S, Pg. 21

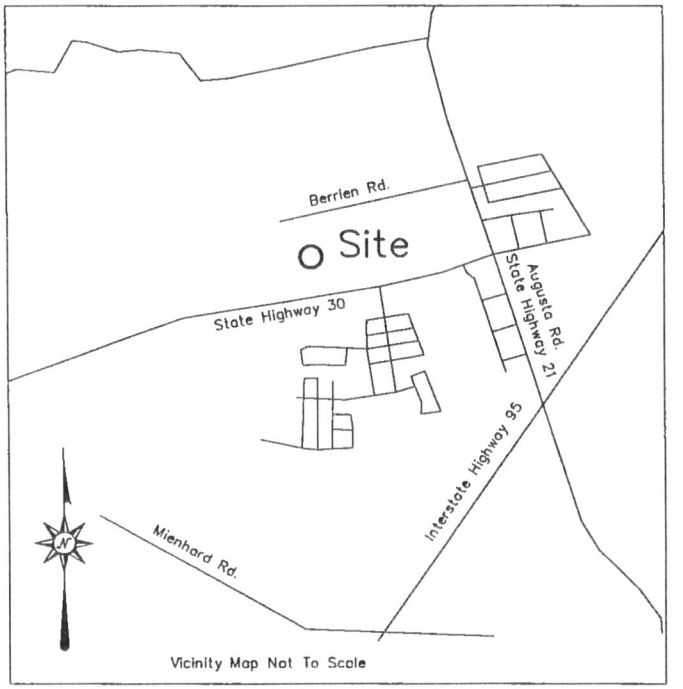
Property Information

Current Zoning: P-RIP

Tax Assessor's Property Identification Number: 7-0976-02-027

Total Study Area: 33.0 Ac.

See Sheet 2 Of 4 For Study Area Map
See Sheet 3 Of 4 For Wetland Area No. 1
See Sheet 4 Of 4 For Wetland Area No. 2



Vicinity Map Not To Scale

To the best of my knowledge and belief, this plat has been prepared in conformity with the Technical Standards for Property Surveys in Georgia as set forth in Chapter 180-7 of the Rules of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as set forth in the Georgia Plat Act, O.C.G.A. 15-6-67

Yawn Land Surveys, LLC
Dale E. Yawn, R.L.S.
24 Island Creek Lane
Savannah, Ga. 31410
912-897-6307
yawn2510@bellsouth.net
LSF #000907

Surveyor's Notes

1. This is not a boundary survey of the property. The boundary line information as shown has been taken from a plat of record. (See Reference). The boundary line of this property is the study area limits line. Boundary/Study Area acreage taken from plat of record.

2. The bearings and coordinates as shown on this drawing are based on the Georgia State Plane Coordinate System, East Zone, NAD83. A Topcon GR3 dual frequency GPS receiver using differential corrections obtained from the EGPS RTK network was used to position control points used in the survey.

3. The wetlands areas as shown were delineated by Environmental Services, Inc. in October, 2016.

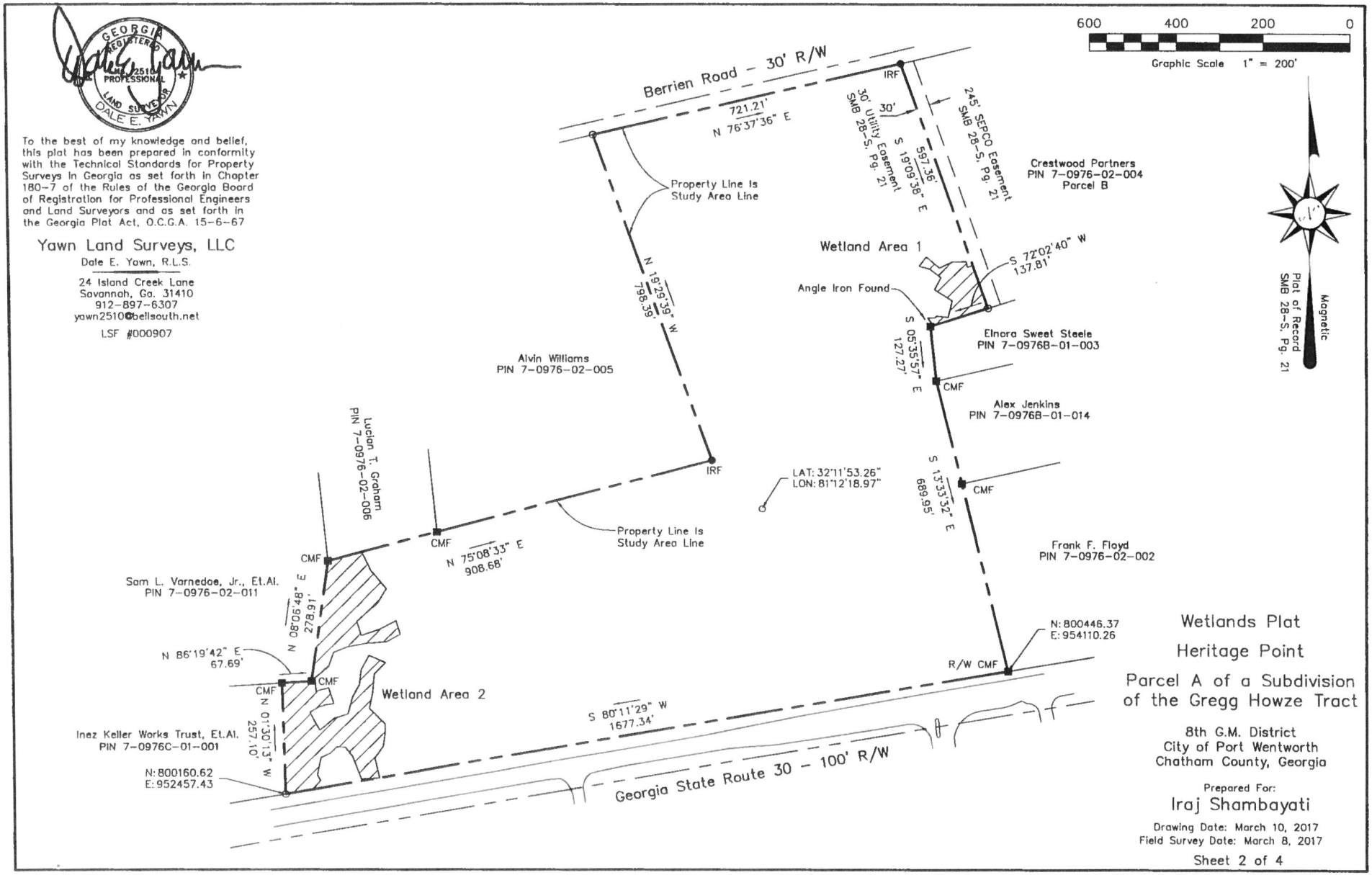
Total Study Area:	33.00 Acres
Wetlands Area 1:	0.27 Acre
Wetlands Area 2:	1.56 Acre
Total Wetlands:	1.83 Acre
Total Uplands:	31.17 Acre

Wetlands Plat
Heritage Point
Parcel A of a Subdivision of the Gregg Howze Tract

8th G.M. District
City of Port Wentworth
Chatham County, Georgia

Prepared For:
Iraj Shambayati

Drawing Date: March 10, 2017
Field Survey Date: March 8, 2017


GEORGIA REGISTERED PROFESSIONAL LAND SURVEYOR DALE E. YAWN
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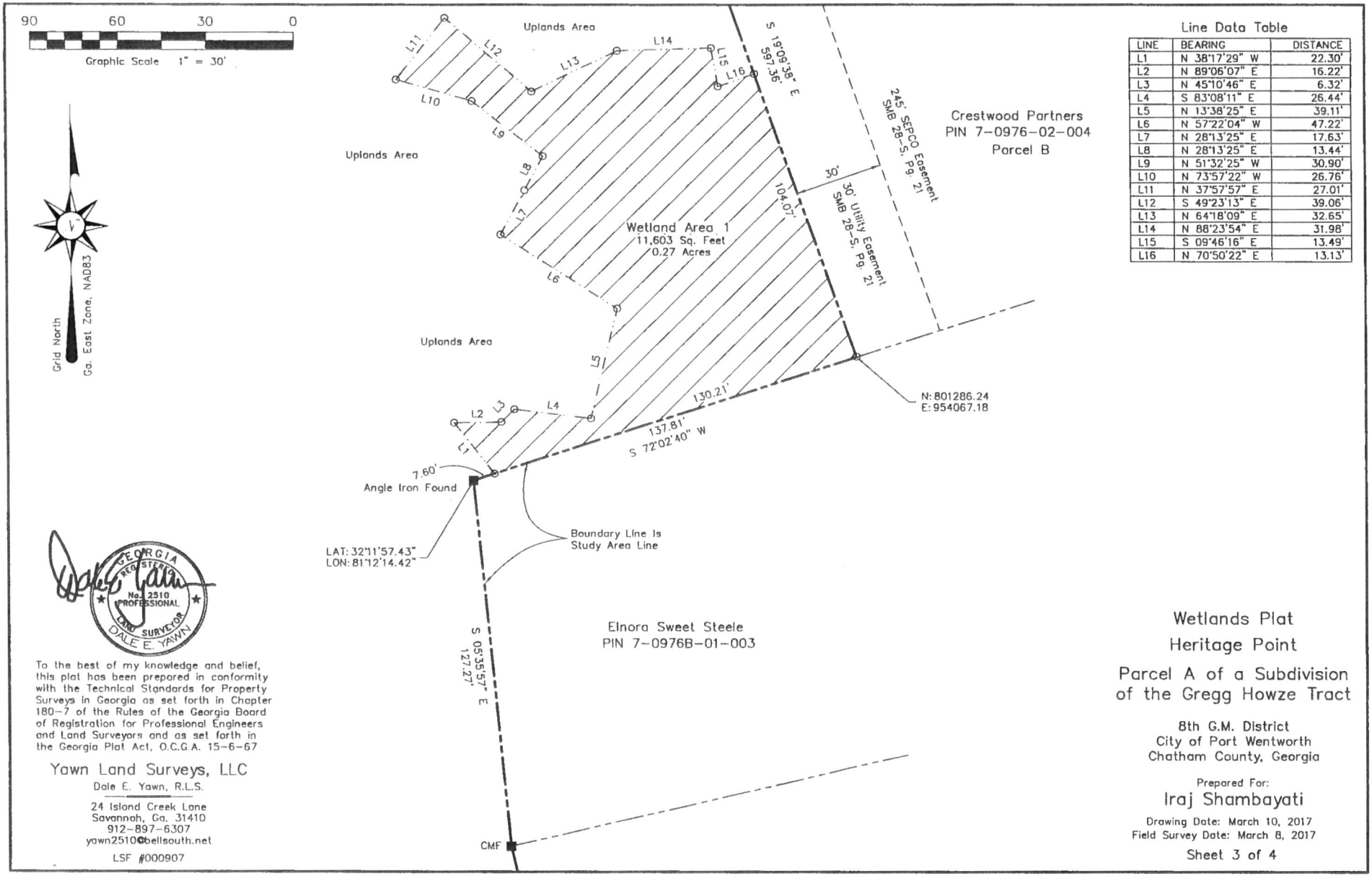
yawn2510@bellsouth.net
LSF #000907
600 400 200 0
Graphic Scale 1" = 200'
Berrien Road - 30' R/W
721.21'
N 76°37'36" E
IRF
30' Utility Easement SMB 28-S, Pg. 21
245' SEPCO Easement SMB 28-S, Pg. 21
Crestwood Partners
PIN 7-0976-02-004
Parcel B
Property Line Is Study Area Line
S 19°09'38" E
597.36'
Wetland Area 1
S 72°02'40" W
137.81'
Angle Iron Found
N 19°29'39" W
798.39'
Alvin Williams
PIN 7-0976-02-005
S 05°35'57" E
127.27'
Elnora Sweet Steele
PIN 7-0976B-01-003
CMF
Alex Jenkins
PIN 7-0976B-01-014
Lucian T. Graham
PIN 7-0976-02-006
IRF
LAT: 32°11'53.26"
LON: 81°12'18.97"
S 13°33'52" E
689.95'
CMF
CMF
N 75°08'33" E
908.68'
Property Line Is Study Area Line
Frank F. Floyd
PIN 7-0976-02-002
CMF
Sam L. Varnedoe, Jr., Et.Al.
PIN 7-0976-02-011
N 08°06'48" E
278.91'
N: 800446.37
E: 954110.26
N 86°19'42" E
67.69'
CMF
CMF
R/W CMF
Wetland Area 2
N 01°30'13" W
257.10'
S 80°11'29" W
1677.34'
Inez Keller Works Trust, Et.Al.
PIN 7-0976C-01-001
N: 800160.62
E: 952457.43
Georgia State Route 30 - 100' R/W
Plat of Record SMB 28-S, Pg. 21
Magnetic
Wetlands Plat
Heritage Point
Parcel A of a Subdivision of the Gregg Howze Tract
8th G.M. District
City of Port Wentworth
Chatham County, Georgia
Prepared For:
Iraj Shambayati
Drawing Date: March 10, 2017
Field Survey Date: March 8, 2017
Sheet 2 of 4



Line Data Table

LINE	BEARING	DISTANCE
L1	N 38°17'29" W	22.30'
L2	N 89°06'07" E	16.22'
L3	N 45°10'46" E	6.32'
L4	S 83°08'11" E	26.44'
L5	N 13°38'25" E	39.11'
L6	N 57°22'04" W	47.22'
L7	N 28°13'25" E	17.63'
L8	N 28°13'25" E	13.44'
L9	N 51°32'25" W	30.90'
L10	N 73°57'22" W	26.76'
L11	N 37°57'57" E	27.01'
L12	S 49°23'13" E	39.06'
L13	N 64°18'09" E	32.65'
L14	N 88°23'54" E	31.98'
L15	S 09°46'16" E	13.49'
L16	N 70°50'22" E	13.13'

GEORGIA REGISTERED No. 2510 PROFESSIONAL LAND SURVEYOR DALE E. YAWN

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Wetlands Plat
Heritage Point
Parcel A of a Subdivision of the Gregg Howze Tract

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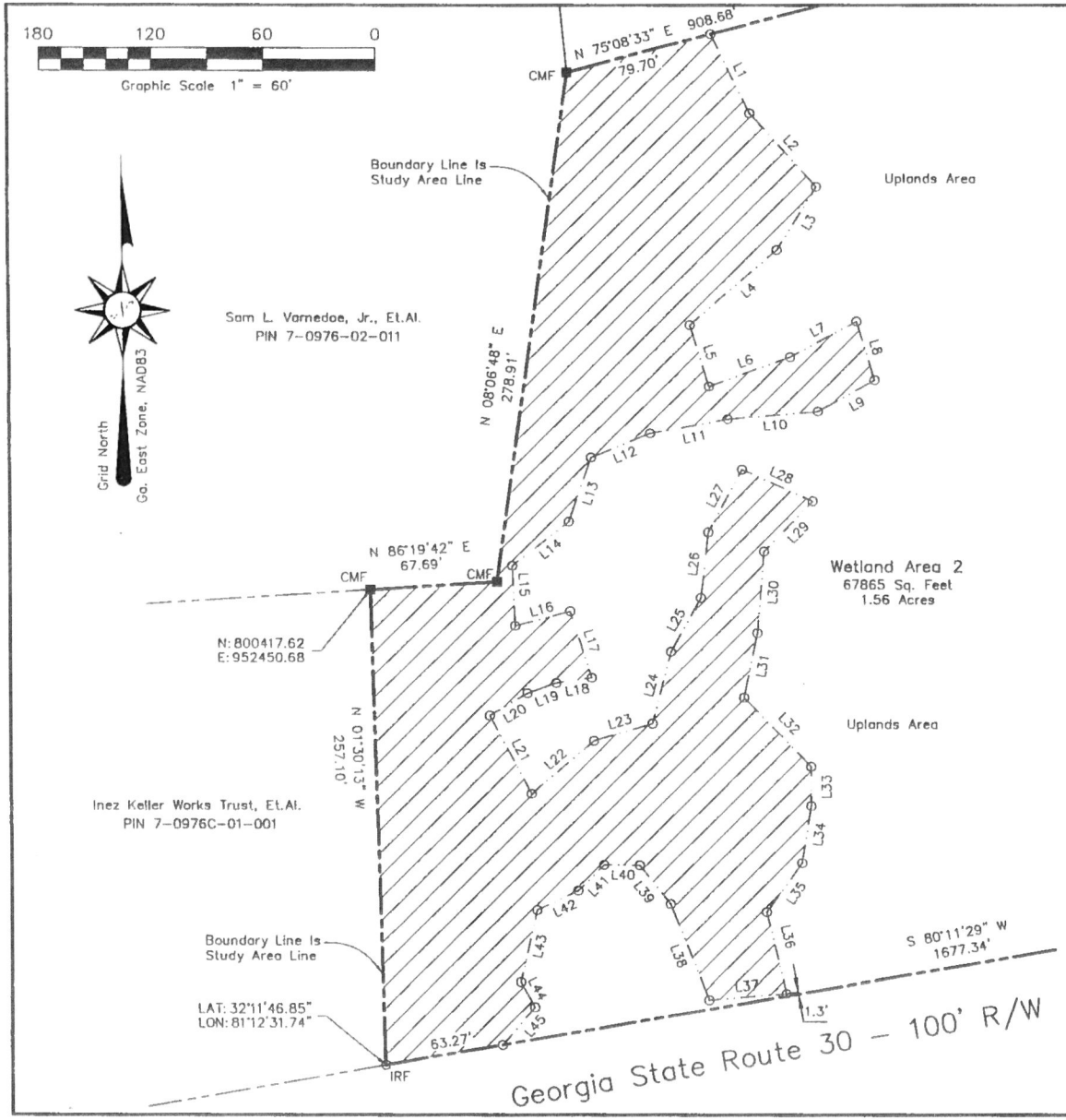

Line Data Table

LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L1	S 25°35'46" E	47.46'	L23	N 73°43'25" E	32.68'
L2	S 41°15'29" E	53.33'	L24	N 14°35'44" E	40.33'
L3	S 31°43'39" W	40.48'	L25	N 28°46'55" E	33.38'
L4	S 49°06'32" W	62.09'	L26	N 06°47'47" E	35.57'
L5	S 16°50'13" E	34.48'	L27	N 28°39'27" E	38.21'
L6	N 70°08'37" E	46.30'	L28	S 65°49'18" E	41.29'
L7	N 61°39'55" E	40.62'	L29	S 44°15'08" W	37.61'
L8	S 16°47'42" E	32.96'	L30	S 04°55'14" W	44.21'
L9	S 60°35'44" W	35.12'	L31	S 11°46'10" W	36.01'
L10	S 85°01'49" W	48.49'	L32	S 44°04'28" E	51.36'
L11	S 79°12'05" W	42.26'	L33	S 00°06'53" W	21.33'
L12	S 67°54'39" W	34.21'	L34	S 09°16'23" W	31.52'
L13	S 19°24'49" W	36.61'	L35	S 35°49'13" W	32.63'
L14	S 51°50'15" W	38.45'	L36	S 13°12'46" E	45.35'
L15	S 02°30'49" E	32.34'	L37	S 85°15'05" W	41.53'
L16	N 74°54'24" E	30.29'	L38	N 21°26'01" W	55.74'
L17	S 17°18'50" E	37.94'	L39	N 38°12'31" W	26.60'
L18	S 81°16'21" W	19.17'	L40	N 89°21'48" W	19.07'
L19	S 70°01'13" W	16.31'	L41	S 44°49'51" W	19.58'
L20	S 59°10'52" W	23.42'	L42	S 64°17'24" W	24.26'
L21	S 27°39'35" E	47.42'	L43	S 12°42'40" W	40.08'
L22	N 49°28'28" E	43.80'	L44	S 28°47'35" E	15.29'
			L45	S 40°37'25" W	26.67'

GEORGIA REGISTERED No. 2510 PROFESSIONAL LAND SURVEYOR DALE E. YAWN

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Wetlands Plat
Heritage Point
Parcel A of a Subdivision of the Gregg Howze Tract

8th G.M. District
City of Port Wentworth
Chatham County, Georgia

Prepared For:
Iraj Shambayati

Drawing Date: March 10, 2017
Field Survey Date: March 8, 2017

3.4.3 Exhibit 1 - Water Distribution System Check List

Typical Water System Plan shall include:	Check Off
1) Layout and legend	✓
2) Water System analysis and design (include calculations)	✓
3) Show waterline easement (if applicable)	✓
4) Pipe separated distances called out at utility crossings	✓
5) Isolation Valves	✓
6) Valves 8" and larger placed in manholes	✓
7) Meters sized and located on plans	✓
8) All service connections shown	✓
9) Existing and proposed fire hydrants shown	✓
10) Fire Flow Demand (Exhibit 2) To be provided upon receiving more information	
▪ Calculate water need based upon ISO Guidelines	
▪ Show maintenance responsibility for fire line and appurtenances in owner/client agreement (Exhibit 3)	
▪ Show Backflow Detector Check Assembly	
▪ If no fire system is proposed, please indicate on the plans	
11) Irrigation System	
▪ Calculate water need based upon system design	✓
▪ Show size and location of backflow preventor and water meter	✓
▪ If no irrigation system is proposed, please indicate on the plans	✓
12) Attach certification that water lines are not in, nor do they serve, structures built upon solid waste landfills	To be provided upon receipt
13) City of Port Wentworth specifications and details used	✓
14) Proposed water/sewer agreement attached	To be provided upon receipt
15) Georgia Registered Professional Engineer stamp & signature	✓

3.5.3 Exhibit 1 - Wastewater Collection System Check List

Typical Wastewater System Plan shall include:	Check Off
1) Layout and legend	✓
2) Exhibit 2 completed (load data)	✓
3) For effluents with process water, comply with the City's Pretreatment Ordinance.	N/A
4) Show sewer easement (if applicable)	N/A
5) Manholes numbered and placed at 350' (max.) spacing	✓
6) Manholes placed at line directional changes	✓
7) Manhole frame and invert elevations shown	✓
8) Invert elevations shown for all pipe inside manholes	✓
9) Minimum gradient of 0.4% used for 8" pipes	✓
10) Maximum height of 2' between invert of pipes and invert of discharge manholes	✓
11) Minimum angle of 90 degrees for influent lines	✓
12) All sanitary sewers profiled	✓
13) Oil/grease traps and details provided for service station and food service preparers	N/A
14) Grading, paving, drainage, erosion control plans attached	✓
15) Attach certification that water and/or sewer lines are not in, nor do they serve, structures built upon solid waste landfills	To be provided upon receipt
16) For pump station design:	
a. Attach design calculations with pump curves	✓
b. City of Port Wentworth pump station design standards used to prepare drawings, details and specifications	✓
17) City of Port Wentworth sewer specifications and details used	✓
18) Proposed water/sewer agreement attached	To be provided upon receipt
19) Georgia Registered Professional Engineer stamp and signature	✓

3.5.4 Exhibit 2 Equivalent Residential Unit (ERU) Calculations

The following is designed to compute the total number of equivalent residential units (ERU's), as well as, total water and sewer fees.

PROJECT NOBLE VINES PHASE 2 **DATE** 08/09/22

LOCATION HWY 30, PORT WENTWORTH, GA

RESIDENTIAL USE: EQUIVALENT RESIDENTIAL UNITS (ERU)			
Total Number of Single Family Homes	____ @ 300 gpd	=	____ GP
Total Number of One Bedroom Apartments	____ @ 150 gpd	=	____ GP
Total Number of Two Bedroom Apartments	____ @ 200 gpd	=	____ GP
Total Number of Three Bedroom Apartments	60 @ 300 gpd	=	18,000 GP
(4 or more units per parcel)	TOTAL GPD 18,000		
	Divide by 300 gpd (1 ERU)		
	= TOTAL ERU's 60		

COMMERCIAL USE: GALLONS PER DAY (GPD)			
Offices	30 gallons/200 sq. ft.	=	____ GPD
Department Store/Retail	5 gallons/100 sq. ft.	=	____ GPD
Restaurant, Less Than 24 hr Operation	25 gallons/seat	=	____ GPD
Restaurant, 24 hr Operation	50 gallons/seat	=	____ GPD
Hotel/Motel	100 gallons per room	=	____ GPD
Schools/Day, Restrooms, gym &	25 gallons/person	=	____ GPD
Self Service Laundry	200 gallons/machine	=	____ GPD
Commercial Laundry	1000 gallons/machine	=	____ GPD
Physician's Office	100 gallons/exam room	=	____ GPD
Dental Office	150 gallons/chair	=	____ GPD
Clinic	150 gallons/exam room	=	____ GPD
Nursing Home	100 gallons/resident	=	____ GPD
Barber Shop/Beauty Parlor	100 gallons/chair	=	____ GPD
Banks	30 gallons/200 sq.ft.	=	____ GPD
Grocery Store	5 gallons/100 sq.ft.	=	____ GPD
Warehouse	10 gallons/1000 sq.ft.	=	____ GPD
Other		=	
	TOTAL GPD ____		
	= TOTAL ERU's ____		

Calculated by: NIKHIL DUGGIRALA Date: 08/09/22

For determination of sewer tap fees reference Port Wentworth Code of Ordinance Article III Section 21-63

For determination of water tap fees reference Port Wentworth Code of Ordinance Article I Section 21-11

For determination of fire protection tap fees reference Port Wentworth Code of Ordinance Article I Section 21-11

ESTD 1946
75H
THOMAS & HUTTON

50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405 | 912.234.5300
THOMASANDHUTTON.COM

September 1, 2022

Ms. Melanie Ellis
City of Port Wentworth
7224 GA Highway 21
Port Wentworth, GA 31407

Re: Noble Vines Phase 2
Specific Development Plan Submittal
J-28896.0003

Dear Ms. Ellis:

On behalf of our client, Claret Communities, LLC, please accept the following documents in support of the Specific Development Plan Submittal.

1. Site Plan Application
2. One (1) copy of the Project Narrative
3. One (1) copy of Nearby Property Information
4. One (1) copy of Recorded Plat
5. One (1) copy of Army Corp of Engineers Wetland JD
6. Three (3) full sized copies of site plan civil drawings
7. Fifteen (15) half-sized (11"x17") copies of site plan civil drawings
8. One (1) 8.5" x 11" copy of overall site plan
9. Two (2) copies of stormwater report
10. One (1) copy of the water report
11. One (1) copy of the pump station design considerations
12. $886.00 check for site plan review fee

An electronic copy of the above documents has been e-mailed to your office.

We appreciate your time in reviewing this project. Please feel free to contact our office with any questions.

Sincerely,

THOMAS & HUTTON

Nathan B. Long, PE

NBL/dc
Enclosures

CITY OF PORT WENTWORTH
(912) 964-4379

REC#: 00368446 9/07/2022 9:55 AM
OPER: KS TERM: 055
REF#: 1052

TRAN: 112.0000 BLDG PERMIT
220474 886.00CR
CLARET COMMUNITIES, LLC
7-0976-02-027
DEV-SPR 886.00CR

TENDERED: 886.00 CHECK
APPLIED: 886.00-

CHANGE: 0.00

WWW.CITYOFPORTWENTWORTH.COM

Project Timeline

Project Number: 220474

Project Name: Noble Vines Ph II

Applicant / Engineer: CLARET COMMUNITIES, LLC

Owner: CLARET COMMUNITIES, LLC

City Review Engineer: TR Long Engineering

- 09.01.22-APPLICATION RECEIVED-INCOMPLETE (NO JUMP DRIVE)
- 09.06.22-PDF SUBMITTAL LINK RECEIVED
- 09.06.22-COMPLETE APPLICATION
- 09.06.22- sent submittal to TR Long for review.
- 10.03.22 – sent email to TR Long for review update.
- 10.21.22 – received EPD review letter. Forwarded to TR Long
- 11.21.22 – received 1st review letter from TR Long. Forwarded to Kathryn Oppenheimer (T&H)
- 12.13.22 – received resubmittal from T&H. Forwarded to TR Long. [ME]
- 02.21.23 – Received concurrence letter from TR Long. Forwarded to T&H and let them know they would be put on the next available meeting date pending advertising requirements.
- 03.15.23 – Oliver Lee requested a meeting to run through the project approvals and what else is needed for ground breaking. Meeting set for 03.28.23 at 11:00 am.
- 03.20.23 – Email sent to Michael Lerque requesting layout of the final unit numbers. Address already assigned.
- 03.24.23 – Public Hearing notice letters mailed [M.E.]
- 03.26.23 – Public Hearing Notice published in the Savannah Morning News [ME]
- 04.10.23 – The Planning Commission voted unanimously to approve the application.

114 North Commerce Street
Hinesville, Georgia 31313
(912) 368-5664 Office
(912) 368-7206 Fax

T R LONG ENGINEERING, P.C.

1000 Towne Center Blvd.
Suite 304
Pooler, Georgia 31322
(912) 355-1046

February 21, 2023

Mr. Brian Harvey
City of Port Wentworth
7224 Georgia Highway 21
Port Wentworth, Georgia 31407

Re: Site Development Plans of Noble Vines Phase 2
Port Wentworth. Georgia

Dear Mr. Harvey:

T. R. Long Engineering, P.C. has reviewed the revisions to the construction plans for the above referenced project. These plans were prepared by Thomas & Hutton dated 8/12/2021 and revised 12/13/2022. The proposed plans generally meet the intent of the ordinances and guidelines governing construction in Port Wentworth.

Concurrence with the site plan by T. R. Long Engineering, P.C. and Port Wentworth does not relieve the owner/developer, designer, engineer, and contractor nor their representatives from their individual or collective responsibilities to comply with provisions of Local, State, and Federal regulations and/or ordinances. T. R. Long Engineering, P.C. and Port Wentworth's review of the submitted documents for completeness and general compliance with codes, ordinances and/or standards. No design liability can be assumed or assigned to T. R. Long Engineering, P.C. or Port Wentworth. All design liability remains with the professional engineer who signed and sealed those documents. Additionally, concurrence with the submitted documents and their intent is not to be construed as a check of every item submitted and does not prevent Port Wentworth from requiring corrections and/or addressing of omissions in the submitted documents and/or construction.

Should you have any questions, comments or need additional information please contact us.

Sincerely,

Trent R. Long, P.E.

3.5.3 Exhibit 1 - Wastewater Collection System Check List

Typical Wastewater System Plan shall include:	Check Off
1) Layout and legend	✓
2) Exhibit 2 completed (load data)	✓
3) For effluents with process water, comply with the City's Pretreatment Ordinance.	N/A
4) Show sewer easement (if applicable)	N/A
5) Manholes numbered and placed at 350' (max.) spacing	✓
6) Manholes placed at line directional changes	✓
7) Manhole frame and invert elevations shown	✓
8) Invert elevations shown for all pipe inside manholes	✓
9) Minimum gradient of 0.4% used for 8" pipes	✓
10) Maximum height of 2' between invert of pipes and invert of discharge manholes	✓
11) Minimum angle of 90 degrees for influent lines	✓
12) All sanitary sewers profiled	✓
13) Oil/grease traps and details provided for service station and food service preparers	N/A
14) Grading, paving, drainage, erosion control plans attached	✓
15) Attach certification that water and/or sewer lines are not in, nor do they serve, structures built upon solid waste landfills	To be provided upon receipt
16) For pump station design:	
a. Attach design calculations with pump curves	✓
b. City of Port Wentworth pump station design standards used to prepare drawings, details and specifications	✓
17) City of Port Wentworth sewer specifications and details used	✓
18) Proposed water/sewer agreement attached	To be provided upon receipt
19) Georgia Registered Professional Engineer stamp and signature	✓

3.5.4 Exhibit 2 Equivalent Residential Unit (ERU) Calculations

The following is designed to compute the total number of equivalent residential units (ERU's), as well as, total water and sewer fees.

PROJECT NOBLE VINES PHASE 2 **DATE** 08/09/22

LOCATION HWY 30, PORT WENTWORTH, GA

RESIDENTIAL USE: EQUIVALENT RESIDENTIAL UNITS (ERU)			
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Total Number of Two Bedroom Apartments	_____ @ 200 gpd	=	_____GP
Total Number of Three Bedroom Apartments	60 @ 300 gpd	=	18,000 GP
(4 or more units per parcel)	TOTAL GPD 18,000		
	Divide by 300 gpd (1 ERU)		
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COMMERCIAL USE: GALLONS PER DAY (GPD)			
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Department Store/Retail	5 gallons/100 sq. ft.	=	_____GPD
Restaurant, Less Than 24 hr Operation	25 gallons/seat	=	_____GPD
Restaurant, 24 hr Operation	50 gallons/seat	=	_____GPD
Hotel/Motel	100 gallons per room	=	_____GPD
Schools/Day, Restrooms, gym &	25 gallons/person	=	_____GPD
Self Service Laundry	200 gallons/machine	=	_____GPD
Commercial Laundry	1000 gallons/machine	=	_____GPD
Physician's Office	100 gallons/exam room	=	_____GPD
Dental Office	150 gallons/chair	=	_____GPD
Clinic	150 gallons/exam room	=	_____GPD
Nursing Home	100 gallons/resident	=	_____GPD
Barber Shop/Beauty Parlor	100 gallons/chair	=	_____GPD
Banks	30 gallons/200 sq.ft.	=	_____GPD
Grocery Store	5 gallons/100 sq.ft.	=	_____GPD
Warehouse	10 gallons/1000 sq.ft.	=	_____GPD
Other		=	
	TOTAL GPD_____		
	= TOTAL ERU's _____		

Calculated by: NIKHIL DUGGIRALA Date: 08/09/22

For determination of sewer tap fees reference Port Wentworth Code of Ordinance Article III Section 21-63

For determination of water tap fees reference Port Wentworth Code of Ordinance Article I Section 21-11

For determination of fire protection tap fees reference Port Wentworth Code of Ordinance Article I Section 21-11

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Watershed Protection Branch
Coastal District Office
1050 Canal Road
Brunswick, Georgia 31525-6856
Phone: 912-264-7284; Fax: (912) 262-3160

September 6, 2022

Claret Communities, LLC
c/o Mr. Lee Terry
lterry@claretcommunities.com

Re: Proposed Land Disturbing Activity
Noble Vines Phase 2
Chatham County, Georgia
File: SW-025-04-177

Dear Mr. Terry:

In accordance with the General NPDES Permit No. GAR100001 for Storm Water Discharges Associated with Construction Activities for Stand Alone Developments, issued by the Georgia Environmental Protection Division (EPD) in August 2018, this Project has been reviewed for deficiencies in the identification of waters of the state and potential encroachment of land disturbing activities within 25 foot immediately adjacent and upland of the identifiable point from which the State mandated buffer is measured.

Based upon this review, the EPD has determined the following:

(1) The project does **not** have deficiencies in the identification of waters of the state.

(2) The project will **not** require a buffer variance from the EPD.

However, the EPD reserves the right to change this determination if information that conflicts with the original submittal is obtained during a later site inspection.

Additionally, in accordance with the General NPDES Permit No. GAR100001, each Erosion, Sedimentation and Pollution Control Plan (ESPCP) submittal shall include a completed and applicable ESPCP Checklist established by the Georgia Soil and Water Conservation as of January 1 of the year in which the land-disturbing activity was permitted.

A deficient ESPCP is a violation of the NPDES Permit. If violations occur on the proposed project site and enforcement actions become necessary, a deficient ESPCP may increase the fines incurred. The applicable Checklist as well as a guidance document are available on the Georgia EPD website @ http://epd.georgia.gov.

Based upon this review, EPD has determined the following:

(1) The ESPCP for this Project has adequately addressed all items of the applicable checklist.

If additional information is required, please contact me at 912-230-4880.

Sincerely,

Shannon K. Winsness
Environmental Specialist

cc: Thomas & Hutton
c/o Nathan B. Long, PE
long.n@tandh.com

Alice Vick
EPD Coastal District Office
1050 Canal Road
Brunswick, GA 31525-6856

File: SW-025-04-177

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

Richard E. Dunn, Director

Watershed Protection Branch
2 Martin Luther King, Jr. Drive
Suite 1152, East Tower
Atlanta, Georgia 30334
404-463-1511

October 13, 2022

Mr. Steve Davis, City Manager
City of Port Wentworth
7224 Georgia Highway 21
Port Wentworth, Georgia 31407

RE: Plans and Specifications (P&S)
Noble Vines Phase 2 Sewer Extension
Port Wentworth Water Pollution Control Plant
NPDES Permit No. GA0038814
EPD # 2022-188
Chatham County

Dear Mr. Davis:

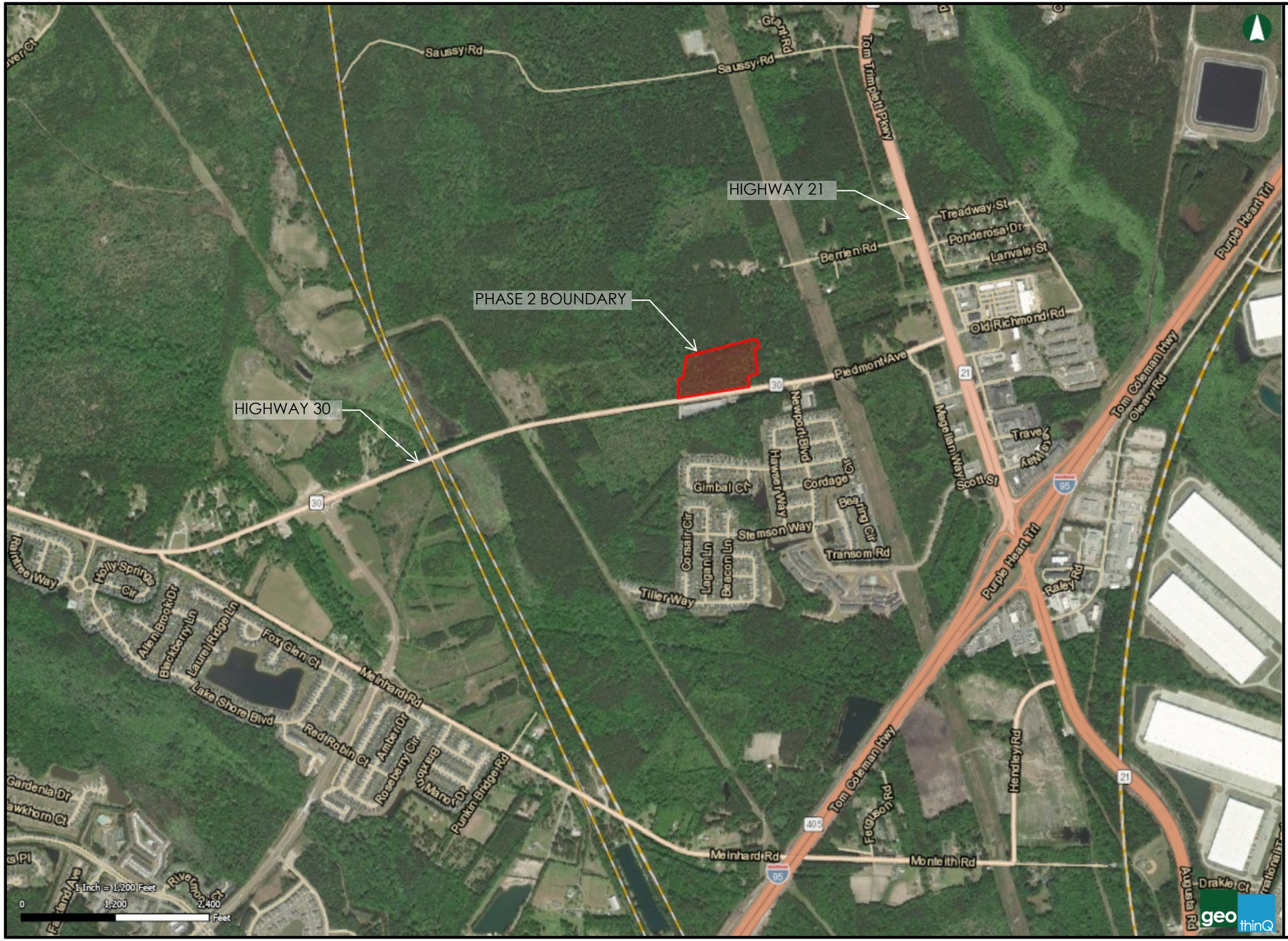
The Georgia Environmental Protection Division (EPD) is in receipt of the plans and specifications for the above-referenced project, which includes the installation of approximately 2,216 linear feet (LF) of 8" gravity sewer. This project has not been selected for review by the Wastewater Regulatory Program.

If you should have any questions, please contact me at (470) 524-0733, or via email at *august.lutkehus@dnr.ga.gov*.

Sincerely,

August Lutkehus
Municipal Permitting Unit
Wastewater Regulatory Program

cc: Nathan Long, Thomas & Hutton (*long.n@tandh.com*)
Omar Senati-Martinez, City of Port Wentworth (*osenati@cityofportwentworth.com*)



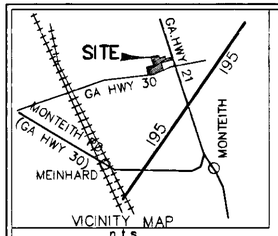
THOMAS & HUTTON

Noble Vines

Phase 2

08/10/2022

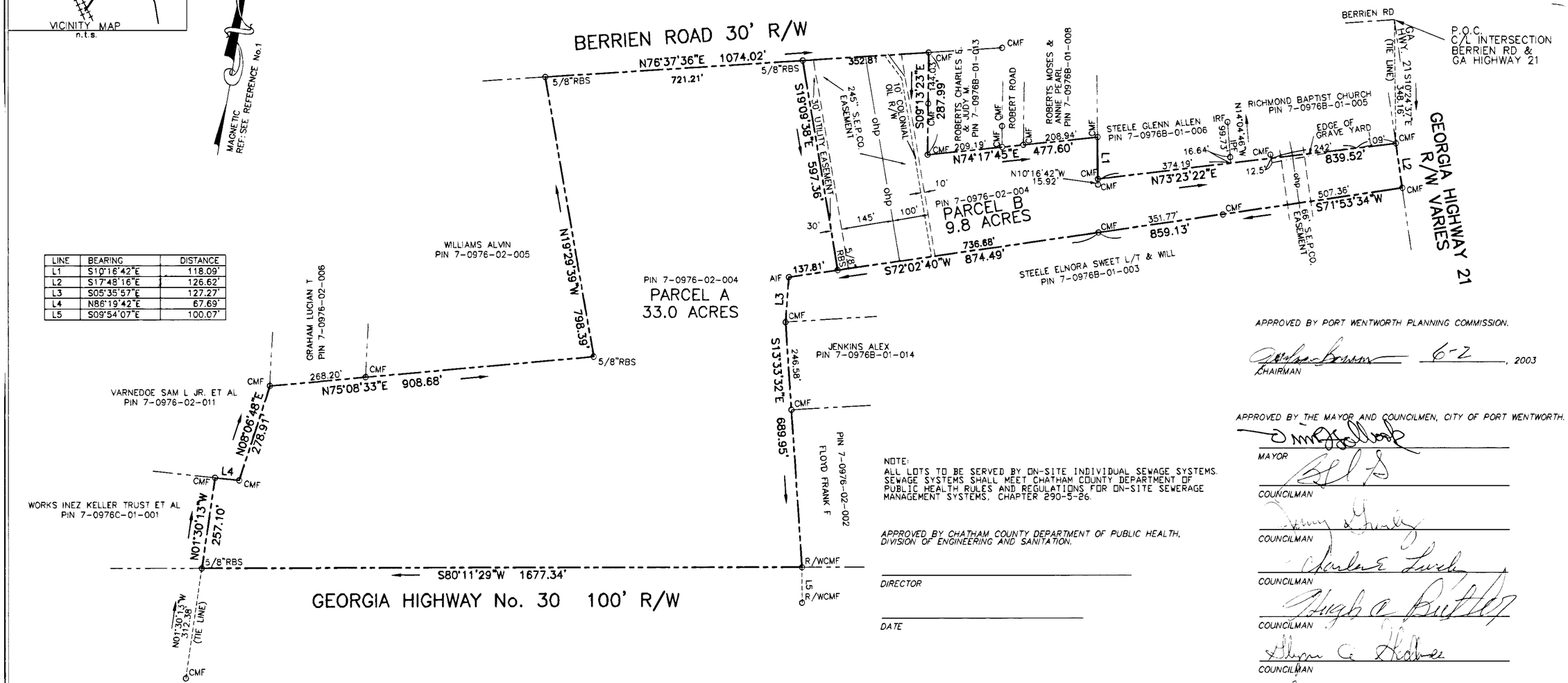
This map was created using geothinQ | www.geothinQ.com | Mapping Smart Land Decisions



ALL STREETS, RIGHTS-OF-WAY, EASEMENTS AND ANY SITES FOR PUBLIC USE AS NOTED ON THIS PLAT ARE HEREBY DEDICATED FOR THE USE INTENDED.

_____ _____, 2002
OWNER

THIS DRAWING AND ALL REPRODUCIBLE COPIES OF THIS DRAWING ARE THE PROPERTY OF GARDNER, WILLIAMS AND ASSOCIATES, INC. REPRODUCTION OR ALTERATIONS OF THIS DRAWING WITHOUT THE WRITTEN CONSENT OF GARDNER, WILLIAMS AND ASSOCIATES, INC. IS NOT PERMITTED.



LINE	BEARING	DISTANCE
L1	S10°16'42"E	118.09'
L2	S17°48'16"E	126.62'
L3	S05°35'57"E	127.27'
L4	N86°19'42"E	67.69'
L5	S09°54'07"E	100.07'

NOTE:
ALL LOTS TO BE SERVED BY ON-SITE INDIVIDUAL SEWAGE SYSTEMS. SEWAGE SYSTEMS SHALL MEET CHATHAM COUNTY DEPARTMENT OF PUBLIC HEALTH RULES AND REGULATIONS FOR ON-SITE SEWERAGE MANAGEMENT SYSTEMS, CHAPTER 290-5-26.

APPROVED BY CHATHAM COUNTY DEPARTMENT OF PUBLIC HEALTH, DIVISION OF ENGINEERING AND SANITATION.

_____
DIRECTOR

_____
DATE

APPROVED BY PORT WENTWORTH PLANNING COMMISSION.

_____ 6-2, 2003
CHAIRMAN

APPROVED BY THE MAYOR AND COUNCILMEN, CITY OF PORT WENTWORTH.

_____
MAYOR

_____
COUNCILMAN

_____
COUNCILMAN

_____
COUNCILMAN

_____
COUNCILMAN

_____
COUNCILMAN

6/12/03
DATE

REFERENCES:
1. PB Y, PAGE 212
2. PB P, PAGE 111
3. PB T, PAGE 273
4. HMB 5, PAGE 66
5. PB U, PAGE 32
6. DB 192Y, PAGE 244
7. RECORD DRAWINGS OF THE GEORGIA HWY 21 NORTHWEST WATER AND SEWER EXTENSION, DATED APRIL, 2003, BY HUSSEY, GAY, BELL & DEYOUNG, INC

IN MY OPINION, THIS PLAT IS A CORRECT REPRESENTATION OF THE LAND PLATTED AND HAS BEEN PREPARED IN CONFORMITY WITH THE MINIMUM STANDARDS AND REQUIREMENTS OF LAW.

_____
MICHAEL S. WILLIAMS
GA REG. L.S. NO. 2712

GEORGIA REGISTERED No. 2712 LAND SURVEYOR MICHAEL S. WILLIAMS

NOTES:
1. BASED ON GRAPHIC DETERMINATION, THIS PROPERTY IS NOT IN A FEMA/FIRM SPECIAL FLOOD HAZARD AREA PER COMMUNITY PANEL NO. 130030-0030-C, DATED MAY 19, 1987
2. THE TOTAL PLAT AREA IS 42.8 ACRES.
3. EQUIPMENT: SOKKIA SET4-B TOTAL STATION
   FIELD ERROR OF CLOSURE: 1/231,330 1" PER ANG. PT.
   PLAT CLOSURE: 1/587,650
   ADJUSTED BY COMPASS METHOD
   FIELD WORK COMPLETED MAY, 2003.
4. THIS IS A BOUNDARY SURVEY ONLY IMPROVEMENTS MAY EXIST ON THIS SITE THAT ARE NOT SHOWN ON THIS SURVEY.
5. THIS PLAT IS SUBJECT TO ALL RECORDED EASEMENTS AND LOCAL BUILDING RESTRICTIONS.

LEGEND:

RBS	REBAR SET
RBF	REBAR FOUND
RRIF	RAILROAD IRON FOUND
CMF	CONCRETE MONUMENT FOUND
IPS	IRON PIPE SET
IPF	IRON PIPE FOUND
R/W	RIGHT OF WAY
AIF	ANGLE IRON FOUND
ohp	OVERHEAD POWER LINE

0' 200' 400'
SCALE: 1"=200'

MINOR SUBDIVISION
DIVISION OF THE GREGG HOWZE TRACT CONTAINING 42.8 ACRES, LOCATED ON GEORGIA HIGHWAY No.21, 8th G.M. DISTRICT, PORT WENTWORTH, CHATHAM COUNTY, GEORGIA

PREPARED FOR: CRESTWOOD PARTNERS, LLC

285-21

DATE: MAY 6, 2003 JOB No. 03-067

GARDNER, WILLIAMS & ASSOC., INC.
LAND SURVEYORS
527 HIGHWAY 80 - SUITE E
GARDEN CITY, GEORGIA 31408
PH (912) 964-8484

Z:\28896\28896.0003\Engineering\Drawings\Construction Plans\28896.0003 - CO.dwg - Dec 15, 2022 - 3:48:8 PM

SITE DEVELOPMENT PLANS

OF

NOBLE VINES

PHASE 2

PORT WENTWORTH, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GA 30341

TM# 7-0976-02-027

AUGUST 12, 2021
REVISED: DECEMBER 13, 2022

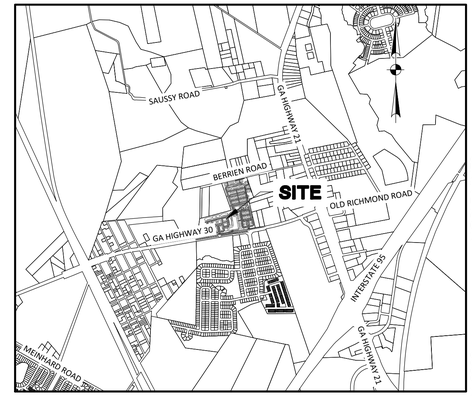
J-28896.0003

PREPARED BY:

THOMAS & HUTTON

GEORGIA REGISTERED No. 031274 PROFESSIONAL ENGINEER JONATHAN B. LONG

Sheet List Table	
Sheet Number	Sheet Title
CO	COVER SHEET
G1.1	GENERAL NOTES
G2.1	EXISTING CONDITIONS PLAN
AR1.1	ACCESSIBLE ROUTE PLAN
C1.1	STRIPING,SIGNAGE AND LAYOUT PLAN
C2.1	WATER AND SEWER PLAN
C2.2	SEWER PROFILES
C2.3	WATER AND SEWER DETAILS
C2.4	WATER AND SEWER DETAILS
C2.5	WATER AND SEWER DETAILS
C3.1	DRAINAGE PLAN
C4.1	PAVING AND GRADING PLAN
C5.1	DRAINAGE PROFILES
C5.2	DRAINAGE PROFILES
C5.3	ROAD PROFILES
C5.4	ROAD PROFILES
C5.5	PAVING,GRADING AND DRAINAGE DETAILS
C5.6	PAVING,GRADING AND DRAINAGE DETAILS
C5.7	PAVING,GRADING AND DRAINAGE DETAILS
C5.8	PAVING,GRADING AND DRAINAGE DETAILS
EC1.1	EROSION CONTROL NOTES
EC1.2	EROSION CONTROL NOTES
EC1.3	EROSION CONTROL NOTES
EC2.1	ES & PC PLAN - INITIAL PHASE
EC3.1	ES & PC PLAN - INTERMEDIATE PHASE
EC4.1	ES & PC PLAN - FINAL PHASE
EC5.1	ES & PC DETAILS
EC5.2	ES & PC DETAILS
EC5.3	ES & PC DETAILS



VICINITY MAP
SCALE: 1" = 2000'

NOBLE VINES
PHASE 2
J-28896.0003
12/13/22

SITE DATA TABLE	
ZONING	P-RIP
PROPOSED SITE USE	MULTIFAMILY
SITE AREA	33.0 AC
DISTURBED AREA	9.8 AC
ALLOWED DENSITY	18 UNITS/AC
PROPOSED DENSITY	60 UNITS (6.1 UNITS/AC)
MAXIMUM IMPERVIOUS COVER	---
PROPOSED IMPERVIOUS COVER	44.1%(5.26 AC)
MAXIMUM BUILDING HEIGHT ALLOWED	---
PROPOSED BUILDING HEIGHT	---
REQUIRED PARKING SPACES	120 SPACES (TOWNHOMES)
PROPOSED PARKING SPACES	30 SURFACE PARKING SPACES 60 DRIVEWAY PARKING SPACES 60 GARAGE PARKING SPACES 150 TOTAL PARKING SPACES
IMPERVIOUS SURFACES (TOTAL)	5.26 AC
POND	0 AC
BUILDINGS	2.75 AC
STREETS/PARKING	2.02 AC
SIDEWALKS	0.49 AC
PERVIOUS SURFACE	6.66 AC

NOTE: AREAS LISTED ABOVE ARE APPROXIMATE AND WILL NOT BE FINALIZED UNTIL A PLAT IS RECORDED.

REVISION HISTORY			
REV. NO.	REVISION	BY	DATE

SUBMITTAL HISTORY	
CITY OF PORT WENTWORTH	12/13/22
CITY OF PORT WENTWORTH, GEORGIA ENVIRONMENTAL PROTECTION DIVISION, GEORGIA EPD WASTEWATER REGULATORY PROGRAM AND GEORGIA EPD WATER PROTECTION BRANCH	9/01/22
SUBMITTED TO	DATE

811 Know what's below. Call before you dig.

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405
p.912.234.5300
www.thomasandhutton.com

Z:\28896\28896.0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896.0003 - ENGR4 • Oct 19, 2022 - 9:12 AM

WATER LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	10"W	10"W
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
VALVE AND BOX		
FIRE HYDRANT W/VALVE & BOX		
POST HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
CAP		

SEWER LEGEND

DESCRIPTION	EXISTING	PROPOSED
GRAVITY PIPE	SS	
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
MANHOLE		
CLEANOUT		
FORCEMAIN	10"FM 10"FM	10"FM 10"FM
VALVE AND BOX		
FLUSH HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
PLUG \ CAP		

ABBREVIATIONS

HDPE	HIGH DENSITY POLYETHYLENE		JB	JUNCTION BOX		SDMH	STORM DRAINAGE MANHOLE
BOT	BOTTOM		LF	LINEAR FEET		SF	SQUARE FEET
CI	CURB INLET		MAX	MAXIMUM		SS	SANITARY SEWER
CPP	CORRUGATED PLASTIC PIPE		MIN	MINIMUM		TC	TOP OF CURB
DIP	DUCTILE IRON PIPE		MH	MANHOLE		TG	TOP OF GUTTER
EL	ELEVATION		OC	ON CENTER		TP	TOP OF PAVEMENT
FG	FINISH GRADE		PC	POINT OF CURVE		TW	TOP OF WALK
FH	FIRE HYDRANT		PH	POST HYDRANT		TYP	TYPICAL
FM	FORCE MAIN (SANITARY SEWER)		PT	POINT OF TANGENT		W	WATER
FP	FINISH PAD		PVC	POLYVINYL CHLORIDE		W/	WITH
FR	FRAME		RCP	REINFORCED CONCRETE PIPE		WV	WATER VALVE
GI	GRATE INLET		RJP	RESTRAINED JOINT PIPE		YI	YARD INLET
GV	GATE VALVE		R/W	RIGHT-OF-WAY			
INV	INVERT ELEVATION		SD	STORM DRAINAGE			

OTHER UTILITIES LEGEND

DESCRIPTION	EXISTING
NATURAL GAS	UGG UGG
TELEPHONE	OHT OHT
UNDERGROUND TELEPHONE	UTL UTL
ELECTRICITY	OHP OHP
UNDERGROUND ELECTRICITY	UGP UGP

DRAINAGE LEGEND

DESCRIPTION	EXISTING	PROPOSED
PIPE		
DITCH		
CURB INLET		
GRATE INLET		
JUNCTION BOX		
OUTLET STRUCTURE		

GENERAL NOTES

1. ALL TOPOGRAPHIC INFORMATION IS BASED ON SURVEY FIELD DATA PROVIDED BY THOMAS AND HUTTON. ELEVATIONS ARE BASED UPON NAVD 88 VERTICAL DATUM. ELEVATIONS WERE ESTABLISHED USING 5" TOTAL STATION. THE HORIZONTAL DATUM USED IS GEORGIA STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83. SEE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION. CONTACT ENGINEER IMMEDIATELY IF FIELD ELEVATIONS VARY FROM EXISTING GROUND ELEVATIONS DISPLAYED. VERIFY CHANGES IN ELEVATIONS RESULTING FROM CONTRACTOR CLEARING AND STRIPPING.
2. HORIZONTAL AND VERTICAL CONTROL SHOWN IN THESE PLANS ARE TO BE USED FOR ALL LAYOUT AND RECORD DATA FOR THIS PROJECT. IF DISCREPANCIES ARE FOUND CONTACT THOMAS AND HUTTON BEFORE PROCEEDING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH SUPPLEMENTAL CONTROL WITHIN THE PROJECT AS NEEDED.
3. CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTACT ENGINEER IMMEDIATELY WITH ANY DISCREPANCIES.
4. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES. IF UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION , THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
5. PIPE, FITTINGS, VALVES AND OTHER ACCESSORIES SHALL, UNLESS OTHERWISE DIRECTED, BE UNLOADED AT THE POINT OF DELIVERY, AND STORED WHERE THEY WILL BE PROTECTED AND WILL NOT BE HAZARDOUS TO TRAFFIC. THEY SHALL AT ALL TIMES BE HANDLED WITH CARE TO AVOID DAMAGE. THE INTERIOR OF ALL PIPE, FITTINGS AND OTHER ACCESSORIES SHALL BE KEPT FREE FROM DIRT AND FOREIGN MATTER AT ALL TIMES.
6. ANY DEFECTIVE, DAMAGED OR UNSOUND PIPE SHALL BE REJECTED. ALL FOREIGN MATTER OR DIRT SHALL BE REMOVED FROM THE INSIDE OF THE PIPE BEFORE IT IS LOWERED INTO ITS POSITION IN THE TRENCH AND SHALL BE KEPT CLEAN BY ACCEPTABLE MEANS DURING AND AFTER LAYING. CARE SHALL BE TAKEN TO PREVENT DIRT FROM ENTERING THE JOINT SPACE. AT TIMES WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY ACCEPTABLE MEANS AND NO TRENCH WATER SHALL BE PERMITTED TO ENTER THE PIPE.
7. CONTRACTOR SHALL MAINTAIN MIN. COVER OVER THE WATER PIPE BARREL OF 3'-0" UNLESS OTHERWISE INDICATED.
8. CLEAN THE INTERIORS OF ALL PIPE BY BRUSHING, SWABBING OR WASHING OUT OF ALL DIRT BEFORE LAYING.
9. ALL UTILITY POLES ADJACENT TO PROPOSED CONSTRUCTION MUST BE SECURED PRIOR TO ANY ADJACENT DISTURBANCE AND THE CONSTRUCTION PROCEDURE MUST BE ACCEPTABLE TO THE UTILITY COMPANY.
10. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES BEFORE WORK COMMENCES, EVEN IF UTILITY IS NOT SHOWN ON THE PLANS. CONTRACTOR SHALL VERIFY UTILITY WITHIN THE PROJECT LIMITS AND NOTIFY THE ENGINEER OF CONFLICTS OR VARIANCES TO THE PLANS PRIOR TO BEGINNING WORK OR PURCHASE OF MATERIALS.
11. ALL WATER AND SEWER MATERIAL, PROCEDURE AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE CITY OF PORT WENTWORTH DEVELOPMENT POLICY AND PROCEDURE MANUAL.TECHNICAL SPECIFICATION AND DETAILS, LATEST VERSIONS, CITY OF PORT WENTWORTH DOCUMENTS SHALL TAKE PRECEDENCE OVER THOMAS AND HUTTON DOCUMENTS FOR ANY DISCREPANCIES FOUND.
12. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR THE RELOCATION OF EXISTING UTILITIES. UTILITIES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION, AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF THE WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO THE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
13. ALL STORM DRAIN PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.
14. SHOULD PIPE, FITTINGS, AND OTHER MATERIALS BE NEEDED IN ADDITION TO THAT SHOWN ON THE DRAWINGS BECAUSE PIPELINE WAS NOT INSTALLED TO THE ALIGNMENT AND PROFILE SHOWN, THEN THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THOSE NECESSARY MATERIALS AND PROVIDING THE EQUIPMENT AND LABOR TO INSTALL THEM TO MEET THE DESIGN INTENT AT NO ADDITIONAL COST TO THE OWNER.
15. THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THOMAS & HUTTON.
16. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER 48 HOURS IN ADVANCE OF ALL REQUIRED TESTS AND INSPECTIONS.
17. CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION.
18. IF WORK IS SUSPENDED OR DELAYED FOR 14 DAYS, THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE DISTURBED AREA AT NO ADDITIONAL COST TO THE OWNER.
19. CONTRACTOR SHALL COMMUNICATE WITH OWNER PRIOR TO DISPOSAL OF DEMOLITION MATERIALS AND STORE ITEMS IN LOCATION SPECIFIED BY THE OWNER OR REMOVE ITEMS FROM SITE REQUESTED BY OWNER.
20. CONTRACTOR SHALL COORDINATE WITH THE CITY OF PORT WENTWORTH PRIOR WATER AND SEWER MAIN CONNECTIONS.
21. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AND TECHNICAL SPECIFICATIONS.
22. THE CONTRACTOR SHALL INSTALL ANY BARRICADES PRIOR TO BEGINNING CONSTRUCTION.
23. ANY DAMAGE TO EXISTING PAVEMENT MUST BE REPAIRED AT CONTRACTORS EXPENSE AND TO THE SATISFACTION OF CITY OF PORT WENTWORTH AND THE PROJECT ENGINEER.
24. A COMPLETE SET OF PERMITTED DRAWINGS AND SPECIFICATIONS MUST BE MAINTAINED ON SITE AT ALL TIMES THAT THE CONTRACTOR IS PERFORMING WORK. THESE DRAWINGS SHALL BE MADE AVAILABLE UPON REQUEST.
25. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS NECESSARY FROM OTHER RESPONSIBLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
26. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION. CONTRACTOR SHALL REFER TO THE REPORT OF GEOTECHNICAL EXPLORATION AND EVALUATION, DATED JULY 30, 2021 PREPARED BY TERRACON CONSULTANTS, INC FOR GUIDANCE THROUGHOUT CONSTRUCTION. CONTACT ENGINEER TO OBTAIN A COPY OF THIS EVALUATION PRIOR TO PROVIDING A BID OR BEGINNING WORK.
27. IT IS THE OBLIGATION OF THE CONTRACTOR TO MAKE THEIR OWN INTERPRETATION OF ALL SURFACE AND SUBSURFACE DATA AVAILABLE AS TO THE NATURE AND EXTENT OF THE MATERIALS TO BE EXCAVATED, WASTED, GRADED AND COMPACTED. THE INFORMATION SHOWN ON THESE PLANS IN NO WAY GUARANTEES THE AMOUNT OR NATURE OF THE MATERIAL TO BE ENCOUNTERED.
28. CONTRACTOR WILL BE REQUIRED TO ADJUST ALL MANHOLE FRAMES AND UTILITY APPURTENANCES TO MATCH FINAL GRADE AT NO ADDITIONAL COST.
29. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE DISTURBANCE OF THE LAND AND SHALL REMAIN FUNCTIONAL UNTIL THE CONTRIBUTING DISTURBED AREAS ARE STABILIZED. SILT BARRIERS WILL BE INSTALLED AS NECESSARY TO PREVENT EXCESSIVE SEDIMENTATION OF DOWNSTREAM AREAS.
30. CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL ACCEPTANCE.
31. CONTROL OF THE WATER FLOWING THROUGH THE EXISTING DRAINAGE PATTERNS DURING THE CONSTRUCTION PERIOD SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXISTING DRAINAGE CONVEYANCE SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. ALL PENALTIES, CLAIMS AND FEES IMPOSED ON OWNER AS A RESULT OF DAMAGES CAUSED BY ACTIONS OF THE CONTRACTOR, IT'S EMPLOYEES OR SUBCONTRACTORS SHALL BE BORNE IN FULL BY THE CONTRACTOR.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHASING OF CONSTRUCTION AND THE COORDINATION,SEQUENCING AND SUPERVISION OF CONSTRUCTION ACTIVITIES. ANY AND ALL COST ASSOCIATED WITH PROJECT PHASING WILL BE BORNE IN FULL BY THE CONTRACTOR.
33. ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" CURRENT EDITION.
34. ACCESS TO THE PROJECT IS LIMITED TO THOSE LOCATIONS WHERE STABILIZED CONSTRUCTION ENTRANCES HAVE BEEN INDICATED IN THE PLANS.
35. ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES.
36. EXISTING ROADWAYS WILL BE CLEANED UP AND RESTORED DAILY. COMPLETE ROAD CLOSURE IS NOT PERMITTED AT ANY TIME DURING THE CONSTRUCTION PERIOD. TRAFFIC SHALL BE REROUTED TO MAINTAIN FLOW DURING CONSTRUCTION OPERATIONS. COORDINATE WITH THE OWNER, ENGINEER AND GDOT IF ROADWAY ACCESS CANNOT BE MAINTAINED PRIOR TO PROCEEDING WITH BLOCKAGE.
37. NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT.
38. ALL STORM DRAIN PIPE INVERTS IN AND OUT ARE THE SAME AS THE BOX INVERT UNLESS OTHERWISE NOTED ON THE PLAN SHEETS AND/OR PROFILES.
39. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNDERGROUND UTILITIES AND SHALL COORDINATE ALL WORK WITH THE OWNER AND UTILITY COMPANIES.
40. CONTRACTOR SHALL CLEAN CLEAN STORM SEWER SYSTEM OF ALL DEBRIS AND REMOVE ALL EROSION CONTROL DEVICES UPON COMPLETION OF CONSTRUCTION AND PRIOR TO FINAL PAYMENT.
41. ANY BARRICADES, LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL DEVICES REQUIRED BY THE CITY OF PORT WENTWORTH AND GDOT FOR THE THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION OF HIGHWAY 30.
42. CONTRACTOR WILL BE REQUIRED TO DEWATER POND AS NECESSARY TO INSTALL DRAINAGE UTILITIES.
43. 4" - 8" WATER PIPE SHALL BE PVC C900 DRIB AND WATER SERVICE LINES SHALL BE SDR 9 HDPE PIPE.
44. CONTRACTOR SHALL COORDINATE WITH DRY UTILITY PROVIDERS TO ENSURE NECESSARY CONDUITS ARE INSTALLED PRIOR TO CONSTRUCTION.

GENERAL INFORMATION

COUNTY CHATHAM
TOWN PORT WENTWORTH
ZONING P-RIP

CLIENT:
CLARET COMMUNITIES, LLC
CONTACT: MR. LEE TERRY
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GA 30341
(404) 795-8301

ENGINEER:
THOMAS & HUTTON
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
(912) 234-5300

GEOTECHNICAL CONSULTANT:
TERRACON CONSULTANTS, INC
2201 ROWLAND AVE,
SAVANNAH GA 31404

SURVEYOR:
THOMAS AND HUTTON
50 PARK OF COMMERCE
PO BOX 2727, SAVANNAH GA 31405

ELECTRIC:
GEORGIA POWER
3100 KILOWATT DRIVE
SAVANNAH, GA 31402
(912) 944-3572

WATER/SEWER:
CITY OF PORT WENTWORTH
CONTACT: BRIAN HARVEY
305 SOUTH COASTAL HIGHWAY
PORT WENTWORTH, GA. 31407
(912) 210-2643

TELEPHONE & CABLE:
HOTWIRE COMMUNICATIONS
CONTACT: CRAIG CHASON
4600 HIGHLANDS PARKWAY
SMYRNA, GA 30082
(770) 401-9205

CABLE (ALTERNATIVE)
COMCAST
CONTACT: KEITH CONNER
145 PARK OF COMMERCE DR.
SAVANNAH, GA 31405
(912) 253-7117

GAS COMPANY:
ATLANTA GAS LIGHT COMPANY
CONTACT: JOSEPH WHITE
1668 CHATHAM PARKWAY
SAVANNAH, GA. 31405
(912) 239-6508

PREPARED FOR:
CLARET COMMUNITIES
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GA 30341

GEORGIA REGISTERED 021332 PROFESSIONAL ENGINEER BRIAN B. LEWIS

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA
NOBLE VINES
GENERAL NOTES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

G1.1

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F
KEVIN & BRYAN GR
PIN: 7-0976-02-

PROPOSED CLEARING LIMITS

LOD

25' SETBACK

30' SETBACK

3"x3" CMF

1/2" REBAR FOUND

WATER MAIN STUB-OUT FROM NOBLE VINES PHASE I

PHASE I LIMITS

MATCH LINE THIS SHEET

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

PROPOSED CLEARING LIMITS

ROAD

EXISTING SEWER MANHOLE (PHASE I)

PHASE I PUMP STATION

MATCH LINE THIS SHEET

PROPOSED CLEARING LIMITS

PHASE I LIMITS

ROAD

EXISTING SEWER MANHOLE (PHASE I)

PHASE I PUMP STATION

PROPOSED CLEARING LIMITS

30' SETBACK

PROPOSED CLEARING LIMITS

PROPOSED CLEARING LIMITS

GEORGIA
REGISTERED
01/31/22
No. 23274
PROFESSIONAL ENGINEER
JONATHAN B. LOCKE

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

EXISTING CONDITIONS PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

G2.1

NOTES:

1. ACCESSIBLE ROUTE - EXTERIOR:
MINIMUM CLEAR WIDTH IS 3'. IF ACCESSIBLE ROUTE HAS LESS THAN 5' CLEAR WIDTH, THEN PASSING SPACES AT LEAST 5'X5' SHALL BE LOCATED EVERY 200' OR LESS (INTERSECTING SIDEWALKS MEET THIS REQUIREMENT). LONGITUDINAL (RUNNING) SLOPE MAY NOT EXCEED 5% UNLESS RAMP IS INSTALLED (RAMPS MAY NOT EXCEED 8.33%). CROSS SLOPE MAY NOT EXCEED 2%. GAPS IN ROUTE MAY NOT EXCEED 1/2" IN WIDTH.

2. FINISHED SURFACE HEIGHT DIFFERENCE REQUIREMENTS:
   A. 0 TO 1/4" : NO REQUIREMENTS
   B. 1/4" TO 1/2" : BEVEL WITH 1:2 SLOPE
   C. LARGER THAN 1/2" : CONFORM TO REQUIREMENTS FOR RAMP

3. RAMPS:
- MAX RAMP SLOPE 8.33% (1:12).
- RAMPS STEEPER THAN 8.33% ARE NOT ACCEPTABLE.
- MAX RISE FOR ANY RAMP RUN IS 30" (AT 8.33% SLOPE, MAXIMUM RUN OF RAMP IS 30').
- MAX CROSS SLOPE OF RAMP 2% (1:50)

A. LANDINGS:
- RAMPS SHALL HAVE LEVEL LANDINGS AT BOTTOM AND TOP OF EACH RAMP.
- LANDING SHALL BE AT LEAST AS WIDE AS RAMP LEADING TO IT.
- LANDING LENGTH SHALL BE MINIMUM 5' CLEAR.
- IF RAMPS CHANGE DIRECTION AT LANDING, MINIMUM LANDING SIZE SHALL BE 5'X5'.
- ALL LANDINGS ARE TO BE NO MORE THAN 2% SLOPE IN ANY DIRECTION.

B. HANDRAILS:
- HANDRAILS REQUIRED ON BOTH SIDES (MIN. 36" CLEAR BETWEEN HANDRAILS) WHEN RAMP RISE IS GREATER THAN 6".
- PROVIDE MINIMUM 12" LONG HANDRAIL EXTENSIONS AT TOP AND BOTTOM LANDINGS.
- PROVIDE MINIMUM 2" HIGH EDGE PROTECTION OR RAIL WITH LESS THAN 4" CLEAR TO RAMP IF RAMP HAS DROP-OFFS.
- ROUTES BETWEEN BUILDINGS WITH ONLY DWELLING UNITS DO NOT HAVE TO HAVE HANDRAILS.
- STAIRS NOT ALLOWED AS PART OF ACCESSIBLE ROUTE BUT IF ADJACENT TO ROUTE OR PART OF TENANT SPACE MUST MEET REQUIREMENTS FOR STAIR RAILS.

4. CURB AND SIDEWALK RAMPS:
- MAX SLOPE OF CURB RAMP 8.33%.
- MAX SLOPE OF SIDE FLARES 10%.
- MAX SLOPE OF ADJOINING GUTTERS, ROAD SURFACE, OR ACCESSIBLE ROUTE 5%.
- MIN WIDTH 36" (NOT INCLUDING SIDE FLARES).
- DETECTABLE WARNING IS REQUIRED ON CURB RAMPS IN PUBLIC RIGHTS OF WAY, AND SHALL BE 24" MINIMUM IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR FLUSH SURFACE. DETECTABLE WARNINGS SHALL BE LOCATED SO THE EDGE NEAREST THE CURB LINE IS 6" TO 8" FROM THE CURB LINE.

5. PAVEMENT MARKINGS:
AS REQUIRED BY LOCAL JURISDICTIONAL AUTHORITY (RECOMMENDED CROSSWALK MARKING TO DESIGNATE ACCESSIBLE PEDESTRIAN ROUTE)

6. PARKING SPACES
- MINIMUM 8' WIDE ACCESSIBLE PARKING SPACE
- MINIMUM 5' WIDE ACCESS AISLE AT STANDARD SPACES
- MINIMUM 8' WIDE ACCESS AISLE AT VAN ACCESSIBLE SPACES
- MAXIMUM 2% (1:50) SLOPE IN ANY DIRECTION

7. SIGNAGE
ACCESSIBLE PARKING SPACES SHALL BE DESIGNATED AS RESERVED BY A SIGN SHOWING THE SYMBOL OF ACCESSIBILITY. VAN ACCESSIBLE SPACES SHALL HAVE AN ADDITIONAL SIGN "VAN-ACCESSIBLE" MOUNTED BELOW THE SYMBOL. SUCH SIGNS SHALL BE LOCATED SO THEY CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE (60" ABOVE GRADE UNLESS OTHER HEIGHT REQUIRED BY LOCAL JURISDICTION).

8. ACCESSIBLE ROUTES
- MUST COMPLY WITH ADA, THE FAIR HOUSING ACT AND ICC/ANSI A117.1-2017.

LEGEND

ACCESSIBLE ROUTE

*NOTE: SEE ARCHITECTURAL PLANS FOR ACCESSIBLE ROUTES WITHIN BUILDINGS

1/2" REBAR FOUND

ROAD ONE

ROAD ONE

ROAD ONE

ROAD SEVEN

ROAD SEVEN

ROAD TWO

ROAD TWO

ROAD TWO

ROAD THREE

ROAD EIGHT

MAIN ENTRANCE

ROAD FIVE

ROAD FIVE

ROAD SIX

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

30' SETBACK

30' SETBACK

GRAPHIC SCALE

30 0 30 60 120

(IN FEET)
1 inch = 30 ft.

GEORGIA
REGISTERED
01/31/22
PROFESSIONAL
ENGINEER
NOBLE B. VINES, JR.

NO.	REVISIONS	BY	DATE

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50 Park of Commerce Way
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ACCESSIBLE ROUTE PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

AR1.1

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F
KEVIN & BRYAN GRAY
PIN: 7-0976-02-001

1/2" REBAR FOUND

WILD S17

WILD S24

WILD S27

3"x3" CMF

25' SETBACK

N: 800,747.67
E: 952,841.69

N: 800,719.29
E: 952,732.32

N: 800,751.40
E: 952,892.72

N: 800,697.74
E: 952,685.91

N: 800,710.77
E: 952,905.34

N: 800,692.37
E: 952,887.38

N: 800,656.10
E: 952,694.65

N: 800,648.76
E: 952,719.28

N: 800,764.40
E: 952,914.12

N: 800,789.53
E: 952,995.07

N: 800,724.68
E: 953,011.89

N: 800,701.48
E: 952,930.44

N: 800,790.80
E: 953,015.88

N: 800,815.94
E: 953,096.83

N: 800,727.88
E: 953,032.21

N: 800,751.08
E: 953,113.66

N: 800,810.89
E: 953,122.03

N: 800,832.45
E: 953,168.43

N: 800,860.83
E: 953,277.81

N: 800,769.25
E: 953,130.76

N: 800,761.91
E: 953,155.39

N: 800,805.53
E: 953,323.49

N: 800,864.55
E: 953,328.84

N: 800,823.92
E: 953,341.45

PC: 7+56.68

C2

100'

8+25.34

L4

24'

24'

SEE SHEET C7.3 FOR DRIVEWAY DETAIL

18" ROLL-OVER CURB AND GUTTER (TYP.)

PT: 6+66.29

PC: 6+13.39

4+30.66

C1

6+00

5+00

4+00

9+97.70

20'R

TYPE A RAMP

TYPE B RAMP

18" ROLLOVER CURB & GUTTER (TYP.)

24" THERMOPLASTIC WHITE STOP BAR (TYP.)

L1

L2

L3

L4

L5

L6

L7

L8

L9

L10

L11

L12

0+00

1+00

2+00

3+00

STOP

R1-1 (30)30

R1-1

N: 800,591.70
E: 952,790.40

N: 800,603.11
E: 952,856.42

N: 800,520.02
E: 952,872.82

N: 800,508.95
E: 952,808.77

N: 800,487.16
E: 952,808.47

N: 800,498.58
E: 952,874.49

N: 800,404.42
E: 952,826.84

N: 800,415.49
E: 952,890.89

N: 800,334.88
E: 952,835.75

N: 800,351.27
E: 952,918.84

N: 800,268.86
E: 952,847.17

N: 800,287.22
E: 952,929.92

PC: 3+27.16

PEDESTRIAN CROSSWALK(TYP.)

3@22'(66')

2@22'(44')

9@22'(198')

97.22'

N: 800,467.87
E: 952,964.37

N: 800,473.05
E: 953,006.10

N: 800,456.00
E: 953,025.37

N: 800,414.70
E: 952,964.52

N: 800,387.45
E: 952,971.26

N: 800,346.27
E: 953,028.02

N: 800,337.14
E: 952,986.97

N: 800,501.16
E: 953,166.80

N: 800,492.03
E: 953,185.76

N: 800,469.60
E: 953,113.40

N: 800,423.53
E: 953,189.36

N: 800,370.43
E: 953,189.40

N: 800,382.23
E: 953,128.50

N: 800,365.25
E: 953,147.68

24" THERMOPLASTIC WHITE STOP BAR (TYP.)

15'R

15'

12'

9'R

PT: 1+75.19

PC: 1+28.06

5' SIDEWALK (TYP.)

N: 800,416.38
E: 953,249.93

N: 800,432.77
E: 953,333.01

N: 800,350.36
E: 953,261.34

N: 800,368.72
E: 953,344.09

PT: 6+46.89

PC: 5+99.76

N: 800,734.59
E: 953,411.01

N: 800,729.33
E: 953,368.79

N: 800,705.38
E: 953,359.44

N: 800,686.57
E: 953,428.66

N: 800,575.22
E: 953,447.91

N: 800,534.25
E: 953,389.02

N: 800,524.06
E: 953,447.41

N: 800,514.84
E: 953,405.87

N: 800,468.79
E: 952,734.98

N: 800,459.57
E: 952,693.45

N: 800,449.37
E: 952,751.83

N: 800,408.41
E: 952,692.95

N: 800,297.06
E: 952,712.20

N: 800,278.24
E: 952,781.41

N: 800,254.30
E: 952,772.06

N: 800,249.04
E: 952,729.84

3+56.78

30' SETBACK

PT: 3+74.29

18" ROLLOVER CURB & GUTTER (TYP.)

GUM S14

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

IE: 17.24

LINE TABLE

LINE	BEARING	LENGTH
L1	N 75°27'17" E	613.39'
L2	N 45°08'27" E	97.87'
L3	S 9°48'31" E	356.78'
L4	S 9°48'31" E	327.16'
L5	N 80°11'29" E	225.48'
L6	N 9°48'31" W	350.82'
L7	N 80°11'29" E	285.48'
L8	N 9°48'31" W	297.22'
L9	N 80°11'29" E	128.06'
L10	N 9°48'31" W	255.47'
L11	N 80°11'29" E	142.43'
L12	N 80°11'29" E	158.06'

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD	CHD BEARING	DELTA
C1	100.00'	52.91'	52.29'	N 60°17'52" E	30°18'51"
C2	100.00'	61.17'	60.23'	N 62°39'58" E	35°03'02"
C3	30.00'	47.12'	42.43'	S 54°48'31" E	90°00'00"
C4	30.00'	47.12'	42.43'	N 35°11'29" E	90°00'00"
C5	30.00'	47.12'	42.43'	N 35°11'29" E	90°00'00"

LEGEND

- HEAVY DUTY PAVEMENT
- REGULAR DUTY PAVEMENT
- SIDEWALK
- VEHICULAR CONCRETE

GEORGIA
REGISTERED
02/02/22
NBL
PROFESSIONAL ENGINEER
NOBLE BRYAN LOVING

NO.	REVISIONS	BY	DATE

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Savannah, GA 31405 • 912.234.5300
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

STRIPING, SIGNAGE AND LAYOUT PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

C1.1

Z:\28896\28896.0003\ENGINEERING\CAD\PLANS\CONSTRUCTION PLANS\28896.0003 - LS-PH1.DWG Dec 14, 2022 - 8:57 AM

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

NOTES:
1. VALVES 8" AND LARGER SHALL BE IN MANHOLES.
2. ALL RE-USE WATER MAINS SHALL BE PURPLE PIPE FOR IRRIGATION. THE CONTRACTOR SHALL INSTALL THE RE-USE WATER MAINS TO MEET CITY OF PORT WENTWORTH SPECS.
3. RE-USE WATER MAINS SHALL BE SERVICED BY IRRIGATION METER LOCATED IN PHASE I.

N/F
KEVIN & BRYAN GR
PIN: 7-0976-02-

MATCH LINE THIS SHEET

MATCH LINE THIS SHEET

ROAD ONE
ROAD TWO
ROAD THREE
ROAD FOUR
ROAD FIVE
ROAD SIX
ROAD SEVEN
ROAD EIGHT
MAIN ENTRANCE

25' SETBACK
30' SETBACK

8" PVC - C900 - DR 18
124 LF 8" PVC - SDR 26 @ 0.40%
240 LF 8" PVC - SDR 26 @ 0.40%
220 LF 8" PVC - SDR 26 @ 0.40%
158 LF 8" PVC - SDR 26 @ 0.40%
34 LF 8" PVC - SDR 26 @ 0.40%
235 LF 8" PVC - SDR 26 @ 0.40%
95 LF 8" PVC - SDR 26 @ 0.40%
91 LF 8" PVC - SDR 26 @ 0.40%
143 LF 8" PVC - SDR 26 @ 0.40%
140 LF 8" PVC - SDR 26 @ 0.40%
104 LF 8" PVC - SDR 26 @ 0.40%
71 LF 8" PVC - SDR 26 @ 0.40%
93 LF 8" PVC - SDR 26 @ 0.40%
210 LF 8" PVC - SDR 26 @ 0.40%
296 LF 8" PVC - SDR 26 @ 0.40%

MH #1
FR: 21.53
INV. IN: 9.06 (SW)
INV. OUT: 8.96 (E)

MH #2
FR: 21.89
INV. IN: 9.65 (W)
INV. IN: 9.65 (S)
INV. OUT: 9.55 (NE)

MH #3
DROP MH
FR: 21.56
INV. IN: 10.71 (W)
INV. IN: 10.71 (S)
INV. OUT: 10.61 (E)

MH #4
FR: 21.73
INV. IN: 11.69 (W)
INV. IN: 11.69 (SW)
INV. OUT: 11.59 (E)

MH #5
FR: 21.75
INV. IN: 12.42 (S)
INV. OUT: 12.32 (E)

MH #6
FR: 21.86
INV. OUT: 13.61 (N)

MH #7
FR: 21.66
INV. IN: 10.32 (S)
INV. IN: 12.67 (W)
INV. OUT: 10.22 (N)

MH #8
DROP MH
FR: 22.09
INV. IN: 10.98 (W)
INV. OUT: 10.88 (N)

MH #9
FR: 21.96
INV. OUT: 11.40 (E)

MH #10
FR: 21.64
INV. OUT: 13.03 (E)

MH #11
FR: 21.98
INV. IN: 11.19 (S)

MH #12
FR: 21.64
INV. OUT: 12.03 (N)

MH #13
FR: 21.62
INV. IN: 11.92 (S)
INV. OUT: 11.82 (NE)

MH #14
FR: 21.75
INV. IN: 12.98 (W)
INV. OUT: 12.88 (N)

MH #15
FR: 21.59
INV. OUT: 13.35 (E)

TOWNHOME WATER METER BANK SEE DETAIL W16

POST INDICATOR VALVE, DOUBLE CHECK VALVE, AND ALL FIRE APPURTENACES TO BE DESIGNED AND INSTALLED BY LICENSED FIRE CONTRACTOR.

FH ASSEMBLY

8" X 2" TEE W/ 2" GV

8" X 8" TEE W/ (2) 8" GV

8" X 8" TEE W/ 8" GV

8" X 8" TEE W/(2)8" GV

8" 45° BEND

8" 22.5° BEND

8" 11.25° BEND

4" SINGLE SEWER SERVICE LATERAL (TYP.)

