CITY OF PORT WENTWORTH

PLANNING COMMISSION

MARCH 13, 2023

Council Meeting Room	**Regular Meeting**	**3:30 PM**

7224 GA HIGHWAY 21
PORT WENTWORTH, GA 31407

1. CALL MEETING TO ORDER

2. PRAYER AND PLEDGE OF ALLEGIANCE

3. ROLL CALL - SECRETARY

4. APPROVAL OF AGENDA

5. ADOPTION OF MINUTES

A. Planning Commission - Regular Meeting - Feb 13, 2023 3:30 PM

6. ZONING MAP AMENDMENTS (REZONING)

7. ZONING TEXT AMENDMENTS (ORDINANCES)

A. Zoning Ordinance Restatement, City of Port Wentworth Code of Ordinances, Appendix B, Zoning, including the amended official Zoning Map, which is referenced in Section 2.30 A

- Public Hearing
- Action

8. SITE PLAN/SUBDIVISION APPROVAL

A. Site Plan Review Application submitted by Guy Davidson, Rice Creek Landing LLC for PIN # 7-0906-01-018 and 7-0906-01-012 (Highway 21) for a General Development Site Plan to allow a multi-family development (Rice Creek Apartments) in a P-R-M (Planned Multifamily Residential) Zoning District

- Public Hearing
- Action

B. Site Plan Review Application submitted by Third Lake Development, LLC., on behalf of Bald Eagle Partners for PIN # 7-0906-04-091 (Rice Hope Rd) for a Specific Development Site Plan to allow a Multifamily Development (The Cottages at Rice Hope Plantation) in a M-P-O (Master Plan Overlay) Zoning District

- Public Hearing
- Action

9. NEW BUSINESS

10. ADJOURNMENT

CITY OF PORT WENTWORTH

PLANNING COMMISSION

FEBRUARY 13, 2023

Council Meeting Room | **Regular Meeting** | **3:30 PM**

7224 GA HIGHWAY 21
PORT WENTWORTH, GA 31407

1. CALL MEETING TO ORDER

Chairman Steward 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	
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	
Jason Stewart	Chairman	Present	
Brian Harvey	Director of Development Services	Present	

4. APPROVAL OF AGENDA

1. Approval of Agenda

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Omar Senati-Martinez, Planning Commissioner
SECONDER:	Sean Register, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

5. ADOPTION OF MINUTES

A. Planning Commission - Regular Meeting - Jan 9, 2023 3:30 PM

RESULT:	**ACCEPTED [UNANIMOUS]**
MOVER:	Abby Brown, Planning Commissioner
SECONDER:	John Holland, Planning Commissioner
AYES:	Moore, Senati-Martinez, Brown, Holland, Middleton, Register
ABSENT:	Gray, Randerwala

6. ZONING MAP AMENDMENTS (REZONING)

Minutes Acceptance: Minutes of Feb 13, 2023 3:30 PM (ADOPTION OF MINUTES)

7. ZONING TEXT AMENDMENTS (ORDINANCES)

8. SITE PLAN/SUBDIVISION APPROVAL

9. NEW BUSINESS

1. Zoning Ordinance Update Planning Commission Draft

Horizon Planning Group gave a presentation of the zoning ordinance rewrite.

10. ADJOURNMENT

A. Adjournment

RESULT:	**ADOPTED [UNANIMOUS]**
MOVER:	Sean Register, 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

Minutes Acceptance: Minutes of Feb 13, 2023 3:30 PM (ADOPTION OF MINUTES)

Planning Commission
305 South Coastal Highway
Port Wentworth, GA 31407

SCHEDULED

Meeting: 03/13/23 03:30 PM
Department: Development Services
Category: Planning/Zoning Item
Prepared By: Melanie Ellis
Department Head: Brian Harvey

AGENDA ITEM (ID # 2803)

DOC ID: 2803

Zoning Ordinance Restatement, City of Port Wentworth Code of Ordinances, Appendix B, Zoning, including the amended official Zoning Map, which is referenced in Section 2.30 A

Issue/Item: Zoning Ordinance Restatement, City of Port Wentworth Code of Ordinances, Appendix B, Zoning, including the amended official Zoning Map, which is referenced in Section 2.30 A.

Facts and Findings: The proposed restatement of the Zoning Ordinance includes the following parts and articles:

Part I: Introduction
Article 1 Title and Purpose
Part II: Zoning District Regulation
Article 2 General Requirements and Interpretations
Article 3 Residential Zoning Districts
Article 4 Commercial and Industrial Zoning Districts
Article 5 Planned Unit Development District
Part III: Development Provisions
Article 6 General Provisions
Article 7 Specific Use Requirements
Article 8 Parking and Loading
Article 9 Site Lighting
Article 10 Landscaping and the Environment
Article 11 Streets and Subdivision Design
Part IV: Review Processes and Standards
Article 12 General Processes
Article 13 Site Development Plan Review
Article 14 Special Use Permit Review
Article 15 Planned Unit Development Review
Article 16 Subdivision Review
Article 17 Zoning Map and Text Amendments
Part V: Administration
Article 18 Zoning Administration
Article 19 Planning Commission
Article 20 City Council
Article 21 Zoning Board of Appeals
Article 22 Nonconformities
Article 23 Enforcement
Part VI: Definitions and Specifications
Article 24 General Definitions
Article 25 Land Use Definitions
Article 26 Planting Specifications

Funding: N/A

Recommendation: The Planning Commission will hear this item on Monday, March 13, 2023 at 3:30 P.M.

ATTACHMENTS:

- Planning Comm Review Draft 2-5-23 (PDF)

CITY OF PORT WENTWORTH

ZONING ORDINANCE UPDATE
PLANNING COMMISSION DRAFT

FEBRUARY 5, 2023

CITY OF Port Wentworth GEORGIA

HORIZON Community Planning

PLB PLANNING GROUP

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

This working draft was was prepared for the City of

PORT WENTWORTH, GEORGIA

MAYOR AND CITY COUNCIL

Mayor Gary Norton
Mayor Pro Tem Thomas Barbee
Gabrielle Nelson, Council Member, District 1
Mark Stephens, Council Member, District 2
Rufus Bright, Council Member, District 3
Glenn Jones, Council Member, District 4

CITY STAFF

Steve Davis, City Manager
Jason Stewart, AICP, Assistant City Manager
Brian Harvey, Director of Development Services

CONSULTANTS

David M. Jirousek, MCP, AICP
Horizon Community Planning
horizon-planning.com

Paul LeBlanc, AICP
PLB Planning Group

HORIZON
Community Planning

PLB PLANNING GROUP

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Section 1.80 Validity and Severability
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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Part I. Introduction

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Article 1. Purpose and Intent

Section 1.10 Title

This ordinance shall be known and may be cited as "The Zoning Ordinance of the City of Port Wentworth, Georgia." The map referred to shall be known as the "The Official Zoning Map of the City of Port Wentworth, Georgia" and shall be maintained by the Zoning Administrator.

Section 1.20 Intent and Purpose

For the purpose of promoting and protecting the health, safety, morals, convenience, order, prosperity, or welfare of the present and future inhabitants of the City of Port Wentworth; and for the purpose of lessening congestion in the streets and roads; securing safety from fire and other dangers; providing adequate light and air; promoting distribution of population and classification of land uses and distribution and utilization of land development as will tend to facilitate and conserve adequate provision of transportation, water supply, drainage, sanitation, educational opportunity, and recreation; and for other public purposes, the Council of the City of Port Wentworth does hereby ordain and enact into law the following regulations and zoning districts.

Section 1.30 Applicability

This ordinance of the City of Port Wentworth:

A. regulates the location, height, bulk, number of stories, and size of buildings and other structures; the percentage of a lot that may be occupied; the sizes of yards and other open spaces; the density and distribution of population; and regulates the use of all land within the City;

B. regulates the uses of buildings, structures, and lands for trade, industry, residence, recreation, conservation, water supply, sanitation, public safety, and public activities;

C. provides for the preservation of scenic areas and protection against floods, rising waters, and erosion;

D. creates districts for these purposes and establishes the boundaries for those districts;

E. defines certain terms used in the ordinance; and

F. provides for the method of administration, appeal and amendment, enforcement, duties, and the provision of penalties for violation.

Section 1.40 Organization

A. **Parts.** This ordinance is divided into the following six (6) parts:

1. Part I Introduction. An introduction to set the purpose, applicability, organization, and legal basis for zoning regulation.
2. Part II Zoning District Regulation. Land use, building, and dimensional regulations specific to Zoning Districts.
3. Part III Development Provisions. Regulations related to general property, specific land uses and activities, and the development of land.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

4. Part IV Review Processes and Standards. Direction for review of zoning and land development applications.
5. Part V Administration. Administrative and review authorities, regulations concerning enforcement, and restrictions on nonconformities.
6. Part VI Definitions. General definitions and land use definitions for terms used in this ordinance.

Section 1.50 Figures and Tables

Graphics are provided as "figures" throughout this ordinance to illustrate the intent of the regulatory language. When there is an apparent discrepancy between the ordinance text and a text within a figure, the ordinance text shall supersede. Any text within a table is a requirement.

Section 1.60 Interpretation and Conflict

A. **Interpretation.** In the interpretation and application of this ordinance, all provisions shall be considered as minimum requirements, liberally construed in favor of the City Council, and deemed neither to limit or repeal any other powers granted under state law. This ordinance is not intended to repeal, abrogate or impair any existing easements, covenants, or deed restrictions.

B. **Conflict.** Where the provisions of this ordinance are in conflict or overlap with other ordinances, whichever imposes the more stringent restrictions shall prevail.

Section 1.70 Legal Basis

A. **Authorization.** The Port Wentworth City Council is authorized to adopt this ordinance pursuant to the enabling authority contained in the Georgia Zoning Procedures Law (O.C.G.A. 36-66-1 et. seq.) and all other relevant laws of the State of Georgia.

B. **Change of Statute.** Whenever any provision of this ordinance refers to or cites a section of the Georgia Code of Laws and that section is later amended or superseded, this ordinance shall be deemed amended to refer to the amended section or the section that most nearly corresponds to the superseded section.

Section 1.80 Validity and Severability

If any section, subsection, clause, provision or portion of these regulations shall be held to be invalid or unconstitutional by any court of competent jurisdiction, such holding shall not affect any other section, subsection, clause, provision or portion of these regulations which is not invalid or unconstitutional.

Section 1.90 Repeal of Ordinances and Effective Date

A. **Repeal.**

1. The adoption of this Zoning Ordinance shall have the effect of repealing the prior Zoning Ordinance (Appendix B of the City of Port Wentworth Code of Ordinances) and replacing all ordinances and parts of ordinances in conflict with this ordinance.
2. The repeal of any language within the ordinance, or any expiration by virtue of any provision contained within the ordinance, shall not affect any right accrued, any offense committed, any penalty or punishment incurred, or any proceeding commenced before the repeal took effect or the regulation expired.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

3. When any language which repealed another shall itself be repealed, the previous language shall not be revived without being approved as a text amendment to this ordinance, as detailed in Article 17.

B. **Approval and Effective Date.** This ordinance is a restatement of the City of Port Wentworth Zoning Ordinance approved on _____, 2023, and effective on _____, 2023.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Part II. Zoning District Regulation

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Article 2. Zoning Districts and Interpretations

Section 2.10 Intent and Purpose

It is the intent of this article to establish zoning districts to ensure the compatible use of and to ensure desirable conditions within the City of Port Wentworth to live, work, conduct business, and visit.

Section 2.20 Established Zoning Districts

A. **Zoning Districts.** The City of Port Wentworth is divided into the following zoning districts:

Table 2.20: Zoning Districts

Zoning District	Abbreviation	Article
Single-Family Residential	R-1	3
Suburban Single-Family Residential	R-2	3
Old Town Residential	R-3	3
Mixed Residential	R-4	3
Multi-Family Residential	R-5	3
Neighborhood Commercial	C-1	4
General Commercial	C-2	4
Interchange Commercial	C-3	4
Industrial	I-1	4
Planned Unit Development	PUD	5

Section 2.30 Interpretation of Zoning District Boundaries

A. **Zoning Map.** The location and boundaries of the zoning districts are established and shown on a map titled "City of Port Wentworth Zoning Map," as amended from time to time. The official and final Zoning Map shall be publicly displayed at the Community Development Department office. The Zoning Map is declared to be part of the Zoning Ordinance.

B. **Rules.** When uncertainty exists with respect to the location of boundaries of any zoning district as shown on the "The Official Zoning Map of the City of Port Wentworth, Georgia," the following rules shall apply:

1. Unless otherwise specifically indicated, where district boundaries are indicated on the zoning map as approximately following the centerline of a street, highway, railroad right-of-way line, stream bed, or riverbed, or such centerlines extended, then that centerline shall be constructed to be the boundary.

2. Where district boundary lines are indicated on the zoning map as approximately following the corporate limits line of the City of Port Wentworth, then the corporate limits line shall be construed to be the district boundary.

3. Where district boundaries are indicated on the zoning map as being set back from a street, road, highway, railroad, stream, or river, and parallel thereto, then such district boundaries, unless otherwise specifically indicated, shall be construed as being at the scaled distance of the zoning map as measured from the centerline of such street, road, highway, railroad, stream or river and as being parallel thereto.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

4. Where district boundaries are indicated on the zoning map as approximately following lot lines or such lot lines extended, then those lot lines or lot lines extended shall be construed to be the district boundaries.
5. Where a district boundary divides a lot, the requirements for the district in which the greater portion of the lot lies shall be extended to the balance of the lot; provided however, that such extension shall not include any part of the lot which lies more than 50 feet beyond the district boundary and provided further that this provision shall not apply to a through lot. In the case of a through lot, the restrictions of the district applying to adjoining lots that front on the same street as the lot frontage in question shall apply.

Section 2.40 Zoning of Vacated and Annexed Areas

A. **Vacated Land.** Whenever any street, alley, or other public way within the City is vacated by official governmental action and the lands within those vacated lands attach to and become a part of lands adjoining the street, alley, or public way, those lands shall automatically be subjected to the same zoning regulations as are applicable to the adjoining lands.

B. **Annexed Land.** When land is annexed into the City, it shall be zoned R-1 until or unless the City Council takes action to classify it as another zoning district.

Section 2.50 Principal Buildings and Uses

A lot or parcel shall not be devoted to more than one (1) principal use or contain more than one (1) principal building, except for groups of multiple family buildings, commercial establishments, or industrial buildings which are determined by the Zoning Administrator to be a principal use collectively, based on one or more of the following considerations:

A. individual buildings share common parking areas;

B. access to the buildings/uses is provided via shared access drives or streets;

C. buildings are under single ownership; or

D. individual activities support one another (such as auto dealership/vehicle repair or a convenience store/restaurant/gas station).

Section 2.60 Similar Land Uses

A. **Intent.** Since every potential use cannot be addressed in this ordinance, each district provides for "similar uses" referencing this section.

B. **Request for Determination.** Requests for a use not specifically addressed in any zoning district shall be submitted to the Zoning Administrator for review based on the following standards:

1. A finding has been made by the Zoning Administrator that the proposed use is not listed as a permitted or conditional use in any zoning district.
2. If the use is not addressed in this ordinance, the Zoning Administrator shall select the use which most closely approximates the proposed use, using criteria such as the nature of the use; conformance with the purpose of the zoning district in which the similar use is permitted; aesthetic and traffic characteristics; and potential nuisance effects (noise, vibration, dust, smoke, odor, glare, hours of operation).

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

3. Once a similar use is determined, the proposed use shall comply with any conditions and review procedures applicable to that use, including rezoning (if applicable) and compliance with the specific use requirements of Article 7, as applicable.
4. If the Zoning Administrator determines a proposed use is not similar to any use addressed in the ordinance, the applicant may petition for an amendment to the ordinance, as described in Article 17, to permit the use.
5. The determination as to whether a proposed use is similar in nature and class to another permitted or conditional use within a district shall be considered an interpretation of the use regulations, not a variance applying to a particular situation. Any use determined by the Zoning Administrator to be similar shall thereafter be included in the enumeration of uses allowed within the particular zoning district.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

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Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Article 3. Residential Zoning Districts

Section 3.10 Intent and Purpose

A. **Introduction.** This article outlines the intent and purpose statements for the residential zoning districts and contains basic information pertaining to the land use, dimensional, and building requirements for properties in the City of Port Wentworth.

B. **Zoning Districts.** The City is divided into five (5) residential zoning districts described in Section 3.20. Each zoning district has unique requirements concerning land use and site development.

Section 3.20 Zoning District Intent Statements

A. **Single-Family Residential (R-1).** This district is intended for detached single-family residential dwellings on larger lots, primarily within rural areas with historic established neighborhoods, but may transition to higher-density districts in the future. The district also allows for limited civic and recreational uses. Characteristics of lands zoned R-1 include open space, fields, farmland, and minor subdivisions in areas that are not conducive to pedestrian or bicycle travel.

B. **Suburban Single-Family Residential (R-2).** This district is intended for detached single-family residential dwellings on typical suburban lots. The district also allows for limited civic and recreational uses. Characteristics of lands zoned R-2 include major subdivisions with curvilinear and grid pattern street systems with moderate connectivity between neighborhoods and commercial areas, as well as sidewalks and community amenities.

C. **Old Town Residential (R-3).** This district is intended for a range of detached single-family dwellings, two-family dwellings, and attached single-family townhomes within the Old Town area of Port Wentworth. While the majority of the Old Town Residential District is developed with single-family dwellings, this district allows for new two-family conversions and townhomes on specified streets and street corners. This district recognizes the Old Towns as a traditional urban village where infill or redevelopment projects may occur. Characteristics of lands zoned R-3 include established neighborhoods on traditional grid pattern street systems with sidewalks, or the feasibility of sidewalks, as it is a walkable traditional neighborhood.

D. **Mixed Residential (R-4).** This district is intended for attached single-family townhomes. The district also allows for limited civic and recreational uses, as well as single-family and two-family residences on smaller urban lots. Characteristics of lands zoned R-4 include major subdivisions with curvilinear and grid pattern street systems with significant connectivity between neighborhoods and commercial areas, as well as sidewalks and community amenities.

E. **Multi-Family Residential (R-5).** This district is intended for multi-family residential buildings. This district also allows for limited civic and recreational uses, as well as single-family and two-family residences and townhomes. Characteristics of lands zoned R-5 include apartment complex facilities and denser townhome communities closer to goods and services or planned mixed-use village areas. Developments include sidewalks and community amenities.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Section 3.30 Land Use Regulation

A. **Requirements.** Land and buildings shall only be used in accordance with Table 3.30.

1. Permitted Use (P). This use is authorized by-right, subject to all other applicable provisions of this ordinance.
2. Special Use Permit Required (S). This use is subject to review in accordance with Article 14.
3. Permitted Use or Special Use (P/S). Designation will depend on whether the principal use or similar land use is a permitted (P) or special use (S).
4. Not Permitted. A cell marked with two dashes (--) indicates that a use is not permitted.

B. **Other Requirements.** See the referenced section for additional requirements specific to the land use if noted in the far-right column.

C. **Land Use Definitions.** See Article 25 for definitions of the land use terms in Table 3.30.

Table 3.30: Residential Districts- Land Use Regulation

Use	R-1	R-2	R-3	R-4	R-5	Other
Accessory Uses- uses defined in Section 25.20						
Accessory building, non-residential	P/S	P/S	P/S	P/S	P/S	
Accessory building, residential	P	P	P	P	P	6.20
Accessory dwelling unit	P	--	P	--	--	7.20
Antennas and over-the-air reception devices	P	P	P	P	P	
Day care home, adults	P	P	P	P	P	7.90
Day care homes, children	P	P	P	P	P	7.90
Home occupation, major	P	--	--	--	--	7.130
Home occupation, minor	P	P	P	P	P	7.130
Residential subdivision amenities	P	P	P	P	P	
Solar energy collector, ground-mounted	P	--	--	--	--	7.210
Accommodations, Hospitality, and Entertainment- uses defined in Section 25.30						
Bed and breakfast	P	--	--	--	--	7.50
Campground or recreational vehicle park	S	--	--	--	--	7.60
Commercial outdoor recreation, low-intensity	S	--	--	--	--	7.70
Golf Course	S	P	P	P	P	7.120
Agricultural- defined in Section 25.40						
Farm	P	--	--	--	--	
Farm market and agritourism	P	--	--	--	--	7.110
Stables, commercial	S	--	--	--	--	7.220
Stables, private	P	--	--	--	--	
Civic and Institutional- defined in Section 25.50						
Cemetery	P	P	P	--	--	
Community garden	P	P	P	P	P	7.80
Community-oriented cultural facility	S	S	S	--	--	
Government facility	P	P	P	P	P	
Public park or preserve	P	P	P	P	P	
Place of worship	P	P	P	P	P	
School- college or university	--	--	--	--	--	

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Table 3.30: Residential Districts- Land Use Regulation						
Use	**R-1**	**R-2**	**R-3**	**R-4**	**R-5**	**Other**
School- pre-school to 12	P	P	P	P	P	
Industrial, Infrastructure, and Transportation- defined in Section 25.60						
Commercial solar energy system	S	--	--	--	--	7.210
Essential public services and utilities without buildings	P	P	P	P	P	
Essential public services and utilities with buildings	P	--	--	--	--	
Residential, Group Living- defined in Section 25.90						
Personal care home	P	P	P	--	--	7.180
Nursing home and assisted living	--	--	--	--	S	
Residential, Household Living- defined in Section 25.100						
Dwelling, single-family	P	P	P	P	P	3.50
Dwelling, two-family	--	--	P	P	P	3.50
Dwelling, townhome	--	--	P	P	P	3.50
Dwelling, multiple-family	--	--	--	-	P	3.50
Manufactured home community	S	--	--	--	--	7.140
Other Uses- defined in Section 25.120						
Similar land use	P/S	P/S	P/S	P/S	P/S	2.60
Temporary land use	P	P	P	P	P	7.230

Section 3.40 Lot, Building, and Siting Requirements

A. **Intent.** This section includes the dimensional requirements for lots and the requirements for the location and size of buildings.

B. **Applicability.**

1. Lots. All lots shall meet the minimum area and width requirements of Table 3.40 A, B, C, and D. Lots shall not be created or changed in dimension except in conformance with these requirements.

2. Buildings. Placement of principal buildings shall conform to the minimum dimensional and sizing requirements listed in this section, as applicable. Accessory buildings shall comply with the requirements of Section 6.20.

3. Specific Use Requirements. Stricter lot, building, and siting requirements may be included in Article 7 for specific land uses.

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Table 3.40 A: Single-Family Residential Districts					
Requirement		**R-1**	**R-2**	**R-1**	**R-2**
		Single-Family		**Non-Residential**	
Min. Lot Area (s.f.)		8,000	7,500	43,560	43,560
Min. Lot Width (ft.)		70	60	150	150
Min. Lot Frontage (ft.)[1]		70	60	150	150
Max. Building Height (ft.)		35	35	40	40
Max. Building Coverage (%)		30	45	30	30
Min. Setbacks (ft.)	Front- major arterial road	50	40	50	50
	Front	35	25	50	50
	Street Side	35	20	50	50
	Side	15	5	25	25
	Rear	40	20	25	25

Table 3.40 B: Old Town Residential					
Requirement		**R-3**			
		Single-Family	**Two-Family**	**Townhouse**	**Non-Residential**
Min. Lot Area (s.f.)		5,000	6,000	2,000[2]	10,000
Min. Lot Width (ft.)		40	50	25[2]	50
Min. Lot Frontage (ft.)[1]		40	50	25[2]	50
Max. Number of Units per Building		1	2	6	--
Max. Building Height (ft.)		35	35	35	40
Max. Building Coverage (%)		50	60	75	50
Min. Setbacks (ft.)	Front (front-loaded)[3]	25	25	25	30
	Front (rear-loaded)[4]	15	15	15	30
	Street Side	15	15	15	30
	Side	5	5	10	20
	Rear	20	20	25	25

[1] See Section 6.50 B for frontage requirements and cul-de-sac reductions.
[2] Minimum lot area, width, and frontage for each dwelling unit (width if applicable).
[3] A front-loaded building means the garage(s) and driveway(s) are oriented toward the primary street they face. Note restrictions for front-loaded townhomes in Section 3.50 D.2.
[4] A rear-loaded building means the garage is in the back yard, back of home, or is oriented toward the alley.

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Table 3.40 C: Mixed Residential					
Requirement		**R-4**			
		Single-Family	**Two-Family**	**Townhouse**	**Non-Residential**
Min. Lot Area (s.f.)		7,500	8,000	2,420[1]	10,000
Min. Lot Width (ft.)		60	60	25[1]	50
Min. Lot Frontage (ft.)[2]		60	60	25[1]	50
Max. Number of Units per Building		1	2	8	--
Max. Building Height (ft.)		35	35	35	40
Max. Building Coverage (%)		45	60	75	40
Min. Setbacks (ft.)	Front- major arterial road	40	40	40	50
	Front (front-loaded)[3]	25	25	25	50
	Front (rear-loaded)[4]	20	20	15	50
	Street Side	20	20	15	50
	Side	5	5	10	25
	Rear	20	20	25	25

Table 3.40 D: Multi-Family Residential						
Requirement		**R-5**				
		Single-Family	**Two-Family**	**Townhouse**	**Multiple-Family**	**Non-Residential**
Min. Lot Area (s.f.)[1]		7,500	8,000	2,420[1]	1,800[1]	10,000
Min. Lot Width (ft.)		60	60	25[1]	100	50
Min. Lot Frontage (ft.)[2]		60	60	25[1]	100	50
Max. Number of Units per Building		1	2	8	24	--
Max. Building Height (ft.)		35	35	35	45	40
Max. Building Coverage (%)		45	60	75	75	40
Min. Setbacks (ft.)	Front- major arterial road	40	40	40	50	50
	Front (front-loaded)[3]	25	25	25	35	50
	Front (rear-loaded)[4]	20	20	15	35	50
	Street Side	20	20	15	35	50
	Side	5	5	10	20	25
	Rear	20	20	25	25	25

[1] Minimum lot area and width for each dwelling unit (width if applicable).
[2] See Section 6.50 B for frontage requirements and cul-de-sac reductions.
[3] A front-loaded building means the garage(s) and driveway(s) are oriented toward the primary street they face. Note restrictions for front-loaded townhomes in Section 3.50 D.2.
[4] A rear-loaded building means the garage is in the back yard, back of home, or is oriented toward the alley.

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Section 3.50 Residential Building Requirements

A. **Intent.** Residential building design requirements are intended to ensure that exterior building materials are of high quality, attractive, and consistent with other buildings within the same zoning district. Further, they are intended to ensure:

1. context-sensitive and compatible infill development in existing neighborhoods;
2. architectural diversity to avoid repetitive styles of buildings;
3. high-quality and lasting buildings that will add value to the community;
4. a pedestrian and bicycle-friendly environment; and
5. the minimization of the visual impact of street-facing garages.

B. **Primary Siding Material.** Durable and quality materials shall be used for siding on all residential buildings, including the following:

1. brick;
2. stone;
3. cementitious material;
4. wood siding;
5. vinyl siding certified by the Vinyl Siding Institute with a thickness of four-hundredths (.040) inch or greater;
6. Exterior Insulation and Finish Systems (EIFS); or
7. other materials as approved by the City Council after a recommendation from the Planning Commission.

C. **Single-Family and Two-Family.**

1. Orientation and Placement.
   a. The orientation of the primary entry and building facade shall be consistent with the established pattern along the same side of the block.
   b. Buildings shall not be constructed diagonally or skewed on the lot.
2. Garages.
   a. Street-facing garages.
      i. Street-facing garages shall not comprise more than 50 percent of the front width of the front façade.
      ii. Garages shall not protrude toward the street in front of the primary façade of the structure. All street-oriented garages shall recess a minimum of 10 feet behind the front building elevation (including side-oriented garages) or a front porch if the porch is at least five (5) feet deep by eight (8) feet wide. However, subdivision developments where at least one (1) phase has been built out with homes shall be exempt from this requirement.
   b. Where an alley exists to the rear of a lot, garages shall be rear-loaded and accessed from the alley.

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3. Variety.

   a. A residential development shall have a variety of house models. The following table indicates the minimum number of different types of house models for developments of various sizes:

Table 3.50: Minimum Number of House Models	
Size of Development	**Minimum**
2-20 buildings	2
21-30 buildings	3
31-40 buildings	4
41+ buildings	5

   b. Each house model shall have multiple characteristics that clearly distinguish it from the other house models, such as different exterior materials, rooflines, garage placement, architectural style, number of stories, and/or building face.

   c. No more than two of the same house model can be located adjacent to one another in developments that are required three (3) or more house models.

4. Other Construction Requirements:

   a. Minimum width from any direction of a dwelling unit shall be 16 feet.

   b. Roof pitch shall be no less than 2:12.

   c. Foundations shall be of permanent construction.

D. **Townhome Buildings.**

1. Orientation and Placement.

   a. The orientation of the primary entry and building facade shall be consistent with the established pattern along the same side of the block.

   b. Buildings shall not be constructed diagonally or skewed on the lot.

2. Garages. Detached garages shall be located in rear yards. Attached garages shall be oriented toward the rear yard or rear alley.

E. **Multi-Family Buildings, Nursing Homes, and Assisted Living Facilities.**

1. Orientation. To the maximum extent feasible, the primary entrance and façade of individual buildings within a multi-family development shall be oriented towards:

   a. Primary, internal, or perimeter streets; or

   b. Common open space, such as interior courtyards, parks, or on-site natural areas or features with a clearly defined and easily accessible pedestrian circulation system.

2. Garages. Garage entries shall be internalized in building groupings and located away from street frontages or accessed using an alley.

3. Massing and Form. One (1) or more of the following techniques shall be used to reduce the overall bulk and mass of individual buildings:

   a. Breaking up the mass of the multi-family building by stepping back the façade (minimum two feet deep and one foot wide) for every 30 feet of building frontage so that the building appears from the street to be separate homes;

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b. Organizing units around a central courtyard that maintains the impression of the traditional side yard setback between units along the street frontage; or

c. Designing the multi-family building so that the massing, arrangement of architectural elements, and use of exterior materials give the appearance of a large single-family home or townhome.

4. Four-Sided Design. Although the front facade of a building is expected to be the primary focal point in terms of the level of architectural character and features, all sides of a residential building shall incorporate architectural detailing that complements the front facade and provides visual interest. Blank walls void of architectural detailing are prohibited. Five (5) architectural features listed below shall be incorporated into the overall design on each side of the building:

   a. Ccovered porches;

   b. Balconies;

   c. Prominent entry features;

   d. Windows;

   e. Door openings;

   f. Distinct variations in color (not a slight variation of a similar hue, such as beige or pastel);

   g. Variations in materials;

   h. Variations in building height;

   i. Variation in roof form;

   j. Dormers;

   k. Projected or recessed building walls; or

   l. Another architectural feature as approved by the City Council after a recommendation from the Planning Commission.

F. **Manufactured Homes.** Compatibility standards for manufactured homes meeting the definition of "single-family dwelling" are as follows:

1. Manufactured Homes qualifying as Dwelling, Single-Family shall be compared to site built and other housing in the immediate general area within the same zoning or residential district or area. Approval shall be granted upon the finding that the manufactured home is substantially similar or superior in size, siding material, roof material, foundation, and general aesthetic appearance to:

   a. site-built or other forms of housing which may be permitted in the same general area under this ordinance; or

   b. existing development; or

   c. proposed development in the same zoning district or area.

2. All towing devices, wheels, axles, and hitches must be removed.

3. At each exterior door, there must be a landing that is a minimum of 36 inches by 48 inches.

G. **Illegal Dwellings.** The use of any floor area below base flood elevation for dwelling purposes is prohibited in all zoning districts unless the floor area meets the applicable building code and flood mitigation requirements. Buildings erected as garages or accessory buildings, except approved accessory dwelling units, shall not be occupied for dwelling purposes.

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Section 3.60 Non-Residential Building Requirements

See Section 4.50 for building requirements for non-residential buildings located within Residential Zoning Districts.

Section 3.70 Other Applicable Development Requirements

In addition to the requirements of this article, the following articles may apply to the development of land and certain uses and activities:

Table 3.70: Other Applicable Development Requirements

Requirement	Article	Included	Applicability
General Provisions	Article 6	General provisions and requirements for certain activities that are not regulated distinctly by zoning districts	Varies
Specific Use Requirements	Article 7	Requirements specific to certain uses	See far right column of Table 3.30
Parking, Loading, and Access Management	Article 8	General parking requirements, minimum number of parking spaces and loading areas, design of parking and loading areas, and other general requirements	All projects that require off-street parking or loading spaces or that require new driveways and curb cuts
Lighting	Article 9	General lighting and light fixture requirements, minimum and maximum levels, and lighting plan requirements	Primarily non-residential and multi-family development, residential lots to a lesser degree
Landscaping and the Environment	Article 10	General landscaping requirements, landscape plan requirements, front yard landscaping, buffering, parking lot trees, and screening	Non-residential and multi-family site development
Streets and Subdivisions	Article 11	Design, maintenance, and easement requirements	Subdivisions and site development projects

Section 3.80 Review Processes and Procedures

See the following articles and sections for review processes and procedures:

Table 3.80: Review Processes and Procedures

Requirement	Article
General Processes and Requirements	Article 12
Site Plan Review	Article 13
Special Use Permit Review	Article 14
Planned Unit Development Review	Article 15
Subdivision Review	Article 16
Rezoning	If rezoning is required, Article 17 will apply
Variance	If variances are required, Section 22.60 will apply

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Article 4. Commercial and Industrial Zoning Districts

Section 4.10 Intent and Purpose

A. **Introduction.** This article outlines the intent and purpose statements for the commercial and industrial zoning districts and contains basic information pertaining to the land use, dimensional, and building requirements for properties in the City of Port Wentworth.

B. **Zoning Districts.** The City is divided into four (4) commercial and industrial zoning districts described in Section 4.20. Each zoning district has unique requirements concerning land use and site development.

Section 4.20 Zoning District Intent Statements

A. **Neighborhood Commercial (C-1).** This district is intended to encourage and accommodate a walkable downtown area with storefronts on the ground story and upper story residential, local market retail, personal services, restaurants, entertainment, offices, and professional services. Sites are located near the established commercial core of the Old Town area of the City of Port Wentworth. Characteristics of uses and land in C-1 include daytime and early evening operations, smaller-scale and mixed-use buildings, sidewalk sales, and on-street parking.

B. **General Commercial (C-2).** This district is intended for a range of retail, office, and service uses, such as large-scale retailers, restaurants, office buildings, professional services, and other related commercial uses serving local and regional markets. Sites may be closer to residential areas and, in some cases, are part of mixed-used development and typically have easy access to arterials or major roadways. Characteristics of uses and land in C-2 may include daytime and early evening operations, larger employers, outdoor sales areas, pedestrian-oriented design, generous landscaping and greenspace, and larger parking areas for higher volumes of consumers.

C. **Interchange Commercial (C-3).** This district is intended for uses such as accommodations, fast food restaurants, vehicle service stations, convenience retail stores, and other service uses that primarily cater to individuals traveling or commuting by cars or commercial vehicles on the interstate highway or major state routes. Sites in this district have direct or convenient access to I-95 or SR-21. Characteristics of uses and land in C-3 include drive-through service, 24-hour or late-night operations, fast food and drive-through services, and high-visibility signage or structures.

D. **Industrial (I-1).** This district is intended for large and intensive warehousing, distribution, and manufacturing, as well as heavier commercial uses and support services that provide the backbone for economic development and job creation. Sites in this district should have ready access to necessary utilities and direct access to major truck transportation routes with significant separation and buffering from residential areas. Characteristics of uses and land in I-1 may include outdoor storage areas, truck traffic, manufacturing, large buildings, and multiple worker shifts.

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Section 4.30 Land Use Regulation

A. **Requirements.** Land and buildings shall only be used in accordance with Table 4.30.

1. Permitted Use (P). This use is authorized by-right, subject to all other applicable provisions of this ordinance.
2. Special Use Permit Required (S). This use is subject to review in accordance with Article 14.
3. Permitted Use or Special Use (P/S). Designation will depend on whether the principal use or the similar land use is a permitted (P) or special use (S).
4. Not Permitted. A cell marked with two dashes (--) indicates that a use is not permitted.

B. **Other Requirements.** See the referenced section for additional requirements specific to the land use if noted in the far-right column.