REMOVE EXITING PLUG AND CONNECT TO EXISTING 10" MAIN

10" X 8" REDUCER

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

3"x3" CMF

1/2" REBAR FOUND

WILD 517 WILD 524 WILD 527

MAP 511 19 14 MAP 533 MAP 517 19 15 MAP 514 16 GUM 514 16

3+56.78

GEORGIA REGISTERED PROFESSIONAL ENGINEER JEREMY B. HUTTON 027174

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NO.	REVISIONS	BY	DATE

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

WATER AND SEWER PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

C2.1

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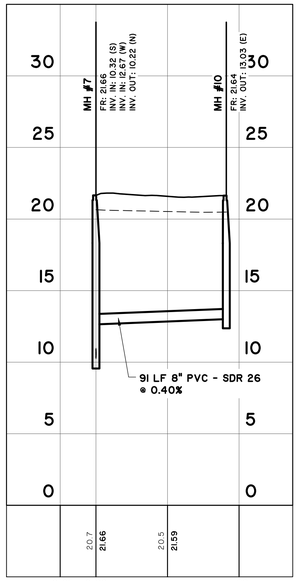
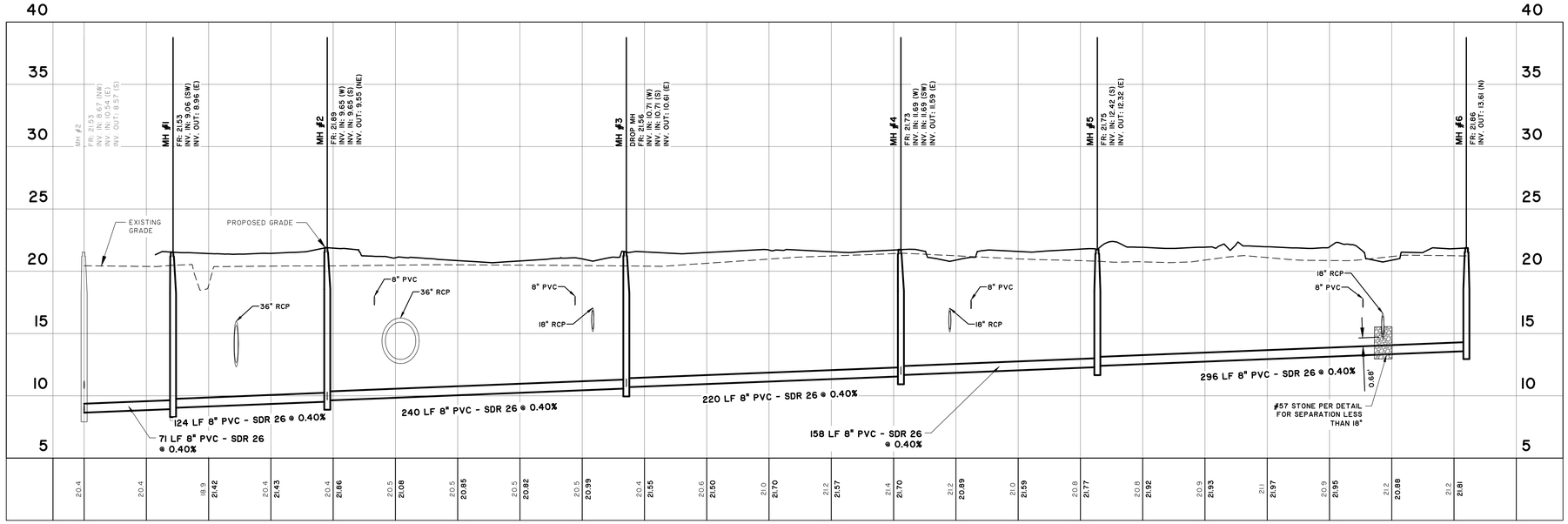
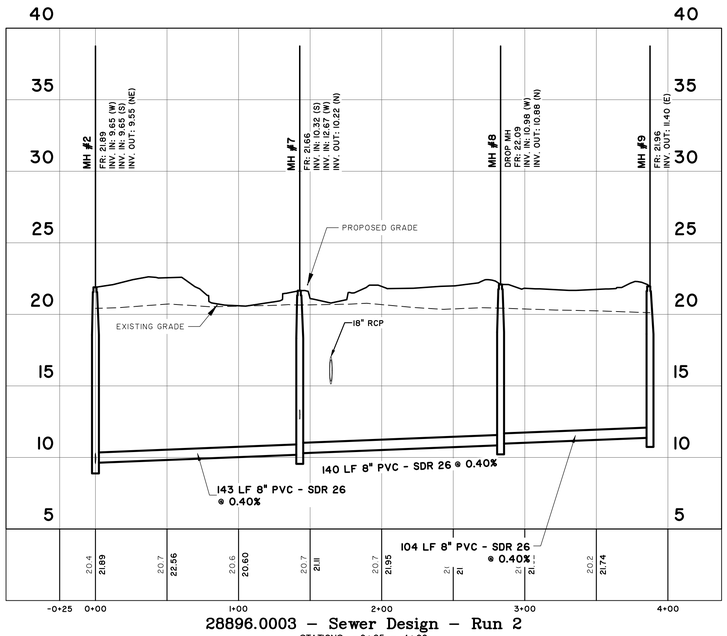


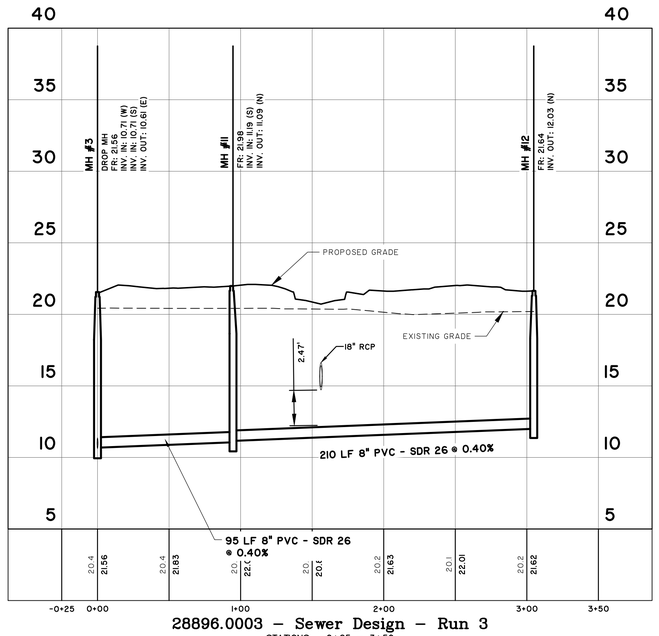
28896.0003 – Sewer Design – Run 5
STATIONS: −0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



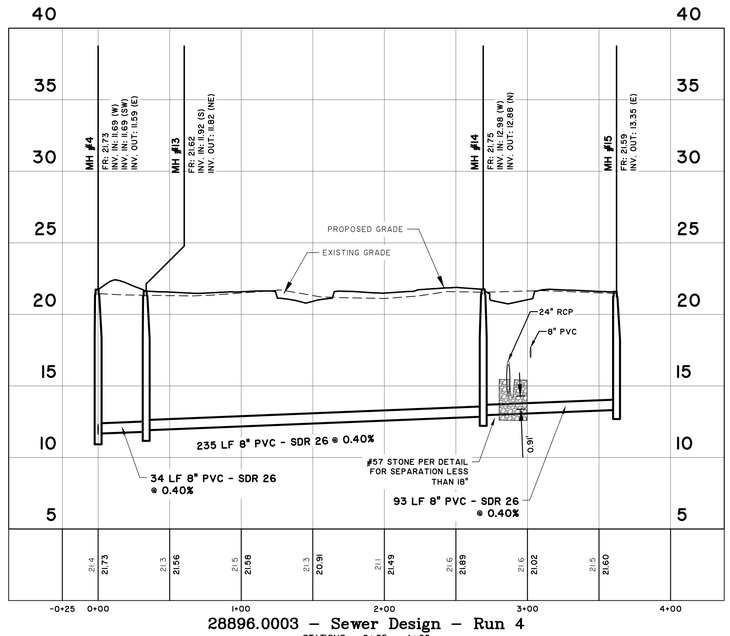
28896.0003 – Sewer Design – Run 1
STATIONS: −0+25 – 11+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 – Sewer Design – Run 2
STATIONS: −0+25 – 4+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 – Sewer Design – Run 3
STATIONS: −0+25 – 3+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 – Sewer Design – Run 4
STATIONS: −0+25 – 4+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

GEORGIA
REGISTERED
JEROME
NOBLE
23774
PROFESSIONAL ENGINEER
ENGINEER
NOBLE VINES

NO.	REVISIONS	BY	DATE

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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

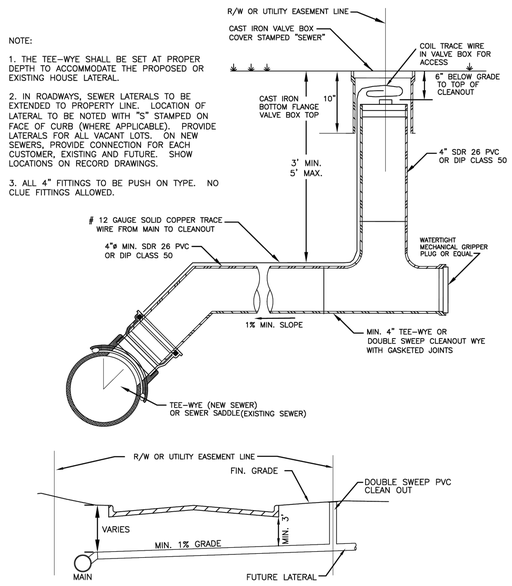
SEWER PROFILES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 50'

C2.2

Z:\28896\28896.0003\ENGR\DWG\SHEETS\SEWER\28896-0003 - SS-PROFILE - Dec 14, 2022 - 9:08 AM

Z:\28896\28896-0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896-0003 - #1 SET.DWG, Dec 15, 2022 - 9:47 AM



NOTE:

1. THE TEE-WYE SHALL BE SET AT PROPER DEPTH TO ACCOMMODATE THE PROPOSED OR EXISTING HOUSE LATERAL.

2. IN ROADWAYS, SEWER LATERALS TO BE EXTENDED TO PROPERTY LINE. LOCATION OF LATERAL TO BE NOTED WITH "S" STAMPED ON FACE OF CURB (WHERE APPLICABLE). PROVIDE LATERALS FOR ALL VACANT LOTS. ON NEW SEWERS, PROVIDE CONNECTION FOR EACH CUSTOMER, EXISTING AND FUTURE. SHOW LOCATIONS ON RECORD DRAWINGS.

3. ALL 4" FITTINGS TO BE PUSH ON TYPE. NO CLUE FITTINGS ALLOWED.

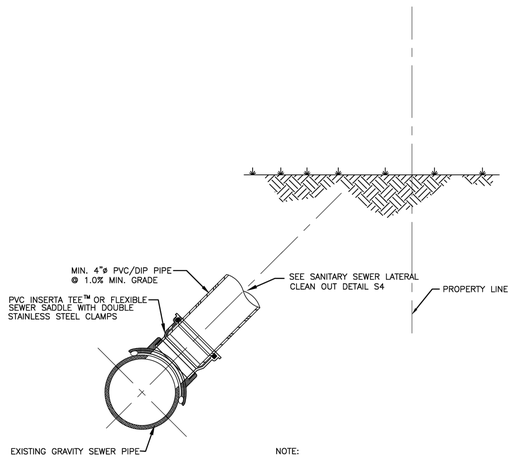
SANITARY SEWER SERVICE CONNECTION

City of Port Wentworth
TECHNICAL DETAILS

S-4

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



NOTE:

CONTRACTOR SHALL NOTIFY CITY OF PORT WENTWORTH WASTEWATER CONVEYANCE DEPARTMENT 24 HOURS PRIOR TO CONNECTION TO EXISTING GRAVITY SEWER PIPE. ALL CONNECTIONS TO THE EXISTING GRAVITY SEWER PIPE MUST BE INSPECTED BY THE CONVEYANCE DEPARTMENT PRIOR TO BACK FILLING.

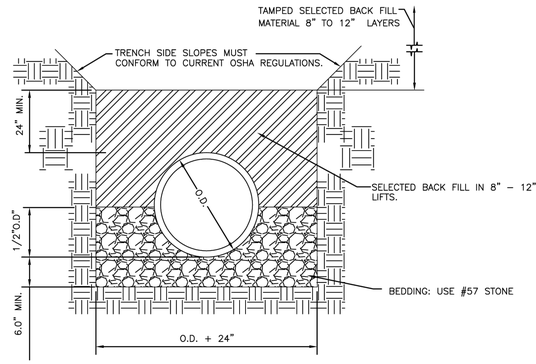
SEWER SERVICE CONNECT TO EXT. PIPE

City of Port Wentworth
TECHNICAL DETAILS

S-5

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



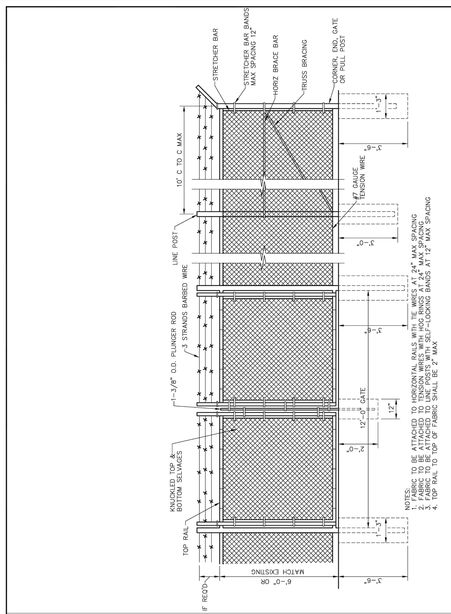
PIPE BEDDING

City of Port Wentworth
TECHNICAL DETAILS

S-8

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



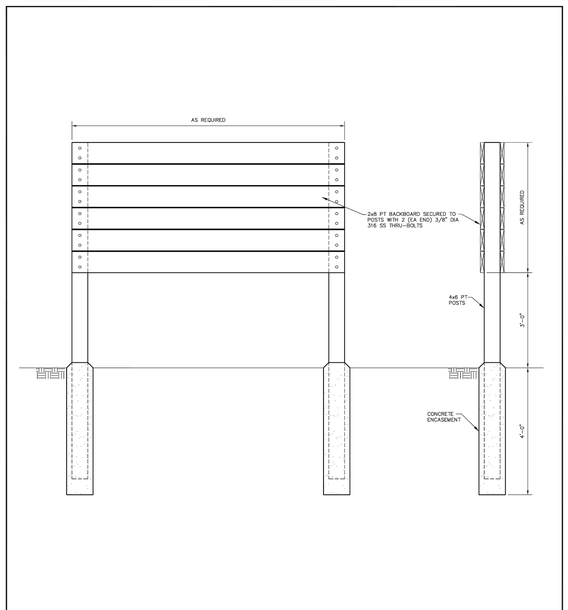
CHAIN LINK FENCE & GATE

City of Port Wentworth
TECHNICAL DETAILS

S-13

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



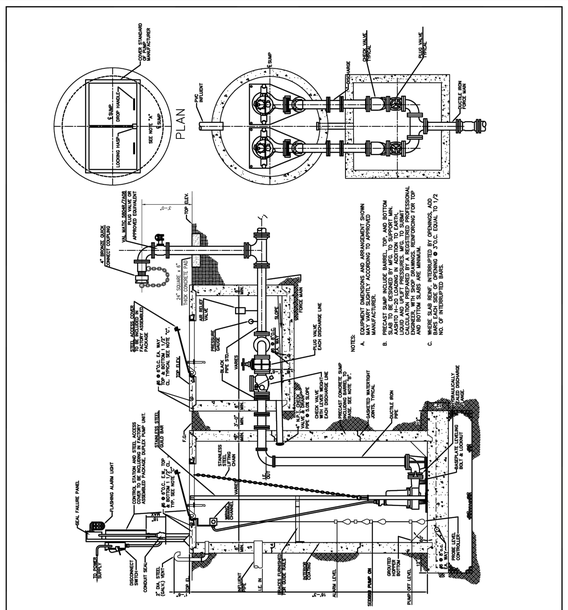
CONTROL PANEL BACKBOARD

City of Port Wentworth
TECHNICAL DETAILS

S-11

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



SANITARY SEWER LIFT STATION

City of Port Wentworth
TECHNICAL DETAILS

S-10

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007

GEORGIA REGISTERED ENGINEER 031032 PROFESSIONAL ENGINEER JONATHAN B. DAVIS

NO.	REVISIONS	BY	DATE

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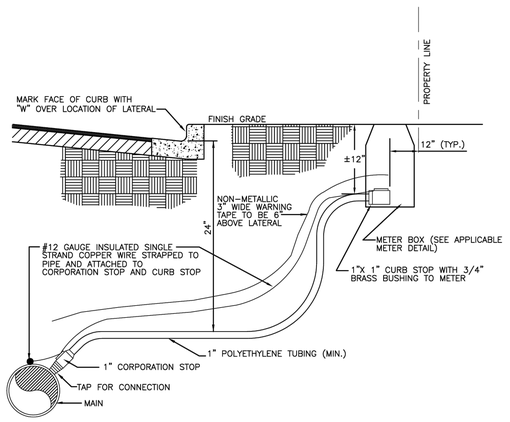
CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

WATER AND SEWER DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C2.3



NOTE:
ALL FITTINGS IN LATERAL SHALL BE COMPRESSION TYPE.

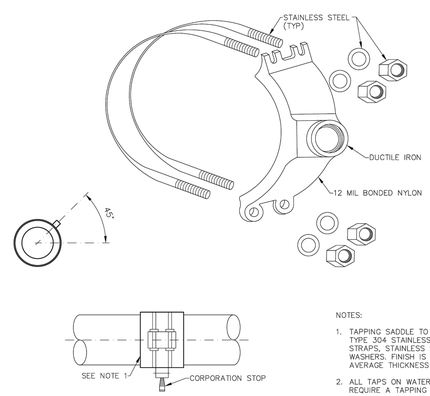
WATER SERVICE LATERAL

City of Port Wentworth
TECHNICAL DETAILS

W-1

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



NOTES:

1. TAPPING SADDLE TO BE DUCTILE IRON WITH TYPE 304 STAINLESS STEEL FORGED DOUBLE STRAPS, STAINLESS STEEL BOLTS, NUTS AND WASHERS. FINISH IS FUSION-BONDED NYLON TO AVERAGE THICKNESS OF 12 MILS.
2. ALL TAPS ON WATER MAIN WILL REQUIRE A TAPPING SADDLE.

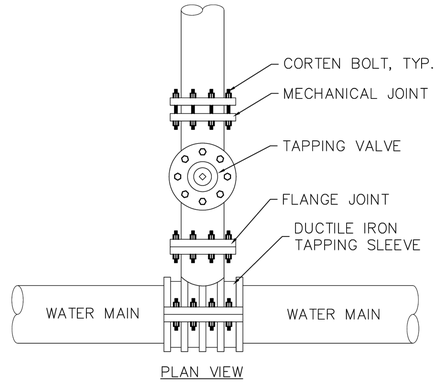
1" AND 2" TAPPING SADDLE

City of Port Wentworth
TECHNICAL DETAILS

W-2

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



PLAN VIEW

NOTE:
1. THE TAPPING SLEEVE AND VALVE MUST BE INSTALLED IN A MANHOLE. SEE DETAIL W-14 FOR THE MANHOLE DETAIL.

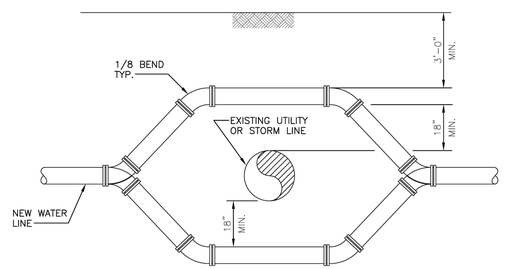
STANDARD TAPPING SLEEVE

City of Port Wentworth
TECHNICAL DETAILS

W-5

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



NOTES:

1. WATER LINE SHALL BE INSTALLED ABOVE SANITARY OR STORM LINE IF POSSIBLE.
2. STRAIGHT RUN OF WATER LINE DIRECTLY ABOVE OR BELOW EXISTING UTILITY LINE MUST BE 10' MINIMUM WITH NO JOINT.
3. IF WATER LINE IS INSTALLED BELOW SANITARY LINE WATER LINE SHALL BE DUCTILE IRON PIPE.
4. JOINTS SHALL BE RESTRAINED IN ACCORDANCE WITH CITY OF PORT WENTWORTH STANDARD DETAILS.

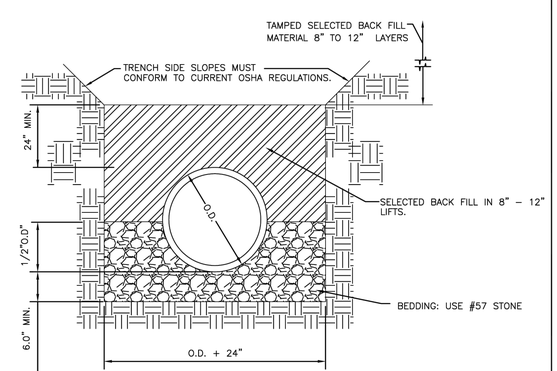
STANDARD UTILITY CROSSING

City of Port Wentworth
TECHNICAL DETAILS

W-6

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



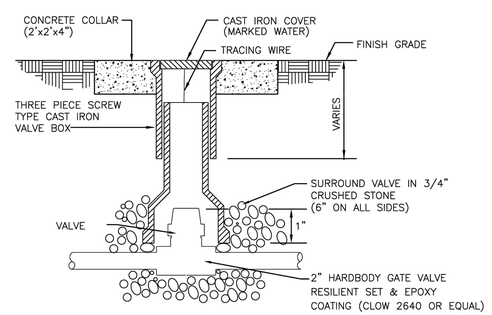
PIPE BEDDING

City of Port Wentworth
TECHNICAL DETAILS

W-8

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007



NOTE:

1. THIS DETAIL APPLIES TO VALVES.
2. IN UNPAVED AREAS, SET TOP OF CONC. COLLAR 1" ABOVE FINISHED GRADE. IN PAVED AREAS SET TOP OF BOX FLUSH W/ PAVEMENT. NO CONC. COLLAR REQUIRED.
3. VALVE BOX SHALL NOT REST ON THE VALVE

2" WATER VALVE

City of Port Wentworth
TECHNICAL DETAILS

W-18

PREPARED BY SAUSSY ENGINEERING, LLC.

SCALE: N.T.S.
DATED: FEBRUARY 2007

GEORGIA REGISTERED 18702 PROFESSIONAL ENGINEER NOBLE L. VINES

NO.	REVISIONS	BY	DATE

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

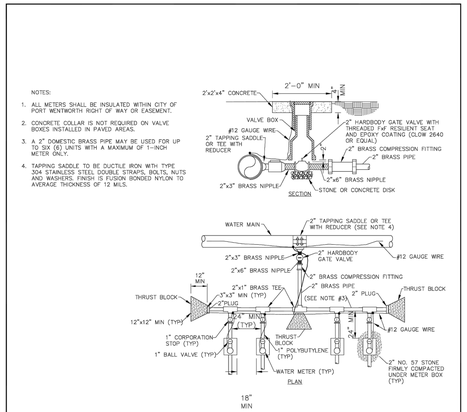
NOBLE VINES

WATER AND SEWER DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C2.4

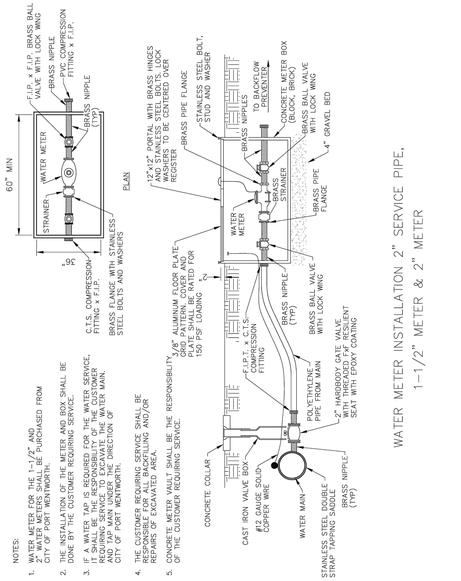
Z:\28896\28896.0003\ENGINEERING\GRADING\CONSTRUCTION PLANS\28896.0003 - #1 SHEETS - Dec 15, 2022 - 9:57 AM



MULTIPLE WATER METER INSTALLATION

City of Port Wentworth
TECHNICAL DETAILS
W–16

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



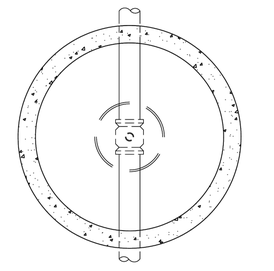
WATER METER INSTALLATION 2" SERVICE PIPE

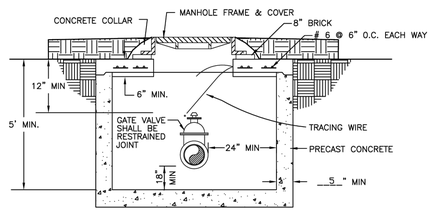
City of Port Wentworth
TECHNICAL DETAILS
W–19

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

NOTES:

1. MANHOLE FRAME AND COVER SHALL BE NEENAH FOUNDRY CO, CATALOG NO. R-1668, TYPE C, LABELED "WATER".
2. THE BOTTOM OF THE MANHOLE FRAME SHALL NOT BE MORE THAN 12" ABOVE THE TOP OF THE MANHOLE STRUCTURE.
3. PRECAST CONCENTRIC CONE RISERS MAY BE USED WHERE REQUIRED FOR DEPTH.
4. THE MANHOLE FRAME AND COVER MUST BE CENTERED OVER THE VALVE.

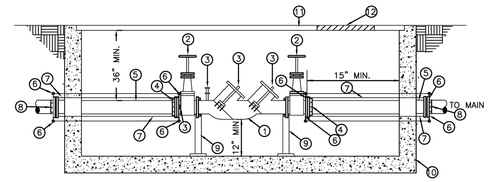




VALVE MANHOLE FOR 8" & GREATER GATE VALVE

City of Port Wentworth
TECHNICAL DETAILS
W–14

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



MATERIALS		
ITEM	QUAN.	DESCRIPTION
1	1	DOUBLE CHECK VALVE ASSEMBLY
2	2	NON-RISING RESILIENT SEAT GATE VALVES
3	4	TEST COCKS
4	2	COMPANION FLANGE
5		DUCTILE IRON PIPE, CUT TO FIT
6	8	CARBON STEEL EYE BOLTS
7		3/4 GALV. ALL THREAD ROD
8		MEGA LUG OR EQUIVALENT FOR DUCTILE PIPE
9	2	2" SCH. 40 GALV. PIPE STAND & BASE BOLTED TO FLANGE
10		PIT-CEMENT BLOCK, POURED CONCRETE, OR PREFABRICATED BOX PER CITY SPECS.
11		3/8 ALUM. FLOOR PLATE / HATCH COVER W/FLUSH HANDLE
12		2" X 2" MIN. HATCH

NOTE:

1. FOR FINAL APPROVAL, ASSEMBLY MUST BE CENTERED IN ENCLOSURE (IF APPLICABLE), UNDER NO CONDITION WILL ANY CONNECTION BE ALLOWED BETWEEN THE SERVICE METER AND A BACKFLOW PREVENTER USED FOR SYSTEM CONTAINMENT. BACKFLOW PREVENTER SHALL ALWAYS BE INSTALLED DOWNSTREAM OF METER.
2. IF A PRESSURE MONITOR IS TO BE INSTALLED, ADD A TEE, VALVE, FITTINGS, AND MOUNT ON SUPPLY SIDE PRIOR TO BACKFLOW PREVENTER; UNDER NO CIRCUMSTANCE, SHALL TEST PORTS BE MODIFIED OR UTILIZED FOR THIS OR OTHER APPLICATION, OTHER THAN BACKFLOW DEVICE TESTING.

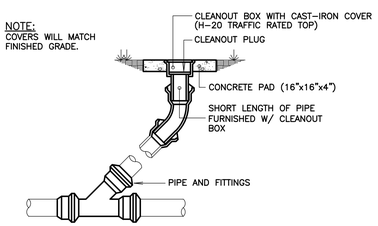
TYPICAL BELOW GRADE INSTALLATION
(3", 4", 6", 8", & 10" SIZES)

DOMESTIC DOUBLE CHECK VALVE ASSEMBLY (B)

City of Port Wentworth
TECHNICAL DETAILS
W–21

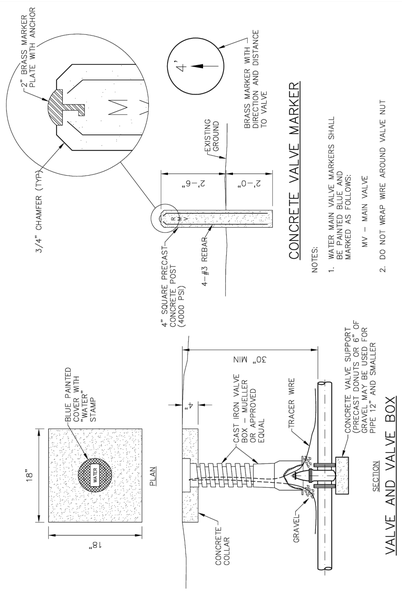
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

NOTE:
COVERS WILL MATCH FINISHED GRADE.



CLEANOUT DETAIL

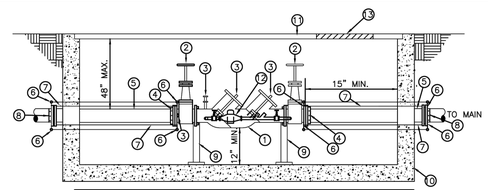
NOT TO SCALE



WATER VALVE 4" OR 6"

City of Port Wentworth
TECHNICAL DETAILS
W–36

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



MATERIALS		
ITEM	QUAN.	DESCRIPTION
1	1	DOUBLE DETECTOR CHECK VALVE ASSEMBLY
2	2	OS&Y RESILIENT SEAT GATE VALVES
3	4	TEST COCKS
4	2	COMPANION FLANGE (UNION SHALL BE USED FOR 2")
5		DUCTILE IRON PIPE, CUT TO FIT
6	8	CARBON STEEL EYE BOLTS
7		3/4 GALV. ALL THREAD ROD
8		MEGA LUG OR EQUIVALENT FOR DUCTILE PIPE
9	2	2" SCH. 40 GALV. PIPE STAND & BASE BOLTED TO FLANGE
10		PIT-CEMENT BLOCK, POURED CONCRETE, OR PREFABRICATED BOX PER CITY SPECS.
11		3/8 ALUMINUM FLOOR PLATE / HATCH COVER
12	1	3/4 CUBIC FT. BYPASS METER
13		2" X 2" MIN. HATCH

NOTES:

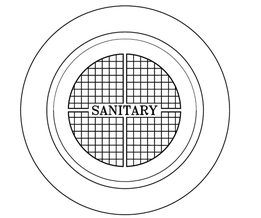
1. FOR FINAL APPROVAL, ASSEMBLY MUST BE CENTERED IN ENCLOSURE (IF APPLICABLE). UNDER NO CONDITION WILL ANY CONNECTION BE ALLOWED BETWEEN THE SERVICE METER AND A BACKFLOW PREVENTER USED FOR THE SYSTEM CONTAINMENT. BACKFLOW PREVENTER SHALL ALWAYS BE INSTALLED DOWNSTREAM OF METER.
2. IF A PRESSURE MONITOR IS TO BE INSTALLED, ADD A TEE, VALVE, FITTINGS, AND MOUNT ON SUPPLY SIDE PRIOR TO BACKFLOW PREVENTER; UNDER NO CIRCUMSTANCE SHALL TEST PORTS BE MODIFIED OR UTILIZED FOR THIS OR OTHER APPLICATION, OTHER THAN BACKFLOW DEVICE TESTING.
3. IF ADDITIONAL SIAMESE CONNECTION IS REQUIRED FOR FIRE SERVICE, SEE DETAIL SHEET STD. FIRE SERVICE SYSTEM FOR BUILDINGS.

TYPICAL BELOW GRADE INSTALLATION
(2", 3", 4", 6", 8", & 10" SIZES)

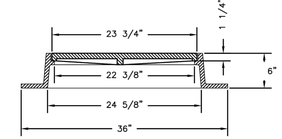
FIRE SYTEM DOUBLE DETECTOR CHECK VALVE

City of Port Wentworth
TECHNICAL DETAILS
W–22

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



PLAN



SECTION

NOTE:

MANHOLE RING & COVER SHALL BE HEAVY DUTY RATED EQUAL TO U. S. FOUNDRY CO. USF 195-ORS. TOTAL WEIGHT 325# TYPE "C" LID TO HAVE MACHINED BEARING SURFACES. LID TO BE LETTERED 2 1/2" -3" LETTER HEIGHT "SANITARY" (NON VENTED). MANHOLE RING SHALL INCLUDE A WATERTIGHT GASKET. STACKING CLEATS ON THE BOTTOM OF THE COVER SHALL NOT BE ALLOWED.

MANHOLE RING & COVER

City of Port Wentworth
TECHNICAL DETAILS
S–2

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

GEORGIA REGISTERED 18928 PROFESSIONAL ENGINEER JEFFREY T. SAUSSY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

WATER AND SEWER DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C2.5

Z:\28896\28896.0003\DWG\ENGINEERING\SHEETS\CONSTRUCTION PLANS\28896.0003 - #1 SHEET.dwg, Dec 15, 2022 - 9:58 AM

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F KEVIN & BRYAN GRAY PIN: 7-0976-02-

YI #41
FR: 20.06
INV. OUT: 15.00 (E)

YI #40
FR: 19.80
INV. IN: 14.38 (W)
INV. OUT: 14.38 (E)

YI #39
FR: 19.77
INV. IN: 13.74 (W)
INV. OUT: 13.74 (E)

YI #38
FR: 19.77
INV. IN: 13.01 (W)
INV. OUT: 13.01 (SE)

205 LF 18" RCP @ 0.30%
214 LF 18" RCP @ 0.30%
244 LF 24" RCP @ 0.30%
85 LF 24" RCP @ 0.30%
25' SETBACK

GI #31
FR: 20.50
INV. IN: 14.00 (W)
INV. OUT: 14.00 (E)
71 LF 18" RCP @ 0.30%
75 LF 18" RCP @ 0.30%
GI #33
FR: 20.50
INV. OUT: 14.44 (E)
136 LF 24" RCP @ 0.30%
75 LF 30" RCP @ 0.30%
GI #30
FR: 20.50
INV. IN: 13.60 (W)
INV. OUT: 13.60 (E)
SMH #29
FR: 20.90
INV. IN: 13.37 (W)
INV. IN: 15.31 (S)
INV. OUT: 13.37 (E)
GI #28
FR: 20.50
INV. IN: 13.13 (W)
INV. OUT: 13.13 (E)
GI #37
FR: 20.50
INV. IN: 12.75 (NW)
INV. OUT: 12.75 (SE)
66 LF 36" RCP @ 0.38%
INV.: 12.50
211 LF 36" RCP @ 0.30%

ROAD ONE
ROAD TWO
ROAD THREE
ROAD FOUR
ROAD FIVE
ROAD SIX
ROAD SEVEN
ROAD EIGHT
MAIN ENTRANCE

SMH #32
FR: 20.88
INV. IN: 15.27 (S)
INV. IN: 14.23 (W)
INV. OUT: 14.23 (E)
75 LF 18" RCP @ 0.30%
GI #34
FR: 20.50
INV. OUT: 15.50 (N)
150 LF 18" RCP @ 0.30%
GI #22
FR: 20.50
INV. OUT: 15.50 (E)
62 LF 18" RCP @ 0.30%
GI #21
FR: 20.50
INV. IN: 15.05 (W)
INV. OUT: 15.05 (E)
79 LF 36" RCP @ 0.30%
64 LF 18" RCP @ 0.30%
GI #35
FR: 20.50
INV. OUT: 15.50 (N)
79 LF 18" RCP @ 0.30%
GI #26
FR: 20.50
INV. OUT: 15.50 (E)
GI #27
FR: 20.50
INV. OUT: 15.50 (S)
67 LF 18" RCP @ 0.30%
GI #11
FR: 20.50
INV. OUT: 15.50 (S)
112 LF 18" RCP @ 0.30%
GI #10
FR: 20.50
INV. IN: 15.16 (N)
INV. OUT: 15.16 (S)
57 LF 18" RCP @ 0.30%
71 LF 18" RCP @ 0.30%
71 LF 18" RCP @ 0.30%
GI #13
FR: 20.50
INV. OUT: 15.50 (S)
53 LF 18" RCP @ 0.30%
SMH #7
FR: 20.86
INV. IN: 15.34 (N)
INV. IN: 14.56 (W)
INV. OUT: 14.56 (S)
53 LF 24" RCP @ 0.30%
HI #15
HD: 20.80
INV. OUT: 15.50 (E)
12 LF 18" RCP @ 0.30%
HI #14
HD: 20.80
INV. IN: 15.46 (W)
INV. OUT: 15.46 (S)
103 LF 18" RCP @ 1.42%
SMH #3
FR: 22.32
INV. IN: 13.83 (W)
INV. IN: 14.00 (N)
INV. OUT: 13.83 (E)
SMH #20
FR: 20.81
INV. IN: 14.86 (W)
INV. OUT: 14.86 (S)
48 LF 18" RCP @ 0.30%
GI #19
FR: 20.50
INV. IN: 14.72 (N)
INV. OUT: 14.72 (S)
48 LF 18" RCP @ 0.30%
GI #17
FR: 20.50
INV. IN: 14.35 (W)
INV. OUT: 14.35 (E)
SMH #25
FR: 20.90
INV. IN: 15.30 (N)
INV. IN: 15.26 (W)
INV. OUT: 15.26 (S)
75 LF 18" RCP @ 0.30%
GI #24
FR: 20.50
INV. IN: 15.04 (N)
INV. OUT: 15.04 (S)
66 LF 24" RCP @ 0.30%
SMH #16
FR: 20.98
INV. IN: 14.12 (W)
INV. IN: 14.84 (N)
INV. OUT: 12.69 (S)
44 LF 42" RCP @ 0.44%
75 LF 24" RCP @ 0.30%
77 LF 30" RCP @ 0.30%
SMH #18
FR: 20.88
INV. IN: 14.58 (N)
INV. IN: 15.36 (S)
INV. OUT: 14.58 (E)
47 LF 18" RCP @ 0.30%
GI #23
FR: 20.50
INV. OUT: 15.50 (N)
111 LF 42" RCP @ 0.71%
SMH #9
FR: 20.86
INV. IN: 14.99 (N)
INV. IN: 15.33 (S)
INV. OUT: 14.99 (E)
58 LF 18" RCP @ 0.30%
GI #12
FR: 20.50
INV. OUT: 15.50 (N)
GI #8
FR: 20.50
INV. IN: 14.78 (W)
INV. OUT: 14.78 (E)
47 LF 24" RCP @ 0.30%
GI #6
FR: 20.50
INV. IN: 14.41 (N)
INV. OUT: 14.41 (SE)
SMH #5
FR: 20.88
INV. IN: 14.26 (NW)
INV. OUT: 14.26 (E)
63 LF 30" RCP @ 0.30%
GI #4
FR: 20.50
INV. IN: 14.08 (W)
INV. OUT: 14.08 (E)
81 LF 30" RCP @ 0.30%
69 LF 36" RCP @ 0.30%
GI #2
FR: 20.50
INV. IN: 13.63 (W)
INV. OUT: 13.63 (E)
114 LF 36" RCP @ 0.70%
YI #1
FR: 19.87
INV. IN: 13.29 (W)
INV. OUT: 13.29 (NE)
30' SETBACK

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

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GEORGIA REGISTERED 021037 PROFESSIONAL ENGINEER NEIL B. LEWIS

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

DRAINAGE PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

C3.1

GEORGIA REGISTERED 18032 PROFESSIONAL ENGINEER BRIAN B. CONNOR

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

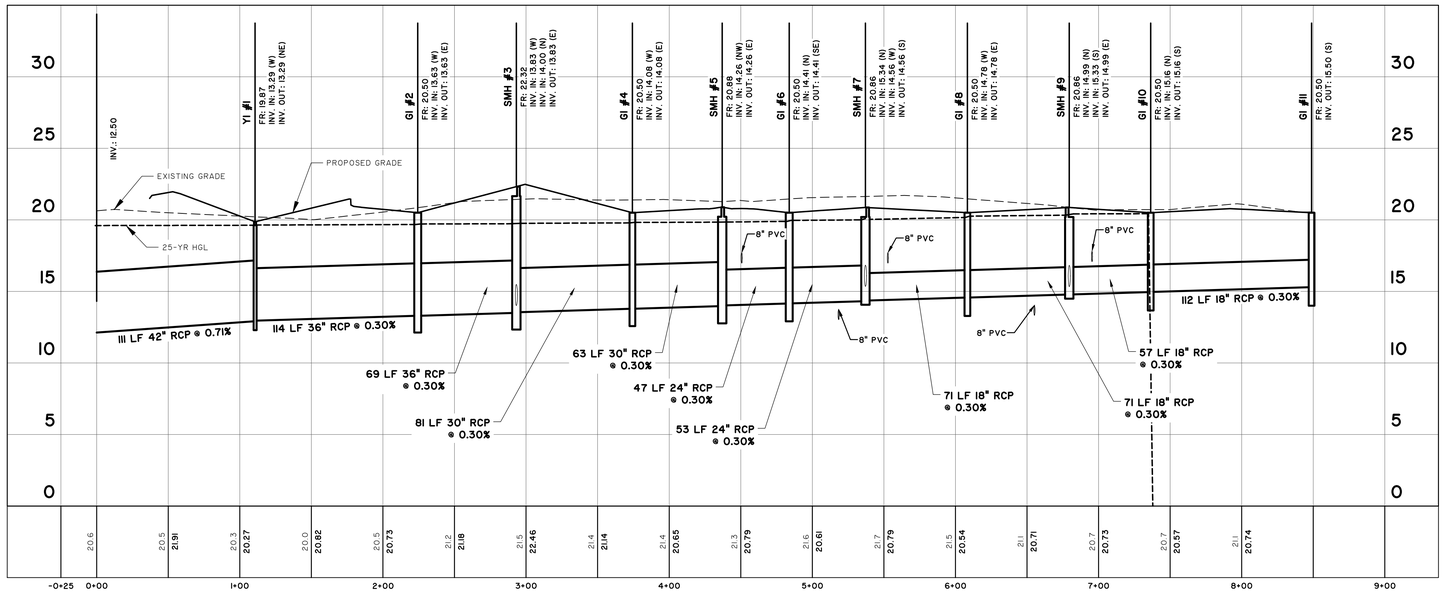
CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

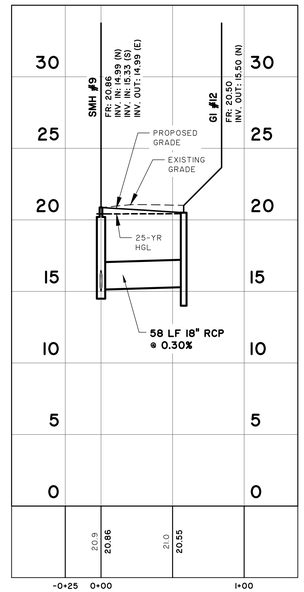
PAVING AND GRADING PLAN

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

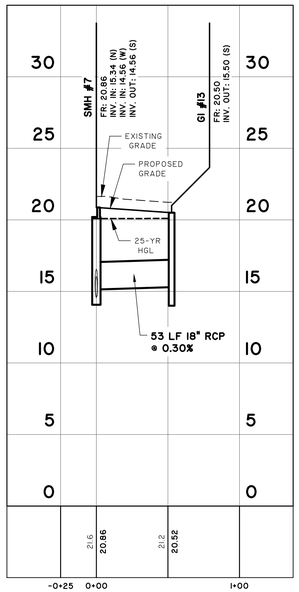
C4.1



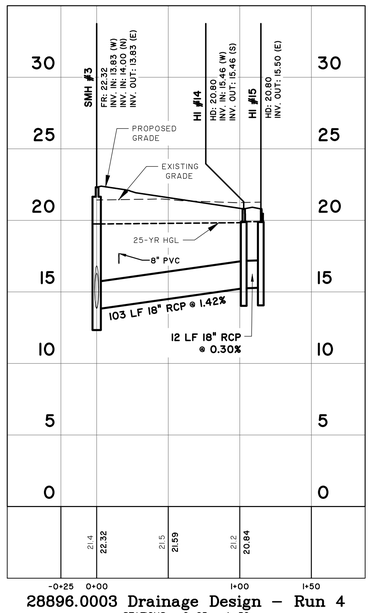
28896.0003 Drainage Design – Run 1
STATIONS: -0+25 – 9+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



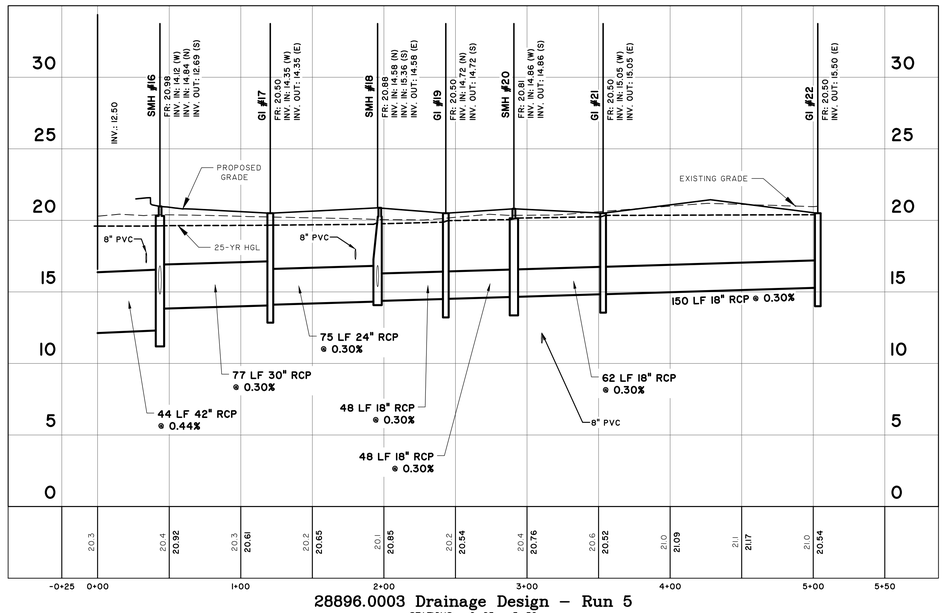
28896.0003 Drainage Design – Run 2
STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



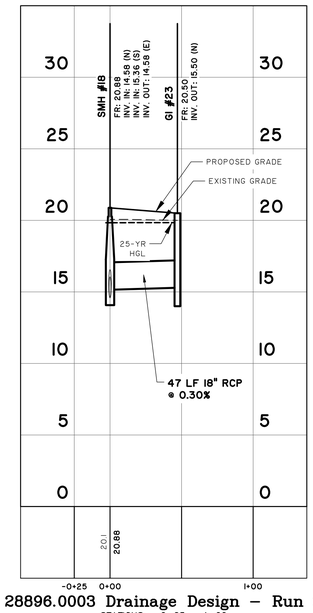
28896.0003 Drainage Design – Run 3
STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



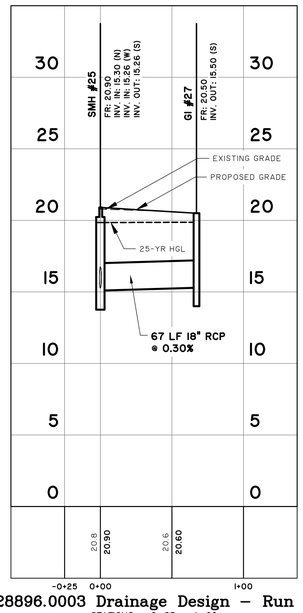
28896.0003 Drainage Design – Run 4
STATIONS: -0+25 – 1+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 Drainage Design – Run 5
STATIONS: -0+25 – 5+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 Drainage Design – Run 6
STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 Drainage Design – Run 8
STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

GEORGIA REGISTERED JOHN T. BARRY No. 031274 PROFESSIONAL ENGINEER

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

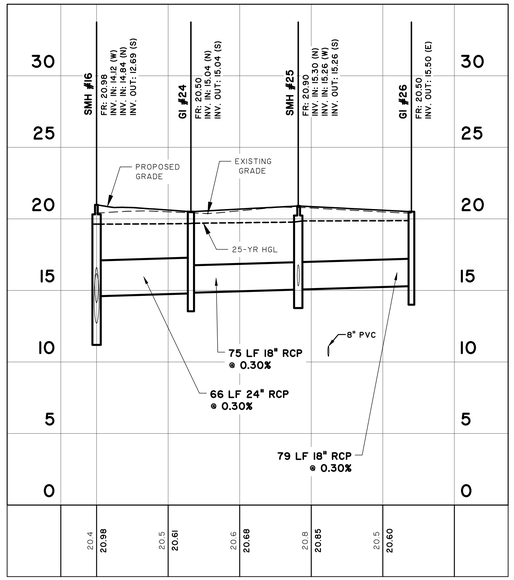
NOBLE VINES

DRAINAGE PROFILES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 50'

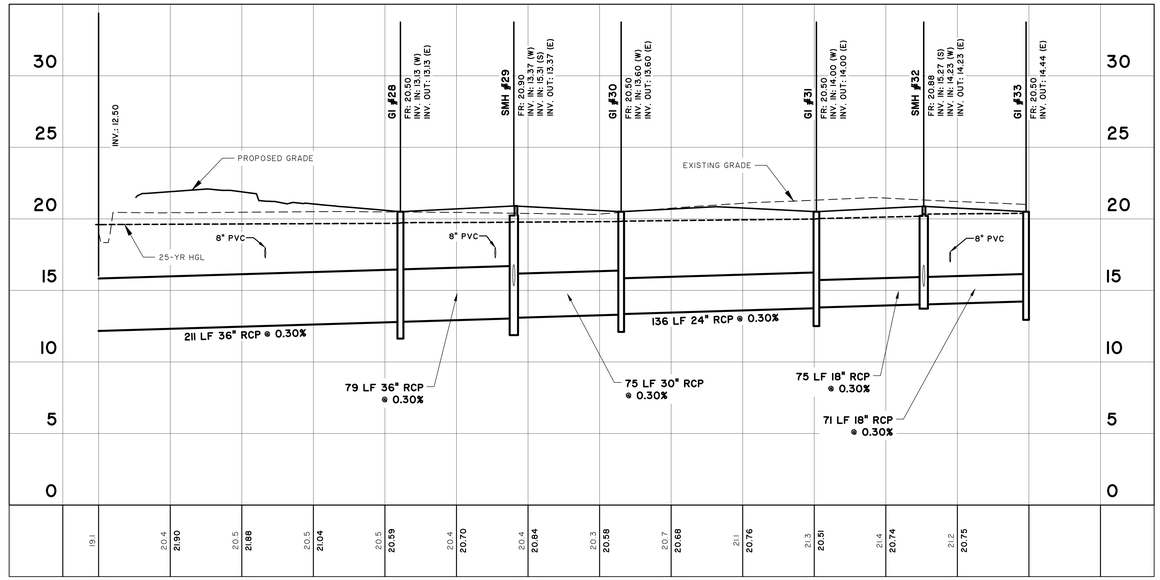
C5.1

Z:\28896\28896.0003\ENGINEERING\28896WRKDS CONSTRUCTION PLANS\28896.0003_DR-PF.DWG - Dec 14, 2022 - 8:31 AM



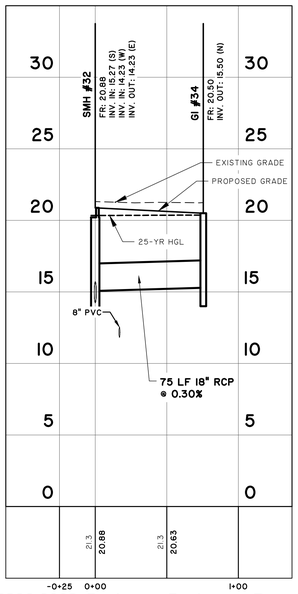
28896.0003 Drainage Design – Run 7

STATIONS: -0+25 – 2+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



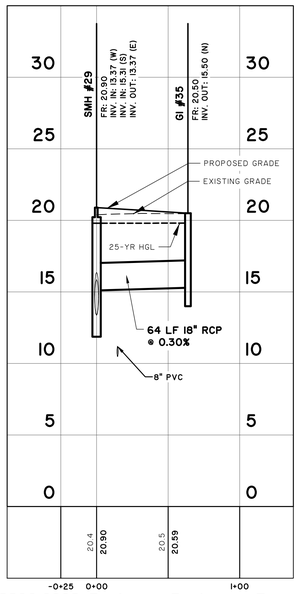
28896.0003 Drainage Design – Run 9

STATIONS: -0+25 – 7+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



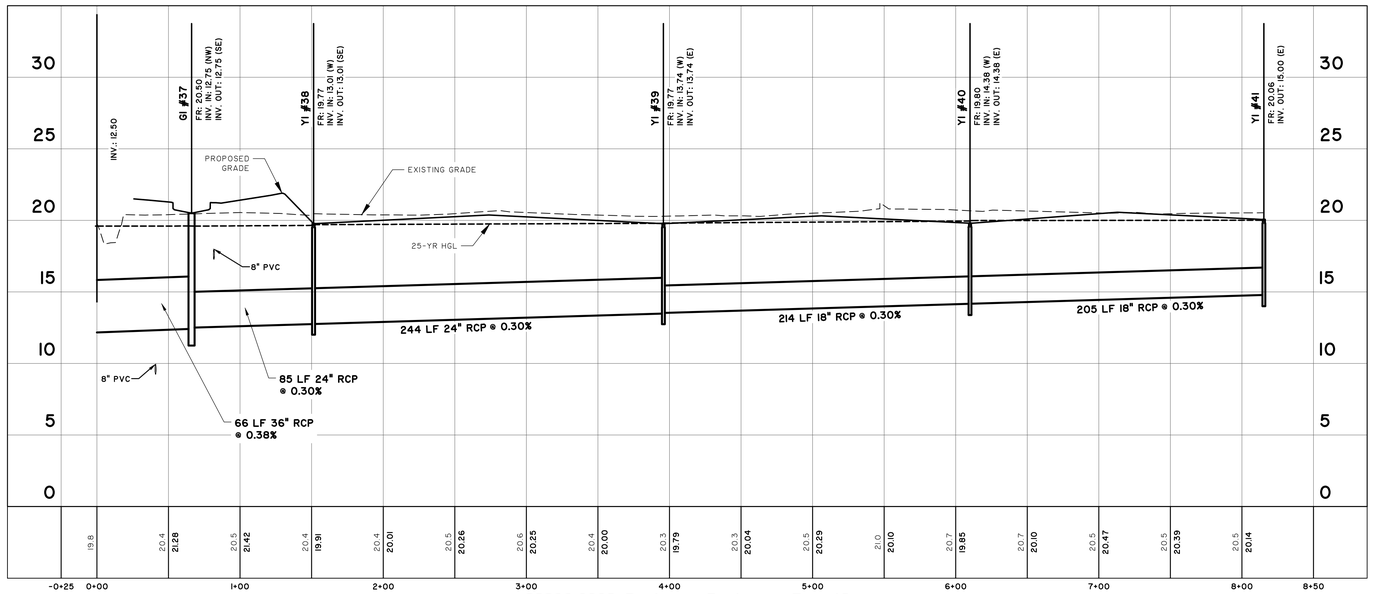
28896.0003 Drainage Design – Run 10

STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 Drainage Design – Run 11

STATIONS: -0+25 – 1+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



28896.0003 Drainage Design – Run 12

STATIONS: -0+25 – 8+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

Z:\28896\28896.0003\ENGINEERING\DRAINAGE\CONSTRUCTION PLANS\28896-0003-DRAINAGE - Dec 14, 2022 - 8:31 AM

GEORGIA
REGISTERED
11/01/22
PROFESSIONAL ENGINEER
No. 032774
CHRISTOPHER G. CLOWER
JOHN B. THOMAS, II
THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

NO.	REVISIONS	BY	DATE

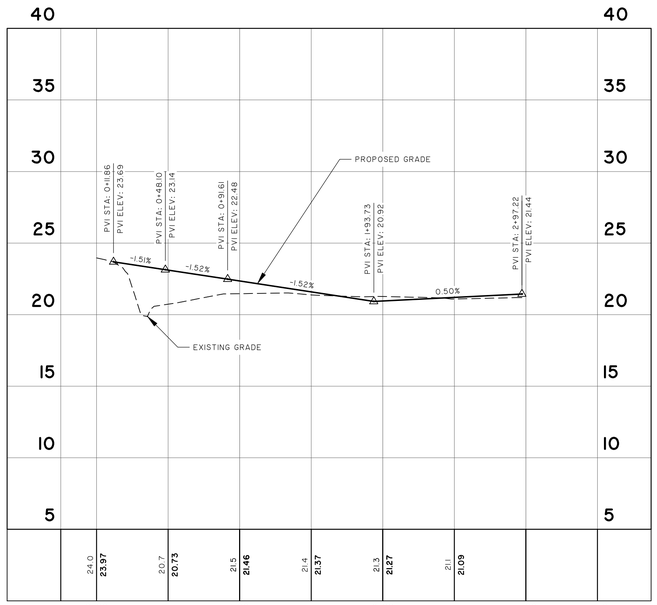
CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

DRAINAGE PROFILES

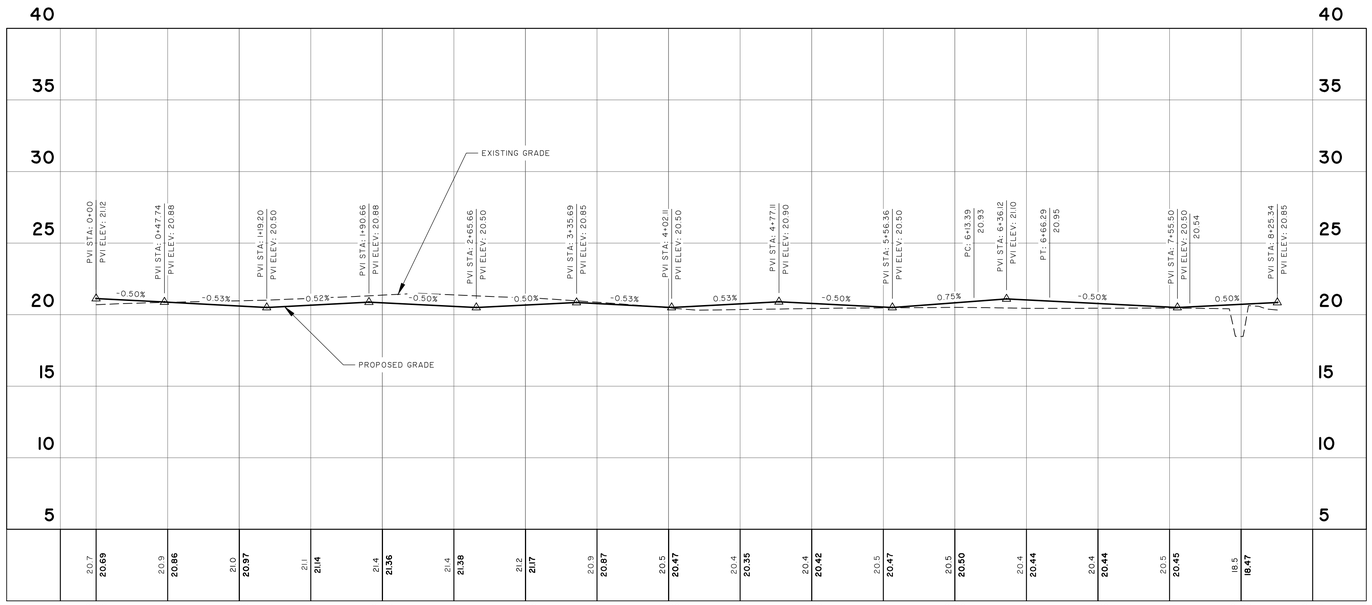
JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 50'

C5.2



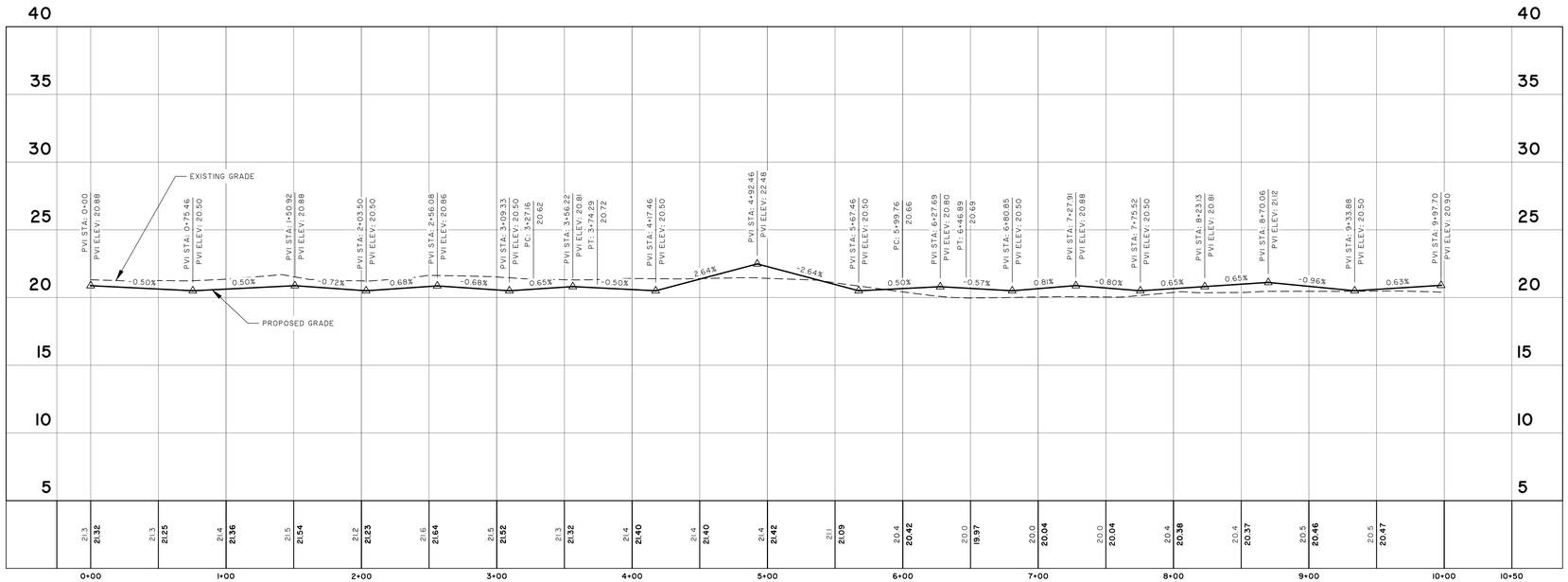
MAIN ENTRANCE

STATIONS: −0+25 – 3+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



ROAD ONE

STATIONS: −0+25 – 8+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



ROAD TWO

STATIONS: −0+25 – 10+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

GEORGIA
REGISTERED
01/02/22
NO. 033274
PROFESSIONAL ENGINEER
JOHN T. DRAWDY
CERTIFICATE OF AUTHORIZATION
JOHN B. CLEMENT

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

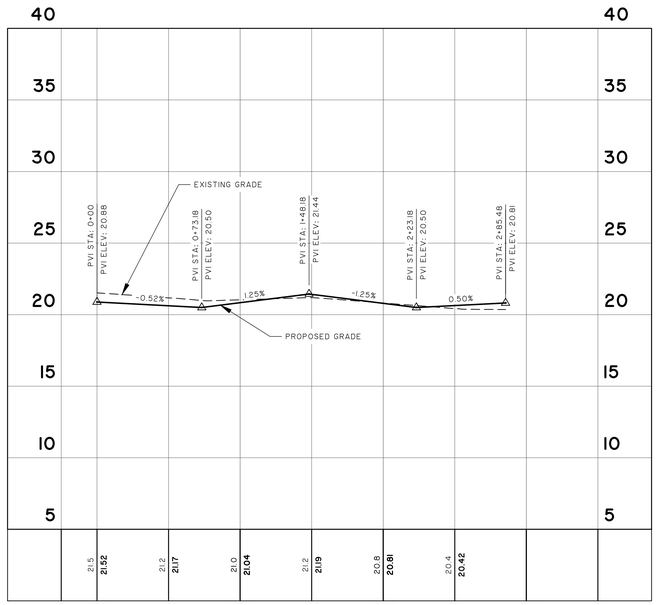
ROAD PROFILES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 50'

C5.3

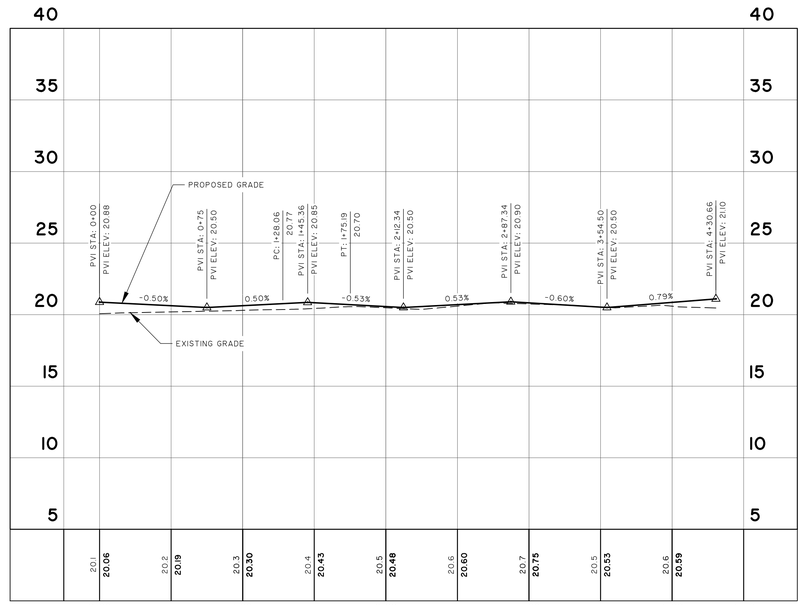
Z:\28896\28896.0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896.0003 dtd-PE.DWG Dec 15, 2022 - 9:55 AM

Z:\28896\28896.0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896.0003 -RD PROFILES - Dec 15, 2022 - 9:55 AM



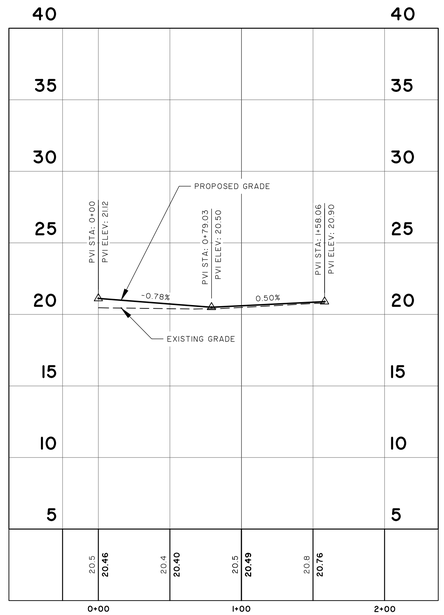
ROAD THREE

STATIONS: −0+25 – 3+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



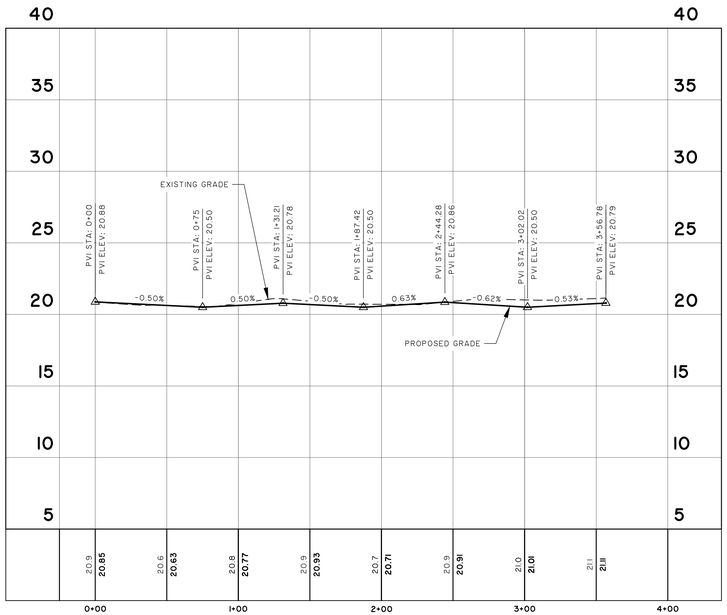
ROAD FIVE

STATIONS: −0+25 – 4+50
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



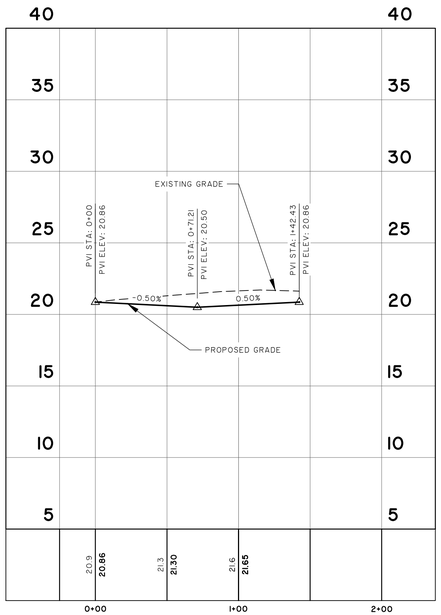
ROAD SIX

STATIONS: −0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



ROAD SEVEN

STATIONS: −0+25 – 4+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'



ROAD EIGHT

STATIONS: −0+25 – 2+00
SCALE: HORZ.: 1" = 50'
VERT.: 1" = 5'

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NO.	REVISIONS	BY	DATE

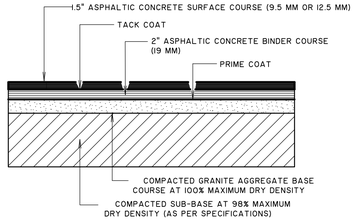
CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ROAD PROFILES

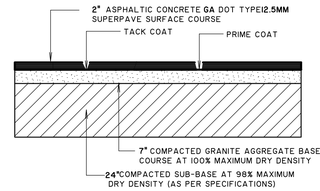
JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 50'

C5.4



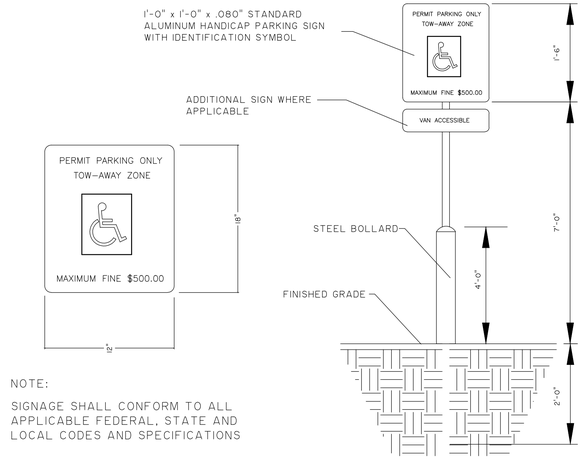
HEAVY DUTY PAVEMENT SECTION

NOT TO SCALE



REGULAR DUTY PAVEMENT SECTION

NOT TO SCALE

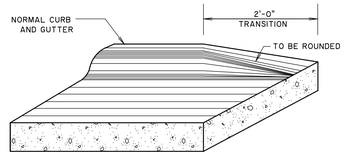


NOTE:

SIGNAGE SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND SPECIFICATIONS

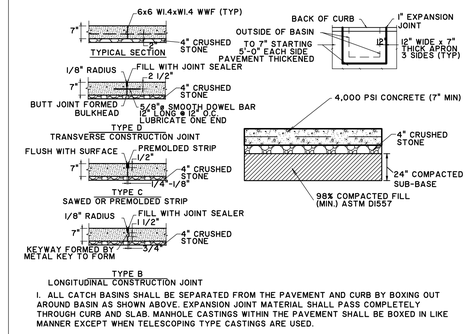
ACCESSIBLE PARKING SIGN DETAIL

NOT TO SCALE



FEATHERING OF CURB AND GUTTER DETAIL

NOT TO SCALE



1. ALL CATCH BASINS SHALL BE SEPARATED FROM THE PAVEMENT AND CURB BY BOXING OUT AROUND BASIN AS SHOWN ABOVE. EXPANSION JOINT MATERIAL SHALL PASS COMPLETELY THROUGH CURB AND SLAB. MANHOLE CASTINGS WITHIN THE PAVEMENT SHALL BE BOXED IN LIKE MANNER EXCEPT WHEN TELESCOPING TYPE CASTINGS ARE USED.

2. WHEN A JOINT FALLS WITHIN 5' OF OR CONTACTS BASINS, MANHOLES, OR OTHER STRUCTURES, SHORTEN ONE OR MORE PANELS EITHER SIDE OF OPENING TO PERMIT JOINT TO FALL ON ROUND STRUCTURES AND AT OR BETWEEN CORNERS OF RECTANGULAR STRUCTURES.

3. ALL TRANSVERSE JOINTS MUST EXTEND THROUGH CURBS AND MUST BE CONTINUOUS ACROSS PAVEMENT, EXCEPT TIED TRANSVERSE CONSTRUCTION JOINTS. EXPANSION JOINTS WILL NOT BE REQUIRED EXCEPT AT STRUCTURES OR AS SHOWN ON THE PLANS.

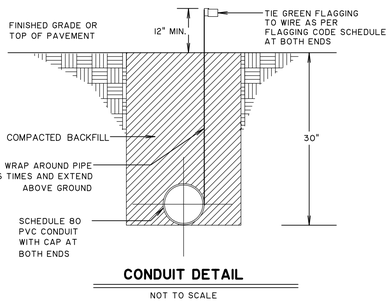
4. ALL SOFT AND YIELDING MATERIAL AND OTHER PORTIONS OF THE SUBGRADE WHICH WILL NOT COMPACT READILY WHEN ROLLED OR TAMPED SHALL BE REMOVED AS DIRECTED AND REPLACED WITH SUITABLE MATERIAL PLACED AND COMPACTED. THE SUBGRADE SHALL BE THOROUGHLY COMPACTED WITH SUITABLE EQUIPMENT SO AS TO HAVE UNIFORM DENSITY AT MOISTURE CONTENTS OF NOT LESS THAN STANDARD OPTIMUM (AASHTO T98). ALL SEWER TRENCHES AND STRUCTURE EXCAVATIONS SHALL BE BACKFILLED TO NATURAL OR FINISHED GRADE AS SOON AS CONDITIONS PERMIT. ALL BACKFILL SHALL BE COMPACTED WITH MECHANICAL TAMPERS IN LAYERS OF NOT OVER 8" LOOSE MATERIAL. IN ORDER TO PREVENT DIFFERENTIAL HEAVE, THE BACKFILL MATERIAL SHALL BE THE SAME MATERIAL AS THE SUBGRADE ADJACENT TO THE TRENCH.

5. THE MINIMUM CEMENT CONTENT SHALL NOT BE LESS THAN 6.0 SACKS (94 lb. PER SACK) PER CU. YD. OF CONCRETE. THE MAXIMUM SIZE AGGREGATE SHALL NOT EXCEED 1/4 OF THE SLAB THICKNESS. THE MAXIMUM SLUMP SHALL NOT EXCEED 3". ALL CONCRETE SHALL BE AIR ENTRAINED IN ACCORDANCE WITH THE FOLLOWING TABLE:

MAX. SIZE OF COARSE AGGREGATE, INCHES	AIR CONTENT, PER CENT BY VOLUME
1-1/2", 1", 3/4", 1/2"	5 ± 1
3/8", 1/2"	7-1/2 ± 1

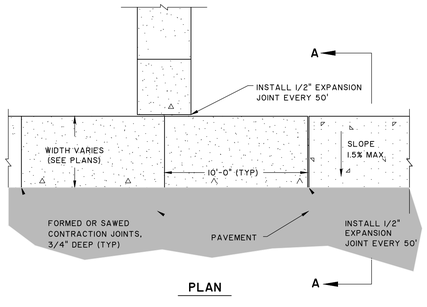
CONCRETE PAVEMENT DETAILS

NOT TO SCALE

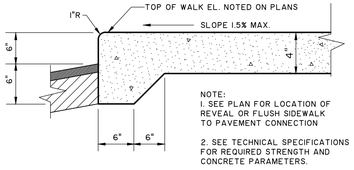


CONDUIT DETAIL

NOT TO SCALE



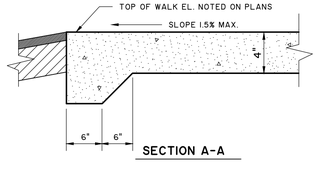
PLAN



SECTION A-A

SIDEWALK AND WALKWAY DETAILS WITH REVEAL

NOT TO SCALE

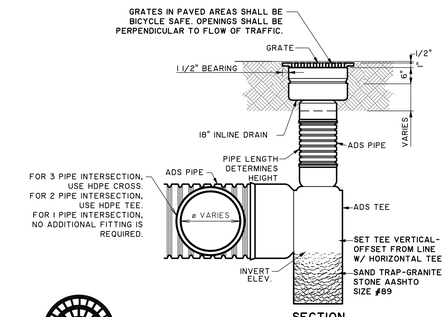


SECTION A-A

SIDEWALK AND WALKWAY DETAILS WITH NO REVEAL

NOT TO SCALE

NOTE: SEE PLANS FOR SIDEWALK TO PAVEMENT TRANSITIONS : REVEAL / NO REVEAL



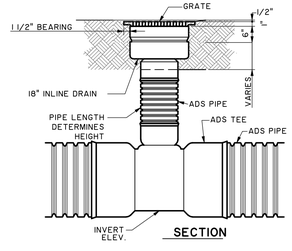
SECTION

YARD INLET END OF LINE SCENARIO

NOT TO SCALE

YARD INLET COVER

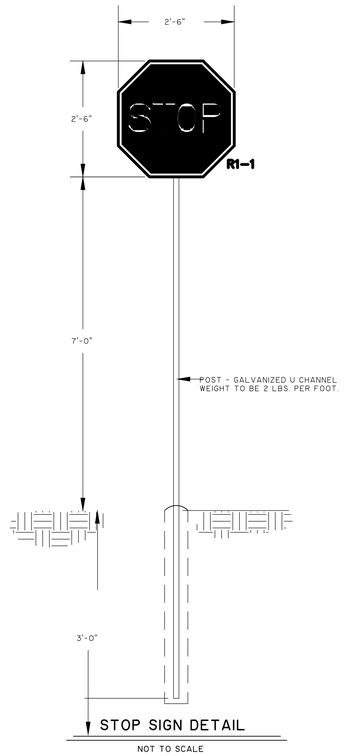
NOTE:
USE SOLID LID FOR SPECIAL MANHOLE



SECTION

YARD INLET

NOT TO SCALE



STOP SIGN DETAIL

NOT TO SCALE

GEORGIA REGISTERED LANDSCAPE ARCHITECT 001018 NOBLE LYNES VINES BRIAN B. CONNOR

NO.	REVISIONS	BY	DATE

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

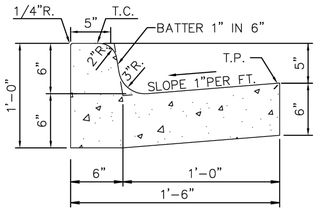
NOBLE VINES

PAVING,GRADING AND DRAINAGE DETAILS

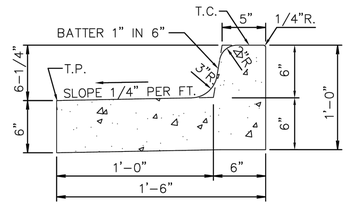
JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C5.5

Z:\28896.0003\DRAWINGS\CONSTRUCTION PLANS\28896.0003 - PDG-DTL.DWG - Sat, Mar 26, 2022 - 9:54 AM



NORMAL GUTTER



PITCHED GUTTER

NOTE: COMPACT SUBGRADE TO 98% (ASTM D698-00ael)

18" CURB & GUTTER

City of Port Wentworth
TECHNICAL DETAILS
P-3

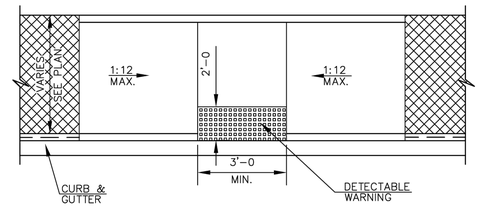
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

DETECTABLE WARNINGS ON WALKING SURFACE OF HANDICAP RAMP

DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN (23mm). A HEIGHT OF NOMINAL 0.2 IN (5mm) AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN (60mm) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

SURFACES SHALL MEET THE ADA ACCESSIBILITY GUIDELINES SECTION 4.29.2.

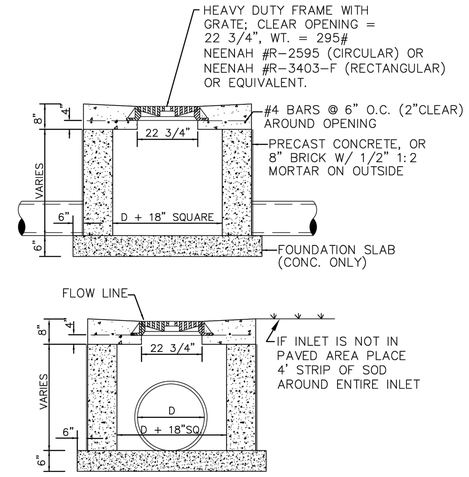


PAVEMENT

HANDICAP RAMP TYPE "B"

City of Port Wentworth
TECHNICAL DETAILS
P-5

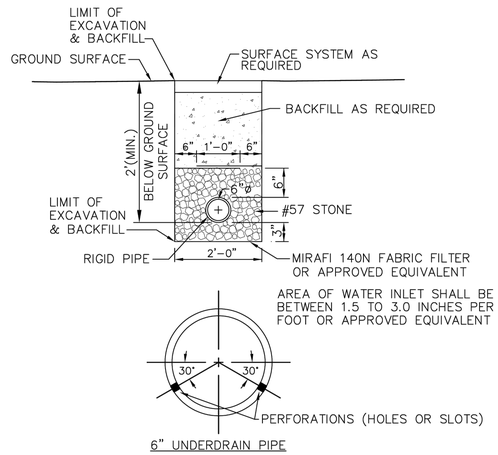
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



GRATE INLET

City of Port Wentworth
TECHNICAL DETAILS
SD-8

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

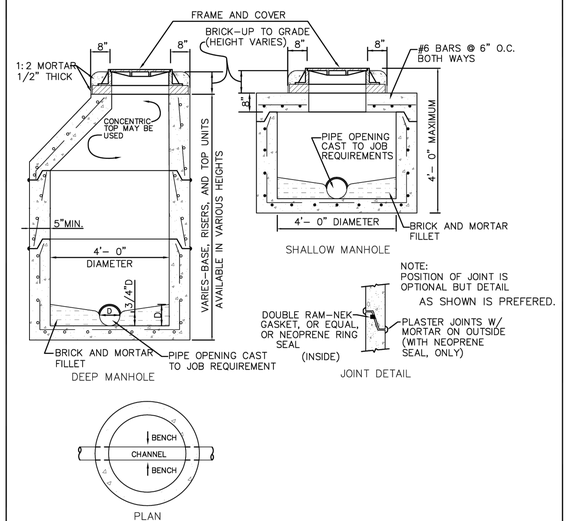


6" UNDERDRAIN PIPE

6" UNDERDRAIN PIPE

City of Port Wentworth
TECHNICAL DETAILS
SD-10

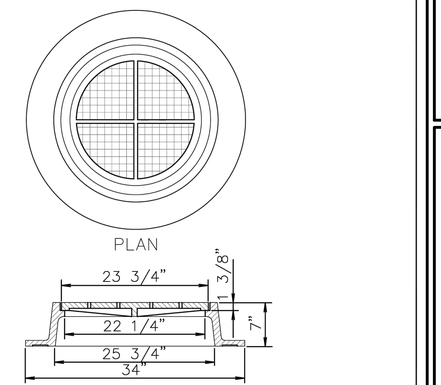
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



PRECAST STORM MANHOLE

City of Port Wentworth
TECHNICAL DETAILS
SD-12

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



NOTE:

MANHOLE RIM & COVER SIMILAR TO NEENAH FOUNDRY CO. R-1412-A4. TOTAL WEIGHT 310#. TYPE "C" LID TO HAVE MACHINED BEARING SURFACES. LID TO BE LETTERED "STORM",

STORM MANHOLE RING & COVER

City of Port Wentworth
TECHNICAL DETAILS
SD-14

PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

GEORGIA REGISTERED PROFESSIONAL ENGINEER 032232 JONATHAN B. LEWIS

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

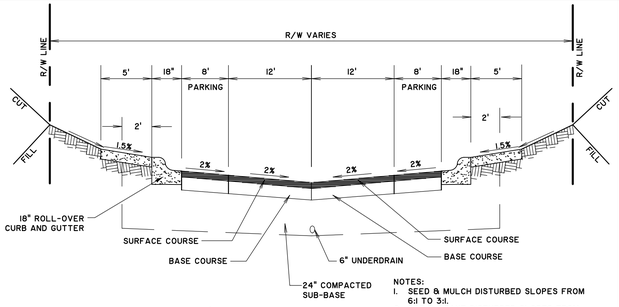
NOBLE VINES

PAVING,GRADING AND DRAINAGE DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C5.6

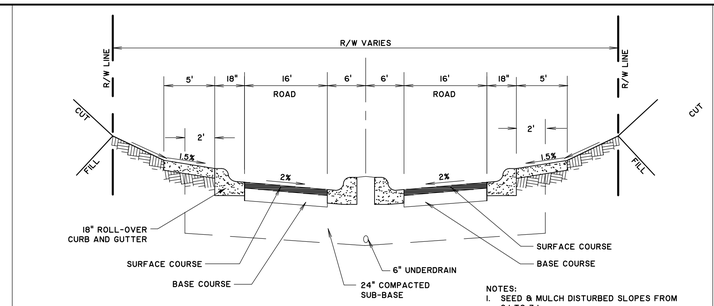
Z:\28896\28896.0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896.0003 - PDI-07.DWG Dec 15, 2022 - 9:56 AM



NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
3. REFER TO PLANS FOR LOCATION OF SIDEWALK, AS MAY BE APPLICABLE.
4. REFER TO PAVEMENT SECTION DETAILS.

24' INVERTED CROWN W/ PARKING ON 2 SIDES

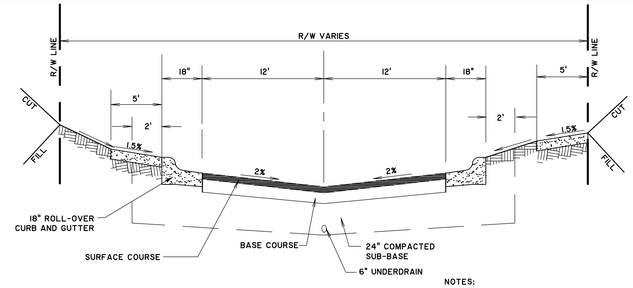
NOT TO SCALE



NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
3. REFER TO PLANS FOR LOCATION OF SIDEWALK, AS MAY BE APPLICABLE.
4. REFER TO PAVEMENT SECTION DETAILS.

16' DIVIDED ENTRANCE

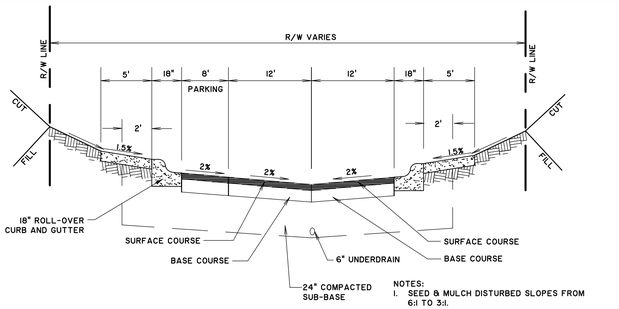
NOT TO SCALE



NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
3. REFER TO PLANS FOR LOCATION OF SIDEWALK, AS MAY BE APPLICABLE.
4. REFER TO PAVEMENT SECTION DETAILS.

24' INVERTED CROWN

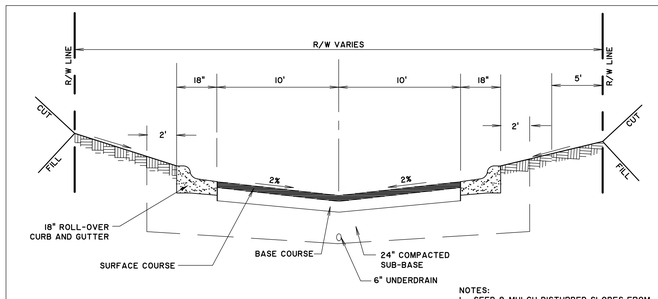
NOT TO SCALE



NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
3. REFER TO PLANS FOR LOCATION OF SIDEWALK, AS MAY BE APPLICABLE.
4. REFER TO PAVEMENT SECTION DETAILS.

24' INVERTED CROWN W/ PARKING ON 1 SIDE

NOT TO SCALE

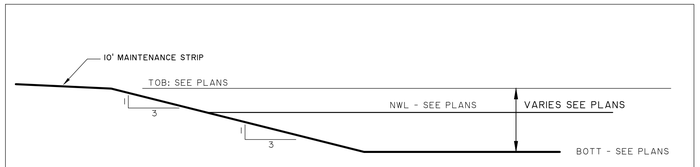


NOTES:
1. SEED & MULCH DISTURBED SLOPES FROM 6:1 TO 3:1.
2. SOD & STAKE DISTURBED SLOPES FROM 3:1 TO 2:1.
3. REFER TO PLANS FOR LOCATION OF SIDEWALK, AS MAY BE APPLICABLE.
4. REFER TO PAVEMENT SECTION DETAILS.

STANDARD CURB

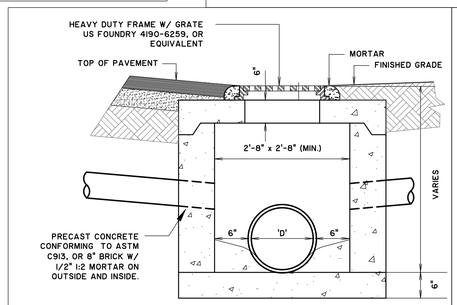
20' INVERTED CROWN

NOT TO SCALE

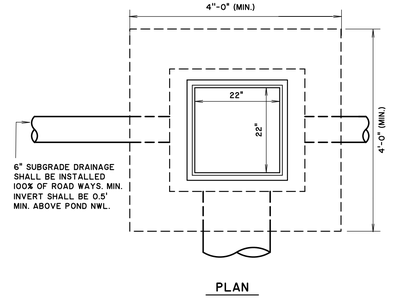


POND BANK DETAIL

NOT TO SCALE



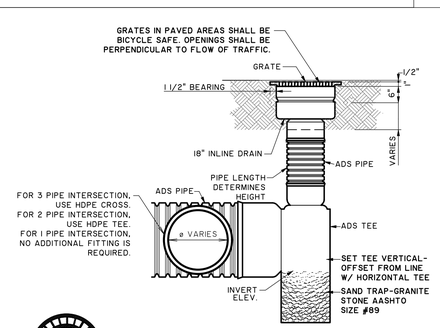
SECTION



PLAN

STANDARD INLET - GRATE TYPE

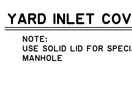
NOT TO SCALE



SECTION

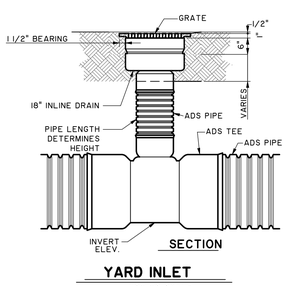
YARD INLET END OF LINE SCENARIO

NOT TO SCALE



YARD INLET COVER

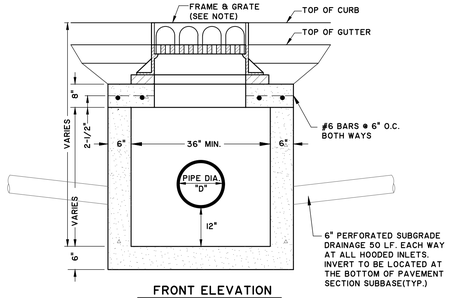
NOTE:
USE SOLID LID FOR SPECIAL MANHOLE



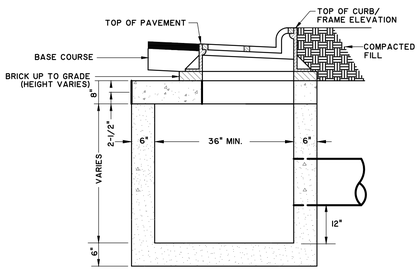
SECTION

YARD INLET

NOT TO SCALE



FRONT ELEVATION



SIDE ELEVATION

NOTE:
1. FOR 18" CURB AND GUTTER, USE EAST JORDAN IRON WORKS 7205 FRAME AND GRATE OR EQUIVALENT.
2. STEPS TO BE INSTALLED IF DEPTH IS GREATER THAN 4 FEET.