C. **Land Use Definitions.** See Article 24 for definitions of the land use terms in Table 4.30.

Table 4.30: Commercial and Industrial Districts- Land Use Regulation

Use	C-1	C-2	C-3	I-1	Other
Accessory Uses- uses defined in Section 25.20					
Accessory building, non-residential	P/S	P/S	P/S	P/S	
Antennas and over the air reception devices	P	P	P	P	
Outdoor display and sales	P	P	P	--	7.150
Outdoor storage	--	--	P	P	7.160
Outdoor storage of containers	--	--	--	P	7.160
Accommodations, Hospitality, and Entertainment- uses defined in Section 25.30					
Banquet or meeting hall	P	P	P	--	
Campground or recreational vehicle park	--	--	S	--	7.60
Commercial indoor recreation facility	P	P	P	P	
Commercial outdoor recreation facility	--	--	--	P	
Hotel or motel	P	P	P	--	
Indoor theater	P	P	--	--	
Outdoor theater	--	--	--	S	7.170
Restaurant	P	P	P	--	
Restaurant with drive-through	--	S	S	--	7.100
Restaurant with micro-brewery, small distillery, or small winery	P	P	P	--	
Tavern	P	P	P	--	
Civic and Institutional- defined in Section 25.50					
Cemetery	P	--	--	--	
Community-oriented cultural facility	P	P	--	--	
Community-based indoor recreational facility	P	P	--	--	
Government facility	P	P	P	P	
Public park or preserve	P	P	P	P	
Place of worship	P	P	--	--	
School- college or university	P	P	--	--	
School- pre-k to 12	P	P	--	--	
School- specialized training	P	P	P	P	

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Table 4.30: Commercial and Industrial Districts- Land Use Regulation					
Use	**C-1**	**C-2**	**C-3**	**I-1**	**Other**
School- truck driving	--	--	--	P	
Industrial, Infrastructure, and Transportation- defined in Section 25.60					
Brewery, winery, distillery	--	--	--	P	
Commercial solar energy system	--	--	--	P	7.210
Crematorium	--	--	--	P	
Essential public services and utilities without buildings	P	P	P	P	
Essential public services and utilities, with buildings	P	P	P	P	
Manufacturing, processing, and packaging- heavy	--	--	--	S	
Manufacturing, processing, and packaging- light	--	--	--	P	
Outdoor storage, principal use	--	--	--	S	7.160
Outdoor container storage as principal use	--	--	--	S	7.160
Propane gas sales	--	--	--	P	
Salvage or impound operation	--	--	--	P	7.190
Sawmill or planing mill	--	--	--	P	
Self-storage	--	P	P	P	7.200
Truck terminal	--	--	--	S	
Warehousing and distribution	--	--	--	S	
Waste management and recycling	--	--	--	P	
Wholesaling and distribution	--	--	--	S	
Offices and Services- defined in Section 25.70					
Animal and pet services	P	P	P	--	7.40
Animal clinic	P	P	P		
Child day care center	P	P	--	--	
Contractor facility	P	P	--	P	
Funeral home or mortuary	P	P	--	--	
General offices and services	P	P	--	--	
General offices and services with drive-through	S	S	--	--	7.100
Hospital	--	P	P	--	
Research and development	--	--	--	P	
Temporary office	P	P	P	P	7.230
Truck stop or truck fuel sales	--	--	S	S	7.250
Vehicle repair, major	--	--	P	P	7.240
Vehicle repair, minor	S	P	P	P	7.240
Vehicle service station	S	S	S	P	7.250
Vehicle wash, cars	--	S	S	--	
Vehicle wash, trucks	--	--	--	P	
Residential Group Living- defined in Section 25.80					
Nursing home	S	S	--	--	
Residential Household Living- defined in Section 25.90					
Mixed-use residential	P	--	--	--	

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Table 4.30: Commercial and Industrial Districts- Land Use Regulation					
Use	**C-1**	**C-2**	**C-3**	**I-1**	**Other**
Retail and Other Sales and Rental - defined in Section 25.100					
Bakery, 5,000 square feet or less	P	P	--	--	
Construction and landscape supply, outdoor	--	--	P	P	7.150
Greenhouse and nursery	--	P	P	--	
Retail sales	P	P	P	--	
Retail sales with drive-through service	--	S	S	--	7.100
Vehicle and equipment sales and rental, major	--	S	S	P	7.150
Vehicle and equipment sales and rental, minor	--	P	P	--	7.150
Other Uses- defined in Section 25.110					
Adult entertainment	--	--	S	S	7.30
Similar land use	P/S	P/S	P/S	P/S	2.60
Temporary land use	P	P	P	P	7.230
Temporary sales	P	P	P	--	7.230

Section 4.40 Lot, Building, and Siting Requirements

A. **Intent.** This section includes the dimensional requirements for lots and the requirements for the location and size of buildings.

B. **Applicability.**

1. Lots. All lots shall meet the minimum area and width requirements of Table 4.40. Lots shall not be created or changed in dimension except in conformance with these requirements.

2. Buildings. All placement of principal and accessory buildings shall conform to the minimum dimensional and sizing requirements listed in Section 4.40, as applicable.

3. Specific Use Requirements. Stricter lot, building, and siting requirements may be included in Article 7 for specific land uses.

Table 4.40: Lot, Building, and Siting Requirements					
Requirement		**C-1**	**C-2**	**C-3**	**I-1**
Min. Lot Area (s.f. unless noted otherwise)		--	1 acre	1 acre	5 acres
Min. Lot Width/Frontage (ft.)		--	150	150	300
Max. Building Height (ft.)		35	45	45	50
Max. Building Coverage (%)		75	60	60	50
Min. Setbacks (ft.)	Front	0	25	25	50
	Street Side	0	25	25	50
	Side abutting residential districts	10	35	50	200
	Side abutting commercial and industrial districts	0	15	15	50
	Rear abutting residential districts	20	35	50	200
	Rear abutting commercial and industrial districts	10	15	15	50

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Section 4.50 Commercial and Industrial Building Requirements

A. **Intent.** The intent of this section is to ensure that exterior building materials are of high quality, attractive, and consistent with other buildings within the same zoning district. Buildings should have architectural features and patterns that provide visual interest and reduce massive aesthetic effects.

B. **Nursing Homes and Assisted Living Facilities.** See Section 3.50 E.

C. Requirements.

1. Walls. The exterior walls shall be tilt-up concrete panels, split-faced block, brick on block, or a combination of tilt-up concrete (minimum height 10 feet), and metal panel construction. The use of materials such as nondecorative concrete block, corrugated metal, or pre-engineered metals installed with exposed fasteners will be prohibited in connection with the construction of the exterior of any buildings or other improvements.
2. Architectural Articulation.
    a. Building facades shall include a repeating pattern that shall include no less than three (3) of the elements listed below. Blank areas on walls shall not exceed 30 feet in width. At least one (1) of these elements shall repeat horizontally:
        i. Color and texture change.
        ii. Material change.
        iii. Step backs;
        iv. Change in building, parapet, or roofline height. If used to comply with this standard, the minimum change in roofline shall be two (2) feet;
        v. Awnings, canopies, or marquees extending at least four (4) feet beyond the building face; and
        vi. Expression of architectural detail through a change of plane no less than 12 inches in width, such as an offset, reveal, or projecting rib.
    b. These elements shall be integral parts of the building fabric and not superficially applied trim or graphics.
3. Rooftop Equipment. Exterior rooftop equipment, such as storage tanks, cooling towers, transformers, antennae, electronic receivers, and other similar equipment and facilities, shall be screened from view from adjacent parcels and streets. The materials used for screening shall be compatible in architectural design and aesthetics with building materials employed in the construction of the primary building and other improvements to the parcel.

D. **Architectural Deviations.** Deviations from the requirements of Section 4.50 may be authorized after a recommendation of the Planning Commission and approval by the City Council.

1. In determining if a deviation is warranted, the following shall be considered:
    a. The proposed architectural design and/or building material is equal or superior to these requirements as it relates to achieving the character desired by this section.
    b. The proposed architectural design and/or building material better fits the character of the area than when it strictly conforms to the requirements of this section.
    c. The deviation has no significant visual impact or distinction from the public right-of-way or

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adjacent properties.

d. The applicant shall demonstrate that conformance with the requirements is impractical due to complexity, but these factors shall not by themselves be the reasons for granting a deviation.

2. The City Council may grant a lesser deviation than requested.

3. The City Council may attach conditions necessary to uphold the intent of this section.

Section 4.60 Other Applicable Development Requirements

In addition to the requirements of this article, the following articles may apply to the development of land and certain uses and activities:

Table 4.60: Other Applicable Development Requirements

Requirement	Article	Included	Applicability
General Provisions	Article 6	General provisions and requirements for certain activities that are not regulated distinctly by zoning districts	Varies
Specific Use Requirements	Article 7	Requirements specific to certain uses	See far right column of Table 4.30
Parking, Loading, and Access Management	Article 8	General parking requirements, minimum number of parking spaces and loading areas, design of parking and loading areas, and other general requirements	All projects that require off-street parking or loading spaces or that require new driveways and curb cuts
Lighting	Article 9	General lighting and light fixture requirements, minimum and maximum levels, and lighting plan requirements	Primarily non-residential and multi-family development, residential lots to a lesser degree
Landscaping and the Environment	Article 10	General landscaping requirements, landscape plan requirements, front yard landscaping, buffering, parking lot trees, and screening	Non-residential and multi-family site development
Streets and Subdivisions	Article 11	Design, maintenance, and easement requirements	Subdivisions and site development projects

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Section 4.70 Review Processes and Procedures

See the following articles and sections for review processes and procedures:

Table 4.70: Review Processes and Procedures	
Requirement	**Article**
General Processes and Requirements	Article 12
Site Plan Review	Article 13
Special Use Permit Review	Article 14
Planned Unit Development Review	Article 15
Subdivision Review	Article 16
Rezoning	If rezoning is required, Article 17 will apply
Variance	If variances are required, Section 22.60 will apply

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Article 5. Planned Unit Development District

Section 5.10 Intent and Purpose

It is recognized that traditional zoning, with its segregation of uses and rigid dimensional requirements, may not be suitable in all situations to best achieve the objectives of the City relative to desired land use and preservation of its resources and character. In order to permit and encourage more creative and innovative land development for the benefit of the community as a whole and in furtherance of the vision and goals of the City of Port Wentworth Comprehensive Plan, planned unit development (PUD) may be permitted as a zoning district to achieve the following purposes:

A. provide for flexibility in development that will result in a better project for the developer, residents and users, as well as for the City in general;

B. preserve existing natural assets, such as stands of trees, floodplain, open fields, marshes, rivers, streams, and the like;

C. accomplish a more desirable and sustainable residential environment than would be possible through the strict application of minimum requirements of this ordinance;

D. encourage the utilization of open space and development of recreational amenities generally located within walking distance of all living units;

E. encourage the use of lands in ways that are most in accord with their character and adaptability;

F. result in recognizable public benefits to the community-at-large; and

G. allow efficient land use by facilitating economical and suitable arrangements for buildings, streets, utilities, and other land use features.

Section 5.20 Qualifying Conditions

At a minimum, all proposed PUDs shall meet the following qualifying conditions, as applicable, to be considered for approval:

A. **Location**. PUDs may be located in any part of the City, subject to meeting all other applicable requirements.

B. **PUD Purpose.** The applicant shall demonstrate that the PUD will achieve three (3) or more of the purposes listed in Section 5.10.

C. **Size**. The minimum site size for a PUD shall be based on the type of development, as shown in the following table. Churches, public or private schools, public buildings, and recreational amenities such as golf courses and health clubs, and their ancillary commercial uses, such as clubhouses and pro shops, shall not be considered non-residential uses for purposes of this condition.

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Table 5.20: Minimum Site Size	
PUD Type	**Minimum Required Site Size**
All residential	20 acres
Mixed residential/non-residential	30 acres
All non-residential*	10 acres
* Where more than 10 percent of the PUD site area is to be devoted to industrial, warehousing, and/or distribution, the minimum required site size shall be 80 acres	

D. **Housing Variety.** Any PUD containing residential uses shall include a variety of housing types and/or lot sizes to provide for varying lifestyles, diversity, and affordability.

E. **Utilities**. The PUD shall be served by public water and sanitary sewer facilities.

F. **Ownership and Control**. The tract(s) of land for which a PUD application is submitted must be either in single ownership or the subject of an application filed collectively by all owners of the property. Each property owner, or their agent, must sign the PUD application.

G. **Recognizable Public Benefit**. The PUD shall achieve recognizable and substantial benefits that may not be possible under the existing zoning classification(s). At least two (2) of the following benefits shall be accrued to the community as a result of the proposed PUD:

1. preservation of significant natural features not otherwise required by this ordinance;
2. a complementary mix of land uses or housing types that address a demonstrated community need;
3. incorporation of infrastructure improvements or other means to mitigate existing and future traffic congestion in the vicinity of the PUD site;
4. preservation of common open space beyond the minimum required;
5. connectivity of preserved open space with adjacent open space, greenways, or public trails;
6. coordinated redevelopment of multiple lots or parcels; or
7. removal or renovation of deteriorating buildings, sites, or contamination clean-up.

Section 5.30 Permitted Uses

Any land use or combination of land uses may be considered for inclusion within a PUD.

Section 5.40 PUD Development Requirements

A. **Minimum Lot Size and Zoning Requirements.** Lot area, width, setbacks, height, lot coverage, minimum floor area, parking, landscaping, lighting, and other requirements for the district specified in the following table for the proposed use shall apply to all such uses within a PUD unless modified in accordance with the provisions of Section 5.40 B. Within a PUD, the minimum buffer requirements specified in Section 10.70 between uses shall not apply, provided the Planning Commission or City Council may require separation or buffering of uses as a condition of preliminary concept plan approval.

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Table 5.40: Zoning Requirements by Use Type	
Land Use Type	**Applicable Zoning District**
Single-family residential	R-2
Two-family residential	R-5
Townhomes	
Multiple-family residential	
Commercial	C-2
Industrial	I-1
Public/Quasi-public	R-1

B. **Modification of Minimum Requirements.** Regulations applicable to a land use in the PUD district may be altered from the requirements specified in Table 5-4, including the following: modification from the lot area and width, building setbacks, height, lot coverage, signs, and parking. However, a reduction in lot size shall not result in an increase in the number of parcels or dwellings otherwise permitted by the applicable zoning district unless a density bonus is also granted in accordance with Section 5.40 C. In the absence of a density bonus, land gained by the reduction in lot sizes shall be added to the open space required within the PUD. The applicant for a PUD shall identify, in writing, all proposed deviations from the zoning district requirements. Modifications may be approved by the City Council during the preliminary concept plan review stage after Planning Commission recommendation. Adjustments to the minimum requirements may be permitted only if they will result in a higher quality and more sustainable development, consistent with the purpose of the PUD district, as expressed in Section 5.10.

C. **Residential Density Bonus.** In addition to the modification of minimum requirements permitted in Section 5.40 B, the City Council, after Planning Commission recommendation, may permit an increase, not to exceed 20 percent, in the total number of residential units otherwise allowed within a PUD, according to the requirements in Table 5-4, where it is demonstrated that:

1. The appearance and construction will result in a development of high quality, as evidenced by the innovative design and predominant use of building materials such as stone, masonry, wood, and hardie-plank;
2. Amenities beyond the minimum required open space, will be provided to create a more sustainable community and desirable living environment; and
3. At least four (4) of the following will be included within the development:
    a. Dedicated common open space is provided in excess of the minimum required, per Section 5.40 D.
    b. One (1) or more parking structures are proposed within a mixed-use or non-residential PUD to meet the minimum parking requirements of this code.
    c. One (1) or more LEED-certified buildings will be constructed.
    d. Significant natural features, in addition to those required, will be preserved and/or substantial landscaping beyond the minimum requirements will be incorporated into the development.
    e. Decorative pavers and/or aesthetic enhancements (e.g., plazas, boulevards, round-a-bouts, ornamental lighting, fountains, and street furniture) will be incorporated into the vehicular and pedestrian circulation system throughout the PUD.
    f. Sidewalks will be constructed on both sides of all streets within the development.

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g. A commercial and/or office component, comprising not less than 15 percent of the PUD site is proposed within the development.

h. Property is to be conveyed to and accepted by the City or school district for a future public use.

i. Three (3) or more public benefits, as identified in Section 5.20 G., will be achieved.

D. **Common Open Space.** For purposes of the PUD requirements, "common open space" is defined as an area of land or water, or a combination of land and water, designed and intended for the perpetual use and enjoyment of the users of the development and/or the general public. Common open space may contain accessory structures and improvements necessary or desirable for educational, noncommercial, recreational, or cultural uses. A variety of open space and recreational areas is encouraged such as: children's informal play areas in close proximity to neighborhoods or dwelling unit clusters; formal parks, picnic areas, and playgrounds; pathways and trails; scenic open areas and communal, noncommercial recreation facilities; and natural conservation areas. At a minimum, the following regulations shall apply to all common open space within a PUD:

1. The area of common open space shall not be less than 25 percent of the total land area of a PUD containing any residential units and not less than 10 percent of the total land area in non-residential developments. Land dedicated for recreation, in accordance with Section 5.40 D.2., shall count toward the common open space requirement.

2. All common open space shown on the final development plan must be reserved or dedicated by conveyance of title to a corporation, association, or other legal entity by means of a restrictive covenant, easement, or through other legal instrument. The terms of such legal instrument must include provisions guaranteeing the continued use in perpetuity of such open space for the purposes intended and for continuity of proper maintenance of those portions of the open space requiring maintenance.

3. The open space shall meet the following minimum dimensions, contiguity, and connectivity requirements:

   a. The required open space shall be centrally located along the street frontage of the development to protect or enhance views, located to preserve significant natural features, adjacent to dwellings, and/or located to interconnect other open spaces throughout the development or on contiguous properties.

   a. Required open space areas shall be of sufficient size and dimension and located, configured, or designed in such a way as to achieve the applicable purposes of these regulations and enhance the quality of the development. The open space shall neither be perceived nor function simply as an extension of the rear yard of those lots abutting it.

   b. If the site contains a river, stream, or other body of water, the City may require that a portion of the required open space shall abut the body of water.

   c. All required open space areas shall be configured so the open space is reasonably accessible to and usable by residents, visitors, and other intended users of the development. The minimum size of a required open space area shall be 15,000 square feet; provided, however, that the required open space abutting a public street may be less than 15,000 square feet; and, further provided, that the City Council, upon recommendation of the Planning Commission, may approve other open space areas of less than 15,000 square feet if these areas are designed and established as pedestrian or bicycle paths or are otherwise determined to be open space reasonably usable by residents, visitors and other intended users of the development. The

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minimum average dimension of a required open space area shall be 100 feet.

d. Open space areas are encouraged to be linked with any adjacent open spaces, public parks, bicycle paths, or pedestrian paths.

e. Grading in the open space shall be minimal, with the intent to preserve existing topography, trees, and other natural features, where practical.

f. A sign, structure, or building may be erected within the required open space if it is determined to be accessory to a recreation or conservation use or an entryway. These accessory structure(s) or building(s) shall not occupy, in the aggregate, more than one (1) percent of the total open space area. Accessory structures or uses of a significantly different scale or character than present in abutting residential districts shall not be located near the boundary of the development if they may negatively impact the residential use of adjacent lands as determined by the Planning Commission. Pathways, sidewalks, play fields, and courts shall be exempt from this limitation.

g. The following areas shall not qualify as required common open space for the purposes of this section:

   i. The area within any public street right-of-way.

   ii. The area within private road easements.

   iii. The area within a subdivision lot.

   iv. Land within any required yard or setback area.

   v. Any area less than 100 feet wide adjacent to the rear lot line of two (2) or more contiguous lots.

   vi. Parking and loading areas.

   vii. Fifty percent of any easement for overhead utility lines.

   viii. Fifty percent of any rivers, streams, detention ponds, marshes, lakes or floodplains that are not generally accessible within the development. Accessible shall mean that the feature is bordered by a substantial open space area, park, playground, pathway or reasonable means of access for the enjoyment of all owners, visitors or others, in which case the total area may qualify as required common open space.

   ix. Fifty percent of the area of any golf course.

E. **Connectivity**. Pathways for bicycles and pedestrians shall be incorporated throughout the PUD and along all perimeter streets to ensure connectivity between uses and with adjacent properties. Pathways and sidewalks shall be constructed in accordance with the City design standards.

Section 5.50 Existing PUDs

Within the City, there are existing planned developments identified on the zoning map as “MPO,” “P-” and “PUD”. These developments shall be exempt from the requirements of this article and shall conform to the prior approved development plans for each respective project. However, any expansion, alteration, or variation of the existing approved developments that constitutes a major change, as defined in Section 15.50, shall be subject to the major change procedural requirements of Section 15.50.

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Section 5.60 Other Applicable Development Requirements

In addition to the requirements of this article, the following articles may apply to the development of land and certain uses and activities.

Table 5.60: Other Applicable Development Requirements

Requirement	Article	Included	Applicability
General Provisions	Article 6	General provisions and requirements for certain activities that are not regulated distinctly by zoning districts	Varies
Specific Use Requirements	Article 7	Requirements specific to certain uses	See far right column of Tables 3.30 or 4.30
Parking, Loading, and Access Management	Article 8	General parking requirements, minimum number of parking spaces and loading areas, design of parking and loading areas, and other general requirements	All projects that require off-street parking or loading spaces or that require new driveways and curb cuts
Lighting	Article 9	General lighting and light fixture requirements, minimum and maximum levels, and lighting plan requirements	Primarily non-residential and multi-family development, residential lots to a lesser degree
Landscaping and the Environment	Article 10	General landscaping requirements, landscape plan requirements, front yard landscaping, buffering, parking lot trees, and screening	Non-residential and multi-family site development
Streets and Subdivisions	Article 11	Design, maintenance, and easement requirements	Subdivisions and site development projects

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Part III. Development Provisions

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Article 6. General Provisions

Section 6.10 General Compliance

A. **Compliance with Ordinance**. Except as otherwise provided in this ordinance, no building, structure, or premises shall be used or occupied; and no building or part of any building or other structures shall be erected, razed, moved, placed, reconstructed, extended, enlarged, or altered, except in conformity with the provisions of this ordinance.

B. **Unlawful Buildings and Uses**. Any building, use, or lot which has been unlawfully constructed, occupied or created prior to the date of adoption of this ordinance shall continue to be unlawful unless expressly permitted by this ordinance. Such unlawful buildings, uses, or lots shall not be considered to be nonconforming buildings, uses, or lots and shall not be afforded any protections or allowances otherwise granted to legally nonconforming buildings, uses, or lots.

C. **Trash, Litter, or Junk**. It shall be unlawful for any person to accumulate, place, store, or allow or permit the accumulation, placement or storage of trash, litter, or junk on premises in the city, except in a lawful sanitary landfill, a lawful junkyard, or not to exceed seven (7) days storage in watertight storage receptacles designed for the temporary accumulation of trash. Waste receptacles shall not be left unattended in any yard longer than a period of 48 hours unless they are kept or enclosed in a permanent structure designed to prevent disturbance of such receptacles by animals or severe weather conditions.

D. **Restoring Unsafe Buildings**. Nothing in this ordinance shall prevent the strengthening or restoration to a safe condition of any part of any building or structure declared unsafe by the building official or required to comply with his lawful order, provided such restoration shall be subject to and completed in accordance with the City of Port Wentworth building code and all other applicable ordinances. Nonconforming buildings and uses shall also be subject to the limitations of Article 22.

E. **Voting Place.** The provisions of this ordinance shall not interfere with the temporary use of any property as a voting place in connection with a federal, state, county, municipal, or other public election.

Section 6.20 Accessory Buildings, Uses, and Structures

A. **Accessory Buildings**.

1. Accessory buildings or garages shall be considered to be part of the main building if structurally and architecturally integrated into the main building or if attached by an enclosed breezeway or similar enclosed structure not more than 10 feet in length.
2. Detached accessory buildings shall not be located closer than 10 feet to the main building on the lot.
3. A building permit shall be required for any accessory building exceeding 240 sq. ft. in area.
4. No accessory building shall be located in a front or side yard.
5. No accessory building shall be constructed on a lot before the principal building or use on the lot is constructed.

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6. Accessory buildings shall be set back at least five (5) feet from the side and rear lot lines. However, if the rear lot line of the property on which the accessory building is located is also the side lot line of the neighboring property, the accessory building shall be set back the same distance from the rear lot line as the required side yard setback for a principal building.
7. If a detached garage is accessed from an alley, there shall be no rear setback requirement.
8. The maximum number of accessory buildings permitted on any lot containing a single- or two-family dwelling shall comply with the requirements specified in Table 6.20, based on whether a garage is attached to the principal dwelling and the number of vehicle stalls provided within such garage:

Table 6.20: Maximum Size and Number of Accessory Buildings [1]

Lot Size (sq. ft.)	Number of Accessory Bldgs. Allowed	Maximum Total Size (square feet) Allowed for All Accessory Buildings in Combination[2]			
		If no attached garage	If one stall attached	If two stall attached	If three or more stalls attached
< 5,000	1	576	240	120	0
5,000 – 8,999	2	720	432	144	120
9,000 – 14,999	2	864	576	288	180
15,000 – 21,780	2	984	696	408	270
21,781 – 43,560	2	1,128	840	552	408
> 43,560 (1 acre)	3	1,128			

9. The area of accessory buildings shall be included in the maximum lot coverage.
10. The maximum height of an accessory building shall not exceed 12 feet.
11. No accessory building, except as otherwise permitted in this ordinance, shall be used as a dwelling or rented.
12. Accessory buildings on lots within nonresidential districts shall comply with all yard setback requirements for principal buildings within the district in which located.

B. **Domestic Animals**.

1. The keeping of household pets, including dogs, cats, fish, birds, hamsters, and other animals commonly considered household pets is permitted in any residential district, provided no more than three (3) dogs or cats, six (6) months of age or older, in any combination shall be kept or housed in or at one (1) dwelling.
2. The keeping of farm animals not generally considered to be household pets, including, but not limited to, exotic animals, horses, pigs, sheep, cattle, goats, and poultry, is prohibited in all zoning districts, except within the R-1 District on existing bona fide farms and lots larger than five (5) acres. The keeping of wild animals shall not be permitted in any district.

[1] Bona fide farm buildings in the R-1 District shall be exempt from the size limits.

[2] Regardless of the total size shown, no more than 25 percent of the rear yard shall be occupied by accessory buildings.

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C. **Fences and Walls**.

1. A permit shall be obtained prior to the erection or construction of any fence or wall.
2. Fences and walls, including gates, shall be constructed of durable, weather-resistant, rustproof, and easily maintainable materials customarily used in the construction of walls and fences, such as wood, metal, masonry, chain-link, composite, or vinyl. However, this provision shall not preclude the use of decorative architectural materials when consistent with the intent of this section and the character of the area where the fence is to be placed and as approved by the Zoning Administrator. Fence material shall be permitted subject to review and approval by the Zoning Administrator. Fences shall be maintained to ensure they remain free of deficiencies and are kept upright and firmly fastened to the ground and associated supporting structures.
3. Fences or walls in any residential district or on any residentially used lot shall not exceed six (6) feet in height, measured from the natural grade to the uppermost portion of the fence.
4. A non-sight obscuring security fence, not exceeding 12 feet high, may be permitted around the perimeter of an essential public service building, essential public service storage yard, towers, approved outdoor storage areas in the commercial (not including the C-1, Neighborhood Commercial) or industrial districts, and around the property boundary of sites in the I-1 District. The security fence may also include a maximum of one (1) additional foot of barbed wire. Razor wire and electrification shall not be permitted in any district.
5. Fences or walls erected within the required front yard in any residential district or on any residentially used lot shall not exceed four (4) feet in height. This shall also apply to a secondary front yard on a corner lot and each front yard of a through lot, provided the fence or wall shall not exceed three (3) feet in height within the clear vision corner.
6. Fences shall not be erected within any public right-of-way or easements.
7. In any district, if both sides of the fence or wall are not identical, the finished side shall face the adjoining property.
8. Chain link fences shall not be erected in any front yard within either a residential district or any lot containing a dwelling unless enclosing a retention pond, essential public service, or publicly owned facility that has been approved by the city. In all such cases, the chain link fence shall be black vinyl coated.
9. Barbed wire shall not be permitted in any residential district or on any lot or parcel containing a residential use except for security around essential public services or publicly owned facilities.
10. Required screen walls shall be located inside the property line. The design of all walls, including openings for vehicular traffic or other purposes, shall only be as approved by the Zoning Administrator.

D. **Mechanical Appurtenances.**

1. Mechanical units located on the ground shall be located in the rear or side yard and may encroach as permitted in Table 6.40. When attached to a building, the mechanical equipment shall be architecturally integrated or appropriately screened by shrubbery or fencing so as not to be visible from neighboring property. Screening shall comply with the requirements of Section 10.80.
2. If located on the roof of a building or in a location that cannot otherwise be screened, the equipment shall be enclosed or designed in a manner that is architecturally integrated with the building where it is located.

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3. Mechanical units shall not be placed within any easement.

E. **Swimming Pools, Spas and Hot Tubs.**

1. Any swimming pool, spa, hot tub, or similar structure whose depth at any point exceeds 24 inches shall be subject to the following regulations and shall be fenced securely in accordance with the applicable requirements of the City of Port Wentworth building code.
2. Swimming pools, spas, hot tubs, and similar structures shall only be permitted in the rear yard.
3. Swimming pools, spas, hot tubs, and similar structures, whether above or below ground, shall be set back a minimum of 10 feet from any side or rear lot line, as measured from the edge of the pool.

F. **Temporary Storage Units.**

1. It shall be unlawful to place or permit the placement of a temporary storage unit on property located within the City of Port Wentworth for more than seven (7) consecutive days, provided a longer period may be approved by the Zoning Administrator for building construction or remodeling projects.
2. Temporary storage units shall only be placed upon or within a driveway, parking area or if access exists to the rear of the lot, the rear yard.
3. No temporary storage unit shall be placed upon or within public property or a public place, including, without limitation, a street, sidewalk, or street greenway.
4. The temporary storage unit shall not exceed eight (8) feet in height, eight (8) feet in width, and 16 feet in length.
5. The temporary storage unit shall be secured in a manner that does not endanger the safety of persons or property in the vicinity of the unit.
6. The temporary storage unit shall, at all times, be maintained in good condition, free from evidence of deterioration, weathering, discoloration, graffiti, rust, ripping, tearing, or other holes or breaks.
7. No temporary storage unit shall be used for human occupancy or to store solid waste, construction debris, demolition debris, business inventory, commercial goods, hazardous materials, or goods for property other than the property on which the storage unit is located. Upon reasonable notice, the officials of the City of Port Wentworth may inspect the contents of any temporary storage unit at any reasonable time to ensure compliance with these requirements.
8. Any temporary storage unit which is not removed at the end of the time for which it may lawfully remain in place may be removed by the city immediately, without notice, and the cost of such removal may be assessed against the property on which the unit was located.
9. A sign identifying the storage unit supplier, mounted on the temporary storage unit, shall not require a sign permit, provided the storage unit is in compliance with this subsection and all other applicable ordinances.

Section 6.30 Building Height Exceptions

The following structures are exempt from the height limitations of this ordinance: belfries, broadcast towers/antennas, chimneys, cooling towers, elevator bulkheads, fire towers, flag poles in non-residential districts, stacks, elevated water towers, stage lofts, monuments, cupolas, domes, spires, and penthouses housing necessary mechanical appurtenances such as HVAC or similar equipment on the roof of a building.

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Parapet walls may not exceed the height limits by more than four (4) feet.

Section 6.40 Setbacks and Yards

A. **Setback Requirements**. All setbacks shall be measured from the property lines. For unplatted lots, an up-to-date property survey prepared by a surveyor registered in the State of Georgia shall be submitted with any application for building permit or site development plan approval. In the case of a private street easement, setbacks shall be measured from the easement line. A building shall not be erected, converted, enlarged, reconstructed, or structurally altered except in conformity with the setback requirements of the district in which it is located.

B. **Encroachment into Right-of-Way**. No buildings, structures, service areas, or off-street parking and loading facilities, except driveways, shall be permitted to encroach on public or private rights-of-way.

C. **Front Setback Requirements**. All yards abutting upon a public or private street right-of-way shall be considered as front yards or secondary front yards for setback purposes, except as otherwise provided in this ordinance. A setback within a secondary front yard is a side street setback.

D. **Clear Vision Corner**. Signs, fences, walls, structures, benches, shrubbery, or other potential obstructions to vision, shall not be permitted to exceed a height of three (3) feet within a triangular area formed by the intersection of two street right-of-way lines or a street and railroad right-of-way line and a line connecting two points located on those intersecting right-of-way lines 20 feet from the point where the right-of-way lines intersect; provided, utility poles, street lights, and street signs shall be exempt from this requirement (Figure 6-1).

Figure 6-1 Clear Vision Corner

E. **Setbacks and Yards by Lot Type**.

1. Interior Lots. On interior lots, the minimum front, side, and rear building setbacks shall be met. Each interior lot shall be comprised of a front yard, two (2) side yards, and a rear yard.
2. Corner Lots. On corner lots, the minimum front, side street, side, and rear building setbacks shall be met. Each corner lot shall be comprised of a front yard, a secondary front yard, a side yard, and a rear yard.
3. Through Lots. On through lots, the minimum front building setback shall be met on each street fronting yard, and side setbacks shall be met. Each through lot shall be comprised of a front yard, two (2) side yards, and a rear yard.
4. Multi-Frontage. On multi-frontage lots, the minimum front building setback shall be met on each street fronting yard, and a side setback shall be met. Each multi-frontage lot shall be comprised of a front yard, a secondary front yard, a side yard, and a rear yard.

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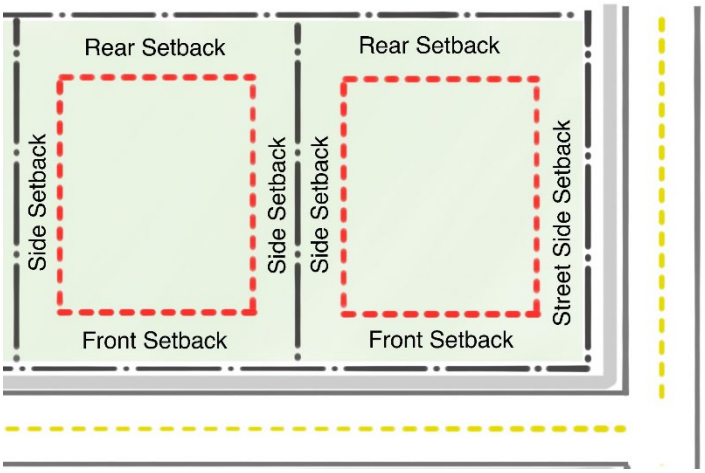

Figure 6-2 Setbacks for Interior and Corner Lots

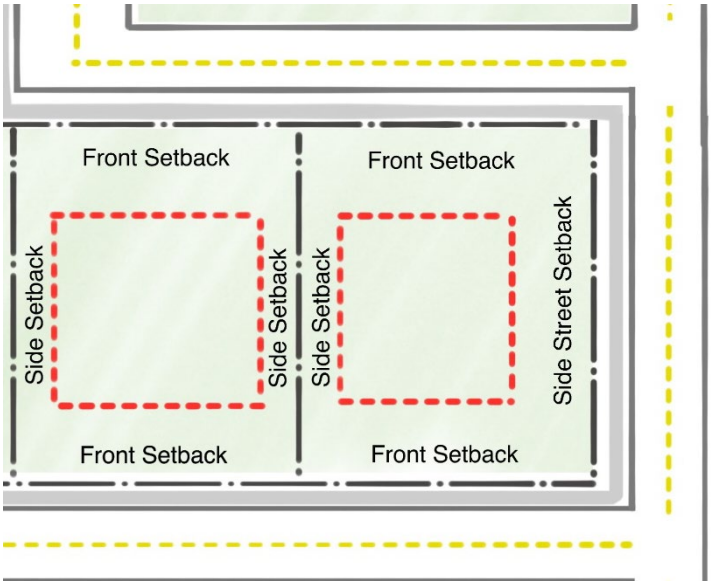

Figure 6-3 Setbacks for Through and Multi-Frontage Lots

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F. **Projections into Required Setbacks**. Certain structures and architectural features may project into the required setbacks, as provided in Table 6.40.

Table 6.40: Encroachments into Required Setbacks [1]

Type of Feature	Allowed Encroachment into a Setback		
	Front Yard	Side Yard	Rear Yard
Accessory structures	See Section 6.20 A		
Accessible ramps, wheelchair lifts and similar structures	Least encroachment necessary to meet state or federal requirements, but no more than 8 ft.; must maintain a 3-foot side yard setback		
Air conditioning units, generators and other mechanical equipment [1]	None	3 ft.	3 ft.
		No more than 5 ft. from the building	
Arbors, trellises and pergolas (attached to principal building)	5 ft.	3 ft.	10 ft.
Awnings and canopies			
Balconies	5 ft.	None	10 ft.
Bay windows	3 ft.	3 ft.	3 ft.
Chimneys	3 ft.	3 ft.	3 ft.
Driveways	N/A	Up to 1 ft. from a side lot line	N/A
Eaves and gutters	2 ft.	2 ft.	2 ft.
Fences and walls	See Section 6.20 C		
Flagpoles	Permitted up to 6 ft. from all lot lines		
Light poles (not including ground-mounted lights)	Permitted up to 6 ft. from all lot lines		
Outdoor fireplaces and pits	None	None	Up to 10 ft. from a rear lot line
Paved patios and similar at-grade structures (not including driveways and sidewalks), un-roofed and unenclosed [1]	10 ft.	Up to 3 ft. from a side lot line	Up to 3 ft. from a rear lot line
Porches, decks and stoops, uncovered and unenclosed[2]	5 ft.	3 ft.	10 ft.
Stairways (not including steps to main floor entry) and below-grade stairwells	5 ft.	3 ft.	10 ft.

[1] Building code may necessitate additional fire protection. Equipment shall not be located within any easement.
[2] Any covered or roofed porch, deck, patio, stoop or similar structure shall be considered part of the principal building and shall comply with the required setbacks applicable to the principal building.

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Table 6.40: Encroachments into Required Setbacks [1]			
Type of Feature	**Allowed Encroachment into a Setback**		
	Front Yard	**Side Yard**	**Rear Yard**
Swing sets and similar play structures (attached)	None	Up to 3 ft. from a side lot line	Up to 3 ft. from a rear lot line
Window wells and egress windows, below grade	3 ft.	3 ft.	3 ft.

Section 6.50 Lots

A. **Required Area or Space**. No lot or lots in common ownership and no yard, court, parking area or other space shall be so divided, altered, or reduced as to make the area or space smaller than the minimum required under this ordinance. If already less than the minimum size required, the area or space shall not be further divided or reduced.

B. **Minimum Lot Frontage**. All lots and parcels shall have frontage on and be accessible from a public or private street. The required minimum frontage shall be equal to the minimum lot width. However, frontage for cul-de-sac lots for single-family and two-family dwellings may be reduced to 40 feet (Figure 6-3).

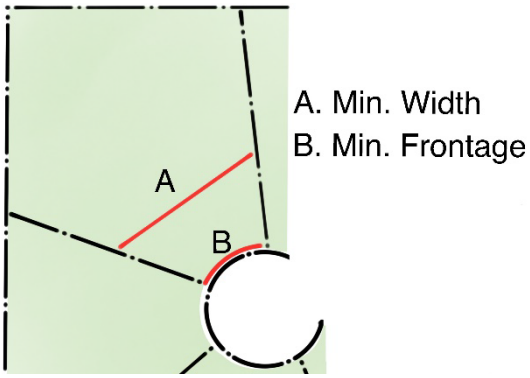

Figure 6-4 Cul-de-Sac Lot Frontage

C. **Lots on Lakes, Rivers, and Streams**. Lots abutting or containing an inland lake, river, or stream shall comply with the following regulations:

1. The lot width on the street side shall not be less than the minimum width required for the zoning district in which the lot is located.
2. The lot width abutting a waterbody shall meet the minimum requirements of the zoning district in which the lot is located, measured at the ordinary high-water mark between side lot lines.
3. Waterfront lots shall be considered through lots with both the waterside and street side considered to be front yards. The front yard on the waterside shall be the area between the ordinary high water mark and the nearest wall of the principal building. This regulation shall not apply to stormwater basins or other man-made water features.
4. Accessory buildings shall be permitted within the waterside front yard but not within the required waterside setback area and shall comply with all applicable requirements of Section 6.20 A.

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Section 6.60 Utilities & Services

A. **Essential Public Services**. The erection, construction, alteration, or maintenance of essential public services shall be permitted in any zoning district and shall be exempt from the application of this ordinance; provided, buildings, parking areas, and other uses or structures accessory to the essential service shall not be exempt and shall conform to all applicable ordinance requirements and procedures. This provision, however, shall not be construed to waive the rights of the City of Port Wentworth to require that specific services be installed underground.

B. **Water and Sanitary Sewer Service**. No structure for human occupancy shall, after the effective date of this ordinance, be erected, altered, or moved upon any lot or premises and used, in whole or in part, for dwelling, business, industrial, institutional, or recreational purposes unless provided with a safe, sanitary and potable water supply and with a safe and effective means of collection, treatment, and disposal of human, domestic, commercial and industrial waste. All such systems shall be designed to preclude infiltration of flood waters into the system and discharges from the system into flood waters. Such installations and facilities shall conform to the minimum requirements for such facilities as established by the State of Georgia, Chatham County, City of Port Wentworth, and other relevant government codes, ordinances, and standards.

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Article 7. Specific Use Requirements

Section 7.10 Intent and Purpose

This article outlines conditions applicable to specific land uses based on the unique operational characteristics that warrant additional regulations to protect public health, safety, and welfare. These requirements apply in addition to all the regulations of the zoning district in which the use is located, as well as all other applicable requirements in this ordinance.

Section 7.20 Accessory Dwelling Unit

A. **General Requirements.**

1. Single-Family. Accessory dwelling units are limited to single-family lots.
2. Number. Only one (1) attached or detached accessory dwelling unit shall be permitted per principal dwelling.
3. Occupancy. The principal dwelling or the accessory dwelling unit shall be owner-occupied.
4. Setbacks. Attached accessory dwelling units shall comply with all setback requirements applicable to the principal dwelling. Detached accessory dwelling units shall comply with all setback requirements applicable to accessory buildings.
5. Appearance. Attached and detached accessory dwellings shall retain a residential appearance consistent with the architectural design and building materials of the principal dwelling, including but not limited to roof material, roof type, siding material, and window type and placement.
6. Area. Accessory dwelling square footage shall not exceed 50 percent of the principal dwelling square footage, or 800 square feet, whichever is less. Square footage shall also not exceed the maximum accessory building square footage per Table 6.20. The minimum area is subject to Building Code compliance.
7. Metering and Mailing Address. The accessory dwelling shall not have a separate meter for public utilities, such as electric and gas service or a separate mailing address.

B. **Specific Requirements for Attached Accessory Dwelling Units.**

1. Attached accessory dwellings may be designed as an independent living area that can be isolated from the principal dwelling space; however, an internal connection to the principal dwelling must be maintained, and the principal and accessory living space must both be accessible through the primary entrance of the dwelling. This requirement does not preclude separate entrances to either living space.
2. An attached accessory dwelling unit located over an attached garage may be served by a single access point separate from the rest of the building.

C. **Specific Requirements for Detached Accessory Dwelling Units.**

1. A lot shall not be divided in a manner that separates a detached accessory dwelling unit and principal dwelling unit onto separate parcels if the division results in a nonconformity.
2. A new detached accessory dwelling unit to be constructed shall not be located closer to a front lot line than the principal dwelling.

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3. In the case of a detached accessory dwelling unit over garage space, such as a carriage house, the first-floor garage space shall not count against the maximum square footage applicable to the accessory dwelling unit.
4. The minimum square footage shall be the minimum necessary to comply with applicable building codes.
5. The height of a detached accessory dwelling unit shall not exceed the height of the principal dwelling. However, the height of a detached accessory dwelling unit over garage space may exceed the height of a single-story principal dwelling by 10 feet.

Section 7.30 Adult Entertainment Establishments

A. **Applicability and Intent.** These standards are intended to regulate adult entertainment establishments businesses, promote the health, safety, morals, and general welfare of the citizens of the City, and establish reasonable and uniform regulations to prevent the deleterious location and concentration of sexually oriented businesses within the City, thereby helping to reduce and eliminate the adverse secondary effects from such sexually oriented businesses. These standards have neither the purpose nor effect of imposing a limitation or restriction on the content of any communicative materials, including sexually oriented materials. Similarly, it is not the intent or effect of these standards to restrict or deny access by adults to sexually oriented materials protected by the First Amendment of the U.S. Constitution or Georgia statute or to deny access by the distributors and exhibitors of sexually oriented entertainment to their intended market. Neither is it the intent or effect of these standards to condone or legitimize the distribution of obscene material.

B. **Licensing and Operations.** Adult Entertainment Establishments shall comply with all applicable City of Port Wentworth licensing and operations requirements.

C. **Location Requirements.**

1. No adult entertainment use shall be located within 2,000 feet of the exterior boundary of any residential zoning district, place of worship, K-12 school, library, day care center, public community center, park, fairground, recreation center, and publicly owned or maintained building opened for use by the general public.
2. No adult entertainment use shall be located within 2,000 feet of any other adult entertainment use, whether such adult entertainment use is within or outside the city boundaries.

D. **Retail Display.** No product for sale or gift, nor any picture or other representation of any product for sale or gift, shall be displayed so that it is visible by a person of normal visual acuity from the nearest adjoining roadway or adjoining property.

E. **Site Lighting.** In addition to the requirements of Article 11, all off-street parking areas shall be illuminated from at least 90 minutes prior to sunset to at least 60 minutes after closing.

Section 7.40 Animal and Pet Services

A. **General Requirements**.

1. Outdoor activity areas shall be screened in accordance with Section 10.70. An outdoor activity area is a location for walking leashed and unleashed dogs, pet relief, leashed and unleashed dog training, dog exercise and play areas, and outdoor dog runs.
2. All kennels shall be operated in conformance with any applicable County and State regulations.

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3. Buildings used as commercial kennels or pet services shall be insulated in such a manner that excessive noise from barking is minimized.
4. Habitual barking, which results in a nuisance to neighboring landowners or residents, is prohibited.

B. **Outdoor Exercise and Play Area Requirements**.

1. Outdoor exercise and play areas are locations outside of enclosed structures that are intended and used for unleashed dog exercise, training, and play.
2. The outer limits of outdoor exercise and play areas shall not be located closer than 100 feet from any adjacent residential zoned property.
3. Outdoor exercise and play areas shall be fenced.

C. **Outdoor Run Requirements for Boarding and Day Care**.

1. Outdoor runs are individually fenced areas connected to buildings that accommodate outdoor access for associated indoor pens or suites.
2. Outdoor runs shall not be located closer than 100 feet from any adjacent residential zoned property.
3. Outdoor runs shall be located in the rear or side yards.
4. Outdoor runs shall be equipped with impervious surfaces suitable for cleaning with high-pressure water. Outdoor runs shall be kept in a clean and sanitary manner to prevent the accumulation of flies, the spread of disease, offensive odor, or dust generation.

Section 7.50 Bed and Breakfast

A. **Principal Residence.** A bed and breakfast use shall only be established in a detached single-family dwelling, which shall also be the principal residence of the owner or manager.

B. **Appearance.** The building shall maintain an exterior appearance that is in character with surrounding residential uses.

C. **Lot Conformance.** A bed and breakfast shall be located on a lot that conforms to non-residential area requirements.

D. **Guest Rooms.** The total number of guest rooms in the establishment shall not exceed six (6).

E. **Term.** The length of stay for a guest or guests shall not exceed 14 consecutive days.

F. **Cooking.** No separate cooking facilities shall be provided.

G. **Food Service.** Meals shall only be served to the operator's family, employees, and overnight guests.

Section 7.60 Campground or Recreational Vehicle Park

A. **Minimum Lot Area.** A minimum of five (5) acres is required to establish the use.

B. **Setbacks.** Buildings shall be at least 100 feet from residential-zoned properties.

C. **Buffer.** The site shall be subject to a buffer type B as noted in Table 10.40 B where abutting residential zoned property.

D. **General Requirements**. All recreational vehicle (RV) sites shall include water and sewer services unless separate restroom facilities are available.

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1. Accessory sheds and buildings are not permitted on individual RV sites.
2. A park attendant must be on duty at the park or available at all times to address the needs of campers, emergencies, and maintenance issues.
3. Common areas and individual sites shall be kept free of litter and debris at all times.
4. Service buildings shall be maintained in a sanitary condition at all times.
5. The operator shall ensure continued maintenance of landscaping and buildings. Common areas shall be mowed and kept free of fallen branches and tall grass and weeds.
6. RV lots shall be provided a concrete, paved, or gravel off-street car parking area of a minimum size to accommodate two vehicles without vehicle encroachment onto internal driveways.
7. Driveways shall be clear for emergency vehicle access at all times. Guest parking shall not obstruct driveways.
8. Dumpsters and trash bins shall be required in a common area. The dumpster shall be emptied frequently to avoid the accumulation of waste and debris.
9. No part of any campground shall be used for any other purpose than for temporary living quarters occupancy of individual recreational vehicle units or tent camping, except for such uses that are required for the direct servicing and well-being of campground guests and for the management and maintenance of the campground.
10. The open discharge of gray water within the park shall be prohibited.

Section 7.70 Commercial Outdoor Recreation, Low-Intensity

A. **Minimum Lot Area.** A minimum of five (5) acres is required to establish the use.

B. **Setbacks.** Buildings shall be at least 100 feet from residential-zoned properties.

C. **Buffer.** The site shall be subject to a buffer type B as noted in Table 10.40 B where abutting residential zoned property.

D. **Parking.** Parking lots shall be at least 100 feet from abutting residential zoned property lines.

E. **Noise.** Outdoor electrified sound amplification is prohibited.

F. **Lighting.** Light levels shall not be detectable along lot lines on a photometric plan (0.0 foot-candles).

G. **Hours of Operation.** Hours of operation are limited to dawn to dusk.

Section 7.80 Community Garden

A. **Drainage**. The site shall be designed and maintained so that water and fertilizer will not drain onto adjacent property.

B. **Sales**. The on-site sale of community garden products is prohibited except when permitted as an approved temporary use.

C. **Noise**. The use of motorized equipment is restricted to hours beginning at 7:00 AM and ending at 9:00 PM.

D. **Waste and Compost**. An on-site trash storage container must be provided and located as close as practicable to the rear lot line or when located on a lot with other uses, the rear side of the community

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garden. Compost bins or piles must also be located in the same location. Trash must be removed from the site at least once a week.

E. **Chickens and Farm Animals**. The keeping of animals is prohibited unless the community garden is located in a zone district that permits animals.

F. **Hours of Operation**. Within a residential zoning district, operating hours for community garden activities are restricted to between 5:00 AM and 11:00 PM daily.

Section 7.90 Day Care Home (Adults and Children)

A. **State Approvals and Regulations**.

1. All licensing and permitting shall be obtained from the State of Georgia.
2. All rules and regulations from the State of Georgia shall be adhered to.

B. **Residency Requirement**. The owner or management of the dwelling shall reside on the premises.

C. **Separation**. A day care home shall not be located within 1,000 feet from any other day care home.

Section 7.100 Drive-Through Service

A. **Access and Circulation.** Site access and circulation shall be designed to minimize traffic conflicts, congestion, and disruption and enhance traffic safety on abutting public and private streets and drives. Access and drive aisles shall be arranged to prevent queued or parked vehicles from encroaching upon a sidewalk, street, intersection, or public right-of- way.

B. **Stacking Spaces.** The City Council may require additional stacking spaces beyond those required by Table 8.40 based on the characteristics of the use and anticipated traffic volumes.

C. **Sound.** Loudspeakers shall be modulated so that any generated sound is not audible beyond property boundaries.

Section 7.110 Farm Markets and Agritourism

A. **Minimum Lot Area.** A minimum of five (5) acres is required to establish the use.

B. **Setbacks.** Buildings shall be at least 100 feet from abutting residential zoned property lines.

C. **Buffer.** The site shall be subject to a buffer type B as noted in Table 10.40 B where abutting residential zoned property.

D. **Parking.** Parking lots shall be at least 100 feet from residential-zoned property.

E. **Lighting.** Light levels shall not be detectable along lot lines on a photometric plan (0.0 foot-candles).

F. **Noise.** Outdoor amplified sound is prohibited.

G. **Hours of Operation.** The hours of operation of annual and seasonal events, as well as permanent uses, shall be set by the City Council. The intent of these restrictions is to ensure the use remains accessory and incidental to the farm use of the property and not a typical commercial use.

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Section 7.120 Golf Course

A. **Minimum Lot Area.** A minimum of 40 acres is required to establish the use.

B. **Setbacks.** Buildings shall be at least 100 feet from residential-zoned property.

C. **Parking.** Parking lots shall be at least 100 feet from residential-zoned property.

Section 7.130 Home Occupations

A. **Major Home Occupation.**

1. Minimum Lot Area. A minimum of five (5) acres is required to establish the use.
2. Location. Major home occupation operations must be conducted entirely within a principal dwelling, attached accessory building, detached accessory building, or combination of these buildings.
3. A maximum of 25 percent of the gross floor area of a dwelling and accessory buildings may be devoted to major home occupation business operations. Up to 25 percent of the floor area of the principal dwelling may be devoted to a major home occupation.
4. There shall be no physical evidence of the major home occupation from other properties or the public right-of-way aside from parking and customer visitation.
5. All equipment and vehicles shall be stored indoors.
6. Retail Sales. Accessory retail sales shall only be allowed if incidental to authorized uses and shall be subject to the parking and visitation requirements of this section. Only items produced on the subject lot shall be sold.
7. Operation and Employees.
    a. Major home occupations shall only be owned and operated by a full-time resident of the dwelling.
    b. Any occupant of the principal dwelling may be employed by the major home occupation.
    c. A maximum of four (4) persons who are not residents of the dwelling may work on-site or may pick up and return work vehicles during any one (1) day.
8. Parking and Visitation.
    a. Visitation of the site by clients, customers, or students shall be by appointment only.
    b. No more than two (2) individual appointments shall be scheduled at any one (1) time unless group activities or classes are approved.
    c. If open to the public for appointments or other approved activities, see Article 8 for parking requirements.

B. **Minor Home Occupation.**

1. Minor home occupations shall only be owned and operated by a full-time resident of the principal dwelling. Non-resident employees may not work on-site.
2. Home occupations must be conducted entirely within the principal dwelling and not within an accessory building.

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3. Up to 25 percent of the floor area of the principal dwelling may be devoted to a home occupation.
4. There shall be no physical evidence of the home occupation from the exterior of the dwelling.
5. No customers or clients shall visit the site.

Section 7.140 Manufactured Home Community

A. **Manufactured Home Spaces.**

1. Each space shall contain a minimum area of 5,000 square feet and shall be at least 40 feet wide.
2. Each space shall abut on a driveway or other access with unobstructed access to a street.

B. **Placement**. Each manufactured home shall be placed upon a space so that:

a. There is a minimum of 15 feet between mobile homes;
b. It is not located within 50 feet of an exterior boundary of the manufactured home community;
c. It is not located within 50 feet of a public right-of-way;
d. It does not obstruct any roadway, walkway, or easement;
e. It is not located within 10 feet of any internal street or drive.

C. **Access.** Internal access drives shall meet all Fire Department requirements for maneuverability.

Section 7.150 Outdoor Display and Sales

A. **Setbacks**. Outdoor display and sales areas shall comply with setbacks applicable to principal buildings.

B. **Maximum Area**. Accessory outdoor display and sales areas as part of a general retail establishment are limited to 20 percent of the principal building's square footage. For businesses where the primary sales area is outdoors, such as landscaping supply, construction supply, nurseries, and similar uses, there is no maximum sales area as long as all other zoning requirements are met.

C. **Surface**. See Outdoor Storage, Section 7.160 B.

Section 7.160 Outdoor Storage

A. **Setbacks.** Outdoor storage areas shall be subject to the setbacks for principal buildings.

B. **Surface.** Outdoor storage areas shall be asphalt, concrete, gravel, or crushed stone. Gravel and crushed stone surfaces are subject to the following requirements:

1. Shall be properly drained in accordance with the City of Port Wentworth Stormwater Ordinance and Comprehensive Design Manual.
2. Dust generation shall be minimized.
3. The surface will be maintained and free of weeds, grass, and overgrown vegetation at all times.

C. **Screening.** Outdoor storage areas shall be screened from all sides. See Section 10.70 for screening requirements.

D. **Hazardous Materials.** No flammable liquids, solvents, cleaners, and other hazardous substances capable of contaminating groundwater shall be stored outdoors.

E. **Containers.** Containers shall not be stacked more than two (2) high.

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Section 7.170 Outdoor Theater

A. **Access.** Outdoor theaters shall have direct access to a state road.

B. **Setbacks.** Buildings and screens shall be at least 100 feet from residential-zoned property.

C. **Buffer.** The site shall be subject to a buffer type B as noted in Table 10.40 B where abutting residential zoned property.

D. **Circulation.** There shall be sufficient stacking and queuing space for vehicles entering the facility to ensure that there will be no resulting obstructions within the public right-of-way.

E. **Design.** The site shall be designed to prevent the movie screens from being viewed from residential areas or adjacent major thoroughfares.

Section 7.180 Personal Care Home

A. **State Approvals and Regulations**.

1. All licensing and permitting shall be obtained from the State of Georgia.

2. All rules and regulations from the State of Georgia shall be adhered to.

B. **Residency Requirement**. The owner or management of the dwelling shall reside on the premises.

C. **Separation**. A personal care home shall not be located within 1,000 feet from any other personal care home.

Section 7.190 Salvage or Impound Operation

A. **Surface.** See Outdoor Storage, Section 7.160 B.

B. **Screening.** Outdoor storage areas for damaged or disabled vehicles shall be screened from all sides. See Section 10.70 for screening requirements.

C. **Parking.** Parking of operable vehicles shall comply with the requirements of Article 8.

D. **Hazardous Materials.** All flammable liquids, solvents, cleaners, and other hazardous substances capable of contaminating groundwater shall be stored within a building, and secondary containment measures shall be employed to prevent ground contact of any spilled materials.

Section 7.200 Self-Storage

A. **Building Separation.** Storage buildings shall be separated by drive aisles no less than 24 feet in width.

B. **Outdoor Storage.**

1. Areas provided for outdoor storage of automobiles, boats, recreational vehicles, trailers, and similar personal property shall be designated on the site plan.

2. Outdoor storage shall not be located within any required setback area.

C. **Surface.** See Outdoor Storage, Section 7.160 B

D. **Screening.** Outdoor storage areas shall be screened from all sides. See Section 10.70 for screening requirements.

E. **Use Restriction.** Use of any storage unit for the conduct of manufacturing, repair, service, sales,

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fabrication, assembly, or any other business purpose other than the storage of goods or merchandise is prohibited.

F. **Caretaker's Dwelling.** A single one-bedroom dwelling unit is permitted as an on-site residence for the facility caretaker. This dwelling unit shall be physically attached to the building, which contains the leasing and management office for the facility.

Section 7.210 Solar Energy

A. **Applicability.** This section does not apply to rooftop solar panels or smaller-scale solar energy collectors mounted on fences, poles, or on the ground with collector surface areas less than five (5) square feet and less than six (6) feet above the ground.

B. **Solar Energy, Accessory Ground-Mounted.**

1. Applications and Review.

   a. Accessory ground-mounted solar energy systems shall be approved administratively by the Zoning Administrator and the Building Official.

   b. Accessory ground-mounted solar energy systems shall be approved administratively by the Zoning Administrator and the Building Official.

2. Requirements.

   a. Glare and Reflection. The exterior surfaces of solar energy collectors shall be substantially non-reflective of light. A system shall not be installed or located in a manner that directs glare onto neighboring dwellings or adjacent streets.

   b. Location. Systems shall be placed in rear yards unless existing vegetation and other site constraints make rear yard placement unfeasible. The Zoning Administrator shall refer side and front yard placement requests to the Planning Commission in cases where there is a higher likelihood of visual impact to nearby residents.

   c. Installation. Systems shall be installed, maintained, and used only in accordance with the manufacturer's directions. Upon request, a copy shall be submitted to the City before installation.

   d. Wires. All wires shall be buried underground. Overhead wires are prohibited.

   e. Setbacks. Accessory ground-mounted solar energy systems shall be subject to the setbacks required for principal buildings. Measurement shall be taken from the outermost edge of the support structure or solar panel, whichever is closer to the property line, to the applicable property line.

   f. Maximum Number. One (1) accessory non-commercial ground-mounted solar energy system and its associated support structure are permitted per lot or parcel. However, in the case of a uniquely shaped parcel or lot or extraordinary conditions of the land, a single system with multiple structures and panels may be approved as long as the structures are clustered in close proximity.

   g. Maximum Size. Systems shall be designed and sized to produce no more than 125 percent of the annual kWh usage or 1,500 square feet, whichever is less. Proposed system power generation specifications and historical annual usage data shall be provided by the applicant for review.

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h. Maximum Height. The maximum height of a system at its highest point, or at full tilt, shall be 16 feet. Height is measured from the natural grade below the system to the highest point of the panels or any part of the support structure, whichever is greater.

i. Abandonment. Systems that cease to produce energy continuously for 12 months will be considered abandoned unless the landowner provides a plan to reinstate the operation of the system within six (6) months. If the system remains non-functional after six (6) months, it shall be determined as abandoned.

j. Removal. The landowner shall remove the support structure, panels, and all equipment and restore the site to its condition prior to installation of the system within one (1) year of abandonment.

C. **Commercial Solar Energy System.**

1. Applications and Review.

a. Commercial solar energy systems are subject to site plan and conditional land use review.

b. In addition to all other required application contents, equipment, and unit renderings or plans shall be submitted for review. Multiple participating commercial solar energy parcels operating as one commercial solar energy system may be requested under a single special land use permit application. However, each participating commercial solar energy parcel is subject to special land use and site plan application fees.

2. Principal or Accessory Use. Commercial solar energy systems may be established as principal or accessory uses.

3. Requirements.

a. Lot Coverage. Solar energy collectors and panels shall not count against the maximum lot coverage required by the Zoning Ordinance.

b. Glare and Reflection. The exterior surfaces of solar energy collectors shall be substantially non-reflective of light. A system shall not be installed or located in a manner that directs considerable glare onto neighboring dwellings or adjacent streets. The applicant shall provide a glare analysis to demonstrate compliance with this standard.

c. Minimum Setbacks. Commercial solar energy systems and all equipment, aside from wires, shall be set back a minimum of 100 feet from property lines and public right-of-way. Commercial solar energy systems shall not be subject to property line setbacks between participating commercial solar energy parcels.

d. Maximum Height. The maximum height of a system at its highest point, or at full tilt, shall be 16 feet. Height is measured from the natural grade below the system to the highest point of the panels or any part of the support structure, whichever is greater.

e. Minimum Acreage. The minimum acreage for a commercial solar energy system on a single parcel is 40 acres. For commercial solar energy systems spanning multiple contiguous participating commercial solar energy parcels, the minimum combined acreage is 40 acres.

f. Screening. Views of collectors and equipment from residential properties or public right-of-way may be required to be screened. Screening methods may include the use of fences, screening walls, landscaping, or preservation of existing vegetation that will blend the facility into the natural setting and existing environment.

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g. Abandonment. Systems that cease to produce energy continuously for 12 months will be considered abandoned by the City unless the responsible party provides a plan to reinstate the operation before the end of the 12-month period. If a plan is provided, a 12-month extension for reinstatement may be granted by the City Council.

h. Removal. The responsible party shall remove all equipment and structures and restore the site to its condition prior to the installation of the system within one (1) year of abandonment.

i. Decommissioning. A decommissioning plan signed by the responsible party and the property owner (if different) addressing the following shall be submitted prior to approval:

   i. Defined conditions upon which decommissioning will be initiated (i.e. end of land lease, no power production for 12 months, abandonment, etc.).

   ii. Removal of all non-utility owned equipment, conduit, structures, fencing, roads, solar panels, and foundations.

   iii. Restoration of property to its original condition or a condition that is stabilized and graded to be consistent with the character of the area.

   iv. The timeframe for completion of decommissioning activities.

   v. Description of any agreement (e.g. lease) with the property owner regarding decommissioning, if applicable.

   vi. The entity or individual responsible for decommissioning.

   vii. The financial plan for decommissioning activities and site restoration.

   viii. Protocol for updating the decommissioning plan.

j. A performance guarantee may be required to be posted in the form of a bond, letter of credit, cash, or another form acceptable to the City to ensure removal upon abandonment. As a part of the decommissioning plan, the responsible party shall provide at least two (2) cost estimates from qualified contractors for full removal of the equipment, foundations, and structures associated with the facility. These amounts will assist the City when setting the performance guarantee amount. The performance guarantee shall be valid throughout the lifetime of the facility. Bonds and letters of credit shall be extended on a regular basis with expiration dates never less than two (2) years from the annual anniversary of special land use approval.

k. The property owner and responsible shall record the decommissioning plan with the office of the Clerk of Superior Court of Chatham County.

Section 7.220 Stables, Commercial

A. **Minimum Lot Area.** A minimum of five (5) acres is required to establish the use.

B. **Setbacks.** Buildings shall be at least 100 feet from residential-zoned property.

C. **Buffer.** The site shall be subject to a buffer type B as noted in Table 10.40 B where abutting residential zoned property.

D. **Parking.** Parking lots shall be at least 100 feet from abutting residential zoned property lines.

E. **Lighting.** Light levels shall not be detectable along lot lines on a photometric plan (0.0 foot-candles).

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Section 7.230 Temporary Offices and Land Uses

A. **Temporary Construction Office.** A temporary office building or yard for construction materials and/or equipment is permitted in any zone without a permit for such period of time as it is both incidental and necessary to construction at the site.

B. **Temporary Sales Office.** A temporary office is permitted in any zone without a permit for such period of time as it is both incidental and necessary for the sale or rental of real property in a new subdivision or housing project.

C. **Temporary Sales.**

1. Permitting. Temporary outdoor parking lot sales are subject to review and approval by the Zoning Administrator in accordance with this section.
2. Application Requirements. Applications shall include a site plan illustrating structures, tents, off-street parking, and lighting.
3. Sales and events shall be permitted a maximum of twice during a calendar year for a maximum of 30 days total per lot or parcel.
4. The sales area shall not extend into the clear vision area at any street intersection.
5. No more than 20 percent of the available parking spaces may be utilized for temporary use.
6. All temporary structures shall be erected in a safe manner in accordance with any applicable Building Codes, ordinances, and standards.

D. **Mobile Food Units.**

1. Location. Mobile food units may be permitted in the C-1, C-2, C-3, and I-1 zoning districts.
2. Location. Mobile food units shall be located on a privately-owned property where an existing permanent business operates in a building with a certificate of occupancy. A maximum of one (1) mobile food unit shall be allowed on a lot or parcel at any time.
3. Visibility. Mobile food units shall not obscure traffic sight visibility or operate in driveways or fire lanes.
4. Parking. Mobile food units may operate in parking spaces if the required parking for the property remains in compliance with the parking requirements of this ordinance.
5. Drive-Through. Mobile food units shall not provide a drive-through service of any kind.
6. Setbacks. Mobile food unit parking shall be set back at least 20 feet from public right-of-way and 50 feet from all other lot lines.
7. Licensing. Licenses shall be secured from the Georgia Department of Public Health.

E. **Garage and Yard Sales.**

1. Permitting. Permits are not required.
2. Number. Yard and garage sales are permitted for durations of four (4) days, no more than four (4) times a calendar year.

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Section 7.240 Vehicle Repair

A. **Overhead Doors**. Overhead doors shall not residential-zoned property. The City Council may modify this requirement upon a determination that there is no reasonable alternative and the visual impact will be diminished through use of building materials, architectural features, and landscaping.

B. **Indoor Work**. All maintenance and repair work shall be conducted completely within an enclosed building.

C. **Outdoor Storage**. There shall be no outdoor storage or display of vehicle components and parts, materials, commodities for sale, supplies, or equipment, unless allowable within the applicable zoning district and in accordance with Section 7.160.

D. **Parking**. Parking of operable vehicles awaiting service or pickup shall comply with the requirements of Article 8.

E. **Requirements for Major Vehicle Repair**.

1. Outdoor storage areas for damaged or disabled vehicles shall be screened from all sides. See Section 10.70 for screening requirements.

2. Buildings shall be at least 100 feet from residential-zoned properties.

Section 7.250 Vehicle Service Station

A. **Access and Circulation.** All fueling pumps shall be arranged to prevent queued or parked vehicles waiting to be serviced from encroaching upon a sidewalk, street, intersection, or public right-of- way.

B. **Vehicle Repair.** Repair work shall be limited to minor vehicle repair unless major vehicle repair is approved for the site.

C. **Surface.** All areas designated for vehicles shall be concrete or asphalt. Notwithstanding any other allowance in this ordinance, alternative surfaces are not permitted.

D. **Canopy.** A permanent canopy that is open on all sides shall be located over all fuel pump islands. Canopies shall meet setback requirements for principal buildings.

E. **Hazardous Materials.** All flammable liquids, solvents, cleaners, and other hazardous substances capable of contaminating groundwater shall be stored within a building, and secondary containment measures shall be employed to prevent ground contact of any spilled materials.

Section 7.260 Vehicle Wash

A. **Indoor Washing**. All washing activities must occur inside a building.

B. **Access and Circulation.** Site access and circulation shall be designed to minimize traffic conflicts, congestion, and disruption and enhance traffic safety on abutting public and private streets and drives. Access and drive aisles shall be arranged to prevent queued or parked vehicles from encroaching upon a sidewalk, street, intersection, or public right-of-way. Direct access to the wash building shall not be from an adjoining street, but rather from within the property.

C. **Bypass Lane**. For automated drive-through wash facilities, a bypass lane is required that allows bypassing waiting vehicles.

D. **Overhead Doors**. Overhead doors shall not residential-zoned property. The City Council may modify this requirement upon a determination that there is no reasonable alternative and that the visual

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impact will be diminished through the use of building materials, architectural features, and landscaping.

E. **Setbacks**. A vehicle wash facility building and any accessory buildings and uses, including vacuums, shall be located at least 100 feet from residential-zoned property.

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Article 8. Parking, Loading, and Traffic

Section 8.10 Intent and Purpose

The purpose of this article is to prescribe regulations for off-street parking of motor vehicles in residential and non-residential zoning districts; to ensure by the provision of these regulations that adequate parking and access are provided in a safe and convenient manner; and to afford reasonable protection to adjacent land uses from light, noise, air/water pollution and other effects of parking lot proximity.

Section 8.20 General Requirements and Applicability

A. **Applicability of Parking Requirements**. For all buildings and uses established after the effective date of this ordinance, off-street parking shall be provided as required by this article. In addition, the following shall also apply:

1. Whenever use of a building or lot is changed to another classification of use, off-street parking facilities shall be provided, as required by this article for that use.
2. If the intensity of use of any building or lot is increased, through the addition of floor area, increase in seating capacity, or other means, additional off-street parking shall be provided, as required by this article.
3. Off-street parking facilities in existence on the effective date of this ordinance shall not be reduced below the requirements of this article, nor shall nonconforming parking facilities that exist as of the effective date of this ordinance be further reduced or made more nonconforming.
4. An area designated as required off-street parking shall not be changed to another use unless equal facilities are provided elsewhere in accordance with the provisions of this article.

B. **Location**. Off-street parking facilities required for all uses other than single and two-family dwellings shall be located on the lot or within 400 feet of the building(s) or use they are intended to serve, as measured from the nearest point of the parking facility to the nearest public entry of the building(s) or use served. Off-street parking facilities required for single-and two-family dwellings shall be located on the same lot or parcel as the dwelling they are intended to serve, and shall consist of a driveway, parking strip, parking apron, and, if applicable, garage.

C. **Maximum Allowed Parking**. In order to minimize excessive areas of pavement that detract from aesthetics, contribute to high rates of stormwater runoff, and generate reflective heat, the minimum parking space requirements of this section shall not be exceeded by more than 10 percent unless approved by the City Council, as part of concept plan review, or if the parking spaces are located within a multi-level parking structure. In approving additional parking space, the review authority shall determine that the parking is necessary, based on documented evidence, to accommodate the use on a typical day. Further, all additional parking spaces exceeding 10 percent over the minimum requirement shall be located on permeable surfaces.

D. **On-Street Parking**. Where on-street parking is available within 400 feet of the boundary of a lot or parcel, a portion of the off-street parking requirement may be waived by the City Council, in its consideration of a concept site development plan, upon determining that one or more of the following conditions is applicable (see Section 11.40 B):

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1. A number of the on-street spaces are currently routinely available and can reasonably be expected to be available to the use for which the waiver is requested;
2. The nature of the proposed use is such that its peak demand occurs at times when the on-street parking is not likely to be used; or
3. The on-street parking would not be the primary parking area for the use and may be considered as a temporary option in support of deferred parking, as provided in Section 8.50 B.

E. **Maintenance**. All parking areas shall be maintained free of trash and debris. Surface, curbing, light fixtures, and signage shall be maintained in good condition.

F. **Limitations on Use of Parking Lots.**

1. Off-street parking areas are intended only for temporary vehicle parking. Except when land is used as storage space in connection with the business of a vehicle repair (see Section 7.240) or salvage or impound operation (see Section 7.190), the use of parking areas or open land is not permitted for the storage or parking of wrecked or junked cars, or for creating a junkyard or nuisance.
2. Loading spaces, as required in Section 8.90, and parking spaces, as required in Section 8.40, shall be considered separate and distinct requirements and shall be provided as individual components on the site. In no case shall one component be construed as meeting the requirements of the other.
3. Parking lots and loading areas shall not be used for the long-term storage of trucks, trailers, or containers, except where such outdoor storage is specifically permitted in the zoning district and has been approved in accordance with this ordinance. Overnight parking or storage of commercial vehicles or containers shall be prohibited except for uses and locations approved for vehicle or container storage. This shall not be construed to prohibit the parking overnight of commercial fleet vehicles or the short-term parking of trailers in loading bays or staging areas related to commercial or industrial uses.
4. It shall be unlawful to use a parking lot or open area to store or park any vehicle for the purpose of displaying vehicles for sale except in an approved vehicle sales dealership.

Section 8.30 Parking Lot Design and Dimensional Requirements

A. **Location and Setbacks**. Off-street parking lots shall meet the setback requirements applicable to parking, as may be specified in the zoning district or which may be specified for individual uses.

B. **Parking Construction and Development**. The construction of any parking lot shall require approval of a site development plan in accordance with Article 13. Construction shall be completed and approved by the Zoning Administrator before a certificate of occupancy is issued, and the parking lot is used.

1. Pavement. All parking lots and vehicle, container, and equipment storage areas shall be paved with asphalt or concrete and shall be graded and drained so as to dispose of surface water that might accumulate. Alternative paving materials, such as permeable/grass pavers, stone, or asphalt millings, may be approved for all or a portion of the parking areas, based upon credible evidence of the durability and appearance of the proposed materials. For storage areas, a substitute for hard-surfaced pavement may be approved by the City Council in conjunction with conceptual site development plan review upon a determination that there are no adverse effects on adjoining properties.

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2. Drainage. Surface water from parking areas shall be managed in accordance with the City Engineering standards. The City Engineer shall determine the appropriate detention or retention treatment.

3. Dimensions. Parking space and aisle dimensions shall meet the following requirements and as specified in Table 8.30.

   a. Angled parking between these ranges shall be to the nearest degree.

   b. Space length may be reduced by up to two (2) feet if an unobstructed overhang, such as a landscaped area or sidewalk, is provided. A sidewalk shall have a minimum width of seven (7) feet where abutting a parking space. There shall be a minimum distance of seven (7) feet between the parking lot curb and the building. Where curbing does not exist, bumper blocks shall be provided to protect pedestrian space adjacent to the building.

   c. All parking lots shall be striped and maintained showing individual parking bays, in accordance with the following dimensions; provided, if alternative materials are used wheel stops shall be installed to define the spaces:

Table 8.30: Dimensional Requirements (ft.)

Parking Pattern	Parking Space		Maneuvering Aisle Width	
	Width	Length	One-way	Two-way
0°(parallel)	8	22	11	22
45°	9	18	11	22
60°	9	20	11	22
75° to 90°	9	20	12	22

4. Stacking Spaces. Waiting/stacking spaces for drive-through uses (such as banks, restaurants, car washes, pharmacies, dry cleaners, and oil change establishments) shall be at least 24 feet long and 10 feet wide. Stacking spaces shall not block required off-street parking spaces. Where the drive-through waiting lane provides for a single lane for five (5) or more vehicles, an escape/by-pass lane shall be provided to allow vehicles to exit the waiting lane.

5. Ingress and Egress. Adequate vehicular ingress and egress to the parking area shall be provided by means of clearly limited and defined drives. Parking lots shall provide interior access and circulation aisles for all parking spaces. The use of streets for maneuvering into or out of off-street parking spaces shall be prohibited.

6. Access Through Residential Districts. Ingress and egress to a parking lot in a non-residential zoning district shall not be through a residential district, except in instances where access is provided by means of an alley that forms the boundary between a residential and non-residential district or if specifically authorized by the City Council in conjunction with conceptual site development plan review.

7. Curbing. A six (6) inch concrete curb or approved alternative shall be provided around all sides of any parking lot of 10 or more spaces to protect landscaped areas, sidewalks, buildings, or adjacent property from vehicles that might otherwise extend beyond the edge of the parking lot. Curb openings are allowed for stormwater drainage, as recommended by the City Engineer. Plantings shall be set back two (2) feet from curbs to allow for bumper overhang. This curbing requirement

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may be modified, as recommended by the City Engineer, where stormwater runoff is intended to flow across the parking area or where a pervious border is designed.

8. Landscaping. Off-street parking areas shall be landscaped and/or screened in accordance with the requirements of Article 10. The use of rain gardens and other low-impact design solutions to minimize the impact of stormwater runoff is encouraged.

9. Lighting. Parking lot lighting shall conform to the requirements of Article 9.

10. Fire Lanes. Fire lanes shall be designated on the site and posted with signage prior to occupancy. Vehicle circulation shall meet turning radius requirements set by the fire department.

11. Crosswalks. Pedestrian pathways and crosswalks in parking areas shall be distinguished from concrete and asphalt driving surfaces through the use of durable, low maintenance, striping or surface materials such as pavers, bricks, or scored, stamped, or colored concrete to enhance pedestrian safety and comfort as well as the attractiveness of the parking area.

E. **Barrier Free Parking in Parking Lots**. Within each parking lot, signed and marked barrier free spaces shall be provided at a convenient location, in accordance with the applicable requirements of the Americans with Disabilities Act of 1990 (ADA). Barrier free spaces shall be located as close as possible to building entrances. Where a curb exists between a parking lot surface and a sidewalk entrance, an inclined approach or curb cut with a gradient of not more than a 1:12 slope and a width of a minimum four (4) feet shall be provided for wheelchair access.

F. **Single-Family Residential Parking**. Within any single-family residential zoning district, vehicles shall be parked only on the designated driveway area that provides access to a garage or lot from the abutting street. Parking areas shall not exceed 30 feet in width or half the lot width, whichever is less. The parking or storage of abandoned or inoperable vehicles, machinery, and recreational vehicles shall not be permitted except as specifically provided by Section 8.70.