HOODED INLET

NOT TO SCALE

GEORGIA REGISTERED JOHN T. JUDD 32274 PROFESSIONAL ENGINEER

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON

50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

PAVING,GRADING AND DRAINAGE DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

C5.7

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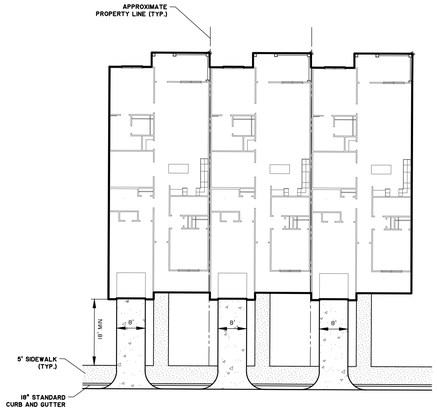
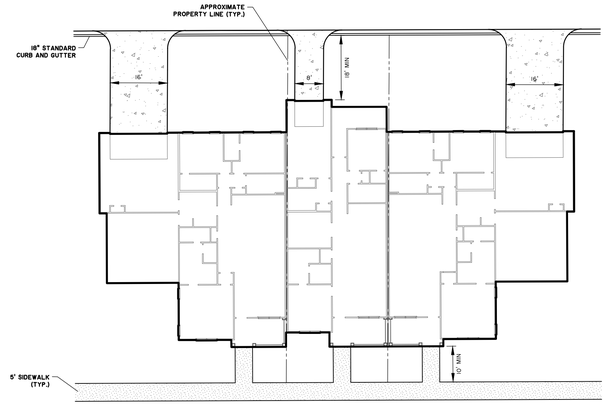


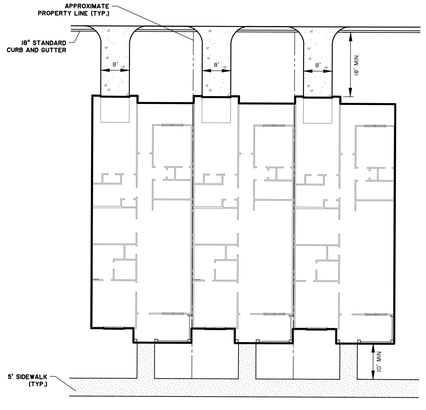
TYPICAL DRIVEWAY DETAIL - 3PLEX FRONT LOADED

NOT TO SCALE



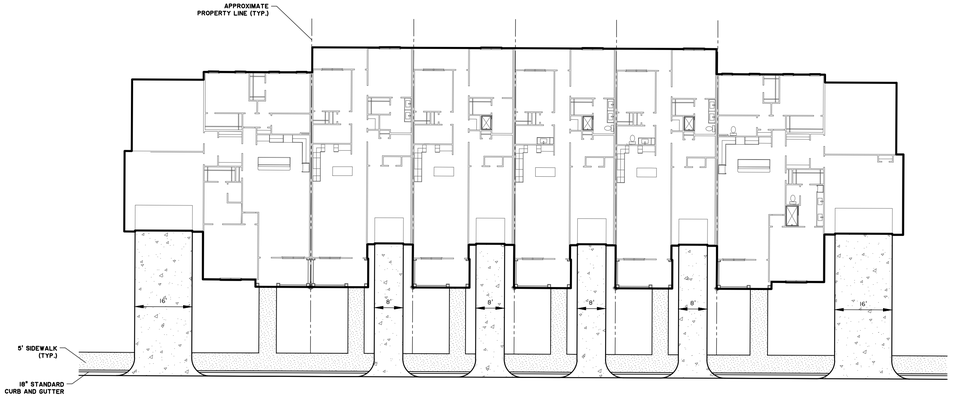
TYPICAL DRIVEWAY DETAIL - 3PLEX REAR LOADED

NOT TO SCALE



TYPICAL DRIVEWAY DETAIL - 3PLEX REAR LOADED

NOT TO SCALE



TYPICAL DRIVEWAY DETAIL - 6PLEX FRONT LOADED

NOT TO SCALE

GEORGIA
GEORGIA TECH
2010
NOBLE VINES
DRIVE
NBL
2022
NOBLE VINES
DRIVE
NBL
2022
NOBLE VINES
DRIVE
NBL
2022

EROSION,SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST - STAND ALONE CONSTRUCTION PROJECTS

SWCD: COASTAL
PROJECT NAME: NOBLE VINES - PHASE 2
CITY/COUNTY: CITY OF PORT WENTWORTH / CHATHAM COUNTY

ADDRESS: BERRIEN RD, PORT WENTWORTH, GA 31407
DATE ON PLANS: 08/12/22
REVISED DATE:
NAME/EMAIL OF PERSON FILLING OUT CHECKLIST: NATHAN LONG / LONG.N@TANDH.COM

ATTACHED | YES

1. THE APPLICABLE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CHECKLIST ESTABLISHED BY THE COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED. (THE COMPLETED CHECKLIST MUST BE SUBMITTED WITH THE ES&PC PLAN OR THE PLAN WILL NOT BE REVIEWED.) (PERMIT IV.D.1 PG 26)

PLEASE FIND THE CURRENT STAND ALONE EROSION, SEDIMENTATION AND POLLUTION CONTROL CHECKLIST ATTACHED WITH THIS PLAN.

ALL | YES

2. LEVEL II CERTIFICATION NUMBER ISSUED BY THE COMMISSION, SIGNATURE AND SEAL OF THE CERTIFIED DESIGN PROFESSIONAL. (SIGNATURE, SEAL AND LEVEL II NUMBER MUST BE ON EACH SHEET PERTAINING TO ES&PC PLAN OR THE PLAN WILL NOT BE REVIEWED)

PLEASE FIND ON EACH SHEET OF THIS PLAN THE GSWCC LEVEL II CERTIFICATION NUMBER, SIGNATURE AND SEAL FOR MR. NATHAN B. LONG, P.E.

ECIJ | YES
EC2J-4.2

3. LIMIT OF DISTURBANCE SHALL BE NO GREATER THAN 50 ACRES AT ANY ONE TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE EPD DISTRICT OFFICE. IF EPD APPROVES THE REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME, THE PLAN MUST INCLUDE AT LEAST 4 OF THE BMPs LISTED IN APPENDIX 1 OF THIS CHECK LIST. (A COPY OF THE THE WRITTEN APPROVAL BY EPD MUST BE ATTACHED TO THE PLAN FOR THE PLAN TO BE REVIEWED. (PERMIT IV.D3 PG 27)

AREA OF DISTURBANCE DOES NOT EXCEED 50 ACRES.

ECIJ | YES

4. THE NAME AND PHONE NUMBER OF 24-HOUR LOCAL CONTACT RESPONSIBLE FOR EROSION, SEDIMENTATION AND POLLUTION CONTROLS. (PERMIT II.B.1.c PG 12)

NATHAN B. LONG
(912) 721 - 4181

ECIJ | YES

5. PROVIDE NAME, ADDRESS, EMAIL ADDRESS AND PHONE NUMBER OF PRIMARY PERMITTEE. (PERMIT II.B.1 b PG 12)

CLARET COMMUNITIES, LLC
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GA 30341
MR. LEE TERRY
(404) 795-8301; LTERRY@CLARETCOMMUNITIES.COM

ECIJ | YES

6. NOTE TOTAL AND DISTURBED ACREAGE OF THE PROJECT OR PHASE UNDER CONSTRUCTION. (PERMIT IV.D.2 c PG 27)

TOTAL PARCEL ACREAGE IS APPROXIMATELY 33.0 ACRES.
TOTAL DISTURBED ACREAGE FOR THE PROJECT IS 9.8 ACRES.

ECIJ | YES

7. PROVIDE THE GPS LOCATION OF THE CONSTRUCTION EXIT FOR THE SITE. GIVE THE LATITUDE AND LONGITUDE IN DECIMAL DEGREES. PERMIT II.B.1 a PG 12

CONSTRUCTION EXIT IS LOCATED AT:
LAT: N32.19664 ; LONG: W81.20672

ALL | YES

8. INITIAL DATE OF THE PLAN AND THE DATES OF ANY REVISIONS MADE TO THE PLAN INCLUDING THE ENTITY WHO REQUESTED THE REVISIONS.

PLEASE FIND THE INITIAL DATE OF THE PLAN AND ALL REVISIONS ON THE COVER SHEET AS WELL AS EACH SHEET OF THE PLAN.

ECIJ | YES

9. DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY. (PERMIT IV.D.2 a PG 27)

THE SITE IS WAS PREVIOUSLY VACANT. CONSTRUCTION ACTIVITY AT THE SITE WILL INVOLVE, GRADING, UTILITY INSTALLATION, PAVING AND CONSTRUCTION OF A TOWNHOME COMMUNITY WITH AN AMENITY AREA.

COVER | YES

10. PROVIDE VICINITY MAP SHOWING SITE'S RELATION TO SURROUNDING AREAS. INCLUDE DESIGNATION OF SPECIFIC PHASE, IF NECESSARY. (PERMIT IV.D.2 e PG 27)

VICINITY MAP SHOWN ON THE COVER SHEET OF THE PLANS

ECIJ,ECI.3 | YES

11. IDENTIFY THE PROJECT RECEIVING WATERS AND DESCRIBE ALL SENSITIVE ADJACENT AREAS INCLUDING STREAMS, LAKES, RESIDENTIAL AREAS, WETLANDS, MARSHLANDS, ETC. WHICH MAY BE AFFECTED. (PERMIT IV.D.2.f PG 27)

THE PROJECT DISCHARGES TO EXISTING CULVERT PIPES UNDER HIGHWAY 30. THE EVENTUAL RECEIVING WATER IS THE SAVANNAH RIVER.

ECIJ | YES

12. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE SITE WAS VISITED PRIOR TO DEVELOPMENT OF THE ES&PC PLAN AS STATED ON PART IV PAGE 19 OF THE PERMIT.

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR AUTHORIZED AGENT UNDER MY SUPERVISION.

NATHAN B. LONG, PE
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION #00000024602
EXPIRATION DATE: 11/29/21

ECIJ | YES

13. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE PERMITTEE'S ES&PC PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BMP'S AND SAMPLING TO MEET PERMIT REQUIREMENTS AS STATED ON PART IV PAGE 19 OF THE PERMIT.

I CERTIFY THAT THE PERMITEE'S EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001.

NATHAN B. LONG, PE
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION #00000024602
EXPIRATION DATE: 11/29/21

ECIJ | YES

14. CLEARLY NOTE THE STATEMENT THAT "THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION, IN ACCORDANCE WITH PART IV.A.5 PAGE 25 OF THE PERMIT.

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION.

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.

DATE OF INSPECTION: _____

I CERTIFY THE SITE WAS _____ WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.

_____ _____
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN

_____
_____
_____
_____

THESE DEFICIENCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

ECIJ | YES

15. CLEARLY NOTE THE STATEMENT THAT "NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS." (PART IV.(i)-(iv) PG 19-24 OF THE PERMIT).

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

ECIJ | YES

16. PROVIDE A DESCRIPTION OF ANY BUFFER ENCROACHMENTS AND INDICATE WHETHER A BUFFER VARIANCE IS REQUIRED.

NO BUFFER ENCROACHMENTS. NO VARIANCE REQUIRED.

ECIJ | YES

17. CLEARLY NOTE THE STATEMENT THAT "AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.", (PART IV.C PG 26 OF PERMIT).

AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

ECIJ | YES

18. CLEARLY NOTE THE STATEMENT THAT "WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT. (PERMIT IV.D.3.c(1) PG 30).

WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

ECIJ | YES

19. CLEARLY NOTE THE STATEMENT THAT "THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES."

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

ECIJ | YES

20. CLEARLY NOTE THE STATEMENT THAT "EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE."

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

ECIJ | YES

21. CLEARLY NOTE THE STATEMENT "ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING." (PERMIT IV.D.3.a.(1) PG 28).

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

ECIJ | YES

22. ANY CONSTRUCTION ACTIVITY WHICH DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF AN 8IOTA IMPAIRED STREAM SEGMENT MUST COMPLY WITH PART III.C. OF THE PERMIT. INCLUDE THE COMPLETED APPENDIX 1 LISTING ALL THE BMP'S THAT WILL BE USED FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT. (PART III.C.2.A - V. PG 19-21)

THE SITE IS LOCATED MORE THAN 1 LINEAR MILE UPSTREAM OF THE NEAREST IMPAIRED STREAM SEGMENT.

ECIJ | YES

23. IF A TMDL IMPLEMENTATION PLAN FOR SEDIMENT HAS BEEN FINALIZED FOR THE IMPAIRED STREAM SEGMENT (IDENTIFIED IN ITEM 22 ABOVE) AT LEAST SIX MONTHS PRIOR TO SUBMITTAL OF NOI, THE ES&PC PLAN MUST ADDRESS ANY SITE-SPECIFIC CONDITIONS OR REQUIREMENTS INCLUDED IN THE TMDL IMPLEMENTATION PLAN. (PERMIT III.C.1 PG 15)

THE SITE IS LOCATED MORE THAN 1 LINEAR MILE UPSTREAM OF THE NEAREST IMPAIRED STREAM SEGMENT.

PLAN | YES

24. BMP'S FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF THE VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED. (PERMIT IV.D.3.c(6) PG 31).

THERE SHALL BE CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REARS OF THE VEHICLES.

ECIJ | YES

25. PROVIDE BMP'S FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS, (PERMIT IV.D.3.c.(5) PG 31).

PETROLEUM BASED PRODUCTS- CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE FOR SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS. HAVE EQUIPMENT TO CONTAIN AND CLEAN UP PETROLEUM SPILLS IN FUEL STORAGE AREAS OR ON MAINTENANCE AND FUELING VEHICLES. STORE IN COVERED AREAS PROTECTED WITH DIKES. REGULARLY INSPECT FOR CRACKS OR LEAKAGE IN CONTAINERS/TANKS.

SPILL CLEANUP AND CONTROL PRACTICES

- **LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.**
- **MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND MEAL WASTE CONTAINERS.**
- **SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.**
- **FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.**
- **FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS**
- **FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.**
- **FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.**

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

ECIJ | YES

26. DESCRIPTION OF THE MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. (PERMIT IV.D.3.b PG 29).

THE MAIN PERMANENT EROSION CONTROL PRACTICE AT THE OUTFALL POND'S CONTROL STRUCTURE DISCHARGE IS RIP-RAP. THE POND ITSELF ALSO SERVES AS A PERMANENT MEASURE TO REDUCE POLLUTANTS IN STORMWATER. THE OUTFALL POND INCLUDES AN EARTHEN WEIR. PERMANENT GRASSING AND LANDSCAPING WILL BE INSTALLED TO PROTECT EARTHEN AREAS FROM EROSION ONCE CONSTRUCTION IS COMPLETE.

ECIJ | YES

27. DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE, (PERMIT IV.D.3.c.(2) PG 30).

THE PLAN MUST CONTAIN A DESCRIPTION OF MEASURES, SUCH AS PLASTIC SHEETING OR TEMPORARY ROOFS, TO COVER BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.

ECIJ | YES

28. DESCRIPTION OF THE PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES. (PERMIT IV PG 24)

POLLUTANT PREVENTION

THE FOLLOWING MATERIALS ARE EXPECTED ONSITE DURING CONSTRUCTION: PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, ADDITIVES FOR SOIL STABILIZATION, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, CONCRETE PRODUCTS, ASPHALT, TAR, LUMBER, , PAINTS/STAINS/FINISHING TREATMENTS, PAINT SOLVENTS, CLEANING SOLVENTS, PLASTICS AND METAL PIPES.

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISK OF SPILLS FROM DISCHARGING INTO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

- **QUANTITIES ONSITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.**
- **PRODUCTS AND MATERIALS WILL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.**
- **PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER'S LABELS LEGIBLE AND VISIBLE.**
- **PRODUCT MIXING, DISPOSAL, AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.**
- **THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.**

PRODUCT SPECIFIC PRACTICES

FERTILIZER/HERBICIDES/PESTICIDES/DETERGENTS- THESE WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS. DO NOT DISCHARGE WASH WATER INTO STORM WATER SYSTEM. INSTALL CURBS OR DIKES AROUND STORAGE AREA TO PROTECT AGAINST SPILLS. LIMIT USE OF DETERGENTS ON-SITE.

PAINTS/FINISHES/SOLVENTS- ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING- CONCRETE WASHOUT SHALL OCCUR ONLY IN THE WASH PAD VICINITY DELINEATED IN THE PLANS.

BUILDING MATERIALS- NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

GEORGIA REGISTERED 032822 No. 030274 PROFESSIONAL ENGINEER NATHAN B. LONG

NATHAN B. LONG
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #
00000024602

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
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Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

EROSION CONTROL NOTES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	NTS

EC1.1

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EROSION,SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST - STAND ALONE CONSTRUCTION PROJECTS

SWCD: COASTAL
PROJECT NAME: NOBLE VINES - PHASE 2
CITY/COUNTY: CITY OF PORT WENTWORTH/CHATHAM COUNTY

ADDRESS: BERRIEN ROAD, PORT WENTWORTH, GA 31407
DATE ON PLANS: 08/12/22
REVISED DATE:
NAME/EMAIL OF PERSON FILLING OUT CHECKLIST: NATHAN B. LONG/ LONG.N@TANDH.COM

ECL2 | YES

29. DESCRIPTION AND CHART OR TIMELINE OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES WHICH DISTURB SOILS FOR THE MAJOR PORTIONS OF THE SITE (I.E., INITIAL PERIMETER AND SEDIMENT STORAGE BMP'S, CLEARING AND GRUBBING ACTIVITIES, EXCAVATION ACTIVITIES, UTILITY ACTIVITIES, TEMPORARY AND FINAL STABILIZATION). (PERMIT IV.D.2b PG 27)

A SPECIFIED WORK SCHEDULE IS NEEDED TO COORDINATE THE TIMING OF LAND DISTURBING ACTIVITIES WITH THE INSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES.

THE PURPOSE OF THE SCHEDULE IS TO REDUCE ON-SITE EROSION AND OFF-SITE SEDIMENTATION BY PERFORMING LAND DISTURBING ACTIVITIES AND INSTALLING EROSION AND SEDIMENTATION CONTROL PRACTICES IN ACCORDANCE WITH A PLANNED SCHEDULE.

IN PLANNING CONSTRUCTION WORK, IT MAY BE HELPFUL TO OUTLINE ALL LAND DISTURBING ACTIVITIES NECESSARY TO COMPLETE THE PROPOSED PROJECT. THEN LIST ALL PRACTICES NEEDED TO CONTROL EROSION AND SEDIMENTATION ON THE SITE. THESE TWO LISTS CAN THEN BE COMBINED IN LOGICAL ORDER TO PROVIDE A PRACTICAL AND EFFECTIVE CONSTRUCTION SEQUENCE SCHEDULE THAT BECOMES PART OF THE EROSION AND SEDIMENTATION CONTROL PLAN.

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
1. OBTAIN ALL PLAN APPROVALS AND OTHER APPLICABLE PERMITS.	
2. FLAG THE WORK LIMITS AND MARK THE TREES AND BUFFER AREAS FOR PROTECTION.	
3. HOLD PRE CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION.	
4. CONSTRUCTION ACCESS - CONSTRUCTION ENTRANCE, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS.	FIRST LAND DISTURBING ACTIVITY - STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS CONSTRUCTION TAKES PLACE.
5. SEDIMENT TRAPS AND BARRIERS - BASIN TRAPS, SEDIMENT FENCES, AND OUTLET PROTECTION.	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ACCESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING.
6. RUNOFF CONTROL - DIVERSIONS, PERIMETER DIKES, WATER BARS, AND OUTLET PROTECTION.	INSTALL KEY PRACTICES AFTER PRINCIPAL SEDIMENT TRAPS AND BEFORE LAND GRADING. INSTALL ADDITIONAL RUNOFF-CONTROL MEASURES DURING GRADING.
7. RUNOFF CONVEYANCE SYSTEM- STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	WHERE NECESSARY, STABILIZE STREAM BANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPAL RUNOFF CONVEYANCE SYSTEM WITH RUNOFF-CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
8. LAND CLEARING AND GRADING - SITE PREPARATION CUTTING, FILLING AND GRADING, SEDIMENTATION TRAPS, BARRIERS, DIVERSIONS, DRAINS,SURFACE ROUGHENING.	BEGIN MAJOR CLEARING AND GRADING AFTER PRINCIPAL SEDIMENT AND KEY RUNOFF - CONTROL MEASURES ARE INSTALLED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES. MARK TREES AND BUFFER AREAS FOR PRESERVATION.
9. SURFACE STABILIZATION - TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETE.
10. BUILDING CONSTRUCTION- BUILDINGS UTILITIES, PAVING.	INSTALL NECESSARY EROSION AND SEDIMENTATION CONTROL PRACTICES AS WORK TAKES PLACE.
11. LANDSCAPING AND FINAL STABILIZATION - TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING RIPRAP.	LAST CONSTRUCTION PHASE--STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE AND STABILIZE ALL TEMPORARY CONTROL MEASURES.

CONSTRUCTION SCHEDULE

ACTIVITY	MONTH 1	3	5	7	9	11
PERIMETER BMPS	■					
SITE CLEARING	■	■				
TEMPORARY SEDIMENT CONTROL BMPS	■					
SITE GRADING		■	■			
TEMPORARY GRASSING		■	■	■		
UTILITY INSTALLATION		■	■	■		
ROAD CONSTRUCTION			■	■	■	
SITE PAVING				■	■	
BUILDING CONSTRUCTION			■	■	■	■
PERMANENT GRASSING					■	■
FINAL STABILIZATION/ BMP REMOVAL						■
BMP MAINTENANCE	■	■	■	■	■	■

ECL2 | YES

30. PROVIDE COMPLETE REQUIREMENTS OF INSPECTIONS AND RECORD KEEPING BY THE PRIMARY PERMITEE, (PERMIT IV.D.4.a PG 31-33).

INSPECTIONS AND RECORD KEEPING

A. PRIMARY PERMITTEE:

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (a) ALL AREAS OF THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT. (b) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF-SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY AND NON-WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
3. CERTIFIED PERSONAL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (a) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE. (b) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION. AND (c) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (i.e. UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2 OF THIS PERMIT.

AN "EROSION & SEDIMENTATION INSPECTION AND MAINTENANCE REPORT" SHEET IS ATTACHED. SHOULD THE INSPECTION REVEAL ANY DEFICIENCIES, A COPY SHALL BE SENT TO:

MR. NATHAN B. LONG, P.E.
THOMAS AND HUTTON
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
(912) 234-5300

ECL2 | YES

31. PROVIDE COMPLETE REQUIREMENTS OF SAMPLING FREQUENCY AND REPORTING OF SAMPLING RESULTS. (PART IV.D.6.d PG 35-37 & PART IV.E PG 37)

SAMPLING REQUIREMENTS. THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS PARAGRAPH SHALL NOT APPLY TO ANY LAND DISTURBANCE ASSOCIATED WITH THE CONSTRUCTION OF SINGLE-FAMILY HOMES WHICH ARE NOT PART OF A SUBDIVISION OR PLANNED COMMON DEVELOPMENT UNLESS FIVE (5) ACRES OR MORE WILL BE DISTURBED. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (a) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (b) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION FOR THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2) A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3) WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX b. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4) ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

b. SAMPLE TYPE. ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833-B-92-001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

1. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
2. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THE PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E. OF THE PERMIT.

c. SAMPLING POINTS: THERE WILL BE 2 STORM WATER SAMPLING LOCATIONS. THE SAMPLING LOCATION WILL BE THE DOWNSTREAM POINTS, PER NPDES PERMIT GAR 100001, FOR CONSTRUCTION ACTIVITIES, THE PRIMARY PERMITTEE MUST COMPLETE ALL SAMPLING.

1. FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S) OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALL(S) USING THE FOLLOWING MINIMUM GUIDELINES:

A. THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY, WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

B. THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

C. IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNELS(S).

D. CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.

E. THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

F. THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

G. PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).

A. ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

d. SAMPLING FREQUENCY

1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY-FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
2. HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
3. SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

B. IN ADDITION TO (A.) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THE PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATIONS, WHICHEVER COMES FIRST;

C. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST-STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

D. WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.a.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND

E. EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS.

GEORGIA REGISTERED 031032 ENGINEER
NATHAN B LONG
GOVT CERTIFICATE # PEGBOARD
00000042

NO.	REVISIONS	BY	DATE

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

EROSION CONTROL NOTES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	NTS

EC1.2

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Z:\28896\28896.0003\DWG\ENGR\CAD\ARCS\CONSTRUCTION PLANS\28896.0003 - EC-NT.DWG - Oct 13, 2022 - 9:43 AM

SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORT SHALL INCLUDE THE FOLLOWING INFORMATION:
   a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;
   b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;
   c. THE DATE(S) ANALYSES WERE PERFORMED;
   d. THE TIME(S) ANALYSES WERE INITIATED;
   e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;
   f. REFERENCES AND WRITTEN PROCEDURES , WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;
   g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;
   h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND
   i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.
3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

EPD OFFICE:
COASTAL DISTRICT - BRUNSWICK OFFICE
GEORGIA ENVIRONMENTAL PROTECTION DIVISION
400 COMMERCE CENTER DRIVE
BRUNSWICK, GA 31523-8687
(912) 264-7284

ECI.3 | YES — 32. PROVIDE COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F. PG 38 OF THE PERMIT.

RETENTION OF RECORDS

I. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI.

- COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD.
- A COPY OF THE ESⓅPC PLAN REQUIRED IN PERMIT No. GAR 100001.
- THE DESIGN PROFESSIONALS REPORT OF THE THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5 IN PERMIT No. GAR 100001.
- A COPY OF ALL SAMPLING INFORMATION , RESULTS, AND REPORTS REQUIRED BY IN PERMIT No. GAR 100001.
- A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.a OF PERMIT No. GAR 100001.
- A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2 IN PERMIT No. GAR 100001.
- DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.a.(2). IN PERMIT No. GAR 100001.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI OF THE GAR100001. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

ECI.3 | YES — 33. DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION. (PERMIT IV.D.6.a.(3) PG 33-35)

STORM WATER SAMPLES ARE TO BE ANALYZED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 AND THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT EPA 833-8-92-001.

ECI.3 | YES — 34. APPENDIX B RATIONALE FOR NTU VALUES AT ALL OUTFALL SAMPLING POINTS WHERE APPLICABLE. (PERMIT IV.D.6.a.(3) PG 33)

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATIONS. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING 75, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT No. GAR 100001. THE NTU IS BASED UPON THE SITE ACREAGE OF 1.25 ACRES FOR THE PROJECT SITE, THE SURFACE WATER DRAINAGE AREA OF LESS THAN 4.99 SQUARE MILES AND RECEIVING WATER WHICH SUPPORTS WARM WATER FISHERIES. APPENDIX B WAS USED TO DETERMINE THE NTU ALLOWABLE AND DOWNSTREAM SAMPLING WILL BE PERFORMED FOR THIS PROJECT.

Appendix B
Nephelometric Turbidty Unit (NTU) Table
Warm Water (Suppoting Warm Water Fisheries)

	Surface Water Drainage Area, square miles							
	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	50	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

ECI.3 | YES — 35. DELINEATE ALL SAMPLING LOCATIONS, PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED. (PERMIT IV.D.6.a.(3) PG 33)

SAMPLING LOCATIONS WERE INCLUDED IN PHASE I OF THE NOBLE VINES DEVELOPMENT. PLEASE REFER TO NOBLE VINES PHASE I DEVELOPMENT PLANS FOR DELINEATION OF SAMPLING LOCATIONS.

PLAN | YES — 36. A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDING (1) INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S, (2) INTERMEDIATE GRADING AND DRAINAGE BMP'S, AND (3) FINAL BMP'S. FOR CONSTRUCTION SITES WHERE THERE WILL BE NO MASS GRADING AND THE INITIAL PERIMETER CONTROL BMP'S, INTERMEDIATE GRADING AND DRAINAGE BMP'S, AND FINAL BMP'S ARE THE SAME, THE PLAN MAY COMBINE ALL OF THE BMP'S INTO A SINGLE PHASE. (PERMIT IV.D.3 PG 27)

INITIAL PHASE - THE INITIAL PHASE OF THE ESⓅPC PLAN WILL INCLUDE THE INSTALLATION OF THE CONSTRUCTION EXIT AND SILT FENCE. TYPE NS SILT FENCE WILL BE USED. DITCHES, AS NEEDED, WILL BE CONSTRUCTED AND MAINTAINED DURING SITE CLEARING. DUST CONTROL AND MULCHING WILL BE IMPLEMENTED AS NECESSARY.

INTERMEDIATE PHASE - THE INTERMEDIATE GRADING AND DRAINAGE BMP'S WILL INCLUDE THE MAINTENANCE OF ALL SILT FENCE. SEDIMENT INLET TRAPS WILL BE INSTALLED AND MAINTAINED AS INDICATED ON THE PLANS. DUST CONTROL, MULCHING, AND TEMPORARY SEEDING WILL BE IMPLEMENTED AS NECESSARY.

FINAL PHASE - THE FINAL GRADING AND DRAINAGE BMP'S WILL INCLUDE THE MAINTENANCE OF ALL SILT FENCE. SEDIMENT INLET TRAPS WILL BE INSTALLED AND MAINTAINED AS INDICATED ON THE PLANS. PERMANENT SEEDING WILL BE IMPLEMENTED FOR SITE STABILIZATION. ONCE THE SITE IS STABILIZED, ALL TEMPORARY BMPS ARE TO BE REMOVED.

PLAN | YES — 37. GRAPHIC SCALE AND NORTH ARROW.

GRAPHIC SCALE AND NORTH ARROW ARE LOCATED ON EACH PLAN SHEET.

PLAN | YES — 38. EXISTING AND PROPOSED CONTOUR LINES WITH CONTOUR LINES DRAWN AT AN INTERVAL IN ACCORDANCE WITH THE FOLLOWING:

EXISTING AND PROPOSED CONTOUR LINES DRAWN AT AN INTERVAL OF 1' ARE SHOWN ON EACH PLAN SHEET.

| N/A — 39. USE OF ALTERNATIVE BMP'S WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMP'S AS CERTIFIED BY A DESIGN PROFESSIONAL (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION). PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT www.gaswcc.org. (PERMIT IV.D.3.a(4) PG 29)

NOT APPLICABLE FOR THIS PROJECT.

| N/A — 40. USE OF ALTERNATIVE BMP FOR APPLICATION TO THE EQUIVALENT BMP LIST. PLEASE REFER TO APPENDIX A-2 OF THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA 2016 EDITION.

NOT APPLICABLE FOR THIS PROJECT.

| N/A — 41. DELINEATION OF THE APPLICABLE 25-FOOT OR 50-FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS AND ANY ADDITIONAL BUFFERS REQUIRED BY THE LOCAL ISSUING AUTHORITY. CLEARLY NOTE AND DELINEATE ALL AREAS OF IMPACT. (PERMIT IV.D.2.e PG 27)

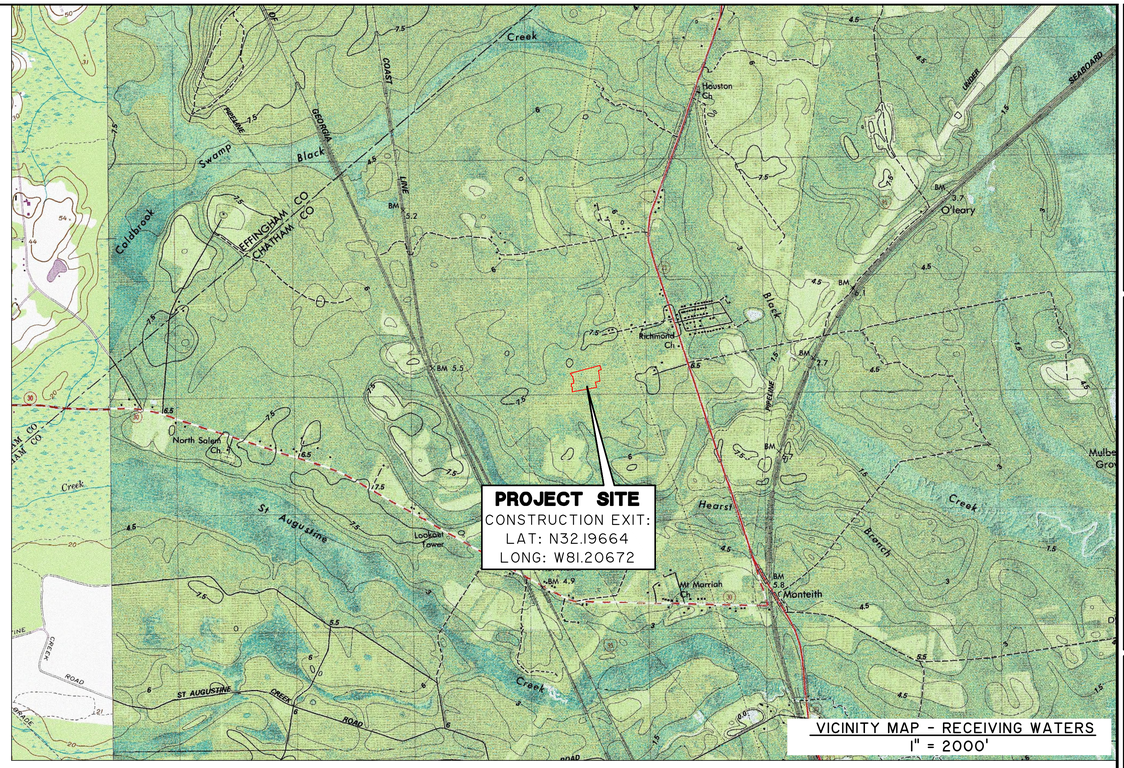
NOT APPLICABLE FOR THIS PROJECT.

PLAN | YES — 42. DELINEATION OF ON-SITE WETLANDS AND ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE.

THE WETLANDS ARE DELINEATED ON THE PLANS.

PLANS | YES — 43. DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE. (PERMIT IV.D.2.e PG 27)

ALL CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE ARE CLEARLY DELINEATED ON THE PLAN SHEETS



VICINITY MAP - RECEIVING WATERS
1" = 2000'

REPORT | YES — 44. PROVIDE HYDROLOGY STUDY AND MAPS OF DRAINAGE BASINS FOR BOTH PRE- AND POST-DEVELOPMENT CONDITIONS.

PLEASE SEE ATTACHED REPORT WITH DETAILS FOR PRE AND POST DEVELOPMENT HYDROLOGY.

ECI.3 | YES — 45. AN ESTIMATE OF THE RUNOFF COEFFICIENT OR PEAK DISCHARGE FLOW OF THE SITE PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED. (PERMIT IV.D.2.d PG 27)

RUNOFF COEFFICIENT: PRE-CONSTRUCTION CN = 79
POST-CONSTRUCTION CN = 89.5

PLAN | YES — 46. STORM-DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION. IDENTIFY/DELINEATE ALL STORM WATER DISCHARGE POINTS.

OUTLET PROTECTION IS PROVIDED IN THE FORM OF RIP-RAP AT ALL POINTS OF CONCENTRATED DISCHARGE.

ECI.3 | YES / PLAN — 47. SOIL SERIES FOR THE PROJECT SITE AND THEIR DELINEATION.

SOILS ARE DELINEATED ON THE EROSION CONTROL SHEETS. THE SOILS FOR THE SITE ARE: MANDARIN FINE SAND (A), PELHAM LOAMY SAND (B/D), AND POTTSBURG SAND (A).

PLAN | YES — 48. THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION.

PLEASE SEE THE PLAN FOR THE DELINEATION OF THE LIMITS OF DISTURBANCE. THEY ARE THE SAME FOR ALL PHASES OF CONSTRUCTION.

ECI.3 | YES — 49. PROVIDE A MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED USING A TEMPORARY SEDIMENT BASIN, RETROFITTED DETENTION POND, AND/OR EXCAVATED INLET SEDIMENT TRAPS FOR EACH COMMON DRAINAGE LOCATION. SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED. A WRITTEN JUSTIFICATION EXPLAINING THE DECISION TO USE EQUIVALENT CONTROLS WHEN A SEDIMENT BASIN IS NOT ATTAINABLE MUST BE INCLUDED IN THE PLAN FOR EACH COMMON DRAINAGE LOCATION IN WHICH A SEDIMENT BASIN IS NOT PROVIDED. A WRITTEN JUSTIFICATION AS TO WHY 67 CUBIC YARDS OF STORAGE IS NOT ATTAINABLE MUST ALSO BE GIVEN. WORKSHEETS FROM THE MANUAL MUST BE INCLUDED FOR STRUCTURAL BMPs AND ALL CALCULATIONS USED BY THE STORAGE DESIGN PROFESSIONAL TO OBTAIN THE REQUIRED SEDIMENT WHEN USING EQUIVALENT CONTROLS. WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, PERMITEES ARE REQUIRED TO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE, UNLESS INFEASIBLE. IF OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE NOT FEASIBLE, A WRITTEN JUSTIFICATION EXPLAINING THIS DECISION MUST BE INCLUDED IN THE PLAN. (PERMIT IV.D.3.a.(3) PG 28)

SEDIMENT STORAGE - THE PERMIT REQUIRES A MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED.

THE SEDIMENT STORAGE REQUIREMENT WILL BE ACHIEVED BY UTILIZING PERIMETER SILT FENCE AND RETROFITTED POND SEDIMENT STORAGE

SEDIMENT STORAGE REQUIRED

ACREAGE DRAINED = 9.8

REQUIRED SEDIMENT STORAGE = 9.8 AC X 67 CY/AC = 656.6 CY

RETROFITTED DETENTION POND STORAGE:

((50,466 SF + 73,724 SF)/2) * 6 LF = 372,570 CF

372,570 CF * (0.037 CF/CY) = 13,785 CY

PERIMETER SILT FENCE

LF OF SILT FENCE FOR STORAGE = 2,406 LF * 7.5 CF OF STORAGE/LF

(4,600 LF X 7.5 CF/LF) * (CY/ 27 CF) = 1,277.7 CY

TOTAL SEDIMENT STORAGE PROVIDED BY PROPOSED BMPS = 15,062 CY

TOTAL STORAGE PROVIDED EXCEEDS STORAGE REQUIRED (656.6 CY)

PLAN | YES — 50. LOCATION OF BEST MANAGEMENT PRACTICES THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. USE UNIFORM CODING SYMBOLS FROM THE MANUAL,CHAPTER 6, WITH LEGEND.

PLEASE SEE THE PLAN SHEETS FOR THE LOCATION OF BEST MANAGEMENT PRACTICES THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA USING THE UNIFORM CODING SYMBOLS FROM THE MANUAL, CHAPTER 6 WITH ACCOMPANYING LEGEND.

PLAN | YES — 51. PROVIDE DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES. SPECIFICATIONS MUST, AT A MINIMUM, MEET THE GUIDELINES SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

PLEASE SEE THE DETAIL SHEET FOR DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES WITH SPECIFICATIONS MEETING THE GUIDELINES SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

YES — 52. PROVIDE VEGETATIVE PLAN, NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES, INCLUDE SPECIES, PLANTING DATES AND SEEDING, FERTILIZER, LIME AND MULCHING RATES. VEGETATIVE PLAN SHALL BE SITE SPECIFIC FOR APPROPRIATE TIME OF YEAR THAT SEEDING WILL TAKE PLACE AND FOR APPROPRIATE GEOGRAPHIC REGION OF GEORGIA.

PLEASE SEE THE PLAN AND DETAIL SHEETS FOR THE VEGETATIVE PLAN NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES INCLUDING SPECIES, PLANTING DATES AND SEEDING, FERTILIZER, LIME AND MULCHING RATES. THIS PLAN IS SPECIFIC TO THE SITE AND APPROPRIATE FOR TIME OF YEAR THAT SEEDING WILL TAKE PLACE AND FOR THE APPROPRIATE GEOGRAPHIC REGION OF GEORGIA.

GEORGIA REGISTERED
ISSUED
NATHAN B. LONG
10/13/2022
PROFESSIONAL ENGINEER
NATHAN B. LONG
GEORGIA REGISTERED PROFESSIONAL ENGINEER CERTIFICATION # 033666 LONG

NO.	REVISIONS	BY	DATE

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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

EROSION CONTROL NOTES

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	NTS

EC1.3

SOIL LEGEND		
SYMBOL	DESCRIPTION	HYDROLOGIC RATING
Pn	POOLER FINE SANDY LOAM	C/D
Oj	OGEECHEE LOAMY FINE SAND	B/D
Cc	CAPE FEAR SOILS	C/D

N/F
KEVIN & BRYAN GR
PIN: 7-0976-02-

Sd1-NS

LIMITS OF DISTURBANCE (TYP.)

TREE PROTECTION (TYP.)

1/2" REBAR FOUND

3"x3" CMF

DOUBLE ROW SILT FENCING

25' SETBACK

Pn (C/D)

Oj (B/D)

Du
Ds1 Ds2

SOIL BOUNDARY (TYP.)

Sd1-S

Cc (C/D)

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

MATCH LINE THIS SHEET

ROAD

LOD

CONCRETE WASHOUT

CONSTRUCTION EXIT
N: 800,279.28
E: 953,106.63
LAT: 32.19665
LONG: -81.20672

30' SETBACK

Co

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.

GEORGIA REGISTERED No. 33674 PROFESSIONAL ENGINEER NATHAN B. LONG
NATHAN B. LONG
CONSULTING, P.E.
GA REGISTERED PROFESSIONAL ENGINEER
CERTIFICATION #
0000034662

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ES & PC PLAN - INITIAL PHASE

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

EC2.1

F:\28896\28896-0003\ENGINEERING\GRADING\CONSTRUCTION PLANS\28896-0003 - EPC INITIAL.DWG - Dec 15, 2022 - 9:58 AM

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F
KEVIN & BRYAN GR
PIN: 7-0976-02-

DOUBLE ROW SILT FENCING

LIMITS OF DISTURBANCE (TYP.)

TREE PROTECTION (TYP.)

Sd1-NS

Sd1-S

Sd2-F

Du
Ds1 Ds2

Co

St 1

St 2

St 3

St 4

CONSTRUCTION EXIT
N: 800,279.28
E: 953,106.63

LAT: 32.19665
LONG: -81.20672

CONCRETE WASHOUT

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

MATCH LINE THIS SHEET

MATCH LINE THIS SHEET

25' SETBACK

50' SETBACK

ROAD

LOD

GEORGIA REGISTERED LANDSCAPE ARCHITECT 002832 NATHAN B. LONG

NATHAN B. LONG
GEORGIA REGISTERED
LANDSCAPE ARCHITECT
DESIGN PROFESSIONAL
CERTIFICATE #
0002832

NO.	REVISIONS	BY	DATE

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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ES & PC PLAN - INTERMEDIATE PHASE

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

EC3.1

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N/F
KEVIN & BRYAN GR
PIN: 7-0976-02-

DOUBLE ROW SILT FENCING

LIMITS OF DISTURBANCE (TYP.)

TREE PROTECTION (TYP.)

25' SETBACK

40' SETBACK

ROAD ONE

ROAD TWO

ROAD THREE

ROAD FIVE

ROAD SEVEN

ROAD EIGHT

MAIN ENTRANCE

MATCH LINE THIS SHEET

Sd1-NS

Sd1-S

Sd2-F

Sd2-G

Ds3

St 3

St 4

CONSTRUCTION EXIT
N: 800,279.28
E: 953,106.63

LAT: 32.19665
LONG: -81.20672

CONCRETE WASHOUT

EXISTING POND
TOB: 21.5
NWL: 17.5
BOT: 11.5
25-YR: 19.60
100-YR: 20.14

GEORGIA
REGISTERED
PROFESSIONAL
ENGINEER
NATHAN B. LONG
No. 032274
CIVIL

NATHAN B. LONG
GEORGIA P.E. #032274
DESIGN PROFESSIONAL
IN RESPONSIBLE CHARGE
0000024602

NO.	REVISIONS	BY	DATE

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CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ES & PC PLAN - FINAL PHASE

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 30'

EC4.1

Z:\28896\28896.0003\ENGINEERING\DRAWINGS\CONSTRUCTION PLANS\28896.0003 - ESPC FINAL.DWG Dec 15, 2022 - 9:55 AM

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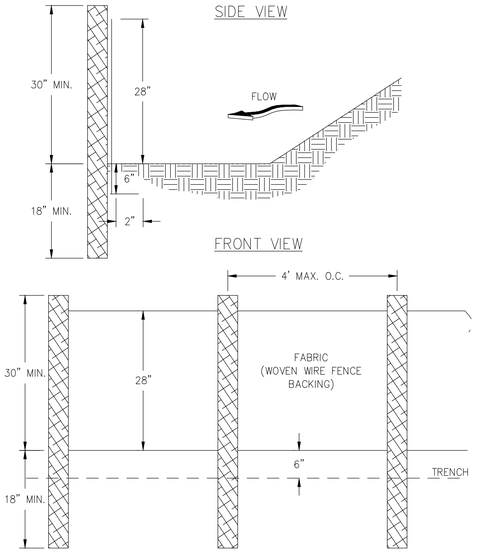
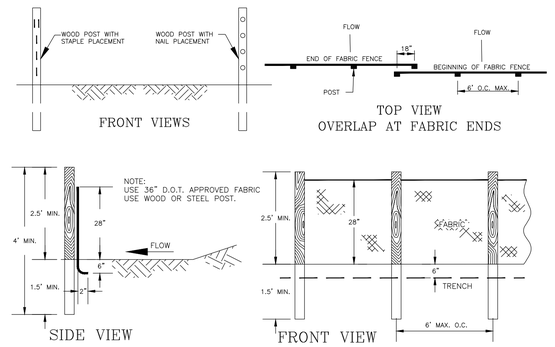


NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT 28" IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

SILT FENCE - TYPE SENSITIVE

NOT TO SCALE

Sdl-S



TYPE A SILT FENCE (36")

USE:
1) ON DEVELOPMENTS WHERE THE LIFE OF THE PROJECT IS GREATER THAN OR EQUAL TO 6 MONTHS.
2) WHERE THE SLOPE GRADIENT IS STEEPER THAN 3:1.

POST SIZE

MIN. LENGTH	TYPE OF POST	SIZE OF POST
4'	SOFT WOOD	3" DIA. OR 2X4
4'	OAK	1.5 X 1.5
4'	STEEL	1.3 LB./FT. MIN.

FASTENERS FOR WOOD POST (WIRE STAPLES)

GAUGE	CROWN	LEGS	STAPLES/POST
17 MIN.	3/4" WIDE	1/2" LONG	5 MIN.

FASTENERS FOR WOOD POST (NAILS)

GAUGE	LENGTH	BUTTON HEADS	NAIL/POST
14 MIN.	1"	3/4"	4 MIN.

NOTE: FILTER FABRIC MAY ALSO BE ATTACHED TO THE POST BY WIRE, CORD, AND POCKETS.

FENCE

TENSILE STRENGTH (LBS MIN) (1) (ASTM D-4632)	ELONGATION (2)MAX) (ASTM D-4632)	AOS (APPARENT OPENING SIZE) (MAX. SIEVE SIZE) (ASTM D-4751)	FLOW RATE (GAL/MIN/SQ. FT.) (GDT-87)	UL TRAVIOLET STABILITY (2) (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4355)	BURSTING STRENGTH (PSI MIN.) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER)	MIN. FABRIC WIDTH (INCHES)
WARP-120 FILL-100	40	#30	25	80	175	36

(1) MIN. ROLL AVERAGE OF FIVE SPECIMENS.
(2) PERCENT OF REQUIRED INITIAL MIN. TENSILE STRENGTH.

NOTE:
SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

SILT FENCE - TYPE NON-SENSITIVE

NOT TO SCALE

Sdl-NS

Dust Control on Disturbed Areas

Du

DEFINITION

Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE

- To prevent surface and air movement of dust from exposed soil surfaces.
- To reduce the presence of airborne substances that may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

CONDITIONS

This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS

A. Temporary Methods

Mulches. See standard **Ds1 - Disturbed Area Stabilization (With Mulching Only)**. Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification **Tac - Tackifiers**. Resins should be used according to manufacturer's recommendations.

Vegetative Cover. See specification **Ds2 - Disturbed Area Stabilization (With Temporary Seeding)**.

Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification **Tac - Tackifiers.**

Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure that should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

Calcium Chloride. Apply at rate that will keep surface moist. May need retreatment.

B. Permanent Methods

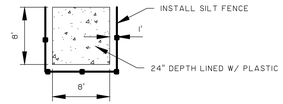
Permanent Vegetation. See specification **Ds3 -Disturbed Area Stabilization (With Permanent Vegetation)**. Existing trees and large shrubs may afford valuable protection if left in place.

Topsoiling. This entails covering the surface with less erosive soil material. See specification **Tp - Topsoiling**.

Stone. Cover surface with crushed stone or coarse gravel. See specification **Cr-Construction Road Stabilization**.

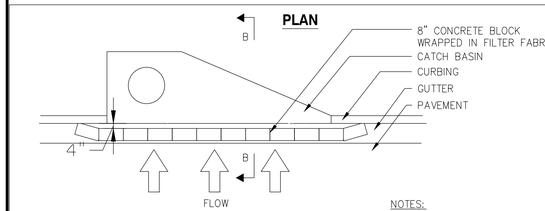
GBWCC 2016 Edition

6-55

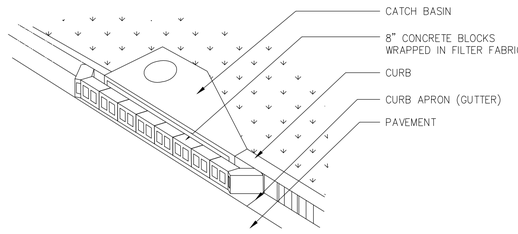


CONCRETE WASHOUT DETAIL

NOT TO SCALE



NOTES:
1. INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION.
2. WRAP 8" CONCRETE BLOCKS IN FILTER FABRIC AND SPAN ACROSS CATCH BASIN INLET.
3. FACE OPENINGS IN BLOCKS OUTWARD.
4. LEAVE A GAP OF APPROXIMATELY 4 INCHES BETWEEN THE CURB AND THE FILTERS TO ALLOW FOR OVERFLOW TO PREVENT HAZARDOUS PONDING.
5. INSTALL OUTLET PROTECTION BELOW STORM DRAIN OUTLETS.



CURB INLET FILTER "PIGS IN BLANKET" CURB INLET PROTECTION

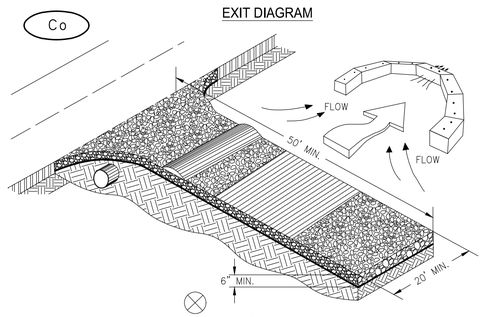
NOT TO SCALE

Sd2-P

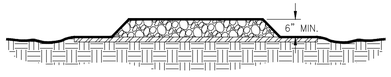
CRUSHED STONE CONSTRUCTION EXIT

Co

EXIT DIAGRAM



ENTRANCE ELEVATION

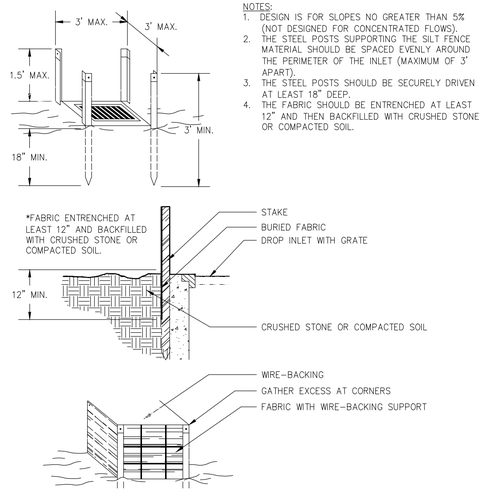


NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%.
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

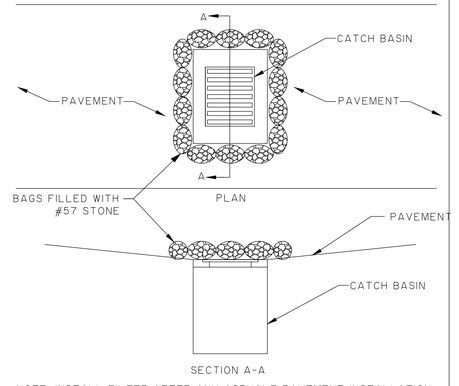
FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

Sd2-F

STEEL FRAME AND SILT FENCE INSTALLATION



NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.



NOTE: INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION

INLET SEDIMENT TRAP GRAVEL BAGS

NOT TO SCALE

Sd2-G

GEORGIA REGISTERED
NATHAN B. LONG
GEORGIA
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PROFESSIONAL ENGINEER
NATHAN B. LONG
GEORGIA REGISTERED LANDSCAPE ARCHITECT
DESIGN PROFESSIONAL
GEORGIA REGISTRATION #
0000024602

NO.	REVISIONS	BY	DATE

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Savannah, GA 31405 • 912.234.1030
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ES & PC DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

EC5.1

Disturbed Area Stabilization (With Mulching Only) Ds1

DEFINITION
Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE
- To reduce runoff and erosion
- To conserve moisture
- To prevent surface compaction or crusting
- To control undesirable vegetation
- To modify soil temperature
- To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE
Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.

Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months.

If any area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. Refer to **Ds2 -Disturbed Area Stabilization (With Temporary Seeding), Ds3 - Disturbed Area Stabilization (With Permanent Seeding), and Ds4 - Disturbed Area Stabilization (With Sodding)**.

SPECIFICATIONS
Mulching Without Seeding
This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
Select one of the following materials and apply at the depth indicated:
1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

Applying Mulch
When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.
1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.

Disturbed Area Stabilization (With Temporary Seeding) Ds2

DEFINITION
The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

PURPOSE
- To reduce runoff and sediment damage of down stream resources
- To protect the soil surface from erosion
- To improve wildlife habitat
- To improve aesthetics
- To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

REQUIREMENT FOR REGULATORY COMPLIANCE
Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to six months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding).**

CONDITIONS
Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS
Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation
When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

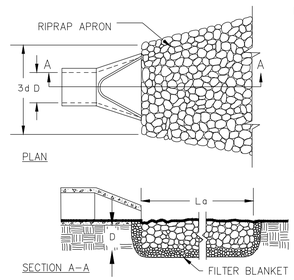
Lime and Fertilizer
Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to determine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

Seeding
Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See Table 6-4.1

Mulching
Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only)**.

Irrigation
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESSTHAN 6".
3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.
5. La = 10'
   Wl = 4'
   W2 = 12'
   d50 = 3.6"
   dMAX = 5.4"
   D = 8.1"

PIPE OUTLET TO WELL DEFINED CHANNEL

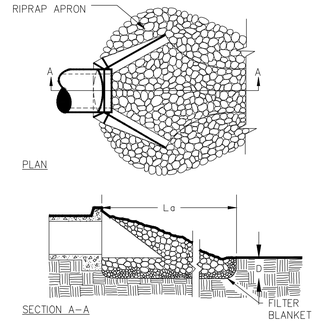


Table 1. Mulching Application Requirements

Material	Rate	Depth
Straw or hay	-	2" to 4"
Wood waste, chips, sawdust, bark	-	2" to 3"
Polyethylene film	Secure with soil, anchors, weights	-
Geotextiles, jute matting, netting, etc.	See manufacturer's recommentations	-

RIPRAP OUTLET PROTECTION
NOT TO SCALE
St

OUTLET PROTECTION DESIGN CRITERIA #1 (St)

OUTLET OPENING :	42"
FLOW RATE (CFS):	13.12
VELOCITY (FPS):	5.34
TAILWATER CONDITION: (MIN. or MAX.)	MIN
d_{50} RIPRAP SIZE:	0.75'
d_{max} RIPRAP SIZE:	1.12'
MIN. RIPRAP THICKNESS(D):	1.69'
La:	22'
Wup:	10.5'
Wdown :	25.5'

OUTLET PROTECTION DESIGN CRITERIA #2 (St)

OUTLET OPENING :	42"
FLOW RATE (CFS):	13.45
VELOCITY (FPS):	6.44
TAILWATER CONDITION: (MIN. or MAX.)	MIN
d_{50} RIPRAP SIZE:	0.75'
d_{max} RIPRAP SIZE:	1.12'
MIN. RIPRAP THICKNESS(D):	1.69'
La:	22'
Wup:	10.5'
Wdown :	25.5'

OUTLET PROTECTION DESIGN CRITERIA #3 (St)

OUTLET OPENING :	36"
FLOW RATE (CFS):	13.50
VELOCITY (FPS):	4.78
TAILWATER CONDITION: (MIN. or MAX.)	MIN
d_{50} RIPRAP SIZE:	0.60'
d_{max} RIPRAP SIZE:	0.90'
MIN. RIPRAP THICKNESS(D):	1.35'
La:	19'
Wup:	9'
Wdown :	22'

OUTLET PROTECTION DESIGN CRITERIA #4 (St)

OUTLET OPENING :	36"
FLOW RATE (CFS):	7.17
VELOCITY (FPS):	4.38
TAILWATER CONDITION: (MIN. or MAX.)	MIN
d_{50} RIPRAP SIZE:	0.60'
d_{max} RIPRAP SIZE:	0.90'
MIN. RIPRAP THICKNESS(D):	1.35'
La:	19'
Wup:	9'
Wdown :	22'

SOIL LEGEND

SYMBOL	DESCRIPTION	HYDROLOGIC RATING
Pn	POOLER FINE SANDY LOAM	C/D
Oj	OCILLA COMPLEX	B/D
Cc	CAPE FEAR SOILS	C/D

EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)	Ds3
DUST CONTROL	Du
CHECK DAM (STONE)	Cd-S
CONSTRUCTION EXIT	Co
SILT FENCE - TYPE NS	Sd1-NS
SILT FENCE - TYPE S	
INLET SEDIMENT TRAP (FILTER FABRIC WITH FRAME)	Sd2-F
INLET SEDIMENT TRAP (CURB INLET)	Sd2-P
STORM DRAIN OUTLET PROTECTION	St
SLOTTED BOARD DAM	
NPDES MONITORING LOCATION	
CONCRETE WASHOUT	

GEORGIA REGISTERED 18028 PROFESSIONAL ENGINEER NATHAN B. LONG
NATHAN B. LONG GEORGIA REGISTERED PROFESSIONAL ENGINEER 18028
THOMAS & HUTTON ENGINEERING CO. 50 Park of Commerce Way Savannah, GA 31405 • 912.234.1487 www.thomasandhutton.com

NO.	REVISIONS	BY	DATE

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA
NOBLE VINES
ES & PC DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

EC5.2

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Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BAHIA, PENSACOLA *Paspalum notatum*					
alone or with temporary cover	60 lbs	1.4 lbs	P		186,000 seed per pound. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Will spread into bermuda pastures and awns. Mix with Sericea lespedeza or weeping lovegrass.
with other perennials	30 lbs	0.7 lb	C		
BAHIA, WILMINGTON *Paspalum notatum*					
alone or with temporary cover	60 lbs	1.4 lb	M-L		
with other perennials	30 lbs	0.7 lb	P		Same as above.
BERMUDA, COMMON *Cynodon dactylon*					
Hulled seed			P		
alone	10 lbs	0.2 lb	C		1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fileds.
with other perennials	6 lbs	0.7 lb			
BERMUDA, COMMON *Cynodon dactylon*					
Unhulled seed					
with temporary cover	10 lbs	0.2 lb	P		Plant with winter annuals.
with other perennials	6 lbs	0.1 lb	C		Plant with Tall Fescue

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BERMUDA SPRIGS *Cynodon dactylon*					
Coastal, Common, Midland, or Tift 44	40 cu ft or sod plugs 3' x3'	0.9 cu ft	M-L		A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 springs.
Coastal, Common, of Tift 44			P C		Same as above.
Tift 78			C		Southern Coastal Plain only
CENTIPEDE *Eremochloa ophuiroides*					
	Black sod only		P C		Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in concentrated flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy as far as north Athens and Atlanta
CROWNVETECH Coronilla varia					
with winter annuals or cool season grasses	15 lbs	0.3 lb	M-L P		100,000 seed per pound. Dense growth. Drought tolerant and fire resistant. Attractive rose, pink and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate see with M inoculant. Use from North Atlanta and Northward.

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
FESCUE, TALL *Festuca arundinacea*					
alone	50 lbs	1.1 lb	M-L		227,000 seed per pound. Use alone only on better sites. Mix with perennial lespedeza or Crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.
with other perennials	30 lbs	0.7 lb	P		
KUDZU *Pueraria thumbergiana*					
Plants or crowns	3' - 7' apart		ALL		Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
LESPEDEZA SERICEA *Lespedeza cuneata*					
scarified	60 lbs	1.4 lb	M-L P C		350,000 seed per pound. Widely adapted. Low maintenace. Mix with Weeping lovegrass. Common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
unscarified	75 lbs	1.7 lb	M-L P C		Mix with Tall fesue or winter annuals.
seed- bearing hay	3 tons	1338 lbs	M-L P C		Cut when seed mixture is mature, but before, it shatters. Add Tall fescue or winter annuals.

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
LESPEDEZA Ambro virgata *Lespedeza virgata DC* or Appalow *Lespedeza cuneata (Dumont) G. Don)*					
scarified	60 lbs	1.4 lb	M-L P C		300,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth. New growth has bronze coloration. Mix with weeping lovegrass, common bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedeza. Slow to develop solid stands. Inoculate seed with EL inoculant.
unscarified	75 lbs	1.7 lb	M-L P C		
LESPEDEZA, SHRUB *Lespedeza bicolor Lespedeza thumbergii*					
plants	3' x3'		M-L P C		Provide wildlife food and cover.
LOVEGRASS, WEEPING *Eragrostis curvula*					
alone	4 lbs	0.1 lb	M-L P C		1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedeza on roadbanks.
with other perennials	2 lbs	0.05 lb			

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
MAIDENCANE *Panicum hemitomon*					
sprigs	2' x 3' spacing	ALL			For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
PANICGRASS, ATLANTIC COASTAL *Panicum amarum var amarulkum*					
	20 lbs	0.5 lb	P C		Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for wildlife. Mix with Sericea lespedeza except on sand dunes.
REED CANARY GRASS *Phalaris arundinacea*					
alone	50 lbs	1.1 lb	M-L		
with other perennials	30 lbs	0.7 lb	P		Grows similar to Tall fescue
SUNFLOWER, 'AZTEC' MAXIMILLIAN *Helianthus maximiliani*					
	10 lbs	0.2 lb	M-L P C		227,000 seed per pound. Mix with Weeping lovegrass or other low-grwoing grasses or legumes.

1 Reduce seeding rates by 50% when drilled
2 PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications.
3 M-L represents to Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents the Souther Coastal Plain;Sand Hills;Black Lands;and Atlantic Coast Flatwoods MLRAs. See Figure 6-4.1

Table 6-4.1 - Temporary Cover or Companion Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BARLEY *Hordeum vulgare*					
alone	3 bu. (144 lbs)	3.3 lbs	M-L		14,000 seed per pound. Winter hardy. Use on productive soils.
in mixture	1/2 bu. (24lbs)	0.6 lb	P C		
LESPEDEZA, ANNUAL *Lespedeza striata*					
alone	40 lbs	0.9 lb	M-L		200,000 seed per pound. May volunteer for several years. Use inoculant EL.
in mixture	10 lbs	0.2 lb	P C		
LOVEGRASS, WEEPING *Eragrostis curvula*					
alone	4 lbs	0.1 lb	M-L		1,500,000 seed per pound. May last for several years. Mix with *Sericea lespedeza.*
in mixture	2 lbs	0.05 lb	P C		
MILLET, BROWNTOP *Panicum fasciculatum*					
alone	40 lbs	0.9 lb	M-L		137,000 seed per pound. Quick dense cover. Will provide excessive competion in mixtures if seeded at high rate.
in mixture	10 lbs	0.2 lb	P C		

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
MILLET, PEARL *Pennesetum glaucum*					
alone	50 lbs	1.1 lbs	M-L P C		68,000 seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
OATS *Avena sativa*					
alone	4 bu. (128 lbs)	2.9 lbs	M-L		13,000 seed per pound. Use on productive soils. Not as a winter hardy as rye or barley.
in mixture	1 bu. (32 lbs)	0.7 lb	P C		
RYE *Secale cereale*					
alone	3 bu. (168 lbs)	3.9 lbs	M-L		18,000 seed per pound. Quick cover. Drought tolerant and winter hardy.
in mixture	1/2 bu. (28 lbs)	0.6 lb	P C		
RYEGRASS, ANNUAL *Lolium temulentum*					
alone	40 lbs	0.9 lb	M-L P C		227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
SUDANGRASS *Sorghum sudanase*					
alone	60 lbs	1.4 lbs	M-L P C		55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
TRITICALE *X-Triticosecale*					
alone	3 bu. (144 lbs)	3.3 lbs	C		Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
in mixture	1/2 bu. (24 lbs)	0.6 lb			
WHEAT *Triticum aestivum*					
alone	3 bu. (180 lbs)	4.1 lbs	M-L		15,000 seed per pound. Winter hardy.
in mixture	1/2 bu. (30 lbs)	0.7 lb	P C		

[1] Temporary cover crops are very competitive and will crowd out perennials if seeded too heavily
[2] Reduce seeding rates by 50% when drilled.
[3] M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents Southern Coastal Plan; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs
(see Figure 6-4.1, p. 6-40)

GEORGIA REGISTERED LANDSCAPE ARCHITECT No. 001274 NATHAN B. LONG
NATHAN B. LONG CERTIFICATE # 000002402 EXPIRES 12/31/2023

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.236.4154
www.thomasandhutton.com

CLARET COMMUNITIES
PORT WENTWORTH, GEORGIA

NOBLE VINES

ES & PC DETAILS

JOB NO:	J-28896.0003
DATE:	08/12/22
DRAWN:	CGC
DESIGNED:	JTD
REVIEWED:	NBL
APPROVED:	NBL
SCALE:	1" = 1'

EC5.3

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GA. HIGHWAY 30 GDOT ROAD IMPROVEMENTS

OF

NOBLE VINES

PHASE 1

PORT WENTWORTH, GA

PREPARED FOR:

PORT WENTWORTH TOWNHOMES GA, LLC

5553 PEACHTREE ROAD, SUITE 170

CHAMBLEE, GA 30341

TM# 7-0976-02-027

OCTOBER 4, 2021

LAST REVISED: MARCH 29, 2022

J-28896.0001

PREPARED BY:

THOMAS & HUTTON

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Sheet Number	Sheet Title
CO	COVER SHEET
G1.1	GENERAL NOTES AND SHEET INDEX
G2.1	EXISTING CONDITIONS PLAN
G2.2	EXISTING CONDITIONS PLAN
D1.1	DEMOLITION PLAN
D1.2	DEMOLITION PLAN
C1.1	STRIPING, SIGNAGE, AND LAYOUT PLAN
C1.2	STRIPING, SIGNAGE, AND LAYOUT PLAN
C2.1	PAVING, GRADING, AND DRAINAGE PLAN
C2.2	PAVING, GRADING, AND DRAINAGE PLAN
C3.1	PAVING, GRADING, AND DRAINAGE DETAILS
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C3.4	PAVING, GRADING, AND DRAINAGE DETAILS
C3.5	PAVING, GRADING, AND DRAINAGE DETAILS
C3.6	PAVING, GRADING, AND DRAINAGE DETAILS
C3.7	PAVING, GRADING, AND DRAINAGE DETAILS
C3.8	PAVING, GRADING, AND DRAINAGE DETAILS
C3.9	PAVING, GRADING, AND DRAINAGE DETAILS
C3.10	PAVING, GRADING, AND DRAINAGE DETAILS
EC1.1	ES & PC NOTES
EC1.2	ES & PC NOTES
EC1.3	ES & PC NOTES
EC2.1	ES & PC PLAN - INITIAL PHASE
EC2.2	ES & PC PLAN - INITIAL PHASE
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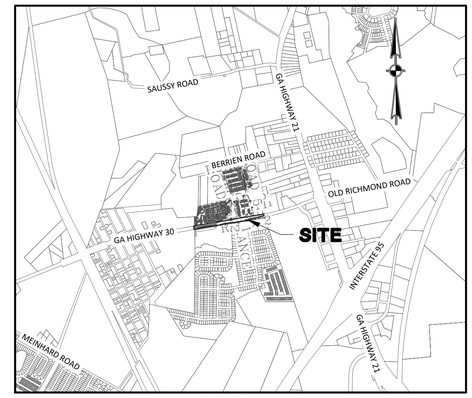
EC2.6	ES & PC PLAN - FINAL PHASE
EC3.1	ES & PC DETAILS
EC3.2	ES & PC DETAILS
EC3.3	ES & PC DETAILS

GEORGIA — CERTIFICATE OF AUTHORIZATION — No. 031274 — PROFESSIONAL ENGINEER — NATHAN B. LONG

PERMIT SET - FOR REVIEW PURPOSES ONLY



VICINITY MAP
SCALE: 1" = 2000'

NOBLE VINES
PHASE 1
J-28896.0001
03/29/22

REVISION HISTORY			
1	ADDED UNDERGROUND TELEPHONE LINES	VND	03/29/22
REV. NO.	REVISION	BY	DATE

SUBMITTAL HISTORY	
SUBMITTED TO	DATE

811 Know what's below. Call before you dig.

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WATER LEGEND

DESCRIPTION	EXISTING	PROPOSED
WATER MAIN	10"W	10"W
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
VALVE AND BOX		
FIRE HYDRANT W/VALVE & BOX		
POST HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
CAP		

SEWER LEGEND

DESCRIPTION	EXISTING	PROPOSED
GRAVITY PIPE	SS	
SINGLE SERVICE LATERAL		
DOUBLE SERVICE LATERAL		
MANHOLE		
CLEANOUT		
FORCEMAIN	10"FM 10"FM	10"FM 10"FM
VALVE AND BOX		
FLUSH HYDRANT		
REDUCER		
BACKFLOW PREVENTOR		
CROSS		
TEE		
90° BEND - HORIZONTAL		
45° BEND - HORIZONTAL		
22-½° BEND - HORIZONTAL		
11-¼° BEND - HORIZONTAL		
BEND - VERTICAL		
PLUG \ CAP		

DRAINAGE LEGEND

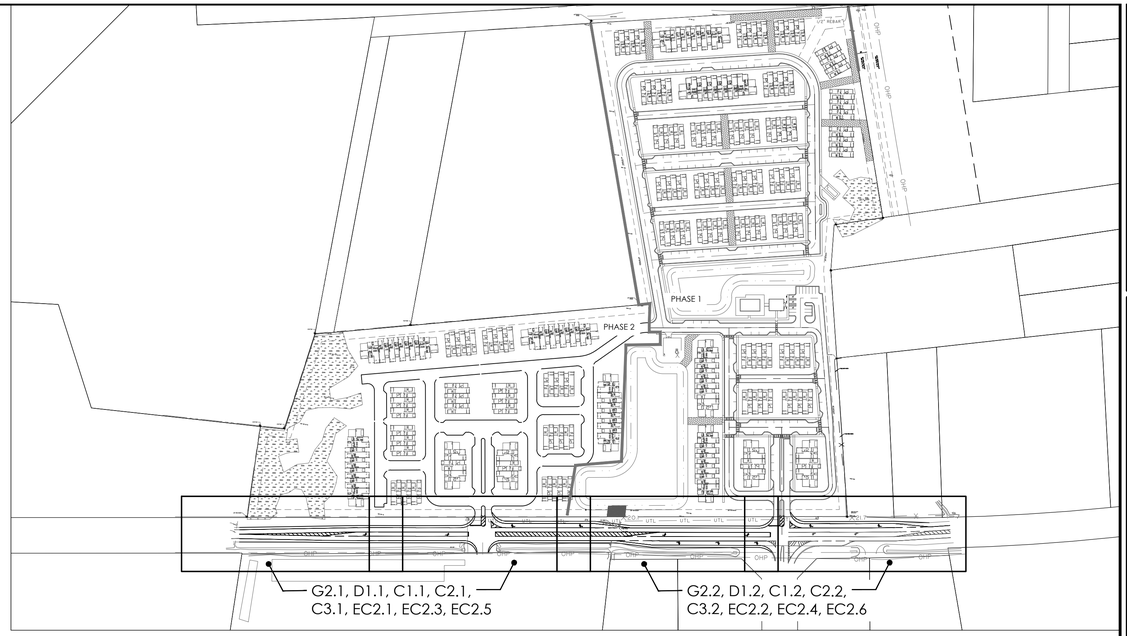
DESCRIPTION	EXISTING	PROPOSED
PIPE		
DITCH		
CURB INLET		
GRATE INLET		
JUNCTION BOX		
OUTLET STRUCTURE		

OTHER UTILITIES LEGEND

DESCRIPTION	EXISTING
NATURAL GAS	UGG UGG
TELEPHONE	OHT OHT
UNDERGROUND TELEPHONE	UTL UTL
ELECTRICITY	OHP OHP
UNDERGROUND ELECTRICITY	UGP UGP

ABBREVIATIONS

HDPE	HIGH DENSITY POLYETHYLENE		JB	JUNCTION BOX		SDMH	STORM DRAINAGE MANHOLE
BOT	BOTTOM		LF	LINEAR FEET		SF	SQUARE FEET
CI	CURB INLET		MAX	MAXIMUM		SS	SANITARY SEWER
CPP	CORRUGATED PLASTIC PIPE		MIN	MINIMUM		TC	TOP OF CURB
DIP	DUCTILE IRON PIPE		MH	MANHOLE		TG	TOP OF GUTTER
EL	ELEVATION		OC	ON CENTER		TP	TOP OF PAVEMENT
FG	FINISH GRADE		PC	POINT OF CURVE		TW	TOP OF WALK
FH	FIRE HYDRANT		PH	POST HYDRANT		TYP	TYPICAL
FM	FORCE MAIN (SANITARY SEWER)		PT	POINT OF TANGENT		W	WATER
FP	FINISH PAD		PVC	POLYVINYL CHLORIDE		W/	WITH
FR	FRAME		RCP	REINFORCED CONCRETE PIPE		WV	WATER VALVE
GI	GRATE INLET		RJP	RESTRAINED JOINT PIPE		YI	YARD INLET
GV	GATE VALVE		R/W	RIGHT-OF-WAY		SGD	SUB GRADE DRAIN
INV	INVERT ELEVATION		SD	STORM DRAINAGE			



GENERAL NOTES

1. ALL TOPOGRAPHIC INFORMATION IS BASED ON SURVEY FIELD DATA PROVIDED BY THOMAS AND HUTTON ENGINEERING. THE HORIZONTAL DATUM USED IS GEORGIA STATE PLAN COORDINATE SYSTEM, EAST ZONE, NAD 83 AND THE VERTICAL DATUM USED IS NAVD 88. SEE EXISTING CONDITIONS PLAN FOR ADDITIONAL INFORMATION. CONTACT ENGINEER IMMEDIATELY IF FIELD ELEVATIONS VARY FROM EXISTING GROUND ELEVATIONS DISPLAYED. VERIFY CHANGES IN ELEVATIONS RESULTING FROM CONTRACTOR CLEARING AND STRIPPING.
2. PROPERTY BOUNDARY INFORMATION WAS PROVIDED BY THOMAS AND HUTTON. BOUNDARY HAS NOT BEEN FIELD VERIFIED. EXISTING BENCHMARKS ARE SHOWN ON THE EXISTING CONDITIONS PLAN.
3. HORIZONTAL AND VERTICAL CONTROL SHOWN IN THESE PLANS ARE TO BE USED FOR ALL LAYOUT AND RECORD DATA FOR THIS PROJECT. IF DISCREPANCIES ARE FOUND CONTACT THOMAS AND HUTTON BEFORE PROCEEDING. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ESTABLISH SUPPLEMENTAL CONTROL WITHIN THE PROJECT AS NEEDED.
4. CONTRACTOR SHALL VERIFY THE SIZE AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTACT ENGINEER IMMEDIATELY WITH ANY DISCREPANCIES.
5. THE EXISTING UNDERGROUND UTILITIES SHOWN HEREON ARE BASED UPON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF ALL UTILITIES, IF UTILITIES OTHER THAN THOSE SHOWN ARE ENCOUNTERED DURING CONSTRUCTION , THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND TAKE STEPS TO PROTECT THE LINE(S) AND ENSURE CONTINUED SERVICE. DAMAGE CAUSED TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR. ADDITIONALLY, THE CONTRACTOR SHALL CONFIRM THE CONNECTION POINTS OF NEW UTILITIES TO EXISTING UTILITIES PRIOR TO BEGINNING NEW CONSTRUCTION.
6. ALL UTILITY POLES ADJACENT TO PROPOSED CONSTRUCTION MUST BE SECURED PRIOR TO ANY ADJACENT DISTURBANCE AND THE CONSTRUCTION PROCEDURE MUST BE ACCEPTABLE TO THE UTILITY COMPANY.
7. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES BEFORE WORK COMMENCES, EVEN IF UTILITY IS NOT SHOWN ON THE PLANS. CONTRACTOR SHALL VERIFY UTILITY WITHIN THE PROJECT LIMITS AND NOTIFY THE ENGINEER OF CONFLICTS OR VARIANCES TO THE PLANS PRIOR TO BEGINNING WORK OR PURCHASE OF MATERIALS.
8. CONTRACTOR TO COORDINATE WITH UTILITY COMPANIES FOR THE RELOCATION OF EXISTING UTILITIES. UTILITIES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION, AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF THE WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO THE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
9. THE DATA, TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANY WAY INDICATED THEREBY, WHETHER BY DRAWINGS OR NOTES, OR IN ANY OTHER MANNER, ARE BASED UPON FIELD INVESTIGATIONS AND ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED, AND DO NOT BIND THOMAS & HUTTON.
10. THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER 48 HOURS IN ADVANCE OF ALL REQUIRED TESTS AND INSPECTIONS.
11. CONTRACTOR IS TO VERIFY ACCURACY OF ANY TEMPORARY BENCHMARKS SHOWN PRIOR TO UTILIZING THEM FOR CONSTRUCTION.
12. IF WORK IS SUSPENDED OR DELAYED FOR 14 DAYS, THE CONTRACTOR SHALL TEMPORARILY STABILIZE THE DISTURBED AREA AT NO ADDITIONAL COST TO THE OWNER.
13. THE CONTRACTOR SHALL INSTALL ANY BARRICADES PRIOR TO BEGINNING CONSTRUCTION.
14. ANY DAMAGE TO EXISTING PAVEMENT MUST BE REPAIRED AT CONTRACTORS EXPENSE AND TO THE SATISFACTION OF GDOT AND THE PROJECT ENGINEER.
15. THIS PROJECT IS LOCATED WITHIN THE GEORGIA DEPARTMENT OF TRANSPORTATION (GDOT) RIGHT-OF-WAY. GDOT SPECIFICATIONS AND DETAILS SHALL BE USED FOR ALL SITE WORK WITHIN THE RIGHT-OF-WAY. GDOT SPECIFICATIONS AND DETAILS SHALL GOVERN OVER OTHER DETAILS AND SPECIFICATIONS IF ANY DISCREPANCIES ARE FOUND. CONTACT ENGINEER WITH ANY DISCREPANCIES FOUND PRIOR TO PROCEEDING WITH CONSTRUCTION.
16. THESE PLANS ARE TO BE USED IN CONJUNCTION WITH THE NOBLE VINES PHASE I AND PHASE 2 SITE DEVELOPMENT PLANS. CONTRACTOR IS RESPONSIBLE FOR UTILIZING BOTH SETS OF PLANS TO COMPLETE THE PROJECT.
17. THE CONTRACTOR SHALL INSTALL ALL EROSION CONTROL AND PREVENTION STRUCTURES SHOWN ON THE PLANS. THE CONTRACTOR SHALL UTILIZE THE EROSION CONTROL SHOWN ON THESE PLANS IN CONJUNCTION WITH THE NOBLE VINES PHASE I AND PHASE 2 SITE IMPROVEMENT PLANS TO PROVIDE EROSION CONTROL FOR THE SITE.
18. A COMPLETE SET OF PERMITTED DRAWINGS AND SPECIFICATIONS MUST BE MAINTAINED ON SITE AT ALL TIMES THAT THE CONTRACTOR IS PERFORMING WORK. THESE DRAWINGS SHALL BE MADE AVAILABLE UPON REQUEST.
19. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL CONSTRUCTION PERMITS NECESSARY FROM OTHER RESPONSIBLE AGENCIES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
20. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF UNSUITABLE MATERIAL IS DISCOVERED PRIOR TO BEGINNING ANY REMOVAL OPERATION.
21. IT IS THE OBLIGATION OF THE CONTRACTOR TO MAKE THEIR OWN INTERPRETATION OF ALL SURFACE AND SUBSURFACE DATA AVAILABLE AS TO THE NATURE AND EXTENT OF THE MATERIALS TO BE EXCAVATED, WASTED, GRADED AND COMPACTED. THE INFORMATION SHOWN ON THESE PLANS IN NO WAY GUARANTEES THE AMOUNT OR NATURE OF THE MATERIAL TO BE ENCOUNTERED.
22. CONTRACTOR WILL BE REQUIRED TO ADJUST ALL MANHOLE FRAMES AND UTILITY APPURTENANCES TO MATCH FINAL GRADE AT NO ADDITIONAL COST.
23. ALL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH THE DISTURBANCE OF THE LAND AND SHALL REMAIN FUNCTIONAL UNTIL THE CONTRIBUTING DISTURBED AREAS ARE STABILIZED. SILT BARRIERS WILL BE INSTALLED AS NECESSARY TO PREVENT EXCESSIVE SEDIMENTATION OF DOWNSTREAM AREAS.
24. CONTRACTOR SHALL GRADE AREAS TO DRAIN FOR POSITIVE FLOW PRIOR TO FINAL ACCEPTANCE.
25. CONTROL OF THE WATER FLOWING THROUGH THE EXISTING DRAINAGE PATTERNS DURING THE CONSTRUCTION PERIOD SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE EXISTING DRAINAGE CONVEYANCE SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD. ALL PENALTIES, CLAIMS AND FEES IMPOSED ON OWNER AS A RESULT OF DAMAGES CAUSED BY ACTIONS OF THE CONTRACTOR, IT'S EMPLOYEES OR SUBCONTRACTORS SHALL BE BORNE IN FULL BY THE CONTRACTOR.
26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PHASING OF CONSTRUCTION AND THE COORDINATION,SEQUENCING AND SUPERVISION OF CONSTRUCTION ACTIVITIES. ANY AND ALL COST ASSOCIATED WITH PROJECT PHASING WILL BE BORNE IN FULL BY THE CONTRACTOR.
27. ALL TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE MANUAL ON "UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS" CURRENT EDITION.
28. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND APPROVED BY GDOT.
29. ACCESS TO THE PROJECT IS LIMITED TO THOSE LOCATIONS WHERE STABILIZED CONSTRUCTION ENTRANCES HAVE BEEN INDICATED IN THE PLANS.
30. ALL DRAINAGE WILL BE MADE FUNCTIONAL DAILY AS WORK PROGRESSES. EXISTING ROADWAYS WILL BE CLEANED UP AND RESTORED DAILY. COMPLETE ROAD CLOSURE IS NOT PERMITTED AT ANY TIME DURING THE CONSTRUCTION PERIOD. TRAFFIC SHALL BE REROUTED TO MAINTAIN FLOW DURING CONSTRUCTION OPERATIONS. COORDINATE WITH THE OWNER, ENGINEER AND GDOT IF ROADWAY ACCESS CANNOT BE MAINTAINED PRIOR TO PROCEEDING WITH BLOCKAGE.
31. NEW PAVEMENT TO BE FLUSH WITH EDGE OF EXISTING PAVEMENT.
32. ANY BARRICADES, LIGHTS, SIGNS AND OTHER TRAFFIC CONTROL DEVICES REQUIRED BY GDOT FOR THE PROTECTION AND SAFETY OF THE PUBLIC SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION ON GA. HIGHWAY 30. COMPLETE LANE CLOSURES ARE NOT ALLOWED FOR THE CONSTRUCTION OF HIGHWAY 30 ROADWAY IMPROVEMENTS. CONTRACTOR SHALL OBTAIN PERMISSION FROM GDOT PRIOR TO CLOSURE OF ANY LANES DURING ROADWAY ACTIVITIES.

PREPARED FOR:

PORT WENTWORTH TOWNHOMES GA, LLC

5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GEORGIA 30341

GENERAL INFORMATION

COUNTY: CHATHAM

TOWN: PORT WENTWORTH

PROPERTY OWNER AND APPLICANT:
PORT WENTWORTH TOWNHOMES GA, LLC
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GEORGIA 30341
LEE TERRY
LTERRY@CLARETCOMMUNITIES.COM
(404) 795-8311

ENGINEER:
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50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
(912) 234-5300

ELECTRIC:
GEORGIA POWER
3100 KILOWATT DRIVE
SAVANNAH, GA 31402
(912) 944-3572

CABLE TV:
COMCAST
145 PARK OF COMMERCE DRIVE
SAVANNAH, GA 31405
(912) 523-5100

SURVEYOR:
THOMAS & HUTTON
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405
(912) 234-5300

WATER AND SEWER:
CITY OF PORT WENTWORTH
7224 GA-21
PORT WENTWORTH, GA 31407
(912) 964-4379

TELEPHONE:
HARGRAY
9 MILL CREEK CIR.
POOLER, GA 31322
(912) 631-1300

NATURAL GAS:
GEORGIA NATURAL GAS
P.O. BOX 440667
KENNESAW, GA 30160-9512
(770) 850-6200

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PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

GENERAL NOTES AND SHEET INDEX

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	AS SHOWN

G1.1

Z:\28896.0000\DESIGN\PLANS\CONSTRUCTION PLANS\28896.0000 - EC-PLT.DWG - Mar 29, 2022 - 5:37 PM

1/2" IRON REBAR

NONJURISDICTIONAL WETLAND

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF EXISTING DITCH

IE: 19.47

EXISTING POLE DELINEATE

24" RCP

EXISTING EDGE OF SHOULDER

5" WHITE EDGE LINE (TYP.)

5" YELLOW CENTER EDGE LINE (TYP.)

5" WHITE EDGE LINE (TYP.)

EXISTING EDGE OF SHOULDER

EXISTING POLE DELINEATE

IE: 19.50

CENTERLINE OF EXISTING DITCH

EXISTING GDOT RIGHT-OF-WAY (TYP.)

49' BETWEEN EXISTING CENTERLINE TO R/W

30' BETWEEN SHOULDER TO R/W

36' BETWEEN ROAD AND DITCH CENTERLINE

51' BETWEEN EXISTING CENTERLINE TO R/W

29' BETWEEN SHOULDER TO R/W

45' BETWEEN ROAD AND DITCH CENTERLINE

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

NONJURISDICTIONAL WETLAND

GUM S14 16

Underground Telephone Lines In This Area

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE THIS SHEET

EXISTING UTILITY POLE

STOP N STOR BUILDING

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

WILD

WILD S24

GUM S14 16

MATCH LINE THIS SHEET

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF EXISTING DITCH

EXISTING EDGE OF SHOULDER

5" WHITE EDGE LINE (TYP.)

DOUBLE 5" YELLOW CENTER EDGE LINE (TYP.)

5" WHITE EDGE LINE (TYP.)

EXISTING EDGE OF SHOULDER

CENTERLINE OF EXISTING DITCH

EXISTING GDOT RIGHT-OF-WAY (TYP.)

49' BETWEEN EXISTING CENTERLINE TO R/W

30' BETWEEN SHOULDER TO R/W

36' BETWEEN ROAD AND DITCH CENTERLINE

51' BETWEEN EXISTING CENTERLINE TO R/W

29' BETWEEN SHOULDER TO R/W

45' BETWEEN ROAD AND DITCH CENTERLINE

EXISTING UTILITY POLE W/ TELEPHONE MARKER

EXISTING UNDERGROUND TELEPHONE LINE

EXISTING COMMUNICATIONS UTILITY BOX

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE - SEE SHEET NO. G2.2

IE: 19.38

IE: 19.21

WMH
FRAME: 22.93

PP

8" RCP

EXISTING CURB

EXISTING UTILITY POLE

EXISTING SEWER MANHOLE
SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 14.09 (NW)
IE OUT: 11.34 (E)

STOP N STOR BUILDING

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

EXISTING CONDITIONS PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

G2.1

E:\28896_28896.000\ENGINEERING\DRAWINGS\GRADY\CONSTRUCTION PLANS\28896.0000 - EC-PLDWG - Mar 29, 2022 - 5:37 PM

MATCH LINE - SEE SHEET NO. G2.1

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

EXISTING COMMUNICATIONS UTILITY BOX

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF EXISTING DITCH

EXISTING UNDERGROUND TELEPHONE LINE

Underground Telephone Line in This Area

EXISTING EDGE OF SHOULDER

EXISTING (4) 36" FES

EXISTING TOPOGRAPHY SIGN

5" WHITE EDGE LINE (TYP.)

GEORGIA STATE ROUTE 30 - 100' R/W

8" YELLOW APPROACHING DOUBLE TAPER EDGES (TYP.)

45' BETWEEN ROAD AND DITCH CENTERLINE

50' BETWEEN EXISTING CENTERLINE TO R/W

EXISTING THERMOPLASTIC CHEVRON

DOUBLE 5" YELLOW CENTER EDGE LINE (TYP.)

(4) 36" RCP

5" SKIP WHITE 2' SEGMENT, 6" GAP (TYP.)

5" WHITE EDGE LINE (TYP.)

TYPE 2 DIRECTIONAL ARROW (TYP.)

MATCH LINE THIS SHEET

CENTERLINE OF EXISTING DITCH

EXISTING UTILITY POLE

8" PVC

SSMH
FRAME: 20.31
IE IN: 21.40 (W)
IE OUT: 10.00 (S)

36" RCP

EXISTING CURB

WMH
FRAME

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

RIGHT OF WAY MONUMENT

EXISTING UNDERGROUND TELEPHONE LINE

EXISTING COMMUNICATIONS UTILITY BOX

Underground Telephone Line in This Area

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF EXISTING DITCH

EXISTING EDGE OF SHOULDER

5" WHITE EDGE LINE (TYP.)

TYPE 2 DIRECTIONAL ARROW (TYP.)

EXISTING THERMOPLASTIC CHEVRON

MATCH LINE THIS SHEET

NEWPORT BLVD

EXISTING CURB

EXISTING MEDIAN

WMH
FRAME: 24.09

GEORGIA STATE ROUTE 30 - 100' R/W

DOUBLE 5" YELLOW CENTER EDGE LINE (TYP.)

5" WHITE EDGE LINE (TYP.)

5" SKIP WHITE 2' SEGMENT, 6" GAP (TYP.)