Section 8.40 Required Off-Street Parking

A. **Minimum Number.** The minimum number of required off-street parking spaces shall be provided and maintained on the premises or as otherwise allowed by this article in accordance with the applicable requirements of Table 8.40. As a condition of site development plan approval, a performance guarantee, in accordance with the provisions of Section 12.70, may be required to be posted.

B. **Fractions.** When units or measurements determining the number of required parking spaces result in a fraction over one-half (½), a full parking space shall be required.

C. **Uses Not Mentioned.** In the case of a use not specifically mentioned, the requirement for off-street parking facilities for a specified use that is most similar, as determined by the Zoning Administrator, shall apply.

D. **Benches and Pews.** Each 24 inches of bench, pew, or similar seating facilities shall be counted as one (1) seat, except if specifications and plans filed in conjunction with a building permit application specify a maximum seating capacity, that number may be used as the basis for required parking spaces.

E. **Occupancy.** Where parking requirements are based upon maximum seating or occupancy capacity, the capacity shall be as determined by the City building and fire codes.

F. **Usable Floor Area.** Unless otherwise indicated, floor area shall be usable floor area (UFA).

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Table 8.40: Parking Requirements by Use	
Use	**Number of Parking Spaces**
Accessory Uses	
Accessory dwellings	1 space per dwelling unit
Mailbox clusters serving residential subdivisions or other concentrated developments	A turn-out/off-set area shall be provided adjacent to the mailbox cluster of sufficient dimension (minimum 66 feet long by 7 feet wide) to accommodate three (3) standing vehicles
Residential subdivision amenities	1 per 10 persons allowed within the maximum capacity as established by the City fire and building codes
Accommodations, Hospitality, and Entertainment	
Banquet hall or meeting hall	1 per 3 persons allowed within the maximum occupancy load as established by the City fire and building codes
Bed and breakfast	2 for the owner/operator and 1 per leasable room
Commercial indoor recreation facility	1 per 3 persons allowed within the maximum occupancy load as established by City fire and building codes, plus 1 per employee
Commercial indoor recreation facility, billiard parlors	1 per 3 persons allowed within the maximum occupancy load as established by City building and fire codes or 2 per table, whichever is greater
Commercial indoor recreation facility, bowling alleys	4 per bowling lane, plus additional for accessory uses such as bars or restaurants
Commercial outdoor recreation facility, stadium, sports arenas, sports fields (ball diamonds, soccer fields, etc.) or similar place of outdoor assembly	1 per 3 seats or 3 per 6 feet of bench, plus 1 per employee. For fields without spectator seating, there shall be a minimum of 30 spaces per field.
Golf course, miniature or "par-3" courses	2 per 1 hole, plus 1 per employee
Golf course, public (except miniature or "par-3")	4 per golf hole, plus additional for any bar, restaurant, banquet facility, meeting room, or similar use
Hotel or motel	1 per guest unit. In addition, spaces required for ancillary uses such as lounges, restaurants, meeting rooms, or places of assembly shall be provided and determined on the basis of specific requirements for each individual use
Restaurant, standard sit-down restaurants with or without liquor license	1 per 75 sq. ft. of UFA
Restaurant, carry-out with no or limited seating for eating on premises	6 per service or counter station, plus 1 per employee
Restaurant with drive-through	1 per 75 sq. ft. UFA, plus 8 stacking spaces per food pickup window
Taverns and nightclubs	1 per 50 sq. ft. of UFA

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Table 8.40: Parking Requirements by Use	
Use	**Number of Parking Spaces**
Civic and Institutional	
Community-oriented cultural facilities, public libraries, and museums	1 per 400 sq. ft. of UFA, plus requirements for auditoriums, classrooms, or similar assembly rooms
General places of assembly	1 space per 4 seats or 1 space per 4 persons allowed based on maximum capacity in the main place of assembly, as established by the City fire and building codes
Government facility	1 per 300 sq. ft. of UFA plus requirements for auditoriums, meeting halls, or similar assembly rooms
Government facility, post office	1 per 200 sq. ft. of UFA for customer parking, plus 1 per employee and additional space for delivery vehicles
Place of worship and customary related uses	1 per 8 seats in the main unit of worship, plus spaces required for each accessory use, such as a school
School, college, or university, specialized training, or truck driving	1 per classroom plus 1 per 3 students based on the maximum number of students attending classes at any one time
School, high school, and performing and fine arts schools	1 per teacher, employee, and administrator, in addition to the requirements for places of assembly such as auditorium, gymnasium, or stadium
School, pre-k to 8	1 per teacher, employee, and administrator, in addition to the requirements for places of assembly such as auditorium, gymnasium, or stadium
Industrial, Infrastructure, and Transportation	
General industrial establishments, including manufacturing, research and testing laboratories, bottling works, printing, plumbing, or electrical work-shops	1 per employee computed on the basis of the greatest number of persons employed at any one time during the day or night; or 1 per 550 feet of GFA, whichever is greater
Self-storage	Unobstructed parking area equal to 1 space per 20 door openings, plus parking for uses on the site such as truck rental
Truck terminals	1 per employee, plus 2 truck spaces of 10 by 70 feet per truck berth or docking space
Warehouses and storage buildings	1 per employee computed on the basis of the greatest number of persons employed at any one time during the day or night; or 1 per 5,000 sq. ft. of GFA, whichever is greater.
Offices and Services	
Animal and pet services	1 per 400 sq. ft. of GFA, but no less than 4 spaces
Animal clinic	1 per 200 sq. ft. of UFA
Child day care centers, nursery schools, and day nurseries; adult day care centers	1 space per 2 employees. Sufficient area shall be designated for drop-off of children or adults in a safe manner that will not result in traffic disruptions
Contractor	1 per business vehicle, plus 1 per 1,000 sq. ft. GFA
Funeral home or mortuary	1 per 50 sq. ft. of assembly room or parlor floor space

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Table 8.40: Parking Requirements by Use		
Use		**Number of Parking Spaces**
General offices and services, banks and other financial institutions		1 per 200 sq. ft. of UFA for the public. Drive-up windows/drive-up ATMs shall be provided with 3 stacking spaces per window or drive-up ATM
General offices and services, business, professional and general offices		1 per 300 sq. ft. of UFA, but no less than 5 spaces
General offices and services, dry cleaners		1 per 500 sq. ft. of UFA
General offices and services, laundromat		1 per washer-dryer pair, plus 1 space per employee
General offices and services, medical and dental		1 per 200 sq. ft. of UFA
General offices and services, personal services, beauty parlors, or barber shops		2 parking spaces per chair/station
Hospitals		1 per 2 beds, plus 1 per employee on the largest shift.
Vehicle service station		1 per employee, plus additional parking required for other uses within vehicle service station, such as the retail floor area, restaurants, or vehicle repair stalls. Each automobile fueling position may count as one-quarter (1/4) of a required space for other uses.
Vehicle repair, major or minor		2 per service stall, plus 1 per employee
Vehicle repair, quick oil change		2 stacking spaces per service stall, rack, or pit plus 1 per employee
Vehicle wash, self-service		2 spaces plus 2 stacking spaces per washing stall
Vehicle wash, full service		2 spaces, plus 1 per employee. 15 stacking spaces per washing stall or line, plus a minimum 30-foot-long drying lane to prevent water from collecting on street.
Residential Group Living		
Group homes		1 per 4 occupants
Nursing and assisted living		1 per 4 beds or occupants and 1 space per staff member or employee on the largest shift
Senior apartments and senior independent living		.75 spaces per dwelling unit. Should units revert to general occupancy, the requirements for multiple-family dwellings shall apply
Residential Household Living		
Multiple-family residential dwellings and attached single-family dwellings	Studio	1.25 spaces per dwelling unit
	1-bedroom	1.5 spaces per dwelling unit
	2-bedrooms	1.75 spaces per dwelling unit
	3 or more bedrooms	2 spaces per dwelling unit

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Table 8.40: Parking Requirements by Use		
Use		**Number of Parking Spaces**
Single-family detached and two-family dwellings		2 spaces per dwelling unit
Retail and Other Sales and Rental		
Retail, convenience store		1 per 200 sq. ft. of UFA
Retail, furniture and appliance, household equipment, show-room of a plumber, decorator, electrician, hardware, wholesale and repair shop, or other similar uses		1 per 800 sq. ft. of net UFA plus 1 additional space per employee
Retail, general, except as otherwise specified herein		1 per 250 sq. ft. of UFA
Retail, grocery store/supermarket		1 per 200 sq. ft. of UFA
Retail, home improvement centers		1 per 400 sq. ft. of UFA
Retail, open air businesses, except as otherwise specified herein		1 per 500 sq. ft. of lot area for retail sales, uses, and services
Retail, multi-tenant shopping centers	with 75,000 square feet or less of retail	4 per 1,000 sq. ft. of retail UFA
	with over 75,000 square feet of retail	4.5 per 1,000 sq. ft. of retail UFA
	with restaurants	If more than 20% of the shopping center's floor area is to be occupied by restaurants or entertainment uses, parking requirements for these uses shall be calculated separately. Where the amount of restaurant space is unknown, it shall be assumed to be 20%.
Vehicle and equipment sales and rental		1 per 300 sq. ft. of show room floor space, plus 1 per automobile service stall, plus 1 per employee

Section 8.50 Reduction and Deferment

A. **Modification of Parking Requirements**. The City Council, during concept plan review, may reduce the parking space requirements of this article for any use based upon a finding that one or more of the following conditions shall be met:

1. Other forms of travel (such as transit, bicycle, or pedestrian) are available and likely to be used. In particular, the site design will incorporate both bicycle parking facilities and pedestrian connections.

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2. Shared parking is available to multiple uses where there will be a high proportion of multipurpose visits or where uses have peak parking demands during differing times of the day or days of the week and meeting the following requirements:

   a. Pedestrian connections shall be maintained between the uses.

   b. Unless the multiple uses are all within a unified business center, office park, or industrial park all under the same ownership, shared parking agreements shall be filed by the Zoning Administrator with the City Clerk after approval.

3. Available municipal off-street or on-street spaces are located within 400 feet of the subject property.

4. Expectation of walk-in trade is reasonable due to sidewalk connections to adjacent residential neighborhoods or employment centers. To allow for a parking space reduction, the site design shall incorporate pedestrian connections to the site and on-site pedestrian circulation, providing safe and convenient access to the building entrance.

5. Where the applicant has provided a parking study conducted by a qualified transportation planner or transportation engineer, demonstrating that another standard would be more appropriate based on the actual number of employees, expected level of customer traffic, or actual counts at a similar establishment.

6. A parking study may be required, at the sole discretion of the City Council, to document that any one or more of the criteria 1 through 4 above would be met.

B. **Deferred Parking**.

1. Where a reduction in the number of parking spaces is not warranted, but an applicant demonstrates that the parking requirements for a specific proposed use would be excessive, the City Council may, at the concept plan review stage, defer a portion of the required parking. A site development plan shall designate areas of the site for future construction of the required parking spaces, meeting the design and dimensional requirements of this article. Any area so designated shall be maintained in a landscaped appearance and not occupy required buffers, street yard greenways, or parking lot setbacks, or be used for any other purpose.

2. The deferred parking shall meet the requirements of this article if constructed. Construction of the additional required parking spaces within the deferred parking area may be initiated by the owner or required by the City based on parking needs or observation and shall require approval of an amended site plan which may be approved by the Zoning Administrator.

C. **Temporary Parking**. It is recognized that special events or situations may occur infrequently which would result in a temporary reduction in the availability of required parking spaces or create a need for temporary off-site parking. Such events may include but are not limited to festivals or fairs, church/school car washes, holiday activities, or concerts. In those instances, the Zoning Administrator may authorize the use of a portion of the required parking area for other purposes on a temporary basis or permit temporary off-site parking, upon a demonstration by the applicant that:

1. the loss of the required parking spaces may be off-set by requiring employees or customers to park elsewhere or that due to the time of year or nature of the on-site business, the required spaces are not needed;

2. all or part of the displaced parking may be accommodated on unpaved areas of the site;

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3. permission has been granted by neighboring property owners or operators to use their parking facilities;
4. the duration of the special event is so short or of such a nature as to not create any appreciable parking shortage for the normal operation of the existing on-site use;
5. temporary off-site parking is located and designed to ensure safe and efficient circulation for both pedestrians and vehicles (a site plan may be required to demonstrate this); and
6. the proposed special event satisfies all other applicable City regulations.

Section 8.60 Shared Parking

A. **Applicability.** Two (2) or more buildings or uses may share a common parking facility, provided the number of parking spaces available shall equal the required number of spaces for all the uses computed separately. Cumulative parking requirements for mixed-use developments or shared facilities may be reduced by the City Council, as part of concept plan review, where it can be determined that one (1) or more of the factors listed in Subsection C apply. In any case, the continued availability of required parking, either shared or by other means, shall be made a condition of any site plan approval and/or conditional use approval, as provided by this ordinance.

B. **Maximum Shared Spaces and Location.** Parking facilities for a church, place of worship or similar intermittently used facility may be used to meet up to 50 percent of the off-street parking for uses lying within 400 feet of the facility, as measured from the nearest edge of the parking area to the nearest public entry point of the building or use; provided, the church, place of worship, or similar facility makes the spaces available by written agreement, and there is no conflict between peak times when the uses are in need of the parking facilities.

C. **Request.** A request for shared parking that will result in fewer than the total number of spaces required for all uses separately may be approved as part of concept plan review. The following documentation shall be provided in conjunction with such a request:

1. A parking analysis shall be submitted to the Zoning Administrator that clearly demonstrates the feasibility of shared parking. The study must be provided in a form established by or acceptable to the Zoning Administrator. It must address, at a minimum, the size and type of the proposed development or combination of uses, the composition of tenants, the anticipated rate of parking turnover, and the anticipated peak parking and traffic loads for all uses that will be sharing off-street parking spaces.
2. A shared parking plan shall be enforced through written agreement among all owners of record and included in the development agreements filed with the City. The owner of the shared parking area shall enter into a written agreement with the City of Port Wentworth with enforcement running to the City. The agreement shall state that:
   a. the land comprising the parking area shall never be disposed of, except in conjunction with the sale of the building which the parking area serves so long as the facilities are required; and
   b. the owner agrees to bear the expense of recording the agreement, which shall bind his or her heirs, successors, and assigns.

D. **Agreement.** An attested copy of the shared parking agreement between the owners of record shall be submitted to the Zoning Administrator to be recorded in a form established by the City attorney. The agreement must be recorded before issuance of a building permit or certificate of occupancy for any use to be served by the shared parking area. A shared parking agreement may only be voided if all

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required off-street parking spaces for individual uses will be provided on-site or if other off-street facilities are provided in accordance with the provisions of this ordinance.

Section 8.70 Vehicle and RV Parking, Storage, and Repair

A. **Vehicle Parking, Storage, and Repair**.

1. It shall be unlawful for the owner, tenant, or lessee of any building or land within the City to permit the open storage or parking of any inoperable motor vehicle, machinery, or equipment, or parts thereof, outside of an enclosed garage or enclosed building, for a period of more than 48 hours. An inoperable motor vehicle, for purposes of this section, shall include motor vehicles which, by reason of dismantling, disrepair, or other cause, are incapable of being propelled under their own power or are unsafe for operation on the streets and highways of this state because of the inability to comply with the Georgia Motor Vehicles and Traffic Code, or do not have a current license and registration as required for operation by the Georgia Motor Vehicles and Traffic Code.
2. The repair, restoration, and maintenance of vehicles in any residential district or on property containing a dwelling unit, except as otherwise allowed, shall be conducted entirely within an enclosed building, except for those activities that can be and are completed in less than 24 hours. All such repair shall take place on private property and may not be conducted within any street right-of-way. This provision shall not apply to any lot larger than two (2) acres and occupied by a single-family dwelling in the R-1 district.
3. It shall be unlawful for the owner, tenant, or lessee of any residentially zoned or used lot or parcel to permit the open storage or parking outside of a building of semi-truck tractors and/or semi-truck trailers, bulldozers, earth carriers, cranes, or any other similar equipment or machinery unless parked for purposes of construction being conducted on that lot. This provision shall not apply to any lot larger than two (2) acres and occupied by a single-family dwelling in the R-1 district.

B. **Storage of RVs.** On residentially zoned or used lots or parcels of less than two (2) acres in size, recreational vehicles may only be located outside an enclosed building if the following requirements are met:

1. If located on an interior lot, recreational vehicles shall not be permitted in the front yard. On a corner or through lot, recreational vehicles shall not be permitted in any yard abutting a street.
2. Notwithstanding the provisions of Section 8.70 B.1., recreational vehicles may be parked within any yard on a hard-surfaced area for up to 48 hours within a seven (7) day period for purposes of cleaning, loading, or unloading.
3. Recreational vehicles may be stored for extended periods outside of principal building setbacks in side or rear yards, provided the vehicle is on a hard-surfaced area suitable for that purpose and is screened from view of adjoining properties in accordance with the requirements of Section 10.70. On lots of five (5) acres or larger in the R-1 District, recreational vehicles may be stored within any yard but not within the yard setback area.
4. Recreational vehicles may be used for temporary occupancy for periods not to exceed 48 hours, provided the recreational vehicle contains sleeping accommodations and is solely for the use of the owner of the lot or guests of the owner.

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Section 8.80 Electric Vehicle Charging Stations

A. **Intent**. To plan for the increase of electric vehicles and to expedite the establishment of a convenient, cost-effective electric vehicle infrastructure, this section authorizes required or excess parking spaces to be used as electric vehicle charging stations.

B. **Accessory Use and Accessory Structures**. Electric vehicle charging station spaces are classified as accessory uses, and electric vehicle charging stations are classified as accessory structures. Electric vehicle charging station spaces and electric vehicle charging stations and equipment are permitted in all public and private parking lots.

C. **Review**. The conversion of standard parking spaces to electric vehicle charging station spaces and the installation of electric vehicle charging station equipment shall be reviewed and approved by the Zoning Administrator in accordance with this section. For new and expanded parking lots subject to site development plan review, the Planning Commission shall review and approve electric vehicle charging station spaces and the installation of electric vehicle charging station equipment.

D. **Encouragement of New Electric Vehicle Charging Stations**.

1. All new and expanded public and private parking lots are encouraged to include electric vehicle charging stations or be EV-capable or EV-ready.
2. All new dwellings are encouraged to be constructed with a 220-240-volt / 40 amp outlet on a dedicated circuit and in close proximity to designated vehicle parking to accommodate the potential future hardwire installation of a Level-2 electric vehicle charging station.

E. **Requirements for Electric Vehicle Charging Stations**.

1. An electric vehicle charging station space may be included in the calculation for the minimum required parking spaces in accordance with Table 8.40. There is no limit on the number of electric vehicle charging stations. However, the applicant shall demonstrate by the historical use of the parking area for internal combustion engine vehicles and the anticipated demand for electric vehicle charging stations that there is sufficient parking for both drivers of electric vehicles and internal combustion engine vehicles. At a minimum, the applicant shall provide the number of existing parking spaces and the average number of available parking spaces at peak business hours for one week. The Zoning Administrator or Planning Commission, as applicable, shall make all final determinations regarding the minimum number of parking spaces for internal combustion engine vehicles to ensure compliance with Section 8.40.
2. Electric vehicle charging station spaces shall comply with the dimensional requirements of Table 8.30.
3. Electric vehicle charging station equipment may be located on any part of a property but shall be no less than 10 feet from property lines and public or private right-of-way and shall not be located within clear vision corners per Section 6.40 D. Electric vehicle charging station equipment approved for on-street parking within the right-of-way is exempt from the setback requirement.
4. Electric vehicle charging station equipment shall be protected with bollards or a comparable method. If curbing is used, the equipment shall be located at least two (2) feet behind the face of the curb.
5. At least five (5) feet of clear area shall be maintained if installed on or adjacent to an internal sidewalk, walkway, or another area accessible to pedestrians, cyclists, or wheelchair users abutting a parking lot. Electric vehicle charging station equipment shall not obstruct these passageways.

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6. Any parking space located in a public or private parking lot that is designated as an electric vehicle charging station or electric vehicle parking space shall have a sign posted that includes the maximum charging time allowed by the property owner and a notice that the parking of non-electric vehicles is prohibited. This does not apply to single-family and two-family dwellings.

7. Commercial electric vehicle charging stations are prohibited on residential properties.

Section 8.90 Loading Zones

A. **Uses Requiring Loading Area**. On the same premises with every building, structure, or part thereof, erected and occupied for manufacturing, storage, warehousing, distribution, retails sales, consumer services, or other uses similarly involving the receipt or distribution of vehicles, materials, or merchandise, there shall be provided and maintained on the lot adequate space for standing, loading, and unloading services in order to avoid undue interference with public use of the streets, alleys, and parking spaces. This provision shall not apply to retail sales and consumer service uses of less than 10,000 square feet.

B. **Loading Area Requirements**. Loading and unloading spaces shall be paved and, unless otherwise adequately provided for, shall be 10 feet by 50 feet, with 15-foot height clearance, according to Table 8.90:

Table 8.90: Minimum Off-Street Loading Requirements

Building Net GFA	Minimum Truck Loading Spaces
Industrial and wholesale operations with a gross floor area of 10,000 square feet or over and as follows:	Industrial and wholesale operations with a gross floor area of 10,000 square feet or over and as follows:
Industrial and wholesale operations with a gross floor area of 10,000 square feet or over and as follows:	
10,000—40,000 sq. ft.	1
40,000—100,000 sq. ft.	2
100,000—160,000 sq. ft.	3
160,000—240,000 sq. ft.	4
240,000—320,000 sq. ft.	5
320,000—400,000 sq. ft.	6
Each 90,000 square feet above 400,000	1
Office building, hotel or apartment hotel with a gross usable floor area of 100,000 square feet or more devoted to such purposes.	1 loading berth for every 100,000 square feet of floor area.
Retail operation and all first-floor nonresidential uses, with a gross floor area of more than 3,000 square feet and less than 20,000 square feet, and all wholesale and light industrial operations with a gross floor area of less than 10,000	1 loading space.
Retail operation including restaurant and dining facilities within hotels and office buildings, with a gross usable floor area of 20,000 square feet or more devoted to such purposes.	1 loading berth for every 20,000 square feet of floor area.

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C. **Orientation of Overhead Doors**. Overhead doors for truck loading areas shall not face a street right-of-way and shall be screened to not be visible from a street or an adjacent residential district to the maximum extent possible.

D. **Residential Setback**. Loading and unloading spaces shall not be located closer than 50 feet to any residential district boundary unless the spaces are wholly within a completely enclosed building or completely screened from the residential district by an approved solid, sight-obscuring wall or fence at least six (6) feet in height.

E. **Modification or Waiver.** The City Council, during concept plan review, may modify or waive the requirements of this section for any use based on the frequency of deliveries or shipping activity and/or the size of trucks.

Section 8.100 Access Management

A. **Applicability.** Control over the number and location of access points, as specified in this section, along the City's major roadways is necessary to reduce congestion, improve safety, maintain acceptable flow, and minimize confusion. Therefore, the standards of this section shall apply to all non-residential development having frontage on and direct access to any arterial or collector street, as defined in this ordinance.

B. **Driveway Location in General**.

1. All driveways serving non-residential uses, hereafter referred to as "commercial driveways," shall comply with the requirements of this section.
2. Driveways shall be located to minimize interference with the free movement of traffic, to provide adequate sight distance, and to provide the most favorable driveway grade.
3. Driveways, including the radii, but not including right turn lanes, passing lanes, and tapers, shall be located entirely within the right-of-way frontage of the lot being served unless otherwise approved by the City or the Georgia Department of Transportation (GDOT), as applicable, and upon written certification from the adjacent property owner agreeing to such encroachment.

C. **Driveway Spacing Standards**.

1. Minimum spacing between two commercial driveways or a commercial driveway and a street intersection, either adjacent or on the opposite side of the street, shall be determined based upon posted speed limits along the parcel frontage. The minimum spacing indicated in Table 8.100 A is measured from centerline to centerline for driveways and nearest pavement edge to nearest pavement edge from driveways to street intersections.
2. To reduce left-turn conflicts, new commercial driveways shall be aligned with those across the street, where possible. If alignment is not possible, driveways shall be offset from those on the opposite side of the street the same distance as required in Table 8.100 A. These standards may be reduced by the City Council during conceptual site development plan review where there is insufficient frontage and shared access with an adjacent site is not feasible. Longer offsets may be required depending on the expected inbound left-turn volumes of the driveways.

Table 8.100 A: Minimum Commercial Driveway Spacing

Posted Speed Limit (MPH)	Minimum Driveway Spacing (In Feet)
25	125
30	125
35	150
40	185
45	230
50	275
55	350

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D. **Modification of Requirements**.

1. Given the variation in existing physical conditions along the City's streets, modifications to the spacing and other requirements above may be permitted as part of the concept site plan review. The City Council shall consider the criteria in Section 8.100 D.2 when determining if there is a need for modification in the following circumstances and the degree to which any modification is necessary.

    a. The modification will allow an existing driveway to remain that does not meet the standards of this section but that has or is expected to have very low traffic volumes (less than 50 in- and out-bound trips per day) and is not expected to significantly impact safe traffic operations.

    b. The use is expected to generate a relatively high number of trips, and an additional driveway will improve overall traffic operations.

    c. Practical difficulties exist on the site (sight distance limitations, existing development, topography, unique site configuration or shape) that make compliance infeasible, or existing off-site driveways make it impractical to fully comply with the standards.

    d. Because of restricted turning movements or presence of a median in the street that restricts turning movements, the driveway does not contribute to congestion or an unsafe situation.

2. The City Council may modify the requirements of this section for any of the circumstances cited in Section 8.100 D.1. a-d, upon determining compliance with one or more of the following:

    a. The proposed modification is consistent with the general intent of the standards of this section, the recommendations of the Port Wentworth Comprehensive Plan, and, if applicable, published GDOT guidelines.

    b. Driveway geometrics have been improved to the extent practical to reduce impacts on traffic flow.

    c. Shared access has been provided, or the applicant has demonstrated it is not practical.

    d. Such modification is the minimum necessary to provide reasonable access, will not impair public safety or prevent the logical development or redevelopment of adjacent sites and is not simply for convenience of the development.

E. **Commercial Driveways Permitted**.

1. The number of commercial driveways serving a property shall be the minimum number necessary to provide reasonable user access and access for emergency vehicles while preserving traffic operations and safety along the abutting street.

2. Access shall be provided for each separately owned parcel. Access may be via an individual driveway, shared driveway, or service drive.

3. More than one (1) driveway may be permitted for property by the City Council, during concept plan review, only as follows:

    a. One (1) or more additional driveways may be allowed for properties with a continuous frontage greater than 300 feet if it is determined there are no other reasonable access alternatives;

    b. The City Council determines, based on a traffic impact analysis, that additional access is justified without compromising traffic operations along the abutting street(s); and

    c. The minimum spacing requirements specified in Table 8.100 A would be met.

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F. **Commercial Driveway Design**.

1. All commercial driveways shall be designed according to the standards of the City of Port Wentworth or GDOT, as applicable.
2. For high traffic generators, or for commercial driveways along streets experiencing or expected to experience congestion, the City Council may require two (2) egress lanes at a driveway.

Table 8.100 B: Interior Drive Separation	
Lot Depth (ft.)	**Minimum Required Distance (ft.)**
1,000 or more	200
500 – 999	Not less than 1/5 lot depth
Less than 500	100

3. Where a boulevard entrance is proposed by the applicant or required by the City Council, a fully curbed island shall separate the ingress and egress lanes. The radii forming the edges on this island shall be designed to accommodate the largest vehicle that will use the driveway. The minimum area of the island shall be 180 square feet. Landscaping, tolerant of street conditions, on the section outside the right-of-way may be required.

G. **Shared Driveways and Frontage Streets**.

1. Where noted above, or where the City Council, during concept plan review, determines that reducing the number of access points may have a beneficial impact on traffic operations and safety while preserving the property owner's right to reasonable access, a shared commercial driveway, frontage street, or rear service drive connecting two (2) or more properties or uses may be required. In particular, frontage streets or rear service drives may be required near existing traffic signals or locations having potential for future signalization; along arterial streets with high traffic volumes; and along street segments with a relatively high number of crashes or limited sight distance.
2. Shared driveways between two (2) abutting properties shall be encouraged in order to minimize the number and spacing of individual driveways and, in particular, where parcel widths on abutting properties are insufficient to accommodate individual driveway access in compliance with the specifications in Table 8.100 A; existing driveway spacing on adjacent parcels prevents compliance with the minimum separation requirements specified in Table 8.100 A; or as a condition of allowing more than one (1) driveway access to any parcel.
3. Shared commercial driveways and frontage streets shall be within a recorded access easement. A draft of the access easement shall be provided to the City for review prior to filing.
4. The number of access points along a frontage street shall be according to the standards of this section. City Council, when reviewing the concept plan, may allow temporary access where the frontage street is not completed if a financial guarantee is provided which assures elimination of the temporary access upon completion of the frontage street. Building permits shall not be issued until the financial guarantee has been submitted to the City.

H. **Design Standards**. Frontage streets and service drives shall generally be parallel to the front property line and may be located either in front of, adjacent to, or behind principal buildings. In considering the most appropriate alignment for a frontage street or service drive, as part of the concept plan review, City Council shall consider the setbacks of existing buildings and anticipated traffic flow for the site. However, placement of the frontage street or service drive intersection with the driveway from the abutting street shall be as far as possible from the street for safe and efficient operation. The distance between the nearest edge of the abutting street and the first internal movement from the frontage

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street or service drive shall meet the minimum requirements shown in Table 8-90 B. For large sites with high volumes or heavy truck traffic, and along high-volume streets, the required distance may be increased to avoid interference with the mainline traffic flow. If no other design alternatives exist, the City Council may permit lesser separation distances, provided the left turning movement shall be prevented by means of a raised concrete median. Sites shall be designed so interior driveways accommodate at least 100 feet of vehicle storage.

1. Access easement. The shared driveway, frontage street, or service drive shall be within an access easement permitting traffic circulation between properties. This easement shall be 40 feet wide, except an access easement parallel to a public street right-of-way may be 30 feet wide, if approved by the City Council. The required width shall remain free and clear of obstructions unless otherwise approved.
2. Construction and materials. Shared driveways, frontage streets, and service drives shall have a base, pavement, and curb with gutter in accordance with City standards for public streets. See Table 11.40 for street specifications.
3. Parking. The frontage street or service drive is intended to be used exclusively for circulation, not as a parking maneuvering aisle. The posting of "no parking" signs may be required along the frontage street or service drive. In reviewing the site development plan, the City Council may permit temporary parking in the easement area where a continuous frontage street or service drive is not yet available, provided, the layout allows removal of the parking in the future to allow extension of the service road.
4. Access to frontage street or service road. All access points from abutting streets to the frontage street or service drive shall comply with the driveway spacing standards listed in Table 8.100.
5. Elevation. The site development plan shall indicate the proposed elevation of the frontage street or service drive at the property line, and the City shall maintain a record of all elevations so their grades can be coordinated.
6. Landscaping. The area between a frontage street and the street right-of-way shall be planted as a street yard greenway, as specified in Section 10.50.
7. Maintenance. Each property owner shall be responsible for maintenance of the easement and frontage street or service road.

Section 8.110 Traffic Impact Analysis

A. **Applicability**.

1. TIA Required Unless exempted by Section 8.110 B, a Traffic Impact Analysis (TIA) shall be required for any development abutting a Georgia state highway or which is anticipated to generate more than 50 peak hour trips, based on the most recent edition of the Trip Generation Manual published by the Institute of Transportation Engineers (ITE).
2. Redevelopment. In the case of redevelopment, trip generation will be defined as the number of net new trips generated by the proposed use beyond the trips generated by the previous use unless the previous use has been discontinued for more than 12 months.
3. Projects with Cumulative Impacts. A TIA shall be required for development projects that do not otherwise meet the thresholds of a required TIA, as specified in Section 8.110 A.1, if the application is for a project that:

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a. Shares features such as site access, common ownership, or other infrastructure with nearby undeveloped property for which future development can reasonably be anticipated; and

b. The cumulative impact of the overall development can be expected to exceed the threshold for preparation of a TIA.

4. Other Circumstances. The City Council may waive the requirement to complete a TIA or may require a TIA to be submitted for developments not meeting the above requirements, based upon localized safety, operational, or street capacity issues, including levels of service (LOS) of existing streets.

B. **Exemptions**. Previously approved developments for which a TIA was submitted in conjunction with a preliminary plat for subdivision, final site development plan, or planned development shall be exempt from the requirements of this section, provided the TIA is less than two (2) years old.

C. **Procedure**. The TIA shall be submitted along with an application for a preliminary plat, preliminary concept development plan, and final site development plan review. The TIA shall be prepared by a professional transportation engineer licensed in the State of Georgia and shall, at a minimum:

1. Identify existing conditions including abutting street cross-section, current (background) traffic volumes, peak hour directional volumes, signalization, and intersection level of service (LOS).

2. Project the traffic to be generated by the proposed development and proposed developments in the immediate vicinity based on the most recent edition of the ITE Trip Generation Manual. The Zoning Administrator and/or the Georgia Department of Transportation (GDOT) may also specify annual growth factors to be used in the TIA;

3. Evaluate site access, directional movements, and internal circulation;

4. Evaluate, based on LOS during peak hours, the ability of the surrounding road network to support the proposed development and the cumulative traffic of current and other projected uses;

5. Consider planned roadways or improvements identified by the City of Port Wentworth, Chatham County, and GDOT; and

6. Identify specific improvements to the surrounding road network that are necessary to support the traffic to be generated at an acceptable level of service.

Section 8.120 Bicycle and Pedestrian Accommodation

Sidewalks shall be constructed in conjunction with the development or redevelopment of adjacent property and shall be located within the right-of-way or within the required setback area of all streets to ensure current and future connectivity. Where sidewalks are not located within the right-of-way, a public access easement shall be provided. Sidewalks shall be constructed in accordance with City of Port Wentworth design standards.

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Article 9. Site Lighting

Section 9.10 Intent and Purpose

A. **Intent and Purpose.** The intent and purpose of this article are to:

1. ensure that all site lighting is designed and installed to maintain safe and adequate lighting levels on-site;
2. prevent excessive light spillage and glare directed at adjacent properties, neighboring areas, and motorists;
3. to minimize light pollution in the night sky; and
4. provide security for people, buildings, and land.

Section 9.20 General Requirements and Applicability

A. **General Requirements for All Property**.

1. Limitations. Light shall be confined on-site by the direction of the fixture, shielding, or adjustment of the level of brightness.
2. Glare. Lighting shall not be directed in any manner which causes excessive glare onto neighboring residential property or distraction to drivers.
3. Direction. All outdoor lighting, except ground lights that illuminate governmental flags and lights that are incorporated as architectural accent features of a building, shall be directed down or onto the object being illuminated. Flag and building lighting shall be placed so that lighting or glare is not directed toward streets or adjacent properties, and fixtures shall be located, aimed, or shielded to minimize light spilling into the night sky.
4. Prohibited Light Sources. The following light sources are prohibited:
    a. Laser Source. The use of laser source light or any similar high-intensity light for outdoor advertising or entertainment is prohibited.
    b. Searchlights. The operation of searchlights for advertising purposes is prohibited.
    c. Flashing Lights. Except for motion-activated security lighting and temporary holiday lighting, permanent lights that flash, move, revolve, rotate, scintillate, blink, flicker, vary in intensity or color, or use intermittent electrical pulsation are prohibited.
    d. Public Safety. Lighting that is similar to that used for traffic control devices or emergency vehicles is prohibited.

B. **Applicability**. The remaining sections within this article apply to non-residential and multi-family residential developments.

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Section 9.30 Lighting Plans

A. **Submittal Requirements**. Compliance with the lighting design criteria shall be demonstrated by submitting the following information as part of the required site plan:

1. Lighting plan (as part of the site plan package) showing light fixture locations and type designations.
2. Fixture mounting height(s).
3. Type and number of lighting fixtures.
4. Lamp source type (bulb type, i.e. high-pressure sodium, LED, etc.), lumen output, color temperature, and wattage.
5. Lighting manufacturer-supplied specifications (cut sheets) that include photographs or illustrations of the fixture(s), indicating the certified full cut-off characteristics or B.U.G. rating of the fixture or demonstration that the fixture is fully shielded.

B. **Photometric Plans**. A photometric plan is required for all parking areas. The Zoning Administrator or Planning Commission may require a photometric plan for other areas illuminated on a site to ensure that the intent and requirements of this section are met. Photometric plans shall include the following:

1. Maximum illuminance levels should be expressed in ground-level footcandle measurements on a grid of the site showing footcandle readings in every five or ten-foot square.
2. The grid shall include light contributions from all sources (i.e. pole-mounted, wall-mounted, sign, and street lights).
3. Footcandle measurements shall be shown five feet beyond the property lines.
4. A calculation summary indicating footcandle levels on the lighting plan, noting the maximum, average, and minimum, as well as the uniformity ratio of maximum to minimum, and average to minimum levels. Average and uniformity ratios shall only be calculated within the parking spaces and drive aisles and shall exclude other illuminated areas of the site.

Section 9.40 Fixtures

A. **Color Temperature**. The lighting color temperature of new and replacement light fixtures shall not exceed 4,000 Kelvins.

B. **Fixture Type**. Lighting fixtures for non-residential and multi-family residential uses shall be a down-lighted type and full cut-off and shall not allow light to be emitted above the fixture. For LED lighting, up-light shall be zero for B.U.G. (backlight, uplight, glare) ratings. Fixtures shall comply with the following requirements:

1. A full cut-off fixture shall have no direct up-light and shall reduce glare by limiting the light output to less than 10 percent at and below 10 degrees below the horizontal.
2. If the applicant cannot provide manufacturer confirmation of full cut-off characteristics of light fixtures, the fixture shall be fully shielded, which will be determined by visual inspection of the fixture or a specification sheet. Fully shielded light fixtures are constructed and installed in such a manner that all light emitted by it, either directly from the lamp or a diffusing element or indirectly by reflection or refraction from any part of the fixture, is projected below the horizontal.
3. Under-canopy lighting shall be mounted flush with the canopy surface.

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C. **Setbacks.** Light fixtures shall be no closer than six (6) feet from property lines.

D. **Mounting Height**. Light fixture mounting heights shall not exceed the following:

Table 9.40: Light Fixture Mounting Height		
Zoning District		**Maximum Height (ft).**
Residential		20
Commercial and Industrial	Less than 100 feet from a residential-zoned lot	20
	100 feet or more from a residential-zoned lot	40

Section 9.50 Site Lighting Levels

A. **Required Lighting**.

1. All non-residential and multi-family residential parking lots shall be illuminated for customer and resident safety.
2. Lighting shall be provided throughout any parking lot. Lights to illuminate parking lots shall not be attached to any building except for illuminating parking spaces that are within 10 feet of building walls.

B. **Illumination Levels**. Light levels on a lot or parcel that are subject to site plan approval under this ordinance shall meet the requirements in Table 9.50 for the developed portion of the site.

Table 9.50: Required Site Illumination				
Location on Site	**Min. fc**	**Max. fc**	**Ave. fc**	**Uniformity Ratio Max. to Min./ Ave. to Min.**
Parking Lots	.5 fc [1]	10 fc	1 fc	10:1 / 4:1
Under Canopies Such as Gas Stations, Drive-Thru Bank Porte-Cochere	3 fc	20 fc	-	-
Along Front Lot Line Adjacent to the Street Frontage	0 fc	3 fc	-	-
Along a Lot line Adjoining a Non-Residential Use or District	0 fc	1 fc[2]	-	-
Along a Lot line Adjoining a Residential Use or District	0 fc	0.5 fc	-	-

[1] The minimum illumination levels shall not apply to portions of the site that are fenced to restrict public access, such as storage yards.

[2] The light level along a non-residential lot line may be increased to the maximum footcandle level where there is shared access/vehicular connections or the adjacent use is a similar use.

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Section 9.60 Lighting Modifications

A. **Authority**. After review by the Planning Commission, the City Council may modify the illumination requirements in Table 9.50 and other lighting requirements based on a review of the applicant's proposal against industry standards and advanced lighting technology, so long as lighting plans ensure safe conditions and minimize the impact on adjacent properties.

B. **Considerations**. The Planning Commission and City Council shall consider the following during the review of lighting modification requests:

1. The amount of space on the site available for lighting.
2. Existing lighting on the site and on adjacent properties.
3. The type of land use on the site and the size of the development.
4. The potential impact on existing and proposed adjacent land uses.
5. The effect that the required lighting would have on the operation of the existing or proposed land use.

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Article 10. Landscaping and Environment

Section 10.10 Intent and Purpose

The City of Port Wentworth determines it is necessary and desirable to enact landscaping and tree preservation regulations for the protection of the public health, safety, and welfare. The importance of plant material is recognized by the city for its contribution to shade, cooling, noise and wind reduction, soil erosion prevention, oxygen production, dust filtration, carbon dioxide absorption, aesthetic and economic enhancement of real property, and its contribution to the general well-being and quality of life of the citizens of Port Wentworth. In order to achieve these purposes, this article calls for landscaping specific areas and for the conservation, planting, and replacement of trees, shrubs, and groundcover without denying the reasonable use and enjoyment of real property.

Section 10.20 General Requirements and Applicability

A. **Applicability**. This article governs and regulates the following activities within the city:

1. All projects subject to the site development plan requirements of Section 13.20.
2. The subdivision of land.
3. Removal of any protected tree, as defined in Section 10.90 B.
4. Removal of any trees less than three (3) years prior to commencing a development project on the property.
5. The planting, removal, and perpetual maintenance of any dedicated common area or public land.

B. **Exceptions**. The regulations of this article shall apply in all areas of the city except:

1. Those lands which, on the effective date of this ordinance, have a pending or completed application for approval for residential subdivision or the building of improvements on such lands in compliance with the zoning ordinance as of the date of such application; provided, those proposed improvements are built and completed within the time allowed under such pending or completed applications.
2. Those lands which may in the future be annexed into the city, and on the effective date of that annexation, are improved by the construction of a building or other structure, or have received final approval for residential subdivision, in compliance with the zoning ordinance of the jurisdiction from which they are annexed as they exist on the date of annexation.
3. Commercial timber operations in existence prior to the adoption of this ordinance; provided, no cutting shall be permitted within 50 feet of a street right-of-way.
4. The mitigation of wetlands pursuant to an approved plan from the U.S. Army Corps of Engineers, shall be exempt.
5. Trees grown for sale by commercial nurseries.

C. **Review and Permitting Procedures for Site Development**. All activities identified in Section 10.20 A shall be subject to the following procedural requirements:

1. Pre-application Review. Applicants are strongly encouraged to meet with the Zoning Administrator to discuss site design concepts or present a preliminary plan prior to submission of a request for

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tree removal permit or landscaping plan approval. Such discussions shall not be binding on the applicant or the city, are strictly at the option of the applicant, and no official action will be taken regarding the discussion or presentation.

2. Application. Upon receiving an application for concept site development plan review, subdivision approval, or landscape plan approval, the Zoning Administrator shall determine if the application is complete in all respects, as required by this section and the applicable requirements of Article 13. Incomplete applications will be returned to the applicant without further processing. Separate applications for a tree removal permit shall be processed in accordance with the procedures described in Section 10.90.

3. Technical Review. The Zoning Administrator shall review all applications and plans relative to compliance with the requirements of this article and all other ordinances and laws of the city. Such plans may, at the discretion of the Zoning Administrator, be submitted to qualified landscape architectural consultants, arborists and/or urban foresters for review and comment, the cost of which shall be paid by the applicant.

4. Design Review. Schematic landscape plans shall be reviewed by the City Council as part of the concept site development plan review. Final site development plans and tree removal applications shall be reviewed and decided upon by the Planning Commission which shall consider all revisions and conditions imposed by City Council during concept site development plan review and the comments from the Zoning Administrator or other qualified professionals and shall approve, approve with conditions, or deny the application, based on conformance with the applicable landscape standards of Section 10.30 and requirements of this article. If denied, the reasons for the denial shall be stated in the motion to deny and submitted in writing for the record.

D. Required Submissions.

1. Landscape Plan. A conceptual landscape plan illustrating compliance with the requirements of this article relative to buffers, parking lot landscaping, screening, street yard greenways, and protected trees shall be submitted with any application for preliminary plat or concept site development plan approval, unless exempted per Section 10.20 B. Following approval of such application a detailed landscape plan and, if applicable, a tree survey in accordance with Section 10.90 D of this article shall be submitted in conjunction with the final plat or final site development plan review.

   a. Requirements. The landscape plan, prepared and sealed by a landscape architect licensed in the State of Georgia, shall include the location, botanical name, common name, quantity, and size of all proposed plantings. Additionally, the plan shall include:

      i. summary plant schedules, charts, and notes as necessary to clearly demonstrate conformance with all applicable planting requirements for the site;

      ii. existing and proposed contours at intervals not to exceed two (2) vertical feet;

      iii. anticipated mature height shall be indicated, and the crown spread shall be shown on the plan with circles indicating anticipated plant size at maturity;

      iv. calculations for the proposed landscaping indicating how the plan complies with the regulations of this article;

      v. existing natural and man-made landscape features and proposed buildings and structures, as required for the overall site plan;

      vi. planting details to ensure proper installation and establishment of proposed plant material;

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vii. grass areas and other methods of ground cover;

viii. a description of irrigation methods for landscaped areas; and

ix. a landscape maintenance program, including a statement that all diseased, damaged or dead materials shall be replaced in accordance with the standards of this article.

b. Separate Plan. Unless it can be clearly shown on a plat or site plan sheet, a separate landscape plan sheet shall be drawn at the same scale as the required plat or site plan. To ensure that landscaping is not affected by, or interferes with utilities, the plans shall indicate all existing or proposed utilities and easements.

c. Deviation from Plans. After approval of a landscape plan, an applicant may request an amendment of the proposed plan. Review of such changes shall be processed in accordance with Section 13.80 as a site development plan amendment.

2. Financial Guarantee. At the final plat approval phase, the final site development plan approval phase of any development, or prior to issuance of a certificate of occupancy, the applicant may be required to submit a performance bond to ensure that the improvements are completed in conformance with the approved plan and in a timely manner.

Section 10.30 General Landscape Regulations

A. **Material Standards.** Existing trees within any required buffer or street yard greenway shall be preserved. Protected trees, as defined in Section 10.90 B, shall be subject to all applicable requirements of Section 10.90. In addition, the following standards shall apply at a minimum to all newly planted landscaped areas and any additional trees needed to meet the respective requirements of this article.

1. Native and regionally appropriate plant species are required. Invasive species, as identified by the United States Forest Service, the University of Georgia, or included as prohibited within Appendix C are prohibited from being planted in Port Wentworth. Further, replacement of invasive species with desirable hardwood species is encouraged.

2. All plant and tree material shall meet the American Standard for Nursery Stock standards published by and available from the American Association of Nurserymen.

3. Landscape materials must be free from injury, pests, disease, nutritional disorders, or root defects, and must be of good vigor to assure a reasonable expectation of survivability.

4. No more than 25 percent of a single tree species shall be used to meet any requirement of this article.

5. The minimum standards specified in Table 10.30 shall apply to all plantings required by this article at time of planting, except as otherwise specified.

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Table 10.30: Plant Specifications			
Plant Type	**Min. Size**	**Min. Height**	**Other**
Canopy trees – large	3 in. caliper	16 feet	
Canopy trees – medium	2 in. caliper	10 feet	Multi-stemmed – one (1) inch on any cane
Canopy trees – small	1½ in. caliper	6 feet	Multi-stemmed – one-half (½) inch on any cane
Palms – large		10 ft. clear trunk	
Palms – medium		6 ft. clear trunk	
Palms – small		4 ft. clear trunk	
Shrubs		24 inch	Containerized

B. **Installation Standards**.

1. Installation of trees and landscape materials shall be in accordance with the standards established by the American National Standards Institute (ANSI).
2. Root barriers shall be installed within tree lawns less than seven (7) feet between the back of curb and the sidewalk to prevent root penetration and destruction of infrastructure.
3. Large and medium trees shall not be planted beneath or directly adjacent to overhead power lines and shall be a minimum of 10 feet from any building or underground utility unless root barrier is used.
4. Small trees and palms shall be a minimum of five (5) feet from any building or underground utility.
5. All trees and landscaped areas shall be provided with a means of water delivery in quantities sufficient to establish and maintain the viability of the plants, except for areas of established trees and other vegetation that are retained; provided, site grading or development activities will not result in damage to those areas.

C. **Maintenance Standards**.

1. All plant material shall be maintained in good condition at all times in accordance with standards established by ANSI. Plantings that die or are destroyed must be replaced, during the next suitable planting season.
2. Attaching lights, signage, fence rails, and any other items to trees is strictly prohibited.
3. All sites are required to remain in compliance with the requirements of this article and are subject to inspection by the city for this purpose.

Section 10.40 Buffer Landscaping

A. **Buffer Screening Standards.** Buffering is a method of visually shielding or obscuring one use from another. The buffer may consist of a combination of required plantings, wall, screen fence, or berms. In the event walls, fences, or berms are used to provide screening, the City Council may reduce the required number of trees and shrubs by up to 50 percent if it is determined that the purpose of the buffer will still be achieved. However, where topographic conditions, minimal separation of uses, noise generation, or other potential nuisance characteristics exist, the City Council may require construction of a fence, wall, or berm along all or a portion of the buffer in addition to the required plantings.

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1. Plantings. Plantings shall consist of a combination of trees and shrubs, as specified in Table 10.40 A. Planted areas shall be located along the abutting property lines in areas that will provide the most effective screening.

    a. Evergreen species, under normal growing conditions, shall attain a minimum height of eight (8) feet. The spacing of evergreens shall be such that within three (3) years the plantings can be expected to provide a continuous opaque screen.

    b. All other trees and shrubs used within any buffer area shall conform to the size requirements specified in Table 10.30 at time of planting.

        i. Existing trees and other vegetation within the buffer area shall be retained to the extent possible and may be counted toward meeting the applicable buffer requirement.

        ii. Protected trees, as defined in Section 10.90 B, shall be identified and the requirements of Section 10.90 shall apply.

2. Walls. If walls are incorporated into the buffer, they shall be constructed of masonry material on both sides and be not less than six (6) nor more than eight (8) feet in height. The wall shall be placed along the interior side of the buffer with the required plantings on the outer side facing the adjoining property.

3. Fences. If fences are incorporated into the buffer, they shall be constructed of standard pressure treated wood fencing materials (but not woven wood), shadow-box design, provide at least 90 percent opacity and be not less than six (6) nor more than eight (8) feet in height. Fences shall be placed along the interior side of the buffer with the required plantings on the outer side facing the adjoining property.

4. Berms. Earthen berms, if incorporated into the buffer, shall have a slope of 3:1 and a flat-topped crown at least two (2) feet wide. Plant material shall be placed along the top of the berm and the side slope facing the adjoining property. Berms shall be undulated to provide a more natural appearance.

B. **Buffer Design**. All buffers required by this article shall conform to the following specifications:

1. Landscape plans and tree surveys shall be required to show the type and location of all existing and proposed plantings within a required buffer.

2. Landscaping within buffer areas shall be used to screen objectionable views or nuisances, such as parking and service areas, loading docks, outdoor activity areas, refuse containers, air conditioning units and transformers. To achieve such purposes, trees may be clustered rather that uniformly spaced to achieve optimum screening and buffering.

3. Existing trees within the designated buffer area may be credited toward meeting the requirements of this article if the City Council determines that such plant material achieves the purposes of this article. Protected trees within the buffer area shall be preserved and regulated in accordance with Section 10.90.

C. **Buffer Location.** Buffers shall be located on the outer perimeter of a lot or parcel along the lot lines between dissimilar zone districts or residential and nonresidential uses within the same district. The required buffer shall be provided even when dissimilar districts or residential and nonresidential uses are separated by an existing or proposed public right-of-way; provided, the buffer shall not be located on any portion of an existing, dedicated, or reserved public or private street right-of-way.

D. **Use of Buffers**. A buffer may be used for some forms of passive recreation such as pedestrian, bike, or

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equestrian trails, or as stormwater retention, detention, or water quality area provided that:

1. No required materials shall be eliminated;
2. The total depth of the required buffer area shall be maintained; and
3. The effectiveness of the desired screening shall not be diminished.

E. **Maintenance**. The responsibility for buffer maintenance shall remain with the owner of the property. Any required plant that has died shall be replaced. Maintenance of planted areas shall consist of mowing, removal of litter and dead plant materials, and necessary pruning. Fences and walls shall be kept in a condition that meets the requirements of this article.

F. **Buffers Required**.

1. Perimeter Buffer. When two (2) adjoining properties are in dissimilar zone districts or where a nonresidential use abuts a residential use in the same district, the property within the zone district allowing the more intensive uses or the site containing the nonresidential use abutting residential shall provide a buffer, as shown in Table 10.40 A. Where a buffer or trees and vegetation exist within the required buffer area, the existing trees and vegetation may count toward meeting the buffer requirements of this section and shall be supplemented, as needed, to fully comply with the requirements shown in Table 10.40 B, Buffer Zone Specifications. When two adjoining parcels are vacant, no buffer shall be required until the more intensively zoned property or nonresidential use for that property, as applicable, acquires a site development plan approval. In calculating the area devoted to meeting the buffer requirements, areas dedicated for drainage ditches, easements or rights-of-way shall not be included.

Table 10.40 A: Buffer Zones Required

Zoning Districts	Required Buffer									
	R-1	R-2	R-3	R-4	R-5	C-1	C-2	C-3	I-1	Non-Res[1]
R-1				A	A	B	B	B	C	B
R-2				A	A	B	B	B	C	B
R-3				A	A	B	B	B	C	B
R-4						A	B	B	C	A
R-5						A	B	B	C	A
C-1							A	A	C	
C-2									B	
C-3									B	

[1] Non-residential uses within a residential zoning district.

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Table 10.40 B: Buffer Zone Specifications			
Requirements	**Buffer Zones[1]**		
	A	**B**	**C**
Minimum depth (ft.)	20	35	75[2]
Canopy trees[3]	2	2	1
Medium/Ornamental trees[3]	2	3	3
Evergreen trees[3]	2	3	5
Shrubs[3]	4	6	10
Berm[4]	-	-	[4]

2. Highway Buffer. In addition to the previously listed buffer requirements, buffers shall be required where residential districts abut I-95, GA-21, and GA-25. Residential developments located along or adjacent to these highways shall be buffered from the traffic noise and lights. A masonry wall, berm, landscaping, or combination of these elements shall be established along the residential district boundary abutting the highway right-of-way, as approved by the City Council. The height of a wall or berm shall not be less than six (6) feet or more than eight (8) feet. Additionally, any such buffer wall or berm within a residential development shall be landscaped on the residential side with plantings that screen the wall or berm from adjacent properties.

[1] Additional screening options, per paragraph A of this section, may be proposed or required.
[2] City Council may, at its own discretion, increase the buffer requirement to 100 feet for proposed heavy manufacturing uses, as defined in Article 25 of this ordinance.
[3] Number required per 100 linear feet of buffer, as measured along the property line
[4] An earthen berm, not less than eight (8) feet in height, shall be required along the full length of the buffer and shall meet the requirements of Subsection D.4. below. Where such berm would require the removal of existing healthy trees that provide a substantial visual screen serving the purpose of the buffer, the City Council may alter the berm requirement.

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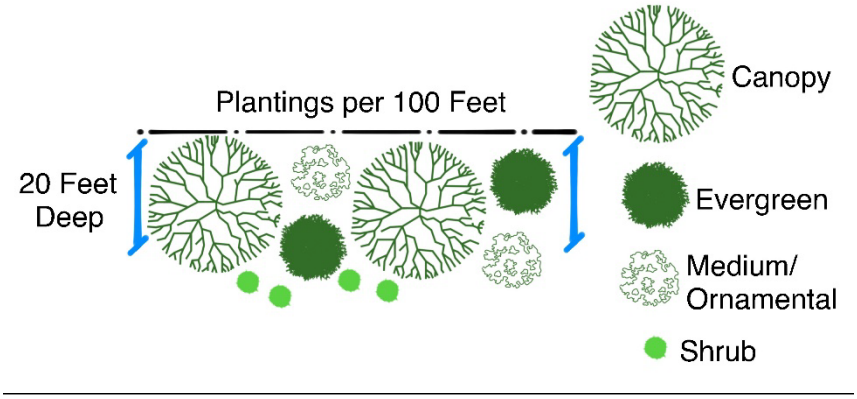

Figure 10-1 Buffer Zone A

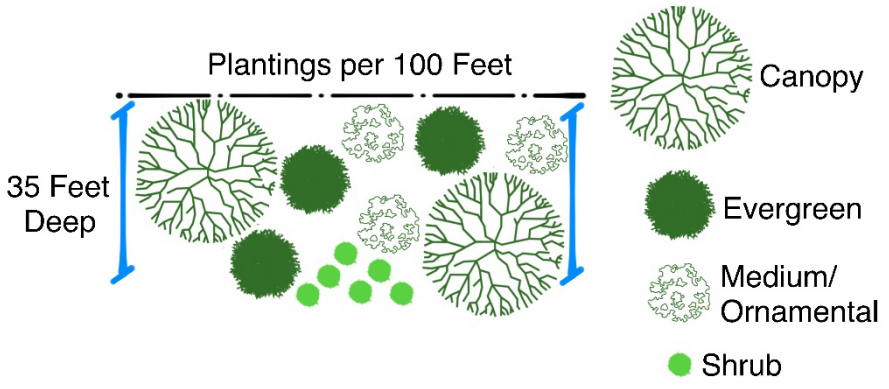

Figure 10-2 Buffer Zone B

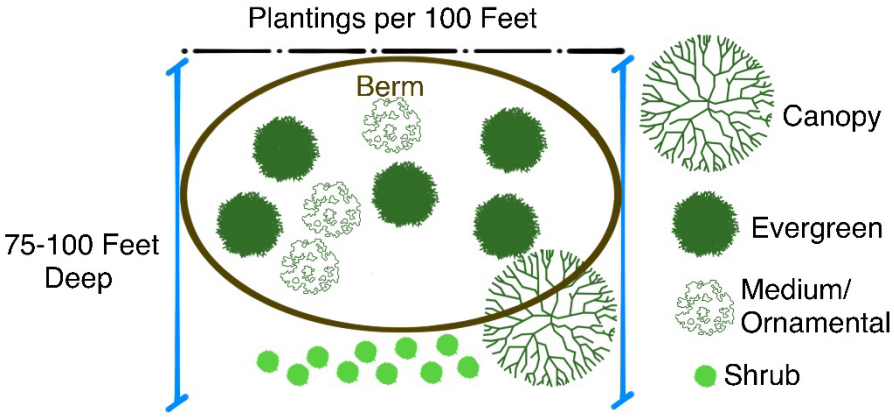

Figure 10-3 Buffer Zone C

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Section 10.50 Street Yard Greenway Landscaping

To protect and enhance the beauty and aesthetics of properties within the City of Port Wentworth and effectively screen front yard parking areas when viewed from the street right-of-way, the following shall be required.

A. **Non-Residential Uses**. Non-residential (commercial, industrial, office, civic, institutional, etc.) uses shall provide a greenway adjacent to the road right-of-way. In all cases, the requirements of Section 10.90 shall be met; provided, that existing protected trees shall be counted toward the planting requirements for street yard greenways.

1. For non-residential development fronting on arterial streets, the following standards shall apply:

   a. A minimum 25-foot-deep landscaped greenway shall be established parallel to the entire frontage along the road right-of-way. If an easement parallels the frontage and precludes planting the required trees, the greenway shall be in addition to the easement or increased to the extent that the planting requirements can be met. (Example: If a 15-foot power easement is directly adjacent to the right-of-way and does not permit trees within it, the 25-foot greenway would commence from the interior edge of the easement for a total of 40 feet).

   b. The greenway shall include:

      i. One (1) large canopy tree (Live Oak preferred) per 50 feet of linear frontage, spaced no more than 50 feet on-center (o.c.) for the entire lot frontage. For areas where overhead utilities exist that preclude planting large trees, two (2) medium canopy trees shall be provided for every one (1) large tree required.

      ii. Four (4) small canopy trees (Crape Myrtle preferred) or palms for every 100 linear feet of lot frontage.

      iii. A double row staggered evergreen shrub hedge or otherwise approved continuous grouping of evergreen shrubs planted along the lot frontage planted at a minimum of two and one-half (2 ½) feet o.c. and a species capable of being maintained at a three (3) foot height within two (2) years of planting.

      iv. Vehicular entrances shall be defined using a mixture of trees, shrubs and groundcovers that will create a sense of arrival. Clusters of flowering and other ornamental plant species such as knockout roses, ornamental grasses and annuals is strongly encouraged. A minimum of 200 square feet shall be planted on each side of the entrance drive.

2. For all non-residential development fronting on collector roads the following standards shall apply:

   a. A minimum 15-foot-deep landscaped greenway shall be established parallel to the entire frontage along the road right-of-way. If an easement parallels the right-of-way frontage and precludes the ability to meet the requirements, as specified below, the 15-foot greenway shall be in addition to the easement width or increased to the extent that the planting requirements can be met. (Example: A 15-foot power easement directly adjacent to the right-of-way that does not allow trees planted within it will require the 15-foot greenway to start inside the property once outside the easement for a total of 30 feet required).

   b. The greenway shall include:

      i. One (1) large canopy tree (Live Oak preferred) per 50 feet of linear frontage, spaced no more than 50 feet on-center (o.c.) for the entire lot frontage. For areas where overhead

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utilities exist that preclude planting large trees, two (2) small or medium canopy trees shall be provided for every one (1) large tree required.

ii. A double row staggered evergreen shrub hedge or otherwise approved continuous grouping of evergreen shrubs planted along the lot frontage planted at a minimum of two and one-half (2 ½) feet o.c. and a species capable of being maintained at a three (3) foot height within two (2) years of planting.

iii. Vehicular entrances shall be defined using a mixture of trees, shrubs and groundcovers that will create a sense of arrival. Clusters of flowering and other ornamental plant species such as knockout roses, ornamental grasses and annuals is strongly encouraged. A minimum of 100 square feet shall be planted on each side of the entrance drive.

c. All required greenways shall contain only living plant materials; provided, the following may be located within the greenway in addition to the planting requirements, when approved as part of the final site development plan:

i. Decorative walls or fences less than four (4) feet high;

ii. Vehicular access drives placed approximately perpendicular to the right-of-way;

iii. Electrical, telephone, gas, water supply, sewage disposal, and other utilities may be constructed to pass through or across the required buffer area. If the installation of such services impacts the requirements of this ordinance, additional landscaping and/or greenway area may be required to meet the intent and standards of this section;

iv. Foot and bicycle paths (including sidewalks);

v. Landscape sculpture, lighting fixtures, trellises, pedestrian amenities and arbors;

vi. Bus/transit shelters;

vii. Signs;

viii. Berming or mounding of soil; and

ix. Bioretention and other heavily vegetated stormwater BMPs.

d. When calculating lot frontage, driveways shall be subtracted from the linear foot total.

i. Where existing or created lagoons and drainage swales will occupy a substantial portion of the required street yard greenway, additional depth may be required to achieve the intent of this section.

ii. Any area not otherwise planted shall be sodded.

iii. The minimum planted size for each plant type within required street yard greenways shall meet the minimum specifications cited in Table 10.30.

B. **Residential and Sylvicultural (Timbering) Uses**. A street yard greenway at least 20 feet in depth shall be established adjacent to the perimeter street right-of-way of all single- and two-family residential developments and 50 feet in depth along timber harvesting sites; provided, timbering sites adjacent to a residential use shall maintain a separation of 100 feet along the entire property line that abuts the residential use. The following requirements shall apply to the street yard greenways:

1. Plantings. Plantings shall consist of trees and shrubs in combination. Planted areas shall be in areas that will provide the best screening effectiveness. The following minimums shall apply to street yard greenway plantings:

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a. Fifteen (15) large evergreen shrubs per 1,000 square feet of greenway (Shrubs shall attain a minimum height of six (6) feet within three (3) years after planting).

b. Two (2) small or medium canopy trees per 1,000 square feet of greenway.

c. One (1) large canopy tree per 1,000 square feet.

2. Protected Trees. In all cases, the requirements of Section 10.90 shall be met; provided, that existing protected trees shall be counted toward the planting requirements for street yard greenways.

3. Walls. If incorporated into the required street yard greenway, walls shall be constructed in durable fashion of masonry materials on both sides and be a minimum height of four (4) feet. The wall shall be placed along the interior of the greenway area with the required plantings located on the street side of the wall.

4. Fences. If fences are incorporated into the greenway, they shall be constructed of durable, low-maintenance materials such as standard pressure treated wood (but not woven wood) or vinyl and be at least four (4) feet in height. Fences shall be placed along the interior of the greenway with the required plantings located on the street side of the fence.

5. Berms. Earthen berms, if incorporated into the greenway, shall have a slope of 3:1 and a flat-topped crown at least two (2) feet wide. Plant material shall be placed along the top of the berm and the side slope facing the street. Berms shall not exceed six (6) feet in height and shall be undulated to provide a more natural appearance.

C. **Single-Family Detached Subdivisions**. In addition to the requirements of Section 10.50 B, the required street yard greenway for single-family detached residential subdivisions shall also be subject to the following standards:

1. For single-family subdivisions, a greenway 50 feet in depth and meeting the requirements of Section 10.50 B shall be maintained along the street frontage where the rear yard of the lots abuts the street right-of-way.

2. The greenway shall be a combination of existing healthy vegetation and/or newly planted landscaping; provided, all existing protected trees shall be retained within the greenway. The greenway shall remain uninterrupted along the length of the property, except to allow for access roads, signs, and entry features. Diseased, dead, or invasive species shall be removed from the greenway. Should the existing vegetation not provide an adequate greenway, additional supplemental plantings, berms, etc. may be required.

D. **Multiple-Family and Attached Single-Family Uses**. In addition to the requirements of Section 10.50 B, the required street yard greenway for multiple-family and attached single-family uses, shall also be subject to the following standards:

1. A street yard greenway of 50 feet in depth shall be maintained along the entire property frontage abutting the street right-of-way.

2. The greenway shall remain uninterrupted along the length of the property, except to allow for access roads, signs, and entry features.

3. All protected trees shall be retained within the greenway and supplemented, as needed. In all cases, the requirements of Section 10.90 shall be met; provided, that existing protected trees shall be counted toward the planting requirements for street yard greenways.

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Section 10.60 Parking Lot Landscaping

A. **Applicability.** Surface parking lots of more than 20 spaces shall include landscaped tree islands meeting the requirements of this section.

B. **Requirements.** The following landscaping requirements shall apply for parking lot interiors:

1. A landscaped island at least 10 feet wide and 120 square feet in area shall be installed within all parking rows at intervals no greater than every 10 parking spaces. Each landscaped island shall contain one (1) medium canopy tree, as specified in Table 10.30.
2. If overhead utilities preclude the planting of a medium tree, small trees and/or palms shall be planted at a ratio of two (2) small trees and/or palms to every one (1) medium tree required.
3. All island plantings shall be protected from vehicle bumpers with curbing, wheel stops or other appropriate means of protection.
4. All islands shall have soil suitable for vigorous plant growth to a minimum depth of 24 inches. The top of grade for the center of all islands shall be mounded to a height of 12 inches above adjacent curb or edge of pavement. The use of unsuitable, muck/clay soils in these areas is prohibited. Any islands that have been compacted during construction shall have the compacted soil removed and replaced with appropriate soil capable of allowing vigorous plant growth. The city reserves the right to inspect the soil within these areas at any time and should the soils be found to be substandard, the soils, plantings, mulch, etc. shall be removed and replaced, as necessary, to be in conformance. A note acknowledging these soil requirements shall be included on all landscape plans.
5. All islands shall also be planted with low growing shrubs and/or groundcover.

C. **Alternatives.** Alternatives to the strict application of the maximum of 10 spaces in a row may be considered where practices such as preservation of existing trees are proposed.

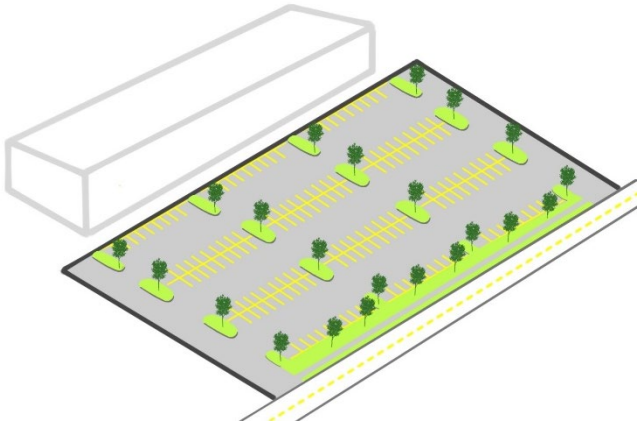

Figure 10-4 Parking Lot Landscaping

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Section 10.70 Screening

A. **Applicability.** Outdoor storage, service, and dumpster areas shall be adequately screened with permanent vegetation and/or walls when visible from adjacent properties or street right-of-way, in accordance with the following:

1. The design of a screening wall shall be the same architectural style as the principal building or buildings on the lot.
2. Except where otherwise allowed by these regulations, any wall shall be opaque to prevent the passage of light and debris and shall be constructed of textured or split-faced block, brick, stone, stucco over concrete block, architectural tile, or similar opaque materials. Unfinished concrete block shall not be permitted.
3. The height of a wall shall be adequate to block view to the area being screened, but shall not exceed eight (8) feet, except as otherwise allowed by this section. Wall height shall be measured from the finished grade at the base of the wall to the top of the fence or wall but shall not include columns or posts.
4. Walls shall be interrupted at intervals not exceeding 25 feet by architectural features such as pilasters or columns or by various species of plants that are at least as tall as or taller than the wall.
5. Such walls shall be setback a minimum of five (5) feet from any adjacent property lines, unless otherwise approved as part of the site development plan review.
6. Additionally, during site development plan review, evergreen plantings or other trees may be required along the wall to provide a visual accent for lengthy and monotonous walls.

B. **Landscape Alternative.** In lieu of a screen wall, a dense landscape screen which, in the site development plan reviewer's sole discretion, meets the intent of this section to visually screen and soften the impact of the storage, service, or dumpster area.

C. **Modification.** Where the storage, service, or dumpster is located adjacent to a required buffer or street yard greenway, the requirements of this section may be waived or modified by the City Council, as provided in Section 10.80.

Section 10.80 Landscaping Modifications

A. **Conditions.** The requirements of this article may be waived or modified by the City Council, under any of the following conditions:

1. If it is clearly demonstrated that the existing topography and/or vegetation will achieve the purposes of this article.
2. If it is clearly demonstrated that for topographic reasons, no required screening device could reasonably screen the ground level activities of the use from the adjacent street or first-floor view of an abutting structure.
3. It is clearly demonstrated that an existing (or proposed) public right-of-way separation between adjoining properties will achieve the purposes of this article.

B. **Petition.** Any person affected by this article may petition the City Council for a waiver or modification from the strict application of any provision or provisions, as follows:

1. The application shall be made upon a form provided by the Zoning Administrator.

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2. A public hearing shall be held on the application after due notice to the applicant and adjoining property owners.
3. The City Council, upon considering all evidence and input at the public hearing, shall approve or deny the request, based upon the following criteria:
    a. That there are unique physical circumstances or conditions or exceptional topographical or other physical conditions peculiar to the particular property that prevent or severely inhibit compliance with all or a portion of the requirements of this article.
    b. Failure to grant relief would result in practical difficulties and exceptional hardship.
    c. That granting relief would not adversely impact the overall purpose and intent of this article and would be the minimum necessary based on conditions of the property.

C. **Alternate Site Planting.** Council, after finding that a waiver or modification of the landscaping requirements meets the above review criteria, may require that the trees/shrubs shall be planted on an alternate site with the following conditions:

1. The required number of trees, shrubs, etc. planted offsite in lieu of onsite planting shall be two (2) times the number required to meet the onsite planting requirement.
2. The alternate location for the required planting must be approved by the City Council.

Section 10.90 Tree Preservation

A. **Requirements.** These regulations shall apply to all trees and land in the City of Port Wentworth, except as noted below; provided, that even for those exempted, tree preservation and best practices are strongly encouraged to uphold the intent of this ordinance.

1. Applicability. All trees not specifically exempted shall be regulated by the provisions of this ordinance. Protected tree classifications are defined in Section 10.90 B. Conditions under which protected trees may be removed by permit are specified in this section.
2. Exemptions. The parties listed below are exempt from this section to the extent specified.
    a. Timber harvesters and foresters: Timber harvesting and forestry shall be exempt from this section. However, harvesting trees less than three (3) years prior to installation of artificial improvements or other development activities shall be a violation of this ordinance, unless approved by the City Council.
    b. Commercial tree farms and nurseries: Growers raising trees for sale and transplant shall not be held to the provisions of this article; provided, such trees are not planted in protected wetlands or required buffer zones after the adoption of this ordinance.
    c. Public utilities: Utility providers shall be exempt from these regulations within easements and rights-of-way in which clearing is necessary for the public safety and welfare. The regulations of this article, however, shall apply within any required buffer zone.
    d. Occupied single-family dwelling: Developed single-family residential lots shall be exempt from the heritage tree protection requirements, but not those pertaining to grand trees or specimen trees: provided, the lot is occupied by a single-family dwelling or manufactured home erected on the lot prior to the adoption of this ordinance. This provision shall not exempt individual lots or parcels being prepared for development and shall not exempt existing developed lots from the provisions of Section 10.90 A.4 regarding the preservation of trees within the street yard greenway.

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3. Maintenance or Removal. Nothing in this section shall be construed to prevent the ordinary pruning, trimming, and maintenance of a tree, nor to prevent the cutting or removal of any tree that is diseased, dying, or required to be removed by a governmental agency for public safety. However, such maintenance or removal shall only be performed by a certified arborist.

4. Street Yard Greenway Trees. On any lot or parcel developed prior to the adoption of this ordinance, no existing trees shall be removed, except as otherwise permitted, from the area where a street yard greenway is required by Section 10.50.

B. **Protected Tree Classifications**. These regulations shall apply to three (3) categories of trees: Heritage Trees, Grand Trees, and Specimen Trees, collectively known as Protected Trees.

1. Heritage Tree. All trees meeting a minimum of 12 inches diameter at breast height (dbh) but less than 24 inches dbh.

2. Grand Tree. A grand tree, due to its age and stature, is considered to have irreplaceable value and is defined as any tree 24 inches in dbh or greater.

3. Specimen Tree. A tree that is of significant size for that species as determined by an arborist, landscape architect, forester, or other licensed tree professional.

C. **Tree Preservation Standards**. Protected trees, unless otherwise permitted by these regulations, shall not be removed, or be caused to be removed. Approval to remove such trees shall be obtained from the Zoning Administrator upon filing a request for a tree removal permit. If approval to remove protected trees is given, the removed trees shall be replaced according to the mitigation requirements of Section 10.90 G. Individuals failing to obtain a tree removal permit shall be cited as provided in Section 10.90 F.

D. **Tree Removal Permit**. Except as otherwise exempt, it shall be unlawful to fell, improperly prune, or otherwise destroy a protected tree without first obtaining a tree removal permit from the Zoning Administrator.

1. Exception. A tree removal permit shall not be necessary to remove a tree creating imminent danger to other trees, permanent structures, public utilities, rights-of-way, or persons. A tree posing imminent danger shall be defined as one damaged by a storm, fire, or vehicular accident such that its structural integrity is seriously compromised and that the tree can be reasonably expected to fall and injure persons or structures.

2. Permit Application Procedure.

a. Application for a tree removal permit must be made at least three (3) business days in advance of the proposed tree removal. The Zoning Administrator shall issue the permit, valid for 60 days, if the request meets the criteria for tree removal, as specified in Section 10.90 D.3.

b. The applicant may apply for a tree removal permit concurrently with a subdivision plan submittal, request for conceptual site development plan approval, or a building permit.

c. A tree survey, meeting the requirements of this section, shall be submitted as part of the permit application. The tree survey shall be prepared by a certified arborist and shall depict the location, species, and size in dbh of all protected trees in the development area and differentiate them as to whether they are heritage, grand, or specimen trees. The development area shall be defined as all areas within 50 feet of any proposed grading, temporary and permanent structures, and other improvements; and as wetlands proposed to be disturbed. The survey shall specify which trees are proposed for removal.