36" RCP

WMH
FRAME: 23.68

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

EXISTING CONDITIONS PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

G2.2

DEMOLITION NOTES:

1. UTILITIES SHOWN ON THIS PLAN ARE APPROXIMATE AND MAY NOT REPRESENT ACTUAL, AND ALL LOCATIONS. SURVEY OF UTILITIES SHOWN WERE COLLECTED FROM THOMAS AND HUTTON ENGINEERING CO. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN AVAILABLE RECORD DRAWINGS AND COORDINATE WITH THE PROVIDER TO LOCATE ALL UTILITIES PRIOR TO DEMOLITION.
2. TREE PROTECTION, EROSION, AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED PRIOR TO, OR CONCURRENT WITH, LAND DISTURBING ACTIVITIES. TREE PROTECTION SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE DEMOLITION WORK OUTLINED BY THIS PLAN.
3. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL, AND DISPOSAL IN A LOCATION APPROVED BY ALL GOVERNING AUTHORITIES, OF ALL MATERIAL INDICATED IN THIS PAN. ALL MATERIALS TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL PER THE SPECIFICATIONS.
4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL DEBRIS FROM THE SITE AND DISPOSING OF THE DEBRIS IN A LAWFUL MANNER. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
5. UTILITIES NEEDING TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE AFFECTED UTILITY COMPANY. ADEQUATE TIME SHALL BE PROVIDED FOR RELOCATION, AND CLOSE COORDINATION WITH THE UTILITY COMPANY IS NECESSARY TO PROVIDE A SMOOTH TRANSITION IN UTILITY SERVICE. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANY CONCERNING PORTIONS OF WORK WHICH MAY BE PERFORMED BY THE UTILITY COMPANY'S FORCES AND ANY FEES WHICH ARE TO BE PAID TO THE UTILITY COMPANY FOR THEIR SERVICES. THE CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND CHARGES.
6. CONTRACTOR MUST PROTECT THE PUBLIC AT ALL TIMES WITH FENCING, BARRICADES, ENCLOSURES, ETC., TO THE BEST PRACTICES. TRAFFIC CONTROL PLAN MUST BE CONSISTENT WITH THE MUTCD, LATEST EDITION.
7. DAMAGE TO ALL EXISTING CONDITIONS TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE
8. PRIOR TO COMMENCING DEMOLITION OF EXISTING SITE, CONTRACTOR SHALL IMPLEMENT PHASING OF EROSION AND SEDIMENTATION CONTROL PRACTICES.
9. PRIOR TO BEGINNING DEMOLITION OF EXISTING SITE, CONTRACTOR SHALL NOTIFY OWNER, ARCHITECT, AND ENGINEER WITHIN 72 HOURS.
10. CONTRACTOR MAY LIMIT SAW-CUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED ON ANY OF THE SURROUNDING PAVEMENT, ETC, THE CONTRACTOR IS RESPONSIBLE FOR ITS REMOVAL AND REPAIR.
11. EXISTING DRAINAGE, WATER, AND SANITARY SEWER UTILITIES AND ASSOCIATED APPURTENANCES SHALL BE PROTECTED DURING DEMOLITION AND CONSTRUCTION OPERATIONS.
12. ALL WATER VALVE BOXES/MANHOLES, METER AND BACKFLOW PREVENTER BOXES AND ASSOICATED APPURTENACES, SANTIRARY SEWER MANHOLE TOPS AND CLEANOUTS AND SURFACE DRAINAGE STRUCTURE INLETS SHALL BE BROUGHT TO FINISHED GRADE.
13. WORK ASSOICATED WITH THIS PROJECT IS LOCATED WITHIN THE GEORGIA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY, ALL WORK SHALL BE COORDINATED WITH GDOT AND CONSTRUCTED TO GDOT CURRENT STANDARDS.

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

1/2" IRON REBAR

SAW CUT 1,880 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

Underground Telephone Lines In This Area

GUM S14 16

EXISTING YELLOW EDGE LINE TO BE ERADICATED

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

EXISTING WHITE EDGE LINE TO BE ERADICATED

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

GEORGIA STATE ROUTE 30 – 100' R/W

SAW CUT 700 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

MATCH LINE THIS SHEET

WILD

WILD S24

MATCH LINE – SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

GUM S14 16

SAW CUT 1,880 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

EXISTING UTILITY POLE AND BOX TO BE RELOCATED. CONTRACTOR TO COORDINATE WITH RESPECTIVE UTILITY COMPANY

SAW CUT 1,880 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

EXISTING WHITE EDGE LINE TO BE ERADICATED

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

EXISTING WHITE EDGE LINE TO BE ERADICATED

GEORGIA STATE ROUTE 30 – 100' R/W

EXISTING YELLOW EDGE LINE TO BE ERADICATED

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

SAW CUT 700 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

SAW CUT AND REMOVE APPROXIMATELY 21 LF OF EXISTING CURB & GUTTER

RIP-RAP

IE: 19.38

WMH
FRAME: 22.93

EXISTING UTILITY POLE

18" RCP

SAW CUT 510 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

SAW CUT AND REMOVE APPROXIMATELY 20 LF OF EXISTING CURB & GUTTER

IE: 19.21

SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 12.09 (NW)
IE OUT: 11.34 (E)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

MATCH LINE – SEE SHEET NO. D1.2

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PORT WENTWORTH, GA

NOBLE VINES

DEMOLITION PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

D1.1

Z:\28896\28896.000\ENGINEERING\DRAWINGS\ASDT\CONSTRUCTION PLANS\28896.000 - DM PL.DWG - Mar 29, 2022 - 5:12 PM

Z:\28896.000\ENGINEERING\DRAWINGS\CADD\CONSTRUCTION PLANS\28896.000 - DP-PLOT - Mar 29, 2022 - 5:07 PM

MATCH LINE - SEE SHEET NO. D1.1

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

POWER AND COMMUNICATION UTILITIES WITHIN THE RIGHT-OF-WAY TO BE RELOCATED AS NEEDED. CONTRACTOR TO COORDINATE WITH RESPECTIVE SERVICE PROVIDERS.

(4) 36" FES TO BE REMOVED AND ADJUSTED. SEE SHEET C2.1.

TREE PROTECTION (TYP.)

EXISTING SIGNAGE TO BE RELOCATED. CONTRACTOR TO COORDINATE.

SAW CUT 1,880 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

EXISTING WHITE EDGE LINE TO BE ERADICATED

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

EXISTING THERMOPLASTIC CHEVRON TO BE ERADICATED

EXISTING YELLOW EDGE LINE TO BE ERADICATED

(4) 36" RCP

EXISTING WHITE EDGE LINE TO BE ERADICATED

GEORGIA STATE ROUTE 30 - 100' R/W

EXISTING SIGNAGE TO BE RELOCATED. CONTRACTOR TO COORDINATE.

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

EXISTING WHITE ARROW TO BE ERADICATED

EXISTING WHITE ARROW TO BE ERADICATED

EXISTING WHITE ARROW TO BE ERADICATED

EXISTING WHITE EDGE LINE TO BE ERADICATED

SAW CUT 510 SY OF EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

SAW CUT AND REMOVE APPROXIMATELY 82 LF OF EXISTING CURB & GUTTER

MATCH LINE - THIS SHEET

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

SSMH
FRAME: 20.31
IE IN: 21.40 (W)
IE OUT: 10.00 (S)

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

POWER AND COMMUNICATION UTILITIES WITHIN THE RIGHT-OF-WAY TO BE RELOCATED AS NEEDED. CONTRACTOR TO COORDINATE WITH APPLICABLE SERVICE PROVIDERS.

SAW CUT EXISTING SHOULDER TO A NEAT EDGE AND REMOVE EXISTING PAVEMENT AS REQUIRED TO INSTALL NEW PAVEMENT

SAW CUT TO NEAT VERTICAL EDGE FOR SMOOTH TIE-IN

GEORGIA STATE ROUTE 30 - 100' R/W

MATCH LINE - THIS SHEET

EXISTING WHITE EDGE LINE TO BE ERADICATED

EXISTING WHITE ARROW TO BE ERADICATED

SAW CUT AND REMOVE APPROXIMATELY 82 LF OF EXISTING CURB & GUTTER

WMH
FRAME: 24.09

WMH
FRAME: 23.68

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

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PORT WENTWORTH TOWNHOMES GA, LLC

PORT WENTWORTH, GA

NOBLE VINES

DEMOLITION PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

D1.2

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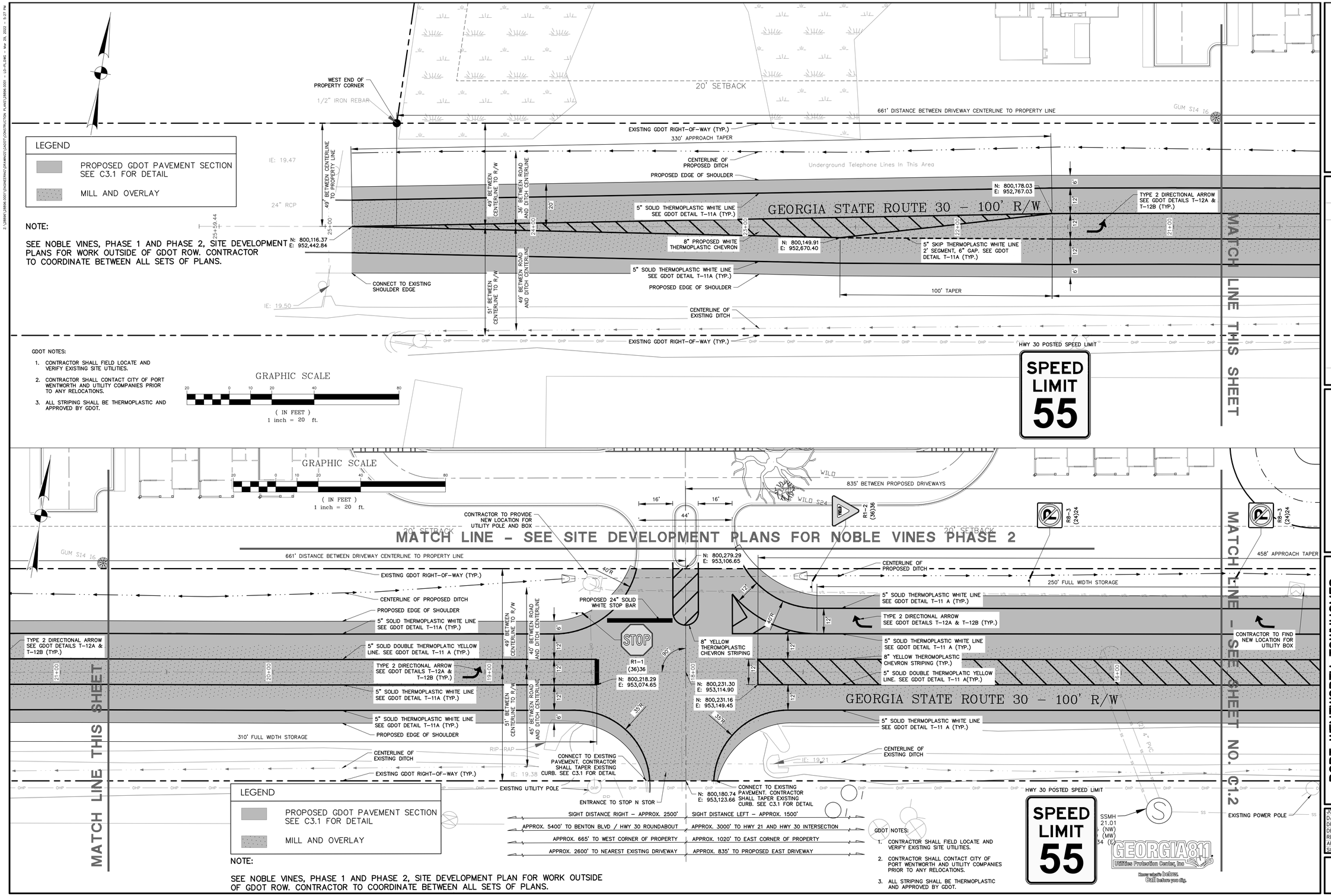

GEORGIA REGISTERED PROFESSIONAL ENGINEER PRO CERTIFICATE NUMBER NATHAN B. ROWE

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PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

STRIPING, SIGNAGE, AND LAYOUT PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

C1.1

F:\28896_28896.0001\ENGINEERING\DRAWINGS\LAYOUT\CONSTRUCTION PLANS\28896.0000 - LD-PLDWG - Mar 29, 2022 - 5:27 PM

MATCH LINE - SEE SHEET NO. C1.1

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

ROAD 2

835' BETWEEN PROPOSED DRIVEWAYS

20' SETBACK

20' SETBACK

16'

458' APPROACH TAPER

310' FULL WIDTH STORAGE

R6-3 (24)24

CENTERLINE OF PROPOSED DITCH

INV.: 17.29

INV.: 17.29

INV.: 17.29

INV.: 17.29

EXISTING GDOT RIGHT-OF-WAY (TYP.)

TREE PROTECTION (TYP.)

100' TAPER

CONTRACTOR TO FIND NEW LOCATION FOR TOPOGRAPHY SIGN

CENTERLINE OF PROPOSED DITCH

PROPOSED EDGE OF SHOULDER

CONTRACTOR TO FIND NEW LOCATION FOR UTILITY BOX

5" SKIP WHITE 2' SEGMENT, 6" GAP SEE GDOT DETAIL T-11 A (TYP.)

100' TAPER

5" SOLID DOUBLE THERMOPLATIC YELLOW LINE. SEE GDOT DETAIL T-11 A (TYP.)

50' BETWEEN CENTERLINE TO R/W

40' BETWEEN ROAD AND DITCH CENTERLINE

6'

12'

12'

12'

12'

12'

6'

TYPE 2 DIRECTIONAL ARROW SEE GDOT DETAILS T-12A & T-12B (TYP.)

Underground Natural Gas Lines in Vicinity

APR

STOP

R1-1 (36)36

15+00

14+00

13+00

12+00

11+00

10+00

PROPOSED THERMOPLASTIC CHEVRON

5" SKIP THERMOPLASTIC WHITE LINE 2' SEGMENT, 6" GAP SEE GDOT DETAIL T-11 A (TYP.)

5" SOLID THERMOPLASTIC WHITE LINE SEE GDOT DETAIL T-11 A (TYP.)

GEORGIA STATE ROUTE 30 - 100' R/W

N: 800,359.21
E: 953,906.99

TYPE 2 DIRECTIONAL ARROW SEE GDOT DETAILS T-12A & T-12B (TYP.)

CONTRACTOR TO FIND NEW LOCATION FOR TOPOGRAPHY SIGN

IE: 17.02

IE: 17.10

IE: 17.11

IE: 17.12

5" SOLID THERMOPLASTIC WHITE LINE SEE GDOT DETAIL T-11 A (TYP.)

PROPOSED EDGE OF SHOULDER

EXISTING GDOT RIGHT-OF-WAY (TYP.)

45° R

CENTERLINE OF EXISTING DITCH

100' TAPER

320' FULL WIDTH STORAGE

HWY 30 POSTED SPEED LIMIT

IE: 19.45

36" RCP

EXISTING POWER POLE

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

LEGEND

PROPOSED GDOT PAVEMENT SECTION SEE C3.1 FOR DETAIL

MILL AND OVERLAY

NOTE:

SEE NOBLE VINES, PHASE 1 AND PHASE 2, SITE DEVELOPMENT PLANS FOR WORK OUTSIDE OF GDOT ROW. CONTRACTOR TO COORDINATE BETWEEN ALL SETS OF PLANS.

SPEED LIMIT 55

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.
3. ALL STRIPING SHALL BE THERMOPLASTIC AND APPROVED BY GDOT.

CONNECT TO EXISTING PAVEMENT. CONTRACTOR SHALL TAPER EXISTING CURB. SEE C3.1 FOR DETAIL

SIGHT DISTANCE RIGHT - APPROX. 3300'

APPROX. 835' TO PROPOSED WEST DRIVEWAY

APPROX. 1500' TO WEST CORNER OF PROPERTY

MATCH LINE THIS SHEET

ROAD 2

16'

44'

16'

R1-2 (36)36

R8-3 (24)24

EAST END OF PROPERTY CORNER

182' BETWEEN DRIVEWAY CENTERLINE TO PROPERTY LINE

CONTRACTOR TO PROVIDE NEW LOCATION FOR UTILITY BOX

CENTERLINE OF PROPOSED DITCH

PROPOSED EDGE OF SHOULDER

5" SOLID THERMOPLASTIC WHITE LINE SEE GDOT DETAIL T-11 A (TYP.)

TYPE 2 DIRECTIONAL ARROW SEE GDOT DETAILS T-12A & T-12B (TYP.)

5" SOLID THERMOPLASTIC WHITE LINE SEE GDOT DETAIL T-11 A (TYP.)

45' BETWEEN ROAD AND DITCH CENTERLINE

50' BETWEEN CENTERLINE TO PROPERTY LINE

CONNECT TO EXISTING SHOULDER EDGE

CONNECT TO EXISTING EDGE LINE

N: 800,461.59
E: 954,340.11

100' TAPER

5" SKIP WHITE 2' SEGMENT, 6" GAP (TYP.)

8" YELLOW THEROMOPLASTIC CHEVRON STRIPING (TYP.)

PROPOSED 24" SOLID WHITE STOP BAR

N: 800,370.71
E: 953,937.68

N: 800,419.98
E: 953,929.16

250' FULL WIDTH STORAGE

9+00

8+00

7+00

6+00

5+00

GEORGIA STATE ROUTE 30 - 100' R/W

NEWPORT BLVD

N: 800,321.45
E: 953,946.21

IE: 20.54

IE: 19.99

36" RCP

IE: 20.29

IE: 19.38

IE: 19.3

EXISTING GDOT RIGHT-OF-WAY (TYP.)

HWY 30 POSTED SPEED LIMIT

SPEED LIMIT 55

GDOT NOTES:

1. CONTRACTOR SHALL FIELD LOCATE AND VERIFY EXISTING SITE UTILITIES.
2. CONTRACTOR SHALL CONTACT CITY OF PORT WENTWORTH AND UTILITY COMPANIES PRIOR TO ANY RELOCATIONS.
3. ALL STRIPING SHALL BE THERMOPLASTIC AND APPROVED BY GDOT.

NOTE:

SEE NOBLE VINES, PHASE 1 AND PHASE 2, SITE DEVELOPMENT PLANS FOR WORK OUTSIDE OF GDOT ROW. CONTRACTOR TO COORDINATE BETWEEN ALL SETS OF PLANS.

LEGEND

PROPOSED GDOT PAVEMENT SECTION SEE C3.1 FOR DETAIL

MILL AND OVERLAY

CONNECT TO EXISTING PAVEMENT. CONTRACTOR SHALL TAPER EXISTING CURB. SEE C3.1 FOR DETAIL

SIGHT DISTANCE RIGHT - APPROX. 3300'

SIGHT DISTANCE LEFT - APPROX. 650'

APPROX. 835' TO PROPOSED WEST DRIVEWAY

APPROX. 2160' TO HWY 21 / HWY 30 INTERSECTION

APPROX. 260' TO NEAREST EXISTING DRIVEWAY

APPROX. 1500' TO WEST CORNER OF PROPERTY

APPROX. 190' TO EAST CORNER OF PROPERTY

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

GEORGIA811 Utilities Protection Center, Inc. Know what's below. Call before you dig.

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

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50 Park of Commerce Way
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www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

STRIPING, SIGNAGE, AND LAYOUT PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

C1.2

Z:\J28896.0001\DWG\PERMIT\GRADING\J28896.0001 - PGD-PLDWG - Mar 29, 2022 - 5:28 PM

1/2" IRON REBAR

20' SETBACK

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF PROPOSED DITCH

GUM S14 16

Underground Telephone Lines In This Area

IE: 19.47

24" RCP

25+59.44

25+00

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH EXISTING PAVEMENT ELEVATION

MATCH EXISTING PAVEMENT ELEVATION

23+50

24+50

22+50

21+00

CENTERLINE OF EXISTING DITCH

EXISTING GDOT RIGHT-OF-WAY (TYP.)

IE: 19.50

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

MATCH LINE THIS SHEET

MATCH LINE - SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

MATCH LINE - SEE SHEET NO. C2.2

GUM S14

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF PROPOSED DITCH

RELOCATE POLE TO ALLOW FOR PIPE INSTALLATION

FES
INV.: 21.83 (E)

116 LF 24" RCP
@ 0.30%

FES
INV.: 21.48 (W)

CONTRACTOR TO ADJUST COMMUNICATION UTILITY BOX TO FINAL GRADE

MATCH EXISTING PAVEMENT ELEVATION

MATCH EXISTING PAVEMENT ELEVATION

GEORGIA STATE ROUTE 30 – 100' R/W

CENTERLINE OF EXISTING DITCH

RIP-RAP

IE: 19.38

IE: 19.21

CENTERLINE OF EXISTING DITCH

EXISTING GDOT RIGHT-OF-WAY (TYP.)

WMH
FRAME: 22.93

SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 12.09 (NW)
IE OUT: 11.34 (E)

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

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PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

C2.1

Z:\J28896.0001\ENGINEERING\DRAWINGS\LAYOUT\CONSTRUCTION PLANS\J28896.0000 - PDS-PLOTS.DWG — Mar 29, 2022 - 5:28 PM

ROAD 2

MATCH LINE – SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 1

MATCH LINE – SEE SHEET C2.1

MATCH LINE – THIS SHEET

GEORGIA STATE ROUTE 30 – 100' R/W

DUE TO CULVERT INVERTS, EXISTING & PROPOSED SLOPES ARE GREATER THAN 3:1.

OVERFLOW WEIR (SEE DETAIL)

CONTRACTOR TO ADJUST COMMUNICATION UTILITY BOX TO FINAL GRADE

FES INV.: 17.29 (S)

FES INV.: 20.64 (E)

FES INV.: 20.99 (W)

19 LF 36" RCP @ 0.26%

19 LF 36" RCP @ 0.70%

19 LF 36" RCP @ 0.00%

117 LF 24" RCP @ 0.30%

INV.: 17.24

INV.: 17.16

INV.: 17.29

TREE PROTECTION (TYP.)

EXISTING GDOT RIGHT-OF-WAY (TYP.)

CENTERLINE OF PROPOSED DITCH

CENTERLINE OF EXISTING DITCH

MATCH EXISTING PAVEMENT ELEVATION

20' SETBACK

SSMH
FRAME: 20.31
IE IN: 21.40 (W)
IE OUT: 10.00 (S)

WMH
FRAME: 24.09

WMH
FRAME: 23.68

36" RCP

8" PVC

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PERMIT SET - FOR REVIEW PURPOSES ONLY

GEORGIA
PROFESSIONAL ENGINEER
NO. PE034487
PROFESSIONAL
NATHAN B. WILLIAMS

NO.	REVISIONS	BY	DATE

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PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE PLAN

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

C2.2

GEORGIA 811
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Know what's below.
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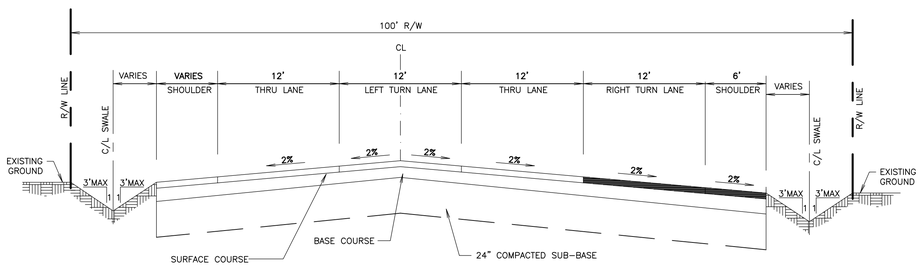
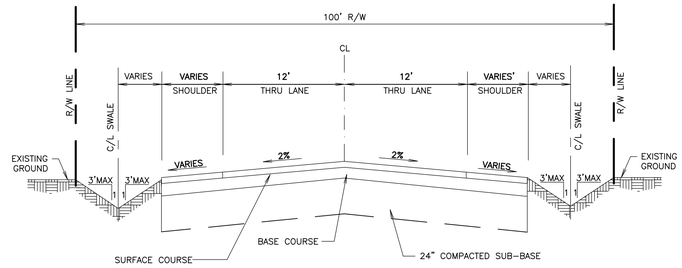


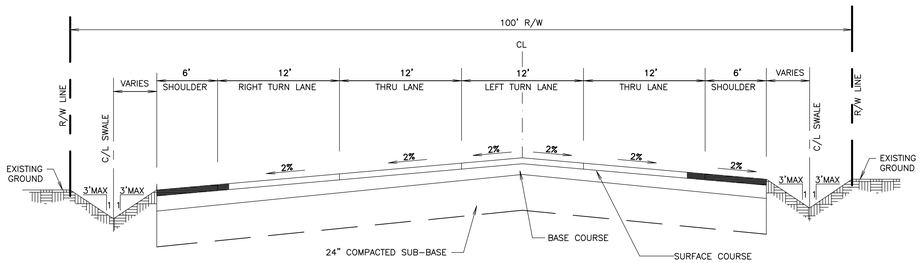
ROADWAY SECTION – STATION 8+00'

NOT TO SCALE



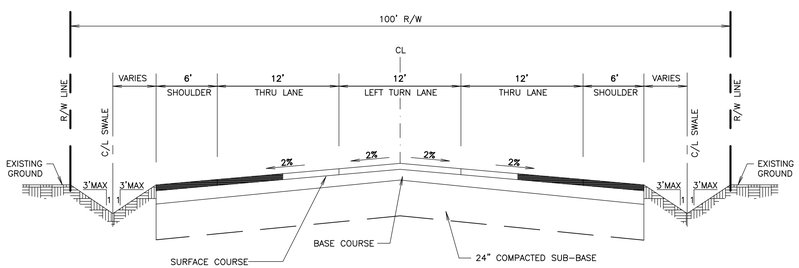
ROADWAY SECTION – STATION 25+00'

NOT TO SCALE



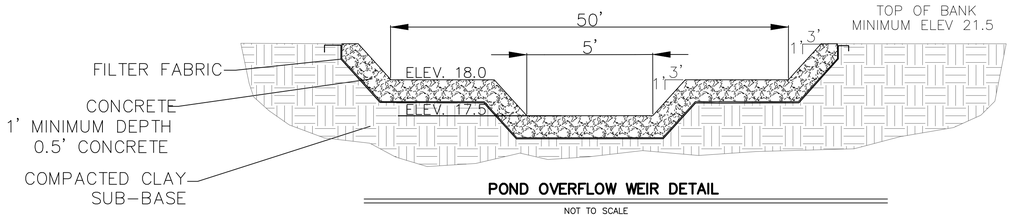
ROADWAY SECTION – STATION 12+00'

NOT TO SCALE



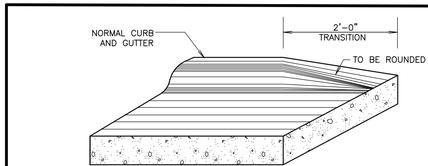
ROADWAY SECTION – STATION 20+00'

NOT TO SCALE



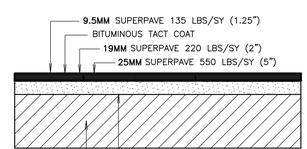
POND OVERFLOW WEIR DETAIL

NOT TO SCALE



FEATHERING OF CURB AND GUTTER DETAIL

NOT TO SCALE



1) AGGREGATE BASE COURSE TO EXTEND 6" BEYOND PAVEMENT SECTION WHERE PROPOSED OR EXISTING PAVEMENT IS NOT LOCATED DIRECTLY ADJACENT TO THE SECTION

PROPOSED GDOT PAVEMENT SECTION

NOT TO SCALE

GEORGIA
NATHAN B. ANDREWS
PROFESSIONAL ENGINEER
PE 036214
LICENSED

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

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PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

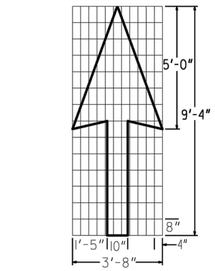
PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

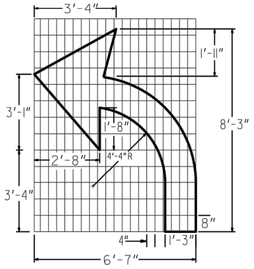
C3.1

Z:\28896.0000\DESIGN\CIVIL\DRAWINGS\LAYOUT\CONSTRUCTION PLANS\28896.0000 - PDD-SITE.DWG - Mar 29, 2022 - 9:58 PM

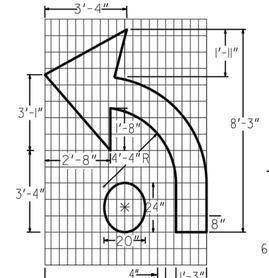
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



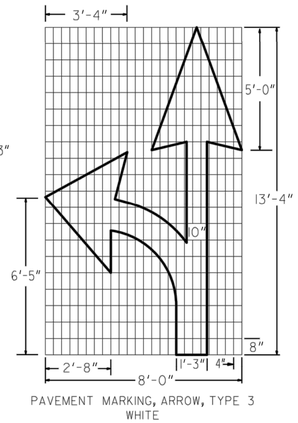
PAVEMENT MARKING, ARROW, TYPE 1
WHITE



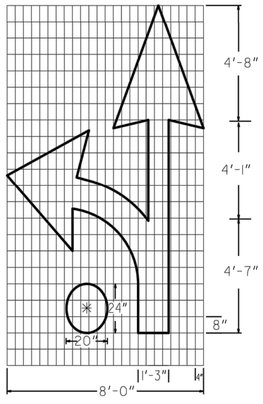
PAVEMENT MARKING, ARROW, TYPE 2
WHITE



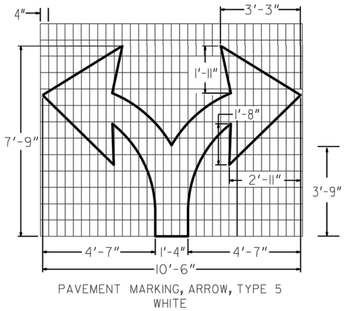
PAVEMENT MARKING, ARROW, TYPE 2A
WHITE



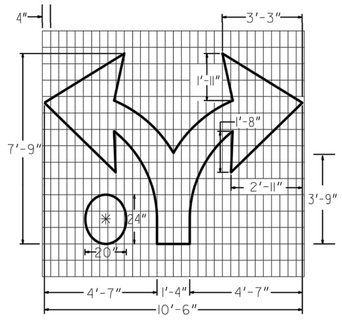
PAVEMENT MARKING, ARROW, TYPE 3
WHITE



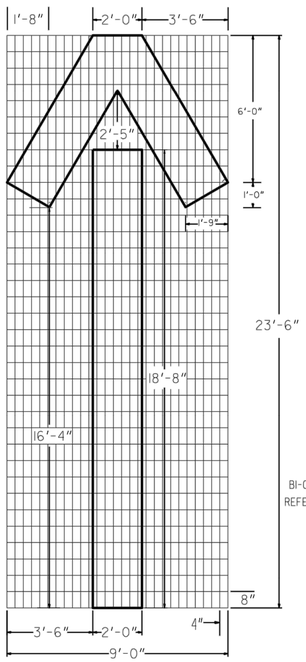
PAVEMENT MARKING, ARROW, TYPE 3A
WHITE



PAVEMENT MARKING, ARROW, TYPE 5
WHITE

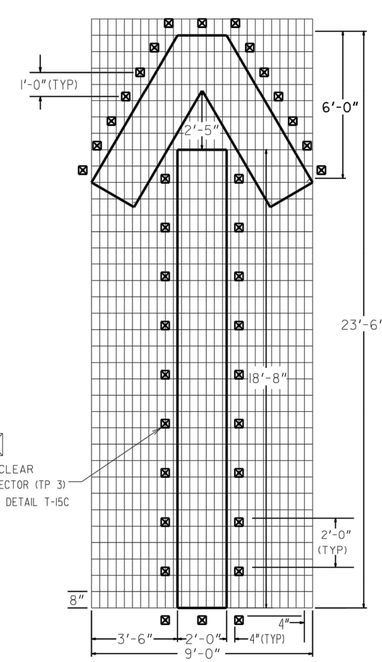


PAVEMENT MARKING, ARROW, TYPE 5A
WHITE

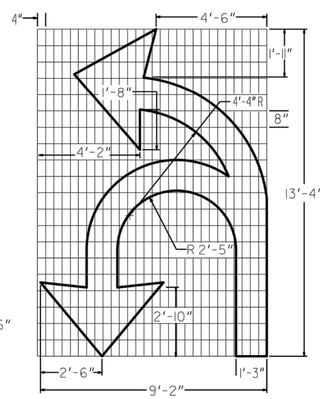


PAVEMENT MARKING, ARROW, TYPE 4
WHITE

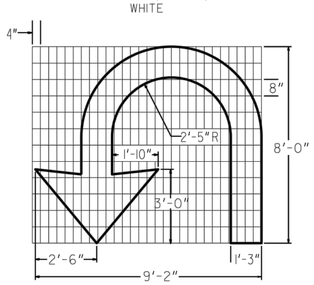
RED
CLEAR
BI-COLOR REFLECTOR (TP 3)
REFER TO GDOT DETAIL T-15C



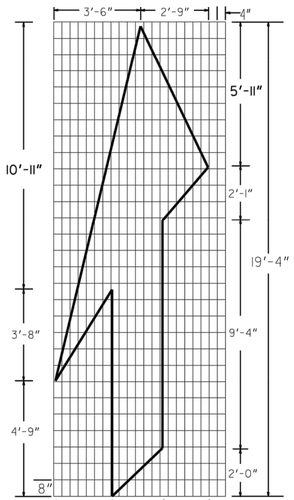
PAVEMENT MARKING, ARROW, WRONG WAY
WHITE



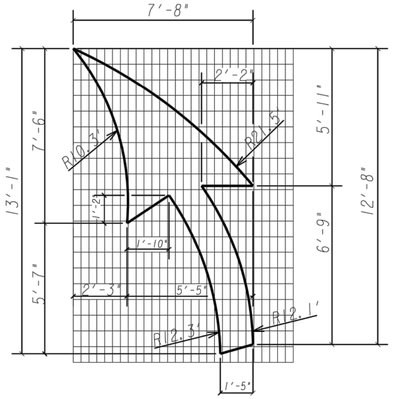
PAVEMENT MARKING, ARROW, TYPE 6
WHITE



PAVEMENT MARKING, ARROW, TYPE 7
WHITE



PAVEMENT MARKING, ARROW, TYPE 8
WHITE



PAVEMENT MARKING, ARROW, TYPE 9
WHITE (MINI ROUNDABOUTS)

NOTES
1. PAVEMENT MARKING ARROWS WITH A DOT (2A, 3A, 5A) SHALL BE USED ALONG MULTI-LANE ROUNDABOUT APPROACHES ALONG THE INSIDE LANE ONLY

BY	DATE	REVISION
ACP	11-04-20	ADDED T-9B PAVEMENT MARKING
ACP	05-30-19	ADDED PAVEMENT MARKING TYPES FOR ROUNDABOUTS
ACP	04-11-00	CHANGED LOCATION OF RPM ON WRONG WAY ARROW

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS
PAVEMENT MARKINGS - ARROWS

NO SCALE — APRIL 2000

DESIGNED ____
DRAWN ____
TRACED ____
CHECKED ____

NUMBER T-12B

GEORGIA
PROFESSIONAL ENGINEER
PE 038744
PROFESSIONAL
NATHAN B. NOBLE

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NO.	REVISIONS	BY	DATE

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Savannah, GA 31405 • 912.234.5300
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PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

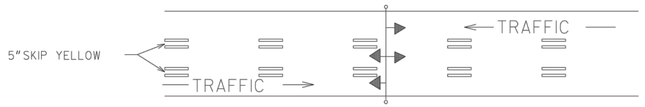
PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

C3.2

Z:\28896.0001\DWG\PLANS\SHEETS\CONSTRUCTION PLANS\28896.0000 - PDS-SITE.DWG - Mar 29, 2022 - 3:39 PM

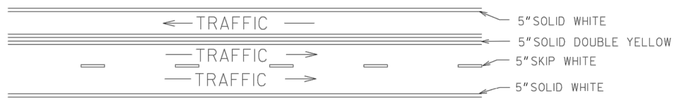
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



REVERSIBLE LANE SIGN OR SIGNAL SYSTEM REQUIRED

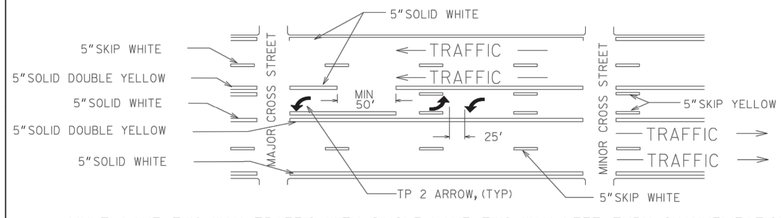
TWO-WAY TRAFFIC WITH A REVERSIBLE CENTER LANE

TWO-WAY TRAFFIC WHERE MOTORISTS IN A SINGLE LANE ARE PERMITTED TO PASS

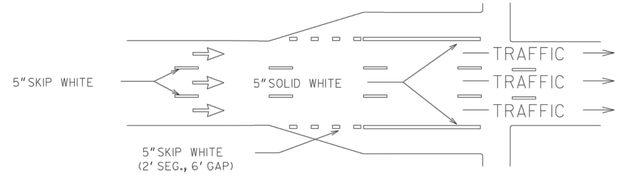


TWO-WAY TRAFFIC WHERE MOTORISTS IN A SINGLE LANE ARE NOT PERMITTED TO PASS

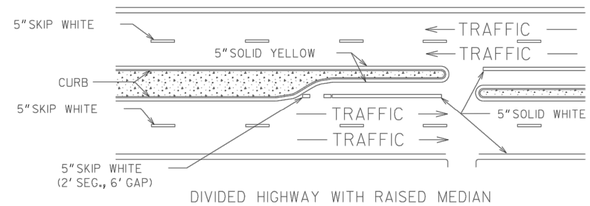
TWO-LANE, TWO-WAY TRAFFIC WITH PASSING PERMITTED



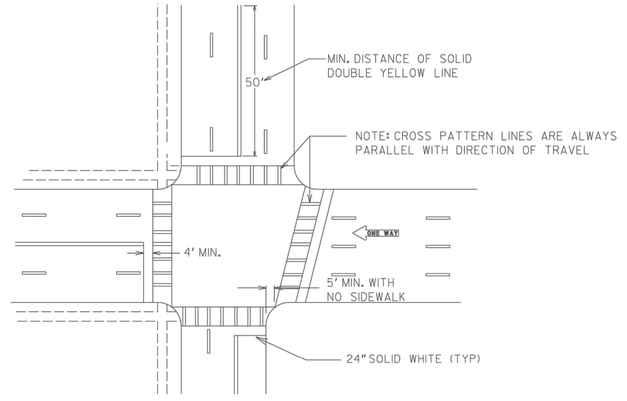
MULTI-LANE, TWO-WAY TRAFFIC WITH SINGLE LANE, TWO-WAY LEFT TURN CHANNELIZATION



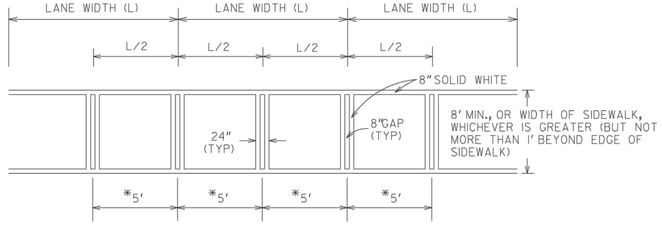
ONE-WAY TRAFFIC WITH ADDED TURN LANES



DIVIDED HIGHWAY WITH RAISED MEDIAN



TYPICAL LOCATION OF CROSSWALKS AND STOP BARS



*USE WHERE THE LANE WIDTH EXCEEDS 12' OR WHERE LANE LINES HAVE BEEN OMITTED

CROSSWALK DETAIL

GENERAL NOTES:

1. SPACING BETWEEEN DOUBLE LINES SHALL BE EQUAL TO THE LINE WIDTH.
2. EDGE LINES SHALL BE PLACED A MINIMUM OF 4 INCHES FROM THE NORMAL EDGE OF PAVEMENT.
3. CONTRAST MARKINGS FOR SKIP STRIPING SHALL BE AS SHOWN IN DETAIL T-IIB.

9-15-16	DATE	DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA
ADDED GENERAL NOTE 3	REVISION	CONSTRUCTION DETAILS PAVEMENT MARKING PLACEMENT NON-LIMITED ACCESS ROADWAY
COR	BY	NO SCALE — JANUARY 2000 DESIGNED ____ DRAWN ____ TRACED ____ CHECKED ____ NUMBER T-IIA

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 036274 NATHAN B. ANDREWS

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

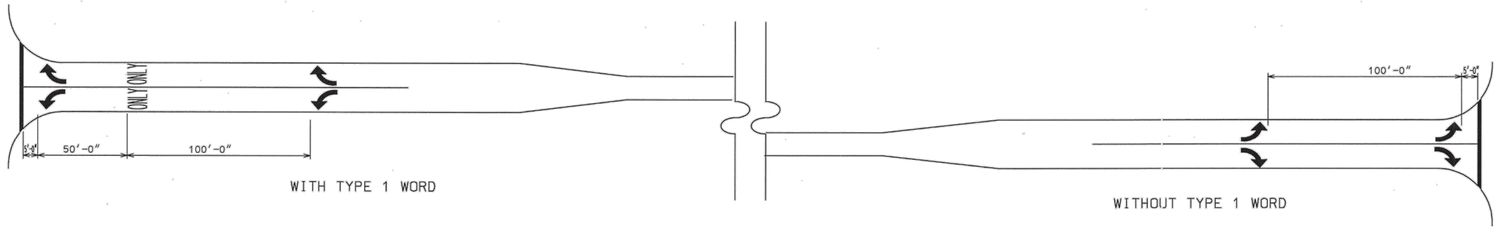
JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

C3.3

Z:\28896.0001\CONSTRUCTION PLANS\PLANSHEETS\C3.3 CONSTRUCTION DETAILS.DWG - PDT: 3/29/2022 - 5:28 PM

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

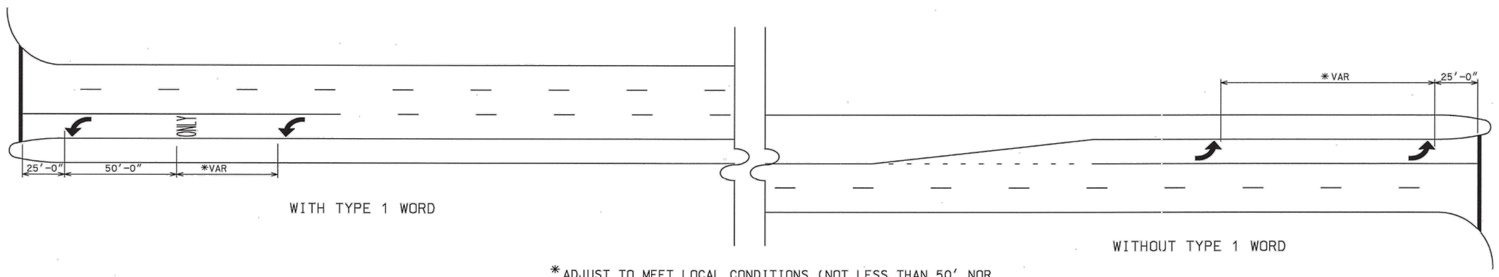
EXIT RAMPS



WITH TYPE 1 WORD

WITHOUT TYPE 1 WORD

SHORT TURN LANES

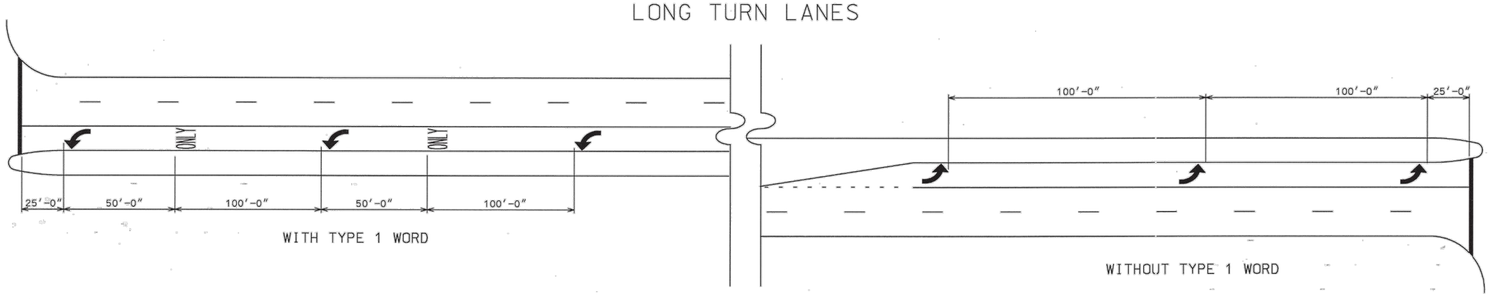


WITH TYPE 1 WORD

WITHOUT TYPE 1 WORD

*ADJUST TO MEET LOCAL CONDITIONS (NOT LESS THAN 50' NOR MORE THAN 100')

LONG TURN LANES



WITH TYPE 1 WORD

WITHOUT TYPE 1 WORD

GENERAL NOTES:

1. SPACING OF TYPE 2 ARROW IS REPRESENTATIVE OF SPACING FOR TYPE 1, TYPE 3, TYPE 4, & TYPE 5 ARROWS.
2. ALL TURNING LANES SHALL HAVE A MINIMUM OF 2 ARROWS.
3. GROUND MOUNTED OR OVERHEAD SIGNING SHALL BE SUPPLEMENTED BY TYPE 1 WORD.

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

DETAILS OF PAVEMENT MARKING ARROW LOCATION

NO SCALE JANUARY 2000

T-12A

PCBOTB

Z:\28896.0001\DWG\PAVING\SHEETS\CONSTRUCTION PLANS\28896.0000 - PDS-STDMD - Mar 29, 2022 - 5:24 PM

GEORGIA
PROFESSIONAL ENGINEER
PE 036744
PROFESSIONAL
NATHAN B. JONES

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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PORT WENTWORTH TOWNHOMES
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NOBLE VINES

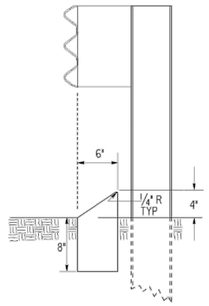
PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

C3.4

11/17/2011 8:14:31 AM \\GDOT-DSN1\GOPLOT\QCF\GO_K1p8000.qcf toox M:\GARY\revised 9032B\9032B.prf

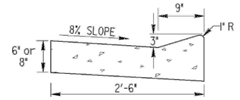
FACE OF CURB MUST ALIGN WITH BACK EDGE OF GUARDRAIL AND THE FACE OF THE OFFSET BLOCK.



TYPE 8

TYPE 8 CURB IS USED IN CONJUNCTION WITH GUARDRAIL CONNECTIONS TO CONCRETE BARRIER AS NOTED ON GA. STD. 4012C.

RAISED EDGE WITH CONCRETE GUTTER



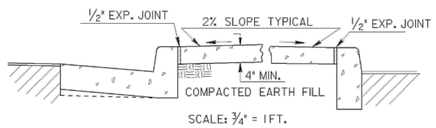
SCALE: 1" = 1FT.

RAISED EDGE TO BE CONSTRUCTED WITH SAME CONCRETE MIX AS THE GUTTER AND SHALL BE FORMED MONOLITHIC WITH GUTTER. JOINTS IN RAISED EDGE SHALL MATCH THOSE IN THE GUTTER.

NOTE:
IF CONCRETE MEDIAN INTERCEPTS PEDESTRIAN CROSSWALKS, WHEELCHAIR RAMPS (CONSTRUCTION DETAIL A-3 AND A-4) WILL BE REQUIRED.

CONCRETE MEDIAN (Between Curbs)

NOTE: CURB TYPES SHOWN ARE TYPICAL. OTHER TYPES MAY BE SPECIFIED.



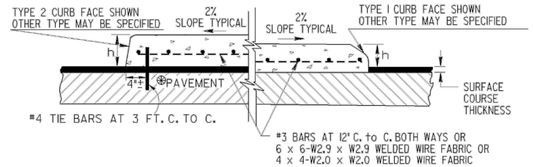
SCALE: 3/4" = 1FT.

NOTE: WIDTH OF CONCRETE MEDIAN WILL BE AS SHOWN IN PLANS

CONCRETE MEDIANS (Integral)

SCALE: 1"=1FT.

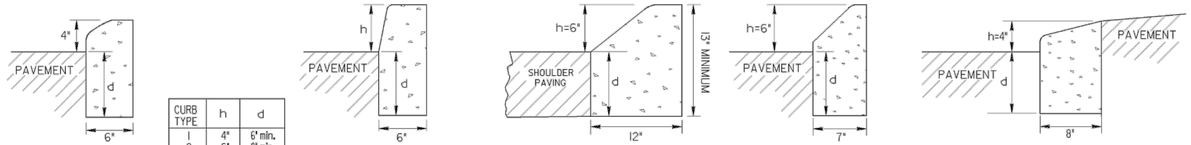
-WITH TIE BARS-



-WITHOUT TIE BARS-

NOTE:
IF FINAL SURFACE COURSE IN PRESENT OR MUST BE INSTALLED BEFORE THE CONCRETE MEDIAN CAN BE INSTALLED, THEN DOWELED IN CONCRETE MEDIAN IS REQUIRED.

CONCRETE HEADER CURBS



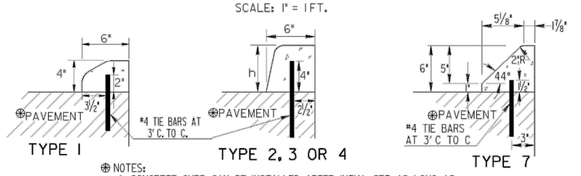
CURB TYPE	h	d
1	4"	6" min.
2	6"	8" min.
3	8"	10" min.
4	10"	12" min.
6	6"	7" min.
7	6"	8" min.
9	4"	8" min.

THE DIMENSION d MAY BE INCREASED AT CONTRACTOR'S OPTION SO BOTTOM OF HEADER CURB WILL ALIGN WITH BOTTOM OF PAVEMENT TYPICAL SECTION.

SCALE: 1 1/2" = 1FT.

CONCRETE DOWELED INTEGRAL CURBS

SCALE: 1" = 1FT.



⊕ NOTES:
1. CONCRETE CURB CAN BE INSTALLED AFTER INTIAL SET AS LONG AS TIE BARS ARE DRILLED INTO UNDERLAYING CONCRETE PAVEMENT.
2. CONCRETE CURB CAN BE INSTALLED BEFORE INTIAL SET WITH DOWELS THAT ARE DRIVEN INTO UNDERLYING CONCRETE PAVMENT.
3. JOINTS IN CURB AND CONCRETE MEDIAN WILL MATCH THOSE IN THE CONCRETE PAVEMENT.
4. ALL TYPES OF CONCRETE CURB CAN BE PLACED ON ASPHALT PAVEMENTS WHERE TIE BARS MAY BE EITHER DRIVEN OR DRILLED INTO THE UNDERLYING PAVEMENT. CONTRACTION JOINTS SHALL BE CONSTRUCTED IN CURB OR CONCRETE MEDAIN AT 20 FT. SPACING.

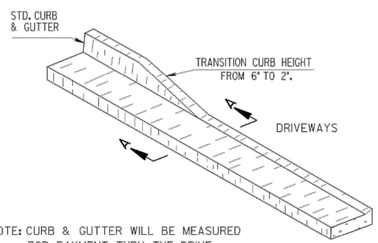
MINIMUM TIE BAR LENGTHS (FOR CONC. DOWELED CURBS OR CONC. MEDIAN)		
CURB TYPE	P.C. CONC. PAV.	ASPHALT PAV.
1	6"	8"
2, 3 or 4	8"	12"
7	6"	8"

NOTE:
TIE BARS FOR DOWELED CURBS MAY BE UNCOATED PLAIN OR DEFORMED BILLET-STEEL BARS (GRADE 40) AS USED FOR CONCRETE REINFORCEMENT. (AASHTO M-31)

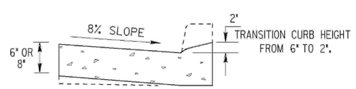
DETAILS OF RECESSED CURB FOR DRIVEWAYS

NO SCALE

PICTORIAL VIEW



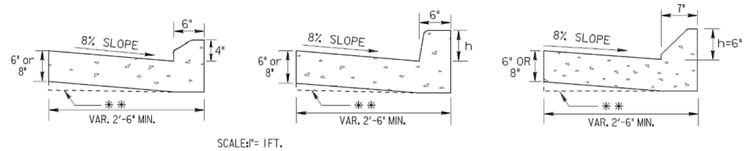
NOTE: CURB & GUTTER WILL BE MEASURED FOR PAYMENT THRU THE DRIVE



SECTIONAL VIEW
SECTION A-A

(SEE SEPARATE CONSTRUCTION DETAILS FOR DRIVEWAYS)

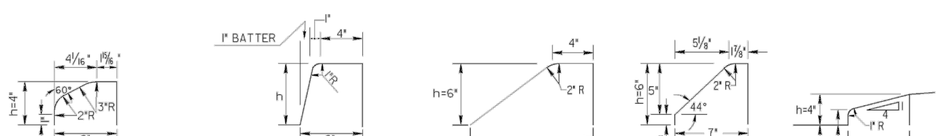
CONCRETE CURB & GUTTER



SCALE: 1" = 1FT.

**AT CONTRACTOR'S OPTION THE GUTTER THICKNESS MAY BE INCREASED AT EDGE OF PAVEMENT TO MAKE BOTTOM OF GUTTER PARALLEL WITH PAVING OF BASE COURSE, BUT THE GUTTER THICKNESS MUST NOT BE LESS THAN THE SPECIFIED 6" OR 8" AT ANY POINT.

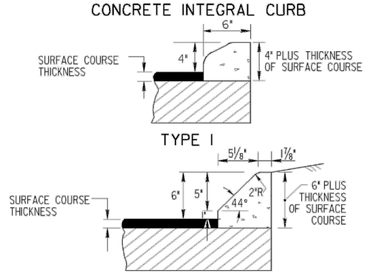
CURB FACE DESIGN



TYPE	h
1	4"
2	6"
3	8"
4	10"
6	6"
7	6"
9	4"

SCALE: 2"=1FT.

CONCRETE INTEGRAL CURB



SCALE: 1 1/2" = 1FT.

NO.	REVISIONS	BY	DATE
TC	REV. TYPE 9 CURB DETAIL & REV. OVERALL LAYOUT	GLO	11-15-11
	REV. MEDIAN NOTE AND ADDED TYPE 9 CURB DETAIL		1-27-11
	ADDED TYPE 9 DETAIL	BY	3-03
	REVISION		DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
CONCRETE CURB & GUTTER
CONCRETE CURBS, CONCRETE MEDIANS

SCALE: AS SHOWN REVISED AND REDRAWN OCT. 2011

DES. DRW. TRA. CHK.

(SUBMITTED) STATE DESIGN POLICY ENGINEER

(APPROVED) Donald M Rus CHIEF ENGINEER

NUMBER 9032B

GEORGIA REGISTERED PROFESSIONAL ENGINEER PROFESSIONAL ENGINEER NATHAN B. ROGERS

PERMIT SET - FOR REVIEW PURPOSES ONLY

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Savannah, GA 31405 • 912.234.5300
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PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

C3.5

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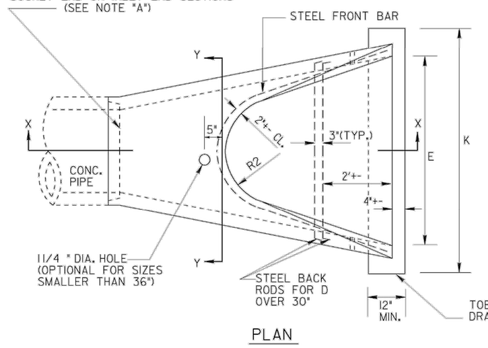
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

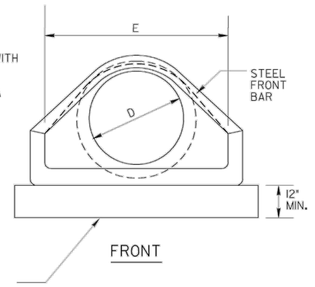
CONCRETE FLARED END SECTION

END SECTION TO PIPE JOINT SHOWN AS TYPICAL:
HUB END ON OUTLET END SECTIONS;
SOCKET END ON INLET END SECTIONS
(SEE NOTE "A")



PLAN

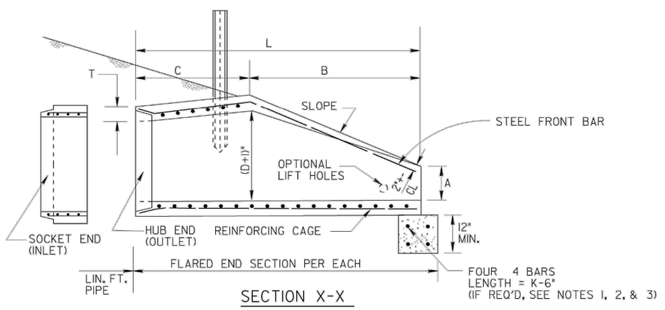
INSTALLATION: (D OVER 30") CABLE, CHAIN, OR LIFTING PIN WILL EXTEND THRU 11/4 " HOLE WITH A PLATE OR REBAR CONNECTED INSIDE THE CONC. SECTION TO PROVIDE ADEQUATE BEARING AREA OR A LIFTING ASSEMBLY DEVICE MAY BE USED TO GIVE 3 LIFT POINTS. HOOKS CONNECTED DIRECTLY TO CONCRETE IS NOT PERMITTED. DAMAGE FROM IMPROPER HANDLING SHALL BE CAUSE FOR REJECTION.



FRONT

TOEWALL IF REQ'D. (TYPICAL FOR STORM DRAIN OUTLETS, SEE GEN. NOTES #1, 2, 3)

NOTE: DO NOT CUT CONCRETE PIPE. USE FULL LENGTH SECTIONS ONLY. WARP SLOPE TO CONFORM WITH PIPE LENGTH AND END SECTION.



SECTION X-X

REINFORCING CAGE:

(1.) WIRE FABRIC HAVING EQUAL STEEL AREA AS INNER CAGE FOR CLASS II PIPE, AASHTO M-170.
(2.) ALTERNATE: # 3 BARS SPACED 12"+LONGITUDINALLY WITH # 2 BARS TRANVERSELY AT 6' O.C. MAX. SPACING, SPOT WELDED OR TIED TO FORM CAGE. (BACK RODS MAY BE OMITTED.)

NOTE "A":
CONTRACTOR WILL INFORM PRODUCER IF CONCRETE FLARED END SECTION IS FOR INLET OR FOR OUTLET END. SOCKET (TONGUE OR SPIGOT) END IS REQUIRED FOR INLETS. HUB (GROOVE OR BELL) END IS REQUIRED FOR OUTLETS. SOCKET TO SOCKET OR HUB TO HUB JOINT WILL NOT BE ACCEPTED UNLESS A REINFORCED CONCRETE COLLAR IS BUILT AROUND THE JOINT WITH NO PAYMENT BEING MADE FOR THE COLLAR.

FLARED END SECTIONS SHALL BE JOINTED TO PIPE WITH ALL SPACE IN THE JOINT FILLED WITH EITHER BITUMINOUS PLASTIC CEMENT OR PREFORMED PLASTIC GASKET (SEC. 848).

WALL THICKNESS (T) IS SHOWN AS NOMINAL AND MAY BE INCREASED AT PRODUCER'S OPTION FOR DESIRED JOINT DESIGN OR TO ALLOW A FLAT OUTSIDE BOTTOM ON THE FLARE, WITH INSIDE DIMENSIONS OF FLARE RETAINED AS SHOWN.

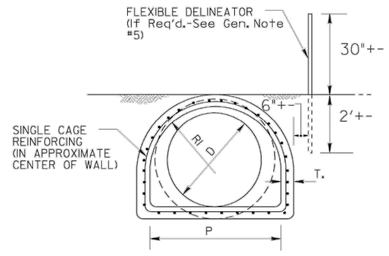
T = PIPE WALL THICKNESS (0.0833D + 1"+- TYPICAL)

DIMENSIONS AND REINFORCING FOR CONCRETE FLARED END SECTIONS (+- 1" TOLERANCE)

PIPE DIA	FRONT BAR	BACK RODS	SLOPE +-	A	B	C *	L *	E	P	R1	R2	OUTLET TOEWALL (IF REQ'D) K= E + 2'	OUTLET TOEWALL (IF REQ'D) CU.YDS. CONC.
12"	1-#3 x 5' 4"	NOT REQ'D.	2.2:1	4"	2'0"	4' 1"	6'1"	2'0"	1'8"	10"	9"	4'-0"	.148
15"	1-#3 x 6' 0"	NOT REQ'D.	2.2:1	6"	2'3"	3'10"	6'1"	2'6"	2'0"	1'0"	11"	4'-6"	.167
18"	1-#3 x 7' 2"	NOT REQ'D.	2.2:1	9"	2'3"	3'10"	6'1"	3'0"	2'5"	1'4"	1'0"	5'-0"	.185
24"	1-#3 x 9' 10"	NOT REQ'D.	2.4:1	10"	3'8"	2' 6"	6'2"	4'0"	2'9"	1'5"	1'2"	6'-0"	.222
30"	1-#4 x 11' 8"	NOT REQ'D.	2.4:1	12"	4'6"	1' 8"	6'2"	5'0"	3'1"	1'6"	1'3"	7'-0"	.259
36"	1-#4 x 13' 10"	2-#4 x 6'3"	2.4:1	15"	5'3"	2'11"	8'2"	6'0"	4'0"	2'0"	1'8"	8'-0"	.296
42"	1-#4 x 13' 10"	2-#4 x 7'4"	2.4:1	21"	5'3"	2'11"	8'2"	6'6"	4'6"	2'4"	1'10"	8'-6"	.315

NOTE: SPECIFIED REINFORCING IS MINIMAL AND MAY BE INCREASED AT PRODUCERS OPTION TO AID CASTING & HANDLING. ALTERNATE REINFORCEMENT PERMITTED IF APPROVED.

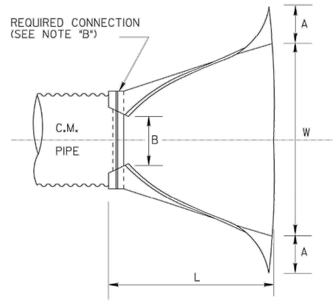
* NOTE: "C" AND "L" DIMENSION MAY BE MEASURED TO EITHER END OF JOINT CONNECTION AT PIPE.



SECTION Y-Y

METAL FLARED END SECTION

(USE ONLY WITH COR. METAL PIPE)



PLAN

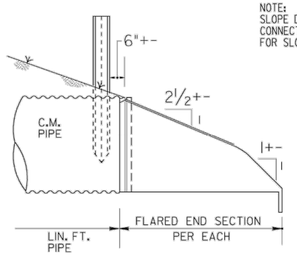
NOTE: GALVANIZED STEEL FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED STEEL PIPE AND ALUMINUM FLARED END SECTIONS ARE TO BE USED ONLY WITH CORRUGATED ALUMINUM PIPE UNLESS OTHERWISE APPROVED BY D.O.T. OFFICE OF MATERIALS AND TESTS.

FLARED END SECTION DIMENSIONS

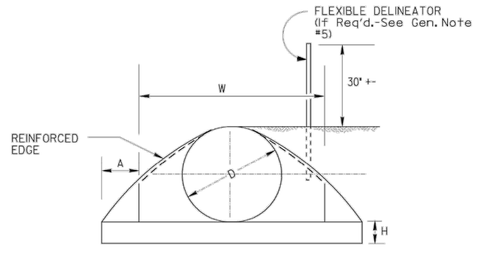
PIPE SIZE "D"	THICKNESS GALV. STEEL	THICKNESS ALUM.	A A= 0.4D +- 1"	B B=0.5 D +- 1"	H H=0.25D +- 1" (MIN.6")	L L=1.67D +- 1/2"	W W=2.0D +- 2"
12"	.064"	.060"	5"	6"	6"	1'8"	2'0"
15"	.064"	.060"	6"	7"	6"	2'3"	2'6"
18"	.064"	.060"	7"	9"	6"	2'6"	3'0"
24"	.064"	.060"	9"	1'0"	6"	3'4"	4'0"
30"	.079"	.105"	1'0"	1'3"	7"	4'2"	5'0"
36"	.079"	.105"	1'2"	1'6"	9"	5'0"	6'0"
42"	.109"	.164"	1'5"	1'9"	10"	5'10"	7'0"

NOTE: WHERE METAL FLARED END SECTIONS ARE USED WITH MULTIPLE PIPE LINES, THE STANDARD SPACING BETWEEN PIPES (S=D OR 3 FT.) MAY HAVE TO BE INCREASED (S=1.75 D TYPICAL). TO PREVENT OVER-LAP OF END SECTION WINGTIPS. SEE ALSO STD. 1030D.

NOTE:
SLOPE DRAIN PIPES WILL REQUIRE AN ELBOW FOR CONNECTION TO THE FLARED END SECTION. PAYMENT FOR SLOPE DRAIN PIPE WILL INCLUDE THIS ELBOW.



SIDE



FRONT

NOTE "B":

THE CONNECTION BETWEEN METAL FLARED END SECTION AND C.M. PIPE WILL BE ONE OF THE FOLLOWING:

(a) A STRAP BAND OR THREADED ROD PROVIDED BY THE MANUFACTURER WILL LOCK END SECTION ONTO PIPE. A CORRUGATION AT THE PIPE AND WILL BE NON-SPIRALED (PERPENDICULAR TO CL OF PIPE)

(b) A DIMPLE BAND COLLAR WILL BE SHOP BOLTED TO END SECTION. PIPE WILL BE INSERTED INTO BAND COLLAR TO MEET THE END SECTION.

(c) A STUB PIPE WILL BE RIVITED TO THE END SECTION AND THE MAIN PIPE CONNECTED TO THE STUB WITH A NORMAL CONNECTING BAND.

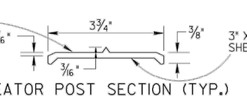
(d) OTHER TYPE CONNECTION IF RECOMMENDED BY MANUFACTURER AND APPROVED BY THE D.O.T.

SPECIAL NOTE:
FLARED END SECTIONS ARE NORMALLY LIMITED TO USE OUTSIDE THE CLEAR ZONE OR BEHIND BARRIER AND WHERE HYDRAULICS PERMIT. SEE OTHER STANDARDS OR DETAILS FOR TAPERED HEADWALLS, SAFETY SLOPE END SECTIONS OR OTHER PIPE END STRUCTURES.

GENERAL NOTES :

1. TOEWALLS ARE REQ'D. FOR OUTLETS OF CONC. STORM DRAINS, EXCEPT WHERE DITCH PAVING OR OTHER EROSION PROTECTION IS PROVIDED OR WHERE THE OUTLET VELOCITY IS LESS THAN 8 FT/SEC. TOEWALLS ARE NOT REQUIRED FOR SIDE DRAINS, SLOPE DRAINS OR INLETS OF STORM DRAINS THIS CRITERIA MAY BE VARIED WHERE SPECIFIED BY THE DESIGNER OR THE ENGINEER.
2. TOEWALLS WILL BE PAID FOR AS CU. YDS. OF CLASS "A" OR "B" CONCRETE. CONTRACTOR MAY ELECT TO CONSTRUCT TOE WALL WITH SAND CEMENT BAG RIPRAP OR STONE RIPRAP TO SAME MINIMUM DIMENSIONS WITH NO ADDITIONAL PAYMENT.
3. PRECAST TOEWALLS SHALL BE CL. "A" CONCRETE; CAST-IN-PLACE TOEWALLS MAY BE CL "A" OR "B" CONCRETE AND MAY BE TRENCH FORMED. WHERE PLANS ITEMIZE ONE CLASS OF CONCRETE AND CONTRACTOR ELECTS TO USE OTHER CLASS, NO ADDITIONAL PAYMENT IS MADE. NO PAYMENT IS MADE FOR STEEL IN TOEWALL.
4. CENTERLINE OF FLARED END SECTION WILL ALIGN WITH CENTERLINE OF PIPE, IF PIPE IS SKEWED, THE EMBANKMENT SLOPE WILL BE WARPED TO CONFORM WITH END SECTION.
5. FLEXIBLE DELINEATORS SHALL BE REQUIRED AT CROSS DRAIN FLARED END SECTIONS, BOTH INLET AND OUTLET. PAYMENT FOR FLARED END SECTION WILL INCLUDE DELINEATORS. SEE DETAIL AND NOTES BELOW. DELINEATORS NOT REQ'D. FOR SIDE DRAIN, SLOPE DRAIN, OR LONG PIPE.

1" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX, ON EACH SIDE OF RIDGE.



3" X 12" LONG YELLOW REFLECTIVE SHEETING TYPE IX.

DELINEATOR POST SECTION (TYP.)

NOTE:
DELINEATOR POST SHALL CONFORM TO SEC. 911 FOR FLEXIBLE DELINEATOR POST EXCEPT REFLECTIVE SHEETING IS NOT REQUIRED AND LENGTH IS 4'-6" FROM TOP TO BOTTOM POINT. ALTERNATES PERMITTED IF APPROVED BY D.O.T. LABORATORY.

SPECIAL NOTE :
PIPE SIZES (D) ARE "NOMINAL-MINIMUM" INSIDE DIAMETERS IN ACCORDANCE WITH GEORGIA STANDARD FOR PIPE CULVERTS. "D" DIMENSION FOR FLARED END SECTION SHALL EQUAL THE "D" DIMENSION FOR CONNECTING PIPE CULVERT.

			6-9-06	DATE	
			REV. REFLECTIVE SHEETING	REVISION	
G.O	DES.	(SUBMITTED)	STATE ROAD & AIRPORT DESIGN ENGINEER		NUMBER
BY	REV.	(APPROVED)	CHIEF ENGINEER		1120
	RETR.				
	CHK.				

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

STANDARD
FLARED END SECTIONS
FOR PIPES

NO SCALE REV. & REDR. SEPT., 1999

GEORGIA REGISTERED PROFESSIONAL ENGINEER NO. 027014 NATHAN B. LONG

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

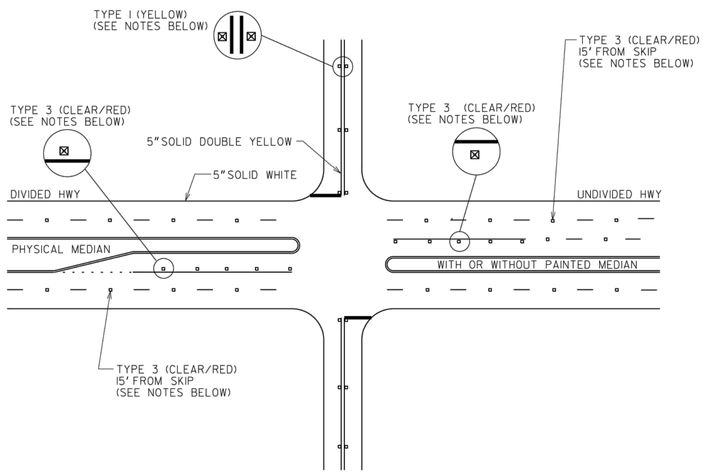
JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 1'

C3.6

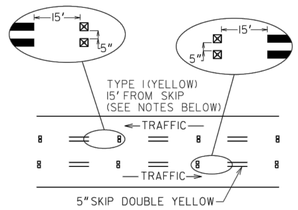
Z:\28896.0001\DWG\PWG\PLANS\GRADSTR\CONSTRUCTION PLANS\28896.0000 - PDD-SITEWC - Mar 29, 2022 - 5:26 PM

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

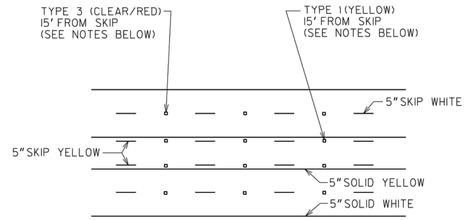
DIVIDED / UNDIVIDED HIGHWAY



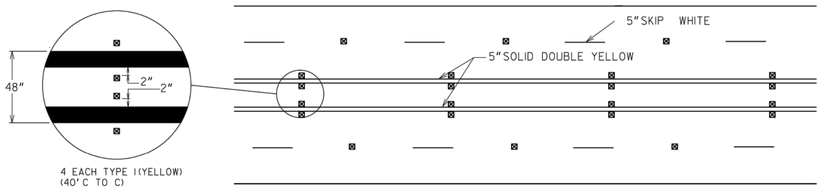
REVERSIBLE LANE



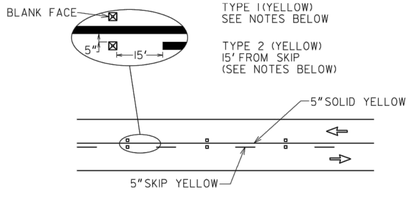
TWO WAY LEFT TURN LANE



4'-0" STRIPED FLUSH MEDIAN



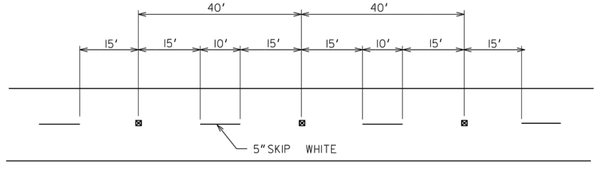
NO PASSING ZONE



GENERAL NOTES:

1. RAISED PAVEMENT MARKERS SHALL BE SPACED EVERY 40 FT UNLESS OTHERWISE SPECIFIED.
2. ON SOLID WHITE TURN BAY LINES, SPACING SHALL BE 20 FT.
3. RAISED PAVEMENT MARKERS SHALL BE OFFSET 5 INCHES FROM SOLID LANE LINES.
4. CLEAR FACE OF TYPE 3 RAISED PAVEMENT MARKERS SHALL BE ORIENTED TOWARD ONCOMING TRAFFIC.

TYPICAL RPM/STRIPE SPACING



CDR BY	REV. RPM SPACING TO 40' REVISION	9-15-2016 DATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

RAISED PAVEMENT MARKER LOCATION
NON-LIMITED ACCESS ROADWAY

NO SCALE — REV. AND REDRAWN, JUNE 2015

DESIGNED ____
DRAWN ____
TRACED ____
CHECKED ____

NUMBER T-15A

GEORGIA — REGISTERED PROFESSIONAL ENGINEER — No. 028214 — PROFESSIONAL — NATHAN B. ANDREWS — LICENSE

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

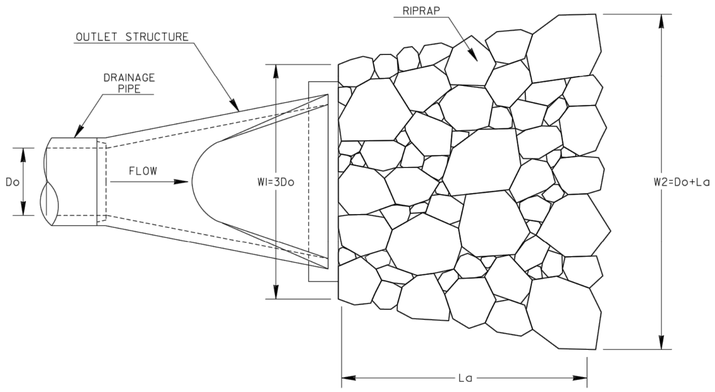
JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VNO
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 1'

C3.7

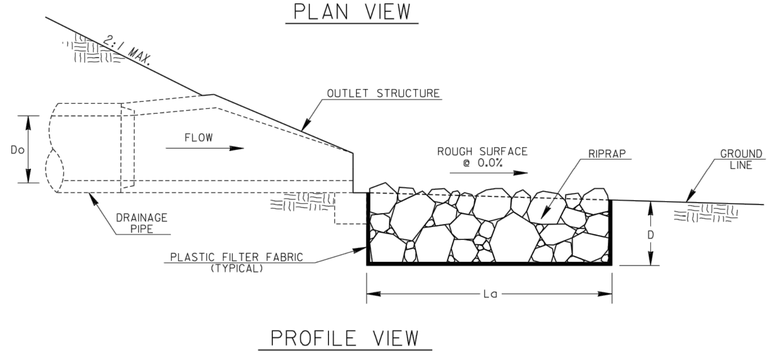
Z:\28896.0001\DRAWINGS\PLANSHEETS\CONSTRUCTION PLANS\28896.0000 - PDS-SITEWK - Mar 29, 2022 - 5:24 PM

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OUTLET TO FLAT AREA

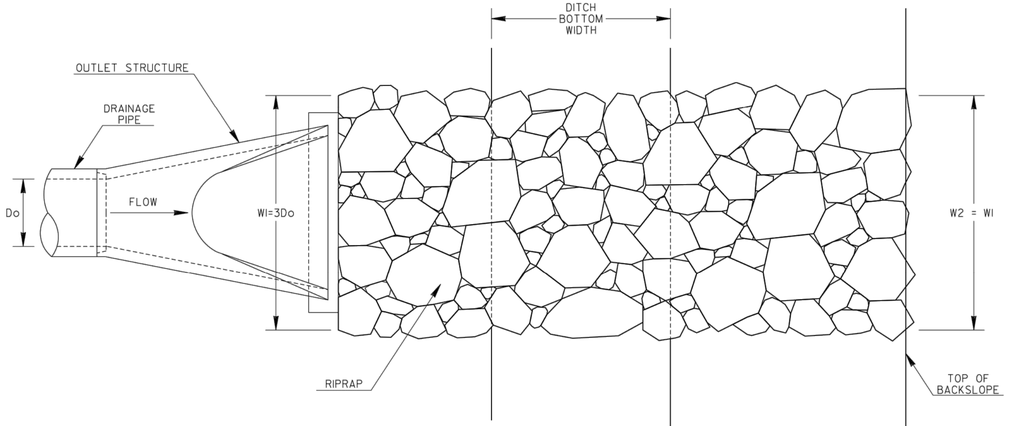


PLAN VIEW

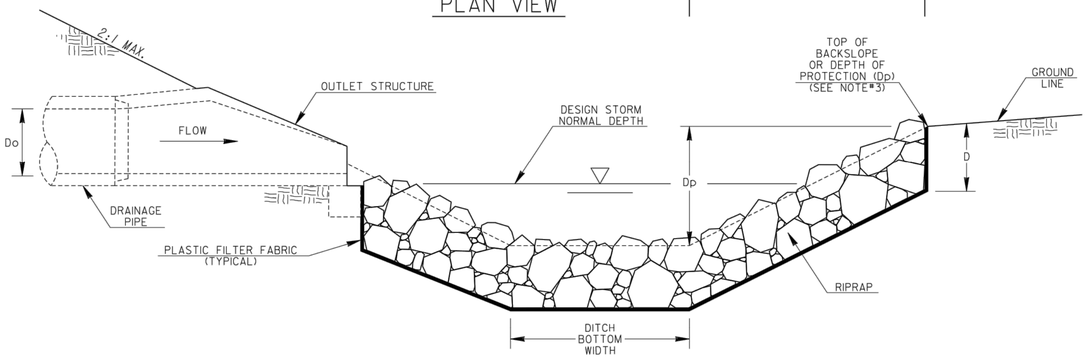


PROFILE VIEW

OUTLET PERPENDICULAR TO WELL-DEFINED CHANNEL



PLAN VIEW



PROFILE VIEW

GENERAL NOTES:

1. RIPRAP OUTLET PROTECTION SHOULD BE USED TO REDUCE A DRAINAGE STRUCTURE'S DISCHARGE VELOCITY. RIPRAP OUTLET PROTECTION IS SHOWN FOR GEORGIA STANDARD 1120, BUT IS INSTALLED SIMILARLY FOR OTHER DRAINAGE OUTLET STRUCTURES.

2. RIPRAP OUTLET PROTECTION SHALL BE DESIGNED IN ACCORDANCE WITH THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA". THE DESIGNER SHALL PROVIDE THE FOLLOWING IN THE PLANS: PIPE DIAMETER (Do), FLOW RATE OF DESIGN STORM (Q), VELOCITY (V), TAILWATER CONDITION (Tw), APRON LENGTH (La), APRON WIDTH AT DRAINAGE STRUCTURE (Wl), APRON WIDTH DOWNSTREAM (W2), AVERAGE STONE DIAMETER (d50), INSTALLATION DEPTH (D), AND TYPE OF RIPRAP WITH QUANTITY.

   THE MINIMUM DESIGN FOR RIPRAP OUTLET PROTECTION SHALL BE THE 25-YEAR STORM EVENT, BUT LARGER STORMS ARE RECOMMENDED.

3. THE APRON WIDTHS SHALL BE THE SAME WHEN THE DRAINAGE STRUCTURE DISCHARGES PERPENDICULAR INTO A WELL-DEFINED CHANNEL. THE LENGTH SHALL EXTEND ACROSS THE CHANNEL AND UP TO THE TOP OF THE CHANNEL BACKSLOPE OR 1-FOOT ABOVE THE NORMAL DEPTH OF THE CHANNEL'S DESIGN STORM (WHICHEVER IS LESS). THE DESIGNER SHALL PROVIDE THE DEPTH OF PROTECTION (Dp) IF THE APRON DOES NOT EXTEND TO THE TOP OF THE BACKSLOPE.

4. IF THE OUTLET HYDRAULICS REQUIRE A d50<=0.70 FEET, TYPE-3 RIPRAP MAY BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50<=1.20 FEET, TYPE-1 RIPRAP SHOULD BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50>1.20 FEET, THE DESIGNER SHALL DESIGN AND PROVIDE A SPECIAL DETAIL FOR APPROPRIATE OUTLET PROTECTION.

5. PLASTIC FILTER FABRIC IS REQUIRED UNDERNEATH RIPRAP APRON.

6. PAYMENT FOR RIPRAP SHALL BE MEASURED IN SQUARE YARDS FOR SPECIFIED INSTALLATION DEPTH. PAYMENT FOR PLASTIC FILTER FABRIC SHALL BE MEASURED IN SQUARE YARDS CONSISTENT WITH RIPRAP QUANTITY AND PAID FOR SEPARATELY.

Do	=	PIPE DIAMETER
Q	=	DESIGN STORM FLOW RATE
V	=	DESIGN STORM VELOCITY
Tw	=	TAILWATER CONDITION/DESIGN STORM NORMAL DEPTH
La	=	APRON LENGTH
Wl	=	APRON WIDTH UPSTREAM
W2	=	APRON WIDTH DOWNSTREAM
d50	=	AVERAGE STONE DIAMETER
D	=	INSTALLATION DEPTH
Dp	=	DEPTH OF PROTECTION

RIPRAP TYPE	REQUIRED d50 (FT)	MIN. DEPTH "D" (IN)
1	≤1.20	36
3	≤0.67	18

REVISION	DATE	BY

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

RIPRAP OUTLET PROTECTION
(SHEET 1 OF 2)

NO SCALE 4-22-2016

DESIGNED DLE
DRAWN DLE
TRACED ____
CHECKED ____

NUMBER D-55A

GEORGIA — REGISTERED PROFESSIONAL ENGINEER — NO. 036274 — NATHAN B. ANDREWS

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 1'

C3.8

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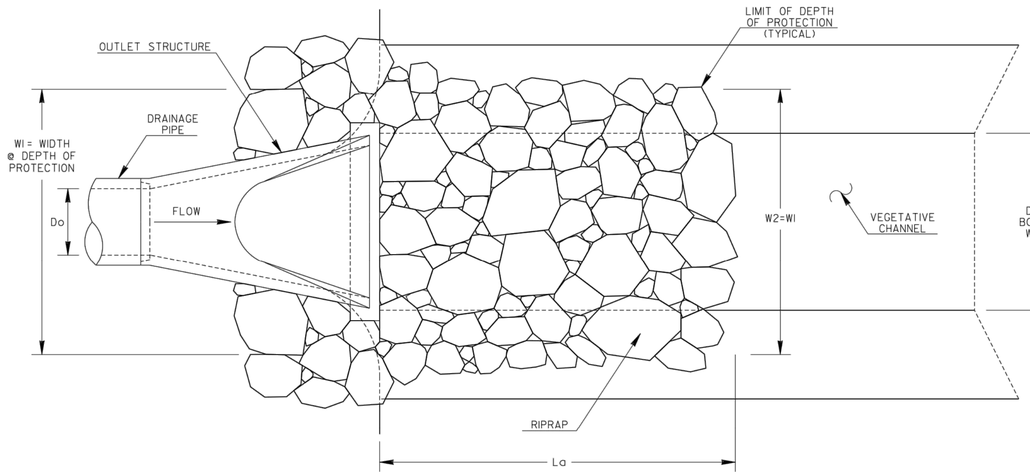
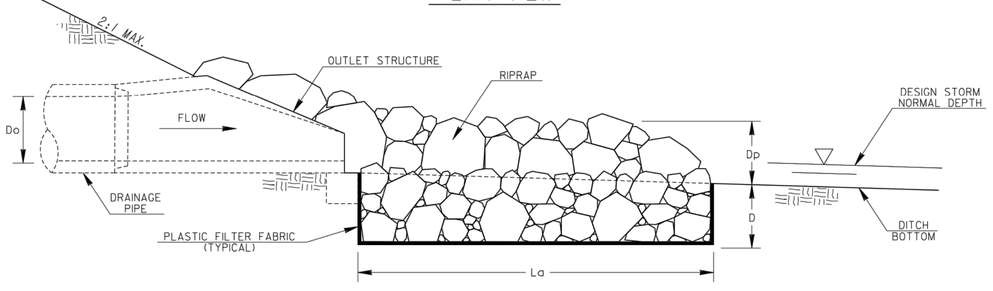
STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			

OUTLET PARALLEL TO WELL-DEFINED CHANNEL

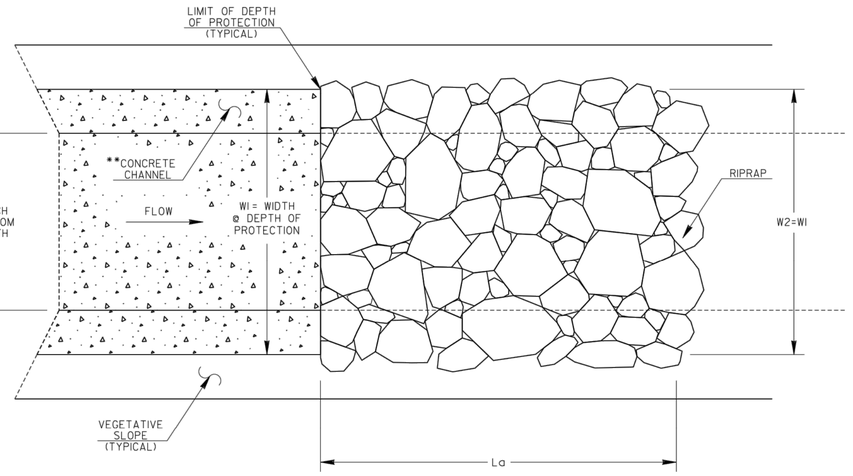


PLAN VIEW



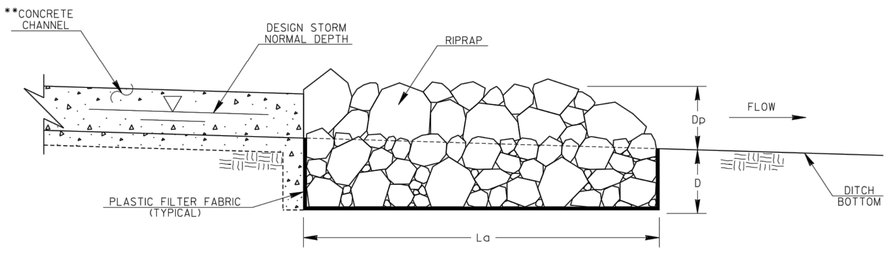
PROFILE VIEW

CONCRETE CHANNEL TO RIPRAP TRANSITION



**REFER TO CONSTRUCTION DETAIL D-10 FOR CONCRETE DITCH PAVING INFORMATION

PLAN VIEW



PROFILE VIEW

GENERAL NOTES:

1. RIPRAP OUTLET PROTECTION SHOULD BE USED TO REDUCE A DRAINAGE STRUCTURE'S DISCHARGE VELOCITY.
   RIPRAP OUTLET PROTECTION IS SHOWN FOR GEORGIA STANDARD 1120, BUT IS INSTALLED SIMILARLY FOR OTHER DRAINAGE OUTLET STRUCTURES.
   RIPRAP OUTLET PROTECTION IS SHOWN FOR A CONCRETE DITCH, BUT IS INSTALLED SIMILARLY TO TRANSITION FROM OTHER CHANNEL LININGS.

2. RIPRAP OUTLET PROTECTION SHALL BE DESIGNED IN ACCORDANCE WITH THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA".
   THE DESIGNER SHALL PROVIDE THE FOLLOWING IN THE PLANS: PIPE DIAMETER (Do), FLOW RATE OF DESIGN STORM (Q), VELOCITY (V), TAILWATER CONDITION (Tw), APRON LENGTH (La), APRON WIDTH AT DRAINAGE STRUCTURE (WI), APRON WIDTH DOWNSTREAM (W2), AVERAGE STONE DIAMETER (d50), INSTALLATION DEPTH (D), AND TYPE OF RIPRAP WITH QUANTITY.

   THE MINIMUM DESIGN FOR RIPRAP OUTLET PROTECTION SHALL BE THE 25-YEAR STORM EVENT, BUT LARGER STORMS ARE RECOMMENDED.

3. THE APRON WIDTHS SHALL BE THE SAME WHEN THE DRAINAGE STRUCTURE DISCHARGES PARALLEL INTO A WELL-DEFINED CHANNEL. THE APRON WIDTHS IN THIS CASE SHALL REPRESENT THE WIDTH AT THE DEPTH OF PROTECTION. THE RIPRAP SHALL BE INSTALLED TO THE TOP OF CHANNEL OR 1-FOOT ABOVE THE NORMAL DEPTH OF THE CHANNEL'S DESIGN STORM (WHICHEVER IS LESS). THE DESIGNER SHALL PROVIDE THE DEPTH OF PROTECTION (Dp) IF THE RIPRAP SHOULD NOT BE INSTALLED TO THE TOP OF THE CHANNEL. RIPRAP SHOULD ALSO BE INSTALLED TO ARMOR CHANNEL CORNER AT THE OUTLET STRUCTURE.