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i. For developments disturbing more than 25 acres, this tree survey requirement may be satisfied by a "sample area" survey. Each sample shall cover at least one (1) acre. Sample areas shall be evenly distributed throughout the site and proportional to the acreage of types of forest found on the site. Sample areas shall represent at least five (5) percent of the site or five (5) acres, whichever is greater. The surveyor shall estimate the relative densities and total number of heritage trees across the site based on the distribution of these trees in the samples. Grand trees and specimen trees shall nevertheless be individually surveyed and documented by location, species, and size in dbh. Upon reviewing the sample survey, the plan reviewer may require that inventories be taken of additional sample sites of their choosing.

ii. For development plans disturbing 25 or fewer acres, all protected trees shall be individually surveyed.

d. Trees to be preserved will be physically marked with brightly colored engineer's tape. The property may first be inspected by the Zoning Administrator before approval is granted. The tape on those trees approved for preservation shall be left in place throughout construction. Following inspection by the Zoning Administrator, the tree removal permit will be approved, partially approved, or disapproved.

e. If the permit is approved or partially approved, the applicant shall post a financial guarantee, as provided in Section 12.90, prior to commencing any tree removal activities to ensure preservation of those trees not authorized for removal.

f. It shall be the responsibility of the applicant to post the tree removal permit on the property in a place that is visible from the public right-of-way throughout any tree removal activity.

3. General Criteria. The following conditions, when attested to by a registered forester or certified arborist, shall constitute grounds for issuance of a tree removal permit regardless of use or zone:

a. Trees potentially hazardous to surrounding trees, permanent structures, public utilities, rights-of-way, or persons due to a loss of stability caused by high wind, unstable soil, age, or other natural forces.

b. Diseased and/or infectious trees and trees in decline.

c. Trees or their root systems causing visible damage to permanent structures that cannot be prevented through proper pruning.

d. Trees or their root systems causing damage to utility lines that cannot be prevented through proper pruning.

e. Trees inhibiting access through a street right-of-way such that proper pruning cannot mitigate the condition.

f. Trees creating hazardous conditions on pedestrian walkways underneath such trees due to excessive debris of a size and shape known to cause injuries from tripping and falling, as determined by the Zoning Administrator.

4. Design Criteria for Property Development. The following criteria shall be followed with respect to the applicable property development:

a. Subdivision of parcel: The subdivider shall make conscious efforts to avoid grand trees and specimen trees, as well as groupings of heritage trees in proposing placement of rights-of-way and easements. Additionally, lots shall be platted in a way that avoids removal of grand trees,

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specimen trees, or groupings of heritage trees such as locating them in the middle of proposed lots. Lot lines should be platted adjacent to protected trees to retain them as design features and vegetative buffers and to mitigate storm water run-off and erosion problems.

b. Building envelopes: Grand trees and specimen trees within a proposed building footprint and for a distance of 20 feet from the perimeter of that footprint shall be mitigated if removed, in accordance with Section 10.90 G. Heritage trees within a building footprint and an area 20 feet from the perimeter of the footprint may be removed without mitigation, if determined to be necessary by the reviewer.

c. Setbacks and buffers: Protected trees shall not be removed from required setbacks (except as may be permitted by paragraph b regarding building envelopes), street yard greenways, or buffer zones and shall be counted toward the landscape requirements for such areas. A protected tree may be limbed up if located outside a required buffer. Heritage trees may be limbed up to eight (8) feet, while grand trees and specimen trees may be limbed up to 16 feet to provide view sheds.

d. Means of access and parking: Grand trees and specimen trees shall not be removed to make way for parking lots, parking spaces, drive aisles, or driveways, unless the applicant demonstrates to the satisfaction of the reviewer that no reasonable alternative exists. Heritage trees may be removed in these locations, but mitigation shall be required per Section 10.90 G.

e. Outdoor uses and active recreation areas. Except as otherwise restricted in this section, protected trees may be removed on land where the principal use is proposed outside; provided, mitigation shall be required for all trees per Section 10.90 G. The Zoning Administrator shall determine whether the proposed outdoor use qualifies under this provision and that the protected tree removal is the minimum necessary to accommodate the proposed use. Qualifying uses shall include, but are not limited to: outdoor sales areas with minimal ancillary indoor space, transportation and construction businesses that store fleet vehicles on site, outdoor storage of containers and oversized bulk items that cannot practically be stored under roof, industrial activities and processes that do not occur under roof, as well as recreation areas, such as golf courses, athletic fields, courts, and pools managed by schools, public recreation departments, country clubs, home owners associations, and other legally established organizations.

f. Streets: Protected trees may be removed without mitigation from public rights-of-way to allow for arterial and collector street construction, including widening, intersection improvements, parallel bicycle/pedestrian improvements, and drainage improvements. Grand and specimen trees removed for construction of local street projects shall be mitigated per Section 10.90 G, while heritage trees may be removed from local street rights-of-way without mitigation.

g. Water, sewer, and drainage improvements: Protected trees may be removed, but must be mitigated per Section 10.90 G, for installation of water, sewer, and drainage infrastructure and implementation of associated easements on private property.

h. Waters of the State: Protected trees within 25 feet of any water of the state shall be preserved and no disturbance shall occur within the critical root zone, even if more than 25 feet distant from such water.

E. **Tree Protection Procedures**. The base and root system of most trees are very sensitive to changes and must be protected to ensure the tree's health and survival. The following measures shall also be taken to protect trees located off-site, but whose limbs and drip lines encroach across property boundaries.

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1. Protected trees shall have their critical root zone guarded before, during, and after construction against the following:
    a. Unnecessary cutting, breaking, or skinning of roots
    b. Skinning and bruising of bark
    c. Storing or stockpiling construction, excavation, or other machinery, tools, materials, and debris within drip lines
    d. Burning within drip lines
    e. Absorption of wastewater run-off within drip lines
    f. Excessive foot or vehicular traffic within drip lines
    g. Parking vehicles within drip lines
2. Wounds to protected trees shall be cleaned to sound wood by removing loose bark and wood, leaving a smooth edge around the wound, and be properly dressed.
3. If any protected tree roots are to be removed, they shall be severed clean and treated with a two (2) inch layer of mulch applied on the surface above the roots, to be retained and replenished throughout harvesting and construction activities.
4. Soil removal or fill within the drip line of a protected tree shall be limited to six (6) inches in depth. Any soil added under the drip line shall be a loamy soil mix to ensure minimal compaction.
5. The following additional measures shall be taken to protect trees scheduled to be retained in preparation for and during property development.
    a. Setbacks. Site improvements, other than landscaping and hardscaping, shall not occur within the critical root zone.
    b. Protective barricading. Barricades shall be erected around all protected trees according to required setbacks, as provided in Subsection 5.a. above. Barricades shall be erected prior to the start of site grading and shall remain in place until all construction activities are complete. The following standards apply:
        i. Barricading trees in groups is encouraged.
        ii. Barricades a minimum of three (3) feet high shall be erected and readily apparent, including in the rear view or side mirror of vehicles and construction equipment moving in reverse.
        iii. Barricading shall consist of orange safety fencing supported by wood/metal members or other comparable material approved by the Zoning Administrator. In any case, barricading shall be capable of repelling a man moving at walking speed. Flagged string or tape, alone, shall not be sufficient to meet the barricading material requirements.
        iv. All tree protection areas shall be designated with signs or tape posted visibly on or within the required barricade. Tree protection area signs shall denote the area as off limits for the sake of tree protection.
        v. Utilities shall not be installed in tree protection areas without the use of special tunneling techniques to preserve root systems.

F. **Violation and Penalty**.

1. The removal, damage, or destruction of a protected tree without a required tree removal permit

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shall constitute a violation of this ordinance. Each protected tree that is removed, damaged, or destroyed shall constitute a separate offense. Each day during which the loss of the tree goes unmitigated, as provided below, shall be judged a separate offense.

2. In lieu of any fines and penalties incurred by a violator of this section, the Zoning Administrator may require tree replacement as a condition of granting Certificates of Occupancy. Replacement trees shall be required such that the total caliper-inches of new trees shall be equivalent to a 50% increase in the mitigation requirements as set forth in Section 10.90 G. In no case, however, shall any replacement tree measure less than four (4) inch dbh for any protected tree.
3. In the event that violations of this article result in the issuance of a stop work order, the violator shall be responsible for tree replacement, payment of fines, or posting a financial guarantee, as determined by the Zoning Administrator, before construction is allowed to resume.
4. In the event that the violator of tree protection standards cannot be identified and located, the developer shall be held responsible for fines and mitigation.

G. **Mitigation for Tree Removal.**

1. Trees planted for mitigation shall meet the performance standards of this article. Mitigation for protected trees shall be as specified in Table 10-90, based on the species of the tree that was removed. In addition, the following size requirements shall apply:

   a. Mitigation for heritage trees shall occur at a rate of 50 percent, where every two (2) inches of heritage trees removed, measured in dbh, shall be replaced by one (1) inch of mitigation trees, measured in caliper-inches.
   b. Mitigation for grand and specimen trees shall occur at a rate of 100 percent, where every inch of tree removed, measured in dbh, shall be replaced by one (1) inch of mitigation trees, measured in caliper-inches.
   c. Any tree planted for mitigation shall measure at least four (4) inches dbh at the time of planting.

2. Any tree at least six (6) inches dbh but less than 12 inches dbh retained within the area of disturbance may be retained to contribute, inch for inch, to a tree mitigation requirement; provided, the tree does not stand in a wetland, any required buffer, street yard greenway, or other area in which the tree would otherwise be required to be conserved. Such trees shall be protected as heritage trees.
3. Trees planted for mitigation in new developments shall be in addition to those required for street yard greenways, buffering, and parking lots and may be used to create a street yard greenway in existing developments where such greenway does not currently exist.

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Table 10.90: Tree Replacement by Species Category		
Species Category		**Percent Replacement Required**
1	Live Oak, Bald Cypress, American Beech, Gingko, American Holly, Southern Magnolia, Sweetbay Magnolia, Tupelo, Chinese Pistache, White Oak, Willow Oak, Overcup Oak, Chestnut oak, Eastern Red Cedar	100
2	Persimmon, Ash species, Hickory species, Tulip Poplar, Sycamore, swamp White Oak, Scarlet Oak, Southern Red Oak, Shumard Oak, Post Oak, Laurel Oak	75
3	Sugarberry, Hackberry, Willow species, Water Oak, Black Cherry, American Elm, Red Maple	50
4[1]	Pine species, Sweet Gum, Callary Pear varieties, River Birch, Mimosa, Chinaberry, Chinese Tallow, Camphor tree, White Poplar	0

Section 10.100 Grading, Excavation, and Ponds

The construction, maintenance, or existence within the city of any unprotected, unbarricaded, open, or dangerous excavations, holes, pits, or wells, which constitute or are likely to constitute a danger or menace to the public health, safety, or welfare, is hereby prohibited; provided, this section shall not apply to the following:

A. any excavation under a permit issued by the city where such excavation is properly protected and warning signs posted in such manner as approved by the city; and

B. rivers, streams, other natural water bodies, ditches, reservoirs, and similar bodies of water created or existing by authority of governmental units or agencies.

Section 10.110 Stormwater Management

All requirements of Article III, Stormwater Management, of Chapter 7 of the City Code of Ordinances shall be met.

[1] Species in this category shall be exempt from the requirements of Section 10.90, except that Pine species and Sweet Gum shall be maintained in buffer areas requiring protection of all vegetation or vegetation of a certain size, and may be approved for plantings in such buffers.

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Article 11. Streets and Subdivision Design

Section 11.10 Intent and Purpose

A. **Intent**. To ensure safe travel and street conditions for all users, streets established in any subdivision shall comply with the requirements of this article.

B. **Purpose**. Street design shall enhance the quality of life for Port Wentworth's citizens by promoting high-quality residential development and minimizing safety hazards to drivers, cyclists, and pedestrians.

C. **Technical Specifications.** The Community Development Department maintains a set of standard details and specifications on file illustrating details of construction and design of streets, sidewalks, stormwater drainage facilities, site improvements, and other elements related to the development of land in accordance with the Zoning Ordinance. These details and specifications are contained in the City of Port Wentworth Comprehensive Development Manual.

Section 11.20 Subdivision Street Requirements

A. **Overall Design.**

1. Access and Circulation. Proposed streets shall provide a safe, convenient, and functional system for vehicular, bicycle, and pedestrian circulation and shall be appropriate for the particular traffic characteristics of each proposed subdivision or development. New subdivisions shall be supported by a thoroughfare network having adequate capacity and safe and efficient traffic circulation.
2. Street Layout. Street layout should show consideration of natural features such as trees and wetlands, drainage requirements, traffic calming measures, addition or relocation of public spaces, and utility location.
3. Major Thoroughfare Plan. The subdivider shall design the street system within such subdivision to conform to the location and arrangement of such arterial streets and collector streets of any applicable major throughfare plan adopted by the City of Port Wentworth.
4. Interior Streets. Interior streets within subdivisions shall be so laid out and designed that their use by through traffic and speeding traffic will be discouraged.
5. Continuation of Existing Street Pattern. The arrangement of streets in a subdivision shall provide for the alignment with, or the continuation of, or the appropriate projection of, existing principal streets in surrounding areas.
6. Street Access to Adjoining Property. If the City Council determines that street access to the adjoining property is needed, a street right-of-way shall be extended to the boundary of such property, and such right-of-way shall be dedicated to the public. If access through an unopened street is required, then the developer of the property for which access is required shall be responsible for opening and improving the unopened street.
7. Subdivisions on Arterial Streets. Where a subdivision abuts or contains an existing or proposed arterial street, residential lots shall not have individual driveways to the arterial street.

B. **Minimum Curb and Street Radius**. The lot line radius at intersecting streets shall be not less than 20 feet. The centerline radius of all curvilinear streets shall be not less than 75 feet.

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C. **Dead Ends**.

1. Permanent dead-end streets. Dead-end streets, designed to be such permanently, shall be provided at the closed end with a turnaround having an outside roadway diameter of not less than 80 feet and a right-of-way diameter of not less than 100 feet.

2. Temporary dead-end streets. Temporary dead-end streets shall be provided with a temporary turnaround area which shall meet the requirements for design, maintenance, and removal as approved by the Mayor and Council.

D. **Block lengths**. Any block exceeding 600 feet in length shall include a mid-block crosswalk. Blocks shall not exceed 800 feet.

E. **Half Streets**. Half streets shall not be permitted within a subdivision.

F. **Street Names**.

1. Street name markers. Street name markers which shall be constructed to City specifications shall be installed at all street intersections.

2. Street names. All streets within a subdivision hereafter established shall be named as approved by the Manager and Council. No name shall be used which will duplicate or be confused with existing street names.

G. **Gates**. No gates or other limited access devices shall be allowed on public streets.

H. **Sidewalks and Bike Lanes**.

1. Sidewalks shall be installed on both sides of streets. Requirements may be reduced for roads adjacent to or crossing wetland areas or lakes or where dwellings or buildings are not proposed.

2. When provided, bike lanes shall be in addition to the minimum pavement width. Bike lanes are a separate feature from pedestrian sidewalks and multipurpose trails and shall be constructed as such in accordance with guidelines developed by the American Association of State Highway and Transportation Officials (AASHTO).

I. **Streetlights**. Streetlights shall be installed in residential areas at a distance to provide safety to the neighborhood in accordance with City guidelines and requirements. Streetlights shall be installed in retail areas to provide illumination to encourage evening activity along the street.

Section 11.30 Private Street Easements and Maintenance

A. **Review and Recording**.

1. Applications for private streets and shared commercial driveways shall include a recordable legal instrument describing and granting the easement and a maintenance agreement.

2. The easement shall be recorded, and a copy of the recorded easement shall be provided to the Zoning Administrator.

B. **Easement Width**. See Table 11.40.

C. **Maintenance Agreement Content**. A copy of a recordable travel surface maintenance agreement, signed by all owners of the lands served by the access easement and other parties in interest, which includes the following:

1. Provisions that assure that the travel surface will be maintained, repaired, and snowplowed for the

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full width and length to ensure safe travel and accessibility by emergency vehicles at all times.

2. Provisions that assure that the costs of maintenance of the travel surface and its easement are paid for in an equitable manner.
3. A legal description of the easement and a legal description of the individual lots or parcels to be served. All properties served by the easement and travel surface shall be subject to the maintenance agreement.
4. Provisions declaring that the maintenance agreement constitutes a restrictive covenant, running with the benefitted lands, and binding on all current and future owners and other parties in interest as to the respective obligations stated therein.
5. Provisions to indemnify, save and hold the City of Port Wentworth and its officers, employees, and agents harmless from any and all claims for personal injury and/or property damage arising out of the failure to properly construct, maintain, repair, or replace the travel surface.
6. City Authority Regarding Private Streets. Notwithstanding the following, the City shall have no obligation for private street or maintenance or upkeep. However, the following shall be included:
   a. Provisions authoring the City of Port Wentworth, in its sole discretion, to perform reasonably necessary maintenance of the private street, subject to reimbursement by the owners of the properties served by the private street.
   b. Provisions authorizing the City, in its sole discretion, to enforce the terms of the private street maintenance agreement, by any lawful means, in addition to such enforcement by any of the owners of the lands served by the private street, or by another interested party.

Section 11.40 Street Dimensional Requirements

A. **Street Design and Construction Specifications**. All streets established in any subdivision shall be designed and constructed in accordance with the following specifications. Street types shall be proposed as part of preliminary plat review and approved based on the design requirements and standards in this article.

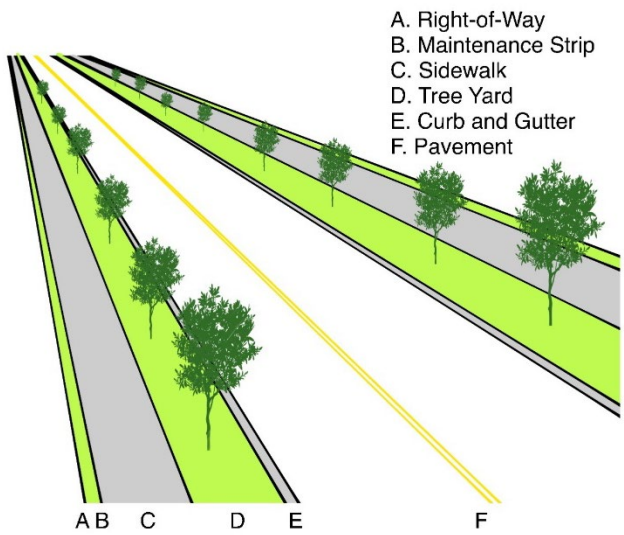

Figure 11-1 Street Design Elements

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B. **On-Street Parking.** On-street parking lanes may be approved by the City Council during the preliminary plat process and shall be a minimum of eight (8) feet in width. This width shall be in addition to the pavement width requirements in Table 11.40. On-street parking shall be marked or posted with signage approved by the Community Development Department.

C. **Curb and Gutter**. Curb and gutters shall be required for all streets.

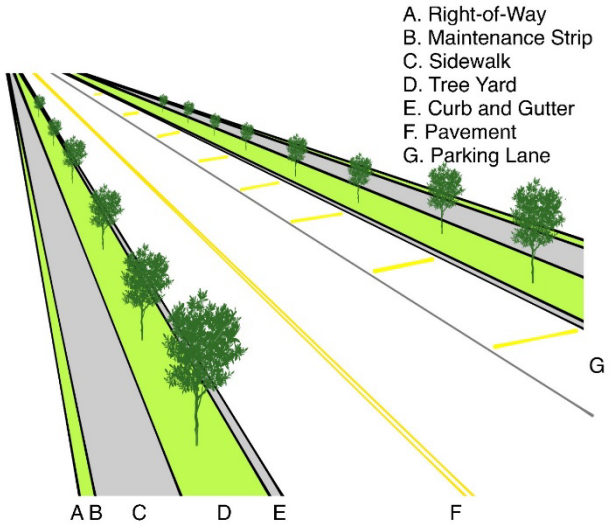

Figure 11-2 Street Design with Parking Lane

Table 11.40: Dimensional Requirements for Streets and Alleys

Specification	Arterial Street	Collector Street	Minor Street	Marginal Access	Alley
A. Min. width of right-of-way or private easement	80 ft.	60 ft.	60 ft.	40 ft.	20 ft.
B. Maintenance strip	1 ft.	1 ft.	1 ft.	1 ft.	1 ft.
C. Min. sidewalk width-single-family residential	5 ft.	5 ft.	5 ft.	5 ft.	--
C. Min. sidewalk width-multi-family residential	6 ft.	6 ft.	6 ft.	6 ft.	--
C. Min. sidewalk width-commercial	8 ft.	8 ft.	8 ft.	8 ft.	--
D. Min. tree yard	6 ft.	6 ft.	4 ft.	4 ft.	--
E. Curb and gutter (each side)	2 ft.	2 ft.	2 ft.	2 ft.	2 ft.
F. Pavement width	36 ft.	30 ft.	24 ft.	24 ft.	14 ft.[1]
G. Parking Lane	8 ft.	8 ft.	8 ft.	8 ft.	--

[1] Pavement width shall be increased if required by the Fire Department.

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Section 11.50 Subdivision Lot Layout and Design

A. **Street Access.** All lots shall front an existing public or private street unless performance guarantees are posted prior to the recording of a final plat.

B. **Lot Lines.** Side lot lines shall be as nearly as practical at right angles to straight street lines and radial to curved street lines.

C. **Corner lots.** Corner lots for residential use shall be provided with sufficient width and depth to permit the establishment of front and side street setbacks.

D. **Through Lots.** Through lots shall only be permitted where it shall be found necessary to separate a development from major arterials or to overcome specific disadvantages or topography and orientation.

E. **Minimum Lot Elevation.** No lot shall be approved that does not contain a suitable site of sufficient elevation to permit a finished floor elevation as required in the Flood Damage Prevention Ordinance if located in a FEMA Special Flood Hazard Area, or at a greater elevation than the localized one (1) percent annual, 24-hour chance design storm event, if not located in a FEMA Special Flood Hazard Area.

F. **Residential Lots in Floodplain.** Residential subdivision lots shall be prohibited within floodplain areas where the cost of providing governmental services in the area would pose an unreasonable economic burden.

G. **Lot Width and Lot Area Requirements.** Lots shall conform to the lot area and lot width requirements as set forth by the applicable zoning district in which the subdivision is located or as required by the Chatham County Health Department. Where the Chatham County Health Department requires wider or larger lots for private water and sewer, the stricter requirement shall prevail.

H. **Commercial and Industrial Lots.** Lots shall be of adequate depth and width for the type of commercial or industrial development contemplated and shall be sufficient in area and dimension to provide off-street parking and loading facilities.

I. **Preservation of Noteworthy Features.** In all subdivisions, to the maximum degree reasonably practicable, efforts shall be made to preserve historic sites, scenic points, trees in accordance with Article 10, and other desirable natural growths, watercourses and other water areas, and other features worthy of preservation, either as portions of public sites and open spaces, or in such other forms as to provide amenity to the neighborhood.

   1. Large trees or other desirable natural growths located in public or private street rights-of-way or public or private easements shall not be removed unless such removal is necessary for the installation of utilities or drainage structures or for other purposes in the public interest and approved by the Mayor and Council.

   2. Such removal may be prohibited if the amenity of adjacent property, or the amenity of the general neighborhood, is adversely affected.

J. **Exempt Lots.** Lots that do not comply with the requirements of the applicable zoning district are prohibited, except as follows:

   1. Signage, Landscape Features. The creation of an unbuildable lot in a proposed subdivision for the exclusive purpose of subdivision identification signage or subdivision entrance landscape features is authorized only under the following circumstances (no waiver, exception or variance is allowed):

      a. The lot must be located at an entrance to the subdivision as an "island" in the right-of-way of a

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local or minor collector street;

b. A mandatory homeowner's association is required for the subdivision for ownership and maintenance of the lot as common area.

2. Stormwater Management Facilities. The creation of an un-buildable lot for the exclusive purpose of providing and maintaining a stormwater management facility is authorized.

3. Private Streets. The creation of an un-buildable lot for the exclusive purpose of providing and maintaining a private street is authorized.

4. Conservation Areas The creation of an un-buildable lot for the exclusive purpose of conserving land from development is authorized and must be recorded as such.

5. Common Areas. The creation of an un-buildable lot, in common ownership, for the exclusive purpose of providing neighborhood amenities such as swimming pools or outdoor amenity space.

Section 11.60 Easements, Monuments, and Benchmarks

A. **Easements.**

1. Types. The following kinds of easements shall be required within subdivisions:

a. Utility Easement. Utility easements for water, sewer, and gas shall be provided where necessary, shall not be less than five (5) feet in width, and shall be centered on side or rear property lines when possible. The location, elevation, and construction of all public utilities, such as sewer, gas, electrical and water systems, and streets, shall be in such a manner as to minimize or eliminate damage by flooding.

b. Drainage Easement. Where a subdivision is traversed by a water course, drainage way, channel, or stream, there shall be provided a stormwater easement or drainage right-of-way which shall conform substantially with the lines of such water course, drainageway, channel, or stream or shall be of such additional width or construction, or both, as will be adequate for the purpose.

c. Maintenance Easement. Where a drainage canal is of such size that it requires mechanical means for cleaning, such as a dragline, there shall be a 12-foot access easement on either side of such canal for access purposes unless similarly sized areas already lie within the drainage right-of-way within which the canal is located.

2. Width. Required easement widths shall be increased if required by the City Engineer or in accordance with the Comprehensive Development Manual.

3. Dedication. Easements shall be noted on the preliminary plat and shall be dedicated prior to final plat approval.

B. **Monuments.** The subdivider shall provide stone or concrete monuments four (4) inches in diameter or square, 30 inches long, with a flat top, which shall be set at each street corner, and at all points of curvature in each street. The top of the monument shall contain a metal pin or be scored with an indented cross to properly identify the location. The subdivider shall also provide all interior lot corners of subdivisions with concrete monuments, iron pins, or iron pipes. Iron pipes shall be at least one-half-inch in diameter and 24 inches in length.

C. **Benchmarks.** At least two (2) benchmarks shall be established within a subdivision. Such benchmarks shall be at opposite corners of the property being subdivided.

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Section 11.70 Water Supply and Sanitary Sewerage

A. **Public Water and Public Sewerage.**

1. When available in accordance with the Environmental Protection Division (EPD) of the Georgia Department of Natural Resources and City of Port Wentworth requirements, every portion of a subdivision shall be served by public water; when feasible, as determined by the Mayor and Council, every portion of a subdivision shall be served by a sanitary sewer system. All such systems shall be designed to preclude infiltration of flood waters into the system and discharges from the system into flood waters.
2. Water and sewer systems must be constructed in accordance with EPD and City of Port Wentworth design specifications; sewer systems must connect to an existing publicly-owned treatment plant, where practical, and both water and sewer systems and trunk lines shall be conveyed to the City of Port Wentworth.
3. When sewer is available, connections will be required to lots that were previously approved with septic systems.

B. **Private Water and Private Sewerage.** Where either public water or public sewers or both are not available to a subdivision as determined by the Mayor and Council and a subdivider shall decide to establish a private water supply system and a private sewer system, then the plans and specifications for such private water system and sewer shall be approved by the Chatham County Health Department and the Mayor and Council. Any such private systems shall be so located as to avoid impairment of them, or contamination from them, during times of flooding.

C. **Publicly-Owned Water and Sewer Systems.**

D. **Fire Hydrants.** Fire hydrants shall be required for all subdivisions by a public or private internal water distribution system and shall be located and designed in accordance with the standards as set forth in the "Standard Fire Prevention Code," 1985 edition as amended, Section 603.1.3.

E. **Non-Potable Reuse Line (NPRC).** A non-potable reuse water main shall be installed in a subdivision. The system shall include reuse water mains, valves, fittings, and hydrants and shall be installed in accordance with the plans and specifications approved by the City of Port Wentworth. The system shall be designed and installed in accordance with the City of Comprehensive Development Manual.

Section 11.80 Subdivision Modifications

When a peculiar shape, or the topography of a tract of land, or other unusual condition, makes it impractical for a developer to comply with the literal interpretations of the design requirements of this article, the City Council, following a recommendation of the Planning Commission, may approve modifications to the design requirements in this article as part of preliminary plat review; provided, however, that in so doing the intent and purpose of this article are not violated.

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Part IV. Review Processes and Standards

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Article 12. General Processes

Section 12.10 Intent and Purpose

A. **Intent and Purpose.** The intent and purpose of this article are to establish a uniform set of submittal, processing, and review requirements for land development proposals and new structure requests to determine compliance with the requirements and standards of this ordinance.

B. **Withholding of Approval**. The City Council, Planning Commission, Board of Zoning Appeals, Zoning Administrator, or other authorized board, commission, or administrative staff may, in their sole discretion, withhold considering approval of any plan, use, or permit request until receipt of all required permits or approvals from other local, state or federal departments or agencies.

Section 12.20 Application, Contents, Fees, and Completeness

A. **Application.**

1. Application. Requests for review and approval of uses, activities, construction, and development required by the Zoning Ordinance shall be provided on official City application forms. An application shall be submitted to the Community Development Department during normal office hours.

2. Authority to File Applications. Applications shall only be submitted by an owner of the property subject to the request, a purchaser under a sale or option to purchase the subject property, or an agent authorized in writing by the owner.

3. Deadline. For all requests that require Planning Commission or Zoning Board of Appeals review, complete applications shall be submitted by the deadlines established annually by the Planning Commission and Zoning Board of Appeals for the meeting in which the applicant desires the request to be considered.

4. Contact Person and Meeting Representation. The application shall indicate one (1) person as the primary contact. The Zoning Administrator or other authorized City official will communicate with the contact person concerning the application and review procedures. The applicant shall notify the City in writing if there is a change in the contact person. The contact person shall be present at all scheduled review meetings, or consideration of the application may be postponed due to lack of representation.

B. **Fees.**

1. Administrative Fee. Required administrative fees shall be paid to the City at the time of application submittal. Administrative fees are non-refundable unless the project is withdrawn prior to administrative time and effort spent on review and processing. The fee schedule is approved by the City Council resolution, is available at the City office, and may change from time to time.

2. Professional Review Fees. An applicant shall also submit a professional review fee determined by the City Council. This fee is an estimate of the costs which may be incurred by the City in reviewing and acting upon development proposals in accordance with an escrow policy adopted by City Council resolution, and the fee may change from time to time.

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C. **Content.**

1. Submittal Checklists. Applicants shall refer to the submittal checklists and shall provide the items required that are specific to the request.
2. Waiver Requests. The applicant may request waivers for items required on submittal checklists.

D. **Completeness Review.**

1. Requirement. An application submitted for review in accordance with this article shall be submitted in complete form, including the application, required checklist items, and applicable fees.
2. Waivers. On a case-by-case basis, the Zoning Administrator or other authorized City official may waive checklist items if determined to be unnecessary or not applicable to the review process based on the scope of the development proposal. However, the final decision-making authority may subsequently require the submittal of waived items if determined to be necessary to act on an application.
3. Completeness Determination. If deemed to be complete by the Zoning Administrator or other authorized City official, an application will be formally processed and reviewed. If the Zoning Administrator or other authorized City official waives required checklist items, the application may be deemed complete if all other items are received.
4. Incomplete Application. If deemed incomplete by the Zoning Administrator or other authorized City official, the applicant will be informed within 14 days of receipt, and the application will not be formally processed and reviewed until it is determined to be in complete form.

Section 12.30 Review Authorities and Application Types

A. **Review Authorities.** Table 12.30 summarizes application types and review authorities under the Zoning Ordinance.

Table 12.30: Review Authorities

Application Type	Zoning Admin.	Planning Commission	City Council	Zoning Board of Appeals
Legislative Review				
Zoning Text Amendment	R	R (PH)	D (PH)	--
Zoning Map Amendments	R	R (PH)	D (PH)	--
Preliminary PUD Plan and Rezoning	R	R (PH)	D (PH)	--
Special Use Permit with Concept Plan, if applicable	R	R	D (PH)	--
Subdivision Review				
Preliminary Plat	R	R	D	--
Final Plat with Dedication	R	--	D	--
Final Plat (exempt, minor, and major	D*	--	--	A (PH)
Permit Review				
Concept Site Plan and Major Amendment	R	R	D	A
Final Site Development Plan	R	D	A (PH)	--
Final PUD Plan	R	D	A (PH)	--

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Table 12.30: Review Authorities				
Application Type	**Zoning Admin.**	**Planning Commission**	**City Council**	**Zoning Board of Appeals**
Tree Removal Permit	D	--	--	A (PH)
Zoning Permit	D	--	--	A (PH)
Administrative Plan and Amendment	D	--	--	A (PH)
Relief				
Administrative Adjustment	D	--	--	A (PH)
Variance	R	--	--	D (PH)
R= review and recommendation authority; D= decision-making authority; A= appeal authority; (PH)= A public hearing is required *- In the case of final plats, the City Manager has final decision-making authority				

B. **Zoning Administrator Reviews.**

1. Zoning Permits.

   a. Zoning Permit- Use Compliance. A change from one permitted use to another permitted use, or establishment of a new permitted use, is subject to a use compliance review.

   b. Zoning Permit- Structure Compliance. Buildings and structures that do not require site plan review per Article 13 are reviewed administratively. Zoning permits are valid for one (1) year and expire if the structure or building construction does not commence within this timeframe.

   c. Zoning Permit- Certification of Conditions. After Planning Commission approves a site plan, the Zoning Administrator shall issue a zoning permit when all conditions of approval are satisfied.

   d. Zoning Permit- Certification of Site Compliance. Once all site work associated with a site plan, the Zoning Administrator shall issue a zoning permit.

   e. Zoning Permit- Minor Site Plan Amendment. For a minor amendment to a site plan in accordance with Section 13.80, which meets zoning requirements, the Zoning Administrator shall issue a zoning permit.

2. Building Permits and Certificates of Occupancy. Building permits and certificates of occupancy are processed in accordance with the building code. However, as the process relates to the Zoning Ordinance, the following applies:

   a. Building permits shall not be issued for building construction until all applicable zoning and site plan approvals are secured, as applicable, and after all conditions of approval are satisfied (Zoning Permit- Certification of Conditions). However, at the discretion of the Zoning Administrator, building permits may be issued conditionally so long as site plan requirements are satisfied prior to the issuance of a certificate of occupancy.

   b. Certificates of Occupancy shall not be issued until all applicable site improvements are installed and certified as complete by the Zoning Administrator or other authorized City Official (Zoning Permit- Certification of Site Compliance). However, at the discretion of the Zoning Administrator, Temporary Certificates of Occupancy may be issued conditionally so long as required site improvements are completed within a specified timeframe. Performance guarantees may be required per Section 12.70.

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Section 12.40 Notices for Public Hearings

A. **Requirements.** Whenever a public hearing is required by this ordinance, the notification requirements of this section shall be followed.

B. **Legal Notice.** Notice of public hearings shall be published within a newspaper of general circulation within the city in which are carried the legal advertisements of the City. The notice shall state the time, place and purpose of the hearing and include the location of property that is the subject of the zoning action, the present zoning district of the property, and the proposed zoning district or proposed zoning action, as applicable. The notice shall be published once, at least 15 days; but, not more than 45 days prior to the date of the hearing.

C. **Signs Posted.** Where a zoning action of property is initiated, the zoning administrator shall post a sign at least 15 days prior to the required public hearing in a conspicuous place on the property that is the subject of an application. The sign or signs will contain information as to the current zoning district, the proposed zoning district or zoning action, and the date, time, and location of the public hearings.

D. **Notification to Adjacent Property Owners.** At least seven (7) days, but not more than 45 days before the date of the public hearing, a notice setting forth the date, time and place for the hearing shall be sent by mail to the applicant, the mayor and council, and all owners of property located adjacent to, or within 300 feet of, or across a public right-of-way from the property that is the subject of the zoning application. The notice shall also include the location of the property, its present zoning classification, and the proposed zoning classification or requested zoning action. The names and addresses of owners of those properties to be notified shall be provided by the applicant. However, where a map amendment is initiated by the Planning Commission the names and addresses of those adjacent property owners shall be provided by the Zoning Administrator. Failure of the Zoning Administrator to send notices or failure of the property owner to receive notification shall not affect the validity of any zoning action. This procedure exists as a supplement to the legally required notification procedures.

Section 12.50 Decisions and Records

A. **Recommendations.** A recommending authority shall review an application against applicable zoning requirements and standards and shall provide a recommendation to the decision-making authority.

B. **Decisions.** The decision-making authority provides final decisions on all applications.

C. **Appeals.** Final decisions may be appealed to an appeal authority.

D. **Actions.** Recommendations and final decisions are limited to the following:

1. Approval.
2. Approval with conditions.
3. Denial.
4. Postpone or table action (not available for zoning permit reviews).

E. **Records and Findings.** Action taken regarding an application, along with the findings in support of that action, shall be recorded in the meeting minutes and by resolution or ordinance, if applicable. Actions of the Zoning Administrator shall be documented in writing. Copies of all officially approved plans shall be filed at the City Offices.

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Section 12.60 Conditions of Approval

A. **Applicability.** Reasonable conditions of approval may be recommended by the Planning Commission and approved by the City Council for site plans, Planned Unit Developments, and subdivisions. Conditions may also be applied to variance approvals by the Zoning Board of Appeals.

B. **Criteria.** Conditions shall be designed to ensure compliance with the intent of the Zoning Ordinance and shall be based on the following criteria. Conditions shall:

1. ensure that there will be no adverse impact on public services and facilities;
2. ensure that the use is compatible with adjacent and nearby land uses and activities;
3. protect natural resources; the health, safety, welfare, and social and economic well-being of those who will use the land use or activity under consideration; residents and landowners immediately adjacent to the proposed land use or activity; and the community as a whole;
4. ensure compatibility between the proposed use or activity and the rights of the City to perform its governmental functions;
5. meet the intent and purpose of the Zoning Ordinance, be related to the regulations and standards established in the ordinance for the land use or activity under consideration and be necessary to ensure compliance with those standards; and
6. ensure compliance with the intent of other City ordinances that are applicable to the site plan.

C. **Performance Guarantee.** A performance guarantee in accordance with Section 12.70 may be incorporated as a condition of approval.

Section 12.70 Performance Guarantees

To ensure compliance with this ordinance and any conditions of project approval, the City may require a cash deposit, certified check, irrevocable letter of credit, or surety bond covering the estimated cost of improvements to ensure completion of the improvements. The performance guarantee shall be deposited at the time of the issuance of the permit authorizing the activity or project. The City shall not require the deposit of the performance guarantee until it is prepared to issue the permit. The City shall rebate cash deposits in reasonable proportion to the ratio of work completed on the required improvements based on an established policy. The monetary value of a performance guarantee shall be approved by the City Engineer.

Section 12.80 Administrative Adjustments

A. **Purpose.** Administrative adjustments are intended to allow the City Manager or their designee to review and approve minor deviations from specified zoning requirements. This authority provides limited flexibility to consider requests for adjustments without requiring an applicant to seek a variance or amendment to this ordinance.

B. **Process and Authority.** An administrative adjustment shall only be reviewed as part of a formal development application or as a minor amendment to a plan. The City Manager or their designee may approve an adjustment if the applicant provides justification that the adjustment will address an unusual or unique site or building condition and does not result in an adverse or incompatible effect on adjacent property. At their discretion, City Manager or their designee may forward the adjustment request to the Planning Commission for review and action.