4. IF THE OUTLET HYDRAULICS REQUIRE A d50<=0.70 FEET, TYPE-3 RIPRAP MAY BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50<=1.20 FEET, TYPE-1 RIPRAP SHOULD BE USED.
   IF THE OUTLET HYDRAULICS REQUIRE A d50>1.20 FEET, THE DESIGNER SHALL DESIGN AND PROVIDE A SPECIAL DETAIL FOR APPROPRIATE OUTLET PROTECTION.

5. PLASTIC FILTER FABRIC IS REQUIRED UNDERNEATH RIPRAP APRON.

6. PAYMENT FOR RIPRAP SHALL BE MEASURED IN SQUARE YARDS FOR SPECIFIED INSTALLATION DEPTH. PAYMENT FOR PLASTIC FILTER FABRIC SHALL BE MEASURED IN SQUARE YARDS CONSISTENT WITH RIPRAP QUANTITY AND PAID FOR SEPARATELY.

RIPRAP TYPE	REQUIRED d50 (FT)	MIN. DEPTH "D" (IN)
1	≤1.20	36
3	≤0.67	18

Do = PIPE DIAMETER
Q = DESIGN STORM FLOW RATE
V = DESIGN STORM VELOCITY
Tw = TAILWATER CONDITION/DESIGN STORM NORMAL DEPTH
La = APRON LENGTH
WI = APRON WIDTH UPSTREAM AT DEPTH OF PROTECTION
W2 = APRON WIDTH DOWNSTREAM AT DEPTH OF PROTECTION
d50 = AVERAGE STONE DIAMETER
D = INSTALLATION DEPTH
Dp = DEPTH OF PROTECTION

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

CONSTRUCTION DETAILS

RIPRAP OUTLET PROTECTION
(SHEET 2 OF 2)

NO SCALE — 4-22-2016

DESIGNED DLE
DRAWN DLE
TRACED
CHECKED

NUMBER D-55B

GEORGIA REGISTERED PROFESSIONAL ENGINEER NATHAN B. VINES 035824 PROFESSIONAL

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

NO.	REVISIONS	BY	DATE

PERMIT SET - FOR REVIEW PURPOSES ONLY

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

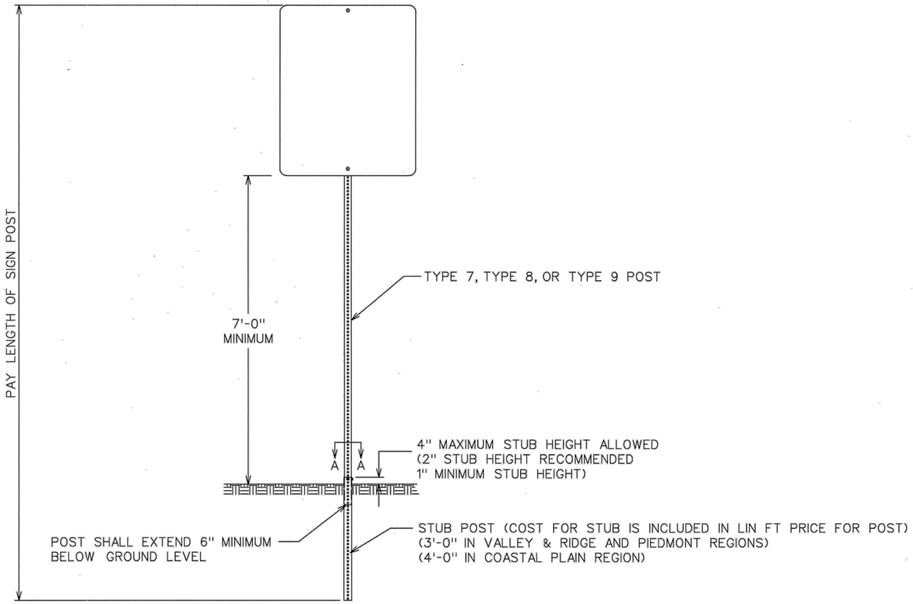
NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VNB
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 1'

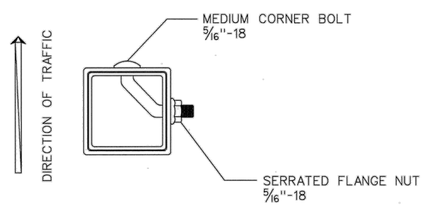
C3.9

STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
GA.			



FRONT VIEW

POST	STUB SIZE
TYPE 7	2¼" x 2¼"
TYPE 8	2¾" x 2¾"
TYPE 9	2½" x 2½"



SECTION A-A

SIGN POST SELECTION CHART

70 MPH Wind Load Chart + 15% Gust Factor

	SLIP BASE NOT REQUIRED				GROUND MOUNTED BREAKAWAY SIGN SUPPORT REQUIRED				
	TYPE 7 2"14 ga.		TYPE 9 2-1/4"14 ga.	TYPE 8 2-1/2"12 ga.	TYPE 8 2-1/2"12 ga.		TYPE 8 w/TYPE 9 Insert* 2-1/2"12 ga. W/2-1/4"14 ga.		
Sign Centroid	1 Post	2 Post	1 Post	1 Post	2 Post	3 Post	1 Post	2 Post	3 Post
	SQUARE FOOTAGE				SQUARE FOOTAGE				
6'	13.50	27.00	19.25	30.00	60.00	90.00	49.25	98.50	147.75
7'	11.60	23.20	16.50	25.75	51.50	77.25	42.25	84.50	126.75
8'	10.15	20.30	14.45	22.55	45.10	67.65	37.00	74.00	111.00
9'	9.00	18.00	12.85	20.00	40.00	60.00	32.85	65.70	98.55
10'	8.10	16.20	11.55	18.00	36.00	54.00	29.55	59.10	88.65
11'	7.40	14.80	10.50	16.40	32.80	49.20	26.90	53.80	80.70
12'	6.80	13.60	9.65	15.00	30.00	45.00	24.65	49.30	73.95
13'	6.25	12.50	8.90	13.85	27.70	41.55	22.75	45.50	68.25
14'	5.80	11.60	8.25	12.90	25.80	38.70	21.15	42.30	63.45
15'	5.00	10.00	6.45	10.10	20.20	30.30	16.55	33.10	49.65
16'	4.70	9.40	6.05	9.45	18.90	28.35	15.50	31.00	46.50
17'	4.40	8.80	5.70	8.90	17.80	26.70	14.60	29.20	43.80
18'	4.15	8.30	5.40	8.40	16.80	25.20	13.80	27.60	41.40
19'	3.95	7.90	5.10	7.95	15.90	23.85	13.05	26.10	39.15
20'	3.75	7.50	4.85	7.55	15.10	22.65	12.40	24.80	37.20

SIGN CENTROID IS DISTANCE FROM GROUND LEVEL TO BOTTOM OF SIGN *PLUS* HALF THE HEIGHT OF SIGN.
EXAMPLE: 24" X 48" SIGN THAT IS 7 FEET FROM GROUND TO BOTTOM OF SIGN. ADD HALF OF 48" (24" OR 2 FT) *PLUS* 7 FT. = 9' CENTROID.

SIGN PLATE SHALL NOT EXCEED 48" IN WIDTH ON A SINGLE POST.

* TYPE 9 INSERT SHALL BE A CONTINOUS POST INSERTED INTO THE TYPE 8 POST WHERE REQUIRED. THE INSERT POST SHALL EXTEND FROM THE BOTTOM OF THE SLIP BASE UPPER ASSEMBLY TO 4" BELOW THE BOTTOM OF THE SIGN. THE INSERT POST SHALL NOT EXTEND ABOVE THE BOTTOM OF THE SIGN. PAYMENT FOR THE INSERT POST SHALL BE PER LINEAR FOOT OF TYPE 9 POST.

GROUND MOUNTED BREAKAWAY SIGN SUPPORT WILL BE MEASURED AND PAID FOR SEPARATELY. THE COST FOR THIS WORK SHALL INCLUDE THE UPPER AND LOWER ASSEMBLY, STUB POST, CLASS "A" CONCRETE, ALL HARDWARE NECESSARY TO COMPLETE THE INSTALLATION, AND BE INCLUDED IN THE BID PRICE SUBMITTED FOR ITEM 636-3010.

DATE	REVISIONS

GEORGIA DEPARTMENT OF TRANSPORTATION
OFFICE OF TRAFFIC SAFETY & DESIGN

TYPE 7, 8, AND 9
SQUARE TUBE POST
INSTALLATION DETAIL

NO SCALE JULY 2002

T-3A

PCBDTB

PERMIT SET - FOR REVIEW PURPOSES ONLY

GEORGIA
JONATHAN B. DINKINS
PROFESSIONAL ENGINEER
PE 036214
PROFESSIONAL

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

PAVING, GRADING, AND DRAINAGE DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 1'

C3.10

Z:\28896.0001\CONSTRUCTION PLANS\SHEETS\T-3A.dgn Mar 29, 2022 - 5:24 PM

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST – STAND ALONE CONSTRUCTION PROJECTS

SWCD: COASTAL
PROJECT NAME: GA. HIGHWAY 30 GDOT ROAD IMPROVEMENTS
CITY/COUNTY: CITY OF PORT WENTWORTH / CHATHAM COUNTY

ADDRESS: BERRIEN RD, PORT WENTWORTH, GA 31407
DATE ON PLANS: 10/04/21
REVISED DATE: 03/29/22
NAME/EMAIL OF PERSON FILLING OUT CHECKLIST: NATHAN LONG / LONG.N@TANDH.COM

ATTACHED | YES

1. THE APPLICABLE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN CHECKLIST ESTABLISHED BY THE COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED. (THE COMPLETED CHECKLIST MUST BE SUBMITTED WITH THE ES&PC PLAN OR THE PLAN WILL NOT BE REVIEWED.) (PERMIT IV.D.1 PG 26)

PLEASE FIND THE CURRENT STAND ALONE EROSION, SEDIMENTATION AND POLLUTION CONTROL CHECKLIST ATTACHED WITH THIS PLAN.

ALL | YES

2. LEVEL II CERTIFICATION NUMBER ISSUED BY THE COMMISSION, SIGNATURE AND SEAL OF THE CERTIFIED DESIGN PROFESSIONAL. (SIGNATURE, SEAL AND LEVEL II NUMBER MUST BE ON EACH SHEET PERTAINING TO ES&PC PLAN OR THE PLAN WILL NOT BE REVIEWED)

PLEASE FIND ON EACH SHEET OF THIS PLAN THE GSWCC LEVEL II CERTIFICATION NUMBER, SIGNATURE AND SEAL FOR MR. NATHAN B. LONG, P.E.

EC1.1 | YES
EC2.1-4.2

3. LIMIT OF DISTURBANCE SHALL BE NO GREATER THAN 50 ACRES AT ANY ONE TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE EPD DISTRICT OFFICE. IF EPD APPROVES THE REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME, THE PLAN MUST INCLUDE AT LEAST 4 OF THE BMPs LISTED IN APPENDIX 1 OF THIS CHECK LIST. (A COPY OF THE THE WRITTEN APPROVAL BY EPD MUST BE ATTACHED TO THE PLAN FOR THE PLAN TO BE REVIEWED. (PERMIT IV.D3 PG 27)

AREA OF DISTURBANCE DOES NOT EXCEED 50 ACRES.

EC1.1 | YES

4. THE NAME AND PHONE NUMBER OF 24-HOUR LOCAL CONTACT RESPONSIBLE FOR EROSION, SEDIMENTATION AND POLLUTION CONTROLS. (PERMIT II.B.1.c PG 12)

NATHAN B. LONG
(912) 721 – 4181

EC1.1 | YES

5. PROVIDE NAME, ADDRESS, EMAIL ADDRESS AND PHONE NUMBER OF PRIMARY PERMITTEE. (PERMIT II.B.1 b PG 12)

PORT WENTWORTH TOWNHOMES GA, LLC
5553 PEACHTREE ROAD, SUITE 170
CHAMBLEE, GA 30341
MR. LEE TERRY
(404) 795-8301; LTERRY@CLARETCOMMUNITIES.COM

EC1.1 | YES

6. NOTE TOTAL AND DISTURBED ACREAGE OF THE PROJECT OR PHASE UNDER CONSTRUCTION. (PERMIT IV.D.2 c PG 27)

TOTAL ACREAGE IS APPROXIMATELY 4.6 ACRES (BETWEEN R/W)
TOTAL DISTURBED ACREAGE FOR THE PROJECT IS 3.9 ACRES.

EC1.1 | YES

7. PROVIDE THE GPS LOCATION OF THE CONSTRUCTION EXIT FOR THE SITE. GIVE THE LATITUDE AND LONGITUDE IN DECIMAL DEGREES. PERMIT II.B.1 a PG 12

CONSTRUCTION EXIT IS LOCATED AT:
LAT: N032.1965 ; LONG: W081.2075

ALL | YES

8. INITIAL DATE OF THE PLAN AND THE DATES OF ANY REVISIONS MADE TO THE PLAN INCLUDING THE ENTITY WHO REQUESTED THE REVISIONS.

PLEASE FIND THE INITIAL DATE OF THE PLAN AND ALL REVISIONS ON THE COVER SHEET AS WELL AS EACH SHEET OF THE PLAN.

EC1.1 | YES

9. DESCRIPTION OF THE NATURE OF CONSTRUCTION ACTIVITY. (PERMIT IV.D.2 a PG 27)

CONSTRUCTION ACTIVITY FOR HIGHWAY 30 DOT IMPROVEMENTS INCLUDE THE CONSTRUCTION OF 2 PROPOSED LEFT TURN LANES, 2 PROPOSED RIGHT TURN LANES, AND WIDENING/ADJUSTMENTS TO THE SHOULDER.

COVER | YES

10. PROVIDE VICINITY MAP SHOWING SITE'S RELATION TO SURROUNDING AREAS. INCLUDE DESIGNATION OF SPECIFIC PHASE, IF NECESSARY. (PERMIT IV.D.2 e PG 27)

VICINITY MAP SHOWN ON THE COVER SHEET OF THE PLANS

EC1.1,EC1.3 YES

11. IDENTIFY THE PROJECT RECEIVING WATERS AND DESCRIBE ALL SENSITIVE ADJACENT AREAS INCLUDING STREAMS, LAKES, RESIDENTIAL AREAS, WETLANDS, MARSHLANDS, ETC. WHICH MAY BE AFFECTED. (PERMIT IV.D.2.f PG 27)

THE PROJECT DISCHARGES TO AN EXISTING DITCH LEADING TO LITTLE HEARST BRANCH AND BLACK CREEK. THE EVENTUAL RECEIVING WATER IS THE SAVANNAH RIVER.

EC1.1 | YES

12. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE SITE WAS VISITED PRIOR TO DEVELOPMENT OF THE ES&PC PLAN AS STATED ON PART 1V PAGE 19 OF THE PERMIT.

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR AUTHORIZED AGENT UNDER MY SUPERVISION.

NATHAN B. LONG, PE
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION #0000024602
EXPIRATION DATE: 11/29/24

EC1.1 | YES

13. DESIGN PROFESSIONAL'S CERTIFICATION STATEMENT AND SIGNATURE THAT THE PERMITTEE'S ES&PC PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BMP'S AND SAMPLING TO MEET PERMIT REQUIREMENTS AS STATED ON PART IV PAGE 19 OF THE PERMIT.

I CERTIFY THAT THE PERMITEE'S EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY I OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100001.

NATHAN B. LONG, PE
GSWCC LEVEL II DESIGN PROFESSIONAL
CERTIFICATION #0000024602
EXPIRATION DATE: 11/29/24

EC1.1 | YES

14. CLEARLY NOTE THE STATEMENT THAT "THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION, IN ACCORDANCE WITH PART IV.A.5 PAGE 25 OF THE PERMIT.

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7 DAYS AFTER INSTALLATION.

DESIGN PROFESSIONAL 7-DAY VISIT CERTIFICATION

DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPs WITHIN 7 DAYS AFTER INSTALLATION.

DATE OF INSPECTION: _____

I CERTIFY THE SITE WAS _____ WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.

_____ _____
GSWCC LEVEL II DESIGN PROFESSIONAL CERTIFICATION #

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN

_____
_____
_____
_____

THESE DEFICIENCIES MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED.

EC1.1 | YES

15. CLEARLY NOTE THE STATEMENT THAT "NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50-FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS." (PART IV.(I)-(iv) PG 19-24 OF THE PERMIT).

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

EC1.1 | YES

16. PROVIDE A DESCRIPTION OF ANY BUFFER ENCROACHMENTS AND INDICATE WHETHER A BUFFER VARIANCE IS REQUIRED.

NO BUFFER ENCROACHMENTS. NO VARIANCE REQUIRED.

EC1.1 | YES

17. CLEARLY NOTE THE STATEMENT THAT "AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.", (PART IV.C PG 26 OF PERMIT).

AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

EC1.1 | YES

18. CLEARLY NOTE THE STATEMENT THAT "WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT. (PERMIT IV.D.3.c(1) PG 30).

WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

EC1.1 | YES

19. CLEARLY NOTE THE STATEMENT THAT "THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES."

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

EC1.1 | YES

20. CLEARLY NOTE THE STATEMENT THAT "EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE."

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

EC1.1 | YES

21. CLEARLY NOTE THE STATEMENT "ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING." (PERMIT IV.D.3.a.(1) PG 28).

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

EC1.1 | YES

22. ANY CONSTRUCTION ACTIVITY WHICH DISCHARGES STORM WATER INTO AN IMPAIRED STREAM SEGMENT, OR WITHIN 1 LINEAR MILE UPSTREAM OF AND WITHIN THE SAME WATERSHED AS, ANY PORTION OF AN BIOTA IMPAIRED STREAM SEGMENT MUST COMPLY WITH PART III.C. OF THE PERMIT. INCLUDE THE COMPLETED APPENDIX 1 LISTING ALL THE BMP'S THAT WILL BE USED FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO THE IMPAIRED STREAM SEGMENT. (PART III.C.2.A – V. PG 19-21)

THE SITE IS LOCATED MORE THAN 1 LINEAR MILE UPSTREAM OF THE NEAREST IMPAIRED STREAM SEGMENT.

EC1.1 | YES

23. IF A TMDL IMPLEMENTATION PLAN FOR SEDIMENT HAS BEEN FINALIZED FOR THE IMPAIRED STREAM SEGMENT (IDENTIFIED IN ITEM 22 ABOVE) AT LEAST SIX MONTHS PRIOR TO SUBMITTAL OF NOI, THE ES&PC PLAN MUST ADDRESS ANY SITE-SPECIFIC CONDITIONS OR REQUIREMENTS INCLUDED IN THE TMDL IMPLEMENTATION PLAN. (PERMIT III.C.1 PG 15)

THE SITE IS LOCATED MORE THAN 1 LINEAR MILE UPSTREAM OF THE NEAREST IMPAIRED STREAM SEGMENT.

PLAN | YES

24. BMP'S FOR CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REAR OF THE VEHICLES. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED, (PERMIT IV.D.3.c(6) PG 31).

THERE SHALL BE NO CONCRETE WASHDOWN OF TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND THE REARS OF THE VEHICLES. IN ADDITION, THE WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED AND SHOULD BE DONE OFFSITE.

EC1.1 | YES

25. PROVIDE BMP'S FOR THE REMEDIATION OF ALL PETROLEUM SPILLS AND LEAKS, (PERMIT IV.D.3.c.(5) PG 31).

PETROLEUM BASED PRODUCTS- CONTAINERS FOR PRODUCTS SUCH AS FUELS, LUBRICANTS AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. THIS INCLUDES ON-SITE VEHICLE AND MACHINERY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE FOR SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATER, NATURAL DRAINS AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS. HAVE EQUIPMENT TO CONTAIN AND CLEAN UP PETROLEUM SPILLS IN FUEL STORAGE AREAS OR ON MAINTENANCE AND FUELING VEHICLES. STORE IN COVERED AREAS PROTECTED WITH DIKES. REGULARLY INSPECT FOR CRACKS OR LEAKAGE IN CONTAINERS/TANKS.

SPILL CLEANUP AND CONTROL PRACTICES

- LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL.
- MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST, AND PROPERLY LABELED PLASTIC AND MEAL WASTE CONTAINERS.
- SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS.
- FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER), THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-800-424-8802.
- FOR SPILLS OF AN UNKNOWN AMOUNT, THE NATIONAL CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS
- FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE GEORGIA EPD WILL BE CONTACTED WITHIN 24 HOURS.
- FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

EC1.1 | YES

26. DESCRIPTION OF THE MEASURES THAT WILL BE INSTALLED DURING THE CONSTRUCTION PROCESS TO CONTROL POLLUTANTS IN STORM WATER THAT WILL OCCUR AFTER CONSTRUCTION OPERATIONS HAVE BEEN COMPLETED. (PERMIT IV.D.3.b PG 29).

THE MAIN PERMANENT EROSION CONTROL PRACTICE AT DRAINAGE DISCHARGES IS RIP-RAP. RIP-RAP IS INSTALLED ON ALL DOWNSTREAM DRAINAGE LOCATIONS. PERMANENT GRASSING AND LANDSCAPING WILL BE INSTALLED TO PROTECT EARTHEN AREAS FROM EROSION ONCE CONSTRUCTION IS COMPLETE.

EC1.1 | YES

27. DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE, (PERMIT IV.D.3.c.(2) PG 30).

THE PLAN MUST CONTAIN A DESCRIPTION OF MEASURES, SUCH AS PLASTIC SHEETING OR TEMPORARY ROOFS, TO COVER BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS IN ORDER TO MINIMIZE EXPOSURE TO PRECIPITATION AND TO STORMWATER.

EC1.1 | YES

28. DESCRIPTION OF THE PRACTICES THAT WILL BE USED TO REDUCE THE POLLUTANTS IN STORM WATER DISCHARGES. (PERMIT IV PG 24)

POLLUTANT PREVENTION

THE FOLLOWING MATERIALS ARE EXPECTED ONSITE DURING CONSTRUCTION: PETROLEUM BASED FUELS AND LUBRICANTS FOR EQUIPMENT, ADDITIVES FOR SOIL STABILIZATION, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, CONCRETE PRODUCTS, ASPHALT, TAR, LUMBER, , PAINTS/STAINS/FINISHING TREATMENTS, PAINT SOLVENTS, CLEANING SOLVENTS, PLASTICS AND METAL PIPES.

PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISK OF SPILLS FROM DISCHARGING INTO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

- QUANTITIES ONSITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.
- PRODUCTS AND MATERIALS WILL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
- PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER'S LABELS LEGIBLE AND VISIBLE.
- PRODUCT MIXING, DISPOSAL, AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
- THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE AND DISPOSAL.

PRODUCT SPECIFIC PRACTICES

FERTILIZER/HERBICIDES/PESTICIDES/DETERGENTS- THESE WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS. DO NOT DISCHARGE WASH WATER INTO STORM WATER SYSTEM. INSTALL CURBS OR DIKES AROUND STORAGE AREA TO PROTECT AGAINST SPILLS. LIMIT USE OF DETERGENTS ON-SITE.

PAINTS/FINISHES/SOLVENTS- ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING- CONCRETE WASHOUT SHALL OCCUR ONLY IN THE WASH PAD VICINITY DELINEATED IN THE PLANS.

BUILDING MATERIALS- NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NATHAN B. LONG

NATHAN B. LONG
REGISTERED
GEORGIA
PROFESSIONAL
ENGINEER
0000024602

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

ES & PC NOTES

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

EC1.1

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EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST – STAND ALONE CONSTRUCTION PROJECTS

SWCD: COASTAL
PROJECT NAME: GA. HIGHWAY 30 GDOT ROAD IMPROVEMENTS
CITY/COUNTY: CITY OF PORT WENTWORTH / CHATHAM COUNTY

ADDRESS: BERRIEN RD, PORT WENTWORTH, GA 31407
DATE ON PLANS: 10/04/21
REVISED DATE: 03/29/22
NAME/EMAIL OF PERSON FILLING OUT CHECKLIST: NATHAN LONG / LONG.N@TANDH.COM

EC1.2 | YES 29. DESCRIPTION AND CHART OR TIMELINE OF THE INTENDED SEQUENCE OF MAJOR ACTIVITIES WHICH DISTURB SOILS FOR THE MAJOR PORTIONS OF THE SITE (I.E., INITIAL PERIMETER AND SEDIMENT STORAGE BMP'S, CLEARING AND GRUBBING ACTIVITIES, EXCAVATION ACTIVITIES, UTILITY ACTIVITIES, TEMPORARY AND FINAL STABILIZATION). (PERMIT IV.D.2b PG 27)

A SPECIFIED WORK SCHEDULE IS NEEDED TO COORDINATE THE TIMING OF LAND DISTURBING ACTIVITIES WITH THE INSTALLATION OF EROSION AND SEDIMENTATION CONTROL MEASURES.

THE PURPOSE OF THE SCHEDULE IS TO REDUCE ON–SITE EROSION AND OFF–SITE SEDIMENTATION BY PERFORMING LAND DISTURBING ACTIVITIES AND INSTALLING EROSION AND SEDIMENTATION CONTROL PRACTICES IN ACCORDANCE WITH A PLANNED SCHEDULE.

IN PLANNING CONSTRUCTION WORK, IT MAY BE HELPFUL TO OUTLINE ALL LAND DISTURBING ACTIVITIES NECESSARY TO COMPLETE THE PROPOSED PROJECT. THEN LIST ALL PRACTICES NEEDED TO CONTROL EROSION AND SEDIMENTATION ON THE SITE. THESE TWO LISTS CAN THEN BE COMBINED IN LOGICAL ORDER TO PROVIDE A PRACTICAL AND EFFECTIVE CONSTRUCTION SEQUENCE SCHEDULE THAT BECOMES PART OF THE EROSION AND SEDIMENTATION CONTROL PLAN.

CONSTRUCTION ACTIVITY	SCHEDULE CONSIDERATION
1. OBTAIN ALL PLAN APPROVALS AND OTHER APPLICABLE PERMITS.	
2. FLAG THE WORK LIMITS AND MARK THE TREES AND BUFFER AREAS FOR PROTECTION.	
3. HOLD PRE CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION.	
4. CONSTRUCTION ACCESS – CONSTRUCTION ENTRANCE, CONSTRUCTION ROUTES, EQUIPMENT PARKING AREAS.	FIRST LAND DISTURBING ACTIVITY – INSTALL PERIMETER BMP, STABILIZE BARE AREAS IMMEDIATELY WITH GRAVEL AND TEMPORARY VEGETATION AS CONSTRUCTION TAKES PLACE.
5. SEDIMENT TRAPS AND BARRIERS – BASIN TRAPS, SEDIMENT FENCES, AND OUTLET PROTECTION.	INSTALL PRINCIPAL BASINS AFTER CONSTRUCTION SITE IS ACCESSED. INSTALL ADDITIONAL TRAPS AND BARRIERS AS NEEDED DURING GRADING.
6. RUNOFF CONTROL – DIVERSIONS, PERIMETER DIKES, WATER BARS, AND OUTLET PROTECTION.	INSTALL KEY PRACTICES AFTER PRINCIPAL SEDIMENT TRAPS AND BEFORE LAND GRADING. INSTALL ADDITIONAL RUNOFF–CONTROL MEASURES DURING GRADING.
7. RUNOFF CONVEYANCE SYSTEM– STABILIZE STREAM BANKS, STORM DRAINS, CHANNELS, INLET AND OUTLET PROTECTION, SLOPE DRAINS.	WHERE NECESSARY, STABILIZE STREAM BANKS AS EARLY AS POSSIBLE. INSTALL PRINCIPAL RUNOFF CONVEYANCE SYSTEM WITH RUNOFF–CONTROL MEASURES. INSTALL REMAINDER OF SYSTEM AFTER GRADING.
8. LAND CLEARING AND GRADING – SITE PREPARATION CUTTING, FILLING AND GRADING, SEDIMENTATION TRAPS, BARRIERS, DIVERSIONS, DRAINS,SURFACE ROUGHENING.	BEGIN MAJOR CLEARING AND GRADING AFTER PRINCIPAL SEDIMENT AND KEY RUNOFF – CONTROL MEASURES ARE INSTALLED. INSTALL ADDITIONAL CONTROL MEASURES AS GRADING PROGRESSES. MARK TREES AND BUFFER AREAS FOR PRESERVATION.
9. SURFACE STABILIZATION – TEMPORARY AND PERMANENT SEEDING, MULCHING, SODDING, RIPRAP.	APPLY TEMPORARY OR PERMANENT STABILIZATION MEASURES IMMEDIATELY ON ALL DISTURBED AREAS WHERE WORK IS DELAYED OR COMPLETE.
10. BUILDING CONSTRUCTION– BUILDINGS UTILITIES, PAVING.	INSTALL NECESSARY EROSION AND SEDIMENTATION CONTROL PRACTICES AS WORK TAKES PLACE.
11. LANDSCAPING AND FINAL STABILIZATION – TOPSOILING, TREES AND SHRUBS, PERMANENT SEEDING, MULCHING, SODDING RIPRAP.	LAST CONSTRUCTION PHASE––STABILIZE ALL OPEN AREAS, INCLUDING BORROW AND SPOIL AREAS. REMOVE AND STABILIZE ALL TEMPORARY CONTROL MEASURES.

CONSTRUCTION SCHEDULE

ACTIVITY	MONTH 1	3	5	8	10	12
PERIMETER BMPS	■					
SITE CLEARING	■	■				
TEMPORARY SEDIMENT CONTROL BMPS	■					
SITE GRADING		■	■			
TEMPORARY GRASSING		■	■	■		
UTILITY INSTALLATION		■	■	■		
ROAD CONSTRUCTION			■	■	■	
SITE PAVING				■	■	
BUILDING CONSTRUCTION			■	■	■	■
PERMANENT GRASSING					■	■
FINAL STABILIZATION/ BMP REMOVAL						■
BMP MAINTENANCE	■	■	■	■	■	■

EC1.2 | YES 30. PROVIDE COMPLETE REQUIREMENTS OF INSPECTIONS AND RECORD KEEPING BY THE PRIMARY PERMITEE, (PERMIT IV.D.4.a PG 31–33).

INSPECTIONS AND RECORD KEEPING

A. PRIMARY PERMITTEE:

1. EACH DAY WHEN ANY TYPE OF CONSTRUCTION ACTIVITY HAS TAKEN PLACE AT A PRIMARY PERMITTEE'S SITE, CERTIFIED PERSONNEL PROVIDED BY THE PRIMARY PERMITTEE SHALL INSPECT: (a) ALL AREAS OF THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT. (b) ALL LOCATIONS AT THE PRIMARY PERMITTEE'S SITE WHERE VEHICLES ENTER OR EXIT THE SITE FOR EVIDENCE OF OFF–SITE SEDIMENT TRACKING. THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
2. MEASURE AND RECORD RAINFALL WITHIN DISTURBED AREAS OF THE SITE THAT HAVE NOT MET FINAL STABILIZATION ONCE EVERY 24 HOURS EXCEPT ANY NON–WORKING SATURDAY, NON–WORKING SUNDAY AND NON–WORKING FEDERAL HOLIDAY. THE DATA COLLECTED FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY. MEASUREMENT OF RAINFALL MAY BE SUSPENDED IF ALL AREAS OF THE SITE HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION.
3. CERTIFIED PERSONAL (PROVIDED BY THE PRIMARY PERMITTEE) SHALL INSPECT THE FOLLOWING AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM THAT IS 0.5 INCHES OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00PM ON ANY FRIDAY OR ON ANY NON–WORKING SATURDAY, NON–WORKING SUNDAY OR ANY FEDERAL HOLIDAY IN WHICH CASE THE INSPECTION SHALL BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AND/OR WORKING DAY, WHICHEVER OCCURS FIRST): (a) DISTURBED AREAS OF THE PRIMARY PERMITTEE'S CONSTRUCTION SITE. (b) AREAS USED BY THE PRIMARY PERMITTEE FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO PRECIPITATION. AND (c) STRUCTURAL CONTROL MEASURES. EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN APPLICABLE TO THE PRIMARY PERMITTEE'S SITE SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S). FOR AREAS OF A SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION, THE PERMITTEE MUST COMPLY WITH PART IV.D.4.a.(4). THESE INSPECTIONS MUST BE CONDUCTED UNTIL A NOTICE OF TERMINATION IS SUBMITTED.
4. CERTIFIED PERSONNEL (PROVIDED BY PRIMARY PERMITTEE) SHALL INSPECT AT LEAST ONCE PER MONTH DURING THE TERM OF THIS PERMIT (I.e. UNTIL A NOTICE OF TERMINATION HAS BEEN SUBMITTED) THE AREAS OF THE SITE THAT HAVE UNDERGONE FINAL STABILIZATION OR ESTABLISHED A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET PERENNIALS APPROPRIATE FOR THE REGION. THESE AREAS SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE DRAINAGE SYSTEM AND THE RECEIVING WATER(S). EROSION AND SEDIMENT CONTROL MEASURES IDENTIFIED IN THE PLAN SHALL BE OBSERVED TO ENSURE THAT THEY ARE OPERATING CORRECTLY. WHERE DISCHARGE LOCATIONS OR POINTS ARE ACCESSIBLE, THEY SHALL BE INSPECTED TO ASCERTAIN WHETHER EROSION CONTROL MEASURES ARE EFFECTIVE IN PREVENTING SIGNIFICANT IMPACTS TO RECEIVING WATER(S).
5. BASED ON THE RESULTS OF EACH INSPECTION, THE SITE DESCRIPTION AND THE POLLUTION PREVENTION AND CONTROL MEASURES IDENTIFIED IN THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, THE PLAN SHALL BE REVISED AS APPROPRIATE NOT LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION. IMPLEMENTATION OF SUCH CHANGES SHALL BE MADE AS SOON AS PRACTICAL BUT IN NO CASE LATER THAN SEVEN (7) CALENDAR DAYS FOLLOWING EACH INSPECTION.
6. A REPORT OF EACH INSPECTION THAT INCLUDES THE NAME(S) OF CERTIFIED PERSONNEL MAKING EACH INSPECTION, THE DATE(S) OF EACH INSPECTION, CONSTRUCTION PHASE (I.E., INITIAL, INTERMEDIATE OR FINAL), MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN, AND ACTIONS TAKEN IN ACCORDANCE WITH PART IV.D.4.a.(5). OF THE PERMIT SHALL BE MADE AND RETAINED AT THE SITE OR BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION UNTIL THE ENTIRE SITE OR THAT PORTION OF A CONSTRUCTION PROJECT THAT HAS BEEN PHASED HAS UNDERGONE FINAL STABILIZATION AND A NOTICE OF TERMINATION IS SUBMITTED TO EPD. SUCH REPORTS SHALL BE READILY AVAILABLE BY END OF THE SECOND BUSINESS DAY AND/OR WORKING DAY AND SHALL IDENTIFY ALL INCIDENTS OF BEST MANAGEMENT PRACTICES THAT HAVE NOT BEEN PROPERLY INSTALLED AND/OR MAINTAINED AS DESCRIBED IN THE PLAN. WHERE THE REPORT DOES NOT IDENTIFY ANY INCIDENTS, THE INSPECTION REPORT SHALL CONTAIN A CERTIFICATION THAT THE BEST MANAGEMENT PRACTICES ARE IN COMPLIANCE WITH THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN. THE REPORT SHALL BE SIGNED IN ACCORDANCE WITH PART V.G.2 OF THIS PERMIT.

AN "EROSION & SEDIMENTATION INSPECTION AND MAINTENANCE REPORT" SHEET IS ATTACHED. SHOULD THE INSPECTION REVEAL ANY DEFICIENCIES, A COPY SHALL BE SENT TO:

MR. NATHAN LONG, P.E.
THOMAS AND HUTTON
50 PARK OF COMMERCE WAY,
SAVANNAH, GA 31405
(912) 234–5300

EC1.2 | YES 31. PROVIDE COMPLETE REQUIREMENTS OF SAMPLING FREQUENCY AND REPORTING OF SAMPLING RESULTS. (PART IV.D.6.d PG 35–37 & PART IV.E PG 37)

SAMPLING REQUIREMENTS. THIS PERMIT REQUIRES THE MONITORING OF NEPHELOMETRIC TURBIDITY IN RECEIVING WATER(S) OR OUTFALLS IN ACCORDANCE WITH THIS PERMIT. THIS PARAGRAPH SHALL NOT APPLY TO ANY LAND DISTURBANCE ASSOCIATED WITH THE CONSTRUCTION OF SINGLE–FAMILY HOMES WHICH ARE NOT PART OF A SUBDIVISION OR PLANNED COMMON DEVELOPMENT UNLESS FIVE (5) ACRES OR MORE WILL BE DISTURBED. THE FOLLOWING PROCEDURES CONSTITUTE EPD'S GUIDELINES FOR SAMPLING TURBIDITY.

a. SAMPLING REQUIREMENTS SHALL INCLUDE THE FOLLOWING:

(1) A USGS TOPOGRAPHIC MAP, A TOPOGRAPHIC MAP OR A DRAWING (REFERRED TO AS A TOPOGRAPHIC MAP) THAT IS A SCALE EQUAL TO OR MORE DETAILED THAN A 1:24000 MAP SHOWING THE LOCATION OF THE SITE OR THE STAND ALONE CONSTRUCTION; (a) THE LOCATION OF ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORM WATER IS DISCHARGED AND (b) THE RECEIVING WATER AND/OR OUTFALL SAMPLING LOCATIONS. WHEN THE PERMITTEE HAS CHOSEN TO USE A USGS TOPOGRAPHIC MAP AND THE RECEIVING WATER(S) IS NOT SHOWN ON THE USGS TOPOGRAPHIC MAP, THE LOCATION FOR THE RECEIVING WATER(S) MUST BE HAND–DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORM WATER(S) ENTERS THE RECEIVING WATER(S) TO THE POINT WHERE THE RECEIVING WATER(S) COMBINES WITH THE FIRST BLUE LINE STREAM SHOWN ON THE USGS TOPOGRAPHIC MAP;

(2) A WRITTEN NARRATIVE OF SITE SPECIFIC ANALYTICAL METHODS USED TO COLLECT, HANDLE AND ANALYZE THE SAMPLES INCLUDING QUALITY CONTROL/QUALITY ASSURANCE PROCEDURES. THIS NARRATIVE MUST INCLUDE PRECISE SAMPLING METHODOLOGY FOR EACH SAMPLING LOCATION;

(3) WHEN THE PERMITTEE HAS DETERMINED THAT SOME OR ALL OUTFALLS WILL BE SAMPLED, A RATIONALE MUST BE INCLUDED ON THE PLAN FOR THE NTU LIMIT(S) SELECTED FROM APPENDIX b. THIS RATIONALE MUST INCLUDE THE SIZE OF THE CONSTRUCTION SITE, THE CALCULATION OF THE SIZE OF THE SURFACE WATER DRAINAGE AREA, AND THE TYPE OF RECEIVING WATER(S) (I.E., TROUT STREAM OR SUPPORTING WARM WATER FISHERIES); AND

(4) ANY ADDITIONAL INFORMATION EPD DETERMINES NECESSARY TO BE PART OF THE PLAN. EPD WILL PROVIDE WRITTEN NOTICE TO THE PERMITTEE OF THE INFORMATION NECESSARY AND THE TIME LINE FOR SUBMITTAL.

b. SAMPLE TYPE, ALL SAMPLING SHALL BE COLLECTED BY "GRAB SAMPLES" AND THE ANALYSIS OF THESE SAMPLES MUST BE CONDUCTED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 (UNLESS OTHER TEST PROCEDURES HAVE BEEN APPROVED); THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT, EPA 833–B–92–001" AND GUIDANCE DOCUMENTS THAT MAY BE PREPARED BY THE EPD.

1. SAMPLE CONTAINERS SHOULD BE LABELED PRIOR TO COLLECTING THE SAMPLES.
2. SAMPLES SHOULD BE WELL MIXED BEFORE TRANSFERRING TO A SECONDARY CONTAINER.
3. LARGE MOUTH, WELL CLEANED AND RINSED GLASS OR PLASTIC JARS SHOULD BE USED FOR COLLECTING SAMPLES. THE JARS SHOULD BE CLEANED THOROUGHLY TO AVOID CONTAMINATION.
4. MANUAL, AUTOMATIC OR RISING STAGE SAMPLING MAY BE UTILIZED. SAMPLES REQUIRED BY THIS PERMIT SHOULD BE ANALYZED IMMEDIATELY, BUT IN NO CASE LATER THAN 48 HOURS AFTER COLLECTION. HOWEVER, SAMPLES FROM AUTOMATIC SAMPLERS MUST BE COLLECTED NO LATER THAN THE NEXT BUSINESS DAY AFTER THEIR ACCUMULATION, UNLESS FLOW THROUGH AUTOMATED ANALYSIS IS UTILIZED. IF AUTOMATIC SAMPLING IS UTILIZED AND THE AUTOMATIC SAMPLER IS NOT ACTIVATED DURING THE QUALIFYING EVENT, THE PERMITTEE MUST UTILIZE MANUAL SAMPLING OR RISING STAGE SAMPLING DURING THE NEXT QUALIFYING EVENT. DILUTION OF SAMPLES IS NOT REQUIRED. SAMPLES MAY BE ANALYZED DIRECTLY WITH A PROPERLY CALIBRATED TURBIDIMETER. SAMPLES ARE NOT REQUIRED TO BE COOLED.
5. SAMPLING AND ANALYSIS OF THE RECEIVING WATER(S) OR OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THE PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E. OF THE PERMIT.

c. SAMPLING POINTS: THERE WILL BE 3 STORM WATER SAMPLING LOCATIONS. THE SAMPLING LOCATION WILL BE THE DOWNSTREAM POINTS, PER NPDES PERMIT GAR 100001, FOR CONSTRUCTION ACTIVITIES, THE PRIMARY PERMITTEE MUST COMPLETE ALL SAMPLING.

1. FOR CONSTRUCTION ACTIVITIES THE PRIMARY PERMITTEE MUST SAMPLE ALL RECEIVING WATER(S) OR ALL OUTFALL(S), OR A COMBINATION OF RECEIVING WATER(S) AND OUTFALL(S). SAMPLES TAKEN FOR THE PURPOSE OF COMPLIANCE WITH THIS PERMIT SHALL BE REPRESENTATIVE OF THE MONITORED ACTIVITY AND REPRESENTATIVE OF THE WATER QUALITY OF THE RECEIVING WATER(S) AND/OR THE STORM WATER OUTFALL(S) USING THE FOLLOWING MINIMUM GUIDELINES:

A. THE UPSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN IMMEDIATELY UPSTREAM OF THE CONFLUENCE OF THE FIRST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORM WATER DISCHARGES NOT ASSOCIATED WITH THE PERMITTED ACTIVITY, WHERE APPROPRIATE, SEVERAL UPSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE UPSTREAM TURBIDITY VALUE.

B. THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORM WATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORM WATER DISCHARGE NOT ASSOCIATED WITH THE PERMITTED ACTIVITY. WHERE APPROPRIATE, SEVERAL DOWNSTREAM SAMPLES FROM ACROSS THE RECEIVING WATER(S) MAY NEED TO BE TAKEN AND THE ARITHMETIC AVERAGE OF THE TURBIDITY OF THESE SAMPLES USED FOR THE DOWNSTREAM TURBIDITY VALUE.

C. IDEALLY THE SAMPLES SHOULD BE TAKEN FROM THE HORIZONTAL AND VERTICAL CENTER OF THE RECEIVING WATER(S) OR THE STORM WATER OUTFALL CHANNELS(S).

D. CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORM WATER CHANNEL.

E. THE SAMPLING CONTAINER SHOULD BE HELD SO THAT THE OPENING FACES UPSTREAM.

F. THE SAMPLES SHOULD BE KEPT FREE FROM FLOATING DEBRIS.

G. PERMITTEES DO NOT HAVE TO SAMPLE SHEETFLOW THAT FLOWS ONTO UNDISTURBED NATURAL AREAS OR AREAS STABILIZED BY THE PROJECT. FOR PURPOSES OF THIS SECTION, STABILIZED SHALL MEAN, FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES AND AREAS LOCATED OUTSIDE THE WASTE DISPOSAL LIMITS OF A LANDFILL CELL THAT HAS BEEN CERTIFIED BY EPD FOR WASTE DISPOSAL, 100% OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION WITH A DENSITY OF 70% OR GREATER, OR LANDSCAPED ACCORDING TO THE PLAN (UNIFORMLY COVERED WITH LANDSCAPING MATERIALS IN PLANNED LANDSCAPED AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES AS DEFINED IN THE MANUAL (EXCLUDING A CROP OF ANNUAL VEGETATION AND A SEEDING OF TARGET CROP PERENNIALS APPROPRIATE FOR THE REGION).

A. ALL SAMPLING PURSUANT TO THIS PERMIT MUST BE DONE IN SUCH A WAY (INCLUDING GENERALLY ACCEPTED SAMPLING METHODS, LOCATIONS, TIMING AND FREQUENCY) AS TO ACCURATELY REFLECT WHETHER STORM WATER RUNOFF FROM THE CONSTRUCTION SITE IS IN COMPLIANCE WITH THE STANDARD SET FORTH IN PARTS III.D.3. OR III.D.4., WHICHEVER IS APPLICABLE.

d. SAMPLING FREQUENCY

1. THE PRIMARY PERMITTEE MUST SAMPLE IN ACCORDANCE WITH THE PLAN AT LEAST ONCE FOR EACH RAINFALL EVENT DESCRIBED BELOW. FOR A QUALIFYING EVENT, THE PERMITTEE SHALL SAMPLE AT THE BEGINNING OF ANY STORM WATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN FORTY–FIVE (45) MINUTES OR AS SOON AS POSSIBLE.
2. HOWEVER, WHERE MANUAL AND AUTOMATIC SAMPLING ARE IMPOSSIBLE (AS DEFINED IN THIS PERMIT), OR ARE BEYOND THE PERMITTEE'S CONTROL, THE PERMITTEE SHALL TAKE SAMPLES AS SOON AS POSSIBLE, BUT IN NO CASE MORE THAN TWELVE (12) HOURS AFTER THE BEGINNING OF THE STORM WATER DISCHARGE.
3. SAMPLING BY THE PERMITTEE SHALL OCCUR FOR THE FOLLOWING QUALIFYING EVENTS:

A. FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS PERMIT AFTER ALL CLEARING AND GRUBBING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO COMPLETION OF MASS GRADING OPERATIONS, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATION;

B. IN ADDITION TO (A.) ABOVE, FOR EACH AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL, THE FIRST RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH WITH A STORM WATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THE PERMIT EITHER 90 DAYS AFTER THE FIRST SAMPLING EVENT OR AFTER ALL MASS GRADING OPERATIONS HAVE BEEN COMPLETED, BUT PRIOR TO SUBMITTAL OF A NOT, IN THE DRAINAGE AREA OF THE LOCATION SELECTED AS THE SAMPLING LOCATIONS, WHICHEVER COMES FIRST;

C. AT THE TIME OF SAMPLING PERFORMED PURSUANT TO (A) AND (B) ABOVE, IF BMPS IN ANY AREA OF THE SITE THAT DISCHARGES TO A RECEIVING WATER OR FROM AN OUTFALL ARE NOT PROPERLY DESIGNED, INSTALLED AND MAINTAINED, CORRECTIVE ACTION SHALL BE DEFINED AND IMPLEMENTED WITHIN TWO (2) BUSINESS DAYS, AND TURBIDITY SAMPLES SHALL BE TAKEN FROM DISCHARGES FROM THAT AREA OF THE SITE FOR EACH SUBSEQUENT RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH DURING NORMAL BUSINESS HOURS* UNTIL THE SELECTED TURBIDITY STANDARD IS ATTAINED, OR UNTIL POST–STORM EVENT INSPECTIONS DETERMINE THAT BMPS ARE PROPERLY DESIGNED, INSTALLED AND MAINTAINED;

D. WHERE SAMPLING PURSUANT TO (A), (B) OR (C) ABOVE IS REQUIRED BUT NOT POSSIBLE (OR NOT REQUIRED BECAUSE THERE WAS NO DISCHARGE), THE PERMITTEE, IN ACCORDANCE WITH PART IV.D.4.a.(6), MUST INCLUDE A WRITTEN JUSTIFICATION IN THE INSPECTION REPORT OF WHY SAMPLING WAS NOT PERFORMED. PROVIDING THIS JUSTIFICATION DOES NOT RELIEVE THE PERMITTEE OF ANY SUBSEQUENT SAMPLING OBLIGATIONS UNDER (A), (B) OR (C) ABOVE; AND

E. EXISTING CONSTRUCTION ACTIVITIES, I.E., THOSE THAT ARE OCCURRING ON OR BEFORE THE EFFECTIVE DATE OF THIS PERMIT, THAT HAVE MET THE SAMPLING REQUIRED BY (A) ABOVE SHALL SAMPLE IN ACCORDANCE WITH (B). THOSE EXISTING CONSTRUCTION ACTIVITIES THAT HAVE MET THE SAMPLING REQUIRED BY (B) ABOVE SHALL NOT BE REQUIRED TO CONDUCT ADDITIONAL SAMPLING OTHER THAN AS REQUIRED BY (C) ABOVE.

*NOTE THAT THE PERMITTEE MAY CHOOSE TO MEET THE REQUIREMENTS OF (A) AND (B) ABOVE BY COLLECTING TURBIDITY SAMPLES FROM ANY RAIN EVENT THAT REACHES OR EXCEEDS 0.5 INCH AND ALLOWS FOR SAMPLING AT ANY TIME OF THE DAY OR WEEK.

REPORTING

1. THE APPLICABLE PERMITTEES ARE REQUIRED TO SUBMIT THE SAMPLING RESULTS TO THE EPD AT THE ADDRESS SHOWN IN PART II.C BY THE FIFTEENTH DAY OF THE MONTH FOLLOWING THE REPORTING PERIOD. REPORTING PERIODS ARE MONTHS DURING WHICH SAMPLES ARE TAKEN IN ACCORDANCE WITH THIS PERMIT. SAMPLING RESULTS SHALL BE IN A CLEARLY LEGIBLE FORMAT. UPON WRITTEN NOTIFICATION, EPD MAY REQUIRE THE APPLICABLE PERMITTEE TO SUBMIT THE SAMPLING RESULTS ON A MORE FREQUENT BASIS.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NATHAN P. LONG 034574 PROFESSIONAL
NATHAN P. LONG
CIVIL/UTILITY
DESIGN PROFESSIONAL
LICENSE NUMBER
0000024602

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

ES & PC NOTES

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

EC1.2

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SAMPLING AND ANALYSIS OF ANY STORM WATER DISCHARGE(S) OR THE RECEIVING WATER(S) BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED IN A SIMILAR MANNER TO THE EPD. THE SAMPLING REPORTS MUST BE SIGNED IN ACCORDANCE WITH PART V.G.2. SAMPLING REPORTS MUST BE SUBMITTED TO EPD USING THE ELECTRONIC SUBMITTAL SERVICE PROVIDED BY EPD. SAMPLING REPORTS MUST BE SUBMITTED TO EPD UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

2. ALL SAMPLING REPORT SHALL INCLUDE THE FOLLOWING INFORMATION:

a. THE RAINFALL AMOUNT, DATE, EXACT PLACE AND TIME OF SAMPLING OR MEASUREMENTS;

b. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE SAMPLING AND MEASUREMENTS;

c. THE DATE(S) ANALYSES WERE PERFORMED;

d. THE TIME(S) ANALYSES WERE INITIATED;

e. THE NAME(S) OF THE CERTIFIED PERSONNEL WHO PERFORMED THE ANALYSES;

f. REFERENCES AND WRITTEN PROCEDURES , WHEN AVAILABLE, FOR THE ANALYTICAL TECHNIQUES OR METHODS USED;

g. THE RESULTS OF SUCH ANALYSES, INCLUDING THE BENCH SHEETS, INSTRUMENT READOUTS, COMPUTER DISKS OR TAPES, ETC., USED TO DETERMINE THESE RESULTS;

h. RESULTS WHICH EXCEED 1000 NTU SHALL BE REPORTED AS "EXCEEDS 1000 NTU;" AND

i. CERTIFICATION STATEMENT THAT SAMPLING WAS CONDUCTED AS PER THE PLAN.

3. ALL WRITTEN CORRESPONDENCE REQUIRED BY THIS PERMIT SHALL BE SUBMITTED BY RETURN RECEIPT CERTIFIED MAIL (OR SIMILAR SERVICE) TO THE APPROPRIATE DISTRICT OFFICE OF THE EPD ACCORDING TO THE SCHEDULE IN APPENDIX A OF THIS PERMIT. THE PERMITTEE SHALL RETAIN A COPY OF THE PROOF OF SUBMITTAL AT THE CONSTRUCTION SITE OR THE PROOF OF SUBMITTAL SHALL BE READILY AVAILABLE AT A DESIGNATED LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOT IS SUBMITTED IN ACCORDANCE WITH PART VI.

EPD OFFICE:
COASTAL DISTRICT – BRUNSWICK OFFICE
GEORGIA ENVIRONMENTAL PROTECTION DIVISION
400 COMMERCE CENTER DRIVE
BRUNSWICK, GA 31523–8687
(912) 264–7284

EC1.3 | YES 32. PROVIDE COMPLETE DETAILS FOR RETENTION OF RECORDS AS PER PART IV.F. PG 38 OF THE PERMIT.

RETENTION OF RECORDS

1. THE PRIMARY PERMITTEE SHALL RETAIN THE FOLLOWING RECORDS AT THE CONSTRUCTION SITE OR THE RECORDS SHALL BE READILY AVAILABLE AT A DESIGNATED ALTERNATE LOCATION FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI.

- COPY OF ALL NOTICES OF INTENT SUBMITTED TO EPD.
- A COPY OF THE ES&PC PLAN REQUIRED IN PERMIT No. GAR 100001.
- THE DESIGN PROFESSIONALS REPORT OF THE THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5 IN PERMIT No. GAR 100001.
- A COPY OF ALL SAMPLING INFORMATION , RESULTS, AND REPORTS REQUIRED BY IN PERMIT No. GAR 100001.
- A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.a OF PERMIT No. GAR 100001.
- A COPY OF ALL VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2 IN PERMIT No. GAR 100001.
- DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.a.(2). IN PERMIT No. GAR 100001.

2. COPIES OF ALL NOTICES OF INTENT, NOTICES OF TERMINATION, INSPECTION REPORTS, SAMPLING REPORTS (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECORDINGS FOR CONTINUOUS MONITORING INSTRUMENTATION) OR OTHER REPORTS REQUESTED BY THE EPD, EROSION, SEDIMENTATION AND POLLUTION CONTROL PLANS, RECORDS OF ALL DATA USED TO COMPLETE THE NOTICE OF INTENT TO BE COVERED BY THIS PERMIT AND ALL OTHER RECORDS REQUIRED BY THIS PERMIT SHALL BE RETAINED BY THE PERMITTEE WHO EITHER PRODUCED OR USED IT FOR A PERIOD OF AT LEAST THREE YEARS FROM THE DATE THAT THE NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI OF THE GAR100001. THESE RECORDS MUST BE MAINTAINED AT THE PERMITTEE'S PRIMARY PLACE OF BUSINESS OR AT A DESIGNATED ALTERNATIVE LOCATION ONCE THE CONSTRUCTION ACTIVITY HAS CEASED AT THE PERMITTED SITE. THIS PERIOD MAY BE EXTENDED BY REQUEST OF THE EPD AT ANY TIME UPON WRITTEN NOTIFICATION TO THE PERMITTEE.

EC1.3 | YES 33. DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION. (PERMIT IV.D.6.a.(3) PG 33–35)

STORM WATER SAMPLES ARE TO BE ANALYZED IN ACCORDANCE WITH METHODOLOGY AND TEST PROCEDURES ESTABLISHED BY 40 CFR PART 136 AND THE GUIDANCE DOCUMENT TITLED "NPDES STORM WATER SAMPLING GUIDANCE DOCUMENT EPA 833–8–92–001.

EC1.3 | YES 34. APPENDIX B RATIONALE FOR NTU VALUES AT ALL OUTFALL SAMPLING POINTS WHERE APPLICABLE. (PERMIT IV.D.6.a.(3) PG 33)

STORM WATER IS TO BE SAMPLED FOR NEPHELOMETRIC TURBIDITY UNITS (NTU) AT THE OUTFALL LOCATIONS. A DISCHARGE OF STORM WATER RUNOFF FROM DISTURBED AREAS WHERE BEST MANAGEMENT PRACTICES HAVE NOT BEEN PROPERLY DESIGNED, INSTALLED, AND MAINTAINED SHALL CONSTITUTE A SEPARATE VIOLATION FOR EACH DAY ON WHICH SUCH CONDITION RESULTS IN THE TURBIDITY OF THE DISCHARGE EXCEEDING 75, THE VALUE THAT WAS SELECTED FROM APPENDIX B IN PERMIT No. GAR 100001. THE NTU IS BASED UPON THE SITE ACREAGE OF 4.60 ACRES FOR THE PROJECT SITE, THE SURFACE WATER DRAINAGE AREA OF LESS THAN 4.99 SQUARE MILES AND RECEIVING WATER WHICH SUPPORTS WARM WATER FISHERIES. APPENDIX B WAS USED TO DETERMINE THE NTU ALLOWABLE AND DOWNSTREAM SAMPLING WILL BE PERFORMED FOR THIS PROJECT.

Appendix B
Nephelometric Turbidity Unit (NTU) Table
Warm Water (Suppoting Warm Water Fisheries)

Surface Water Drainage Area, square miles

	0–4.99	5–9.99	10–24.99	25–49.99	50–99.99	100–249.99	250–499.99	500+
1.00–10	75	150	200	400	750	750	750	750
10.01–25	50	100	100	200	300	500	750	750
25.01–50	50	50	100	100	200	300	750	750
50.01–100	50	50	50	100	100	150	300	600
100.01+	50	50	50	50	50	100	200	100

EC1.3 | YES 35. DELINEATE ALL SAMPLING LOCATIONS, PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED. (PERMIT IV.D.6.a.(3) PG 33)

PLEASE SEE PLAN SHEETS FOR DELINEATION OF SAMPLING LOCATIONS, PERENNIAL, INTERMITTENT STREAMS AND OTHER WATER BODIES INTO WHICH STORM WATER IS DISCHARGED.

PLAN | YES 36. A DESCRIPTION OF APPROPRIATE CONTROLS AND MEASURES THAT WILL BE IMPLEMENTED AT THE CONSTRUCTION SITE INCLUDING (1) INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S, (2) INTERMEDIATE GRADING AND DRAINAGE BMP'S, AND (3) FINAL BMP'S. FOR CONSTRUCTION SITES WHERE THERE WILL BE NO MASS GRADING AND THE INITIAL PERIMETER CONTROL BMP'S, INTERMEDIATE GRADING AND DRAINAGE BMP'S, AND FINAL BMP'S ARE THE SAME, THE PLAN MAY COMBINE ALL OF THE BMP'S INTO A SINGLE PHASE. (PERMIT IV.D.3 PG 27)

INITIAL PHASE – THE INITIAL PHASE OF THE ES&PC PLAN WILL INCLUDE THE INSTALLATION OF THE CONSTRUCTION EXIT AND SILT FENCE. TYPE NS SILT FENCE WILL BE USED. DITCHES, AS NEEDED, WILL BE CONSTRUCTED AND MAINTAINED DURING SITE CLEARING. DUST CONTROL AND MULCHING WILL BE IMPLEMENTED AS NECESSARY.

INTERMEDIATE PHASE – THE INTERMEDIATE GRADING AND DRAINAGE BMP'S WILL INCLUDE THE MAINTENANCE OF ALL SILT FENCE. DUST CONTROL, MULCHING, AND TEMPORARY SEEDING WILL BE IMPLEMENTED AS NECESSARY. DUE TO THE LINEAR NATURE OF THE PROJECT, SEDIMENT TRAPS AND INLET TRAPS WILL NOT BE FEASIBLE. THE USE OF STONE CHECK DAMS AND SILT FENCING WILL BE USED AS THE PRIMARY MEANS OF SEDIMENT STORAGE. CONTRACTOR SHALL TAKE SPECIAL CARE AND CLEAN OUT SEDIMENT AS NEEDED.

FINAL PHASE – THE FINAL GRADING AND DRAINAGE BMP'S WILL INCLUDE THE MAINTENANCE OF ALL SILT FENCE. SEDIMENT INLET TRAPS WILL BE INSTALLED AND MAINTAINED AS INDICATED ON THE PLANS. PERMANENT SEEDING WILL BE IMPLEMENTED FOR SITE STABILIZATION. ONCE THE SITE IS STABILIZED, ALL TEMPORARY BMPS ARE TO BE REMOVED.

PLAN | YES 37. GRAPHIC SCALE AND NORTH ARROW.

GRAPHIC SCALE AND NORTH ARROW ARE LOCATED ON EACH PLAN SHEET.

PLAN | YES 38. EXISTING AND PROPOSED CONTOUR LINES WITH CONTOUR LINES DRAWN AT AN INTERVAL IN ACCORDANCE WITH THE FOLLOWING:

EXISTING AND PROPOSED CONTOUR LINES DRAWN AT AN INTERVAL OF 1' ARE SHOWN ON EACH PLAN SHEET.

| N/A 39. USE OF ALTERNATIVE BMP'S WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMP'S AS CERTIFIED BY A DESIGN PROFESSIONAL (UNLESS DISAPPROVED BY EPD OR THE GEORGIA SOIL AND WATER CONSERVATION COMMISSION). PLEASE REFER TO THE ALTERNATIVE BMP GUIDANCE DOCUMENT FOUND AT www.gaswcc.org. (PERMIT IV.D.3.a(4) PG 29)

NOT APPLICABLE FOR THIS PROJECT.

| N/A 40. USE OF ALTERNATIVE BMP FOR APPLICATION TO THE EQUIVALENT BMP LIST. PLEASE REFER TO APPENDIX A–2 OF THE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA 2016 EDITION.

NOT APPLICABLE FOR THIS PROJECT.

| N/A 41. DELINEATION OF THE APPLICABLE 25–FOOT OR 50–FOOT UNDISTURBED BUFFERS ADJACENT TO STATE WATERS AND ANY ADDITIONAL BUFFERS REQUIRED BY THE LOCAL ISSUING AUTHORITY. CLEARLY NOTE AND DELINEATE ALL AREAS OF IMPACT. (PERMIT IV.D.2.e PG 27)

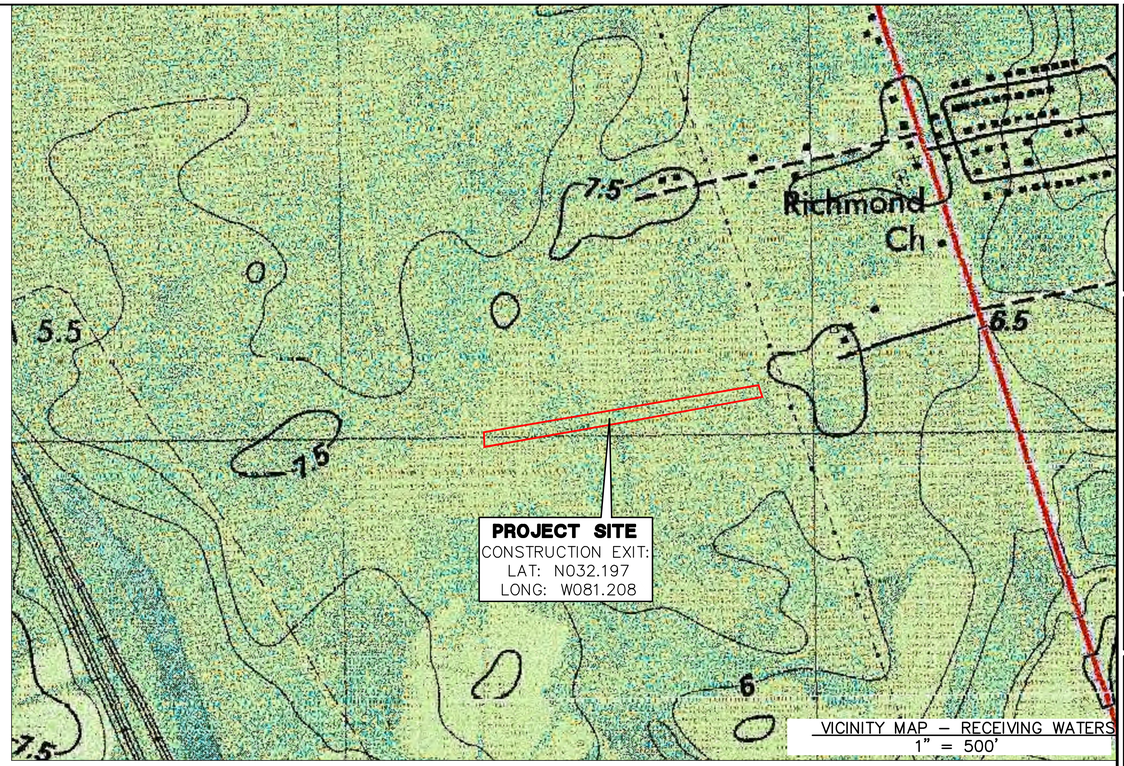
NOT APPLICABLE FOR THIS PROJECT.

PLAN | YES 42. DELINEATION OF ON–SITE WETLANDS AND ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE.

THE WETLANDS ARE DELINEATED ON THE PLANS.

PLANS | YES 43. DELINEATION AND ACREAGE OF CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE. (PERMIT IV.D.2.e PG 27)

ALL CONTRIBUTING DRAINAGE BASINS ON THE PROJECT SITE ARE CLEARLY DELINEATED ON THE PLAN SHEETS



VICINITY MAP – RECEIVING WATERS
1" = 500'

REPORT | YES 44. PROVIDE HYDROLOGY STUDY AND MAPS OF DRAINAGE BASINS FOR BOTH PRE– AND POST–DEVELOPMENT CONDITIONS.

PLEASE SEE ATTACHED REPORT WITH DETAILS FOR PRE AND POST DEVELOPMENT HYDROLOGY.

EC1.3 | YES 45. AN ESTIMATE OF THE RUNOFF COEFFICIENT OR PEAK DISCHARGE FLOW OF THE SITE PRIOR TO AND AFTER CONSTRUCTION ACTIVITIES ARE COMPLETED. (PERMIT IV.D.2.d PG 27)

RUNOFF COEFFICIENT: PRE–CONSTRUCTION CN = 73
POST–CONSTRUCTION CN = 85

PLAN | YES 46. STORM–DRAIN PIPE AND WEIR VELOCITIES WITH APPROPRIATE OUTLET PROTECTION TO ACCOMMODATE DISCHARGES WITHOUT EROSION. IDENTIFY/DELINEATE ALL STORM WATER DISCHARGE POINTS.

OUTLET PROTECTION IS PROVIDED IN THE FORM OF RIP–RAP AT ALL POINTS OF CONCENTRATED DISCHARGE.

EC1.3 | YES 47. SOIL SERIES FOR THE PROJECT SITE AND THEIR DELINEATION.
PLAN

SOILS ARE DELINEATED ON THE EROSION CONTROL SHEETS. THE SOILS FOR THE SITE ARE: POOLER FINE SANDY LOAM (C/D), OCILLA COMPLEX (B/D), AND CAPE FEAR SOILS (C/D)

PLAN | YES 48. THE LIMITS OF DISTURBANCE FOR EACH PHASE OF CONSTRUCTION.

PLEASE SEE THE PLAN FOR THE DELINEATION OF THE LIMITS OF DISTURBANCE. THEY ARE THE SAME FOR ALL PHASES OF CONSTRUCTION.

EC1.3 | YES 49. PROVIDE A MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED USING A TEMPORARY SEDIMENT BASIN, RETROFITTED DETENTION POND, AND/OR EXCAVATED INLET SEDIMENT TRAPS FOR EACH COMMON DRAINAGE LOCATION. SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBANCE ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED. A WRITTEN JUSTIFICATION EXPLAINING THE DECISION TO USE EQUIVALENT CONTROLS WHEN A SEDIMENT BASIN IS NOT ATTAINABLE MUST BE INCLUDED IN THE PLAN FOR EACH COMMON DRAINAGE LOCATION IN WHICH A SEDIMENT BASIN IS NOT PROVIDED. A WRITTEN JUSTIFICATION AS TO WHY 67 CUBIC YARDS OF STORAGE IS NOT ATTAINABLE MUST ALSO BE GIVEN. WORKSHEETS FROM THE MANUAL MUST BE INCLUDED FOR STRUCTURAL BMPs AND ALL CALCULATIONS USED BY THE STORAGE DESIGN PROFESSIONAL TO OBTAIN THE REQUIRED SEDIMENT WHEN USING EQUIVALENT CONTROLS. WHEN DISCHARGING FROM SEDIMENT BASINS AND IMPOUNDMENTS, PERMITEES ARE REQUIRED TO UTILIZE OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE, UNLESS INFEASIBLE. IF OUTLET STRUCTURES THAT WITHDRAW WATER FROM THE SURFACE ARE NOT FEASIBLE, A WRITTEN JUSTIFICATION EXPLAINING THIS DECISION MUST BE INCLUDED IN THE PLAN. (PERMIT IV.D.3.a.(3) PG 28)

SEDIMENT STORAGE – THE PERMIT REQUIRES A MINIMUM OF 67 CUBIC YARDS OF SEDIMENT STORAGE PER ACRE DRAINED.

THE SEDIMENT STORAGE REQUIREMENT WILL BE ACHIEVED BY UTILIZING PROPOSED STONE CHECK DAMS AND PERIMETER SILT FENCE TO TREAT THE TIE DOWN SLOPES.

SEDIMENT STORAGE REQUIRED

ACREAGE DRAINED = 3.90

REQUIRED SEDIMENT STORAGE = 3.6 AC X 67 CY/AC = 261.3 CY

STORM CHECK DAM STORAGE:

APPROX. STORAGE PER CHECK DAM: (0.5 X 20 FT WIDTH X 2 FT HEIGHT) X 20 FT LENGTH X (CY/27 CF) = 14.8 CY

11 TOTAL CHECK DAMS PROPOSED = 14.8 X 11 = 162.8 CY

PERIMETER SILT FENCE

LF OF SILT FENCE FOR STORAGE = 3,500 LF @ 7.5 CF OF STORAGE/LF

(2,406 LF X 7.5 CF/LF) * (CY/ 27 CF) = 972.2 CY

TOTAL SEDIMENT STORAGE PROVIDED BY PROPOSED BMPS = 1,135 CY

TOTAL STORAGE PROVIDED EXCEEDS STORAGE REQUIRED (261.3 CY)

PLAN | YES 50. LOCATION OF BEST MANAGEMENT PRACTICES THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. USE UNIFORM CODING SYMBOLS FROM THE MANUAL,CHAPTER 6, WITH LEGEND.

PLEASE SEE THE PLAN SHEETS FOR THE LOCATION OF BEST MANAGEMENT PRACTICES THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA USING THE UNIFORM CODING SYMBOLS FROM THE MANUAL, CHAPTER 6 WITH ACCOMPANYING LEGEND.

PLAN | YES 51. PROVIDE DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES. SPECIFICATIONS MUST, AT A MINIMUM, MEET THE GUIDELINES SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

PLEASE SEE THE DETAIL SHEET FOR DETAILED DRAWINGS FOR ALL STRUCTURAL PRACTICES WITH SPECIFICATIONS MEETING THE GUIDELINES SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

YES 52. PROVIDE VEGETATIVE PLAN, NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES, INCLUDE SPECIES, PLANTING DATES AND SEEDING, FERTILIZER, LIME AND MULCHING RATES. VEGETATIVE PLAN SHALL BE SITE SPECIFIC FOR APPROPRIATE TIME OF YEAR THAT SEEDING WILL TAKE PLACE AND FOR APPROPRIATE GEOGRAPHIC REGION OF GEORGIA.

PLEASE SEE THE PLAN AND DETAIL SHEETS FOR THE VEGETATIVE PLAN NOTING ALL TEMPORARY AND PERMANENT VEGETATIVE PRACTICES INCLUDING SPECIES, PLANTING DATES AND SEEDING, FERTILIZER, LIME AND MULCHING RATES. THIS PLAN IS SPECIFIC TO THE SITE AND APPROPRIATE FOR TIME OF YEAR THAT SEEDING WILL TAKE PLACE AND FOR THE APPROPRIATE GEOGRAPHIC REGION OF GEORGIA.

EFFECTIVE JANUARY 1, 2021

GEORGIA REGISTERED PROFESSIONAL ENGINEER
NATHAN R. LONG
GEORGIA CERTIFICATE NUMBER
DESIGN PROFESSIONAL
LICENSED PROFESSIONAL ENGINEER
0000024602

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NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

ES & PC NOTES

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

EC1.3

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NOTES:

1. WHEN TRANSITIONING FROM SD1–S TO SD1–NS OR VICE VERSA, A MIN. OVERLAP OF 18" MUST BE USED.
2. WHERE A DOUBLE ROW OF Sd1–S MUST BE INSTALLED AT ALL LOCATIONS DIRECTLY ADJACENT TO AREAS DESIGNATED AS STATE WATERS, WETLANDS, OR ANY AREA DESIGNATED AS A SENSITIVE AREA. IN ADDITION,WHEN INSTALLING A DOUBLE ROW, A MIN. HORIZONTAL SEPARATION OF 36" MUST BE MAINTAINED.
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4. Sd1–S SHALL BE TYPE C, HAVE A WIRE REINFORCED 36" FILTER FABRIC, OF WHICH 30" MUST BE ABOVE TRENCHING.
5. THERE SHALL BE NO CONCRETE WASHOUT OF ANY KIND PERMITTED ON SITE.
6. INLET SEDIMENT TRAPS ARE NOT TO BE EXCAVATED UNLESS OTHERWISE NOTED ON THE PLANS.

SOIL LEGEND		
SYMBOL	DESCRIPTION	HYDROLOGIC RATING
Pn	POOLER FINE SANDY LOAM	C/D
Oj	OCILLA COMPLEX	B/D
Cc	CAPE FEAR SOILS	C/D

PROPOSED SAMPLING STATION #1
N: 800,150.48
E: 952,436.92
LAT: 32.1963
LONG: -081.2089

1/2" IRON REBAR

START OF DOUBLE ROW SILT FENCE

Sd1-S

SILT FENCE (TYP.)

CENTERLINE OF EXISTING DITCH

Du
Ds1
Ds2

TRANSITION FROM DOUBLE ROW SD1-S TO SD1-NS SILT FENCE. MIN. OVERLAP OF 18" REQUIRED

Sd1-NS

CONSTRUCTION EXIT
N: 800229.85
E: 952672.87
LAT: 32.1965
LONG: -81.2075

Co

Underground Telephone Lines In This Area

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE THIS SHEET

GRAPHIC SCALE

(IN FEET)
1 inch = 20 ft.

SOIL TYPE (TYP.)

Pn

Oj

GEORGIA811
Utilities Protection Center, Inc.
Know what's below.
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GRAPHIC SCALE

(IN FEET)
1 inch = ## ft.

MATCH LINE – SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

MATCH LINE – SEE SHEET NO. EC2.2

SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 12.09 (NW)
IE OUT: 11.34 (E)

NOTES:

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GEORGIA
NATHAN B. LONG
071974
PROFESSIONAL
Engineer
NATHAN B. LONG
GSWCC LEVEL II CERT.
DESIGN PROFESSIONAL
LICENSE NUMBER
0000024602

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50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

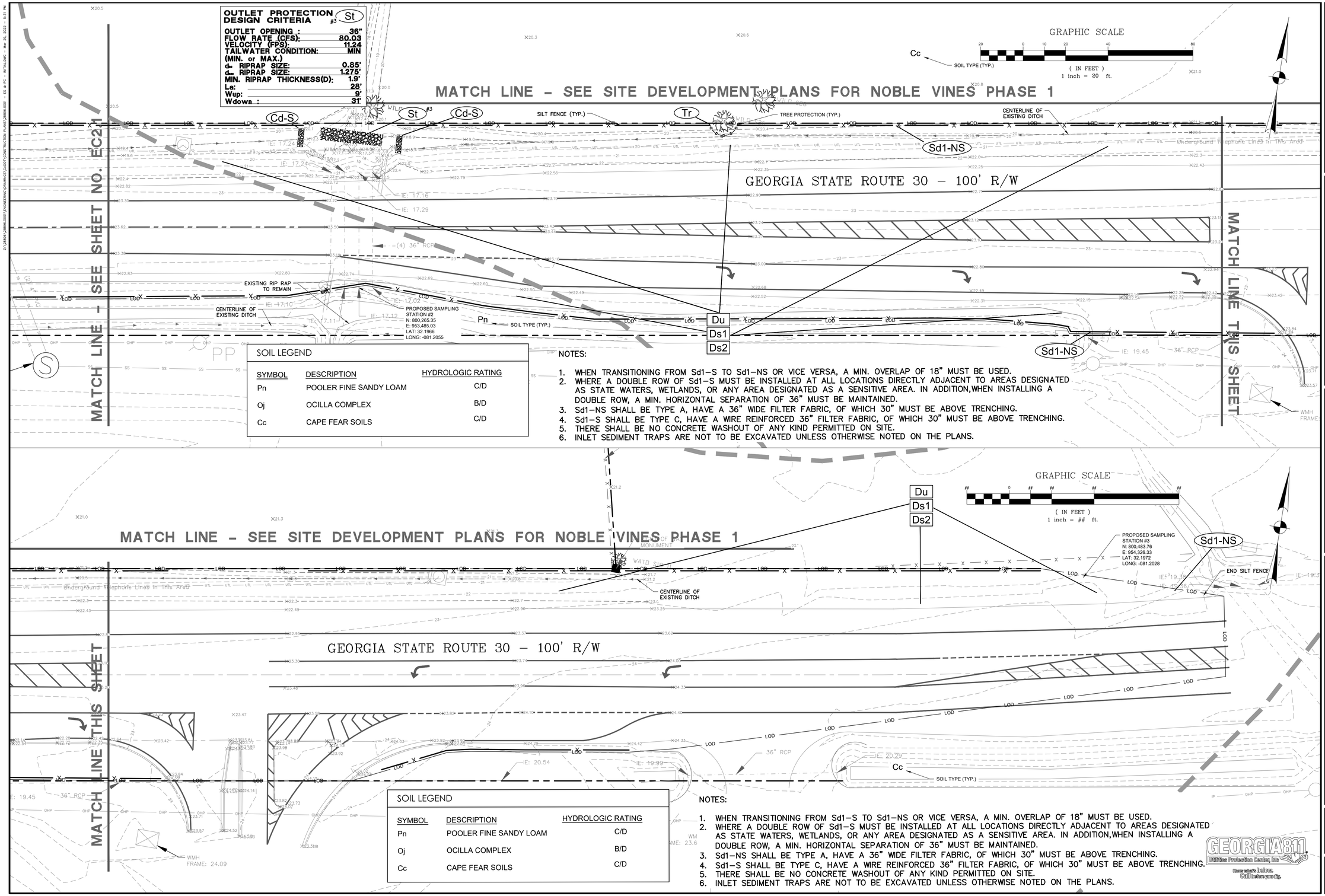
PORT WENTWORTH TOWNHOMES
GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

ES & PC PLAN – INITIAL PHASE

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

EC2.1



NATHAN B. LONG
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EC2.2

GEORGIA811 Utilities Protection Center, Inc.
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E: 952,436.92
LAT: 32.1963
LONG: -081.2089

1/2" IRON REBAR

START OF DOUBLE ROW SILT FENCE

Sd1-S

CENTERLINE OF PROPOSED DITCH

Du
Ds1
Ds2

TRANSITION FROM DOUBLE ROW SD1-S TO SD1-NS SILT FENCE. MIN. OVERLAP OF 18" REQUIRED

SILT FENCE (TYP.)

CONSTRUCTION EXIT
N: 800229.85
E: 952872.87
LAT: 32.1965
LONG: -81.2075

GUM S14 16

Underground Telephone Lines In This Area

Cd-S

Co

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE THIS SHEET

IE: 19.50

Sd1-NS

Pn

SOIL TYPE (TYP.)

CENTERLINE OF EXISTING DITCH

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA811
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SOIL LEGEND		
SYMBOL	DESCRIPTION	HYDROLOGIC RATING
Pn	POOLER FINE SANDY LOAM	C/D
Oj	OCILLA COMPLEX	B/D
Cc	CAPE FEAR SOILS	C/D

OUTLET PROTECTION DESIGN CRITERIA #1 & #2 (St)

OUTLET OPENING :	24"
FLOW RATE (CFS):	80.03
VELOCITY (FPS):	11.24
TAILWATER CONDITION:	MIN
(MIN. or MAX.)	
d_{50} RIPRAP SIZE:	1.5'
d_{100} RIPRAP SIZE:	2.25'
MIN. RIPRAP THICKNESS(D):	3.375'
La:	32'
Wup:	6'
Wdown :	34'

GRAPHIC SCALE
(IN FEET)
1 inch = ## ft.

MATCH LINE – SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

St

St #2

Cd-S

Sd1-NS

Co

Du
Ds1
Ds2

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE – SEE SHEET NO. EC2.4

SOIL TYPE (TYP.)

Oj

Pn

SILT FENCE (TYP.)

SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 12.09 (NW)
IE OUT: 11.34 (E)

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SYMBOL	DESCRIPTION	HYDROLOGIC RATING
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NATHAN B. LONG
Registered
No. 035274
PROFESSIONAL
Engineer

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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 035274
LICENSED PROFESSIONAL ENGINEER
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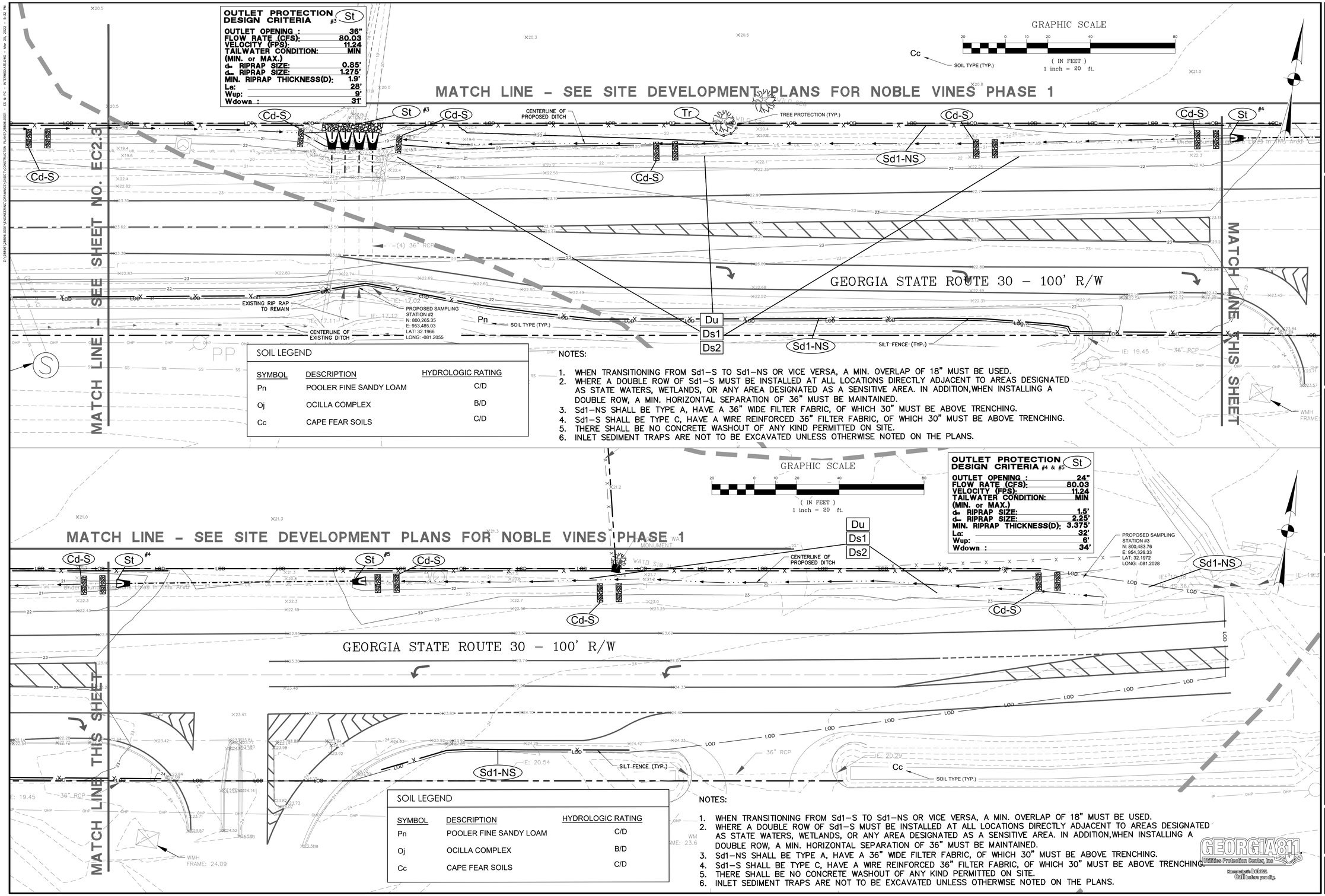
PORT WENTWORTH, GA

NOBLE VINES

ES & PC PLAN – INTERMEDIATE PHASE

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

EC2.3



NATHAN E. LONG
GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 036724
PROFESSIONAL ENGINEER
NATHAN E. LONG
GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 036724

PERMIT SET - FOR REVIEW PURPOSES ONLY

NO.	REVISIONS	BY	DATE

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

PORT WENTWORTH TOWNHOMES GA, LLC
PORT WENTWORTH, GA

NOBLE VINES

ES & PC PLAN - INTERMEDIATE PHASE

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	1" = 20'

GEORGIA 811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

EC2.4

Z:\2898\CAD\04 ENGINEERING\DRAWINGS\ASBUILT\CONSTRUCTION PLANS\2898ES000 — ES & PC — FINAL.DWG — Mar 29, 2022 — 5:13 PM

GEORGIA811
Utilities Protection Center, Inc
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PROPOSED SAMPLING STATION #1
N: 800,150.48
E: 952,436.92
LAT: 32.1963
LONG: -081.2089

1/2" IRON REBAR

START OF DOUBLE ROW SILT FENCE

SILT FENCE (TYP.)

CENTERLINE OF PROPOSED DITCH

20' SETBACK

TRANSITION FROM DOUBLE ROW SD1-S TO SD1-NS SILT FENCE. MIN. OVERLAP OF 18" REQUIRED

CONSTRUCTION EXIT
N: 800229.85
E: 952672.87
LAT: 32.1965
LONG: -81.2075

Underground Telephone Lines In This Area

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE - THIS SHEET

MATCH LINE - SEE SHEET NO. EC2.6

IE: 19.50

CENTERLINE OF EXISTING DITCH

SOIL TYPE (TYP.)

Du
Ds3
Sd1-S
Sd1-NS
Cd-S
Co
St
Pn

NOTES:

1. WHEN TRANSITIONING FROM SD1–S TO SD1–NS OR VICE VERSA, A MIN. OVERLAP OF 18" MUST BE USED.
2. WHERE A DOUBLE ROW OF Sd1–S MUST BE INSTALLED AT ALL LOCATIONS DIRECTLY ADJACENT TO AREAS DESIGNATED AS STATE WATERS, WETLANDS, OR ANY AREA DESIGNATED AS A SENSITIVE AREA. IN ADDITION,WHEN INSTALLING A DOUBLE ROW, A MIN. HORIZONTAL SEPARATION OF 36" MUST BE MAINTAINED.
3. Sd1–NS SHALL BE TYPE A, HAVE A 36" WIDE FILTER FABRIC, OF WHICH 30" MUST BE ABOVE TRENCHING.
4. Sd1–S SHALL BE TYPE C, HAVE A WIRE REINFORCED 36" FILTER FABRIC, OF WHICH 30" MUST BE ABOVE TRENCHING.
5. THERE SHALL BE NO CONCRETE WASHOUT OF ANY KIND PERMITTED ON SITE.
6. INLET SEDIMENT TRAPS ARE NOT TO BE EXCAVATED UNLESS OTHERWISE NOTED ON THE PLANS.

SOIL LEGEND

SYMBOL	DESCRIPTION	HYDROLOGIC RATING
Pn	POOLER FINE SANDY LOAM	C/D
Oj	OCILLA COMPLEX	B/D
Cc	CAPE FEAR SOILS	C/D

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

OUTLET PROTECTION DESIGN CRITERIA #1 & #2 (St)

OUTLET OPENING :	24"
FLOW RATE (CFS):	80.03
VELOCITY (FPS):	11.24
TAILWATER CONDITION: (MIN. or MAX.)	MIN
d_{50} RIPRAP SIZE:	1.5'
d_{max} RIPRAP SIZE:	2.25'
MIN. RIPRAP THICKNESS(D):	3.375'
La:	32'
Wup:	6'
Wdown :	34'

CONSTRUCTION EXIT
N: 800229.85
E: 952872.87
LAT: 32.1965
LONG: -81.2075

GEORGIA STATE ROUTE 30 – 100' R/W

MATCH LINE - THIS SHEET

MATCH LINE - SEE SHEET NO. EC2.6

SOIL LEGEND

SYMBOL	DESCRIPTION	HYDROLOGIC RATING
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MATCH LINE – SEE SITE DEVELOPMENT PLANS FOR NOBLE VINES PHASE 2

SILT FENCE (TYP.)