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C. **Justification.** The applicant shall submit documented justification for the request and demonstrate that there is an unusual or unique site or building condition that warrants an adjustment.

D. **Effect of Approval.** An administrative adjustment shall only apply to the specific requirement and aspect of a site plan or building plan as indicated on the plan and is only valid if developed or built in the manner shown on the plan.

E. **Validity.** Approval of an administrative adjustment expires in one (1) year.

F. **Allowable Administrative Adjustments.** The City Manager or their designee may grant adjustments for the following requirements to the limitations noted in Table 12.80.

Table 12.80: Allowable Administrative Adjustments

Requirement	Limitation of Adjustment (maximum)
Lot Requirements	
Minimum lot area	10%
Minimum lot width	10%
Minimum lot frontage	10%
Building Requirements	
Maximum building height	10%
Maximum building coverage	10%
Minimum front setback	10%
Minimum street side setback	10%
Minimum side setback	10%
Minimum rear setback	10%
Projection into setback	10%
Projection past height maximum	10%
Accessory building size and height	10%
Development Requirements	
Fence or wall height	10%
Landscaping numeric requirements	10%
Light fixture height	10%

G. **Prohibited Adjustments.** Any adjustment inconsistent with adopted building codes, fire codes, and engineering requirements, or the use of an adjustment on the same requirement and aspect of a site, is prohibited.

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Article 13. Site Development Plan Review

Section 13.10 Intent and Purpose

The purpose of this article is to establish a uniform set of requirements for the planning and design of developments within the City to achieve the following objectives to:

A. determine compliance with the provisions of this ordinance;

B. promote the orderly development of the City;

C. prevent depreciation of land values;

D. ensure a consistent level of quality throughout the community;

E. ensure a harmonious relationship between new development and the existing natural and manmade surroundings;

F. achieve the purposes of the City of Port Wentworth Comprehensive Plan; and

G. promote consultation and cooperation between applicants and the City in order that applicants may accomplish their objectives in the utilization of land, consistent with the public purposes of this ordinance and the comprehensive plan.

Section 13.20 Applicability

Varying levels of site development plan review are established, depending on the scale of the proposed development and potential impacts it may have on the community and immediate surroundings. This section defines the parameters under which varied levels of plans will be required for all commercial, industrial, institutional, and residential development and defines the required review, as follows:

A. **Administrative Review**. The Zoning Administrator shall review site development plans in connection with the creation of a use or the erection of a building or structure as indicated in Table 13.20.

B. **Preliminary Concept Plan Review**. The City Council, after review and recommendation by the Planning Commission, shall act upon all concept site development plans in connection with the creation of a PUD district, and as otherwise required.

C. **Final Plan Review**. The Planning Commission shall act upon all final site development plans in connection with the creation of a use or erection of a building or structure as indicated in Table 13.20.

D. **Applicable Projects**. Table 13.20 specifies the project categories applicable to each level of site development plan review.

Table 13.20: Site Development Plan Review

Applicable Projects	Administrative	Concept	Final
Requests for Land Disturbance Permit	X		
Construction of a new accessory building, not exceeding 1,000 sq. ft.	X		
Additions of less than 20 percent of the current gross floor area of an existing building or 5,000 sq. ft., whichever is less, in any zoning district	X		

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Table 13.20: Site Development Plan Review			
Applicable Projects	**Administrative**	**Concept**	**Final**
Changes in the use of any existing building in any zoning district; provided, the use is a "permitted" use in that district and any expansion does not exceed 20 percent or 5,000 sq. ft., as stated above	X		
Construction or expansion of a parking lot, not involving new buildings or additions	X		
Minor changes to an approved site plan, as specified in Section 13.80	X		
Applications for special use permits, as specified in Article 14		X	X
New construction of a principal building in any zoning district		X	X
Construction of a new accessory building, greater than 1,000 sq. ft.			X
Major changes to an approved site plan, as specified in Section 13.80		X	X
As otherwise required by this ordinance	X	X	X
When, in the opinion of the Zoning Administrator, a project which otherwise qualifies for administrative review may have a significant impact on surrounding properties, he may, in his sole discretion, submit the site development plan to the Planning Commission for review. In such cases, the Planning Commission shall follow the review procedure for final site development plans and may require any additional information needed to make an informed decision	X		

Section 13.30 Exemptions

Site development plan review shall not be required for a single or two-family dwelling when permitted by right on a lot on which there exists no other building or use or for any minor home occupation or accessory building in a residential district or residential planned unit development.

Section 13.40 Process

The process of reviewing a site development plan shall be as follows:

A. **Administrative Plan Reviews**. Administrative reviews shall be performed by the Zoning Administrator as follows:

1. The applicant shall submit an application, checklist materials, and fees in accordance with Section 12.20 A-B.
2. The Zoning Administrator shall review the site development plan for completeness in accordance with Section 12.20 D and shall obtain comments, as they consider necessary, from City departments or consultants.

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3. The Zoning Administrator shall consider the site development plan, any comments received, and the applicable standards of this ordinance and shall either approve the plan, as submitted, and act in accordance with Sections 12.50 and 12.60. At the Zoning Administrator's sole discretion, the application may be submitted to the Planning Commission for comment or a decision.
4. The reasons for the Zoning Administrator's action, along with any conditions that may be attached, shall be stated in writing and provided to the applicant.
5. If approved, two (2) copies of the approved site development plan shall be signed and dated by the Zoning Administrator and the applicant. One (1) copy shall be kept on file with the City and one (1) copy shall be returned to the applicant or his designated representative. If the plan is approved with conditions, a revised plan, including an electronic version, shall be submitted reflecting those conditions and signed by the applicant and Zoning Administrator prior to issuance of any permits.

B. **Concept Site Development Plan Reviews**. Concept plan reviews shall be performed by the Planning Commission and City Council in accordance with the procedures described below.

1. Prior to submitting an application for concept plan review, the prospective applicant shall conduct a neighborhood meeting to present the concept development plan and invite comments. The meeting shall be scheduled in the evening for the convenience of the potential participants. Invitations, at a minimum, shall be sent by the prospective applicant by first-class US mail or hand-delivered to all property owners within 300 feet of the subject property. The prospective applicant shall document the meeting indicating the location, list of those invited, number of attendees, comments received, and how (or if) the comments are addressed in the concept development plan to be submitted to the City.
2. Following the required neighborhood meeting, copies of a complete preliminary concept plan and an electronic version, in a quantity and format specified by the City shall be submitted to the Zoning Administrator along with an application for that purpose, documentation of the neighborhood meeting, and a fee, as established by the City Council.
3. The Zoning Administrator shall review the preliminary concept plan development plan for completeness in accordance with Section 12.20 D and shall obtain comments, as they consider necessary, from City departments or consultants.
4. Once the Zoning Administrator determines that the concept plan is complete, they shall transmit the plan, along with comments from City departments and consultants, to the Planning Commission for consideration at its next meeting. The Zoning Administrator shall not be required to submit any plan for review which did not meet a published submittal deadline.
5. The Planning Commission shall consider the concept plan and shall act in accordance with Sections 12.50 and 12.60. The Planning Commission review shall be based on the requirements of this article, public comments received at the neighborhood meeting, and the review standards of Section 13.60.
6. The reasons for the Planning Commission's recommendation, along with any proposed conditions, shall be forwarded to the City Council for action on the request. The City Council shall make its decision based on the standards of Section 13.60 and their relevance to the comments from the neighborhood meeting and Planning Commission recommendation.
7. If approved, two (2) copies of the concept plan shall be signed and dated by the mayor and the applicant. One (1) copy shall be kept on file with the City, and one (1) copy shall be returned to

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the applicant or their designated representative. If the plan is approved with conditions, a revised plan, including an electronic version, shall be submitted reflecting those conditions and signed by the applicant and the mayor prior to the issuance of any permits.

C. **Final Plan Reviews**. Final site development plan review shall be performed by the Planning Commission, as follows:

1. The applicant shall submit an application, checklist materials, and fees in accordance with Section 12.20 A-B.
2. The Zoning Administrator shall review the site development plan for completeness in accordance with Section 12.20 D, and shall obtain comments, as they consider necessary, from City departments or consultants.
3. The final site development plan shall conform to the preliminary concept plan in all relevant aspects such as use, building size and location, parking, access, buffering, and open space. If significant deviations are noted, the plan shall be reviewed as a concept plan in accordance with the procedures of Section 13.40 B. and then resubmitted with revisions, if any, for final plan review.
4. Once the Zoning Administrator determines that the site development plan is complete and addresses the substantive review comments from staff and consultants, the final site development plan shall be transmitted to the Planning Commission for consideration at its next meeting. The Zoning Administrator shall not be required to submit any site development plan for review which did not meet a published submittal deadline.
5. The Planning Commission shall consider the final site development plan and shall act in accordance with Sections 12.50 and 12.60. The. The Planning Commission review shall be based on the requirements of this article and, specifically, the review standards of Section 13.60.
6. If approved, two (2) copies of the final site development plan shall be signed and dated by the Planning Commission chairman and the applicant. One (1) copy shall be kept on file with the City, and one (1) copy shall be returned to the applicant or his designated representative. If the plan is approved with conditions, a revised plan, including an electronic version, shall be submitted reflecting those conditions and signed by the applicant and the Planning Commission Chair prior to issuance of any permits.

Section 13.50 Development Plan Requirements

A. **Required Content**. Each site development plan shall contain the following information, as applicable. Incomplete plans may be returned to the applicant without further processing until fully compliant with the requirements of this section.

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Table 13.50: Development Plan Required Information			
Required Information	**Site Development Plan Level**		
	Administrative	**Concept**	**Final**
General Information			
Date, north arrow and scale	X	X	X
Name and address of property owner and petitioner	X	X	X
Location sketch	X	X	X
Legal description of the subject property	X	X	X
Boundary survey	X	X	X
Size of subject property (in acres)	X	X	X
Name and firm address of plan preparer	X	X	X
Preparer's professional seal			X
Existing Conditions			
Existing zoning classification of subject property	X	X	X
Property lines and required setbacks	X	X	X
Location, width and purpose of all easements	X	X	X
Location and dimensions of all existing structures on the property	X	X	X
Location of all existing driveways, parking areas and total number of existing parking spaces on the property	X	X	X
Location of all existing structures, driveways and parking areas within 300 feet of the subject property		X	X
Location of all existing structures, driveways and parking areas within 50 feet of the subject property	X		
Abutting street right-of-way width		X	X
Existing water bodies (rivers, streams, marshes, etc.)	X	X	X
Existing landscaping and vegetation on the property	X	X	X
Tree survey (see Section 10.4 D.2.c)		X	
Size and location of existing utilities (water, sanitary and storm)	X	X	X
Location of all existing surface water drainage facilities	X	X	X
Proposed Development			
Layout and typical dimensions of proposed parcels and lots		X	X
Location and dimensions of all proposed buildings	X	X	X
Finished floor elevations of all buildings	X		X
Number of proposed dwelling units (by type – detached, attached, multiple-family, etc.), including typical floor plans for each type of unit		X	X
Location of all proposed streets, drives and sidewalks	X	X	X
Dimensions and radii of proposed drives, acceleration/deceleration lanes and sidewalks	X		X
Curbing, parking areas (including dimensions of typical space and total number of spaces to be provided), and unloading areas	X		X

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Table 13.50: Development Plan Required Information			
Required Information	**Site Development Plan Level**		
	Administrative	**Concept**	**Final**
Location of walls and fences	X	X	X
Height and materials of walls and fences			X
Recreation areas, common use areas, dedicated open space and areas to be conveyed for common or public use	X	X	X
All deed restrictions or covenants		X	X
General design concept for landscaped areas, including buffers and other interior areas of the site		X	
Landscape plan, per Article 10	X		X
Exterior lighting location, fixture type		X	X
Signs (location, dimensions, setbacks)	X		X
Proposed method of handling sanitary sewage and providing potable water	X	X	X
Size and location of proposed utilities, including connections to public sewer and water supply systems			X
Location of fire hydrants and spacing between hydrants			X
Concept grading plan w/one (1) foot contours showing proposed changes to existing site		X	
Final grading plan w/one (1) foot contours	X		X
Generalized location and type of stormwater drainage facilities	X	X	
Storm drainage system, including location of catch basins, manholes, detention pond design, and materials			X
Narrative description of the project including proposed use, existing floor area (square feet), size of proposed expansion (square feet), and any change in the number of parking spaces	X	X	
Building Details			
Typical elevation views of all sides of each building type	X		X
Elevation views of building additions	X		X
Color and material specifications	X		X
Building height	X	X	X
Gross and net floor area of non-residential buildings	X	X	
Livable floor area of dwellings by type	X		X
Additional Information			
Traffic impact analysis, as required by Section 8.90.		X	
Any other information required by the Zoning Administrator, Planning Commission, or City Council to demonstrate compliance with other applicable provisions of this ordinance	X	X	X

B. **Information Waiver.** Specific requirements of any site development plan may be waived in accordance with Section 12.20 D.

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Section 13.60 Review Standards

Site development plans shall be approved only upon a finding of compliance with the following standards:

A. The site development plan must comply with all standards of this article and all applicable requirements of this ordinance and all other applicable laws and regulations.

B. The site must be designed in a manner that is harmonious, to the greatest extent possible, with the uses and character of the surrounding area.

C. The site must be designed to minimize hazards to adjacent property and to reduce the negative effects of traffic, noise, smoke, fumes, and glare to the maximum extent possible.

D. Unless a more specific design standard is required by the City through a different ordinance, all uses and structures subject to site development plan review shall comply with the following standards:

1. Traffic Circulation. The number, location, size of access and entry points, and internal vehicular and pedestrian circulation routes shall be designed to promote safe and efficient access to and from the site, and circulation within the site. In reviewing traffic features, the number, spacing, and alignment of existing and proposed access points shall be considered relative to their impact on traffic movement on abutting streets and adjacent properties. Right-of-way recommendations for streets shall be met and setbacks from such streets shall be measured accordingly.

2. Stormwater. Stormwater detention and drainage systems shall be designed so the removal of surface waters will not adversely affect neighboring properties or public stormwater drainage systems. Unless impractical, stormwater shall be removed from all roofs, canopies, and paved areas by underground surface drainage system.

3. Landscaping. The landscape shall be preserved in its natural state, insofar as practicable, by minimizing unnecessary tree and soil removal, and any grade changes shall be in keeping with the general appearance of neighboring developed areas. Tree preservation and landscaping shall comply with the requirements of this ordinance to protect the natural environment, enhance the aesthetics of the community, reduce the nuisance effects of intense uses, and buffer potentially incompatible uses from one another.

4. Lighting. Lighting shall be designed to minimize glare on adjacent properties and public streets. As a condition of site development plan approval, reduction of lighting during non-business hours may be required.

5. Utility Service. All utility service shall be underground, unless impractical and approved by the City engineer.

6. Exterior Uses. Exposed storage areas, machinery, heating and cooling units, service areas, loading areas, utility buildings and structures, and similar accessory areas shall be located to have a minimum negative effect on adjacent properties, and shall be screened, as required, to ensure compatibility with surrounding properties.

7. Emergency Access. All buildings and structures shall be readily accessible to emergency vehicles.

8. Water and Sewer. Water and sewer installations shall comply with all City specifications and requirements.

9. Signs. Permitted signs shall be located to avoid creating distractions, obstructions, and visual clutter.

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10. Building Design. New or substantially remodeled buildings shall be reasonably compatible in appearance with, or shall enhance, the established general character of other buildings in the immediate vicinity.

Section 13.70 Conditions

Conditions which are designed to ensure compliance with the intent of this ordinance and the City of Port Wentworth code of ordinances may be imposed on site development plan approval in accordance with Section 12.60.

Section 13.80 Changes to an Approved Site Plan

Projects shall be developed in full compliance with the approved site development plan unless a change is requested and approved in accordance with this section. Changes to an approved site development plan shall be permitted only under the following circumstances:

A. The holder of an approved site development plan shall notify the Zoning Administrator of any proposed change to the plan.

B. Changes to an administrative site development plan may be approved by the Zoning Administrator.

C. Minor changes to concept or final site development plans may be approved by the Zoning Administrator upon determining that the proposed revision(s) will not alter the basic design, nor any specified conditions imposed as part of the original approval. Minor changes shall include, by way of example, the following:

   1. Change in building size up to 20 percent of total approved floor area, not exceeding 5,000 sq. ft.
   2. Movement of buildings or other structures by no more than 10 feet.
   3. Alterations to parking layout; provided, the number of parking spaces does not increase by more than 10 percent of the approved total and the number or location of access drives does not change.
   4. Replacement of plant material specified in the landscape plan with comparable materials of an equal or greater size.
   5. Changes in building materials to materials of a comparable or higher quality.
   6. Changes in floor plans which do not alter the character of the use.
   7. Changes required or requested by a City, county, state, or federal regulatory agency in order to conform to other laws or regulations.

D. A proposed change to a concept or final site development plan, not determined by the Zoning Administrator to be a minor change, shall be submitted to the Planning Commission as a site development plan amendment and shall be reviewed in the same manner as the original application, including review by the City Council if the change deviates substantially from the approved concept plan.

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Section 13.90 Expiration

An application for final site development plan approval shall be submitted within 12 months of the date on which the concept site development plan was approved. Final site development plan approval shall expire 12 months from the date of its approval unless substantial construction has commenced and is continuing. The Zoning Administrator may grant one (1) extension of up to 12 additional months; provided the applicant requests an extension, in writing, prior to the expiration date of the final plan. The extension shall be approved if the applicant presents reasonable evidence to the effect that the development has encountered unforeseen difficulties beyond the control of the applicant, and construction will proceed within the extension period. If the above provisions are not fulfilled or the extension has expired prior to construction, the site development plan approval shall become null and void.

Section 13.100 Appeal

The applicant may appeal a decision relating to the denial of a final site development plan, the conditions of approval, or denial of an extension to the City Council.

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Article 14. Special Use Permit Review

Section 14.10 Intent and Purpose

A. **Intent and Description.** A special use permit is intended to manage specific land uses that may potentially impact or interfere with surrounding land uses; the natural environment; public infrastructure and services; and/or public health, safety, and welfare. Land uses that require special use permits are often desired by the community at large, but by their very nature, may:

1. have a tendency to generate excessive traffic;
2. have a potential for a large number of persons to be attracted to the area of the use, thus creating noise or other pollutants;
3. have a detrimental effect on the value of potential development of other properties in the neighborhood; or
4. create a higher potential for accidents or danger to public health or safety.

B. **Conditions and Safeguards.** Special use permit approval may require the application of imposition of conditions to ensure safeguards for neighboring property owners and the general public.

Section 14.20 Applicability

A. **Permit Required.** Any use classified as requiring a special use permit in Tables 3.30 and 4.30 shall be reviewed in accordance with this article and shall not be commenced without a valid special use permit and other applicable site development plan approvals, zoning permits, and building permits.

B. **Reclassification and Existing Uses.** Any use which was established as a permitted use and subsequently reclassified as a special use may continue and is not considered to be a nonconforming use. However, any change to the use or its associated building or site that is classified by Section 13.80 D as a major change shall require special use permit review in accordance with this article.

A. **Resubmittal.** No application for a special use permit for the same use affecting the same or any portion of the property that was denied by the City Council will be accepted for filing within 12 months of the date the application was denied.

B. **Ownership.** A special use permit, with all associated benefits and conditions, shall run with the land. Change in property ownership does not invalidate the special use permit, provided the operation remains compliant with this ordinance and any conditions of approval.

Section 14.30 Process

A. **Process.** Review of a special use permit shall follow that of a preliminary concept plan review (Section 13.40 B). However, a public hearing shall be held by the City Council prior to action. If approved, a final site development plan review shall be required if the use is proposed with associated site improvements or building construction.

1. The Zoning Administrator shall review the preliminary concept plan development plan for completeness in accordance with Section 12.20 D and shall obtain comments, as they consider necessary, from City departments or consultants.

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2. Once the Zoning Administrator determines that the concept plan is complete, they shall transmit the plan, along with comments from City departments and consultants, to the Planning Commission for consideration at its next meeting. The Zoning Administrator shall not be required to submit any plan for review which did not meet a published submittal deadline.
3. The Planning Commission shall consider the concept plan and shall act in accordance with Sections 12.50 and 12.60. The Planning Commission review shall be based on the requirements of this article, public comments received at the neighborhood meeting, and the review standards of Section 14.40. If site improvements or building construction are proposed along with the special use, the standards of Section 13.60 shall also be considered.
4. The reasons for the Planning Commission's recommendation, along with any proposed conditions, shall be forwarded to the City Council for action on the request.
5. The City Council shall hold a public hearing in accordance with Section 12.40 and make its decision based on the standards of Section 14.40 and their relevance to the comments from the neighborhood meeting and Planning Commission recommendation. If site improvements or building construction are proposed along with the special use, the standards of Section 13.60 shall also be considered.

B. **Permits and Conditions.** If approved, two (2) copies of the special use permit and concept plan, if applicable, shall be signed and dated by the mayor and the applicant. One (1) copy shall be kept on file with the City and one (1) copy shall be returned to the applicant or their designated representative. If the permit is approved with conditions, a revised concept plan, including an electronic version, shall be submitted reflecting those conditions and signed by the applicant and the mayor prior to the issuance of any future permits.

Section 14.40 Review Standards

Special use permits shall be approved only upon a finding of compliance with the following standards:

A. **Zoning Ordinance and Comprehensive Plan.** The special use will be consistent with the goals, intent, and purposes of the City of Port Wentworth Zoning Ordinance and Comprehensive Plan.

B. **Use Compatibility and Character.** The special use and associated building construction and site development will be designed, constructed, operated, and maintained to ensure compatibility with adjacent and nearby land uses, and it will not change the essential character of the area in which it is proposed. Further, it will not impede the normal and orderly development and improvement of surrounding property.

C. **Public Services and Infrastructure.** The site and the land use will be adequately served by essential infrastructure and services, such as roads, stormwater drainage infrastructure, schools, law enforcement, and fire protection; will not create excessive additional requirements at public cost for infrastructure; will not be detrimental to the economic welfare of the community; and will not prevent the City from maintaining sufficient levels of service to existing development.

D. **Impact and Nuisances.** The use and its site design will not be hazardous or disturbing to existing or future uses in the same general vicinity and the community as a whole, and it will not involve uses, activities, processes, materials, equipment, or conditions of operation that will be detrimental to persons, property or general welfare because of excessive activity, noise, vibration, smoke, fumes, glare, odor, or visual impact.

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E. **Environmental Impact.** The protection of existing sensitive natural resources shall be considered during site design, as applicable, to the maximum extent practical, or the impact shall be effectively mitigated. The special use and associated building construction and site development will not cause irreversible environmental degradation and damage.

F. **Traffic.** The use will not result in unsafe traffic conditions or negative impacts on bicycle and pedestrian travel and shall comply with the number, spacing, and alignment of existing and proposed access points relative to their impact on traffic movement on abutting streets and adjacent properties, as specified in Sec. 8.100

Section 14.50 Conditions

Conditions which are designed to ensure compliance with the intent of this ordinance and the City of Port Wentworth code of ordinances may be imposed on special use permit approval in accordance with Section 12.60. Any modification of a condition of approval following City Council approval shall be processed in the same manner as the original application.

Section 14.60 Changes to an Associated Site Plan

Minor changes to a site development plan associated with a special use shall be reviewed in accordance with Section 13.80. Major site plan changes, as classified by Section 13.80 D, shall require an amendment to the special use permit. Review of an amendment of a special use permit shall be processed in the same manner as the original application.

Section 14.70 Expiration

A. **Timeframe.** A special use permit shall expire 12 months from the date of approval unless a completed final site development plan application is submitted prior to expiration, if applicable, or unless the use commences prior to expiration when a final site development plan is not required. Final site development plans associated with a special use shall expire in accordance with Section 13.90 and may be extended as authorized by that section.

B. **Other Factors.** A special use permit shall also expire if:

1. replaced or superseded by a subsequent special use permit approval;
2. replaced or superseded by a permitted use;
3. the applicant requests the rescinding of the special use permit approval;
4. the use ceases operation for 12 consecutive months.

Section 14.80 Appeal

Decisions regarding special use permits by the City Council are final. Anyone not satisfied with a decision may pursue an appeal to the Chatham County Superior Court within 30 calendar days of the decision.

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Article 15. Planned Unit Development Review

Section 15.10 Intent and Purpose

This article establishes the application and review procedures to be followed when considering a request for Planned Unit Development (PUD) zoning approval.

Section 15.20 Application Process

A. **Pre-application Conference.** Prior to submitting a formal application, the applicant shall schedule a meeting with the Zoning Administrator to discuss the zoning classification of the site, the applicable requirements and materials, the qualifying conditions, the review procedures and the proposed development concept. The Zoning Administrator shall notify other appropriate staff and/or City officials. The purpose of this meeting is to discuss the proposed project and provide relevant information to the applicant. However, no statements or representations made at this meeting shall be construed to be a commitment or an assurance of approval on the part of the City.

B. **Neighborhood Meeting.** Following the pre-application conference and prior to submitting an application, the prospective applicant shall conduct a neighborhood meeting to present the concept PUD plan and invite comments. The meeting should be scheduled in the evening for the convenience of the potential participants. Invitations, at a minimum, shall be sent by the prospective applicant by US mail or hand-delivered to all property owners within 300 feet of the subject property. The prospective applicant shall document the meeting indicating the location, list of those invited, number of attendees, comments received, and how (or if) the comments are addressed in the concept PUD plan to be submitted to the City.

C. **Preliminary PUD Review and Rezoning.** The following procedures shall be followed for the review of any PUD request.

1. Application. An application for rezoning to the PUD district shall be submitted to the Zoning Administrator by the owner, owner's authorized representative, or option holder of the property that is the subject of the application. The application shall be filed on a form provided for that purpose, along with a fee established by the City Council, and a preliminary concept plan and narrative containing the information specified in the following subsections. Incomplete applications will not be accepted and will not be processed or forwarded to the Planning Commission.

2. Concept Plan. A preliminary concept plan shall be submitted and include the following:

Table 15.20: Concept PUD Plan Required Information
Required Information
General Information
Date, north arrow, and scale
Name, address, phone number and email address of the applicant(s)
Name, address, phone number and email address of the professional or firm that prepared the plan
Legal description of the property

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Table 15.20: Concept PUD Plan Required Information
Required Information
General location map
Existing Conditions
Property boundary survey
Existing zoning on the subject property and all abutting properties
Adjacent buildings and structures within 100 feet of the property boundaries
Location and dimensions of all existing structures on the property
All perimeter streets abutting the property, including right-of-way width
Existing topographic conditions (two (2) foot intervals)
Existing natural features (woods, ponds, streams, and marshes
Tree survey (see Section 10.4 D.2.c)
Approximate location of existing utilities
Proposed Development
Proposed uses within the PUD
Conceptual layout of the development illustrating the general location of interior streets and access points to abutting streets
Concept grading plan showing proposed changes to existing site
Proposed utilities, including a preliminary utility plan
Generalized location and type of stormwater drainage facilities
Location, width, and purpose of easements
Parking areas
Areas to be developed by type of use
Layout and typical dimensions of proposed parcels and lots
Number of proposed dwelling units (by type – detached, attached, multiple-family, etc.)
Common open spaces and required buffers
Building Details
Gross and net floor area of non-residential buildings
Building height
Perspective sketches or photographs of representative building types, illustrating the proposed architectural style and building materials
Narrative
Identification of the present owners of all land within the proposed project
Statement of how the PUD meets each of the Qualifying Conditions specified in Section *5.20*.
Explanation of the proposed character of the PUD, including a summary of acreage by use, number and type of dwelling units, gross residential density, area and percent of the project to be preserved as common open space, minimum lot sizes by type of use.
A complete description of any requested deviations, in accordance with Section 5.40 B., from the minimum spatial or other requirements applying to the property.
An explanation of why the proposed development should be given a density bonus, if applicable, in accordance with Section 5.40 C.
A general description of the proposed development schedule and anticipated phases.
Intended agreements, provisions and covenants to govern the use of the development, approval of building materials/architectural styles and open space areas to be preserved.
A traffic impact analysis, per Section 8.90.

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Table 15.20: Concept PUD Plan Required Information
Required Information
Other
Any other information required by the Zoning Administrator, Planning Commission, or City Council to demonstrate compliance with other applicable provisions of this ordinance

D. **Planning Commission Review.** Following receipt of a complete application package, the Zoning Administrator will cause the application materials to be forwarded to the Planning Commission for review. Within 45 days after submission of a complete application and all required plans and information, the Planning Commission shall conduct a public hearing and make a recommendation to the City Council, as follows:

1. Notice of hearing. Public notice of the time, date, location and purpose of the hearing shall be provided, in accordance with the requirements of Section 12.40.
2. Public hearing. The Planning Commission shall conduct a public hearing in accordance with its rules of procedure.
3. Recommendation. Following the public hearing, the Planning Commission shall recommend to City Council that the preliminary concept plan and PUD zoning be approved as presented, approved with supplementary conditions, or disapproved. The recommendation shall be based on the standards of Section 13.60 and 15.40.
4. Project representation. The applicant or authorized representative shall be present at all meetings at which the request is to be considered. If the applicant or authorized representative is not present, the matter may be tabled.

E. **City Council Action.** Upon receiving the recommendation from the Planning Commission, council shall take final action on the request.

1. Action. Council shall approve, approve with supplementary conditions, or disapprove the preliminary concept plan, and zoning change, based on the standards of Section 15.40.
2. Conditions. If conditions are attached to the Council's approval, the final site plan shall reflect those conditions. Failure of the applicant to comply with any conditions of approval shall be considered a violation of this ordinance and subject to all applicable enforcement, remedies, and penalties provided for in this ordinance.
3. Project representation. The applicant or authorized representative shall be present at all meetings at which the request is to be considered. If the applicant or authorized representative is not present, the matter may be tabled.

F. **Final PUD Review***:* The following procedures shall be followed for review of the final development plan.

1. Timing. An application for final development plan approval shall be filed not later than 24 months after the date of approval of the preliminary concept plan and zoning change, otherwise the preliminary concept plan approval shall be considered expired. One (1) extension of up to six (6) months may be authorized by the Zoning Administrator for cause. The applicant shall submit the request for extension to the Zoning Administrator in writing, prior to the expiration of the original approval period. The Zoning Administrator shall make a written determination regarding his decision to extend or deny the extension. Both the request and the determination shall be made

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part of the record.

2. Application. An application for approval of the final development plan shall be submitted to the Zoning Administrator by the property owner or owner's authorized representative. The application shall be filed on a form provided for that purpose, along with a fee established by the City Council, including a final development plan and narrative containing the information specified in the following subsections. Incomplete applications will not be accepted and will not be processed or forwarded to the Planning Commission.

   a. Final Plan. A final development plan, substantially consistent with the approved preliminary concept plan and containing all information required in Section 13.50 (final plan), shall be submitted with the required application form. If applicable, a plat may be submitted concurrently in accordance with the City's subdivision ordinance.

   b. Project Narrative. A project narrative shall also accompany the application and final development plan and provide the following:

      i. Proposed covenants and/or deed restrictions governing the use, design, maintenance, ownership and control of the development and common areas;

      ii. Identification of the entity responsible for maintenance of common areas;

      iii. Description of all deviations from the otherwise applicable zoning requirements;

      iv. Net and gross density of any residential component of the project;

      v. Open space calculations, identifying the gross acreage and percent of lands to be preserved as common open space, including calculations by phase of the development, if applicable.

      vi. Restrictions or requirements regarding architectural style and/or building materials;

      vii. Improvements that would be the responsibility of the developer such as construction of roads, parks, utilities, pathways, sidewalks, and similar elements;

      viii. An anticipated development schedule by phase, if applicable; and

      ix. An updated traffic impact analysis shall be required if the final plan deviates substantively from the approved preliminary concept plan with respect to number of dwelling units, square footage of buildings, or proposed uses.

3. Phased Projects. If a proposed PUD is to be constructed in two (2) or more phases, final development plan approval may be granted for individual phases; provided, a complete plan for the entire development was first given preliminary concept plan approval and that each subsequent phase shall be submitted for final development plan approval and is consistent with the approved preliminary concept plan. The Planning Commission may require additional information beyond what is otherwise required if, in its judgment, more detailed information is necessary due to the size of the development; number of phases proposed; or the interrelationship of roads, utilities, or drainage systems within the total site.

4. Planning Commission Action. Following receipt of a complete application package, the Zoning Administrator shall cause the application materials to be forwarded to the Planning Commission for review. The Planning Commission shall consider the application and take action to approve, approve with supplementary conditions, or disapprove the final development plan, based on the review standards of Section 15.40 and the site plan review standards of Section 13.60. The applicant or authorized representative shall be present at all meetings at which the request is to be

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considered. If the applicant or authorized representative is not present, the matter may be tabled.

5. Performance Guarantee. In conjunction with the approval of a final development plan, the petitioner may be required to provide a performance guarantee for all public and common improvements, in accordance with Section 12.70.

6. Private Covenants and Restrictions.

   a. Covenants and restrictions for the property within any PUD district are required and must be recorded with the office of the county clerk prior to the approval of a plat or issuance of a building permit. These restrictions shall run with the land to ensure that, if subdivided or developed in phases, the covenants and restrictions shall still be enforced.

   b. Covenants and restrictions shall:

      i. Be based on the conditions attached to the approved PUD application;

      ii. Subject each owner or person taking title to land located within the development to the terms and conditions of the covenants and restrictions as well as any other applicable regulations;

      iii. Establish a property owners association (POA) with mandatory membership for each owner or person taking title to land located within the development, and require the collection of assessments from owners in an amount sufficient to pay for its functions; and

      iv. Provide for the ownership, development, management, and maintenance of any private open space, private community parking facilities, private community meeting spaces, or other common areas, as required by Section 5.40 D.2.

7. Expiration. Approval of the final site plan by the Planning Commission shall expire 12 months after the date of that approval, unless substantial construction has been commenced and is continuing. An extension of up to 12 additional months may be granted by the Planning Commission, in accordance with the requirements of Section 13.90.

Section 15.30 Development Impact Assessment

As part of the concept plan review process, the City Council, at its sole discretion, may require the applicant to prepare a development impact assessment to evaluate the potential impacts on municipal improvements and facilities, natural and historic resources, and the fiscal impact on the City. The content of such assessment shall be as follows:

A. Executive Summary

B. Introduction, Project Description, Objectives, Environmental Setting

C. Projected Impacts and Mitigation Alternatives

   1. Fiscal. The developer shall estimate and quantify the additional revenues and costs to the City of Port Wentworth as a result of the proposed development. Fiscal analysis involves assessing the public service costs and revenues associated with the development. Such an analysis projects the net cost of the development on the fiscal balance sheet of the community. Since fiscal feasibility plays an important role in determining whether or not to proceed with a proposed development, fiscal impact analysis is a critical component of the development impact assessment.

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2. Community Facilities.

   a. Water supply and distribution. The developer shall provide an estimate and provide calculations of water supply needs including domestic and adequate fire flow protection. Anticipated improvements necessary to accommodate the proposed development shall be specified.

   b. Wastewater collection and treatment. The developer shall provide a quantitative estimate of sewage to be generated and specify any anticipated improvement necessary to accommodate the volume.

   c. Solid waste. The developer shall provide a quantitative estimate of the solid waste expected to be generated by the proposed development, including the assumptions used in all calculations.

   d. Stormwater management. The developer shall address all components of Article III. Stormwater Management, Section (5), Subsections (a) and (b) of the Code of Ordinances, City of Port Wentworth. The remaining requirements of Article III. shall be addressed in the final site development plan. A discussion of the adequacy of the receiving stormwater conveyance shall be provided.

   e. Stormwater quality. The developer shall provide narrative discussing measures that will be used to preserve and/or improve the physical, chemical, biological, or radiological integrity of stormwater runoff from the proposed development.

   f. Schools. The developer shall provide narrative discussing the impact to the local school system, if any, including number of students to be generated, potential number of new employee families to reside in Port Wentworth, capacity of existing schools that would be impacted, and busing needs.

   g. Parks and recreation. The developer shall provide narrative discussing impact to the municipal parks and recreation facilities or programs, including the location of existing parks, potential facility demands by employees, families, and visitors generated by the proposed development.

   h. Public safety (police and fire). The developer shall provide data and narrative identifying impacts, including special needs, personnel, and equipment. The assessment shall identify the current availability of equipment and staffing, current demands on fire and police service per capita and per dwelling unit, increased demand on services based on number of employees, dwelling units, or residents in the proposed PUD, and any added personnel or equipment needs.

Section 15.40 Review Standards

In considering a PUD request, the Planning Commission and/or City Council, as applicable, shall find that the proposed development meets all applicable requirements and qualifying conditions of this ordinance, as well as each of the following general standards:

A. **Purpose of PUD**. The proposed development shall be consistent with the stated purpose of this district, as found in Section 5.10.

B. **Qualifying Conditions**. The proposed development shall satisfy each of the Qualifying Conditions, as stated in Section 5.20.

C. **Recognizable and Substantial Benefits**. Approval of the PUD will result in a recognizable and substantial benefit to the users of the project and to the community which would not otherwise be

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feasible or achievable under conventional zoning districts. The development shall provide two (2) or more of the benefits specified in Section 5.20 G.

D. **Comprehensive Plan**. The PUD shall be consistent with the recommended future land use patterns, goals, and relevant recommendations contained in the City of Port Wentworth Comprehensive Plan.

E. **Surrounding Uses**. The development shall be compatible with the existing and intended uses surrounding the subject property.

F. **Natural Environment**, The design and layout of the PUD shall be harmonious with the natural character of the site and surrounding area and shall employ best management practices to ensure their conservation.

G. **Public Facilities and Services**. The proposed development shall not place undue burden on the capacity of public facilities and services such as, but not limited to, roads, fire and police protection, water, sanitary sewer service, and drainage.

H. **Health, Safety, and Welfare**. The PUD shall not contain uses or conditions of use that may be injurious to the public health, safety, or welfare.

I. **Consistent with All Applicable Standards and Requirements**. The proposed development shall conform to all applicable requirements of this ordinance, unless specifically modified and approved, as authorized by Section 5.40 B.

J. **Final Development Plan**. The final development plan is substantially consistent with the representations made and plans shown during the prior preliminary concept plan stage of approval.

Section 15.50 Changes to an Approved Plan

A. The PUD shall be constructed in compliance with the approved final development plan unless changes are approved in accordance with this section. Changes to an approved final development plan shall be permitted only as specified in Section 13.80.