SSMH
FRAME: 21.01
IE IN: 14.65 (NW)
IE IN: 12.09 (NW)
IE OUT: 11.34 (E)

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NATHAN R. LONG
GEORGIA LICENSED
DESIGN PROFESSIONAL
LICENSE NUMBER
0000024602

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PORT WENTWORTH, GA

NOBLE VINES

ES & PC PLAN – FINAL PHASE

JOB NO:	J-28896.0001
DATE:	03/29/22
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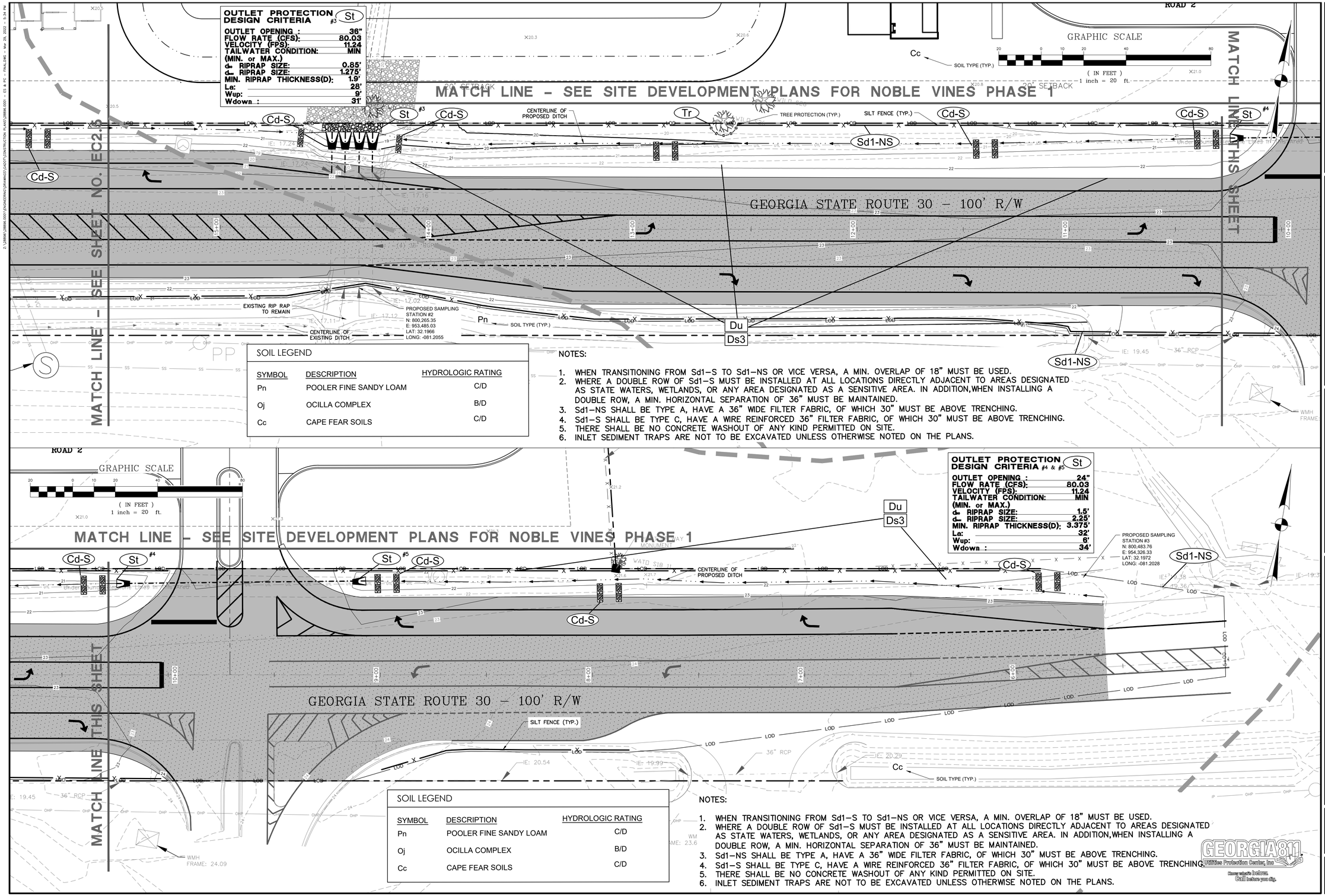
EC2.5



PERMIT SET - FOR REVIEW PURPOSES ONLY

NATHAN B. LONG
GEORGIA REGISTERED
ENGINEER
No. 036247
PROFESSIONAL
Engineer
NATHAN B. LONG
GEORGIA LICENSED
PROFESSIONAL ENGINEER
0000024602

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EC2.6

GEORGIA 811 Utilities Protection Center, Inc
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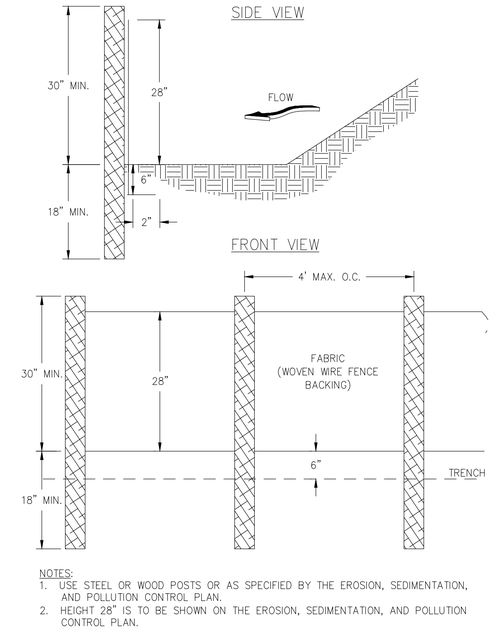


NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT 28" IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

SILT FENCE – TYPE SENSITIVE

NOT TO SCALE

Sd1–S

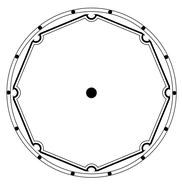
EROSION CONTROL LEGEND

DESCRIPTION	PLAN SYMBOL
DISTURBED AREA STABILIZATION (MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (PERMANENT VEGETATION)	Ds3
DUST CONTROL	Du
CHECK DAM (STONE)	Cd-S
CONSTRUCTION EXIT	Co
SILT FENCE – TYPE NS	Sd1-NS
SILT FENCE – TYPE S	-
TREE PROTECTION	Tr

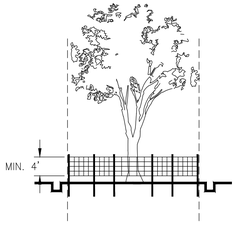
TREE PROTECTION

"SNOW" FENCE Tr

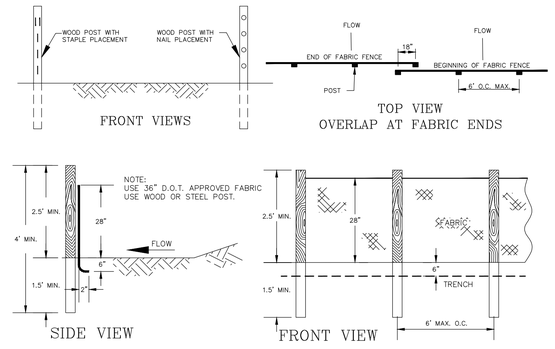
PLAN



CROSS–SECTION



NOTES:
1. USE TRENCHER (I.E. DITCH WHICH) TO CUT A 4"–5" W X 18" D TRENCH ALONG DRIP LINE (LIMIT OF CLEARING) AND BACKFILL WITH SAND AND LIGHTLY COMPACT.
2. SPACE STAKES AT INTERVALS SUFFICIENT TO MAINTAIN ALL FENCING OUT OF DRIP LINE OR AS SHOWN BY ENGINEER (SET STAKES NO GREATER THAN 6 FEET ON CENTER–REBAR IS NOT TO BE USED FOR STAKES).
3. MAINTAIN FENCE BY REPAIRING AND/OR REPLACING DAMAGED FENCE. DO NOT REMOVE FENCING PRIOR TO LANDSCAPING OPERATIONS.
4. DO NOT STORE OR STACK MATERIALS, EQUIPMENT, OR VEHICLES WITHIN FENCED AREA.
5. FENCE SHALL BE ORANGE VINYL "SNOW FENCE" 4' HIGH MINIMUM.



TYPE A SILT FENCE (36")

USE:
1) ON DEVELOPMENTS WHERE THE LIFE OF THE PROJECT IS GREATER THAN OR EQUAL TO 6 MONTHS.
2) WHERE THE SLOPE GRADIENT IS STEEPER THAN 3:1.

POST SIZE

MIN. LENGTH	TYPE OF POST	SIZE OF POST
4'	SOFT WOOD	3" DIA. OR 2X4
4'	OAK	1.5"X1.5"
4'	STEEL	1.3 LB./FT. MIN.

FASTENERS FOR WOOD POST (WIRE STAPLES)

GAUGE	CROWN	LEGS	STAPLES/POST
17 MIN.	3/4" WIDE	1/2" LONG	5 MIN.

FASTENERS FOR WOOD POST (NAILS)

GAUGE	LENGTH	BUTTON HEADS	NAIL/POST
14 MIN.	1"	3/4"	4 MIN.

NOTE: FILTER FABRIC MAY ALSO BE ATTACHED TO THE POST BY WIRE, CORD, AND POCKETS.

FENCE

TENSILE STRENGTH (LBS. MIN) (1) (ASTM D-4632)	ELONGATION (%MAX.) (ASTM D-4632)	AOS (APPARENT OPENING SIZE) (MAX. SIEVE SIZE) (ASTM D-4751)	FLOW RATE (GAL/MIN./SQ. FT.) (GDT-87)	ULTRAVIOLET STABILITY (2) (ASTM D-4632 AFTER 300 HOURS WEATHERING IN ACCORDANCE WITH ASTM D-4355)	BURSTING STRENGTH (PSI MIN) (ASTM D-3786 DIAPHRAGM BURSTING STRENGTH TESTER)	MIN. FABRIC WIDTH (INCHES)
WARP–120 FILL–100	40	#30	25	80	175	36

(1) MIN. ROLL AVERAGE OF FIVE SPECIMENS.
(2) PERCENT OF REQUIRED INITIAL MIN. TENSILE STRENGTH.

NOTE:
SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE–HALF THE ORIGINAL HEIGHT OF THE BARRIER. FILTER FABRIC SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF THE FABRIC IS REDUCED (APPROXIMATELY SIX MONTHS). TEMPORARY SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATED AT THE BARRIER SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE BARRIER IS REMOVED.

SILT FENCE – TYPE NON–SENSITIVE

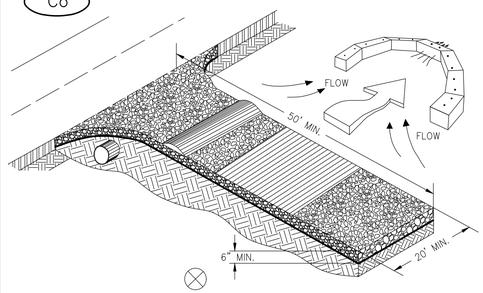
NOT TO SCALE

Sd1–NS

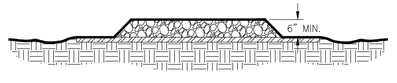
CRUSHED STONE CONSTRUCTION EXIT

Co

EXIT DIAGRAM



ENTRANCE ELEVATION



NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R–2 (1.5"–3.5" STONE).
4. GRAVEL PAD SHALL HAVE A MINIMUM THICKNESS OF 6".
5. PAD WIDTH SHALL BE EQUAL FULL WIDTH AT ALL POINTS OF VEHICULAR EGRESS, BUT NO LESS THAN 20'.
6. A DIVERSION RIDGE SHOULD BE CONSTRUCTED WHEN GRADE TOWARD PAVED AREA IS GREATER THAN 2%..
7. INSTALL PIPE UNDER THE ENTRANCE IF NEEDED TO MAINTAIN DRAINAGE DITCHES.
8. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN (DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE ENTRANCE TO A SEDIMENT CONTROL DEVICE).
9. WASHRACKS AND/OR TIRE WASHERS MAY BE REQUIRED DEPENDING ON SCALE AND CIRCUMSTANCE. IF NECESSARY, WASHRACK DESIGN MAY CONSIST OF ANY MATERIAL SUITABLE FOR TRUCK TRAFFIC THAT REMOVE MUD AND DIRT.
10. MAINTAIN AREA IN A WAY THAT PREVENTS TRACKING AND/OR FLOW OF MUD ONTO PUBLIC RIGHTS–OF–WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

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NOBLE VINES

ES & PC DETAILS

JOB NO:	J–28896.0001
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DRAWN:	VND
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REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

EC3.1

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Disturbed Area Stabilization (With Mulching Only) Ds1

DEFINITION

Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

PURPOSE

- To reduce runoff and erosion
- To conserve moisture
- To prevent surface compaction or crusting
- To control undesirable vegetation
- To modify soil temperature
- To increase biological activity in the soil

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Mulch can be used as a singular erosion control device for up to six months, but it shall be applied at the appropriate depth, depending on the material used, anchored and have a continuous 90% cover or greater of the soil surface.

Maintenance shall be required to maintain appropriate depth and 90% cover. Temporary vegetation may be employed instead of mulch if the area will remain undisturbed for less than six months.

If any area will remain undisturbed for greater than six months, permanent vegetative techniques shall be employed. Refer to **Ds2 -Disturbed Area Stabilization (With Temporary Seeding), Ds3 - Disturbed Area Stabilization (With Permanent Seeding), and Ds4 - Disturbed Area Stabilization (With Sodding).**

SPECIFICATIONS

Mulching Without Seeding

This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation

1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.
3. Loosen compact soil to a minimum depth of 3 inches.

Mulching Materials

Select one of the following materials and apply at the depth indicated:

1. Dry straw or hay shall be applied at a depth of 2 to 4 inches providing complete soil coverage. One advantage of this material is easy application.
2. Wood waste (chips, sawdust or bark) shall be applied at a depth of 2 to 3 inches. Organic material from the clearing stage of development should remain on site, be chipped, and applied as mulch. This method of mulching can greatly reduce erosion control costs.
3. Polyethylene film shall be secured over banks or stockpiled soil material for temporary protection. This material can be salvaged and re-used.

Applying Mulch

When mulch is used without seeding, mulch shall be applied to provide full coverage of the exposed area.

1. Dry straw or hay mulch and wood chips shall be applied uniformly by hand or by mechanical equipment.

Disturbed Area Stabilization (With Temporary Seeding) Ds2

DEFINITION

The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.

PURPOSE

- To reduce runoff and sediment damage of down stream resources
- To protect the soil surface from erosion
- To improve wildlife habitat
- To improve aesthetics
- To improve tilth, infiltration and aeration as well as organic matter for permanent plantings

REQUIREMENT FOR REGULATORY COMPLIANCE

Mulch or temporary grassing shall be applied to all exposed areas within 14 days of disturbance. Temporary grassing, instead of mulch, can be applied to rough graded areas that will be exposed for less than six months. If an area is expected to be undisturbed for longer than six months, permanent perennial vegetation shall be used. If optimum planting conditions for temporary grassing is lacking, mulch can be used as a singular erosion control device for up to six months but it shall be applied at the appropriate depth, anchored, and have a continuous 90% cover or greater of the soil surface. Refer to specification **Ds1-Disturbed Area Stabilization (With Temporary Seeding).**

CONDITIONS

Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS

Grading and Shaping

Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

No shaping or grading is required if slopes can be stabilized by hand-seeded vegetation or if hydraulic seeding equipment is to be used.

Seedbed Preparation

When a hydraulic seeder is used, seedbed preparation is not required. When using conventional or hand-seeding, seedbed preparation is not required if the soil material is loose and not sealed by rainfall.

When soil has been sealed by rainfall or consists of smooth cut slopes, the soil shall be pitted, trenched or otherwise scarified to provide a place for seed to lodge and germinate.

Lime and Fertilizer

Agricultural lime is required unless soil tests indicate otherwise. Apply agricultural lime at a rate determined by soil test for pH. Quick acting lime should be incorporated to modify pH during the germination period. Bio stimulants should also be considered when there is less than 3% organic matter in the soil. Graded areas require lime application. Soils must be tested to determine required amounts of fertilizer and amendments. Fertilizer should be applied before land preparation and incorporated with a disk, ripper, or chisel. On slopes too steep for, or inaccessible to equipment, fertilizer shall be hydraulically applied, preferably in the first pass with seed and some hydraulic mulch, then topped with the remaining required application rate.

Seeding

Select a grass or grass-legume mixture suitable to the area and season of the year. Seed shall be applied uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder (slurry including seed and fertilizer). Drill or cultipacker seeders should normally place seed one-quarter to one-half inch deep. Appropriate depth of planting is ten times the seed diameter. Soil should be "raked" lightly to cover seed with soil if seeded by hand. See Table 6-4.1

Mulching

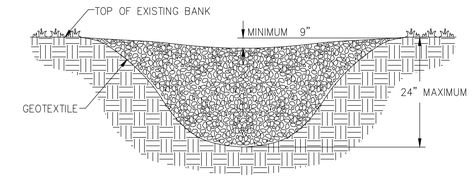
Temporary vegetation can, in most cases, be established without the use of mulch, provided there is little to no erosion potential. However, the use of mulch can often accelerate and enhance germination and vegetation establishment. Mulch without seeding should be considered for short term protection. Refer to **Ds1 - Disturbed Area Stabilization (With Mulching Only).**

Irrigation

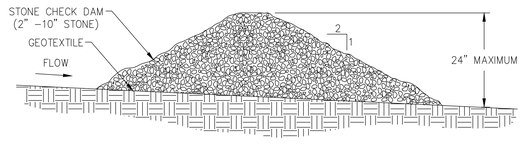
During times of drought, water shall be applied at a rate not causing runoff and erosion. The soil shall be thoroughly wetted to a depth that will insure germination of the seed. Subsequent applications should be made when needed.

Table 1. Mulching Application Requirements

Material	Rate	Depth
Straw or hay	-	2" to 4"
Wood waste, chips, sawdust, bark	-	2" to 3"
Polyethylene film	Secure with soil, anchors, weights	-
Geotextiles, jute matting, netting, etc.	See manufacturer's recommentations	-



PROFILE VIEW



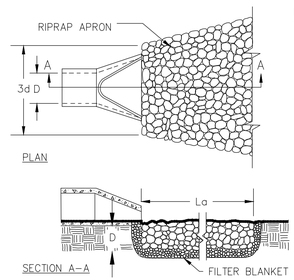
NOTES:
1. CHECK DAMS ARE TO BE USED ONLY IN SMALL OPEN CHANNELS (THEY ARE NOT TO BE USED IN LIVE STREAMS).
2. THE DRAINAGE AREA FOR STONE CHECK DAMS SHALL NOT EXCEED TWO ACRES.
3. THE CENTER OF THE CHECK DAM MUST BE AT LEAST 9 INCHES LOWER THAN THE OUTER EDGES.
4. THE DAM HEIGHT SHOULD BE A MAXIMUM OF 2 FEET FROM CENTER TO RIM EDGE.
5. THE SIDE SLOPES OF THE CHECK DAM SHALL NOT EXCEED A 2:1 SLOPE.
6. GEOTEXTILE SHALL BE USED TO PREVENT THE MITIGATION OF SUBGRADE SOIL PARTICLES INTO THE STONES (REFER TO AASHTO M288-96, SECTION 7.3, TABLE 3).

STONE CHECK DAM

NOT TO SCALE

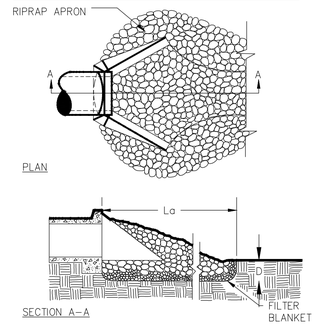
CD-S

PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL



NOTES:
1. La IS THE LENGTH OF THE RIPRAP APRON.
2. D = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6".
3. IN A WELL-DEFINED CHANNEL, EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK (WHICHEVER IS LESS).
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND THE SOIL FOUNDATION.
5. La = 10'
   W1 = 4'
   W2 = 12'
   d50 = 3.6"
   dMAX = 5.4"
   D = 8.1"

PIPE OUTLET TO WELL DEFINED CHANNEL



RIPRAP OUTLET PROTECTION

NOT TO SCALE

St

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN

1. CFS IN THE CHANNEL/DITCH THAT THE CHECK DAM IS BEING USED IN= LESS THAN 2 CFS
2. ABOVE 2.0 CFS: NO
3. IF YES, LIST BMP BEING USED IN CONJUNCTION WITH CHECK DAM: N/A

SPACING BETWEEN CHECK DAMS

A = THE TOE OF THE UPSTREAM CHECK DAM.
B = TOP OF THE DOWNSTREAM CHECK DAM.
C = THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

CROSS SECTION

GRAPHIC SCALE

0 .5 1 2 4

(IN FEET)
1 inch = 1 ft.

GEORGIA REGISTERED PROFESSIONAL ENGINEER NATHAN B. LONG 034754
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NOBLE VINES

ES & PC DETAILS

JOB NO:	J-28896.0001
DATE:	03/29/22
DRAWN:	VND
DESIGNED:	JTD
REVIEWED:	JRW
APPROVED:	NBL
SCALE:	NTS

EC3.2

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Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BAHIA, PENSACOLA *Paspalum notatum*					
alone or with temporary cover	60 lbs	1.4 lbs	P		166,000 seed per pound. Low growing. Sod forming. Slow to establish. Plant with a companion crop. Will spread nto bermuda pastures and awns. Mix with Sericea lespedeza or weeping lovegrass.
with other perennials	30 lbs	0.7 lb	C		
BAHIA, WILMINGTON *Paspalum notatum*					
alone or with temporary cover	60 lbs	1.4 lb	M-L		
with other perennials	30 lbs	0.7 lb	P		Same as above.
BERMUDA, COMMON *Cynodon dactylon*					
Hulled seed			P		
alone	10 lbs	0.2 lb	C		1,767,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fileds.
with other perennials	6 lbs	0.7 lb			
BERMUDA, COMMON *Cynodon dactylon*					
Unhulled seed					
with temporary cover	10 lbs	0.2 lb	P		Plant with winter annuals.
with other perennials	6 lbs	0.1 lb	C		Plant with Tall Fescue

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BERMUDA SPRIGS *Cynodon dactylon*					
Coastal, Common, Midland, or Tift 44	40 cu ft or sod plugs 3' x3'	0.9 cu ft	M-L		A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 springs.
			P		
Coastal, Common, of Tift 44			C		Same as above.
Tift 78			C		Southern Coastal Plain only
CENTIPEDE *Eremochloa ophuiroides*					
	Block sod only		P		
			C		Drought tolerant. Full sun or partial shade. Effective adjacent to concrete and in constricted flow areas. Irrigation is needed until fully established. Do not plant near pastures. Winterhardy as far as north Athens and Atlanta
CROWNVETECH Coronilla varia					
with winter annuals or cool season grasses	15 lbs	0.3 lb	M-L P		100,000 seed per pound. Dense growth. Drought tolerant and fire resistent. Attractive rose, pink and white blossoms spring to late fall. Mix with 30 pounds of Tall fescue or 15 pounds of rye. Inoculate see with M inoculant. Use from North Atlanta and Northward.

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
FESCUE, TALL *Festuca arundinacea*					
alone	50 lbs	1.1 lb	M-L		227,000 seed per pound. Use alone only on better sites. Mix with perennial lespedeza or Crownvetch. Apply topdressing in spring following fall plantings. Not for heavy use areas or athletic fields.
with other perennials	30 lbs	0.7 lb	P		
KUDZU *Pueraria thumbergiana*					
Plants or crowns	3' - 7' apart		ALL		Rapid and vigorous growth. Excellent in gully erosion control. Will climb. Good livestock forage.
LESPEDEZA SERICEA *Lespedeza cuneata*					
scarified	60 lbs	1.4 lb	M-L P C		350,000 seed per pound. Widely adapted. Low maintenace. Mix with Weeping lovegrass, Common bermuda, bahia, or tall fescue. Takes 2 to 3 years to become fully established. Excellent on roadbanks. Inoculate seed with EL inoculant.
unscarified	75 lbs	1.7 lb	M-L P C		Mix with Tall fesue or winter annuals.
seed- bearing hay	3 tons	1338 lbs	M-L P C		Cut when seed mixture is mature, but before, it shatters. Add Tall fescue or winter annuals.

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
LESPEDEZA Ambro virgata *Lespedeza virgata DC* or *Appalow Lespedeza cuneata (Dumont) G. Don)*					
scarified	60 lbs	1.4 lb	M-L P C		300,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth. New growth has bronze coloration. Mix with weeping lovegrass, common bermuda, bahia, tall fescue or winter annuals. Do not mix with Sericea lespedeza. Slow to develop solid stands. Inoculate seed with EL inoculant.
unscarified	75 lbs	1.7 lb	M-L P C		
LESPEDEZA, SHRUB *Lespedeza bicolor* *Lespedeza thumbergii*					
plants	3' x3'		M-L P C		Provide wildlife food and cover.
LOVEGRASS, WEEPING *Eragrostis curvula*					
alone	4 lbs	0.1 lb	M-L P C		1,500,000 seed per pound. Quick cover. Drought tolerant. Grows wet with Sericea lespedeza on roadbanks.
with other perennials	2 lbs	0.05 lb			

Table 6-5.2- Permanent Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
MAIDENCANE *Panicum hemitomon*					
sprigs	2' x 3' spacing	ALL			For very wet sites. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
PANICGRASS, ATLANTIC COASTAL *Panicum amarum var amarulkum*					
	20 lbs	0.5 lb	P C		Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for wildlife. Mix with Sericea lespedeza except on sand dunes.
REED CANARY GRASS *Phalaris arundinacea*					
alone	50 lbs	1.1 lb	M-L		
with other perennials	30 lbs	0.7 lb	P		Grows similar to Tall fescue
SUNFLOWER, 'AZTEC' MAXIMILLIAN *Helianthus maximiliani*					
	10 lbs	0.2 lb	M-L P C		227,000 seed per pound. Mix with Weeping lovegrass or other low-growing grasses or legumes.

1 Reduce seeding rates by 50% when drilled
2 PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications.
3 M-L represents to Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents the Souther Coastal Plain;Sand Hills;Black Lands;and Atlantic Coast Flatwoods MLRAs. See Figure 6-4.1

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Table 6-4.1 - Temporary Cover or Companion Cover Crops

PLANT, PLANTING RATE, AND PLANTING DATE FOR TEMPORARY COVER OR COMPANION CROPS [1]

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
BARLEY *Hordeum vulagre*					
alone	3 bu. (144 lbs)	3.3 lbs	M-L		14,000 seed per pound. Winter hardy. Use on productive soils.
in mixture	1/2 bu. (24lbs)	0.6 lb	P		
			C		
LESPEDEZA, ANNUAL *Lespedeza striata*					
alone	40 lbs	0.9 lb	M-L		200,000 seed per pound. May volunteer for several years. Use inoculant EL.
in mixture	10 lbs	0.2 lb	P		
			C		
LOVEGRASS, WEEPING *Eragrostis curvula*					
alone	4 lbs	0.1 lb	M-L		1,500,000 seed per pound. May last for several years. Mix with *Sericea lespedeza.*
in mixture	2 lbs	0.05 lb	P		
			C		
MILLET, BROWNTOP *Panicum fasciculatum*					
alone	40 lbs	0.9 lb	M-L		137,000 seed per pound. Quick dense cover. Will provide excessive competion in mixtures if seeded at high rate.
in mixture	10 lbs	0.2 lb	P		
			C		

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
MILLET, PEARL *Pennesetum glaucum*					
alone	50 lbs	1.1 lbs	M-L		88,000 seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
			P		
			C		
OATS *Avena sativa*					
alone	4 bu. (128 lbs)	2.9 lbs	M-L		13,000 seed per pound. Use on productive soils. Not as a winter hardy as rye or barley.
in mixture	1 bu. (32 lbs)	0.7 lb	P		
			C		
RYE *Secale cereale*					
alone	3 bu. (168 lbs)	3.9 lbs	M-L		18,000 seed per pound. Quick cover. Drought tolerant and winter hardy.
in mixture	1/2 bu. (28 lbs)	0.6 lb	P		
			C		
RYEGRASS, ANNUAL *Lolium temulentum*					
alone	40 lbs	0.9 lb	M-L		227,000 seed per pound. Dense cover. Very competitive and is not to be used in mixtures.
			P		
			C		
SUDANGRASS *Sorghum sudanese*					
alone	60 lbs	1.4 lbs	M-L		55,000 seed per pound. Good on droughty sites. Not recommended for mixtures.
			P		
			C		

Species	Broadcast Rates		Resource Area[3]	Planting Dates by Resource Area (Solid lines indicate optimum dates, dotted lines indicate permissible but marginal dates.) J F M A M J J A S O N D	Remarks
	Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft			
TRITICALE *X-Triticosacale*					
alone	3 bu. (144 lbs)	3.3 lbs	C		Use on lower part of Southern Coastal Plain and in Atlantic Coastal Flatwoods only.
in mixture	1/2 bu. (24 lbs)	0.6 lb			
WHEAT *Triticum aestivum*					
alone	3 bu. (180 lbs)	4.1 lbs	M-L		15,000 seed per pound. Winter hardy.
in mixture	1/2 bu. (30 lbs)	0.7 lb	P		
			C		

[1]Temporary cover crops are very competitive and will crowd out perennials if seeded too heavily

[2]Reduce seeding rates by 50% when drilled.

[3]M-L represents the Mountain; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents Southern Coastal Plan; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs
(see Figure 6-4.1, p. 6-40)

GEORGIA REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT NATHAN E. LONG Landscape Architect

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NOBLE VINES

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JOB NO:	J-28896.0001
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APPROVED:	NBL
SCALE:	NTS

EC3.3

STORMWATER MANAGEMENT REPORT FOR:

NOBLE VINES

PORT WENTWORTH, GEORGIA

PREPARED FOR:
CLARET COMMUNITIES, LLC

J – 28896.0003

JULY 2021
REVISED: AUGUST 2022

Prepared by:

THOMAS & HUTTON

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STORMWATER MANAGEMENT REPORT
Noble Vines

Project:	Noble Vines
T&H Job Number:	J–28896.0003
Location:	Port Wentworth, Georgia
Date Prepared:	August 2022

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APPENDICES

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Pipe Sizing Calculations ..... Appendix F

The following can be found in pockets at the end of this report:

Pre-Development Basins Exhibit ..... 24" x 36" Exhibit

Post-Development Basins Exhibit ..... 24" x 36" Exhibit

SECTION 1 – SUMMARY OF RESULTS
Noble Vines

TABLE 1 Summary of Results – Peak Runoff (Site Only)						
Condition	**Peak Runoff (cfs)**					
	2–yr	***5–yr***	***10–yr***	***25–yr***	***50–yr***	***100-yr***
Pre–development (Pre-Out-01)	116.83	167.86	214.77	283.22	337.58	390.26
Post–development (Post-Out-01)	78.11	113.15	144.98	192.51	231.81	273.15

TABLE 2 Summary of Results – Peak Pond Stages								
Basin/Pond	**NWL (ft)**	**TOB (ft)**	**Peak Pond Stage (ft)**					
			2–yr	***5-yr***	***10–yr***	***25–yr***	***50–yr***	***100-yr***
Pond-01	17.5	21.5	18.73	19.02	19.27	19.60	19.86	20.14
Pond-02	17.5	21.5	18.80	19.16	19.48	19.95	20.34	20.79

SECTION 2 – PROJECT NARRATIVE

Noble Vines, is a multi-family/townhome development within the city limits of Port Wentworth. The tract is bordered to the east and west by undeveloped land, to the north by Berrien Road and to the south by GA Hwy 30. The development will ultimately consist of at least one amenity area with a pool, townhomes, multi-family buildings, stormwater ponds, and associated infrastructure.

No wetland impacts are proposed as part of this project. Water, sewer and storm infrastructure necessary to serve the project will be included and integrated in to the existing infrastructure in this development.

The majority of the site is currently wooded with a mixture of hardwoods and planted pines. Elevations on the tract range from approximately 15.0 feet (NAVD 1988) to 25.0 feet (NAVD 1988). The existing soil types consist of hydrologic soil types B/D and C/D. The existing drainage system is predominantly the silviculture ditches that exist within the site. These ditches help discharge through the culvert pipes running under GA Hwy 30. The project area lies in Zone X, Area of Minimal Flood Hazard, as shown on FEMA FIRM map 13051C0030G, dated August 16, 2018. Permanent seeding will provide a groundcover to stabilize the area after completion.

This stormwater management report uses Storm and Sanitary Analysis (SSAO) computer program developed by AutoCAD to analyze post-development flows for Noble Vines and adjacent properties. The post-development section of this report compares the post-development conditions of the proposed areas with the pre-development conditions. Proposed stormwater ponds and proposed drainage infrastructure will be constructed as part of the project to serve as permanent stormwater BMP which will provide the required storm water attenuation.

SECTION 3 – PURPOSE

- To define the limits of the drainage basin or basins that contain this project.
- To define the tailwater conditions for the project.
- To document that major drainage infrastructure such as road crossings, drainage connectors, ponds, and outfalls are adequate for all existing, proposed, and future development within the drainage basin, and/or that infrastructure construction can be phased to accommodate future development.
- To document compliance with regulatory requirements of the State of Georgia and the City of Port Wentworth summarized as follows:

  Georgia EPD

  - Sediment shall be prevented from leaving the site during construction.

  City of Port Wentworth

  - Post-Development peak runoff rates shall be detained for 2, 10, 25, and 50 year storms.
  - Peak stages in ponds shall be below the minimum Finished Floor Elevations.
  - Study entire drainage basin at a buildout condition, including areas upstream and downstream of the current project.
  - Drainage culverts shall be sized to accommodate runoff from the 25-year storm.

SECTION 4 – PROPOSED DRAINAGE SYSTEM

The components of the proposed system are roads, swales, pipes/culverts, ponds/lakes/lagoons and outfalls. Roads, and in some cases rear yard swales, provide positive drainage from lots. A combination system of pipes, weirs and lagoons provides conveyance of stormwater runoff throughout the project and the wetlands. Proposed stormwater ponds (Pond 1 and Pond 2) will interconnect with each other to detain excessive runoff. A spillway is proposed to provide the necessary detention of runoff and this spillway will discharge through existing culverts under GA Hwy 30.

SECTION 5 – STORMWATER QUANTITY METHODOLOGY

The existing and proposed conditions will be analyzed using the Storm and Sanitary Analysis (SSA) computer program developed by AutoCAD. Please see appendices A and B for model input and results for the pre-development and post-development models, respectively. SSA is used to model rainfall and stormwater runoff and to perform hydraulic routing through the storm drainage system. The SSA program is a FEMA approved model that has the ability to analyze complex interconnected drainage systems dynamically over extended time periods.

The hydrologic input data consists of information for each drainage basin, or subwatershed, within the project. Input variables include runoff curve number, rainfall distribution pattern, hydrograph peaking factor, area of each drainage basin, and time of concentration (see below section "Hydrology" for specifics on the values of these variables that were used in this model). The SSA program generates runoff hydrographs for each subwatershed based on the user–specified variables. Hydrographs are generated by SSA using the SCS Unit Hydrograph Method.

The model hydraulic input data consists of a system of nodes and links. Nodes represent locations where flows enter or exit the system, pipe or channel characteristics change, or where stage/storage/time relationships are provided. Links represent traditional types of hydraulic conveyance such as pipes, channels, drop structures, weirs, etc. The sizes, inverts, lengths, and Manning n values for all pipes connecting the lagoons are input into the model. In addition to pipe information, all lagoon and detention area stage–storage information and the respective outfall structure information is input into the model. The node and link conditions are analyzed within the model for a given storm, and flow conditions are determined.

The basic equation used by SSA to route flows through the system is:

$\Delta s = (Q_{in} - Q_{out})\ \Delta t$

Where:
Δs = Change in storage for time step
Q_{in} = Flow into a node at time "t"
Q_{out} = Flow out of a node at time "t"
Δt = Length of time step; user defined range from 1.0 sec to 0.1 sec.

Hydrographs for each drainage area are merged within the SSA program, and the hydrologic results are then combined with the hydraulic information to model the hydraulic interactions of the entire drainage system. The results include detention area discharge rates and stage/storage information during the design storm.

For the design of the storm drainage system, a warning stage elevation is set for each detention area and structure to assure no stormwater ponding. In addition, the ultimate discharge rate from the system cannot exceed the pre–developed runoff rate. Knowing these two factors, the drainage system is designed by trial and error.

SECTION 6 – HYDROLOGY

- SCS Unit Hydrograph Method is used.
- Amount of rainfall for each storm frequency is determined based on NOAA Atlas 14 Point Precipitation Frequency Estimates at the project site in Port Wentworth, GA. The following design storms are used in the model simulations:

TABLE 3
Rainfall Amounts

Storm Event	Duration	Rainfall (inches)
2–year	24–hour Design Storm	4.47
5-year	24–hour Design Storm	5.68
10–year	24–hour Design Storm	6.78
25–year	24–hour Design Storm	8.45
50–year	24–hour Design Storm	9.86
100–year	24–hour Design Storm	11.4

- SCS Type III Statistical Rainfall Distribution is used. This distribution pattern is determined by the Soil Conservation Service comparing regional rain–gage data.
- A 323 Hydrograph Peaking Factor is used instead of the Typical SCS 484 Peaking Factor. The 323 Factor is based on statistical analysis of actual rainfall and runoff data from the Southeastern United States, and is typical for coastal areas.

SECTION 7 – PRE–DEVELOPMENT RUNOFF CALCULATIONS

Pre–development peak flow rates for each design storm are calculated by the SSA program. The pre–development drainage basins are shown in an attached exhibit at the end of this report.

7.1 Curve Numbers

Curve numbers are generated according to procedures set forth in SCS TR–55. The composite curve numbers for each drainage basin are calculated using soils information from the SCS Soil Survey of Bryan and Chatham Counties, Georgia. Pre–Development Curve Numbers were weighted based on the type and amount of soil within each basin.

7.2 Time of Concentration

Times of concentration were calculated according to procedures set forth in SCS Hydrology Technical Note No. N4 [as referenced in TR–55]. The travel times (T_t) for overland flow, shallow concentrated flow, and channel flow are added together for the drainage basin to get the time of concentration T_c.

- Overland Flow
  The equation for overland flow travel time is as follows:

$T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5}\,S^{0.4}}$ Where: n = Manning's friction factor
L = slope length (ft)
S = Slope (ft/ft)
P_2 = 2-yr, 24–hour precipitation (inches)

The travel time as calculated in the above equation is in hours (multiply by 60 minutes per hour to convert to minutes).

- Shallow Concentrated Flow
  The equation for shallow concentrated flow travel time is as follows:

  $T_t = \frac{L}{60v}$ (min) Where: L = length (ft)
  v = velocity (ft/sec)

- Channel and Pipe Flow
  The equation for channel flow travel time is as follows:

  $T_t = \frac{L}{60v}$ (min) Where: L = length of channel (ft)
  v = velocity (ft/sec)

  The velocity is determined using Manning's equation:
  $v = (1.49/n)r^{2/3}S^{1/2}$ Where: r = hydraulic radius (ft) = A_x/P
  A_x = cross–sectional area (sf)
  P = wetted perimeter (ft)
  S = slope (ft/ft)

  Travel times for each sub–basin were then added together to determine the time of concentration for each pre–developed drainage area.

TABLE 5
Pre–Development Conditions Summary

Basin Name	Area (ac)	CN	Tc (min)
PRE-DA1	4.29	79.0	14.6
PRE-DA2	2.63	79.0	14.0
PRE-DA3	3.09	79.0	10.8
PRE-DA4	10.60	79.0	23.6
PRE-DA5	10.05	79.0	20.5
PRE-DA6	7.05	79.0	13.9
PRE-DA7	5.28	79.0	24.5
OFFSITE DA-1	3.95	79.0	12.4
OFFSITE DA-2	7.05	79.0	19.4
OFFSITE DA-3	16.71	84.0	34.8
OFFSITE DA-4	19.02	84.8	135.4
OFFSITE DA-5	5.50	87.2	31.5

SECTION 8 – POST–DEVELOPMENT RUNOFF CALCULATIONS

The components of the proposed system are roads, swales, pipes/culverts, ponds/lakes/lagoons and an outfall. Roads, and in some cases rear yard swales, provide positive drainage from lots. A combination system of pipes, weirs and lagoons provides conveyance of stormwater runoff throughout the project and the wetlands. Proposed stormwater ponds (Pond 1 and Pond 2) will

interconnect with each other other to detain excessive runoff. A spillway is proposed to provide the necessary detention of runoff and this spillway will discharge to existing culverts under GA Hwy 30.

8.1 Curve Numbers

Curve numbers are generated according to procedures set forth in SCS TR–55. The composite curve numbers for each drainage basin are calculated using soils information from the SCS Soil Survey of Bryan and Chatham Counties, Georgia. Post–Development Curve Numbers were weighted based on the type and amount of soil within the basin and shown in the appendix.

8.2 Time of Concentration

Times of concentration for post–development are determinded according to the longest anticipated travel path within each basin. The travel times (T_t) for overland flow, shallow concentrated flow, and pipe flow are added together for each drainage basin to calculate the time of concentration T_c.

- Overland Flow

  The equation for overland flow travel time is as follows:

  $$T_t = \frac{0.007\,(nL)^{0.8}}{P_2^{0.5} S^{0.4}}$$

  Where: n = Manning's friction factor
  L = slope length (ft)
  S = Slope (ft/ft)
  P_2 = 24–hour precipitation (inches)
  For 2–year storm event

  The travel time as calculated in the above equation is in hours. Multiply the result by 60 minutes per hour to convert to minutes.

- Shallow Concentrated Flow

  The equation for shallow concentrated flow travel time is as follows:

  $$T_t = \frac{L}{60v} \text{ (min)}$$

  Where: L = length (ft)
  v = velocity (ft/sec)

  The velocity is determined using the TR–55 method.

- Pipe and Channel Flow

  The equation for channel flow travel time is as follows:

  $$T_t = \frac{L}{60v} \text{ (min.)}$$

  Where: L = length of channel (ft)
  v = velocity (ft/sec)

  Times of concentration for post–development are determined according to the longest anticipated travel path within each basin. Travel times are assumed to be as follows:

Description	Velocity
Pipe Flow	2 ft/sec

  Travel times for each sub–basin were then added together to calculated time of concentration for each pre–developed drainage area.

TABLE 6 Post–Development Conditions Summary			
Basin Name	**Area (ac)**	**CN**	**Tc (min)**
POST-DA-1	7.83	92.7	28.9
POST-DA-2	13.12	89.4	157.9
POST-DA-3	9.32	89.91	32.2
POST-DA-4	2.70	83.0	7.0
POST-DA-5	10.05	79.0	40.0
OFFSITE-DA-1	3.95	79.0	12.4
OFFSITE-DA-2	7.05	79.4	19.4
OFFSITE-DA-3	16.71	84.0	34.8
OFFSITE-DA-4	19.02	84.8	135.4
OFFSITE-DA-5	5.50	87.2	31.5

The minimum time of concentration used for basins is six (6) minutes. Times of concentration are generated according to procedures set forth in SCS Technical Release 55.

The specific hydrology theory is described in the Soils Conservation Services National Handbook, Section 4, "Hydrology."

SECTION 9 – PRE-DEVELOPMENT CONDITIONS

Pre–development drainage basins are shown in an attached exhibit at the end of this report. Please see Summary of Results (Pre–Development vs. Post–Development Conditions) at the beginning of report in Table 1. The project area lies in Zone X, Area of Minimal Flood Hazard, as shown on FEMA FIRM map 13051C00350, dated August 16, 2018.

SECTION 10 – TAILWATER CONDITIONS

The tailwaters for our project were established in both the pre-development and post-development models for the 2-year, 5-year, 10-year, 25-year, 50-year, and 100-year storms. In both stormwater models, all the runoff discharging to the outfall downstream of the site was accounted for. This allows for a normal depth condition to be assumed at the outfall. As a result, the tailwater conditions are automatically calculated within the stormwater models.

The tail water condition is the maximum stage in the receiving water which can be:

- Mean annual high tide for tidal areas
- Mean annual seasonal high water elevation
- Peak stage in receiving water (pond level, ditch water elevation, etc.)

SECTION 11 – COASTAL STORMWATER SUPPLEMENT (CSS)

The stormwater runoff volume generated by the first 1.2" of rainfall is called the runoff reduction storm event (RRv), in Section 4.4.1 of the latest edition of the CSS to the GSMM. The RRv shall be captured on-site. A stormwater management system is presumed to comply with these criteria if:

1. It includes green infrastructure practices that provide for the interception, evapotranspiration, infiltration or capture and reuse of stormwater runoff, that have been selected, designed, constructed and maintained in accordance with the information presented in the latest edition of the CSS to the GSMM and the LDM; and,

2. It is designed to provide the amount of stormwater runoff reduction specified in the latest edition of the CSS to the GSMM.

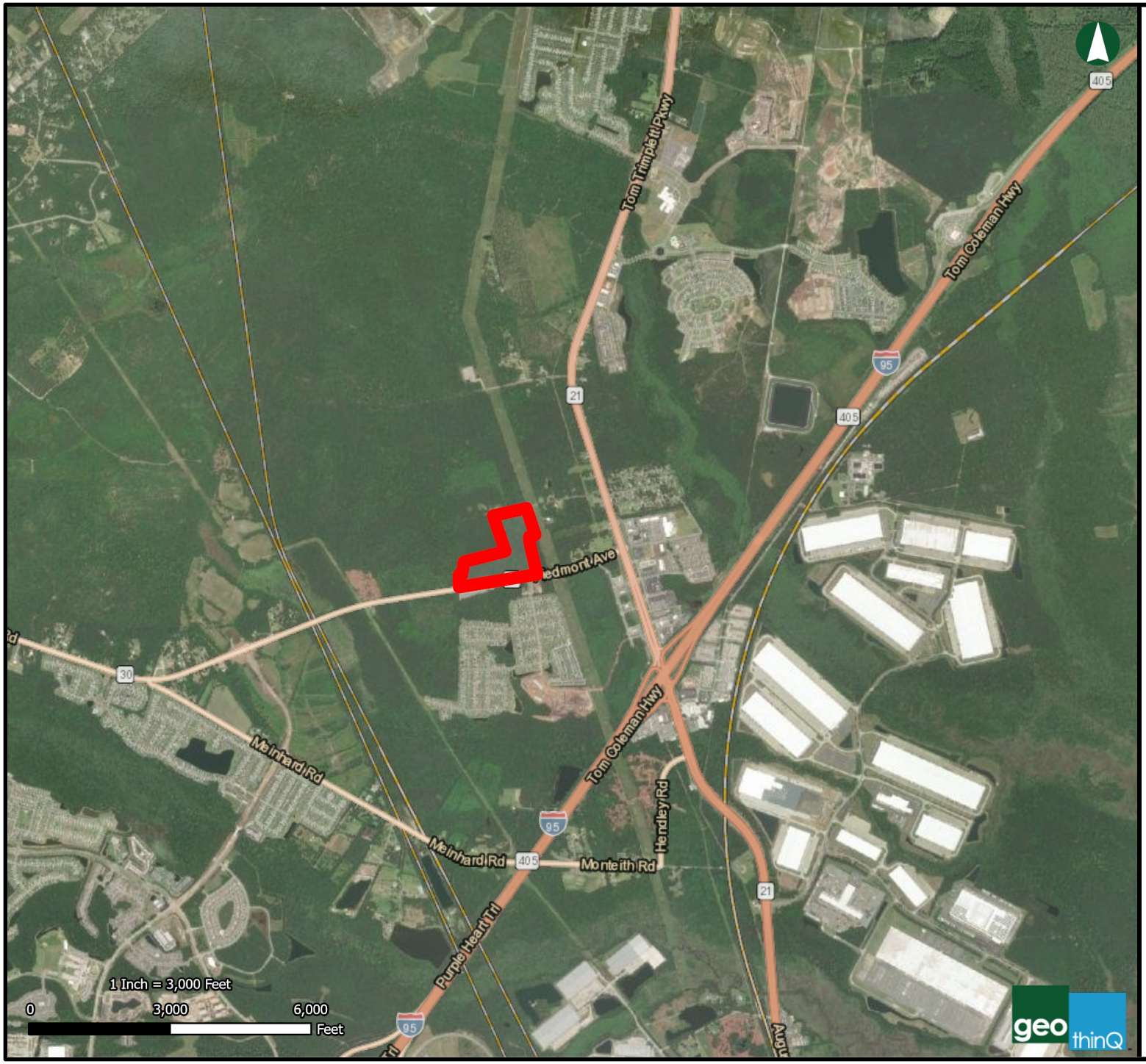
A combination of high groundwater, poor draining soils, and the nature of the curb-and-gutter parking design does not allow significant opportunity to effectively implement green infrastructure practices. In addition, some work is proposed within the right-of-way of GA Hwy 30, which has limited space and does not allowSection 4.4.2 of the latest edition of the CSS states that any runoff from the 1.2-inch rainfall event that cannot be reduced due to site constraints should be intercepted and treated by stormwater management practices to provide an 80% reduction in total suspended solids (TSS) and a reduction in the load of total nitrogen (TN) and bacteria loads to the maximum extent practical. By detaining the 1-year, 24-hour design storm event, which represents a rainfall event of 3.80 inches over 24 hours, to the pre-development peak runoff rate, it is presumed that the first 1.2 inches of runoff will also be detained for treatment (please see Appendix E for extended detention for the 1-yr storm). Based on section 4.25.3 of Volume 2 of the GSMM (2016 Edition), wet detention ponds are assumed to provide an 80% reduction in the TSS load, a 30% reduction in TN load, and a 70% reduction in fecal coliform load. Please see Appendix D for CSS Calculations and exhibit.

SECTION 12 – POST–DEVELOPMENT CONDITIONS

Post–development drainage basins are shown in an attached exhibit at the end of this report. See Appendices for post–development ICPR model input and results. See Summary of Results (Pre–Development vs. Post–Development Conditions) at the beginning of report in Table 1. The hydraulic grade line (peak stage elevation) for the ponds or lakes in the drainage system are shown in Table 2 at the beginning of the report.

SECTION 13 – CONCLUSIONS

The post-developed runoff is detained on site and is released at less than pre-developed rates. The stormwater system satisfies design requirements for Georgia EPD and The City of Port Wentworth. No adverse upstream or downstream impacts should occur to the existing stormwater system due to the proposed development.



THOMAS & HUTTON

NOBLE VINES

VICINITY MAP

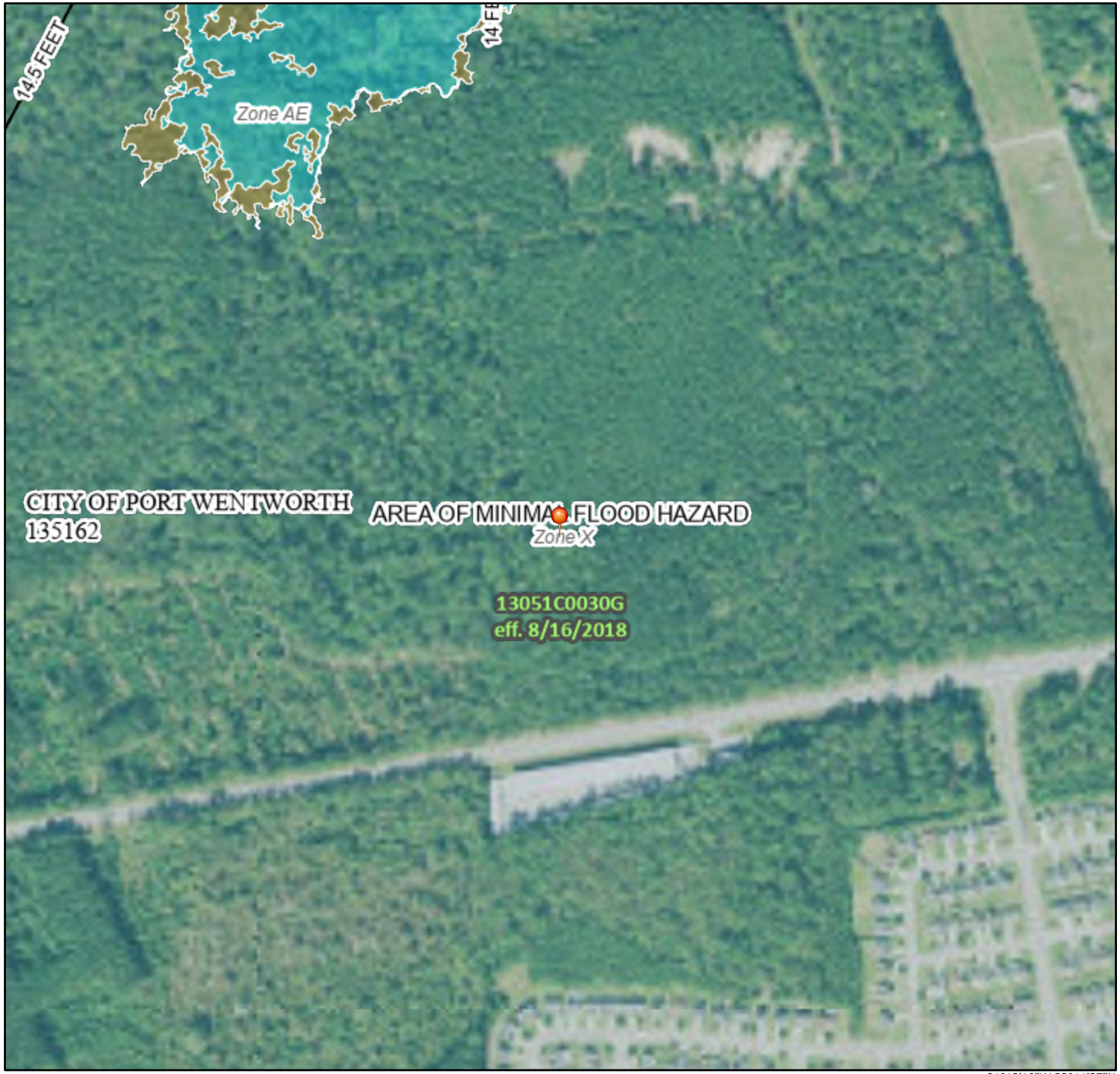
07/23/2021

This map was created using geothinQ | www.geothinQ.com | Mapping Smart Land Decisions

National Flood Hazard Layer FIRMette

FEMA

81°12'48"W 32°12'8"N



81°12'10"W 32°11'37"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
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 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 7/23/2021 at 2:16 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.

STORMWATER MANAGEMENT REPORT

NOBLE VINES

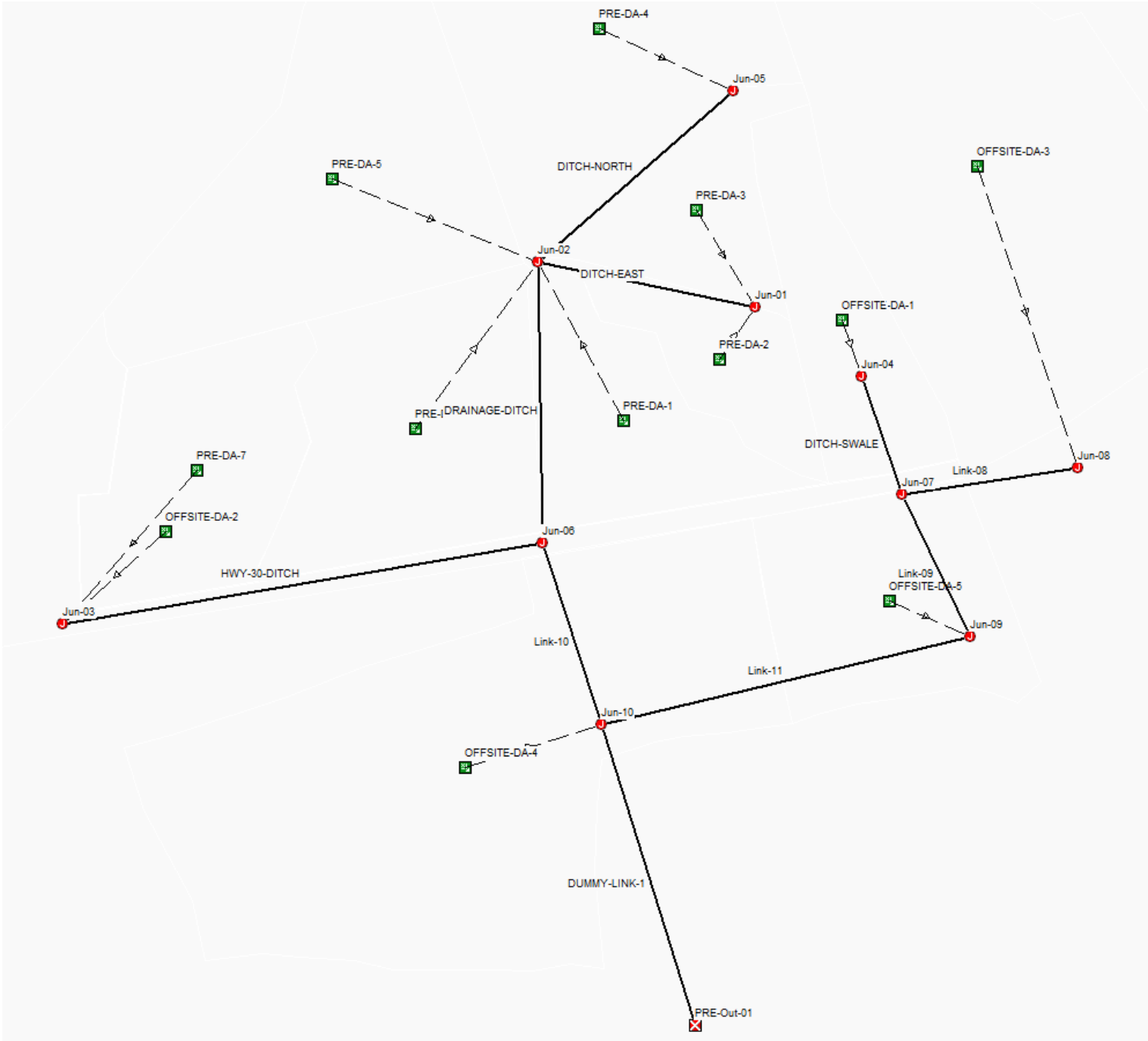
APPENDIX A

PRE–DEVELOPMENT
SSA MODEL DIAGRAM, INPUT, & RESULTS

J – 28896.0003

THOMAS & HUTTON

Pre-Development Model



Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... May 25, 2021 00:00:00
End Analysis On ..... May 26, 2021 00:00:00
Start Reporting On ..... May 25, 2021 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 1 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-002	Intensity	inches	Georgia	Chatham	2	4.47	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	4.47	2.35	9.29	7.57	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	4.47	2.35	16.57	11.31	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	4.47	2.79	46.62	24.07	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	4.47	2.87	54.49	11.51	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	4.47	3.09	16.97	9.18	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	4.47	2.35	10.09	7.73	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	4.47	2.35	6.18	4.83	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	4.47	2.35	7.26	6.22	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	4.47	2.35	24.92	15.61	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	4.47	2.35	23.63	15.75	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	4.47	2.35	16.57	12.97	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	4.47	2.35	12.41	7.64	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	10.97	20.55	0.00	2.45	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	58.08	20.52	0.00	3.08	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	18.64	21.36	0.00	2.34	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	7.57	21.83	0.00	2.17	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	15.60	21.43	0.00	4.17	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	74.89	19.01	0.00	3.68	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	29.19	21.19	0.00	2.11	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	23.99	21.21	0.00	2.09	0 00:00	0.00	0.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	37.93	21.15	0.00	1.85	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	116.82	18.27	0.00	4.23	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					116.83	18.26					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	28.77	105.95	0.27	1.36	2.95	0.98	0.00	Calculated
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	74.01	26.42	2.80	6.02	1.35	0.45	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	8.43	166.72	0.05	0.45	1.74	0.43	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	15.41	575.55	0.03	1.01	1.38	0.28	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	7.44	170.24	0.04	0.81	1.79	0.60	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	56.39	469.21	0.12	2.51	1.80	0.36	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	116.83	6836.31	0.02	30.83	0.97	0.19	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	18.54	169.84	0.11	1.85	1.68	0.42	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	23.98	95.54	0.25	1.99	2.90	0.58	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	37.23	196.41	0.19	2.51	2.06	0.41	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	8.43	0 12:24	166.72	0.05	0.45	20.78	1.74	0.43	0.00		
2	DITCH-NORTH	15.41	0 12:26	575.55	0.03	1.01	10.50	1.38	0.28	0.00		
3	DITCH-SWALE	7.44	0 12:16	170.24	0.04	0.81	6.40	1.79	0.60	0.00		
4	DRAINAGE-DITCH	56.39	0 12:26	469.21	0.12	2.51	4.13	1.80	0.36	0.00		
5	DUMMY-LINK-1	116.83	0 12:31	6836.31	0.02	30.83	0.01	0.97	0.19	0.00		
6	HWY-30-DITCH	18.54	0 12:25	169.84	0.11	1.85	10.85	1.68	0.42	0.00		
7	Link-08	23.98	0 12:30	95.54	0.25	1.99	0.04	2.90	0.58	0.00		
8	Link-11	37.23	0 12:33	196.41	0.19	2.51	5.58	2.06	0.41	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	28.77	0 12:30	105.95	0.27	1.36	1.31	2.95	0.98	0.00		Calculated
2	Link-10	74.01	0 12:29	26.42	2.80	6.02	0.28	1.35	0.45	0.00		> CAPACITY

Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 26, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-005	Intensity	inches	Georgia	Chatham	5	5.68	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	5.68	3.40	13.41	10.94	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	5.68	3.40	23.93	16.36	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	5.68	3.90	65.14	33.46	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	5.68	3.98	75.76	16.00	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	5.68	4.23	23.26	12.44	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	5.68	3.40	14.56	11.18	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	5.68	3.40	8.93	6.98	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	5.68	3.40	10.49	8.98	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	5.68	3.40	35.99	22.57	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	5.68	3.40	34.12	22.78	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	5.68	3.40	23.93	18.75	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	5.68	3.40	17.93	11.05	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	15.86	20.95	0.00	2.05	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	84.87	20.91	0.00	2.69	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	27.06	21.61	0.00	2.09	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	10.94	21.97	0.00	2.03	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	22.53	21.62	0.00	3.98	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	109.20	19.39	0.00	3.30	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	40.96	21.63	0.00	1.67	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	33.36	21.65	0.00	1.65	0 00:00	0.00	0.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	52.75	21.54	0.00	1.46	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	167.84	18.43	0.00	4.07	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					167.86	18.42					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	40.32	105.95	0.38	1.90	3.00	1.00	35.00	SURCHARGED
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	107.87	26.42	4.08	6.94	1.61	0.54	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	12.62	166.72	0.08	0.47	2.13	0.53	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	22.33	575.55	0.04	1.12	1.67	0.33	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	10.78	170.24	0.06	0.87	1.98	0.66	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	82.70	469.21	0.18	2.79	2.19	0.44	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	167.86	6836.31	0.02	33.78	1.13	0.23	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	26.51	169.84	0.16	1.98	1.99	0.50	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	33.36	95.54	0.35	1.99	3.33	0.67	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	52.04	196.41	0.26	2.78	2.33	0.47	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	12.62	0 12:22	166.72	0.08	0.47	19.89	2.13	0.53	0.00		
2	DITCH-NORTH	22.33	0 12:26	575.55	0.04	1.12	9.46	1.67	0.33	0.00		
3	DITCH-SWALE	10.78	0 12:16	170.24	0.06	0.87	5.96	1.98	0.66	0.00		
4	DRAINAGE-DITCH	82.70	0 12:25	469.21	0.18	2.79	3.72	2.19	0.44	0.00		
5	DUMMY-LINK-1	167.86	0 12:29	6836.31	0.02	33.78	0.00	1.13	0.23	0.00		
6	HWY-30-DITCH	26.51	0 12:25	169.84	0.16	1.98	10.13	1.99	0.50	0.00		
7	Link-08	33.36	0 12:30	95.54	0.35	1.99	0.04	3.33	0.67	0.00		
8	Link-11	52.04	0 12:31	196.41	0.26	2.78	5.04	2.33	0.47	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	40.32	0 12:29	105.95	0.38	1.90	0.94	3.00	1.00	35.00		SURCHARGED
2	Link-10	107.87	0 12:28	26.42	4.08	6.94	0.24	1.61	0.54	0.00		> CAPACITY

Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... May 25, 2021 00:00:00
End Analysis On ..... May 26, 2021 00:00:00
Start Reporting On ..... May 25, 2021 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 1 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-010	Intensity	inches	Georgia	Chatham	10	6.78	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	6.78	4.38	17.31	14.09	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	6.78	4.38	30.90	21.07	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	6.78	4.93	82.40	42.04	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	6.78	5.02	95.52	20.13	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	6.78	5.29	29.07	15.42	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	6.78	4.38	18.80	14.38	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	6.78	4.38	11.53	8.98	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	6.78	4.38	13.54	11.55	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	6.78	4.38	46.46	29.05	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	6.78	4.38	44.05	29.33	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	6.78	4.38	30.90	24.13	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	6.78	4.38	23.14	14.22	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	20.37	21.25	0.00	1.75	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	109.80	21.21	0.00	2.39	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	34.91	21.82	0.00	1.88	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	14.08	22.08	0.00	1.92	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	28.96	21.77	0.00	3.83	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	141.28	19.73	0.00	2.96	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	51.66	21.98	0.00	1.32	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	41.96	21.99	0.00	1.31	0 00:00	0.00	0.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	65.96	21.82	0.00	1.18	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	214.74	18.55	0.00	3.95	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					214.77	18.54					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	50.73	105.95	0.48	2.39	3.00	1.00	49.00	SURCHARGED
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	139.26	26.42	5.27	7.63	1.84	0.62	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	16.50	166.72	0.10	0.50	2.43	0.61	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	28.75	575.55	0.05	1.21	1.89	0.38	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	13.88	170.24	0.08	0.96	2.04	0.68	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	107.25	469.21	0.23	2.97	2.51	0.50	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	214.77	6836.31	0.03	35.94	1.25	0.25	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	34.10	169.84	0.20	2.04	2.26	0.57	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	41.96	95.54	0.44	1.98	3.68	0.74	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	65.27	196.41	0.33	2.97	2.54	0.51	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	16.50	0 12:22	166.72	0.10	0.50	18.70	2.43	0.61	0.00		
2	DITCH-NORTH	28.75	0 12:25	575.55	0.05	1.21	8.76	1.89	0.38	0.00		
3	DITCH-SWALE	13.88	0 12:15	170.24	0.08	0.96	5.40	2.04	0.68	0.00		
4	DRAINAGE-DITCH	107.25	0 12:24	469.21	0.23	2.97	3.49	2.51	0.50	0.00		
5	DUMMY-LINK-1	214.77	0 12:29	6836.31	0.03	35.94	0.00	1.25	0.25	0.00		
6	HWY-30-DITCH	34.10	0 12:25	169.84	0.20	2.04	9.84	2.26	0.57	0.00		
7	Link-08	41.96	0 12:30	95.54	0.44	1.98	0.04	3.68	0.74	0.00		
8	Link-11	65.27	0 12:31	196.41	0.33	2.97	4.71	2.54	0.51	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	50.73	0 12:25	105.95	0.48	2.39	0.75	3.00	1.00	49.00		SURCHARGED
2	Link-10	139.26	0 12:27	26.42	5.27	7.63	0.22	1.84	0.62	0.00		> CAPACITY

Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... May 25, 2021 00:00:00
End Analysis On ..... May 26, 2021 00:00:00
Start Reporting On ..... May 25, 2021 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 1 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-025	Intensity	inches	Georgia	Chatham	25	8.45	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	8.45	5.93	23.42	18.90	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	8.45	5.93	41.79	28.29	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	8.45	6.53	109.08	55.05	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	8.45	6.63	126.03	26.42	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	8.45	6.91	37.99	19.90	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	8.45	5.93	25.43	19.29	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	8.45	5.93	15.59	12.04	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	8.45	5.93	18.32	15.49	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	8.45	5.93	62.84	38.99	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	8.45	5.93	59.58	39.36	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	8.45	5.93	41.79	32.37	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	8.45	5.93	31.30	19.10	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	27.32	21.64	0.00	1.36	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	148.19	21.60	0.00	2.00	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	46.93	22.09	0.00	1.61	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	18.89	22.51	0.00	1.49	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	38.82	21.97	0.00	3.63	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	190.66	20.35	0.00	2.34	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	67.07	22.47	0.00	0.83	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	55.01	22.49	0.00	0.81	0 00:00	0.00	0.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	86.24	22.21	0.00	0.79	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	283.16	18.71	0.00	3.79	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					283.22	18.70					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	66.41	105.95	0.63	3.13	3.00	1.00	64.00	SURCHARGED
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	183.14	26.42	6.93	8.23	2.21	0.74	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	22.61	166.72	0.14	0.54	2.81	0.70	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	38.62	575.55	0.07	1.32	2.18	0.44	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	18.66	170.24	0.11	1.20	2.26	0.75	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	145.06	469.21	0.31	3.17	2.98	0.60	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	283.22	6836.31	0.04	38.53	1.41	0.28	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	45.82	169.84	0.27	2.08	2.70	0.68	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	55.01	95.54	0.58	2.06	4.18	0.84	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	85.58	196.41	0.44	3.23	2.81	0.56	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	22.61	0 12:20	166.72	0.14	0.54	17.31	2.81	0.70	0.00		
2	DITCH-NORTH	38.62	0 12:25	575.55	0.07	1.32	8.03	2.18	0.44	0.00		
3	DITCH-SWALE	18.66	0 12:15	170.24	0.11	1.20	4.32	2.26	0.75	0.00		
4	DRAINAGE-DITCH	145.06	0 12:23	469.21	0.31	3.17	3.27	2.98	0.60	0.00		
5	DUMMY-LINK-1	283.22	0 12:29	6836.31	0.04	38.53	0.00	1.41	0.28	0.00		
6	HWY-30-DITCH	45.82	0 12:25	169.84	0.27	2.08	9.65	2.70	0.68	0.00		
7	Link-08	55.01	0 12:30	95.54	0.58	2.06	0.04	4.18	0.84	0.00		
8	Link-11	85.58	0 12:30	196.41	0.44	3.23	4.33	2.81	0.56	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	66.41	0 12:29	105.95	0.63	3.13	0.57	3.00	1.00	64.00		SURCHARGED
2	Link-10	183.14	0 12:29	26.42	6.93	8.23	0.21	2.21	0.74	0.00		> CAPACITY

Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... May 25, 2021 00:00:00
End Analysis On ..... May 26, 2021 00:00:00
Start Reporting On ..... May 25, 2021 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 1 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-050	Intensity	inches	Georgia	Chatham	50	9.86	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	9.86	7.26	28.68	22.97	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	9.86	7.26	51.18	34.41	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	9.86	7.89	131.89	66.04	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	9.86	8.00	152.08	31.69	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	9.86	8.29	45.59	23.67	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	9.86	7.26	31.15	23.46	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	9.86	7.26	19.09	14.64	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	9.86	7.26	22.43	18.82	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	9.86	7.26	76.96	47.48	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	9.86	7.26	72.96	47.89	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	9.86	7.26	51.18	39.35	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	9.86	7.26	38.33	23.23	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	33.19	21.91	0.00	1.09	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	180.00	21.88	0.00	1.72	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	57.17	22.28	0.00	1.42	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	22.95	22.92	0.00	1.08	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	47.18	22.16	0.00	3.44	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	229.81	20.99	0.00	1.70	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	80.56	22.88	0.00	0.42	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	65.99	22.89	0.00	0.41	0 00:00	0.00	0.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	103.41	22.49	0.00	0.51	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	337.56	18.81	0.00	3.69	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					337.58	18.80					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	79.88	105.95	0.75	3.77	3.00	1.00	73.00	SURCHARGED
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	216.57	26.42	8.20	9.47	2.26	0.75	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	28.25	166.72	0.17	0.58	3.10	0.77	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	47.22	575.55	0.08	1.38	2.42	0.48	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	21.27	170.24	0.12	1.33	2.46	0.82	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	174.65	469.21	0.37	3.28	3.46	0.69	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	337.58	6836.31	0.05	40.26	1.51	0.30	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	55.77	169.84	0.33	2.09	3.12	0.78	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	65.99	95.54	0.69	2.12	4.58	0.92	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	102.85	196.41	0.52	3.41	3.01	0.60	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	28.25	0 12:19	166.72	0.17	0.58	16.12	3.10	0.77	0.00		
2	DITCH-NORTH	47.22	0 12:25	575.55	0.08	1.38	7.68	2.42	0.48	0.00		
3	DITCH-SWALE	21.27	0 12:12	170.24	0.12	1.33	3.90	2.46	0.82	0.00		
4	DRAINAGE-DITCH	174.65	0 12:22	469.21	0.37	3.28	3.16	3.46	0.69	0.00		
5	DUMMY-LINK-1	337.58	0 12:30	6836.31	0.05	40.26	0.00	1.51	0.30	0.00		
6	HWY-30-DITCH	55.77	0 12:25	169.84	0.33	2.09	9.60	3.12	0.78	0.00		
7	Link-08	65.99	0 12:30	95.54	0.69	2.12	0.04	4.58	0.92	0.00		
8	Link-11	102.85	0 12:31	196.41	0.52	3.41	4.11	3.01	0.60	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	79.88	0 12:28	105.95	0.75	3.77	0.47	3.00	1.00	73.00		SURCHARGED
2	Link-10	216.57	0 12:29	26.42	8.20	9.47	0.18	2.26	0.75	0.00		> CAPACITY

Project Description

File Name ..... 28896.0001 - PRE Model.SPF

Project Options

Flow Units ..... CFS
Elevation Type ..... Elevation
Hydrology Method ..... SCS TR-55
Time of Concentration (TOC) Method ..... SCS TR-55
Link Routing Method ..... Hydrodynamic
Enable Overflow Ponding at Nodes ..... YES
Skip Steady State Analysis Time Periods ... NO

Analysis Options

Start Analysis On ..... May 25, 2021 00:00:00
End Analysis On ..... May 26, 2021 00:00:00
Start Reporting On ..... May 25, 2021 00:00:00
Antecedent Dry Days ..... 0 days
Runoff (Dry Weather) Time Step ..... 0 01:00:00 days hh:mm:ss
Runoff (Wet Weather) Time Step ..... 0 00:05:00 days hh:mm:ss
Reporting Time Step ..... 0 00:05:00 days hh:mm:ss
Routing Time Step ..... 1 seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	12
Nodes	11
Junctions	10
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	0
Links	10
Channels	8
Pipes	2
Pumps	0
Orifices	0
Weirs	0
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-100	Intensity	inches	Georgia	Chatham	100	11.40	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	11.40	8.73	34.49	27.40	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.00	11.40	8.73	61.56	41.06	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	11.40	9.40	156.99	77.96	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	11.40	9.50	180.73	37.50	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	11.40	9.81	53.93	27.76	0 00:31:30
6	PRE-DA-1	4.29	323.00	79.00	11.40	8.73	37.46	28.00	0 00:14:37
7	PRE-DA-2	2.63	323.00	79.00	11.40	8.73	22.97	17.47	0 00:13:57
8	PRE-DA-3	3.09	323.00	79.00	11.40	8.73	26.98	22.46	0 00:10:49
9	PRE-DA-4	10.60	323.00	79.00	11.40	8.73	92.56	56.66	0 00:23:34
10	PRE-DA-5	10.05	323.00	79.00	11.40	8.73	87.76	57.18	0 00:20:29
11	PRE-DA-6	7.05	323.00	79.00	11.40	8.73	61.56	46.97	0 00:13:51
12	PRE-DA-7	5.28	323.00	79.00	11.40	8.73	46.10	27.75	0 00:24:28

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-01	Junction	19.00	19.30	19.00	999.00	1.00	39.61	22.26	0.00	0.74	0 00:00	0.00	0.00
2	Jun-02	Junction	18.60	20.70	18.60	999.00	1.00	213.56	22.24	0.00	1.36	0 00:00	0.00	0.00
3	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	68.24	22.47	0.00	1.23	0 00:00	0.00	0.00
4	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	27.37	23.35	0.00	0.65	0 00:00	0.00	0.00
5	Jun-05	Junction	20.60	21.20	20.60	999.00	1.00	56.27	22.46	0.00	3.14	0 00:00	0.00	0.00
6	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	267.30	21.65	0.00	1.04	0 00:00	0.00	0.00
7	Jun-07	Junction	18.30	22.50	18.30	999.00	1.00	95.22	23.29	0.00	0.01	0 00:00	0.00	0.00
8	Jun-08	Junction	0.00	6.00	0.00	6.00	0.00	77.88	23.30	0.00	0.00	0 12:28	0.12	5.00
9	Jun-09	Junction	18.00	23.00	18.00	999.00	1.00	121.80	22.76	0.00	0.24	0 00:00	0.00	0.00
10	Jun-10	Junction	17.29	22.50	17.29	999.00	1.00	390.24	18.91	0.00	3.59	0 00:00	0.00	0.00
11	PRE-Out-01	Outfall	17.29					390.26	18.90					

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length (ft)	Inlet Invert Elevation (ft)	Outlet Invert Elevation (ft)	Average Slope (%)	Diameter or Height (in)	Manning's Roughness	Peak Flow (cfs)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Reported Condition
1	Link-09	Pipe	Jun-07	Jun-09	107.00	18.30	18.00	0.2800	36.000	0.0130	94.27	105.95	0.89	4.45	3.00	1.00	83.00	SURCHARGED
2	Link-10	Pipe	Jun-06	Jun-10	102.00	17.30	17.29	0.0100	36.000	0.0130	247.65	26.42	9.37	10.61	2.31	0.77	0.00	> CAPACITY
3	DITCH-EAST	Channel	Jun-01	Jun-02	561.00	19.00	18.60	0.0700	48.000	0.0320	33.56	166.72	0.20	0.63	3.44	0.86	0.00	
4	DITCH-NORTH	Channel	Jun-05	Jun-02	636.00	20.60	18.60	0.3100	60.000	0.0320	55.30	575.55	0.10	1.33	2.74	0.55	0.00	
5	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	24.19	170.24	0.14	1.40	2.66	0.89	0.00	
6	DRAINAGE-DITCH	Channel	Jun-02	Jun-06	622.00	18.60	17.30	0.2100	60.000	0.0320	202.01	469.21	0.43	3.34	3.99	0.80	0.00	
7	DUMMY-LINK-1	Channel	Jun-10	PRE-Out-01	10.00	17.30	17.29	0.1000	60.000	0.0010	390.26	6836.31	0.06	41.75	1.61	0.32	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	66.63	169.84	0.39	2.10	3.38	0.85	0.00	
9	Link-08	Channel	Jun-08	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	77.49	95.54	0.81	2.17	4.99	1.00	0.00	
10	Link-11	Channel	Jun-09	Jun-10	840.00	18.00	17.29	0.0800	60.000	0.0320	120.60	196.41	0.61	3.59	3.19	0.64	0.00	

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-EAST	561.00	19.00	0.00	18.60	0.00	0.40	0.0700	Trapezoidal	4.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DITCH-NORTH	636.00	20.60	0.00	18.60	0.00	2.00	0.3100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
3	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	DRAINAGE-DITCH	622.00	18.60	0.00	17.30	0.00	1.30	0.2100	Trapezoidal	5.000	37.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	DUMMY-LINK-1	10.00	17.30	0.01	17.29	0.00	0.01	0.1000	Trapezoidal	5.000	31.000	0.0010	0.0000	0.0000	0.0000	0.00	No
6	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
7	Link-08	5.00	18.30	18.30	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
8	Link-11	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-EAST	33.56	0 12:16	166.72	0.20	0.63	14.84	3.44	0.86	0.00		
2	DITCH-NORTH	55.30	0 12:25	575.55	0.10	1.33	7.97	2.74	0.55	0.00		
3	DITCH-SWALE	24.19	0 12:15	170.24	0.14	1.40	3.70	2.66	0.89	0.00		
4	DRAINAGE-DITCH	202.01	0 12:20	469.21	0.43	3.34	3.10	3.99	0.80	0.00		
5	DUMMY-LINK-1	390.26	0 12:31	6836.31	0.06	41.75	0.00	1.61	0.32	0.00		
6	HWY-30-DITCH	66.63	0 12:25	169.84	0.39	2.10	9.56	3.38	0.85	0.00		
7	Link-08	77.49	0 12:31	95.54	0.81	2.17	0.04	4.99	1.00	0.00		
8	Link-11	120.60	0 12:30	196.41	0.61	3.59	3.90	3.19	0.64	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	Link-09	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3
2	Link-10	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	Link-09	94.27	0 12:26	105.95	0.89	4.45	0.40	3.00	1.00	83.00		SURCHARGED
2	Link-10	247.65	0 12:30	26.42	9.37	10.61	0.16	2.31	0.77	0.00		> CAPACITY

STORMWATER MANAGEMENT REPORT

NOBLE VINES

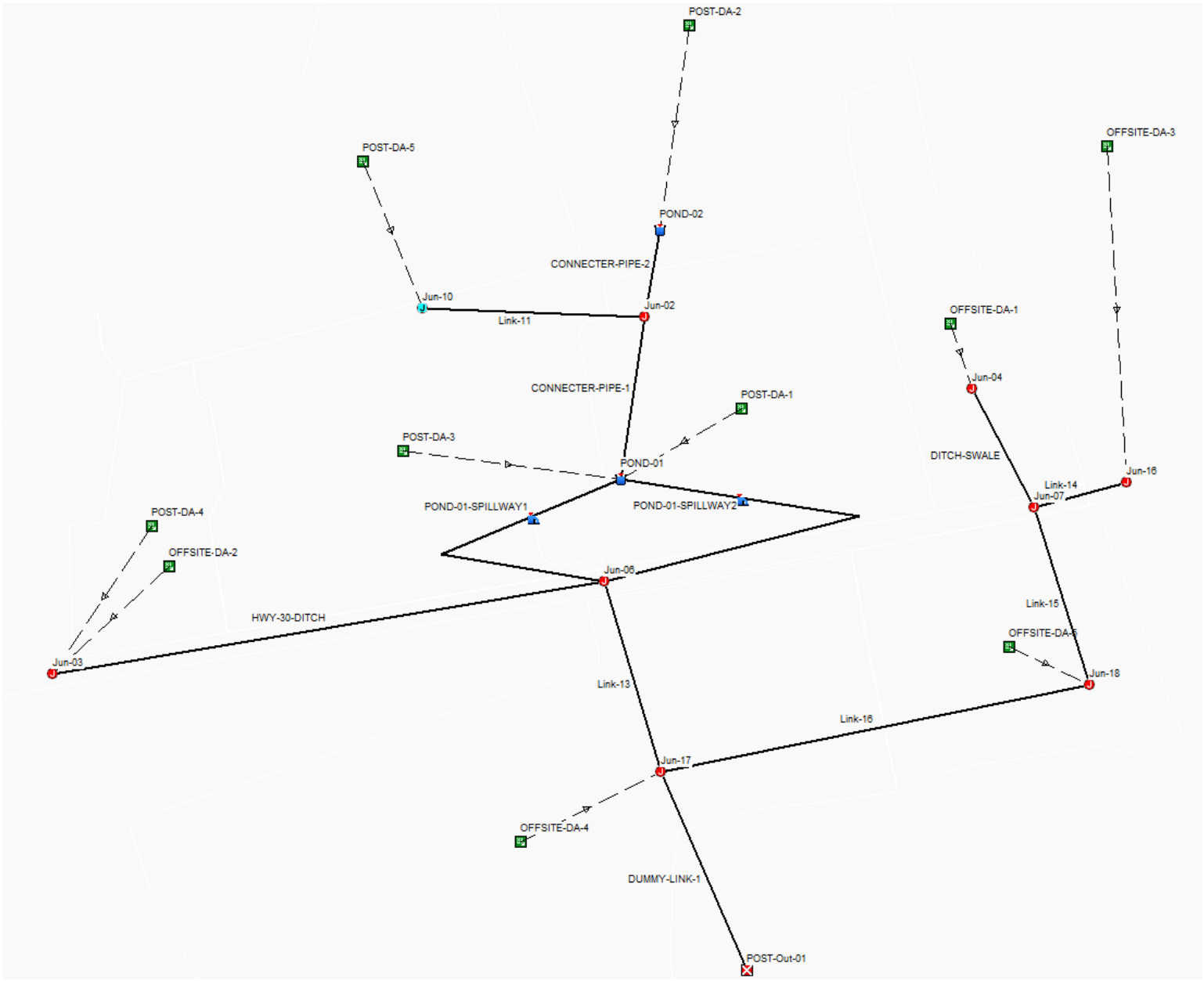
APPENDIX B

POST-DEVELOPMENT
SSA MODEL DIAGRAM, INPUT, AND RESULTS

J – 28896.0003

THOMAS & HUTTON

Post-Development Model



Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-002	Intensity	inches	Georgia	Chatham	2	4.47	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	4.47	2.35	9.29	7.57	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	4.47	2.39	16.84	11.50	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	4.47	2.79	46.62	24.07	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	4.47	2.87	54.49	11.51	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	4.47	3.09	16.97	9.18	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	4.47	3.65	28.55	15.63	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	4.47	3.30	43.34	8.17	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	4.47	3.36	31.30	16.55	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	4.47	2.70	7.29	7.04	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	4.47	2.35	23.63	11.28	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	15.67	18.79	0.00	2.21	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	16.94	21.67	0.00	2.03	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	7.57	21.83	0.00	2.17	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	38.69	18.71	0.00	1004.09	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	29.20	21.31	0.00	2.19	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	11.26	18.81	0.00	1.19	0 00:00	0.00	0.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	23.99	21.32	0.00	2.18	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	78.12	18.20	0.00	4.30	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	38.06	21.26	0.00	1.74	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					78.11	18.20					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	36.62	18.73				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	11.57	18.80				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	15.67	3.03	5.18	1.63	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	10.87	3.03	3.59	1.13	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	11.26	2.68	4.20	1.17	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	38.86	26.42	1.47	3.99	1.15	0.38	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	28.91	105.95	0.27	1.36	3.00	1.00	6.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	7.44	170.24	0.04	0.76	1.85	0.62	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	78.11	2903.03	0.03	11.16	0.91	0.18	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	16.48	169.84	0.10	2.00	1.50	0.38	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	23.98	95.54	0.25	0.94	3.01	0.60	0.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	38.00	196.41	0.19	2.57	2.06	0.41	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				5.09							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				31.54							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	7.44	0 12:16	170.24	0.04	0.76	6.82	1.85	0.62	0.00		
2	DUMMY-LINK-1	78.11	0 12:47	2903.03	0.03	11.16	0.01	0.91	0.18	0.00		
3	HWY-30-DITCH	16.48	0 12:25	169.84	0.10	2.00	10.03	1.50	0.38	0.00		
4	Link-14	23.98	0 12:30	95.54	0.25	0.94	0.09	3.01	0.60	0.00		
5	Link-16	38.00	0 12:34	196.41	0.19	2.57	5.45	2.06	0.41	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	15.67	0 13:15	3.03	5.18	1.63	1.13	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	10.87	0 13:38	3.03	3.59	1.13	1.63	3.50	1.00	4320.00		SURCHARGED
3	Link-11	11.26	0 12:35	2.68	4.20	1.17	2.01	3.50	1.00	4320.00		SURCHARGED
4	Link-13	38.86	0 13:00	26.42	1.47	3.99	0.43	1.15	0.38	0.00		> CAPACITY
5	Link-15	28.91	0 12:30	105.95	0.27	1.36	1.31	3.00	1.00	6.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	36.62
Peak Lateral Inflow (cfs)	31.93
Peak Outflow (cfs)	33.68
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	18.73
Max HGL Depth Attained (ft)	7.23
Average HGL Elevation Attained (ft)	17.66
Average HGL Depth Attained (ft)	6.16
Time of Max HGL Occurrence (days hh:mm)	0 12:56
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	11.57
Peak Lateral Inflow (cfs)	8.17
Peak Outflow (cfs)	10.87
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	18.80
Max HGL Depth Attained (ft)	7.3
Average HGL Elevation Attained (ft)	17.66
Average HGL Depth Attained (ft)	6.16
Time of Max HGL Occurrence (days hh:mm)	0 13:00
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-005	Intensity	inches	Georgia	Chatham	5	5.68	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	5.68	3.40	13.41	10.94	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	5.68	3.44	24.23	16.56	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	5.68	3.90	65.14	33.46	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	5.68	3.98	75.76	16.00	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	5.68	4.23	23.26	12.44	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	5.68	4.83	37.83	20.42	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	5.68	4.47	58.58	11.00	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	5.68	4.53	42.17	22.01	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	5.68	3.80	10.25	9.79	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	5.68	3.40	34.12	16.33	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	22.16	19.14	0.00	1.86	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	24.30	21.91	0.00	1.79	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	10.94	21.97	0.00	2.03	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	56.75	19.01	0.00	1003.79	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	40.96	21.73	0.00	1.77	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	16.32	19.19	0.00	0.81	0 00:00	0.00	0.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	33.36	21.74	0.00	1.76	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	113.15	18.39	0.00	4.11	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	52.97	21.63	0.00	1.37	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					113.15	18.39					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	50.75	19.02				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	14.84	19.16				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	22.16	3.03	7.32	2.30	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	14.99	3.03	4.95	1.56	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	16.32	2.68	6.09	1.70	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	57.00	26.42	2.16	4.51	1.40	0.47	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	40.55	105.95	0.38	1.91	3.00	1.00	35.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	10.77	170.24	0.06	0.83	1.98	0.66	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	113.15	2903.03	0.04	12.40	1.10	0.22	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	23.87	169.84	0.14	2.20	1.75	0.44	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	33.36	95.54	0.35	0.94	3.44	0.69	0.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	53.09	196.41	0.27	2.83	2.34	0.47	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				5.02							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				46.72							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	10.77	0 12:16	170.24	0.06	0.83	6.24	1.98	0.66	0.00		
2	DUMMY-LINK-1	113.15	0 12:44	2903.03	0.04	12.40	0.01	1.10	0.22	0.00		
3	HWY-30-DITCH	23.87	0 12:23	169.84	0.14	2.20	9.12	1.75	0.44	0.00		
4	Link-14	33.36	0 12:30	95.54	0.35	0.94	0.09	3.44	0.69	0.00		
5	Link-16	53.09	0 12:32	196.41	0.27	2.83	4.95	2.34	0.47	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	22.16	0 13:11	3.03	7.32	2.30	0.80	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	14.99	0 13:35	3.03	4.95	1.56	1.18	3.50	1.00	4320.00		SURCHARGED
3	Link-11	16.32	0 12:35	2.68	6.09	1.70	1.38	3.50	1.00	4320.00		SURCHARGED
4	Link-13	57.00	0 12:55	26.42	2.16	4.51	0.38	1.40	0.47	0.00		> CAPACITY
5	Link-15	40.55	0 12:30	105.95	0.38	1.91	0.93	3.00	1.00	35.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	50.75
Peak Lateral Inflow (cfs)	42.08
Peak Outflow (cfs)	48.84
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.02
Max HGL Depth Attained (ft)	7.52
Average HGL Elevation Attained (ft)	17.69
Average HGL Depth Attained (ft)	6.19
Time of Max HGL Occurrence (days hh:mm)	0 12:51
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	14.84
Peak Lateral Inflow (cfs)	10.99
Peak Outflow (cfs)	14.99
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.16
Max HGL Depth Attained (ft)	7.66
Average HGL Elevation Attained (ft)	17.70
Average HGL Depth Attained (ft)	6.2
Time of Max HGL Occurrence (days hh:mm)	0 12:58
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-010	Intensity	inches	Georgia	Chatham	10	6.78	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	6.78	4.38	17.31	14.09	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	6.78	4.43	31.23	21.27	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	6.78	4.93	82.40	42.04	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	6.78	5.02	95.52	20.13	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	6.78	5.29	29.07	15.42	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	6.78	5.92	46.33	24.77	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	6.78	5.53	72.61	13.55	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	6.78	5.60	52.16	26.95	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	6.78	4.82	13.01	12.32	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	6.78	4.38	44.05	21.03	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	27.89	19.44	0.00	1.56	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	30.96	22.10	0.00	1.60	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	14.08	22.10	0.00	1.90	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	72.84	19.25	0.00	1003.55	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	51.06	22.06	0.00	1.44	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	21.03	19.54	0.00	0.46	0 00:00	0.00	0.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	41.96	22.07	0.00	1.43	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	144.99	18.54	0.00	3.96	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	66.18	21.90	0.00	1.10	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					144.98	18.54					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	63.46	19.27				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	17.78	19.48				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	27.90	3.03	9.22	2.90	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	18.72	3.03	6.19	1.95	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	21.03	2.68	7.85	2.19	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	73.16	26.42	2.77	4.89	1.59	0.53	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	50.80	105.95	0.48	2.40	3.00	1.00	47.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	13.88	170.24	0.08	0.96	2.05	0.68	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	144.98	2903.03	0.05	13.29	1.25	0.25	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	30.75	169.84	0.18	2.33	1.95	0.49	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	41.96	95.54	0.44	0.93	3.77	0.75	0.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	66.49	196.41	0.34	3.02	2.55	0.51	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				4.96							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				60.07							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	13.88	0 12:15	170.24	0.08	0.96	5.40	2.05	0.68	0.00		
2	DUMMY-LINK-1	144.98	0 12:43	2903.03	0.05	13.29	0.01	1.25	0.25	0.00		
3	HWY-30-DITCH	30.75	0 12:22	169.84	0.18	2.33	8.61	1.95	0.49	0.00		
4	Link-14	41.96	0 12:30	95.54	0.44	0.93	0.09	3.77	0.75	0.00		
5	Link-16	66.49	0 12:32	196.41	0.34	3.02	4.64	2.55	0.51	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	27.90	0 13:10	3.03	9.22	2.90	0.64	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	18.72	0 13:35	3.03	6.19	1.95	0.94	3.50	1.00	4320.00		SURCHARGED
3	Link-11	21.03	0 12:35	2.68	7.85	2.19	1.07	3.50	1.00	4320.00		SURCHARGED
4	Link-13	73.16	0 12:53	26.42	2.77	4.89	0.35	1.59	0.53	0.00		> CAPACITY
5	Link-15	50.80	0 12:30	105.95	0.48	2.40	0.74	3.00	1.00	47.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	63.46
Peak Lateral Inflow (cfs)	51.26
Peak Outflow (cfs)	62.21
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.27
Max HGL Depth Attained (ft)	7.77
Average HGL Elevation Attained (ft)	17.73
Average HGL Depth Attained (ft)	6.23
Time of Max HGL Occurrence (days hh:mm)	0 12:49
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	17.78
Peak Lateral Inflow (cfs)	13.55
Peak Outflow (cfs)	18.72
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.48
Max HGL Depth Attained (ft)	7.98
Average HGL Elevation Attained (ft)	17.74
Average HGL Depth Attained (ft)	6.24
Time of Max HGL Occurrence (days hh:mm)	0 12:57
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-025	Intensity	inches	Georgia	Chatham	25	8.45	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	8.45	5.93	23.42	18.90	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	8.45	5.98	42.16	28.49	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	8.45	6.53	109.08	55.05	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	8.45	6.63	126.03	26.42	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	8.45	6.91	37.99	19.90	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	8.45	7.57	59.29	31.30	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	8.45	7.17	94.10	17.45	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	8.45	7.24	67.46	34.41	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	8.45	6.41	17.30	16.15	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	8.45	5.93	59.58	28.30	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	36.20	19.90	0.00	1.10	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	41.33	22.34	0.00	1.36	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	18.89	22.58	0.00	1.42	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	96.52	19.58	0.00	1003.22	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	67.15	22.53	0.00	0.97	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	28.27	20.07	0.07	0.00	0 12:41	0.00	19.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	55.01	22.55	0.00	0.95	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	192.51	18.73	0.00	3.77	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	86.68	22.26	0.00	0.74	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					192.51	18.73					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	82.39	19.60				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	22.37	19.95				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	36.20	3.03	11.96	3.76	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	24.32	3.03	8.04	2.53	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	28.27	2.68	10.55	2.94	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	96.87	26.42	3.67	5.37	1.86	0.62	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	66.85	105.95	0.63	3.15	3.00	1.00	59.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	18.59	170.24	0.11	1.20	2.28	0.76	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	192.51	2903.03	0.07	14.36	1.44	0.29	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	41.40	169.84	0.24	2.51	2.21	0.55	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	55.02	95.54	0.58	0.97	4.24	0.85	0.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	87.13	196.41	0.44	3.26	2.82	0.56	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				4.90							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				79.43							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	18.59	0 12:15	170.24	0.11	1.20	4.32	2.28	0.76	0.00		
2	DUMMY-LINK-1	192.51	0 12:41	2903.03	0.07	14.36	0.01	1.44	0.29	0.00		
3	HWY-30-DITCH	41.40	0 12:21	169.84	0.24	2.51	7.99	2.21	0.55	0.00		
4	Link-14	55.02	0 12:30	95.54	0.58	0.97	0.09	4.24	0.85	0.00		
5	Link-16	87.13	0 12:31	196.41	0.44	3.26	4.29	2.82	0.56	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	36.20	0 13:10	3.03	11.96	3.76	0.49	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	24.32	0 13:35	3.03	8.04	2.53	0.73	3.50	1.00	4320.00		SURCHARGED
3	Link-11	28.27	0 12:35	2.68	10.55	2.94	0.80	3.50	1.00	4320.00		SURCHARGED
4	Link-13	96.87	0 12:50	26.42	3.67	5.37	0.32	1.86	0.62	0.00		> CAPACITY
5	Link-15	66.85	0 12:29	105.95	0.63	3.15	0.57	3.00	1.00	59.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	82.39
Peak Lateral Inflow (cfs)	65.19
Peak Outflow (cfs)	81.58
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.60
Max HGL Depth Attained (ft)	8.1
Average HGL Elevation Attained (ft)	17.77
Average HGL Depth Attained (ft)	6.27
Time of Max HGL Occurrence (days hh:mm)	0 12:47
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	22.37
Peak Lateral Inflow (cfs)	17.45
Peak Outflow (cfs)	24.32
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.95
Max HGL Depth Attained (ft)	8.45
Average HGL Elevation Attained (ft)	17.80
Average HGL Depth Attained (ft)	6.3
Time of Max HGL Occurrence (days hh:mm)	0 12:58
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-050	Intensity	inches	Georgia	Jasper	50	9.86	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	9.86	7.26	28.68	22.97	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	9.86	7.31	51.56	34.61	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	9.86	7.89	131.89	66.04	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	9.86	8.00	152.08	31.69	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	9.86	8.29	45.59	23.67	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	9.86	8.97	70.26	36.77	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	9.86	8.56	112.33	20.71	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	9.86	8.63	80.43	40.65	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	9.86	7.77	20.97	19.38	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	9.86	7.26	72.96	34.43	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	42.82	20.28	0.00	0.72	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	49.98	22.51	0.00	1.19	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	22.95	22.96	0.00	1.04	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	115.58	19.84	0.00	1002.96	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	80.71	22.91	0.00	0.59	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	34.43	20.53	0.53	0.00	0 12:28	0.02	56.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	66.00	22.93	0.00	0.57	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	231.82	18.87	0.00	3.63	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	103.93	22.52	0.00	0.48	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					231.81	18.87					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	97.94	19.86				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	26.26	20.34				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	42.82	3.03	14.15	4.45	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	29.01	3.03	9.59	3.02	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	34.37	2.68	12.83	3.57	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	115.95	26.42	4.39	5.70	2.06	0.69	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	80.38	105.95	0.76	3.79	3.00	1.00	68.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	20.76	170.24	0.12	1.31	2.48	0.83	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	231.81	2903.03	0.08	15.10	1.58	0.32	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	50.36	169.84	0.30	2.62	2.39	0.60	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	66.00	95.54	0.69	1.00	4.62	0.92	0.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	104.48	196.41	0.53	3.43	3.02	0.61	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				4.87							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				95.00							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	20.76	0 12:11	170.24	0.12	1.31	3.96	2.48	0.83	0.00		
2	DUMMY-LINK-1	231.81	0 12:40	2903.03	0.08	15.10	0.01	1.58	0.32	0.00		
3	HWY-30-DITCH	50.36	0 12:21	169.84	0.30	2.62	7.66	2.39	0.60	0.00		
4	Link-14	66.00	0 12:30	95.54	0.69	1.00	0.08	4.62	0.92	0.00		
5	Link-16	104.48	0 12:31	196.41	0.53	3.43	4.08	3.02	0.61	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	42.82	0 13:11	3.03	14.15	4.45	0.41	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	29.01	0 13:39	3.03	9.59	3.02	0.61	3.50	1.00	4320.00		SURCHARGED
3	Link-11	34.37	0 12:35	2.68	12.83	3.57	0.66	3.50	1.00	4320.00		SURCHARGED
4	Link-13	115.95	0 12:49	26.42	4.39	5.70	0.30	2.06	0.69	0.00		> CAPACITY
5	Link-15	80.38	0 12:28	105.95	0.76	3.79	0.47	3.00	1.00	68.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	97.94
Peak Lateral Inflow (cfs)	76.88
Peak Outflow (cfs)	97.14
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	19.86
Max HGL Depth Attained (ft)	8.36
Average HGL Elevation Attained (ft)	17.81
Average HGL Depth Attained (ft)	6.31
Time of Max HGL Occurrence (days hh:mm)	0 12:46
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	26.26
Peak Lateral Inflow (cfs)	20.69
Peak Outflow (cfs)	29.01
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	20.34
Max HGL Depth Attained (ft)	8.84
Average HGL Elevation Attained (ft)	17.85
Average HGL Depth Attained (ft)	6.35
Time of Max HGL Occurrence (days hh:mm)	0 12:59
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Project Description

File Name ..... 28896.0003 - POST Model - Spillway only.SPF

Project Options

Flow Units	CFS
Elevation Type	Elevation
Hydrology Method	SCS TR-55
Time of Concentration (TOC) Method	SCS TR-55
Link Routing Method	Hydrodynamic
Enable Overflow Ponding at Nodes	YES
Skip Steady State Analysis Time Periods	NO

Analysis Options

Start Analysis On	May 25, 2021	00:00:00
End Analysis On	May 28, 2021	00:00:00
Start Reporting On	May 25, 2021	00:00:00
Antecedent Dry Days	0	days
Runoff (Dry Weather) Time Step	0 01:00:00	days hh:mm:ss
Runoff (Wet Weather) Time Step	0 00:05:00	days hh:mm:ss
Reporting Time Step	0 00:05:00	days hh:mm:ss
Routing Time Step	1	seconds

Number of Elements

	Qty
Rain Gages	1
Subbasins	10
Nodes	12
Junctions	9
Outfalls	1
Flow Diversions	0
Inlets	0
Storage Nodes	2
Links	12
Channels	5
Pipes	5
Pumps	0
Orifices	0
Weirs	2
Outlets	0
Pollutants	0
Land Uses	0

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1		Time Series	TS-100	Intensity	inches	Georgia	Chatham	100	11.40	SCS Type III 24-hr

Subbasin Summary

SN	Subbasin ID	Area (ac)	Peak Rate Factor	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	OFFSITE-DA-1	3.95	323.00	79.00	11.40	8.73	34.49	27.40	0 00:12:22
2	OFFSITE-DA-2	7.05	323.00	79.43	11.40	8.79	61.97	41.30	0 00:19:25
3	OFFSITE-DA-3	16.71	323.00	84.00	11.40	9.40	156.99	77.96	0 00:34:49
4	OFFSITE-DA-4	19.02	323.00	84.82	11.40	9.50	180.73	37.50	0 02:15:21
5	OFFSITE-DA-5	5.50	323.00	87.16	11.40	9.81	53.93	27.76	0 00:31:30
6	POST-DA-1	7.83	323.00	92.69	11.40	10.51	82.25	42.75	0 00:28:52
7	POST-DA-2	13.12	323.00	89.36	11.40	10.09	132.33	24.27	0 02:37:52
8	POST-DA-3	9.32	323.00	89.91	11.40	10.16	94.65	47.46	0 00:32:13
9	POST-DA-4	2.70	323.00	83.00	11.40	9.26	25.01	22.88	0 00:06:58
10	POST-DA-5	10.05	323.00	79.00	11.40	8.73	87.76	41.17	0 00:39:58

Node Summary

SN	Element ID	Element Type	Invert Elevation (ft)	Ground/Rim (Max) Elevation (ft)	Initial Water Elevation (ft)	Surcharge Elevation (ft)	Ponded Area (ft²)	Peak Inflow (cfs)	Max HGL Elevation Attained (ft)	Max Surcharge Depth Attained (ft)	Min Freeboard Attained (ft)	Time of Peak Flooding Occurrence (days hh:mm)	Total Flooded Volume (ac-in)	Total Time Flooded (min)
1	Jun-02	Junction	12.00	21.00	17.50	999.00	1.00	49.61	20.70	0.00	0.30	0 00:00	0.00	0.00
2	Jun-03	Junction	19.70	23.40	19.70	999.00	1.00	59.45	22.67	0.00	1.03	0 00:00	0.00	0.00
3	Jun-04	Junction	21.00	22.00	21.00	999.00	1.00	27.37	23.37	0.00	0.63	0 00:00	0.00	0.00
4	Jun-06	Junction	17.30	22.69	17.30	999.00	1.00	134.98	20.12	0.00	1002.68	0 00:00	0.00	0.00
5	Jun-07	Junction	18.30	23.50	18.30	999.00	1.00	95.43	23.32	0.00	0.18	0 00:00	0.00	0.00
6	Jun-10	Junction	12.00	20.00	17.50	999.00	1.00	41.10	21.06	1.06	0.00	0 12:21	0.03	82.00
7	Jun-16	Junction	18.30	23.50	18.30	999.00	1.00	77.88	23.34	0.00	0.16	0 00:00	0.00	0.00
8	Jun-17	Junction	17.29	22.50	17.29	999.00	1.00	273.16	19.00	0.00	3.50	0 00:00	0.00	0.00
9	Jun-18	Junction	18.00	23.00	18.00	999.00	1.00	122.75	22.77	0.00	0.23	0 00:00	0.00	0.00
10	POST-Out-01	Outfall	17.29					273.15	19.00					
11	POND-01	Storage Node	11.50	21.50	17.50		1.00	114.57	20.14				0.00	0.00
12	POND-02	Storage Node	11.50	21.50	17.50		1.00	30.50	20.79				0.00	0.00

Link Summary

SN	Element ID	Element Type	From (Inlet) Node	To (Outlet) Node	Length	Inlet Invert Elevation	Outlet Invert Elevation	Average Slope	Diameter or Height	Manning's Roughness	Peak Flow	Design Flow Capacity	Peak Flow/ Design Flow Ratio	Peak Flow Velocity	Peak Flow Depth	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged	Reported Condition
					(ft)	(ft)	(ft)	(%)	(in)		(cfs)	(cfs)		(ft/sec)	(ft)		(min)	
1	CONNECTER-PIPE-1	Pipe	Jun-02	POND-01	110.50	12.00	12.00	0.0000	42.000	0.0130	49.61	3.03	16.39	5.16	3.50	1.00	4320.00	SURCHARGED
2	CONNECTER-PIPE-2	Pipe	POND-02	Jun-02	110.50	12.00	12.00	0.0000	42.000	0.0130	34.10	3.03	11.27	3.54	3.50	1.00	4320.00	SURCHARGED
3	Link-11	Pipe	Jun-10	Jun-02	141.00	12.00	12.00	0.0000	42.000	0.0130	41.03	2.68	15.31	4.26	3.50	1.00	4320.00	SURCHARGED
4	Link-13	Pipe	Jun-06	Jun-17	102.00	17.30	17.29	0.0100	36.000	0.0130	135.29	26.42	5.12	6.00	2.26	0.75	0.00	> CAPACITY
5	Link-15	Pipe	Jun-07	Jun-18	107.00	18.30	18.00	0.2800	36.000	0.0130	95.18	105.95	0.90	4.49	3.00	1.00	76.00	SURCHARGED
6	DITCH-SWALE	Channel	Jun-04	Jun-07	311.00	21.00	18.30	0.8700	36.000	0.0320	24.16	170.24	0.14	1.35	2.68	0.90	0.00	
7	DUMMY-LINK-1	Channel	Jun-17	POST-Out-01	10.00	17.29	17.29	0.0000	60.000	0.0010	273.15	2903.03	0.09	15.78	1.71	0.34	0.00	
8	HWY-30-DITCH	Channel	Jun-03	Jun-06	1204.00	19.70	17.30	0.2000	48.000	0.0320	60.13	169.84	0.35	2.73	2.58	0.65	0.00	
9	Link-14	Channel	Jun-16	Jun-07	5.00	18.30	18.30	0.0000	60.000	0.0320	77.89	95.54	0.82	1.03	5.00	1.00	6.00	
10	Link-16	Channel	Jun-18	Jun-17	840.00	18.00	17.29	0.0800	60.000	0.0320	123.25	196.41	0.63	3.60	3.22	0.64	0.00	
11	POND-01-SPILLWAY1	Weir	POND-01	Jun-06		11.50	17.30				5.05							
12	POND-01-SPILLWAY2	Weir	POND-01	Jun-06		11.50	17.30				110.87							

Channel Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Shape	Height (ft)	Width (ft)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate
1	DITCH-SWALE	311.00	21.00	0.00	18.30	0.00	2.70	0.8700	Trapezoidal	3.000	19.000	0.0320	0.5000	0.5000	0.0000	0.00	No
2	DUMMY-LINK-1	10.00	17.29	0.00	17.29	0.00	0.00	0.0000	Trapezoidal	5.000	35.000	0.0010	0.0000	0.0000	0.0000	0.00	No
3	HWY-30-DITCH	1204.00	19.70	0.00	17.30	0.00	2.40	0.2000	Trapezoidal	4.000	25.000	0.0320	0.5000	0.5000	0.0000	0.00	No
4	Link-14	5.00	18.30	0.00	18.30	0.00	0.00	0.0000	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No
5	Link-16	840.00	18.00	0.00	17.29	0.00	0.71	0.0800	Trapezoidal	5.000	31.000	0.0320	0.5000	0.5000	0.0000	0.00	No

Channel Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	DITCH-SWALE	24.16	0 12:15	170.24	0.14	1.35	3.84	2.68	0.90	0.00		
2	DUMMY-LINK-1	273.15	0 12:39	2903.03	0.09	15.78	0.01	1.71	0.34	0.00		
3	HWY-30-DITCH	60.13	0 12:20	169.84	0.35	2.73	7.35	2.58	0.65	0.00		
4	Link-14	77.89	0 12:30	95.54	0.82	1.03	0.08	5.00	1.00	6.00		
5	Link-16	123.25	0 12:30	196.41	0.63	3.60	3.89	3.22	0.64	0.00		

Pipe Input

SN	Element ID	Length (ft)	Inlet Invert Elevation (ft)	Inlet Invert Offset (ft)	Outlet Invert Elevation (ft)	Outlet Invert Offset (ft)	Total Drop (ft)	Average Slope (%)	Pipe Shape	Pipe Diameter or Height (in)	Pipe Width (in)	Manning's Roughness	Entrance Losses	Exit/Bend Losses	Additional Losses	Initial Flow (cfs)	Flap Gate	No. of Barrels
1	CONNECTER-PIPE-1	110.50	12.00	0.00	12.00	0.50	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
2	CONNECTER-PIPE-2	110.50	12.00	0.50	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
3	Link-11	141.00	12.00	0.00	12.00	0.00	0.00	0.0000	CIRCULAR	42.000	42.000	0.0130	0.5000	0.5000	0.0000	0.00	No	1
4	Link-13	102.00	17.30	0.00	17.29	0.00	0.01	0.0100	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	4
5	Link-15	107.00	18.30	0.00	18.00	0.00	0.30	0.2800	CIRCULAR	36.000	36.000	0.0130	0.5000	0.5000	0.0000	0.00	No	3

Pipe Results

SN	Element ID	Peak Flow (cfs)	Time of Peak Flow Occurrence (days hh:mm)	Design Flow Capacity (cfs)	Peak Flow/ Design Flow Ratio	Peak Flow Velocity (ft/sec)	Travel Time (min)	Peak Flow Depth (ft)	Peak Flow Depth/ Total Depth Ratio	Total Time Surcharged (min)	Froude Number	Reported Condition
1	CONNECTER-PIPE-1	49.61	0 13:12	3.03	16.39	5.16	0.36	3.50	1.00	4320.00		SURCHARGED
2	CONNECTER-PIPE-2	34.10	0 13:42	3.03	11.27	3.54	0.52	3.50	1.00	4320.00		SURCHARGED
3	Link-11	41.03	0 12:35	2.68	15.31	4.26	0.55	3.50	1.00	4320.00		SURCHARGED
4	Link-13	135.29	0 12:48	26.42	5.12	6.00	0.28	2.26	0.75	0.00		> CAPACITY
5	Link-15	95.18	0 12:27	105.95	0.90	4.49	0.40	3.00	1.00	76.00		SURCHARGED

Storage Nodes

Storage Node : POND-01

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Outflow Weirs

SN	Element ID	Weir Type	Flap Gate	Crest Elevation (ft)	Crest Offset (ft)	Length (ft)	Weir Total Height (ft)	Discharge Coefficient
1	POND-01-SPILLWAY1	Trapezoidal	No	17.50	6.00	5.00	0.50	3.33
2	POND-01-SPILLWAY2	Trapezoidal	No	18.00	6.50	50.00	999.00	3.33

Output Summary Results

Peak Inflow (cfs)	114.57
Peak Lateral Inflow (cfs)	89.56
Peak Outflow (cfs)	112.98
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	20.14
Max HGL Depth Attained (ft)	8.64
Average HGL Elevation Attained (ft)	17.85
Average HGL Depth Attained (ft)	6.35
Time of Max HGL Occurrence (days hh:mm)	0 12:46
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

Storage Node : POND-02

Input Data

Invert Elevation (ft)	11.50
Max (Rim) Elevation (ft)	21.50
Max (Rim) Offset (ft)	10.00
Initial Water Elevation (ft)	17.50
Initial Water Depth (ft)	6.00
Ponded Area (ft²)	1.00
Evaporation Loss	0.00

Output Summary Results

Peak Inflow (cfs)	30.50
Peak Lateral Inflow (cfs)	24.25
Peak Outflow (cfs)	34.10
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	20.79
Max HGL Depth Attained (ft)	9.29
Average HGL Elevation Attained (ft)	17.90
Average HGL Depth Attained (ft)	6.4
Time of Max HGL Occurrence (days hh:mm)	0 13:01
Total Exfiltration Volume (1000-ft³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

STORMWATER MANAGEMENT REPORT

NOBLE VINES

APPENDIX C

CN AND TC CALCULATIONS

J – 28896.0003

THOMAS & HUTTON

PRE-DEVELOPMENT MODEL
CN AND TC CALCULATIONS

Subbasin Hydrology

Subbasin : OFFSITE-DA-1

Input Data

Area (ac) 3.95
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	3.95	D	79.00
Composite Area & Weighted CN	3.95		79.00

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	405	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	11.07	0.00	0.00

Total TOC (min) 12.38

Subbasin : OFFSITE-DA-2

Input Data

Area (ac) 7.05
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	7.05	D	79.00
Composite Area & Weighted CN	7.05		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	663	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	18.11	0.00	0.00

Total TOC (min) 19.43

Subbasin : OFFSITE-DA-3

Input Data

Area (ac) 16.71
Peak Rate Factor 323.00
Weighted Curve Number 84.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	16.71	D	84.00
Composite Area & Weighted CN	16.71		84.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	1002	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	10.37	0.00	0.00

Total TOC (min) 34.83

Subbasin : OFFSITE-DA-4

Input Data

Area (ac) 19.02
Peak Rate Factor 323.00
Weighted Curve Number 84.82
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/4 acre lots, 38% impervious	2.30	D	87.00
50 - 75% grass cover, Fair	0.65	D	84.00
Paved parking & roofs	0.62	-	98.00
50 - 75% grass cover, Fair	15.45	D	84.00
Composite Area & Weighted CN	19.02		84.82

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	863	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	8.93	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	527	0.00	0.00
Channel Slope (%) :	1.0	0.00	0.00
Cross Section Area (ft^2) :	0.18	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	101.97	0.00	0.00

Total TOC (min) 135.36

Subbasin : OFFSITE-DA-5

Input Data

Area (ac) 5.50
Peak Rate Factor 323.00
Weighted Curve Number 87.16
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/4 acre lots, 38% impervious	0.62	D	87.00
Paved parking & roofs	1.11	-	98.00
50 - 75% grass cover, Fair	3.77	D	84.00
Composite Area & Weighted CN	5.50		87.16

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	265	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	2.74	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	818	0.00	0.00
Channel Slope (%) :	0.30	0.00	0.00
Cross Section Area (ft^2) :	0.56	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	3.17	0.00	0.00
Computed Flow Time (min) :	4.30	0.00	0.00

Total TOC (min) 31.50

Subbasin : PRE-DA-1

Input Data

Area (ac) 4.29
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	4.29	D	79.00
Composite Area & Weighted CN	4.29		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	487	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	13.31	0.00	0.00

Total TOC (min) 14.62

Subbasin : PRE-DA-2

Input Data

Area (ac) 2.63
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	2.63	D	79.00
Composite Area & Weighted CN	2.63		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	463	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	12.65	0.00	0.00

Total TOC (min) 13.96

Subbasin : PRE-DA-3

Input Data

Area (ac) 3.09
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	3.09	D	79.00
Composite Area & Weighted CN	3.09		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	348	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	9.51	0.00	0.00

Total TOC (min) 10.82

Subbasin : PRE-DA-4

Input Data

Area (ac) 10.60
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	10.60	D	79.00
Composite Area & Weighted CN	10.60		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.50	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	815	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	22.27	0.00	0.00

Total TOC (min) 23.58

Subbasin : PRE-DA-5

Input Data

Area (ac) 10.05
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	10.05	D	79.00
Composite Area & Weighted CN	10.05		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	702	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	19.18	0.00	0.00

Total TOC (min) 20.49

Subbasin : PRE-DA-6

Input Data

Area (ac) 7.05
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	7.05	D	79.00
Composite Area & Weighted CN	7.05		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	459	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	12.54	0.00	0.00

Total TOC (min) 13.86

Subbasin : PRE-DA-7

Input Data

Area (ac) 5.28
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	5.28	D	79.00
Composite Area & Weighted CN	5.28		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	848	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	23.17	0.00	0.00

Total TOC (min) 24.48

POST-DEVELOPMENT MODEL
CN AND TC CALCULATIONS

Subbasin Hydrology

Subbasin : OFFSITE-DA-1

Input Data

Area (ac)	3.95
Peak Rate Factor	323.00
Weighted Curve Number	79.00
Rain Gage ID	Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	3.95	D	79.00
Composite Area & Weighted CN	3.95		79.00

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	405	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	11.07	0.00	0.00

Total TOC (min) 12.38

Subbasin : OFFSITE-DA-2

Input Data

Area (ac) 7.05
Peak Rate Factor 323.00
Weighted Curve Number 79.43
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	4.00	D	79.00
> 75% grass cover, Good	3.05	D	80.00
Composite Area & Weighted CN	7.05		79.43

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.27	0.00	0.00
Computed Flow Time (min) :	1.31	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	663	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	18.11	0.00	0.00

Total TOC (min) 19.43

Subbasin : OFFSITE-DA-3

Input Data

Area (ac) 16.71
Peak Rate Factor 323.00
Weighted Curve Number 84.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
50 - 75% grass cover, Fair	16.71	D	84.00
Composite Area & Weighted CN	16.71		84.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	1002	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	10.37	0.00	0.00

Total TOC (min) 34.83

Subbasin : OFFSITE-DA-4

Input Data

Area (ac) 19.02
Peak Rate Factor 323.00
Weighted Curve Number 84.82
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/4 acre lots, 38% impervious	2.30	D	87.00
50 - 75% grass cover, Fair	0.65	D	84.00
Paved parking & roofs	0.62	-	98.00
50 - 75% grass cover, Fair	15.45	D	84.00
Composite Area & Weighted CN	19.02		84.82

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	863	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	8.93	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	527	0.00	0.00
Channel Slope (%) :	1.0	0.00	0.00
Cross Section Area (ft^2) :	0.18	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	101.97	0.00	0.00

Total TOC (min) 135.36

Subbasin : OFFSITE-DA-5

Input Data

Area (ac) 5.50
Peak Rate Factor 323.00
Weighted Curve Number 87.16
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
1/4 acre lots, 38% impervious	0.62	D	87.00
Paved parking & roofs	1.11	-	98.00
50 - 75% grass cover, Fair	3.77	D	84.00
Composite Area & Weighted CN	5.50		87.16

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	265	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	2.74	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	818	0.00	0.00
Channel Slope (%) :	0.30	0.00	0.00
Cross Section Area (ft^2) :	0.56	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	3.17	0.00	0.00
Computed Flow Time (min) :	4.30	0.00	0.00

Total TOC (min) 31.50

Subbasin : POST-DA-1

Input Data

Area (ac) 7.83
Peak Rate Factor 323.00
Weighted Curve Number 92.69
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	3.45	-	98.00
POND	2.07	-	98.00
> 75% grass cover, Good	2.31	D	80.00
Composite Area & Weighted CN	7.83		92.69

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	83	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.98	0.00	0.00
Computed Flow Time (min) :	0.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	447	0.00	0.00
Channel Slope (%) :	0.30	0.00	0.00
Cross Section Area (ft^2) :	0.28	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	2.00	0.00	0.00
Computed Flow Time (min) :	3.73	0.00	0.00

Total TOC (min) 28.88

Subbasin : POST-DA-2

Input Data

Area (ac) 13.12
Peak Rate Factor 323.00
Weighted Curve Number 89.36
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	3.77	-	98.00
POND	1.25	-	98.00
50 - 75% grass cover, Fair	8.10	D	84.00
Composite Area & Weighted CN	13.12		89.36

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	126	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	1.30	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	735	0.00	0.00
Channel Slope (%) :	0.30	0.00	0.00
Cross Section Area (ft^2) :	0.28	0.00	0.00
Wetted Perimeter (ft) :	156	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	132.12	0.00	0.00

Total TOC (min) 157.88

Subbasin : POST-DA-3

Input Data

Area (ac) 9.32
Peak Rate Factor 323.00
Weighted Curve Number 89.91
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Paved parking & roofs	5.13	-	98.00
> 75% grass cover, Good	4.19	D	80.00
Composite Area & Weighted CN	9.32		89.91

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.07	0.00	0.00
Computed Flow Time (min) :	24.45	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	65	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Unpaved	Unpaved	Unpaved
Velocity (ft/sec) :	1.61	0.00	0.00
Computed Flow Time (min) :	0.67	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	850	0.00	0.00
Channel Slope (%) :	0.30	0.00	0.00
Cross Section Area (ft^2) :	0.28	0.00	0.00
Wetted Perimeter (ft) :	1.56	0.00	0.00
Velocity (ft/sec) :	2.00	0.00	0.00
Computed Flow Time (min) :	7.09	0.00	0.00

Total TOC (min) 32.22

Subbasin : POST-DA-4

Input Data

Area (ac) 2.70
Peak Rate Factor 323.00
Weighted Curve Number 83.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
-	2.70	-	83.00
Composite Area & Weighted CN	2.70		83.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.013	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.0	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	1.08	0.00	0.00
Computed Flow Time (min) :	1.55	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	489	0.00	0.00
Slope (%) :	1.0	0.00	0.00
Surface Type :	Grassed waterway	Unpaved	Unpaved
Velocity (ft/sec) :	1.50	0.00	0.00
Computed Flow Time (min) :	5.43	0.00	0.00

Total TOC (min) 6.98

Subbasin : POST-DA-5

Input Data

Area (ac) 10.05
Peak Rate Factor 323.00
Weighted Curve Number 79.00
Rain Gage ID ..... Rain Gage-001

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	10.05	D	79.00
Composite Area & Weighted CN	10.05		79.00

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	0.41	0.00	0.00
Flow Length (ft) :	100	0.00	0.00
Slope (%) :	1.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	4.47	0.00	0.00
Velocity (ft/sec) :	0.08	0.00	0.00
Computed Flow Time (min) :	20.79	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	702	0.00	0.00
Slope (%) :	1.5	0.00	0.00
Surface Type :	Woodland	Unpaved	Unpaved
Velocity (ft/sec) :	0.61	0.00	0.00
Computed Flow Time (min) :	19.18	0.00	0.00

Total TOC (min) 39.97

STORMWATER MANAGEMENT REPORT

NOBLE VINES

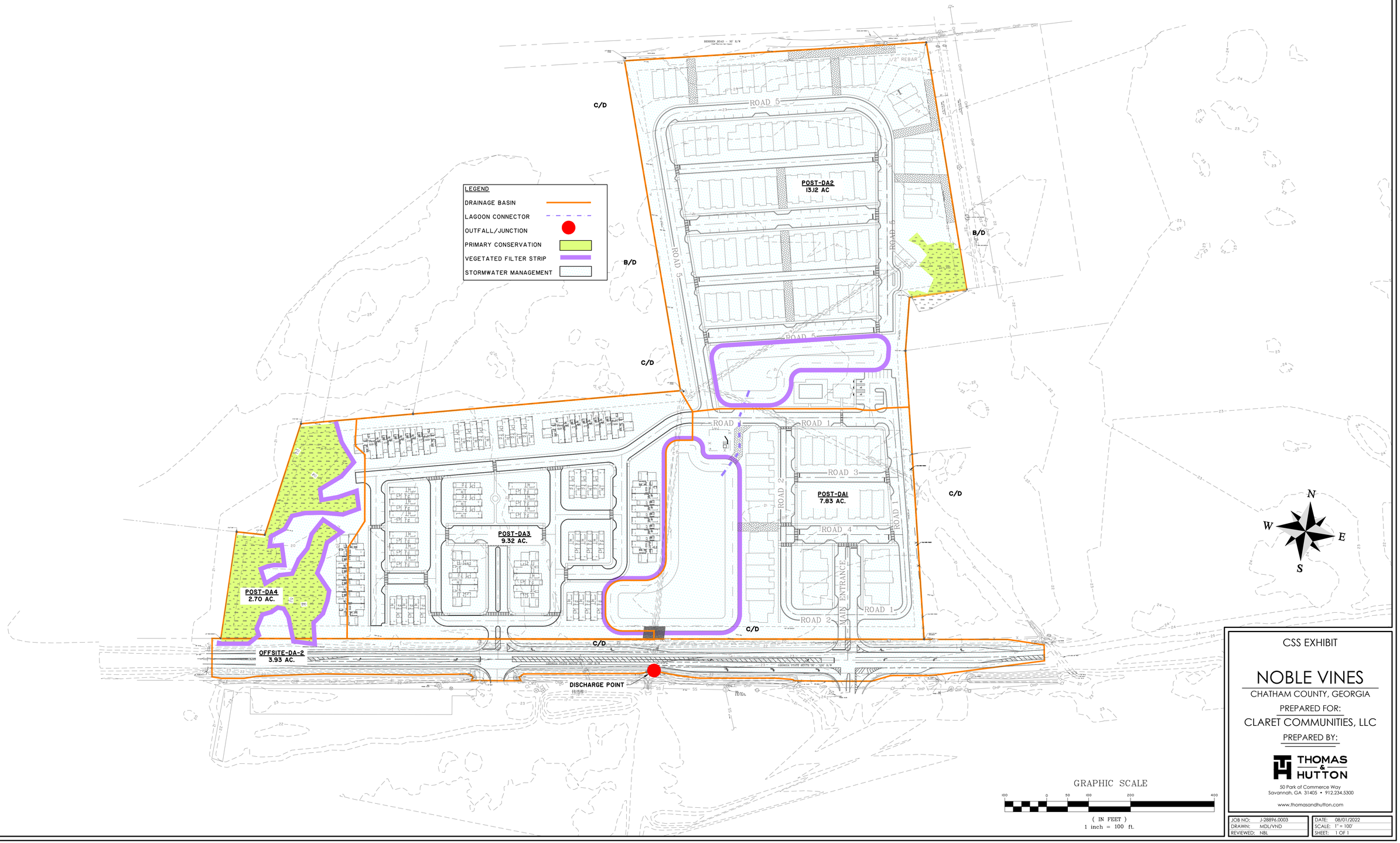
APPENDIX D

CSS EXHIBIT AND CALCULATIONS

J – 28896.0003

THOMAS & HUTTON

J:\28896\28896.0003\Engineering\Calculations and Reports\Storm Water\Exhibits\28896.0003 - CSS.dwg - Aug 1, 2022 - 9:39:20 AM



GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

CSS EXHIBIT

NOBLE VINES

CHATHAM COUNTY, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES, LLC

PREPARED BY:

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50 Park of Commerce Way
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JOB NO:	J-28896.0003
DRAWN:	MDL/VND
REVIEWED:	NBL

DATE:	08/01/2022
SCALE:	1" = 100'
SHEET:	1 OF 1

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

Site Data

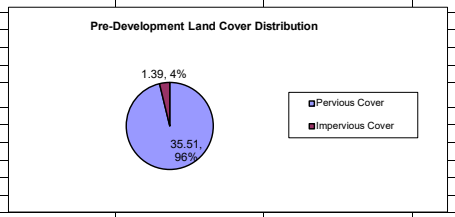
Site Name:

	data input cells
	calculation cells
	constant values

Step 1: Enter Site Information

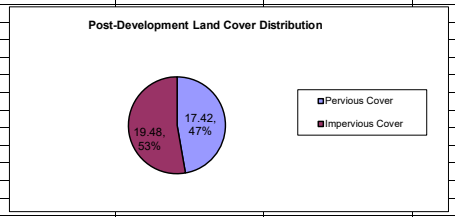
Pre-Development Land Cover (acres)

Land Cover Type	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	35.51	35.51
Impervious Cover	0.00	0.00	0.00	1.39	1.39
				Total	36.90

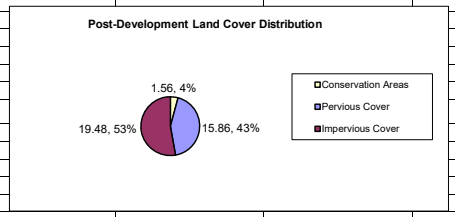


Post-Development Land Cover (acres)

Land Cover Type	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	17.42	17.42
Impervious Cover	0.00	0.00	0.00	19.48	19.48
				Total	36.90



Runoff Reduction Rainfall Event (inches)	1.2
Post-Development Site Imperviousness (%)	53%
Post-Development Site Runoff Coefficient, Rv	0.53
Target Runoff Reduction Volume, RRv (acre-feet)	1.94
Target Runoff Reduction Volume, RRv (cubic feet)	84,406

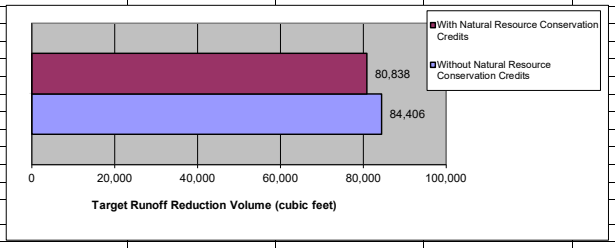


Step 2: Apply Better Site Planning Techniques

Natural Resource Conservation Credits	HSG A Soils	HSG B Soils	HSG C Soils	HSG D Soils	Total
Primary Conservation Areas (acres)	0.0	0.0	0.0	1.6	1.6
Secondary Conservation Areas (acres)	0.0	0.0	0.0	0.0	0.0
Total (acres)					1.56

Target Runoff Reduction Volume with Natural Resource Conservation Credits, RRv

Target Runoff Reduction Volume, RRv (acre-feet)	1.86
Target Runoff Reduction Volume, RRv (cubic feet)	80,838



Step 3: Apply Better Site Design Techniques

Reduced Clearing and Grading Credits

	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Total
Undisturbed Pervious Cover (Acres)	0.0	0.0	0.0	0.4	0.44

Revised Post-Development Land Cover (acres)

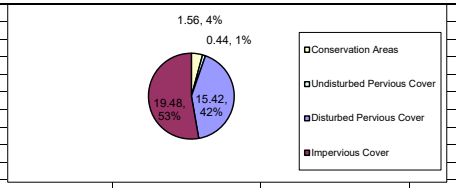
Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals

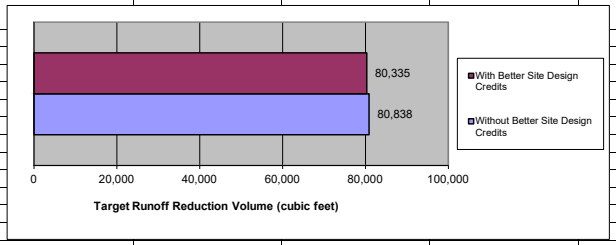
Conservation Areas	0.00	0.00	0.00	1.56	1.56
Undisturbed Pervious Cover	0.00	0.00	0.00	0.44	0.44
Disturbed Pervious Cover	0.00	0.00	0.00	15.42	15.42
Impervious Cover	0.00	0.00	0.00	19.48	19.48
				Total	36.90

Restoration of Disturbed Pervious Surfaces	
Soil Restoration (Acres)	0.0
Site Reforestation/Vegetation (Acres)	0.0
Soil Restoration w/ Site Reforestation/Revegetation (Acres)	0.0

Target Runoff Reduction Volume After Application of Better Site Design Credits, RRv	
Target Runoff Reduction Volume, RRv (acre-feet)	1.84
Target Runoff Reduction Volume, RRv (cubic feet)	80,335

Note: Remainder of Better Site Design Techniques are considered to be "self-crediting."





Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

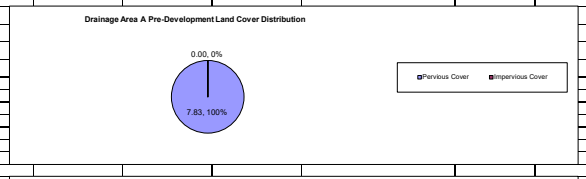
POST-DA1

Drainage Area A

Drainage Area Information

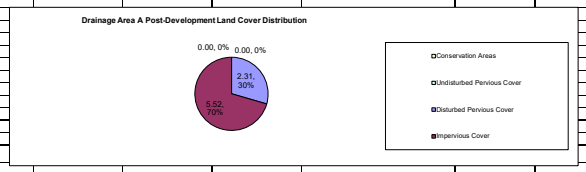
Drainage Area A Pre-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	7.83	7.83
Impervious Cover	0.00	0.00	0.00	0.00	0.00
				Total	7.83



Drainage Area A Post-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	2.31	2.31
Impervious Cover	0.00	0.00	0.00	5.52	5.52
				Total	7.83



Low Impact Development Practices

Alternatives to Impervious Surfaces

Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

"Receiving" Low Impact Development Practices

Vegetated Filter Strip, C/D Soils 1	7.83	5.52	23346.0	30% of volume received by the practice	0.0	23346.0	0.0	23346.0	N/A	N/A	7003.8	16342.2	7003.8	16342.2	Stormwater Pond, Wetland, or Wet Swale 1
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

Treatment Only Practices

Stormwater Pond, Wetland, or Wet Swale 1	0.00	0.00	0.0	None	16342.2	16342.2	16342.2	16342.2	Volume in Wet Pool and Extended Detention	700695.0	0.0	16342.2	16342.2	0.0	No Downstream Practice
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	**7.83**	**5.52**									**7003.8**		**23346.0**		

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

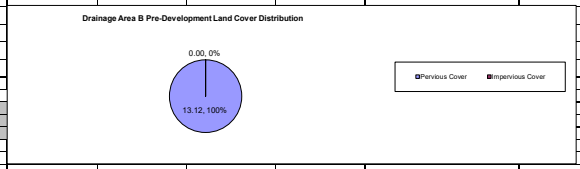
POST-DA2

Drainage Area B

Drainage Area Information

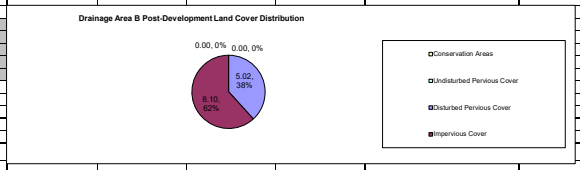
Drainage Area B Pre-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	13.12	13.12
Impervious Cover	0.00	0.00	0.00	0.00	0.00
				Total	13.12



Drainage Area B Post-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	5.02	5.02
Impervious Cover	0.00	0.00	0.00	8.10	8.10
				Total	13.12



Low Impact Development Practices

Alternatives to Impervious Surfaces

Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

"Receiving" Low Impact Development Practices

Vegetated Filter Strip, C/D Soils 1	13.10	8.10	34608.4	30% of volume received by the practice	0.0	34608.4	0.0	34608.4	N/A	N/A	10382.5	24225.9	10382.5	24225.9	Stormwater Pond, Wetland, or Wet Swale 1
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

Treatment Only Practices

Stormwater Pond, Wetland, or Wet Swale 1	0.00	0.00	0.0	None	24225.9	24225.9	24225.9	24225.9	Volume in Wet Pool and Extended Detention	700695.0	0.0	24225.9	24225.9	0.0	Stormwater Pond, Wetland, or Wet Swale 2
Stormwater Pond, Wetland, or Wet Swale 2	0.00	0.00	0.0	None	24225.9	24225.9	0.0	0.0	Volume in Wet Pool and Extended Detention	240524.0	0.0	24225.9	0.0	0.0	No Downstream Practice
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	**13.10**	**8.10**									**10382.5**		**34608.4**		

Revised July 2014

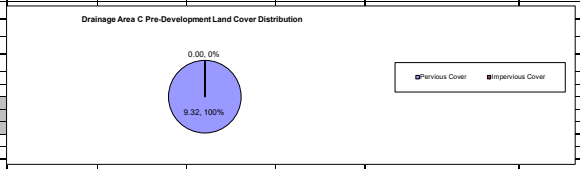
Drainage Area C

POST-DA3

Drainage Area Information

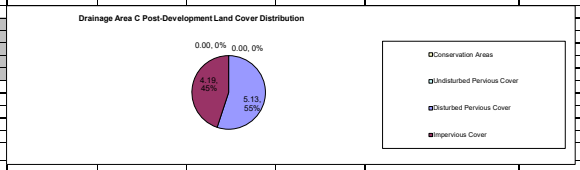
Drainage Area C Pre-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	9.32	9.32
Impervious Cover	0.00	0.00	0.00	0.00	0.00
				Total	9.32



Drainage Area C Post-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	5.13	5.13
Impervious Cover	0.00	0.00	0.00	4.19	4.19
				Total	9.32



Low Impact Development Practices

Alternatives to Impervious Surfaces

Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

"Receiving" Low Impact Development Practices

Vegetated Filter Strip, C/D Soils 1	9.23	3.48	15653.3	30% of volume received by the practice	0.0	15653.3	0.0	15653.3	N/A	N/A	4696.0	10957.3	4696.0	10957.3	Stormwater Pond, Wetland, or Wet Swale 1
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

Treatment Only Practices

Stormwater Pond, Wetland, or Wet Swale 1	0.00	0.00	0.0	None	10957.3	10957.3	10957.3	10957.3	Volume in Wet Pool and Extended Detention	700695.0	0.0	10957.3	10957.3	0.0	No Downstream Practice
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	**9.23**	**3.48**									**4696.0**		**15653.3**		

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

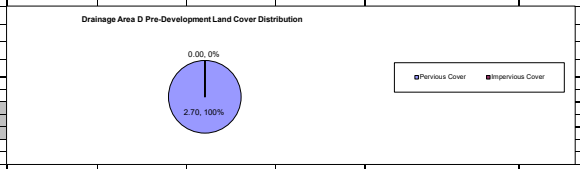
POST-DA4

Drainage Area D

Drainage Area Information

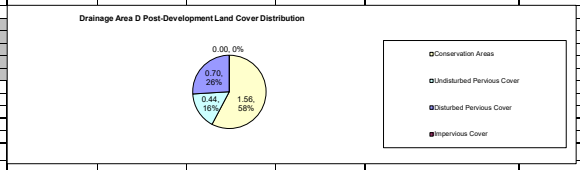
Drainage Area D Pre-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	2.70	2.70
Impervious Cover	0.00	0.00	0.00	0.00	0.00
				Total	2.70



Drainage Area D Post-Development Land Cover (acres

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	1.56	1.56
Undisturbed Pervious Cover	0.00	0.00	0.00	0.44	0.44
Disturbed Pervious Cover	0.00	0.00	0.00	0.70	0.70
Impervious Cover	0.00	0.00	0.00	0.00	0.00
				Total	2.70



Low Impact Development Practices

Alternatives to Impervious Surfaces

Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

"Receiving" Low Impact Development Practices

Vegetated Filter Strip, C/D Soils 1	2.79	0.00	607.7	30% of volume received by the practice	0.0	607.7	0.0	607.7	N/A	N/A	182.3	425.4	182.3	425.4	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	

Treatment Only Practices

Stormwater Pond, Wetland, or Wet Swale 1	0.00	0.00	0.0	None	0.0	0.0	0.0	0.0	Volume in Wet Pool and Extended Detention	11824.0	0.0	0.0	0.0	0.0	No Downstream Practice
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	**2.79**	**0.00**									**182.3**		**182.3**		

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

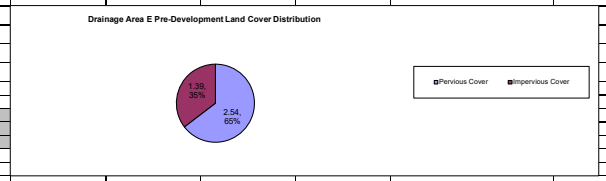
Drainage Area E

THE PORTION OF OFFSITE-DA-2 WITHIN PROJECT'S LIMITS OF DISTURBANCE.

Drainage Area Information

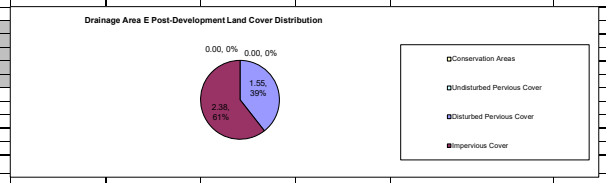
Drainage Area E Pre-Development Land Cover (acres)

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Pervious Cover	0.00	0.00	0.00	2.54	2.54
Impervious Cover	0.00	0.00	0.00	1.39	1.39
				Total	3.93



Drainage Area E Post-Development Land Cover (acres)

Land Cover Type	HSG A soils	HSG B Soils	HSG C Soils	HSG D Soils	Totals
Conservation Areas	0.00	0.00	0.00	0.00	0.00
Undisturbed Pervious Cover	0.00	0.00	0.00	0.00	0.00
Disturbed Pervious Cover	0.00	0.00	0.00	1.55	1.55
Impervious Cover	0.00	0.00	0.00	2.38	2.38
				Total	3.93



Low Impact Development Practices

Alternatives to Impervious Surfaces

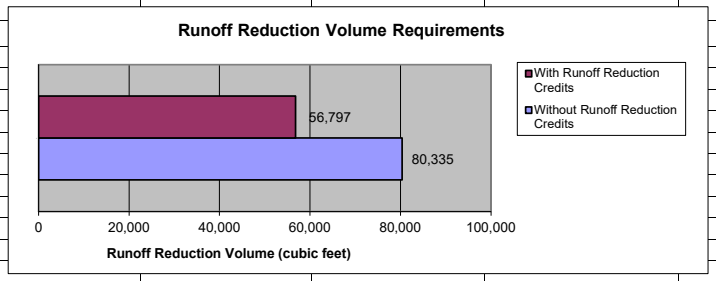
Low Impact Development Practice	Size of Contributing Drainage Area (acres)	Impervious Cover in Contributing Drainage Area (acres)	Direct Runoff Reduction Volume Received by Practice (cubic feet)	Description of Runoff Reduction Credit	Runoff Reduction Volume Received from Upstream Practices	Total Runoff Reduction Volume Received by Practice (cubic feet)	Treatment Volume Received from Upstream Practices (cubic feet)	Total Treatment Volume Received by Practice (cubic feet)	Method for Calculating Storage	Storage Volume Provided by Practice (cubic feet)	Adjustment to Runoff Reduction Volume (cubic feet)	Remaining Runoff Reduction Volume (cubic feet)	Adjustment to Treatment Volume (cubic feet)	Remaining Treatment Volume (cubic feet)	Downstream Practice to be Employed
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
"Receiving" Low Impact Development Practices															
Grass Channel, C/D Soils 1	3.93	2.38	10186.5	12.5% of volume received by the practice	0.0	10186.5	0.0	10186.5	N/A	N/A	1273.3	8913.2	1273.3	8913.2	No Downstream Practice
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Treatment Only Practices															
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	0.0	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
None	0.00	0.00	0.0	N/A	0.0	0.0	0.0	0.0	N/A	N/A	0.0	0.0	0.0	0.0	
Totals	**3.93**	**2.38**									**1273.3**		**1273.3**		

Coastal Stormwater Supplement Site Planning & Design Worksheet

Revised July 2014

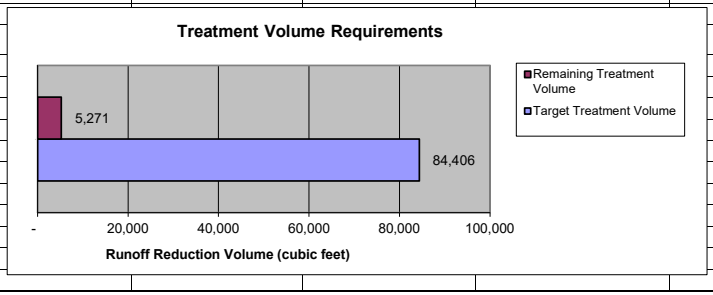
Stormwater Runoff Reduction Summary

Target Runoff Reduction and Treatment Volume, RRv (cubic feet)	84,406
Total Adjustment to Runoff Reduction Volume, RRv (cubic feet)	27,610
Percentage of Target Runoff Reduction Volume Achieved	33%
Runoff Reduction Volume Achieved (in)	0.39
Runoff Reduction Volume Remaining (cubic feet)	56,797



Note: If any of the target runoff reduction volume cannot be reduced on the development site, due to site characteristics or constraints, it should be intercepted and treated in one or more stormwater management practices that: (1) provide for at least an 80 percent reduction in TSS loads; and (2) reduce nitrogen and bacteria loads to the maximum extent practical.

Treatment Volume Achieved (cubic feet)	79,135
Treatment Volume Remaining (cubic feet)	5,271



STORMWATER MANAGEMENT REPORT

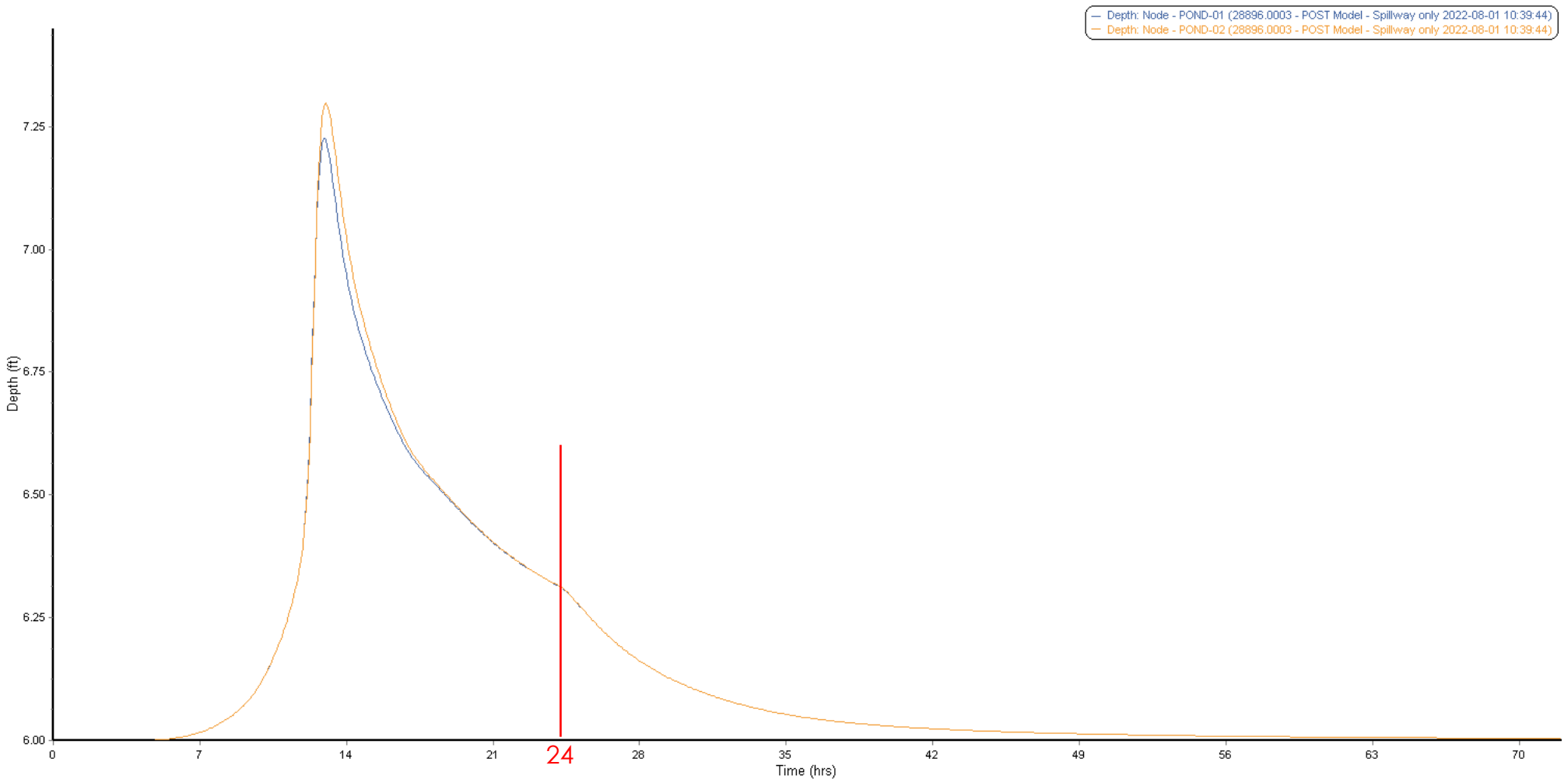
NOBLE VINES

APPENDIX E

EXTENDED DETENTION

J – 28896.0003

THOMAS & HUTTON


Depth: Node - POND-01 (28896.0003 - POST Model - Spillway only 2022-08-01 10:39:44)
Depth: Node - POND-02 (28896.0003 - POST Model - Spillway only 2022-08-01 10:39:44)
Depth (ft)
7.25
7.00
6.75
6.50
6.25
6.00
0
7
14
21
24
28
35
42
49
56
63
70
Time (hrs)

STORMWATER MANAGEMENT REPORT

NOBLE VINES

APPENDIX F

PIPE SIZING CALCULATIONS

J – 28896.0003

THOMAS & HUTTON

NOBLE VINES **JOB# 28896**
CULVERT PIPE SIZING CALCULATIONS **DATE: 8/10/2021**
PREPARED BY: THOMAS & HUTTON **DESIGNED BY: MDL/JTD**

PIPE SIZING METHODOLOGY

The following calculations determine the total design flow for each proposed culvert pipe proposed along GA Hwy 30. The flowrate was determined using the rational method. The flow is a function of the rainfall intensity (inches/hr), runoff coefficient, and drainage basin area. The design flow in cubic feet per second can then be used to calculate the pipe size needed to accommodate the flow using Manning's equation. There are a total of two culvert pipes. The culvert pipe located toward the western side of the site along Hwy 30 will be referred to as the *Western Culvert*. The culvert pipe located toward the eastern side of the site along Hwy 30 will be referred to as the *Eastern Culvert*. Please note that that 25-yr rainfall intensity is used in the calculations below.

Please see "Pipe Sizing Exhibit" of Appendix F for delineation of areas draining to the culvert pipes.

FLOWRATE CALCULATIONS

Q = CiA

Western Culvert - Corresponding Flow Rate Calculation

C = Runoff Coefficient	=	0.55
i = rainfall intensity in inch/hour	=	8.45
A = Drainage basin area in acres	=	1.04
Q = Flowrate in cubic feet/second	=	4.83

Eastern Culvert - Corresponding Flow Rate Calculation

C = Runoff Coefficient	=	0.5
i = rainfall intensity in inch/hour	=	8.45
A = Drainage basin area in acres	=	1.27
Q = Flowrate in cubic feet/second	=	5.37

MANNING'S EQUATION

$Q/A = (1.49/n) \times R_h^{2/3} \times S^{1/2}$

Q = Flowrate in cubic feet per second
A = Area of pipe in square feet
n = Manning's roughness coefficient based on pipe material
R_h = Hydraulic radius
S = Pipe slope (ft/ft)

FLOWRATE AND MANNING'S CALCULATIONS

BASIN	Basin Q (cfs)	Manning's n	Diameter (in.)	Pipe Area (ft^2)	# 24 in. Pipes	# 30 in. Pipes	# 36 in. Pipes
Western Culvert	4.83	0.013	16.8	1.5	0.5	0.3	0.2
Eastern Culvert	5.37	0.013	17.5	1.7	0.5	0.3	0.2

Conclusion: A 24 in. pipe will suffice for each culvert.

N/F
ALVIN WILLIAMS
PIN: 7-0976-02-005

N/F
ROSETTA FOREMAN GRAHAM
PIN: 7-0976-02-046

N/F
KEVIN & TIFFANY GRAHAM
PIN: 7-0976-02-040

N/F
SAM L WAYNEDOE
PIN: 7-0976-02-038

N/F
ELNORA SWEET & WILL STEELE
PIN: 7-09768-01-003

N/F
SHIRLEY PRICE
PIN: 7-09768-01-014

N/F
COLLEEN LYNETTE BRADY-HOHNERLEIN
PIN: 7-0976-02-034

POOL

AMENITY

TOWNHOME 8
3 UNITS

TOWNHOME 7
3 UNITS

TOWNHOME 6
6 UNITS

TOWNHOME 5
3 UNITS

TOWNHOME 4
3 UNITS

TOWNHOME 3
6 UNITS

TOWNHOME 2
3 UNITS

TOWNHOME 1
3 UNITS

WESTERN CULVERT AREA
1.04 AC.
Rc = 0.55

EASTERN CULVERT AREA
1.27 AC.
Rc = 0.50

24" RCP

24" RCP

GEORGIA STATE ROUTE 30 - 100' R/W

GA STATE ROUTE 30 - 100' R/W

N

W E

S

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

CULVERT PIPE SIZING

NOBLE VINES

PORT WENTWORTH, GA

PREPARED FOR:

CLARET COMMUNITIES, LLC

PREPARED BY:

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

JOB NO: J-28896.0001	DATE: 08/10/2021
DRAWN: MDL	SCALE: 1" = 60'
REVIEWED: JRW	SHEET: 1 OF 1

Z:\JOBS\28896.0001\ENGINEERING\CALCULATIONS AND REPORTS\CDM WATERSHED\CDM-0000 CULVERT PIPE AREAS FOR SIZING CULVERTS.DWG - Aug 05, 2021 - 3:47 PM

HEC-22

Energy Grade Line Computations

Struct. ID	*Q* (cfs)	*EGLo* (ft)	*HGLo* (ft)	Total Pipe Loss (ft)	*EGLi* (ft)	*HGLi* (ft)	*Ea* (ft)	*EGLa* (ft)	Surface Elev. (ft)
12		19.60	19.60						14.30
10	7.4	19.69	19.60	0.15	19.84	19.75	5.8	19.88	21.08
9	1.7	19.89	19.87	0.03	19.92	19.90	5.5	19.92	20.50
11	1.3	19.89	19.88	0.01	19.89	19.89	4.4	19.90	20.50
4	4.8	19.93	19.81	0.15	20.08	19.97	5.5	20.12	20.48
15	3.8	20.14	20.07	0.11	20.25	20.18	5.5	20.29	21.05
3	2.1	20.30	20.28	0.03	20.33	20.31	5.3	20.33	20.50
14	1.3	20.34	20.33	0.01	20.34	20.34	5.1	20.35	21.26
13	0.7	20.35	20.35		20.36	20.35	4.9	20.36	20.50
17	0.6	20.35	20.35		20.35	20.35	4.9	20.35	20.50
8	1.8	20.30	20.28	0.02	20.32	20.30	5.0	20.33	20.38
7	0.9	20.33	20.32		20.33	20.33	5.0	20.33	20.38
34		19.95	19.95						14.30
33	8.0	19.99	19.95	0.02	20.01	19.97	5.8	20.02	20.50
32	7.0	20.05	19.97	0.13	20.18	20.10	5.6	20.19	20.50
31	5.1	20.21	20.17	0.07	20.28	20.24	5.2	20.29	20.50
30	3.1	20.31	20.26	0.12	20.43	20.38	5.0	20.45	20.50
43	1.3	20.45	20.45	0.02	20.48	20.47	4.6	20.48	20.90
39		19.95	19.95						14.30
38	10.4	19.98	19.95	0.02	20.00	19.97	6.4	20.03	20.50
37	9.8	20.04	20.01	0.04	20.07	20.04	6.0	20.08	20.50
63	9.3	20.10	20.05	0.04	20.14	20.08	5.8	20.16	21.25
36	8.1	20.17	20.13	0.03	20.20	20.16	5.7	20.21	20.50
59	7.6	20.22	20.18	0.02	20.24	20.21	5.5	20.26	21.35
35	6.0	20.28	20.22	0.05	20.33	20.27	5.4	20.34	20.50
46	5.4	20.36	20.31	0.04	20.40	20.35	5.3	20.42	21.47
45	3.9	20.45	20.37	0.09	20.54	20.47	5.1	20.57	20.93
67	3.0	20.58	20.54	0.04	20.63	20.58	5.0	20.66	21.40
44	2.1	20.67	20.64	0.04	20.71	20.69	4.8	20.71	20.93
75	1.0	20.66	20.65	0.01	20.67	20.66	3.9	20.67	22.13
74	1.1	20.67	20.67	0.01	20.68	20.68	3.7	20.68	22.03
47	1.7	20.42	20.41	0.03	20.46	20.44	5.0	20.46	20.50
58	1.8	20.26	20.25	0.03	20.30	20.28	4.8	20.30	20.50
62	1.5	20.16	20.15	0.02	20.18	20.17	4.7	20.18	20.50
51		19.95	19.95						14.30
50	13.7	20.01	19.95	0.05	20.06	20.00	5.8	20.07	20.50
61	12.9	20.10	20.04	0.03	20.13	20.07	5.6	20.14	21.27
49	11.6	20.18	20.09	0.05	20.23	20.14	5.5	20.25	20.73
57	10.8	20.28	20.20	0.05	20.32	20.25	5.4	20.35	21.27
48	9.5	20.37	20.31	0.04	20.41	20.35	5.3	20.42	20.73
41	7.6	20.46	20.37	0.18	20.64	20.55	5.1	20.70	20.74
66	5.4	20.72	20.67	0.06	20.77	20.73	4.9	20.79	20.93
40	2.2	20.80	20.78	0.07	20.87	20.85	4.5	20.88	20.93
77	1.9	20.80	20.78	0.01	20.81	20.79	4.3	20.81	21.96
76	1.9	20.82	20.80	0.03	20.85	20.83	4.1	20.86	21.81
78	0.7	20.86	20.86		20.87	20.86	3.3	20.87	22.60
79	0.6	20.86	20.86		20.87	20.86	3.7	20.87	22.20
85	0.9	20.70	20.70		20.70	20.70	4.6	20.71	22.13
84	0.9	20.71	20.70	0.01	20.71	20.71	4.4	20.72	21.96
83	0.4	20.72	20.72		20.72	20.72	4.1	20.72	21.67
82	1.0	20.43	20.42		20.43	20.42	4.4	20.43	21.96
81	1.0	20.43	20.43	0.01	20.44	20.44	4.1	20.45	21.66
80	0.4	20.45	20.45		20.45	20.45	3.8	20.45	21.65
56	1.5	20.35	20.34	0.02	20.37	20.36	4.9	20.37	20.50
60	1.5	20.15	20.13	0.02	20.16	20.15	4.7	20.17	20.50
53		19.95	19.95						14.30

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Energy Grade Line Computations

Struct. ID	*Q* (cfs)	*EGLo* (ft)	*HGLo* (ft)	Total Pipe Loss (ft)	*EGLi* (ft)	*HGLi* (ft)	*Ea* (ft)	*EGLa* (ft)	Surface Elev. (ft)
52	1.3	19.96	19.95	0.01	19.97	19.96	4.5	19.97	20.50
55		19.95	19.95						14.30
54	1.2	19.96	19.95	0.01	19.96	19.96	4.5	19.97	20.50
68		19.95	19.95						14.30
26	6.8	20.02	19.95	0.06	20.09	20.01	5.6	20.13	21.10
25	3.9	20.16	20.08	0.10	20.26	20.18	5.4	20.27	20.50
24	2.7	20.29	20.25	0.07	20.36	20.32	5.2	20.37	20.50
23	0.8	20.37	20.37		20.38	20.38	5.0	20.38	21.06
22	0.8	20.38	20.38		20.38	20.38	4.8	20.39	20.55
72	1.0	20.38	20.37		20.38	20.38	5.1	20.38	20.50
73	0.5	20.38	20.38		20.38	20.38	4.9	20.38	20.50
21	3.4	20.15	20.09	0.07	20.22	20.16	5.5	20.23	20.50
20	2.2	20.24	20.22	0.03	20.27	20.25	5.3	20.29	21.10
19	2.2	20.30	20.28	0.03	20.34	20.31	5.1	20.34	20.51
18	1.1	20.34	20.34	0.01	20.36	20.35	4.8	20.36	20.55
92		19.95	19.95						14.30
91	0.8	19.95	19.95		19.96	19.95	4.9	19.96	21.24
90	0.8	19.96	19.96	0.01	19.97	19.97	4.4	19.97	20.39
89	0.6	19.97	19.97	0.01	19.98	19.98	3.9	19.98	20.50
88	0.5	19.98	19.98		19.98	19.98	3.3	19.98	20.00
87	0.3	19.98	19.98		19.98	19.98	3.1	19.98	20.75
86	0.3	19.98	19.98		19.99	19.99	2.9	19.99	20.73

HEC-22
Storm Drain Computations

Structure ID		Length (ft)	Drainage Area (ac)	Runoff Coeff "C"	Tc (min)	Rain "I" (in/hr)	Runoff "Q" (cfs)	Known Q (cfs)	Total Q (cfs)	Pipe Dia. (in)	Velocity Design (ft/s)	Invert Elevation		Slope
From	To											U/S	D/S	
10	12	142			21	5.96	7.4		7.4	24	6.7	14.10	12.50	1.12%
9	10	113	0.41	0.60	13	6.92	1.7		1.7	18	2.8	14.44	14.10	0.30%
11	10	57	0.31	0.60	13	6.92	1.3		1.3	18	2.6	15.50	15.33	0.30%
4	10	74	0.30	0.55	21	6.00	4.8		4.8	18	3.6	14.60	14.37	0.30%
15	4	82			20	6.04	3.8		3.8	18	3.5	14.84	14.60	0.30%
3	15	69	0.24	0.55	16	6.48	2.1		2.1	18	3.0	15.05	14.84	0.30%
14	3	56			16	6.51	1.3		1.3	18	2.6	15.22	15.05	0.30%
13	14	95	0.22	0.50	15	6.58	0.7		0.7	18	2.2	15.50	15.22	0.30%
17	14	75	0.15	0.55	8	7.76	0.6		0.6	18	2.3	15.50	15.22	0.37%
8	15	69	0.27	0.55	20	6.08	1.8		1.8	18	2.9	15.34	15.14	0.30%
7	8	12	0.28	0.55	20	6.08	0.9		0.9	18	2.4	15.38	15.34	0.30%
33	34	52	0.30	0.60	18	6.31	8.0		8.0	30	9.9	14.24	12.50	3.31%
32	33	135	0.45	0.65	17	6.36	7.0		7.0	24	4.1	14.64	14.24	0.30%
31	32	135	0.48	0.65	17	6.42	5.1		5.1	24	3.8	15.05	14.64	0.30%
30	31	135	0.44	0.65	16	6.49	3.1		3.1	18	3.3	15.45	15.05	0.30%
43	30	150	0.38	0.50	15	6.58	1.3		1.3	18	2.6	15.90	15.45	0.30%
38	39	62	0.18	0.70	24	5.71	10.4		10.4	36	8.5	13.63	12.50	1.83%
37	38	164	0.18	0.50	23	5.77	9.8		9.8	36	4.4	14.12	13.63	0.30%
63	37	68			23	5.79	9.3		9.3	30	4.4	14.33	14.12	0.30%
36	63	68	0.18	0.50	23	5.82	8.1		8.1	30	4.2	14.53	14.33	0.30%
59	36	68			22	5.85	7.6		7.6	30	4.1	14.73	14.53	0.30%
35	59	68	0.22	0.50	22	5.88	6.0		6.0	24	3.9	14.94	14.73	0.30%
46	35	68			22	5.91	5.4		5.4	24	3.8	15.14	14.94	0.30%
45	46	68	0.26	0.60	21	5.94	3.9		3.9	18	3.5	15.46	15.25	0.30%
67	45	56			21	5.97	3.0		3.0	18	3.3	15.63	15.46	0.30%
44	67	102	0.49	0.65	15	6.58	2.1		2.1	18	3.0	15.93	15.63	0.30%
75	67	77			21	6.02	1.0		1.0	18	2.5	16.73	16.51	0.30%
74	75	98	0.34	0.50	20	6.08	1.1		1.1	18	2.5	17.03	16.73	0.30%
47	46	122	0.43	0.60	15	6.58	1.7		1.7	18	2.8	15.50	15.14	0.30%
58	59	107	0.45	0.60	15	6.58	1.8		1.8	18	2.9	15.50	15.17	0.30%
62	63	94	0.37	0.60	15	6.58	1.5		1.5	18	2.7	15.50	15.22	0.30%
50	51	113	0.24	0.60	24	5.69	13.7		13.7	36	8.8	14.31	12.50	1.61%
61	50	82			24	5.72	12.9		12.9	36	4.7	14.56	14.31	0.30%
49	61	68	0.26	0.60	23	5.75	11.6		11.6	30	4.6	14.76	14.56	0.30%
57	49	68			23	5.77	10.8		10.8	30	4.5	14.96	14.76	0.30%
48	57	68	0.37	0.50	23	5.80	9.5		9.5	30	4.4	15.17	14.96	0.30%
41	48	158	0.48	0.50	22	5.86	7.6		7.6	24	4.1	15.64	15.17	0.30%
66	41	97	0.41	0.65	22	5.90	5.4		5.4	24	3.8	15.93	15.64	0.30%
40	66	167	0.51	0.65	15	6.58	2.2		2.2	18	2.9	16.39	15.93	0.28%
77	66	25			22	5.92	1.9		1.9	18	2.9	16.49	16.41	0.30%
76	77	97	0.18	0.55	21	5.97	1.9		1.9	18	2.9	16.78	16.49	0.30%
78	76	105	0.23	0.50	20	6.08	0.7		0.7	18	2.2	17.60	17.29	0.30%
79	76	140	0.27	0.35	20	6.08	0.6		0.6	18	2.1	17.20	16.78	0.30%
85	41	55			22	5.92	0.9		0.9	18	2.4	16.07	15.89	0.33%
84	85	99	0.18	0.50	21	6.00	0.9		0.9	18	2.3	16.35	16.07	0.28%
83	84	108	0.14	0.40	20	6.08	0.4		0.4	18	1.8	16.67	16.35	0.30%
82	48	30			16	6.51	1.0		1.0	18	2.4	16.01	15.92	0.30%
81	82	112	0.18	0.50	15	6.58	1.0		1.0	18	2.5	16.35	16.01	0.30%
80	81	100	0.12	0.50	12	7.09	0.4		0.4	18	1.9	16.65	16.35	0.30%
56	57	97	0.44	0.50	15	6.58	1.5		1.5	18	2.7	15.50	15.21	0.30%
60	61	89	0.38	0.60	15	6.58	1.5		1.5	18	2.7	15.50	15.23	0.30%
52	53	53	0.27	0.65	11	7.26	1.3		1.3	18	7.4	15.50	12.50	5.70%
54	55	53	0.28	0.60	11	7.26	1.2		1.2	18	7.3	15.50	12.50	5.72%
26	68	71			15	6.59	6.8		6.8	24	9.2	14.55	12.50	2.89%

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Storm Drain Computations

Structure ID		Length (ft)	Drainage Area (ac)	Runoff Coeff "C"	Tc (min)	Rain "I" (in/hr)	Runoff "Q" (cfs)	Known Q (cfs)	Total Q (cfs)	Pipe Dia. (in)	Velocity Design (ft/s)	Invert Elevation		Slope
From	To											U/S	D/S	
25	26	73	0.30	0.55	10	7.50	3.9		3.9	18	3.5	14.83	14.62	0.30%
24	25	105	0.23	0.55	9	7.59	2.7		2.7	18	3.2	15.15	14.83	0.30%
23	24	71			8	7.68	0.8		0.8	18	2.2	15.37	15.15	0.30%
22	23	61	0.18	0.55	8	7.76	0.8		0.8	18	2.3	15.55	15.37	0.30%
72	24	52	0.12	0.55	8	7.68	1.0		1.0	18	2.5	15.32	15.15	0.33%
73	72	60	0.12	0.55	8	7.76	0.5		0.5	18	2.0	15.50	15.32	0.30%
21	26	67	0.30	0.60	15	6.65	3.4		3.4	18	3.4	14.75	14.55	0.30%
20	21	75			14	6.72	2.2		2.2	18	3.0	14.97	14.75	0.30%
19	20	74	0.30	0.55	14	6.79	2.2		2.2	18	3.0	15.20	14.97	0.30%
18	19	118	0.29	0.55	13	6.92	1.1		1.1	18	2.5	15.55	15.20	0.30%
91	92	65			25	5.54	0.8		0.8	18	5.6	15.04	12.50	3.93%
90	91	191	0.10	0.30	24	5.68	0.8		0.8	18	2.3	15.61	15.04	0.30%
89	90	159	0.07	0.30	23	5.80	0.6		0.6	18	2.1	16.09	15.61	0.30%
88	89	184	0.11	0.30	21	5.95	0.5		0.5	18	2.0	16.64	16.09	0.30%
87	88	78			21	6.02	0.3		0.3	18	1.7	16.88	16.64	0.30%
86	87	81	0.17	0.30	20	6.08	0.3		0.3	18	1.8	17.12	16.88	0.30%

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Inlet Capacity Results

Structure	Q=CIA/Kc (cfs)	Known Q (cfs)	Longitudinal Slope SL (ft/ft)	Cross Slope *Sx* (ft/ft)	Cross Slope *Sw* (ft/ft)	Prev. Bypass Flow (cfs)	Total Gutter Flow (cfs)	Depth *d* (ft)	Gutter Width (ft)	Spread *T* (ft)	Inlet Type	Grate Length (in)	Grate Width (in)	Curb Opening Length (in)	Curb Opening Height (in)	Intercept Flow Q*i* (cfs)	Bypass Flow Q*b* (cfs)	Bypass Structure	Remark
3	1.0		-1.00	0.02			1.0	0.1		7.1	Grate inlet	23.8	23.8			1.0			
4	1.2		-1.00	0.02			1.2	0.2		8.2	Grate inlet	23.8	23.8			1.2			
7	0.9		-1.00	0.02			0.9	0.2		10.0	Combination	20.0	10.9	20.0	4.2	0.9			
8	0.9		-1.00	0.02			0.9	0.2		9.8	Combination	20.0	10.9	20.0	4.2	0.9			
9	1.7		-1.00	0.02			1.7	0.2		10.4	Grate inlet	23.8	23.8			1.7			
11	1.3		-1.00	0.02			1.3	0.2		8.7	Grate inlet	23.8	23.8			1.3			
13	0.7		-1.00	0.02			0.7	0.1		6.0	Grate inlet	23.8	23.8			0.7			
17	0.6		-1.00	0.02			0.6	0.1		5.4	Grate inlet	23.8	23.8			0.6			
30	1.9		-1.00	0.02			1.9	0.2		11.3	Grate inlet	23.8	23.8			1.9			
31	2.1		-1.00	0.02			2.1	0.2		11.9	Grate inlet	23.8	23.8			2.1			
32	1.9		-1.00	0.02			1.9	0.2		11.4	Grate inlet	23.8	23.8			1.9			
33	1.3		-1.00	0.02			1.3	0.2		8.8	Grate inlet	23.8	23.8			1.3			
43	1.3		-1.00	0.02			1.3	0.2		8.6	Grate inlet	23.8	23.8			1.3			
35	0.8		-1.00	0.02			0.8	0.1		6.3	Grate inlet	23.8	23.8			0.8			
36	0.6		-1.00	0.02			0.6	0.1		5.4	Grate inlet	23.8	23.8			0.6			
37	0.6		-1.00	0.02			0.6	0.1		5.4	Grate inlet	23.8	23.8			0.6			
38	1.0		-1.00	0.02			1.0	0.2		7.3	Grate inlet	23.8	23.8			1.0			
44	2.1		-1.00	0.02			2.1	0.2		12.1	Grate inlet	23.8	23.8			2.1			
45	1.0		-1.00	0.02			1.0	0.2		7.4	Grate inlet	23.8	23.8			1.0			
47	1.7		-1.00	0.02			1.7	0.2		10.6	Grate inlet	23.8	23.8			1.7			
58	1.8		-1.00	0.02			1.8	0.2		10.8	Grate inlet	23.8	23.8			1.8			
62	1.5		-1.00	0.02			1.5	0.2		9.6	Grate inlet	23.8	23.8			1.5			
74	1.1		-1.00	0.02			1.1	0.2		7.8	Grate inlet	24.0	24.0			1.1			
40	2.2		-1.00	0.02			2.2	0.3		12.4	Grate inlet	23.8	23.8			2.2			
41	1.5		-1.00	0.02			1.5	0.2		9.6	Grate inlet	23.8	23.8			1.5			
48	1.3		-1.00	0.02			1.3	0.2		8.8	Grate inlet	23.8	23.8			1.3			
49	1.0		-1.00	0.02			1.0	0.2		7.4	Grate inlet	23.8	23.8			1.0			
50	1.1		-1.00	0.02			1.1	0.2		7.7	Grate inlet	23.8	23.8			1.1			
56	1.5		-1.00	0.02			1.5	0.2		9.4	Grate inlet	23.8	23.8			1.5			
60	1.5		-1.00	0.02			1.5	0.2		9.7	Grate inlet	23.8	23.8			1.5			
66	1.9		-1.00	0.02			1.9	0.2		11.1	Grate inlet	23.8	23.8			1.9			
76	0.7		-1.00	0.02			0.7	0.1		3.8	Grate inlet	24.0	24.0			0.7			
78	0.7		-1.00	0.02			0.7	0.1		4.4	Grate inlet	24.0	24.0			0.7			
79	0.6		-1.00	0.02			0.6	0.1		2.8	Grate inlet	24.0	24.0			0.6			
80	0.4		-1.00	0.02			0.4	0.0		1.2	Grate inlet	24.0	24.0			0.4			
81	0.6		-1.00	0.02			0.6	0.1		3.1	Grate inlet	24.0	24.0			0.6			

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Inlet Capacity Results

Structure	Q=CIA/Kc (cfs)	Known Q (cfs)	Longitudinal Slope SL (ft/ft)	Cross Slope *Sx* (ft/ft)	Cross Slope *Sw* (ft/ft)	Prev. Bypass Flow (cfs)	Total Gutter Flow (cfs)	Depth *d* (ft)	Gutter Width (ft)	Spread *T* (ft)	Inlet Type	Grate Length (in)	Grate Width (in)	Curb Opening Length (in)	Curb Opening Height (in)	Intercept Flow Q*i* (cfs)	Bypass Flow Q*b* (cfs)	Bypass Structure	Remark
83	0.4		-1.00	0.02			0.4				Grate inlet	24.0	24.0			0.4			
84	0.6		-1.00	0.02			0.6	0.1		2.8	Grate inlet	24.0	24.0			0.6			
52	1.3		-1.00	0.02			1.3	0.2		8.6	Grate inlet	23.8	23.8			1.3			
54	1.2		-1.00	0.02			1.2	0.2	0.0	8.4	Grate inlet	23.8	23.8			1.2			
18	1.1		-1.00	0.02			1.1	0.2		7.8	Grate inlet	23.8	23.8			1.1			
19	1.2		-1.00	0.02			1.2	0.2		8.1	Grate inlet	23.8	23.8			1.2			
21	1.4		-1.00	0.02			1.4	0.2		9.1	Grate inlet	23.8	23.8			1.4			
22	0.8		-1.00	0.02			0.8	0.1		6.1	Grate inlet	23.8	23.8			0.8			
24	1.0		-1.00	0.02			1.0	0.1		7.1	Grate inlet	23.8	23.8			1.0			
25	1.2		-1.00	0.02			1.2	0.2		8.5	Grate inlet	23.8	23.8			1.2			
72	0.5		-1.00	0.02			0.5	0.1		4.8	Grate inlet	23.8	23.8			0.5			
73	0.5		-1.00	0.02			0.5	0.1		4.8	Grate inlet	23.8	23.8			0.5			
86	0.3		-1.00	0.02			0.3	-0.0			Grate inlet	24.0	24.0			0.3			
88	0.2		-1.00	0.02			0.2	-0.0			Grate inlet	24.0	24.0			0.2			
89	0.1		-1.00	0.02			0.1	-0.1			Grate inlet	24.0	24.0			0.1			
90	0.2		-1.00	0.02			0.2	-0.1			Grate inlet	24.0	24.0			0.2			

HEC-22
Energy Grade Line Computations

Struct. ID	*Q* (cfs)	*EGLo* (ft)	*HGLo* (ft)	Total Pipe Loss (ft)	*EGLi* (ft)	*HGLi* (ft)	*Ea* (ft)	*EGLa* (ft)	Surface Elev. (ft)
103		19.60	19.60						14.30
28	13.5	19.66	19.60	0.09	19.74	19.69	5.6	19.76	20.50
29	11.3	19.77	19.73	0.02	19.79	19.75	5.4	19.81	20.90
30	10.0	19.83	19.77	0.04	19.88	19.81	5.3	19.89	20.50
31	7.4	19.92	19.84	0.15	20.07	19.98	5.0	20.09	20.50
32	4.9	20.14	20.02	0.16	20.30	20.18	5.1	20.36	20.88
34	2.1	20.36	20.34	0.03	20.39	20.37	4.9	20.40	20.50
32	2.8	20.37	20.33	0.05	20.42	20.38	4.9	20.43	20.50
35	1.3	19.81	19.80	0.01	19.82	19.81	4.3	19.82	20.50
101		19.60	19.60						14.30
1	13.5	19.63	19.60	0.02	19.65	19.62	6.4	19.66	19.87
2	12.1	19.68	19.64	0.04	19.72	19.67	6.1	19.73	20.50
3	11.0	19.75	19.71	0.02	19.77	19.73	6.0	19.78	22.32
4	8.1	19.80	19.75	0.03	19.83	19.79	5.8	19.84	20.50
5	7.0	19.85	19.82	0.02	19.87	19.84	5.6	19.89	20.88
6	7.1	19.92	19.85	0.05	19.97	19.89	5.6	19.99	20.50
7	5.9	20.02	19.96	0.04	20.05	20.00	5.5	20.09	20.86
13	1.5	20.10	20.09	0.01	20.11	20.10	4.6	20.11	20.50
8	4.5	20.13	20.03	0.13	20.27	20.16	5.5	20.29	20.50
8	3.3	20.31	20.26	0.07	20.38	20.33	5.4	20.42	20.86
9	1.6	20.43	20.42	0.01	20.44	20.43	5.3	20.44	20.50
9	1.7	20.43	20.41	0.02	20.44	20.43	5.0	20.45	20.50
14	3.1	19.80	19.75	0.09	19.89	19.84	4.5	19.92	20.80
15	1.6	19.92	19.91		19.93	19.91	4.4	19.93	20.80
102		19.60	19.60						14.30
16	13.1	19.63	19.60	0.01	19.64	19.61	5.5	19.65	20.98
17	7.8	19.67	19.63	0.03	19.70	19.66	5.4	19.71	20.50
17	6.3	19.73	19.67	0.06	19.79	19.73	5.3	19.84	20.88
18	5.1	19.89	19.77	0.11	20.01	19.88	5.3	20.03	20.50
20	4.1	20.07	19.98	0.07	20.14	20.06	5.4	20.21	20.81
21	4.1	20.24	20.16	0.10	20.34	20.26	5.3	20.36	20.50
22	1.9	20.37	20.35	0.05	20.42	20.40	4.9	20.42	20.50
18	1.3	19.85	19.84	0.01	19.86	19.85	4.4	19.86	20.50
24	5.6	19.67	19.63	0.04	19.71	19.66	4.7	19.73	20.50
25	3.4	19.75	19.69	0.08	19.83	19.77	4.6	19.86	20.90
27	1.9	19.87	19.85	0.02	19.89	19.87	4.4	19.89	20.50
26	1.6	19.87	19.85	0.02	19.88	19.87	4.4	19.89	20.50
103		19.60	19.60						14.30
28	13.5	19.63	19.60	0.04	19.67	19.64	5.5	19.68	20.50
29	11.3	19.69	19.65	0.02	19.71	19.67	5.3	19.73	20.90
30	10.0	19.75	19.69	0.04	19.80	19.73	5.2	19.81	20.50
31	7.4	19.84	19.76	0.15	19.99	19.90	5.0	20.01	20.50
32	4.9	20.06	19.94	0.16	20.22	20.10	5.0	20.28	20.88
34	2.1	20.28	20.26	0.03	20.31	20.29	4.8	20.32	20.50
32	2.8	20.29	20.25	0.05	20.34	20.30	4.9	20.35	20.50
35	1.3	19.73	19.72	0.01	19.74	19.73	4.2	19.74	20.50

HEC-22

Storm Drain Computations

Structure ID		Length (ft)	Drainage Area (ac)	Runoff Coeff "C"	Tc (min)	Rain "I" (in/hr)	Runoff "Q" (cfs)	Known Q (cfs)	Total Q (cfs)	Pipe Dia. (in)	Full Q (cfs)	Velocity Full (ft/s)	Velocity Design (ft/s)	Invert Elevation		Slope
From	To													U/S	D/S	
28	103	211	0.39	0.75	8	7.78	13.5		13.5	36	59.5	8.42	6.81	14.18	12.50	0.80%
29	28	79			8	7.83	11.3		11.3	36	36.6	5.17	4.55	14.41	14.18	0.30%
30	29	75	0.46	0.75	7	7.88	10.0		10.0	30	22.5	4.58	4.45	14.64	14.41	0.30%
31	30	136	0.42	0.75	7	7.97	7.4		7.4	24	12.4	3.95	4.12	15.05	14.64	0.30%
32	31	75			6	8.03	4.9		4.9	18	5.8	3.26	3.65	15.27	15.05	0.30%
34	32	75	0.34	0.75	6	8.10	2.1		2.1	18	5.8	3.26	3.00	15.50	15.27	0.30%
33	32	71	0.46	0.75	6	8.10	2.8		2.8	18	6.0	3.38	3.33	15.50	15.27	0.32%
35	29	64	0.22	0.75	6	8.10	1.3		1.3	18	5.8	3.26	2.65	15.50	15.31	0.30%
1	101	111	0.26	0.75	9	7.65	13.5		13.5	42	84.8	8.82	6.44	13.29	12.50	0.71%
2	1	114	0.19	0.75	8	7.71	12.1		12.1	36	36.6	5.17	4.64	13.63	13.29	0.30%
3	2	69			8	7.76	11.0		11.0	36	36.6	5.17	4.52	13.83	13.63	0.30%
4	3	81	0.18	0.75	8	7.81	8.1		8.1	30	22.5	4.58	4.20	14.08	13.83	0.30%
5	4	63			7	7.85	7.0		7.0	30	22.5	4.58	4.05	14.26	14.08	0.30%
6	5	47	0.20	0.75	7	7.89	7.1		7.1	24	12.4	3.95	4.08	14.41	14.26	0.30%
7	6	53			7	7.92	5.9		5.9	24	12.4	3.95	3.90	14.56	14.41	0.30%
13	7	53	0.24	0.75	6	8.10	1.5		1.5	18	5.8	3.26	2.72	15.50	15.34	0.30%
8	7	71	0.22	0.75	7	7.98	4.5		4.5	18	5.8	3.26	3.61	14.78	14.56	0.30%
9	8	71			6	8.04	3.3		3.3	18	5.8	3.26	3.36	14.99	14.78	0.30%
10	9	57	0.26	0.75	6	8.10	1.6		1.6	18	5.8	3.26	2.77	15.16	14.99	0.30%
12	9	58	0.28	0.75	6	8.10	1.7		1.7	18	5.8	3.26	2.84	15.50	15.33	0.30%
14	3	103	0.24	0.75	6	8.09	3.1		3.1	18	5.8	3.26	3.32	15.46	15.16	0.30%
15	14	12	0.26	0.75	6	8.10	1.6		1.6	18	5.8	3.26	2.79	15.50	15.46	0.30%
16	102	44			8	7.73	13.1		13.1	42	194.4	20.20	11.50	14.12	12.50	3.73%
17	16	77	0.25	0.75	8	7.78	7.8		7.8	30	22.5	4.58	4.16	14.35	14.12	0.30%
18	17	75			8	7.83	6.3		6.3	24	12.4	3.95	3.97	14.58	14.35	0.30%
19	18	48	0.16	0.75	7	7.87	5.1		5.1	18	5.8	3.26	3.67	14.72	14.58	0.30%
20	19	48			7	7.90	4.1		4.1	18	5.8	3.26	3.54	14.86	14.72	0.30%
21	20	62	0.37	0.75	7	7.95	4.1		4.1	18	5.8	3.26	3.54	15.05	14.86	0.30%
22	21	150	0.31	0.75	6	8.10	1.9		1.9	18	5.8	3.26	2.93	15.50	15.05	0.30%
23	18	47	0.22	0.75	6	8.10	1.3		1.3	18	5.8	3.26	2.66	15.50	15.36	0.30%
24	16	66	0.36	0.75	7	7.96	5.6		5.6	24	12.4	3.95	3.84	15.04	14.84	0.30%
25	24	75			6	8.02	3.4		3.4	18	5.8	3.26	3.40	15.26	15.04	0.30%
27	25	67	0.30	0.75	6	8.10	1.9		1.9	18	5.8	3.26	2.90	15.50	15.30	0.30%
26	25	79	0.27	0.75	6	8.10	1.6		1.6	18	5.8	3.26	2.80	15.50	15.26	0.30%
28	103	211	0.39	0.75	8	7.78	13.5		13.5	42	89.8	9.33	6.71	14.18	12.50	0.80%
29	28	79			8	7.83	11.3		11.3	36	36.6	5.17	4.55	14.41	14.18	0.30%
30	29	75	0.46	0.75	7	7.88	10.0		10.0	30	22.5	4.58	4.45	14.64	14.41	0.30%
31	30	136	0.42	0.75	7	7.97	7.4		7.4	24	12.4	3.95	4.12	15.05	14.64	0.30%
32	31	75			6	8.03	4.9		4.9	18	5.8	3.26	3.65	15.27	15.05	0.30%
34	32	75	0.34	0.75	6	8.10	2.1		2.1	18	5.8	3.26	3.00	15.50	15.27	0.30%

HEC-22

Storm Drain Computations

Structure ID		Length (ft)	Drainage Area (ac)	Runoff Coeff "C"	Tc (min)	Rain "I" (in/hr)	Runoff "Q" (cfs)	Known Q (cfs)	Total Q (cfs)	Pipe Dia. (in)	Full Q (cfs)	Velocity Full (ft/s)	Velocity Design (ft/s)	Invert Elevation		Slope
From	To													U/S	D/S	
33	32	71	0.46	0.75	6	8.10	2.8		2.8	18	6.0	3.38	3.33	15.50	15.27	0.32%
35	29	64	0.22	0.75	6	8.10	1.3		1.3	18	5.8	3.26	2.65	15.50	15.31	0.30%

HEC-22

Inlet Capacity Results

Structure	Q=CIA/Kc (cfs)	Known Q (cfs)	Longitudinal Slope SL (ft/ft)	Cross Slope *Sx* (ft/ft)	Cross Slope *Sw* (ft/ft)	Prev. Bypass Flow (cfs)	Total Gutter Flow (cfs)	Depth *d* (ft)	Gutter Width (ft)	Spread *T* (ft)	Inlet Type	Grate Length (in)	Grate Width (in)	Curb Opening Length (in)	Curb Opening Height (in)	Intercept Flow Q*i* (cfs)	Bypass Flow Q*b* (cfs)	Bypass Structure	Remark
35	1.3		-1.00	0.02			1.3	0.2		8.9	Grate inlet	23.8	23.8			1.3			
30	2.8		-1.00	0.02			2.8	0.3		14.6	Grate inlet	23.8	23.8			2.8			
34	2.1		-1.00	0.02			2.1	0.2		12.0	Grate inlet	23.8	23.8			2.1			
31	2.6		-1.00	0.02			2.6	0.3		13.8	Grate inlet	23.8	23.8			2.6			
28	2.4		-1.00	0.02			2.4	0.3		13.1	Grate inlet	23.8	23.8			2.4			
13	1.5		-1.00	0.02			1.5	0.2		9.4	Grate inlet	23.8	23.8			1.5			
6	1.2		-1.00	0.02			1.2	0.2		8.3	Grate inlet	23.8	23.8			1.2			
4	1.1		-1.00	0.02			1.1	0.2		7.9	Grate inlet	23.8	23.8			1.1			
2	1.2		-1.00	0.02			1.2	0.2		8.1	Grate inlet	23.8	23.8			1.2			
8	1.3		-1.00	0.02			1.3	0.2		8.8	Grate inlet	23.8	23.8			1.3			
15	1.6		-1.00	0.02			1.6	0.3		14.4	Combination	20.0	10.9	20.0	4.2	1.6			
14	1.5		-1.00	0.02			1.5	0.3		13.7	Combination	20.0	10.9	20.0	4.2	1.5			
1	1.6		-1.00	0.02			1.6	0.3		12.6	Grate inlet	24.0	24.0			1.6			
17	1.5		-1.00	0.02			1.5	0.2		9.8	Grate inlet	23.8	23.8			1.5			
22	1.9		-1.00	0.02			1.9	0.2		11.3	Grate inlet	23.8	23.8			1.9			
21	2.3		-1.00	0.02			2.3	0.3		12.8	Grate inlet	23.8	23.8			2.3			
24	2.2		-1.00	0.02			2.2	0.3		12.3	Grate inlet	23.8	23.8			2.2			
26	1.6		-1.00	0.02			1.6	0.2		10.1	Grate inlet	23.8	23.8			1.6			
27	1.9		-1.00	0.02			1.9	0.2		11.1	Grate inlet	23.8	23.8			1.9			
35	1.3		-1.00	0.02			1.3	0.2		8.9	Grate inlet	23.8	23.8			1.3			
30	2.8		-1.00	0.02			2.8	0.3		14.6	Grate inlet	23.8	23.8			2.8			
34	2.1		-1.00	0.02			2.1	0.2		12.0	Grate inlet	23.8	23.8			2.1			
33	2.8		-1.00	0.02			2.8	0.3		14.7	Grate inlet	23.8	23.8			2.8			
31	2.6		-1.00	0.02			2.6	0.3		13.8	Grate inlet	23.8	23.8			2.6			
28	2.4		-1.00	0.02			2.4	0.3		13.1	Grate inlet	23.8	23.8			2.4			

GRAPHIC SCALE

65 0 32 65 130 260

(IN FEET)
1 inch = 65 ft.

BERRIEN ROAD – 30' R/W
(This Section Not Open)

N/F
CITY OF PORT WENTWORTH
PIN: 7-0976-02-028

N/F
ELNORA SWEET & WILL STEELE
PIN: 7-09768-01-003

N/F
SHIRLEY PRICE
PIN: 7-09768-01-014

N/F
COLLEEN LYNETTE BRADY-HOHNERLEIN
PIN: 7-0976-02-034

N/F
ALVIN WILLIAMS
PIN: 7-0976-02-005

N/F
ROSETTA FOREMAN GRAHAM
PIN: 7-0976-02-046

N/F
KEITH ALVIN GRAHAM
PIN: 7-0976-02-045

N/F
SAM L. VARNEDOE
PIN: 7-0976-02-038

PIPE SIZING EXHIBIT

NOBLE VINES

PORT WENTWORTH, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES, LLC

PREPARED BY:

THOMAS & HUTTON

50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300

www.thomasandhutton.com

JOB NO:	J-28896.0003
DRAWN:	VND
REVIEWED:	NBL
DATE:	08/10/22
SCALE:	1" = 65'
SHEET:	EX1

J:\28896.0001 - NOBLE VINES\Engineering\Calculations and Reports\Storm Water Calculations\Pre\28896.0001 - PRE Phase Basins Exhibit.dwg - Jul 23, 2021 - 12:50:09 pm

PRE-DA5
10.05 AC.
CN: 79
Tc: 20.5 MIN.

PRE-DA4
10.6 AC.
CN: 79.0
Tc: 23.6 MIN.

OFFSITE-DA-2
7.05 AC.
CN: 79.0
Tc: 19.4 MIN.

JUN-03

JUN-02

JUN-05

PRE-DA7
5.28 AC.
CN: 79.0
Tc: 24.5 MIN.

PRE-DA6
7.05 AC.
CN: 79
Tc: 13.9 MIN.

PRE-DA3
3.09 AC.
CN: 79.0
Tc: 10.8 MIN.

OFFSITE-DA-3
16.71 AC.
CN: 84.0
Tc: 34.8 MIN.

JUN-01

PRE-DA2
2.63 AC.
CN: 79.0
Tc: 14.0 MIN.

PRE-DA1
4.29 AC.
CN: 79.0
Tc: 14.6 MIN.

JUN-06

JUN-04

OFFSITE-DA-1
3.95 AC.
CN: 79.0
Tc: 12.4 MIN.

JUN-06

JUN-10

JUN-07

OFFSITE-DA-4
19.02 AC.
CN: 84.8
Tc: 135.4 MIN.

JUN-08

OFFSITE-DA-5
5.50 AC.
CN: 87.2
Tc: 31.5 MIN.

JUN-09

PRE-OUT-01

LEGEND

- DRAINAGE BASIN
- SHEET FLOW
- SHALLOW CONC. FLOW
- CHANNEL FLOW
- LAGOON CONNECTOR
- OUTFALL/JUNCTION

N W E S

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

PRE-DEVELOPMENT
BASINS EXHIBIT

NOBLE VINES

CHATHAM COUNTY, GEORGIA

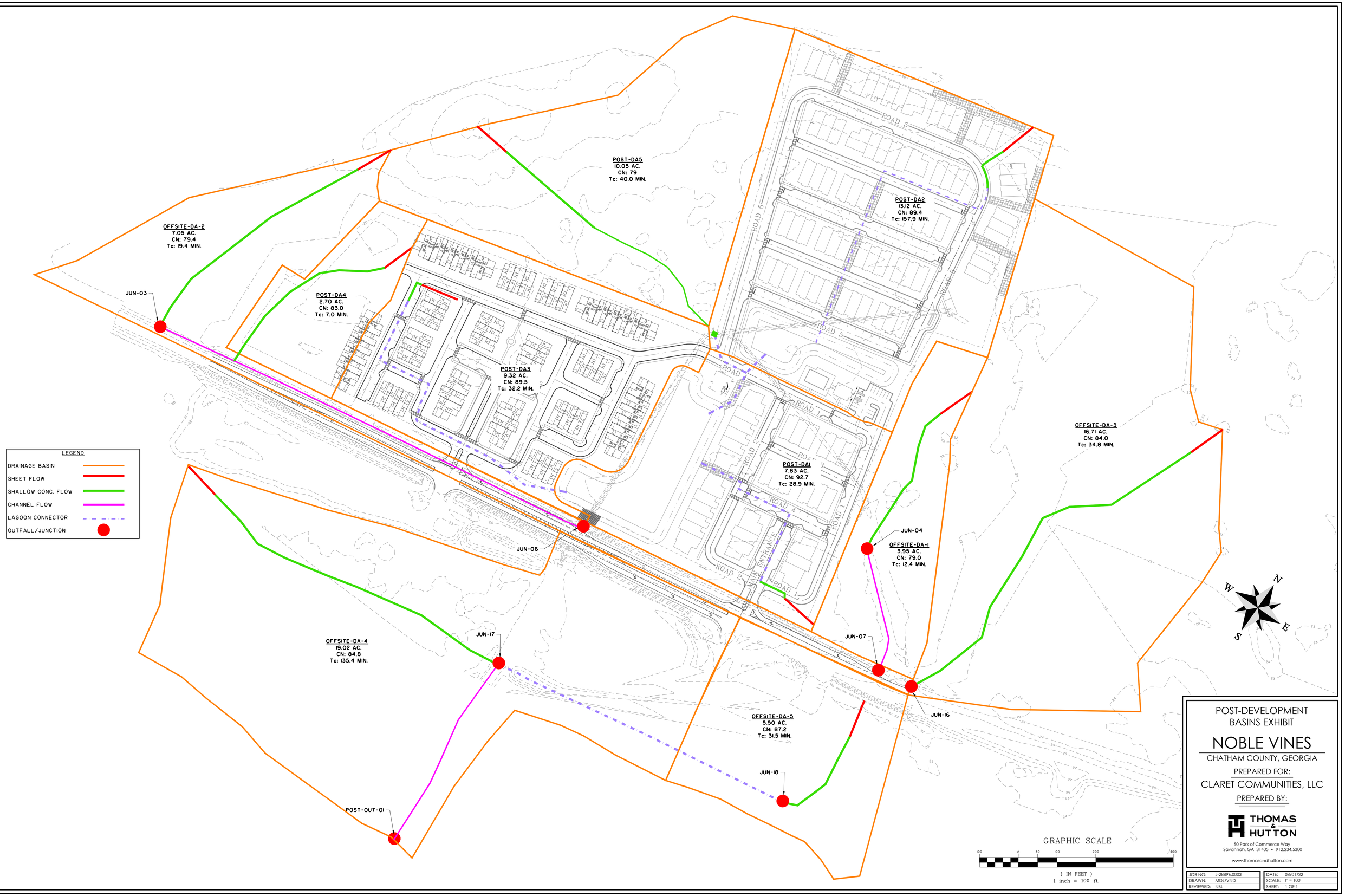
PREPARED FOR:

CLARET COMMUNITIES

PREPARED BY:

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

JOB NO:	J-28896.0001
DRAWN:	JTD/MDL
REVIEWED:	JRW
DATE:	07/23/2021
SCALE:	1" = 100'
SHEET:	1 OF 1



POST-DEVELOPMENT
BASINS EXHIBIT

NOBLE VINES

CHATHAM COUNTY, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES, LLC

PREPARED BY:

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
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JOB NO:	J-28896.0003
DRAWN:	MDL/VND
REVIEWED:	NBL
DATE:	08/01/22
SCALE:	1" = 100'
SHEET:	1 OF 1

THOMAS & HUTTON

PUMP STATION XXX DESIGN CONSIDERATIONS

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

September 7, 2021
Revised: August 08, 2022

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THOMAS & HUTTON

SECTION 1 – NOBLE VINES PUMP STATION DESIGN

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

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PUMP STATION PROJECT NARRATIVE

This proposed project includes installation of a new lift station, construction of new gravity sewer and force main with the construction of phase 1 and phase 2. Phase 1 consists of 102 townhome units with an amenity area. Phase 2 consist of 60 townhome units. Wastewater generated by the site will be initially collected and transported by the way of the proposed pump station. The proposed pump station will pump the wastewater via force main to a proposed surge manhole to be connected to an existing manhole north of the property.

LONG PARK COTTAGES CONTRIBUTORY FLOW

PROJECT DESIGN CONDITIONS (SEWER)					
Description	**GPD[1]**		**# of units**	**Average Day Flow**	
Townhomes	300	per unit	162	**48,600**	gpd
Townhome Amenity Area with Swimming Pool (Phase 1)	38	per member	100	**3,800**	gpd
			Total =	**52,400**	gpd

[1] The contributory flow calculations are based on Port Wentworth's Comprehensive Design Manual: 3.5.4 Exhibit 2 Equivalent Residential Unit (ERU) Calculations

AVERAGE DAY FLOW

24 hours per day of flow = 1440 min/day
52,400 gpd / 1440 min/day = **36** gpm

PEAK FACTOR

Average daily flows will vary continuously throughout each day with peak flows occurring at some point. The peak factor is applied to the average day flow to obtain the peak day flow.

Use Peak Factor of **2.50**

PEAK DAY FLOW

36 gpm x **2.5** = **90.97** gpm , say = **95** gpm

DESIGN FLOW

Therefore,

THE DESIGN FLOW = 95 gpm

CHECK CAPACITY OF NEW GRAVITY SEWER LINE ON-SITE

Use Mannings Equation to Calculate Maximum Allowable Flow

Q_m=(1.49/n)x A x R^.67 x S^.5

where: Q_m = Maximum Flowrate (cts)
n = Mannings Roughness Coefficient
A = Cross Sectional Area (sf)
R = Hydraulic Radius (ft)
S = Slope (ft/ft)

Calculate Cross Sectional Area of Pipe

Dia (in) = **8**

A (sf) = PI x d^2 / 4

A (sf) = 0.35 **0.35**

Calculate Hydraulic Radius

R(ft) = Area / Wetted Perimeter (Pw)

where Pw = inside circumference of pipe (assuming full flow condition)

Pw = 2.09435

R(ft) = **0.17**

Select Variables

n= **0.014** Roughness Coefficient

S (ft/ft) = **0.004** Slope

Q_m (cts) = 0.71

Q_m (gpm) = 317

Qr (gpm) = 95 (Qr is peak flow)

Qr (gpd) = 136,800

Maximum number of units on 8-inch gravity is 600 REUs, which equals 450,000 gpd peak flow(assuming a peak factor of 2.5)

Qr of 194,400 gpd is less than 450,000 gpd. Therefore, the gravity line is adequate in size for the entire proposed project.

WETWELL DESIGN

The wetwell will be designed based on a peak flow of 135 gpm. A 6-ft diameter wetwell will be used. The required storage volume of the wetwell is computed from the following equation:

$$V = \frac{t * Q}{4}$$

Where:

V = Volume of wetwell (gallons)
Q = Pumping rate (gpm) = **95** gpm
t = Time for one pump cycle (minutes) = **10** minutes

6 cycles/hour

Storage Volume:
Solve equation for V:

= **237.5** gallons

REQUIRED STORAGE DEPTH:

Calculate Cross-Sectional Area of Wetwell:

$$A = \frac{\pi * (D_{inside}{}^2)}{4}$$

Where:

D_{inside} = Inside diameter of wetwell = **6** feet
A = Cross-sectional area of wetwell = **28.27** ft^2

Calculate Required Depth:

Using equation for volume:

$$V = A * d$$

Where:

V = Volume of wetwell (gallons) = **237.5** gal
A = Cross-sectional area of wetwell (ft^2) = **28.27** ft^2
d = Depth of the wetwell (feet)

Solve equation for depth:

$$d = \frac{V}{A} = \frac{V(gal) * \left(\frac{1 ft^3}{7.48 gal}\right)}{A(ft^2)} = \textbf{1.12 ft}$$

Therefore,

THE STORAGE DEPTH	=	**1.12 ft**	**Use:**	**2 ft**
PUMP HEIGHT	=	**34.75 in**		**3 ft**

Based on the calculated design pumping rate of 130 gpm the required storage height is 2.0 feet for a 6' diameter wet-well.

WETWELL ELEVATIONS

Top Elevation	22.50
Influent Elevation	8.06
High Water Alarm	7.06
Start Lag Pump	6.06
Start Lead Pump	5.06
L.W.L. - Stop Pumps	3.06
L.W.L. Alarm	2.06
Bottom Elevation	0.06

FORCE MAIN DESIGN ~using C = 120

The discharge pipe will be constructed of **PVC** **AWWA C900, DR18** pipe.
The force main will be constructed of **PVC** **AWWA C900, DR25** pipe.

A Hazen-Williams coefficient of C= **120** will be used to calculate friction head.
The force main velocity will be designed for a range of 2 to 5 ft/sec.

DISCHARGE PIPING*

FM Size (in.)	Flow (gpm)	Velocity (fps)	Friction Head (ft/100')
4	**95**	**2.13**	**0.58**
6	**95**	**1.03**	**0.10**
8	**95**	**0.60**	**0.03**

FORCE MAIN**

FM Size (in.)	Flow (gpm)	Velocity (fps)	Friction Head (ft/100')
4	**95**	**1.99**	**0.49**
6	**95**	**0.96**	**0.08**
8	**95**	**0.56**	**0.02**

** Velocity and Friction Head for Discharge Piping based on nominal I.D. for AWWA C900, DR 18 PVC pipe.*
*** Velocity and Friction Head for Force Main based on nominal I.D. for AWWA C-900, DR 25 PVC pipe.*

Select a **4** -inch Discharge Pipe to satisfy the velocity requirements. Based on material specifications selected, the actual inside diameter for this force main shall be **4.266** -inch.

EQUIVALENT LENGTH OF 4-INCH DISCHARGE PIPE

Description	Quantity	Unit Equiv. Length of Straight Pipe	Equivalent Length of Force Main
4" Ø FM Straight Pipe	**41** l.f.	**1.00** l.f.	**41.00** l.f.
4" - 90° Bend	**2** ea.	**11.00** l.f.	**22.00** l.f.
4" - 45° Bend	**0** ea.	**5.69** l.f.	**0.00** l.f.
4" - 22 1/2° Bend	**0** ea.	**2.84** l.f.	**0.00** l.f.
4" - 11 1/4° Bend	**0** ea.	**1.42** l.f.	**0.00** l.f.
4" Plug Valve	**2** ea.	**32.00** l.f.	**63.99** l.f.
4" Check Valve	**1** ea.	**35.55** l.f.	**35.55** l.f.
4" Tee & Cross	**1** ea.	**22.00** l.f.	**22.00** l.f.
Total Equivalent Length of Discharge Pipe			**184.54** l.f.

EQUIVALENT LENGTH OF 4-INCH PVC FORCE MAIN

Select a **4** -inch force main to satisfy the velocity requirements. Based on the material specifications selected, the actual inside diameter for this force main shall be **4.416** -inch.

Description	Quantity	Unit Equiv. Length of Straight Pipe	Equivalent Length of Force Main
4" Ø FM Straight Pipe	1490 l.f.	1.00 l.f.	1,490.00 l.f.
4" - 90° Bend	0 ea.	11.00 l.f.	0.00 l.f.
4" - 45° Bend	23 ea.	5.89 l.f.	135.42 l.f.
4" - 22 1/2° Bend	0 ea.	2.94 l.f.	0.00 l.f.
4" - 11 1/4° Bend	0 ea.	1.47 l.f.	0.00 l.f.
4" Plug Valve	0 ea.	33.12 l.f.	0.00 l.f.
4" Gate Valve	0 ea.	2.30 l.f.	0.00 l.f.
4" Check Valve	0 ea.	36.80 l.f.	0.00 l.f.
2" Air Release Valve	2 ea.	2.30 l.f.	4.60 l.f.
Total Equivalent Length of Force Main			1,630.02 l.f.

Static Head

Static Head	=	Force Main Discharge Elevation (high point on FM) – L.W.L.	
Elevation of Highest Point of F.M.	=	25.5	ft
L.W.L.	=	3.06	ft
Total Static Head	=	22.44	ft

Friction Head through Discharge Piping

Friction Head	=	(equivalent length of discharge pipe)*(head loss per 100 ft)/100	
Total Equiv. Length of Discharge Pipe	=	184.54	ft
Pumping Rate	=	95	gpm
C-factor	=	120	
Friction loss	=	0.58	ft/(100 ft)
Total Head Loss through Discharge Piping	=	1.07	ft

Friction Head through Proposed 4-inch PVC Force Main

Friction Head	=	(equivalent length of force main)*(head loss per 100 ft)/100	
Total Equiv. Length of Force Main	=	1,630.02	ft
Pumping Rate	=	95	gpm
C-factor	=	120	
Friction loss	=	0.49	ft/(100 ft)
Total Head Loss through 4-inch PVC Force Main	=	7.98	ft

Total Dynamic Head (TDH) For Long Park Cottages Pump Station Static Head + Friction Head through Discharge Piping + Friction Head through Force

= 31.49

SYSTEM HEAD CURVE ~using C = **120**

The system curve below is utilized to help in initial pump slection. The system head curve is plotted on the attached manufacturer's pump curve.

System Head Curve @ **95** GPM, **31.49** TDH

Q	Static Head	Friction Head in Discharge Piping	Friction Head in 4" PVC Force Main	TDH
(gpm)	(ft.)	(ft.)	(ft.)	(ft.)
75	22.44	0.69	5.15	28.28
80	22.44	0.78	5.81	29.02
85	22.44	0.87	6.49	29.80
90	22.44	0.97	7.22	30.63
95	**22.44**	**1.07**	**7.98**	**31.49**
100	22.44	1.18	8.77	32.39
105	22.44	1.29	9.60	33.33
110	22.44	1.40	10.46	34.31
115	22.44	1.52	11.36	35.32
120	22.44	1.65	12.29	36.38
125	22.44	1.78	13.26	37.47
130	22.44	1.91	14.25	38.60
135	22.44	2.05	15.28	39.77

Preliminary pump selection indicates that an **NP 3102 MT ~3 Adaptive 463 (impeller diameter 172 mm)** pump is capable of delivering the desired flow rate and total dynamic head. The selected pump shall operate at **144 gpm at 42.1 ft TDH**. The system head curve is plotted on the manufacturer's pump curve. Please see Section 2 for further results and discussion.

WETWELL FLOTATION CHECK

Wetwell flotation calculations are performed to insure that, during high water condition, the wetwell will not float. During high water table conditions, two counter-acting forces are present. The downward force (F_D) as the result of the weight of the wetwell plus the overburden weight and the Buoyant force (F_B) as the result of the high water table. To insure that the wetwell will not float during high water table conditions, the ratio (F_D/F_B) must be greater than 1.5.

Downward Force

F_D = Weight of Wetwell Walls + Weight of Bottom Slab + Overburden Weight

Wetwell Wall Weight

$$V_{walls} = \left[\left(\frac{\pi (D_O)^2}{4}\right) - \left(\frac{\pi (D_I)^2}{4}\right)\right] * H_W$$

D_I = Inside diameter	=	**6**	ft
D_O = Outside diameter	=	**8**	ft
H_W = Height of wetwell walls	=	**22.44**	ft
V_{Walls} = Volume of wetwell walls	=	**493.47**	ft^3

$$F_{D\,(Walls\,)} = (\rho_{concrete}\,)(V_{Walls}\,)$$

V_{walls} = Volume of wetwell walls	=	**493.47**	ft^3
$\rho_{concrete}$ = Density of concrete	=	**150**	lb/ft^3
$F_{D(walls)}$ = Downward force of wetwell wall	=	**74,020.02**	lb

Bottom Slab Weight

$$V_{slab} = \frac{\pi}{4}(D_S{}^2)(T_S)$$

D_S = Bottom slab diameter	=	**10**	ft
T_S = Bottom slab thickness	=	**1**	ft
V_{slab} = Volume of slab	=	**78.54**	ft^3

$$F_{D(slab)} = (\rho_{concrete})(V_{slab})$$

V_{slab} = Volume of slab	=	**78.54**	ft^3
$\rho_{concrete}$ = Density of concrete	=	**150**	lb/ft^3
$F_{D(slab)}$ = Downward force of slab	=	**11,780.63**	lb

Overburden Weight

$$V_{overburden} = \frac{\pi}{4}(D_S{}^2 - D_O{}^2)(H_W)$$

D_S = Bottom slab diameter	=	**10**	ft
D_O = Outside diameter	=	**8**	ft
H_W = Height of wetwell walls	=	**22.44**	ft
$V_{overburden}$ = Volume of the overburden soil	=	**634.46**	ft^3

$$F_{D(overburden)} = (\rho_{soil})(V_{overburden})$$

ρ_{soil} = Density of soil	=	**100**	lb/ft^3
$V_{overburden}$ = Volume of the overburden soil	=	**634.46**	ft^3
$F_{D(overburden)}$ = Downward force of overburden soil	=	**63,445.73**	lb

Total Downward Force (F_D)

$$F_D = F_{D(walls)} + F_{D(slab)} + F_{D(overburden)} = \textbf{149,246}\ \text{lb}$$

Buoyant Force (F_B)

Total Volume:

$$V_D = V_{wetwell} + V_{bottomslab}$$

$V_{wetwell}$ = Volume of wetwell

$$V_{wetwell} = \frac{\pi}{4}\left(D_O^{\,2}\right)\left(H_W\right) = \textbf{1,127.92}\ \text{ft}^3$$

$V_{bottom\ slab}$ = Volume of bottom slab = **78.54** ft^3

V_D = Total displaced volume = **1,206.46** ft^3

Buoyant Force:

$$F_B = \left(V_D\right)\left(\rho_{water}\right)$$

V_D = Total displaced volume = **1,206.46** ft^3

ρ_{water} = Density of water = **62.4** lb/ft^3

F_B = Buoyancy Force = 75,283.21 lb

Factor of Safety (FOS)

$$FOS = \frac{F_D}{F_B} = \textbf{1.98}$$

Since the FOS is greater than 1.0 the wet well will not float under height groundwater conditions.

THOMAS & HUTTON

SECTION 2 – SELECTED PUMP STATION PERFORMANCE CURVE AND PUMP DIMENSIONS

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

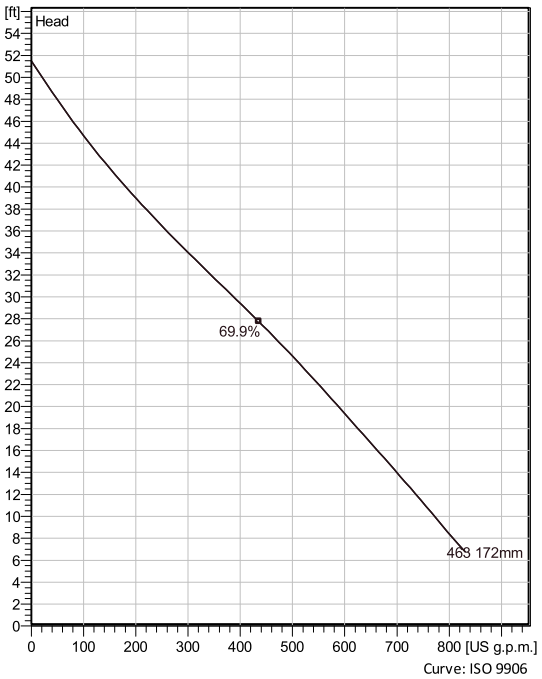
NP 3102 MT 3~ Adaptive 463

Patented self cleaning semi-open channel impeller, ideal for pumping in waste water applications. Modular based design with high adaptation grade.

FLYGT
a xylem brand

Technical specification

Curves according to: Water ,39.2 °F,62.428 lb/ft³,1.6889E-5 ft²/s



Curve: ISO 9906

Configuration

Motor number
N3102.760 18-11-4AL-W 5hp

Installation type
P - Semi permanent, Wet

Impeller diameter
172 mm

Discharge diameter
3/16 inch

Pump information

Impeller diameter
172 mm

Discharge diameter
3/16 inch

Inlet diameter
100 mm

Maximum operating speed
1740 rpm

Number of blades
2

Max. fluid temperature
40 °C

Materials

Impeller
Stainless steel

Stator housing material
Grey cast iron

Project		**Created by**			
Block	0	**Created on**	9/7/2021	**Last update**	9/7/2021

NP 3102 MT 3~ Adaptive 463

Technical specification

Motor - General

Motor number N3102.760 18-11-4AL-W 5hp	**Phases** 3~	**Rated speed** 1740 rpm	**Rated power** 5 hp
ATEX approved No	**Number of poles** 4	**Rated current** 13 A	**Stator variant** 68
Frequency 60 Hz	**Rated voltage** 240 V	**Insulation class** H	**Type of Duty** S1
Version code 760			

Motor - Technical

Power factor - 1/1 Load 0.84	**Motor efficiency - 1/1 Load** 85.1 %	**Total moment of inertia** 0.66 lb ft²	**Starts per hour max.** 30
Power factor - 3/4 Load 0.79	**Motor efficiency - 3/4 Load** 85.9 %	**Starting current, direct starting** 73.1 A	
Power factor - 1/2 Load 0.69	**Motor efficiency - 1/2 Load** 84.7 %	**Starting current, star-delta** 24.4 A	

Project		**Created by**			
Block	0	**Created on**	9/7/2021	**Last update**	9/7/2021

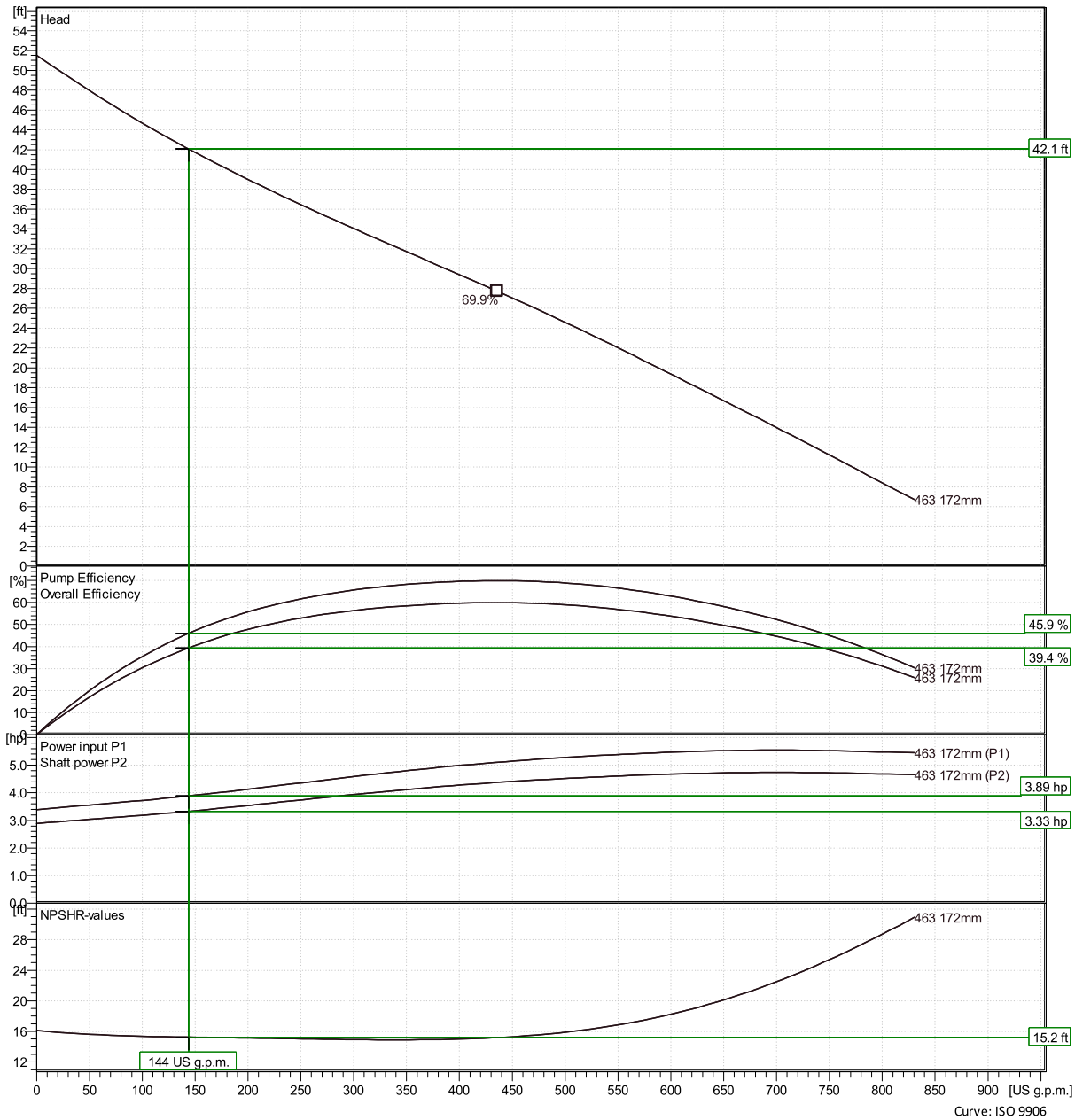
NP 3102 MT 3~ Adaptive 463

Performance curve

Duty point

Flow	Head
144 US g.p.m.	42.1 ft

Curves according to: Water ,39.2 °F,62.428 lb/ft³,1.6889E-5 ft²/s



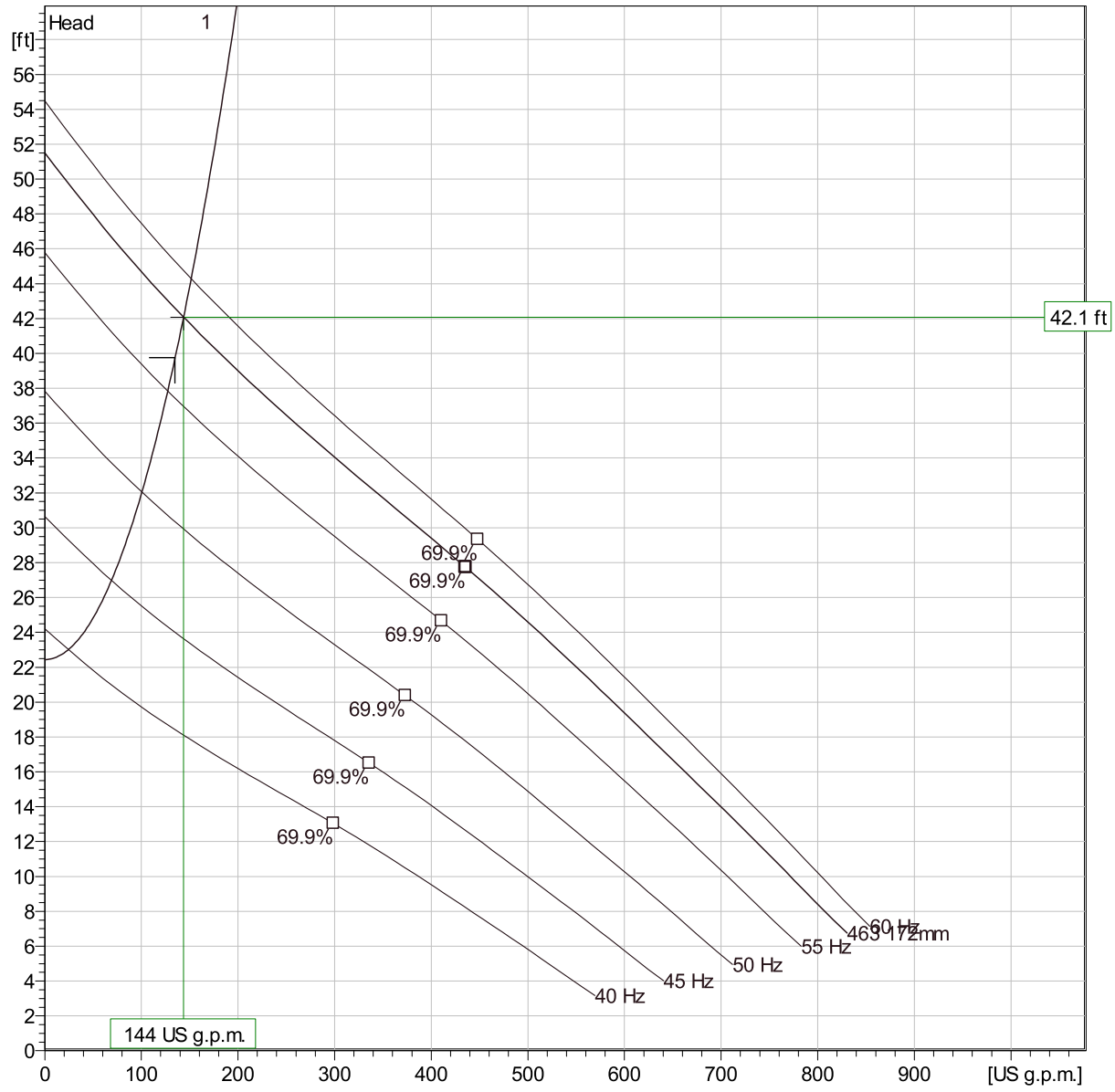
Curve: ISO 9906

Project		**Created by**			
Block	0	**Created on**	9/7/2021	**Last update**	9/7/2021

NP 3102 MT 3~ Adaptive 463

Duty Analysis

Curves according to: Water ,39.2 °F,62.428 lb/ft³,1.6889E-5 ft²/s



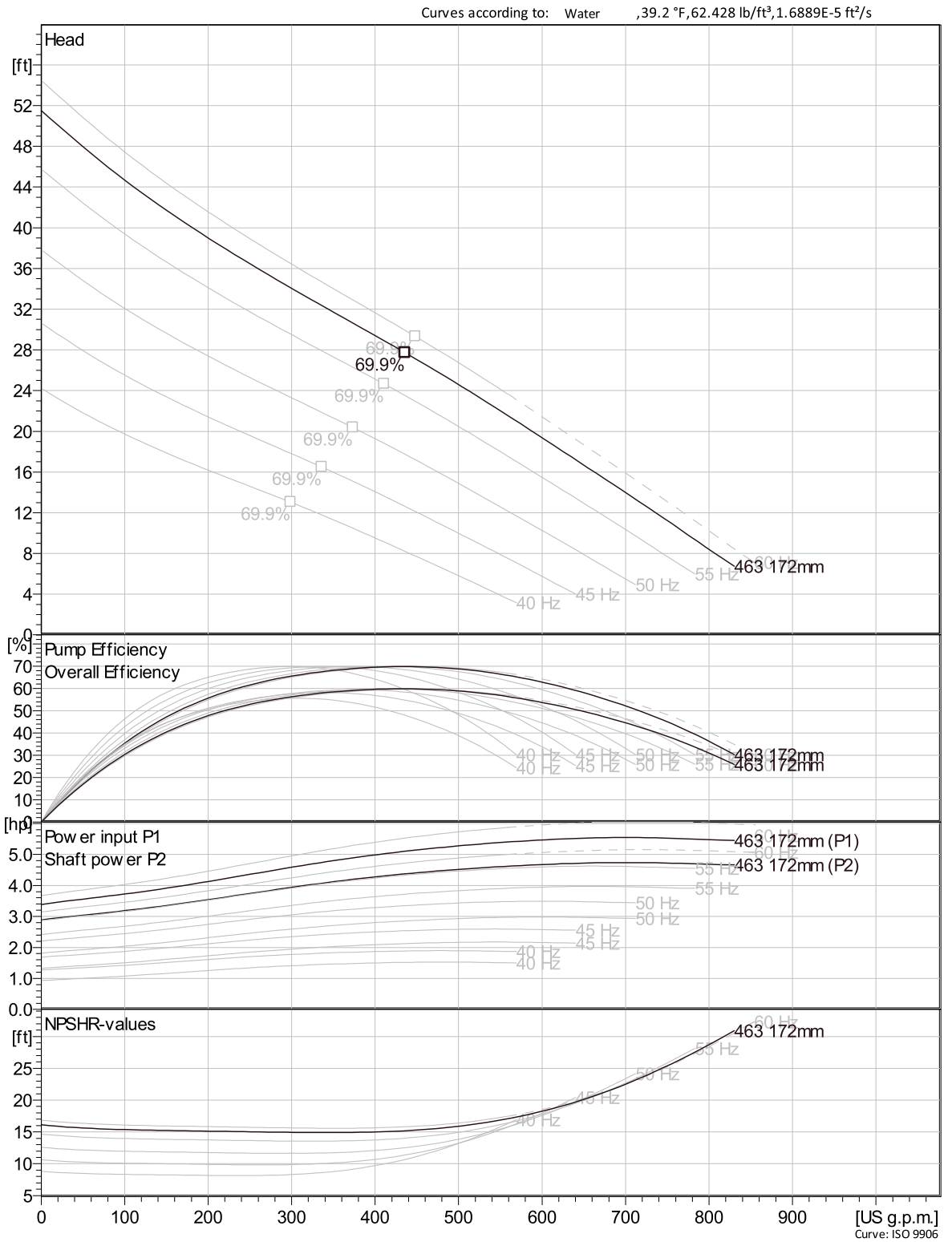
Operating characteristics

Pumps / Systems	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific Energy	NPSHre
1	144 US g.p.m.	42.1 ft	3.33 hp	144 US g.p.m.	42.1 ft	3.33 hp	45.9 %	336 kWh/US M	15.2 ft

Project		**Created by**			
Block	0	**Created on**	9/7/2021	**Last update**	9/7/2021

NP 3102 MT 3~ Adaptive 463

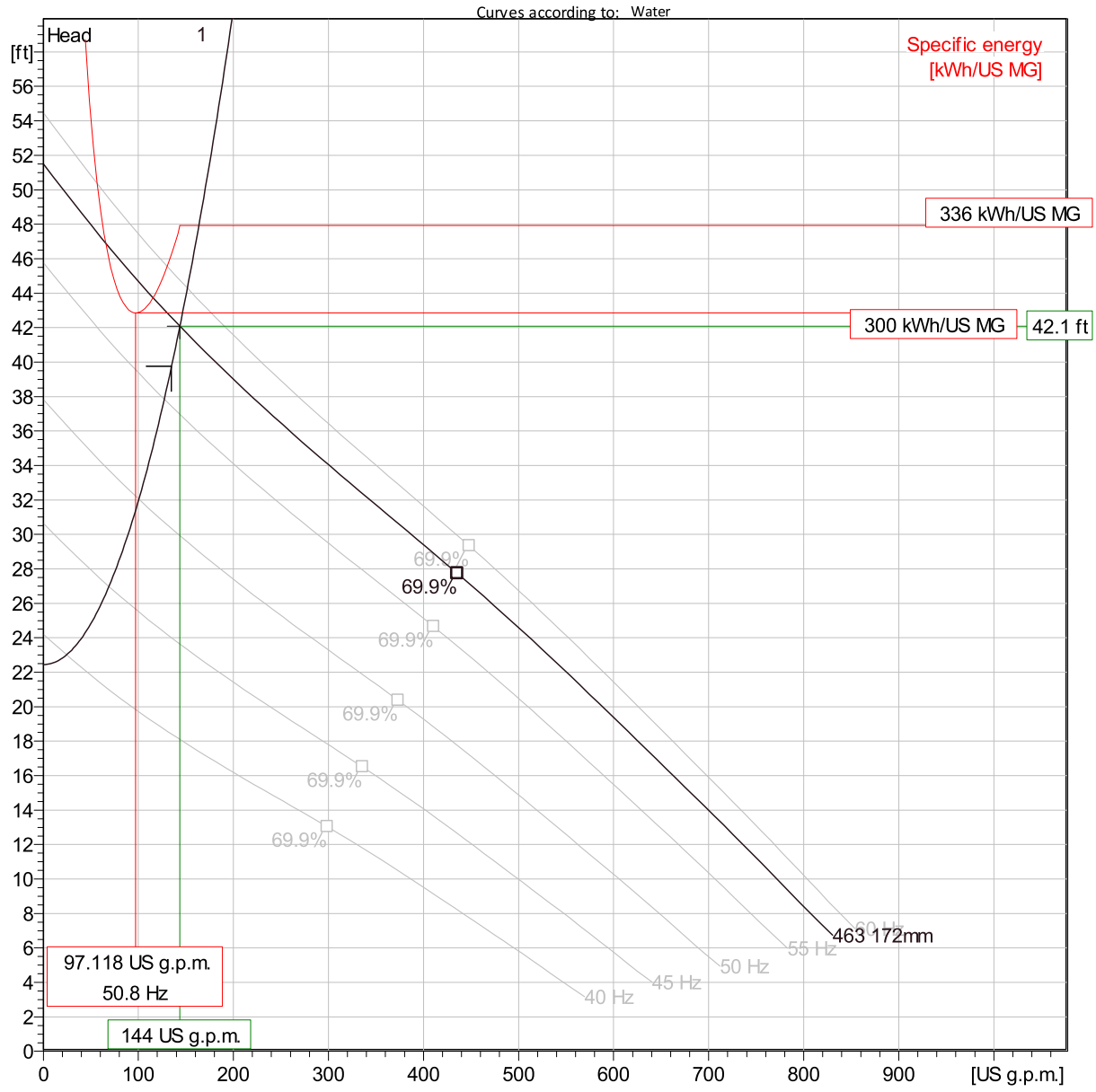
VFD Curve



Project		**Created by**			
Block	0	**Created on**	9/7/2021	**Last update**	9/7/2021

NP 3102 MT 3~ Adaptive 463

VFD Analysis



Operating characteristics

Pumps / Systems	Frequency	Flow	Head	Shaft power	Flow	Head	Shaft power	Hydr.eff.	Specific Energy	NPSHre
1	60 Hz	144 US g.p.m.	42.1 ft	3.33 hp	144 US g.p.m.	42.1 ft	3.33 hp	45.9 %	336 kWh/US M	15.2 ft
1	60 Hz	144 US g.p.m.	42.2 ft	3.34 hp	144 US g.p.m.	42.2 ft	3.34 hp	46 %	336 kWh/US M	15.3 ft
1	55 Hz	120 US g.p.m.	36.1 ft	2.54 hp	120 US g.p.m.	36.1 ft	2.54 hp	43.1 %	310 kWh/US M	13.3 ft
1	50 Hz	92.8 US g.p.m	30.6 ft	1.87 hp	92.8 US g.p.m	30.6 ft	1.87 hp	38.4 %	301 kWh/US M	11.5 ft
1	45 Hz	60.4 US g.p.m	25.9 ft	1.32 hp	60.4 US g.p.m	25.9 ft	1.32 hp	29.8 %	342 kWh/US M	9.77 ft
1	40 Hz	8.98 US g.p.m	22.5 ft	0.872 hp	8.98 US g.p.m	22.5 ft	0.872 hp	5.89 %	1650 kWh/US M	8.35 ft

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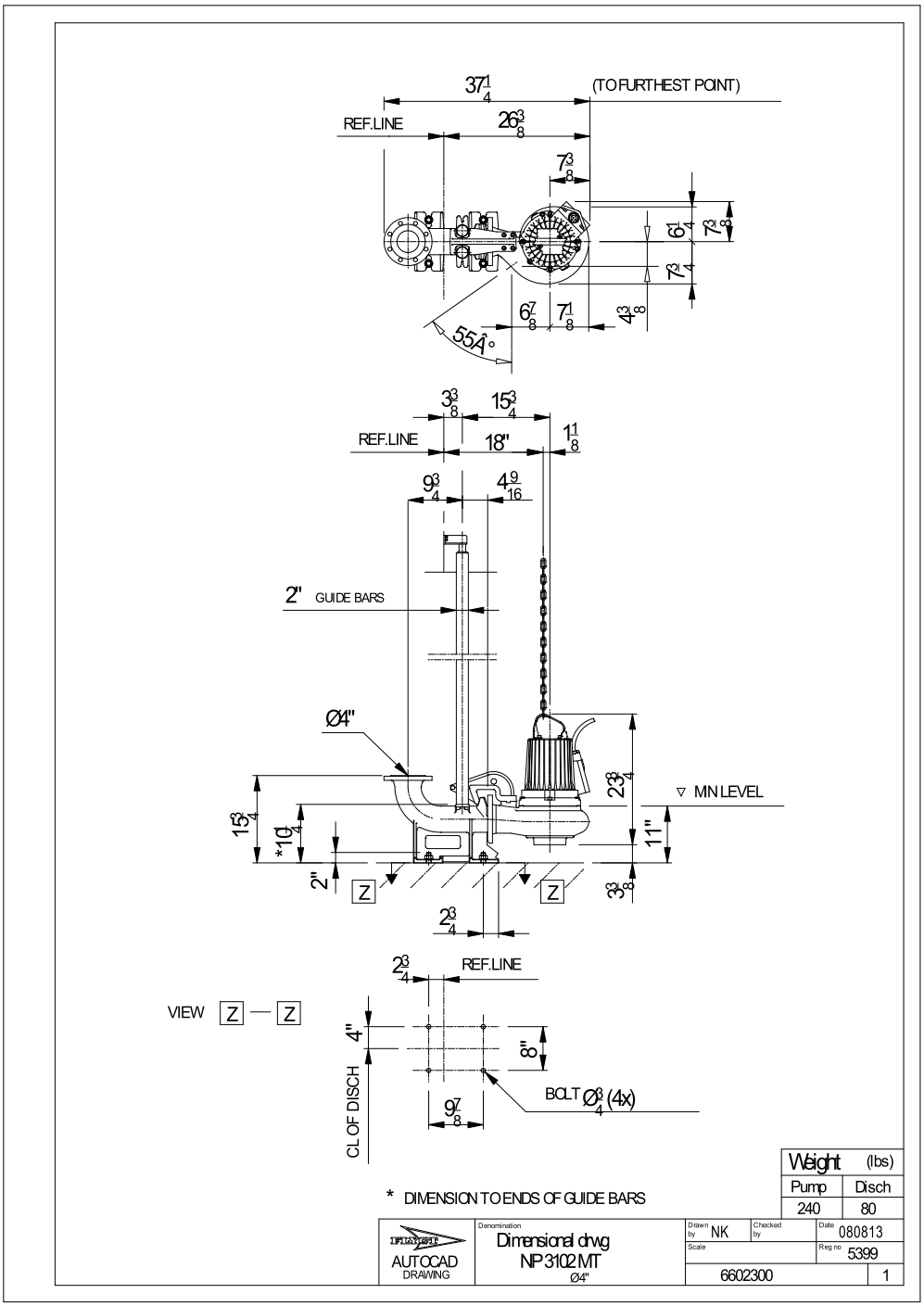
NP 3102 MT 3~ Adaptive 463

Dimensional drawing



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THOMAS & HUTTON

SECTION 3 – PUMP STATION SERVICE AREA EXHIBIT

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

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BERGEEN ROAD – 30' R/W
(This Section Not Open)

N
W E
S

LEGEND

PUMP STATION SERVICE AREA

TOWNHOME 30
TOWNHOME 29
TOWNHOME 28
TOWNHOME 27
TOWNHOME 26
TOWNHOME 25
TOWNHOME 24
TOWNHOME 23
TOWNHOME 22
TOWNHOME 21
TOWNHOME 20
TOWNHOME 19
TOWNHOME 18
TOWNHOME 17
TOWNHOME 16
TOWNHOME 15
TOWNHOME 14
TOWNHOME 13
TOWNHOME 12
TOWNHOME 11
TOWNHOME 10
TOWNHOME 9
TOWNHOME 8
TOWNHOME 7
TOWNHOME 6
TOWNHOME 5
TOWNHOME 4
TOWNHOME 3
TOWNHOME 2
TOWNHOME 1
TOWNHOME 47
TOWNHOME 46
TOWNHOME 45
TOWNHOME 44
TOWNHOME 43
TOWNHOME 42
TOWNHOME 41
TOWNHOME 40
TOWNHOME 39
TOWNHOME 38
TOWNHOME 37
TOWNHOME 36
TOWNHOME 35
TOWNHOME 34
TOWNHOME 33
TOWNHOME 32
TOWNHOME 31

ROAD 1
ROAD 2
ROAD 3
ROAD 4
ROAD 5
MAIN ENTRANCE

NOBLE VINES
PUMP STATION XXX

POOL
AMENITY

N/F
CITY OF PORT WENTWORTH
PIN: 7-0976-02-028

N/F
ELNORA SWEAT & WILL STEELE
PIN: 7-0976B-011-003

N/F
SHIRLEY PRICE
PIN: 7-0976B-011-014

N/F
COLLEEN LYNETTE BRADY-HOHNERLEIN
PIN: 7-0976-02-034

N/F
ROSETTA FORSMAN GRAHAM
PIN: 7-0976-02-046

N/F
ALVIN WILLIAMS
PIN: 7-0976-02-005

N/F
SAM L. VANNEDOE
PIN: 7-0976-02-038

N/F
R&R PROPERTY VENTURES LLC
PIN: 7-0976C-01-004

GEORGIA STATE ROUTE 30 – 100' R/W

GEORGIA STATE ROUTE 30 - 100' R/W

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

PUMP STATION SERVICE AREA

NOBLE VINES

PORT WENTWORTH, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES, LLC

PREPARED BY:

THOMAS & HUTTON
50 Park of Commerce Way
Savannah, GA 31405 • 912.234.5300
www.thomasandhutton.com

JOB NO:	J-28896.0001
DRAWN:	MDL
REVIEWED:	NBL

DATE:	12/14/2022
SCALE:	1" = 80'
SHEET:	1 OF 1

THOMAS & HUTTON

WATER DESIGN CONSIDERATIONS

NOBLE VINES

PORT WENTWORTH, GA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

SEPTEMBER 13, 2021

REVISED: AUGUST 8, 2022

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THOMAS & HUTTON

SECTION 1 – WATER DESIGN CONSIDERATIONS

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

PROJECT NARRATIVE

Noble Vines proposes the development of 102 townhome unit and an amenity area/pool in Phase 1. Phase 2 include 60 townhome units The project is located North of Highway 30/ Piedmont Avenue in Port Wentworth, GA. Water demands from this development will be supplied by an existing 24" water main located along the 30' utility easement off Berrien Road.

PROJECT CALCULATIONS

Problem:
Determine the average daily demand.
Determine the peak day demand.
Determine the peak hour demand.
Determine Peak Instantaneous flow.

Given:
Average daily use = Based on Port Wentworth Comprehensive Development Manual/ Ordinance and/or Georgia EPD

DESIGN LOADING (WW)

Usage Description	Units		Usage (Per Unit) GPD	GPM (WW)
Townhome Dwelling Units	162		300	33.75
Club House (per member)	100		38	2.64
		TOTAL:		36.39

WATER DEMANDS TABLE

Demand Node	Demand Node (Only PDD+Fire Flow Scenario)	Exhibit Identifier	Building Type	Townhome Units	1 Bedroom	2 Bedroom	3 Bedroom	No. of Members	Total GPD (WW)	Total GPD (Water) = 1.5 Total GPD (WW)	Total GPM (W)
Phase 1											
J-3	J-3	A	Townhome Dwelling Units	12					3600	5400	3.75
J-4	J-4	B	Townhome Dwelling Units	18					5400	8100	5.63
J-5	J-5	C	Townhome Dwelling Units	12					3600	5400	3.75
J-7	J-7	D	Townhome Dwelling Units	12					3600	5400	3.75
J-7	J-7	E	Townhome Dwelling Units	6					1800	2700	1.88
J-13	J-13	F	Townhome Dwelling Units	12					3600	5400	3.75
J-17	J-17	G	Townhome Dwelling Units + Clubhouse	6				100	5600	8400	5.83
J-18	J-18	H	Townhome Dwelling Units	12					3600	5400	3.75
J-19	J-19	I	Townhome Dwelling Units	6					1800	2700	1.88
J-21	J-21	J	Townhome Dwelling Units	6					1800	2700	1.88
Phase 2											
J-25	J-25	K	Townhome Dwelling Units	9					2700	4050	2.81
J-26	J-26	L	Townhome Dwelling Units	12					3600	5400	3.75
J-27	J-27	M	Townhome Dwelling Units	9					2700	4050	2.81
J-28	J-28	N	Townhome Dwelling Units	12					3600	5400	3.75
J-31	J-31	O	Townhome Dwelling Units	6					1800	2700	1.88
J-32	J-32	P	Townhome Dwelling Units	6					1800	2700	1.88
J-33	J-33	Q	Townhome Dwelling Units	6					1800	2700	1.88
								WATER AVERAGE DAILY FLOW (GPD)	=	**78,600**	**GPD**

AVERAGE DAY FLOW

	24			=	1440 min/day
	78,600	1440	min/day	=	54.583 **GPM**

PEAKING FACTORS

Average daily flows will vary continuously throughout each day with peak flows occuring at some point. The peaking factors, which is applied to the average day flow to obtain the peak flow, are used to account for variation of the demand for water, which include but are not limited to, habits of people, climatic conditions, pressure in the system, and system losses. They are also used to address seasonal, daily, and hourly variations of the water demand.

This consideration for the new, proposed water system for the development will include a review of alternatives in which the system must satisfy peak hourly water demands at a minimum pressure of 25 pounds per square inch (psi). Typical peaking factors are as follows:

PEAK DAY FLOW

Use Peak Factor of **2.5**

55	x	**2.5**	=	**136.46 GPM**

PEAK HOUR

Use Peak Factor of **3.5**

55	x	**3.5**	=	**191.04 GPM**

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SECTION 2 – WATER TOWER RESULTS

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

WATER TOWER RESULTS

The existing water tower, that is supplying the site with the necessary water demands, was modeled using WaterCAD software. In order to sufficiently model the tank, the following inputs were needed:

- Elevation (base) – The elevation of the bottom tank or the low water level.
- Elevation Level (Minimum) – The minimum elevation that the water level to drop to while still providing the site with the required water demands.
- Elevation Level (Initial) – The assumed starting water level elevation that the model runs the analysis for.
- Elevation Level (Maximum) – The maximum elevation that the water elevation can be or the high water level.
- Physical Elevation – The ground elevation of the bottom of the tower or slab.

Referencing the water tower plans, provided by the City of Port Wentworth, the base elevation, maximum level, and physical elevations were added to the model, as illustrated in Figure 1. However, the minimum elevation level and initial elevation levels were assumed to be 1' and 1.5' above the water tank base respectively. By assuming the initial elevation level is only 1.5' above the bottom of the tank, the model is run assuming worst-case scenario, where water levels are low in the tank. Since the pressures and flows provided to the site at this water level were adequate, it was concluded the water tank would be able to provide the necessary water demands.

TABLE 1
Summary of Inputs – Water Tower Model

Input Description	Elevation (base)	Elevation Level (Min.)	Elevation Level (Initial)	Elevation Level (Max)	Physical Elevation
Input Elevation	127	128	128.5	164	23

Elevation Level (Minimum): Assumed to be 1' above the water tank base

= Elevation (base) + 1'
= 127' + 1' = **128'**

Elevation Level (Initial): Assumed to be 1.5' above the water tank base

= Elevation (base) + 1.5'
= 127' + 1.5' = **128.5'**

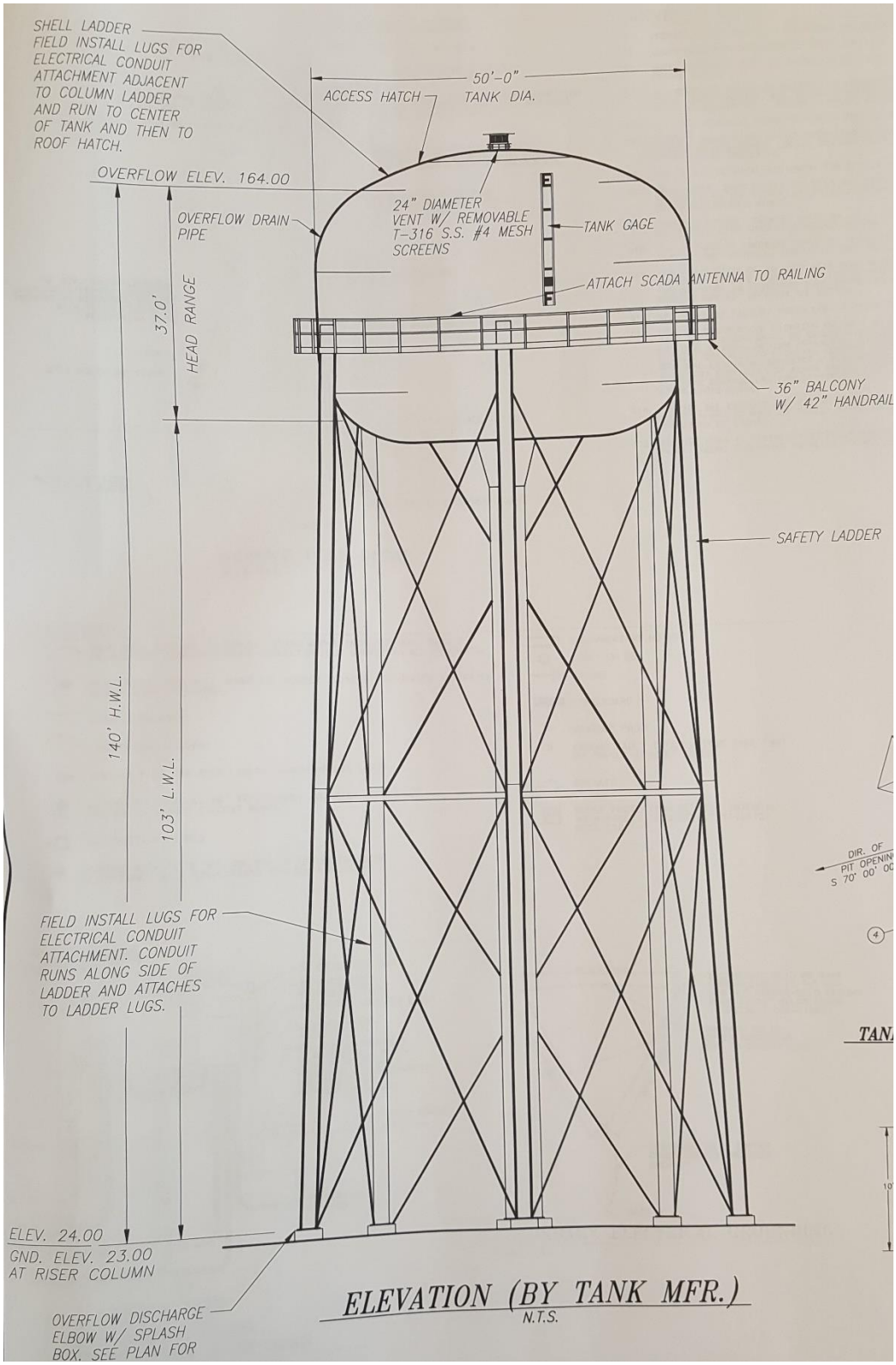

Figure 1: Water Tower Plan

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SECTION 3 – WATERCAD NODE EXHIBIT

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

GRAPHIC SCALE

75 0 37 75 150 300

(IN FEET)
1 inch = 75 ft.

KEY

Color Coding Legend
Pipe: Diameter (in)

<= 6.0
<= 8.0
<= 10.0
<= 16.0
<= 24.0

DEMAND "POCKETS" (TYP.)

FUTRE DEMAND "POCKET" (TYP.)

"POCKET" IDENTIFIER

NUMBER OF UNITS WITHIN "POCKET"

BERRIEN ROAD - 30' R/W
(This Section Not Open)

GEORGIA STATE ROUTE 30 - 100' R/W

ROAD 1
ROAD 2
ROAD 3
ROAD 4
ROAD 5

ENTRANCE

WETLANDS

GPV-1
GPV-2

J-1 J-2 J-3 J-4 J-5 J-6 J-7 J-8 J-9 J-10 J-11 J-12 J-13 J-14 J-15 J-16 J-17 J-18 J-19 J-20 J-21 J-22 J-23 J-24 J-25 J-26 J-27 J-28 J-29 J-30 J-31 J-32 J-33 J-34 J-35 J-36

P-1 P-2 P-3 P-4 P-5 P-6 P-7 P-8 P-9 P-10 P-11 P-12 P-13 P-14 P-15 P-16 P-17 P-18 P-19 P-20 P-21 P-22 P-23 P-24 P-25 P-26 P-27 P-28 P-29 P-30 P-31 P-32 P-33 P-34 P-35 P-36 P-37 P-38 P-39

T-1

A 12
B 18
C 12
D 12
E 6
F 12
G 6
H 12
I 6
J 6
K 9
L 12
M 9
N 12
O 6
P 6
Q 6

N
W E
S

WATER MODEL

NOBLE VINES

PORT WENTWORTH, GEORGIA

PREPARED FOR:

CLARET COMMUNITIES

PREPARED BY:

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JOB NO:	J-28896.0000
DRAWN:	VND
REVIEWED:	JRW
DATE:	08/08/21
SCALE:	1" = 75'
SHEET:	1

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SECTION 4 – WATERCAD RESULTS

NOBLE VINES

PORT WENTWORTH, GEORGIA

Prepared for:

CLARET COMMUNITIES, LLC

J – 28896.0003

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Pressure (Stop) (psi)	Pressure (Start) (psi)
P-1	T-1	J-1	16.0	Ductile Iron	130.0	296	0.47	0.02	46	46
P-3	J-1	J-2	24.0	Ductile Iron	130.0	296	0.21	0.00	46	46
P-4	J-2	GPV-1	8.0	Ductile Iron	130.0	296	1.89	0.11	46	46
P-5	GPV-1	GPV-2	10.0	Ductile Iron	130.0	296	1.21	0.01	45	45
P-6	GPV-2	J-3	10.0	Ductile Iron	130.0	296	1.21	0.12	45	45
P-7	J-3	J-4	8.0	Ductile Iron	130.0	89	0.57	0.05	45	45
P-8	J-4	J-8	8.0	Ductile Iron	130.0	69	0.44	0.05	45	45
P-9	J-8	J-7	8.0	Ductile Iron	130.0	69	0.44	0.02	45	45
P-10	J-5	J-3	10.0	Ductile Iron	130.0	-194	0.79	0.08	45	45
P-11	J-6	J-5	8.0	Ductile Iron	130.0	-49	0.31	0.02	45	45
P-12	J-7	J-6	8.0	Ductile Iron	130.0	-49	0.31	0.02	45	45
P-13	J-9	J-8	8.0	Ductile Iron	130.0	0	0.00	0.00	45	54
P-14	J-7	J-10	8.0	Ductile Iron	130.0	98	0.63	0.03	45	45
P-15	J-10	J-12	8.0	Ductile Iron	130.0	98	0.63	0.02	45	45
P-16	J-11	J-10	8.0	Ductile Iron	130.0	0	0.00	0.00	45	54
P-17	J-13	J-5	10.0	Ductile Iron	130.0	-132	0.54	0.06	45	45
P-18	J-12	J-13	10.0	Ductile Iron	130.0	-119	0.49	0.02	45	45
P-19	J-12	J-14	10.0	Ductile Iron	130.0	217	0.89	0.07	45	45
P-20	J-14	J-15	10.0	Ductile Iron	130.0	47	0.19	0.00	45	45
P-21	J-15	J-16	8.0	Ductile Iron	130.0	47	0.30	0.01	45	45
P-22	J-16	J-17	8.0	Ductile Iron	130.0	20	0.13	0.00	45	45
P-23	J-16	J-18	8.0	Ductile Iron	130.0	26	0.17	0.01	45	45
P-24	J-18	J-22	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-25	J-18	J-19	8.0	Ductile Iron	130.0	13	0.08	0.00	45	45
P-26	J-19	J-20	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-27	J-14	J-23	10.0	Ductile Iron	130.0	171	0.70	0.02	45	45
P-27	J-19	J-21	8.0	Ductile Iron	130.0	7	0.04	0.00	45	45
P-28	J-23	J-24	8.0	Ductile Iron	130.0	19	0.12	0.00	45	45
P-29	J-24	J-25	8.0	Ductile Iron	130.0	11	0.07	0.00	45	45
P-30	J-25	J-26	8.0	Ductile Iron	130.0	7	0.05	0.00	45	45
P-31	J-26	J-27	8.0	Ductile Iron	130.0	3	0.02	0.00	45	45
P-32	J-27	J-28	8.0	Ductile Iron	130.0	1	0.01	0.00	45	45
P-33	J-28	J-29	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-34	J-28	J-30	8.0	Ductile Iron	130.0	-2	0.01	0.00	45	45
P-35	J-30	J-27	8.0	Ductile Iron	130.0	1	0.01	0.00	45	45
P-36	J-30	J-31	8.0	Ductile Iron	130.0	-3	0.02	0.00	45	45
P-37	J-31	J-32	8.0	Ductile Iron	130.0	-5	0.03	0.00	45	45
P-38	J-32	J-25	8.0	Ductile Iron	130.0	-1	0.01	0.00	45	45
P-39	J-32	J-33	8.0	Ductile Iron	130.0	-6	0.04	0.00	45	45
P-40	J-33	J-24	8.0	Ductile Iron	130.0	-8	0.05	0.00	45	45

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Tank Table

ID	Label	Zone	Elevation (Base) (ft)	Elevation (Minimum) (ft)	Elevation (Initial) (ft)	Elevation (Maximum) (ft)	Volume (Inactive) (MG)	Diameter (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
114	T-1	<None>	127.00	128.00	128.50	164.00	0.00	50.00	296	128.50

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Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	22.00	<Collection: 0 items>	0	128.49	46
J-2	22.00	<Collection: 0 items>	0	128.48	46
J-3	22.00	<Collection: 1 item>	9	126.10	45
J-4	22.00	<Collection: 1 item>	14	126.07	45
J-5	22.00	<Collection: 1 item>	9	126.06	45
J-6	22.00	<Collection: 1 item>	0	126.05	45
J-7	22.00	<Collection: 1 item>	14	126.04	45
J-8	22.00	<Collection: 0 items>	0	126.05	45
J-9	0.00	<Collection: 0 items>	0	126.05	55
J-10	22.00	<Collection: 0 items>	0	126.02	45
J-11	0.00	<Collection: 0 items>	0	126.02	55
J-12	22.00	<Collection: 0 items>	0	126.01	45
J-13	22.00	<Collection: 1 item>	9	126.02	45
J-14	22.00	<Collection: 0 items>	0	125.96	45
J-15	22.00	<Collection: 0 items>	0	125.96	45
J-16	22.00	<Collection: 0 items>	0	125.96	45
J-17	22.00	<Collection: 1 item>	15	125.96	45
J-18	22.00	<Collection: 1 item>	9	125.96	45
J-19	22.00	<Collection: 1 item>	5	125.96	45
J-20	22.00	<Collection: 0 items>	0	125.96	45
J-21	22.00	<Collection: 1 item>	5	125.96	45
J-22	22.00	<Collection: 0 items>	0	125.96	45
J-23	22.00	<Collection: 1 item>	108	125.95	45
J-24	22.00	<Collection: 0 items>	0	125.95	45
J-25	22.00	<Collection: 1 item>	3	125.95	45
J-26	22.00	<Collection: 1 item>	4	125.95	45
J-27	22.00	<Collection: 1 item>	3	125.95	45
J-28	22.00	<Collection: 1 item>	4	125.95	45
J-29	22.00	<Collection: 0 items>	0	125.95	45
J-30	22.00	<Collection: 0 items>	0	125.95	45
J-31	22.00	<Collection: 1 item>	2	125.95	45
J-32	22.00	<Collection: 1 item>	2	125.95	45
J-33	22.00	<Collection: 1 item>	2	125.95	45

Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss (ft)	Pressure (Stop) (psi)	Pressure (Start) (psi)
P-1	T-1	J-1	16.0	Ductile Iron	130.0	217	0.35	0.01	46	46
P-3	J-1	J-2	24.0	Ductile Iron	130.0	217	0.15	0.00	46	46
P-4	J-2	GPV-1	8.0	Ductile Iron	130.0	217	1.38	0.06	46	46
P-5	GPV-1	GPV-2	10.0	Ductile Iron	130.0	217	0.89	0.01	46	46
P-6	GPV-2	J-3	10.0	Ductile Iron	130.0	217	0.89	0.07	45	45
P-7	J-3	J-4	8.0	Ductile Iron	130.0	65	0.41	0.03	45	45
P-8	J-4	J-8	8.0	Ductile Iron	130.0	51	0.32	0.03	45	45
P-9	J-8	J-7	8.0	Ductile Iron	130.0	51	0.32	0.01	45	45
P-10	J-5	J-3	10.0	Ductile Iron	130.0	-143	0.58	0.05	45	45
P-11	J-6	J-5	8.0	Ductile Iron	130.0	-36	0.23	0.01	45	45
P-12	J-7	J-6	8.0	Ductile Iron	130.0	-36	0.23	0.01	45	45
P-13	J-9	J-8	8.0	Ductile Iron	130.0	0	0.00	0.00	45	55
P-14	J-7	J-10	8.0	Ductile Iron	130.0	73	0.46	0.02	45	45
P-15	J-10	J-12	8.0	Ductile Iron	130.0	73	0.46	0.01	45	45
P-16	J-11	J-10	8.0	Ductile Iron	130.0	0	0.00	0.00	45	55
P-17	J-13	J-5	10.0	Ductile Iron	130.0	-97	0.40	0.03	45	45
P-18	J-12	J-13	10.0	Ductile Iron	130.0	-88	0.36	0.01	45	45
P-19	J-12	J-14	10.0	Ductile Iron	130.0	161	0.66	0.04	45	45
P-20	J-14	J-15	10.0	Ductile Iron	130.0	33	0.14	0.00	45	45
P-21	J-15	J-16	8.0	Ductile Iron	130.0	33	0.21	0.00	45	45
P-22	J-16	J-17	8.0	Ductile Iron	130.0	15	0.09	0.00	45	45
P-23	J-16	J-18	8.0	Ductile Iron	130.0	19	0.12	0.00	45	45
P-24	J-18	J-22	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-25	J-18	J-19	8.0	Ductile Iron	130.0	9	0.06	0.00	45	45
P-26	J-19	J-20	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-27	J-14	J-23	10.0	Ductile Iron	130.0	127	0.52	0.01	45	45
P-27	J-19	J-21	8.0	Ductile Iron	130.0	5	0.03	0.00	45	45
P-28	J-23	J-24	8.0	Ductile Iron	130.0	19	0.12	0.00	45	45
P-29	J-24	J-25	8.0	Ductile Iron	130.0	11	0.07	0.00	45	45
P-30	J-25	J-26	8.0	Ductile Iron	130.0	7	0.05	0.00	45	45
P-31	J-26	J-27	8.0	Ductile Iron	130.0	3	0.02	0.00	45	45
P-32	J-27	J-28	8.0	Ductile Iron	130.0	1	0.01	0.00	45	45
P-33	J-28	J-29	8.0	Ductile Iron	130.0	0	0.00	0.00	45	45
P-34	J-28	J-30	8.0	Ductile Iron	130.0	-2	0.02	0.00	45	45
P-35	J-30	J-27	8.0	Ductile Iron	130.0	1	0.00	0.00	45	45
P-36	J-30	J-31	8.0	Ductile Iron	130.0	-3	0.02	0.00	45	45
P-37	J-31	J-32	8.0	Ductile Iron	130.0	-5	0.03	0.00	45	45
P-38	J-32	J-25	8.0	Ductile Iron	130.0	-1	0.01	0.00	45	45
P-39	J-32	J-33	8.0	Ductile Iron	130.0	-6	0.04	0.00	45	45
P-40	J-33	J-24	8.0	Ductile Iron	130.0	-8	0.05	0.00	45	45

Scenario: Peak Day
Current Time Step: 0.000 h
FlexTable: Tank Table

ID	Label	Zone	Elevation (Base) (ft)	Elevation (Minimum) (ft)	Elevation (Initial) (ft)	Elevation (Maximum) (ft)	Volume (Inactive) (MG)	Diameter (ft)	Flow (Out net) (gpm)	Hydraulic Grade (ft)
114	T-1	<None>	127.00	128.00	128.50	164.00	0.00	50.00	217	128.50

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Scenario: Peak Day
Current Time Step: 0.000 h
Fire Flow Node FlexTable: Fire Flow Report

Label	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Demand (gpm)	Pressure (Calculated System Lower Limit) (psi)	Pressure (Calculated Residual @ Total Flow Needed) (psi)
J-1	1,000	3,500	3,500	45	0	44	46
J-2	1,000	3,500	3,500	45	0	44	46
J-3	1,000	3,400	3,409	20	9	20	39
J-4	1,000	2,716	2,730	20	14	22	38
J-5	1,000	2,943	2,952	20	9	20	38
J-6	1,000	2,614	2,614	20	0	22	38
J-7	1,000	2,705	2,719	20	14	21	38
J-8	1,000	2,602	2,602	20	0	22	38
J-9	1,000	2,531	2,531	20	0	21	46
J-10	1,000	2,602	2,602	20	0	21	38
J-11	1,000	2,602	2,602	20	0	20	46
J-12	1,000	2,590	2,590	20	0	20	38
J-13	1,000	2,640	2,649	20	9	20	38
J-14	1,000	2,351	2,351	20	0	20	37
J-15	1,000	2,329	2,329	20	0	20	37
J-16	1,000	2,078	2,078	20	0	20	36
J-17	1,000	1,820	1,834	20	15	24	35
J-18	1,000	1,720	1,729	20	9	20	34
J-19	1,000	1,604	1,608	20	5	20	33
J-20	1,000	1,512	1,512	20	0	22	32
J-21	1,000	1,541	1,546	20	5	21	32
J-22	1,000	1,692	1,692	20	0	21	34
J-23	1,000	2,257	2,365	20	108	20	37
J-24	1,000	1,988	1,988	20	0	20	36
J-25	1,000	1,881	1,884	20	3	20	35
J-26	1,000	1,793	1,796	20	4	20	34
J-27	1,000	1,755	1,757	20	3	20	34
J-28	1,000	1,703	1,706	20	4	20	34
J-29	1,000	1,635	1,635	20	0	21	33
J-30	1,000	1,747	1,747	20	0	20	34
J-31	1,000	1,768	1,770	20	2	21	34
J-32	1,000	1,850	1,852	20	2	20	35
J-33	1,000	1,880	1,882	20	2	21	35

Scenario: Peak Hour
Current Time Step: 0.000 h
FlexTable: Junction Table

Label	Elevation (ft)	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	22.00	<Collection: 0 items>	0	128.48	46
J-2	22.00	<Collection: 0 items>	0	128.47	46
J-3	22.00	<Collection: 1 item>	13	125.16	45
J-4	22.00	<Collection: 1 item>	20	125.12	45
J-5	22.00	<Collection: 1 item>	13	125.08	45
J-6	22.00	<Collection: 1 item>	0	125.07	45
J-7	22.00	<Collection: 1 item>	20	125.05	45
J-8	22.00	<Collection: 0 items>	0	125.07	45
J-9	0.00	<Collection: 0 items>	0	125.07	54
J-10	22.00	<Collection: 0 items>	0	125.02	45
J-11	0.00	<Collection: 0 items>	0	125.02	54
J-12	22.00	<Collection: 0 items>	0	124.99	45
J-13	22.00	<Collection: 1 item>	13	125.02	45
J-14	22.00	<Collection: 0 items>	0	124.92	45
J-15	22.00	<Collection: 0 items>	0	124.92	45
J-16	22.00	<Collection: 0 items>	0	124.91	45
J-17	22.00	<Collection: 1 item>	20	124.91	45
J-18	22.00	<Collection: 1 item>	13	124.91	45
J-19	22.00	<Collection: 1 item>	7	124.91	45
J-20	22.00	<Collection: 0 items>	0	124.91	45
J-21	22.00	<Collection: 1 item>	7	124.91	45
J-22	22.00	<Collection: 0 items>	0	124.91	45
J-23	22.00	<Collection: 1 item>	152	124.90	45
J-24	22.00	<Collection: 0 items>	0	124.90	45
J-25	22.00	<Collection: 1 item>	3	124.89	45
J-26	22.00	<Collection: 1 item>	4	124.89	45
J-27	22.00	<Collection: 1 item>	3	124.89	45
J-28	22.00	<Collection: 1 item>	4	124.89	45
J-29	22.00	<Collection: 0 items>	0	124.89	45
J-30	22.00	<Collection: 0 items>	0	124.89	45
J-31	22.00	<Collection: 1 item>	2	124.89	45
J-32	22.00	<Collection: 1 item>	2	124.89	45
J-33	22.00	<Collection: 1 item>	2	124.90	45

CITY OF PORT WENTWORTH

PLANNING COMMISSION

APRIL 10, 2023

Council Meeting Room	Regular Meeting	3:30 PM

7224 GA HIGHWAY 21
PORT WENTWORTH, GA 31407

1. CALL MEETING TO ORDER

Chairman Stewart called the meeting to order.

2. PRAYER AND PLEDGE OF ALLEGIANCE

Commissioner Register led the Prayer and Pledge of Allegiance.

3. ROLL CALL - SECRETARY

Attendee Name	Title	Status	Arrived
Lance Moore	Planning Commissioner	Present	
Omar Senati-Martinez	Planning Commissioner	Present	
Abby Brown	Planning Commissioner	Present	
Jason Stewart	Chairman	Present	
John Holland	Planning Commissioner	Present	
Christopher Gray	Planning Commissioner	Absent	
Nishant Randerwala	Planning Commissioner	Absent	
Charlene Middleton	Planning Commissioner	Present	
Sean Register	Planning Commissioner	Present	
Brian Harvey	Director of Development Services	Present	
Melanie Ellis	Building Inspector	Present	

4. APPROVAL OF AGENDA

1. Approval of Agenda

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Sean Register, Planning Commissioner
SECONDER:	John Holland, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

5. ADOPTION OF MINUTES

A. Planning Commission - Regular Meeting - Mar 13, 2023 3:30 PM

RESULT:	**ACCEPTED [UNANIMOUS]**
MOVER:	Charlene Middleton, Planning Commissioner
SECONDER:	Abby Brown, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

6. ZONING MAP AMENDMENTS (REZONING)

7. ZONING TEXT AMENDMENTS (ORDINANCES)

8. SITE PLAN/SUBDIVISION APPROVAL

A. Subdivision Application submitted by Jessica Vick, Roberts Civil Engineering, LLC., on behalf of Landmark 24 Homes of Savannah, LLC., for PIN # 7-0906-01-031(Miller Park Circle) located in a P-R-M (Planned Residential Multifamily) Zoning District for a Final Plat of a Major Subdivision (Rice Creek Tract C-1 Phase V) for the purpose of Single-Family Homes

The applicant was not present at the meeting. There were no public comments. After discussion, Commissioner Senati-Martinez made a motion to approve the item. Commissioner Register seconded the motion. The vote was unanimous.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Omar Senati-Martinez, Planning Commissioner
SECONDER:	Sean Register, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

B. Site Plan Review Application submitted by Claret Communities, LLC., for PIN # 7-0976-02-027 (Highway 30) for a Specific Development Site Plan to allow a Multi-family Development (Noble Vines Phase 2) in a P-RIP (Planned Residential Institutional) Zoning District

Nathan Long, Thomas & Hutton, was present on behalf of the applicant. Mr. Long gave a brief overview of the project.

Public Hearing:
- Avril Roy Smith - Roseberry Cir - spoke about traffic concerns.

After the public hearing was closed, Commissioner Holland asked if a traffic study had been done. Mr. Long responded that a traffic study was done under phase 1 of the project. Commissioner Register asked if the project was the same as the concept presented with the rezoning application for the property. Mr. Long responded that there was actually a reduction in units from the concept plan. Commissioner Register made a motion to approve the application. Commissioner Moore seconded the motion to approve. The vote was unanimous.

RESULT:	**APPROVED [UNANIMOUS]**
MOVER:	Sean Register, Planning Commissioner
SECONDER:	Lance Moore, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

9. NEW BUSINESS

10. ADJOURNMENT

A. Adjournment

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Abby Brown, Planning Commissioner
SECONDER:	Lance Moore, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

_____

Chairman

The foregoing minutes are true and correct and approved by me on this _____ day of _____, 2023.

_____

Secretary