B. A proposed change to an approved final development plan that is determined by the Zoning Administrator to not be a minor change shall be considered a major change. A major change shall necessitate an amendment to the approved final PUD plan and shall be submitted and reviewed in accordance with the procedures established for the final PUD plan. When, in the sole judgment of the Planning Commission, the proposed change is a substantial deviation from the approved preliminary concept plan, the change shall be reviewed as a new application, in accordance with the provisions of Sections 15.20 C and 15.20 D; provided, public hearings shall not be required, but may be conducted at the discretion of the Planning Commission and/or City Council.

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Article 16. Subdivision Review

Section 16.10 Intent and Purpose

A. **Intent and Purpose.** The intent and purpose of this article are to:

1. conserve and protect the natural, economic, and scenic resources of the City of Port Wentworth;
2. prevent and reduce the traffic congestion and traffic hazards which result from narrow or poorly aligned streets, and which result from excessive entrance and exit points along major traffic arteries;
3. eliminate the costly maintenance problems which develop when streets and lots are laid out without proper consideration being given to the drainage characteristics of the tract of land at the time the land is being subdivided into streets and lots;
4. prevent the spread of urban blight and slums;
5. insure that residential lots will be of such design, area, and width as will prevent health and sanitation problems from developing in those subdivisions with lots to be served by individual water supply and waste disposal systems;
6. insure that all building lots will be accessible to fire fighting equipment and other emergency and service vehicles;
7. to protect the investments of the buyers of subdivision lots; and
8. promote and protect the health, safety, prosperity, and welfare of the citizens of the City of Port Wentworth and for other purposes.

Section 16.20 Applicability and Subdivision Types

A. **Applicability.** Upon the effective date of this ordinance, no subdivision plat for any land within the City of Port Wentworth, unless exempted below, shall be filed with or recorded by the Clerk of the Superior Court until the plat has been submitted and approved according to the procedures set forth in this article, including the following**:**

1. All divisions of a tract or parcel of land into two (2) or more lots, building sites, or other divisions for the purpose of immediate or future sale, legacy, or building development.
2. All divisions of land involving a new street or a change in existing streets.
3. Re-subdivision of land and when appropriate to the context relates to the process of subdivision or to the land subdivided.

B. **Subdivision Types.**

1. Exempt Subdivision.
   a. The subdivision of a tract of land into two (2) or more lots, each having an area of five (5) acres or more, and in which no new street is required. The dividing of a tract into two (2) or more lots of five (5) acres or more each, which requires new access roads, easements or lot width variances at the required building setback line, shall be defined as a subdivision under the terms of this ordinance.

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b. The combination or recombination of portions of previously platted lots where the total number of lots is not increased and the resultant lots are equal to the standards set forth in this ordinance.

2. Minor Subdivision. Any subdivision comprising three (3) lots or less and not involving a new street or change in an existing street.

3. Major Subdivision. Any subdivision comprising four (4) lots or more or any subdivision involving a new street or change in an existing street.

Section 16.30 Sketch Plan

A. **Informal Review.** Prior to submitting a formal subdivision application, a sketch plan may be submitted to the Planning Commission for informal review comments. Comments are non-binding and shall not be construed as an approval or commitment to approval.

B. **Sketch Plan Requirements.** A sketch plan is a less formal plan which shall include the following information, as applicable:

1. Boundary lines of the property being subdivided;

2. Layout of streets, roads, and other features in relation to existing conditions;

3. Water courses and marshes found on the tract of land being subdivided and the limits of habitable area; and

4. The location, name, and right-of-way width of any existing streets on the land being subdivided or on land adjacent to the tract of land being subdivided.

Section 16.40 Exempt and Minor Subdivision Process

A. **Submittal.** Applications shall be submitted in accordance with Section 12.20.

B. **Final Plat.** Exempt and minor subdivisions may be submitted as final plats and shall comply with the requirements of these regulations, including minimum finished floor elevation requirements.

Section 16.50 Major Subdivision- Preliminary Plat Process

A. **Submittal.** Applications shall be submitted in accordance with Section 12.20.

B. **Deadline.** Complete applications must be received by the Port Wentworth Planning Commission 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 Planning Commission must be received 10 business days prior to the Planning Commission meeting at which each subdivision is scheduled to be heard.

C. **Review**. Upon determination of a complete application, the Zoning Administrator will promptly distribute the application for review by internal City Departments and external agencies.

D. **Planning Commission Action.** Except where an extension of time is authorized by the applicant for preliminary plat review, the Planning Commission shall have 45 business days from the date of submittal of a complete preliminary plat with application to act on the preliminary plat application. The Planning Commission shall provide a recommendation to the City Council per Section 12.50.

E. **City Council Action.** Upon receipt of a recommendation from the Planning Commission, the City Council shall hold a public hearing regarding the preliminary plat in accordance with Section 12.40. After a

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hearing is held, the City Council shall act on the preliminary plat per Section 12.50.

F. **Standards of Approval.** When reviewing or approving a preliminary plat, the Planning Commission and City Council shall consider:

1. Recommendations from internal City Departments and external agencies;
2. Compliance with the applicable requirements of the Zoning Ordinance; and
3. Substantial conformance with the City's applicable adopted plans, policies, and the City of Port Wentworth Comprehensive Design Manual.

G. **Validity of Approval.** Approval of a preliminary plat shall be valid for one (1) year. If work has not started on a subdivision on or before the end of this one (1) year period, the approval shall expire. An expired approval requires that a preliminary plat be resubmitted in accordance with this section.

H. **Extension.** The City Council may approve one (1) extension of up to one (1) year if requested in writing by the applicant prior to the expiration date of the original approval. The extension may be approved if the City Council determines that the applicant has provided reasonable evidence that the development has encountered unforeseen difficulties beyond the control of the applicant, and the project will proceed within the extension period. If work has not started on a subdivision on or before the end of this one (1) year extension period, the approval shall expire.

Section 16.60 Preliminary Plat Requirements

A. **Preliminary Plat Requirements.** The preliminary plat shall be drawn at a scale of not less than two hundred (200) feet to the inch. The preliminary plat shall contain the following information:

Table 16.60: Preliminary Plat Submittal Checklist
Existing Features
The bearings and distances of the boundary lines of the property to be subdivided.
The location of any streams, natural drainage ways, and other waterways which exist on the property.
The distance and direction to public water lines and sanitary sewer lines.
The name, location, and right-of-way width of existing streets either on the property or on land adjoining the property.
Existing contours of the property in solid lines and at one-foot intervals and based on mean sea level datum.
The name of subdivision or property owners adjoining the property.
The location of railroads, of public or private rights-of-way or easements, and of parks or other public spaces either on the property or adjoining the property.
Proposed Design Features
The location, purpose, and width of any proposed drainage or utility easements and identification of those to be dedicated.
Lot lines and lot line dimensions; proposed lot numbers.
The location and specifications for proposed streets and lanes, including right-of-way lines, proposed paving, proposed finished grades, proposed pavement width, if any; profiles and typical cross-sections of such streets; and such other information as shall be required to show compliance with the design specifications established by this ordinance for streets.
Proposed street names.
Proposed final contours in dashed lines at one-foot intervals and based on mean sea level datum.

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Building setbacks.
Proposed crosswalks.
The expected limits of the 100-year flood where appropriate.
Supplemental Information
A statement from the subdivider shall be placed on the preliminary plat which shall describe the method by which storm sewers, sanitary sewers, and water facilities will be provided. If septic tanks or individual waste disposal systems are to be used in a subdivision, then soil tests shall be done in accordance with Chatham County Health Department requirements and the results of such tests, together with a contour map showing, where appropriate, the approved location for each private disposal system of each test hole, shall accompany the preliminary map.
Grading and drainage plans shall be submitted with each subdivision application. If the required drainage plans reveal that a request for subdivision approval would overload the capacity of the channel downstream or increase flood stages upstream, the subdivision approval permit shall be denied, unless equivalent flow and storage capacity is replaced and maintained by the owner within the flood plain affected.
When the preliminary plat includes only a part of the tract on which the subdivider has an interest, the developer shall submit a tentative street plan for all of said tract.
All exhibits accompanying the preliminary plat shall be prepared by a registered civil engineer and shall contain the seal of such engineer along with a statement that the plat meets the provisions and standards of the Flood Drainage Prevention Ordinance for the City of Port Wentworth.

Section 16.70 Final Plat Process

A. **Submittal.** Applications shall be submitted in accordance with Section 12.20 and Section 16.80, and the number of copies shall be as required on the application form. For major subdivisions, all construction and site improvements must be complete unless a performance guarantee is posted to ensure the completion of required work.

B. **Approval Authority.** Final plat approval by the City Manager is required before a final plat of a subdivision is recorded with Clerk of Superior Court of Chatham County or the transfer or sale any of the land within the subdivision by reference to a plat.

C. **Review**. Upon determination of a complete application, the City Manager will promptly distribute the application for review by internal City Departments and external agencies.

D. **Phasing.** Final plat submittals for a major subdivision may be submitted in phases.

E. **City Manager Action.**

1. If the City Manager finds that the final plat does not meet all the standards of approval in this section, the applicant will be notified in writing of the specific provisions that have not been met and offer the applicant the opportunity to make changes to the final plat.

2. If the City Manager finds that the final plat meets all the standards of approval in this section, the application will be certified as complying with all applicable requirements of the Zoning Ordinance and this article.

F. **Dedications.**

1. Where the approved final plat includes public dedication, the application will be scheduled for the next available City Council meeting. Upon certification by the City Manager that the application complies with all applicable requirements of the Development Code, no changes to the application

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are permitted prior to the City Council meeting.

2. The City Council must accept or decline any dedication of land or public improvements.

3. Decisions of the City Council are final. Any party not satisfied with a decision of the City Council may pursue appeals to Chatham County Superior Court within 30 calendar days of the decision.

G. **Recording.** Once approved by the City Manager, or the City Council in the case of a final plat with dedications, the applicant will record the final plat in the records of the Clerk of the Chatham County Superior Court and file a copy with the Community Development Department.

H. **Standards of Approval.** When reviewing or approving a final plat, the City Manager shall consider:

1. Substantial conformance with the approved preliminary plat;

2. Recommendations from internal City Departments and external agencies;

3. Compliance with the applicable requirements of the Zoning Ordinance; and

4. Substantial conformance with the City's applicable adopted plans, policies, and the City of Port Wentworth Comprehensive Design Manual.

5. Completion of all infrastructure and required improvements, unless a performance guarantee is posted to ensure the completion of required work.

I. **Lot Sales.** After the final plat of the subdivision has been recorded, then all lots shown on such subdivision may be made available for sale, and such subdivision shall be entitled to all privileges and services available to other subdivisions within the City.

Section 16.80 Final Plat Requirements

A. **Final Plat Requirements.** The original copy of the final plat shall be drawn on 18-inch by 24-inch sheets of mylar with black India ink or equivalent material at a scale of not less than 200 feet to the inch. Where necessary, the final plat may be several mylar sheets accompanied by an index sheet showing the entire subdivision. The final plat shall contain the following information:

Table 16.80: Final Plat Submittal Checklist
Plat Details
Title, scale, north arrow, and date.
Key map showing the location of the subdivision in the City.
All plats shall show the expected limits of the 100-year flood where appropriate.
Primary control points to which all dimensions, angles, bearings, and similar data on the plat shall be referred.
Tract boundary lines; right-of-way lines of streets; easements and other right-of-way; property lines of all lots; and in all such cases with surveyed dimensions. Bearings or deflection angles, radii, arcs, and central angles of all curves shown.
Name and right-of-way width of each street or other right-of-way.
Location, dimensions, and purpose of any easement.
Number to identify each lot or site.
Purpose for which sites, other than residential lots, are dedicated or reserved.
Minimum building set back line on all lots and other sites.
Location and identification of monuments.
Names of record owners of adjoining unplatted land.
Reference to recorded subdivision plats of adjoining platted land by record name.

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Certificate that all survey work was performed by a registered civil engineer or registered surveyor.
Statement by owner, on the plat, dedicating streets, rights-of-way, easements, and any sites for public use. This statement shall be signed by the owner, or his attorney as agent, and shall read as follows: "All streets, rights-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. Such dedications are more specifically described in the deed that accompanies this plat. (Owner or attorney as agent)"
Supplemental Information
The developer must provide the city with a detailed cost report of all public infrastructure that was installed as part of the development. The detailed cost report shall include both on-site improvements and off-site improvements. The intent of the detailed cost report is for cost accounting of publicly held facilities.
Certification from County Health Department if served by well and/or septic
Drawings of record
Maintenance guarantees
Maintenance agreement

B. **Certification from County Health Department.** If lots are not to be served by either public sewers or public water, or both, then the final plat shall be accompanied by a certificate from the Chatham County Health Department certifying health department approval of the water supply system and/or waste disposal system to be used and health department approval of lot sizes and lot widths established in such subdivision.

C. **Maintenance Guarantees.** The developer will provide a cash security payable to the City in the amount of 25 percent of the total public infrastructure construction costs for roadways, drainage facilities, and appurtenances and 10 percent of the total public infrastructure construction costs for water and sewage systems, with no security less than $50,000. The amount must be sufficient to cover all possible repairs required during the warranty/maintenance period (See Section 16.90).

D. **Maintenance Agreement.** The developer shall execute a maintenance agreement suitable in a form to the City Attorney.

Section 16.90 Maintenance Guarantees

A. **Maintenance Periods**. The developer must maintain the public infrastructure for the periods outlined below:

1. Roadways, drainage facilities and appurtenances will be maintained by the developer for a period of two (2) years from the date of acceptance of the final plat. The two (2) year period shall not begin until after all infrastructure and inspections are completed with all deficiencies corrected. The date of the beginning of the maintenance period shall be set by Mayor and Council upon acceptance of the final plat. The developer must request in writing that the City take the roadways, drainage facilities, and appurtenances for maintenance at the end of the two (2) year period. The request may be filed with the City no sooner than 45 business days prior to the end of the period. The City must notify the developer of deficiencies or needed repairs within 30 business days of the request. A notice of needed repairs or deficiencies will require that the developer extend the bond for a period of six (6) months to allow for time to correct such deficiencies or needed repairs. If the needed repairs or deficiencies continue to exist at the expiration of the extended maintenance period, the bond will be extended by such a period as identified by the Mayor and Council. The developer may request in writing that the City accept the roadways, drainage facilities, and appurtenances prior to the end of the extended maintenance period, if all deficiencies and needed

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repairs have been satisfactorily corrected. The Mayor and Council shall determine whether to accept the infrastructure within 45 business days after all needed repairs and deficiencies have been satisfactorily corrected.

2. Water and sewage systems will be maintained by the developer for a period of 12) months from the date of acceptance of the final plat. The twelve month period shall not begin until after all water and sewer infrastructure and inspections are complete with all deficiencies corrected. The date of the beginning of the 12 month period shall be set by the Mayor and Council upon acceptance of the final plat. The developer must request in writing that the City take the water and sewerage systems for maintenance at the end of the 12 month period. The request may be filed with the City no sooner than 45 business days prior to the end of the period. The City must notify the developer of deficiencies or needed repairs within 30 business days of the request. A notice of needed repairs or deficiencies will require that the developer extend the bond for a period of six (6) months to allow for time to correct such deficiencies or needed repairs. If the needed repairs or deficiencies continue to exist at the expiration of the extended maintenance period, the bond will be extended by such a period as identified by the Mayor and Council. The developer may request in writing that the City accept the water and sewerage systems prior to the end of the extended maintenance period, if all deficiencies and needed repairs have been satisfactorily corrected. The Mayor and Council shall determine whether to accept the infrastructure within 45 business days after all needed repairs and deficiencies have been satisfactorily corrected.

3. The developer shall post separate bonds for (1) the water and sewerage systems and (2) roadways, drainage facilities, and appurtenances.

4. Should the developer construct and install water and sewage infrastructure that serves or is intended to serve multiple phases of a project (i.e. beyond a 60-lot maximum initial phase), the developer may request that the portion of the required security derived from the construction cost of that infrastructure be prorated across each proposed phase of the project. Proration of any part of the required cash security will be at the sole discretion of Mayor and Council.

B. **Release of Security.** The security shall only be released at the request of the developer. In no event will the security be released prior to 45 business days before the maintenance period ends. Release of the security shall be by formal action of City Manager.

C. **Forfeit.** The security will be forfeited to the City after a period of 10 years from the date of the approval of the final plat for the initial phase of the subdivision by the City Manager, should the public infrastructure be incomplete and unaccepted by the City at the end of the 10 year period.

Section 16.100 Plat Amendments

A. **Minor Revisions.** Proposed revisions to a recorded plat that do not alter or change in any way the street and/or utility layout of the plat and does not add additional lots shall be submitted as follows:

1. The subdivider shall file with the City Manager four (4) copies of the original plat with all minor revisions shown in red.

2. The plats shall be accompanied by a statement signed by all affected property owners acknowledging their awareness and approval of the revisions.

3. Review shall occur in accordance with Section 16.70.

B. **Major Revisions.** Any amendment not qualifying as a minor amendment shall be processed as a preliminary plat per Section 16.50.

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Article 17. Zoning Map and Text Amendments

Section 17.10 Intent and Purpose

This article establishes the procedures to be followed for any amendment to the provisions of this ordinance or to the zoning designation of any property in the City of Port Wentworth.

Section 17.20 Initiation

Proposals to amend these regulations may be in the form of requests to change the ordinance text or the Zoning Map. Applications for amendment to the text or map may be initiated by the owner or option holder of property that is the subject of an amendment request or by the Planning Commission or City Council upon its own initiative.

Section 17.30 Amendment Review Process

A. **Application**. Each application to amend the zoning text or map shall be filed with the Zoning Administrator on forms provided for that purpose along with the application fee and any other required documentation. Only compete applications containing all required information and exhibits and the required fee, shall be processed by the Zoning Administrator in accordance with the public notice and hearing requirements of this ordinance. An application shall not be withdrawn by the applicant after the legal notification has been processed by the City except as otherwise provided.

B. **Additional Requirements for Map Amendments**.

1. Required Information. All applications for zoning map amendments shall include, in addition to a fully completed application form and required filing fee, the following:

   a. A legal description of the subject property by lot, block, and subdivision designations, or if none, by metes and bounds;

   b. The property identification number from the county's tax records;

   c. Names, addresses, and zip codes, at the date of filing, of owners of property being rezoned and of property owners adjacent to and across any public right-of-way from the property being proposed for rezoning, including properties diagonally across an intersection; and,

   d. All known previous applications for a map amendment affecting the subject property.

2. Resubmittal of Map Amendments. No application for a zoning map amendment that has been denied by the City Council shall be resubmitted within six (6) months of the date when the request was first denied. However, if the amendment request is for a different zoning district than the previous request, an application may be accepted.

C. **Public Notice**. Notice of public hearing shall be given in accordance with the requirements specified in Section 12.40 of this ordinance.

D. **Planning Commission Action**.

1. The Planning Commission shall hold a public hearing on each application for a text or map amendment.

2. Upon completing the public hearing, the Planning Commission shall consider the application,

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testimony of the applicant and public, all reports, and supplemental information that may have been provided and shall make a recommendation to the City Council to approve or deny the subject application. The applicant may also choose to withdraw the request, without prejudice, prior to a decision by the Planning Commission. The Planning Commission may recommend amendments to the request, which in the case of map amendments, would reduce the land area for which a rezoning application is made or change the district requested to a more restrictive district. In the case of a text amendment, wording modifications may be recommended, which are deemed advisable so the purpose of this ordinance will be served, and the public health, safety, and general welfare secured.

E. **Council Action**. After receipt of the Planning Commission's report and recommendation, the City Council shall conduct a public hearing and may approve, deny, or defer the application. An action to defer shall include a written statement of justification for such action and a specific location and meeting date to which the application is deferred; no further public notice shall be required. In the case of map amendments, Council may consider the addition or deletion of conditions of rezoning in accordance with the standards of Section 17.40 B., so the purpose of this ordinance will be served, and the public health, safety, and general welfare secured. Should the Council consider additions or deletions of conditions, the application may be referred to the Planning Commission for review and recommendation.

Section 17.40 Approval Standards

A. **Map Amendments, in General**. In order to promote the public health, safety, and general welfare of the City against the unrestricted use of property, the City Council and Planning Commission may consider the following standards and any other factors relevant to balancing the public interest in making a rezoning decision:

1. Is the request in conformance with the City's Comprehensive Plan?
2. Is this request a logical extension of a zoning boundary which would improve the pattern of uses in the general area?
3. Does the current zoning classification unreasonably restrict the use and enjoyment of the subject property?
4. Has a change of conditions occurred in the surrounding area which makes the current zoning of the property unreasonable?
5. Is there sufficient land already appropriately zoned and available elsewhere in the City?
6. Is this spot zoning and generally unrelated to either existing zoning or the pattern of development of the area?
7. Could traffic created by the proposed zoning classification travel through established residential neighborhoods on minor streets, leading to congestion, noise, and traffic hazards?
8. Would the proposed zoning allow uses that could generate traffic flow beyond the carrying capacity of the current street system?
9. Is there an imminent need for the rezoning and for the uses permitted within the proposed district?
10. Would the allowed uses substantially conflict with existing or intended development density patterns in the surrounding area?
11. Would the proposed zoning change likely precipitate similar requests which would generate or

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accelerate adverse land use changes in the zone or neighborhood?

12. Would any or all of the allowed uses in the proposed zone district adversely impact adjacent or nearby properties in terms of:

    a. Environmental quality or livability, by creating undue traffic, noise, odor, or visual hazards incompatible with the established or intended development pattern.

    b. Property value, by rendering such properties less desirable and, therefore, less marketable for the type of development to which they are committed or restricted.

13. Would the rezoning create development potential of such increased intensity that storm water runoff from the site would exceed current limits, resulting in adverse impacts upon existing or planned down-stream drainage systems?

14. Would the rezoning result in public service demands beyond existing capacities and impose an economic burden on the community at-large?

B. **Conditional Zoning Amendments**.

1. In deciding any application for an amendment to the zoning classification of a parcel of property, the City Council may, on its own motion or upon the recommendation of the Planning Commission or the Zoning Administrator, grant the application subject to such conditions deemed necessary to promote and protect the health, safety, morality, and welfare of the City and to further the purposes of this ordinance. Such conditions shall be imposed for the benefit of the community to prevent or lessen any negative impact expected to result from the zoning map amendment.

2. Conditions that may be adopted include, but are not limited to, vegetative or structural buffers, preservation of existing vegetation and tree cover, maximum density and/or number of lots, access limitations, minimum lot size, setback restrictions, and property use restrictions. Such restrictions shall be binding upon the applicant and any successor in title.

3. If the conditions under consideration by City Council are unacceptable to the applicant, the applicant may withdraw its application without prejudice to the filing of a new application seeking a different zoning classification.

4. Map amendments approved conditionally shall be reflected on the zoning map by a notation indicating that the property has been conditionally zoned.

C. **Text Amendments.** In its consideration of amendments to the text of this ordinance, the following may be applied to guide the deliberations of the Planning Commission and City Council:

1. The proposed text amendment would clarify the intent of this ordinance.

2. The proposed text amendment would correct an error in this ordinance.

3. The proposed text amendment would address changes to the state legislation, recent case law, or opinions from the state attorney general.

4. The proposed text amendment would promote compliance with changes in other City ordinances and county, state, or federal regulations.

5. In the event the amendment would add a use to a district, that use would be fully consistent with the purpose of that district and the character of the uses allowed within the district.

6. The amendment would not create incompatible land uses within a zoning district.

7. The proposed text amendment is supported by the findings of reports, studies, or other

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documentation on functional requirements, contemporary building practices, environmental requirements, best practices, and similar technical items.

8. As applicable, the proposed change would be consistent with the City's ability to provide adequate public facilities and services.
9. The proposed change would be consistent with the ordinance’s intent to protect the public health, safety, and welfare of the community.

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Part V. Administration

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Article 18. Zoning Administration

Section 18.10 Intent and Purpose

A. The provisions of this ordinance shall be administered and enforced by the Zoning Administrator who may designate other City staff to assist in the performance of those duties.

B. In carrying out the administration and enforcement duties of this ordinance, the Zoning Administrator shall also act in accordance with the requirements of all other City regulations regarding code enforcement and may cooperate with other municipal officials in the enforcement of this ordinance.

Section 18.20 Authority

A. **Basic Duties**. The Zoning Administrator shall have the power to grant certificates of zoning compliance, make inspections of premises necessary to carry out his duties in the enforcement of this ordinance, and otherwise carry out the duties assigned herein.

B. **Official zoning Map**. The Zoning Administrator shall be responsible for maintaining the Official Zoning Map.

C. **Enforcement**. The Zoning Administrator shall have the authority to determine zoning compliance in accordance with the requirements of this ordinance.

D. **Violations**. If the Zoning Administrator finds any provisions of this ordinance being violated, he shall notify the person responsible for the violations, in writing, indicating the nature of the violation and ordering the action necessary to correct it. The Zoning Administrator shall order the discontinuance of illegal use of land, buildings, or structures; removal of illegal buildings or structures or of illegal additions, alterations, or structural changes; discontinuance of any illegal work being done; and shall take any other action authorized by this ordinance to ensure compliance or to prevent violation of its provisions.

Section 18.30 Zoning Compliance

A. It shall be unlawful to change the type of use or type of building occupancy or to extend any use on any lot on which there is a non-conforming use until the Zoning Administrator has determined the change complies with applicable provisions of this ordinance.

B. Permit Required. It shall be unlawful to commence excavation for, or construction of, any building or other structure, including accessory buildings exceeding 240 square feet in gross ground floor area and parking areas, or to commence the moving or alteration of any structure, unless the plans, specifications and intended use of such building or structure conforms in all respects to the provisions of this ordinance. The Zoning Administrator shall determine if the project complies with this ordinance according to this section.

1. It shall be unlawful for the Zoning Administrator to approve any plans, issue permits, or otherwise determine zoning compliance for any excavation, construction, or use until he has inspected the plans in detail and found them in compliance with this ordinance.

2. Issuance of an approval shall in no case be construed as waiving any provision of this ordinance.

3. The Zoning Administrator shall not refuse to issue a permit or approval when the applicant

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complies with conditions imposed by this ordinance and all other applicable City, county, and state regulations. Violations of private contracts, such as covenants or private agreements, which may result from granting a permit, are not cause for denial of the permit.

4. The Zoning Administrator may refuse to issue zoning approval where there are unresolved or outstanding violations to any City ordinance, including this zoning ordinance. Upon resolution of prior unresolved or outstanding violations, the Zoning Administrator shall issue the approval in accordance with subparagraph 3, above.
5. When the Zoning Administrator receives an application that requires Planning Commission, City Council, or Zoning Board of Appeals approvals, the Zoning Administrator shall so inform the applicant.
6. A zoning approval shall not be made until all applicable fees, charges, and expenses have been paid in full.
7. In the case of a single- or two-family dwelling or an accessory structure on the same lot as a single- or two-family dwelling, the building official may determine zoning compliance during review of a building permit.

C. Zoning compliance review shall not be required for ordinary repairs or maintenance, including but not limited to roofing, siding, and interior work, provided that such construction does not increase the gross ground floor area of the building, does not change the use of the structure, and/or does not alter the off-street parking area.

D. A structure that does not require a zoning compliance review shall still comply with the requirements of this ordinance.

E. If a proposed excavation, construction, moving, or alteration or use of land as set forth in the application is in conformity with the provisions of this ordinance and in conformance with the provisions of the building code, the Zoning Administrator shall determine that the project complies with this ordinance, provided all other requirements are satisfied. If the Zoning Administrator determines that the project or use is not in compliance, the reasons for the rejection shall be stated in writing.

Section 18.40 Other Duties

A. The Zoning Administrator is not, under any circumstance, permitted to grant exceptions to the actual meaning of any clause, order, or regulation contained in the ordinance to any person making application to excavate, construct, move, alter, or use either buildings, structures or land.

B. The Zoning Administrator shall have the authority to review all plans, applications, and requests prior to such plans, applications, and requests being heard by the Planning Commission or City Council to determine completeness and conformance with the requirements of this ordinance.

C. The Zoning Administrator shall have the authority to make inspections of buildings or premises necessary to carry out his duties in the enforcement of the ordinance.

D. The Zoning Administrator may not make changes to this ordinance or vary the terms of this ordinance in carrying out his duties except as authorized by Section 12.80.

E. The Zoning Administrator shall require every application for excavation, construction, moving, alteration, or change in type of use or type of occupancy, to be accompanied by a site development plan, if required by Article 13, and prepared in accordance with the specifications of Article 13.

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Article 19. Planning Commission

Section 19.10 Intent and Purpose

The Planning Commission is an appointed body charged with various responsibilities related to the administration and enforcement of the zoning ordinance. Among its statutorily mandated responsibilities is that of an advisory role to the City Council related to adopting and amending the ordinance, including changes to the zoning map. Other duties are delegated by this ordinance and described in Section 19.20.

Section 19.20 Powers and Duties

In order to protect the public health, safety, morals, convenience, prosperity, and general welfare, as well as promote efficiency and economy in the development of the City, the Planning Commission shall have the power and duty to:

A. Prepare a comprehensive plan or parts thereof for the development of the City.

B. Prepare and recommend for adoption to the City Council a zoning ordinance and zoning map for the City.

C. Review all applications for text and map amendments and all recommendations for text and map amendments referred to it by the City Council and make recommendations thereupon to the City Council.

D. Prepare and recommend for adoption to the City Council regulations for the subdivision of land within the City and to administer the regulations as applicable.

E. Prepare and recommend for adoption to the City Council a plat or plats or an official map showing the exact location of the boundary lines of existing, proposed, extended, widened, or narrowed streets, public open spaces, or public building sites, together with regulations to control the erection of buildings or other structures within such lines, within the city or a specified portion thereof.

F. Review and act upon all requests, as specified by this ordinance, including, but not limited to, conditional use requests and final site development plan review.

Section 19.30 Rules and Procedures

A. **Members, Officers, and Quorum**. The membership, election of officers, and quorum for conducting business is established by City Code, as adopted and amended by the City Council.

B. **Meetings and Records.** The Planning Commission shall make its own rules of procedure and determine its time of meeting. All meetings of the Planning Commission at which official action is taken shall be open to the public, and all records of the Planning Commission shall be a public record.

C. **Staff and Outside Services.** The Planning Commission may, with City Council approval, appoint such employees and staff as it deems necessary for its work and may contract with the state planning agency, City planners, and other consultants for such services as it may require.

D. **Expenditures.** The expenditures of the Planning Commission, exclusive of gifts, shall be within the amounts appropriated for the purpose by the City Council.

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Article 20. City Council

Section 20.10 Intent and Purpose

The Mayor and City Council, as the City's elected officials, are the sole legislative authority empowered to adopt and amend the zoning ordinance. As such, the City Council may, at its discretion, delegate certain non-legislative responsibilities and appoint those boards, commissions, and committees to whom such responsibility is entrusted.

Section 20.20 Powers and Duties

A. **Ordinance Amendments**. The City Council, by law, is responsible for adopting and amending this zoning ordinance, including the zoning map.

B. **Preliminary Plat Approval**. Council shall be responsible for acting on requests for preliminary plat approval following receipt of a recommendation from the Planning Commission.

C. **Site Plans**. The City Council shall review and act upon all conceptual site development plans related to proposed development projects within the City.

D. **Appointments**. The City Council shall appoint those bodies responsible for the administration, enforcement, and implementation of the various provisions of this ordinance that have been delegated to them.

E. **Budget**. Approval of budgets and expenditures related to the administration and enforcement of this ordinance is the responsibility of the City Council.

Section 20.30 Rules and Procedures

City Council membership, meeting requirements, and procedures shall be as established by City Charter.

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Article 21. Zoning Board of Appeals

Section 21.10 Intent and Purpose

The Zoning Board of Appeals (ZBA) is created as an objective, quasi-judicial body to act on matters specifically authorized by this ordinance including hearing appeals of certain administrative decisions and considering variance requests from dimensional requirements. It is not within the scope of the ZBA's authority to amend the terms of this ordinance or to permit any use of land or building that is not specifically permitted within a zoning district in question.

Section 21.20 Creation and Membership

A. The Zoning Board of Appeals shall be composed of five (5) members, who shall be residents of the City. Members shall be appointed by the City Council and shall serve for a term of three years; provided, the terms of the members first appointed shall be for varying numbers of years, none exceeding three years, in order to provide for differing expiration dates of member terms.

B. The City Council shall fill any vacancies and may remove a member for cause after written notice and an opportunity for a public hearing. Cause may include, but shall not be limited to, repeated failure to attend meetings, misfeasance, and malfeasance.

C. The concurring vote of a majority of the members of the ZBA shall be necessary to reverse any order, requirement, decision, or determination of any administrative official, or to decide in favor of the applicant upon any matter which the ZBA is required to pass under this article or to grant any variance from the dimensional requirements of this ordinance.

D. In the event that any members of the ZBA are absent from a meeting at which the required concurring vote is not obtained, and if the affirmative vote of such absent members would have resulted in the required concurring vote, the matter may, at the discretion of the chairperson, be continued on the agenda for consideration and decision at the next subsequent meeting when all members are present.

E. The ZBA shall elect a chairperson and vice-chairperson from its members annually and adopt rules of procedure. These rules shall be available for public inspection at the office of the City Clerk.

Section 21.30 Powers and Duties

A. The Zoning Board of Appeals, in conformity with the provisions of this article, may reverse or affirm, wholly or in part, or may modify any order, requirements, decision, or determination appealed from, and shall make such order, requirement, decision, or determination as in its opinion ought to be made in the premises, and to that end shall have all the powers to hear and decide all matters referred to it or upon which it is required to pass under this article.

B. The provisions of this article are to be construed as consistent with the applicable provisions of the relevant statutes of the State of Georgia. In the event of a conflict between the provisions of this article and other statutory provisions, the statutory provisions shall prevail.

C. The ZBA, after public hearing, shall have the power to decide applications related to the following:

1. Appeals. Where it is alleged by the appellant that there is error or misinterpretation in any order, requirement, decision, grant, or refusal made by the Zoning Administrator, other administrative officer, or body in the carrying out or enforcement of the provisions of this ordinance. The Board of

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Appeals may, in conformity with the provisions of this ordinance, reverse or affirm, wholly or partly, a decision of an administrative official or may modify the order, requirements, decisions or determinations of such administrative official, and to that end shall have all the powers of such administrative official. In exercising the above powers, the ZBA may issue or direct the issuance of a permit.

2. Variances. Where by reason of the exceptional narrowness, shallowness, or shape of a specific piece of property, or by reason of exceptional topographic conditions, or other extraordinary situation or condition of the land, building, or structure, or of the use or development of property immediately adjoining the property in question, the literal enforcement of the requirements of this ordinance would involve practical difficulties or would cause undue hardship.

Section 21.40 Rules and Procedures

A. Meetings shall be held at the City offices and shall be open to the public.

B. A record of the proceedings of each meeting shall be kept by the ZBA, relating evidence presented by the applicant and the resolution by the ZBA, the vote of each member on each question, or, if absent or failing to vote, indicating such fact. These shall be a public record and immediately filed in the office of the ZBA.

C. The ZBA shall receive reasonable assistance from other departments in carrying out the functions of the ZBA.

D. The Zoning Board of Appeals shall not consider any variance application or appeal without the payment of an application fee in an amount established by the City Council. The application or appeal shall be filed with the Zoning Administrator, who shall transmit the application, together with all plans, specifications, and other papers pertaining to the application or appeal, to the City Clerk.

E. An appeal from any ruling of the Zoning Administrator or other person administering any portion of this ordinance may be filed by any person affected or aggrieved, including the City. Notice of the appeal shall be filed with the Zoning Administrator specifying the grounds for the appeal and shall be filed within 15 calendar days after the order, requirements, decision, or determination appealed from is made.

F. An appeal shall stay all proceedings in furtherance of the action appealed from unless it is determined that a stay would, in the opinion of the Zoning Administrator, cause imminent peril to life or property. In such case, proceedings shall not be stayed otherwise than by restraining order which may be granted by the ZBA or by a court of competent jurisdiction on application.

G. When a variance application or appeal has been filed in proper form, and with the required data, the Zoning Administrator shall immediately place the application or appeal upon the calendar for hearing and cause notices stating the time, place, and object of the hearing to be served. Notices shall be given in accordance with Section 12.40. Any party may appear at the hearing in person or by representative.

H. Upon the day for hearing any variance application or appeal, the ZBA may adjourn the hearing in order to obtain additional information or to cause further notice, as it deems proper, to be served upon other property owners as it decides may be interested in the application or appeal. In the case of an adjourned hearing, persons previously notified and persons already heard need not be notified of the resumption of the hearing.

I. No application for a variance that has been denied wholly or in part by the ZBA shall be resubmitted except upon proof of changed conditions satisfactory to the Zoning Administrator.

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Section 21.50 Decisions

A. The ZBA shall decide all variance applications and appeals within 30 days after the final hearing. A copy of the ZBA's decision shall be transmitted to the applicant or appellant, and to the Zoning Administrator. Such decision shall be binding upon the Zoning Administrator who shall incorporate the terms and conditions of the decision in the permit to the applicant or appellant whenever a permit is authorized by the ZBA. The decision of the ZBA shall be final and may only be appealed to a court of competent jurisdiction.

B. Consideration of any appeal shall be based solely on the record upon which the original administrative decision was made. New evidence or testimony that was not part of the original record shall not be heard by the ZBA.

C. A variance from the provisions or requirements of this ordinance shall be authorized only upon an affirmative finding by the ZBA, based upon competent material and substantial evidence on the whole record, that all of the following criteria are satisfied:

   1. There are unique physical circumstances or conditions beyond that of surrounding properties, including irregularity, narrowness, or shallowness of the lot size or shape, or exceptional topographical or other physical conditions peculiar to the subject property.

   2. Because of such physical circumstances or conditions, the property cannot be developed in strict conformity with the provisions of the zoning ordinance without undue hardship to the property.

   3. Granting the requested variance would not be contrary to the spirit and purpose of this ordinance.

   4. Granting the variance will not result in the authorization of a use not otherwise permitted in the district in which the property is located or cause substantial detriment to the public good.

D. The cost of compliance with the ordinance requirements or a nonconforming use of neighboring lands, structures, or buildings shall not be considered grounds for granting a variance.

Section 21.60 Time Limit on Variances

Unless otherwise specifically provided by the ZBA as a condition of approval, any variance granted by the ZBA shall automatically become null and void after a period of 12 months from the date granted, unless the owner or his/her agent has demonstrated that substantial steps have been taken toward effecting the variance. Building permits shall only be granted for plans consistent with the approved application. Any deviation from the information submitted will require a new public hearing and approval by the ZBA.

Section 21.70 Appeal of a ZBA Decision

All decisions of the Board of Appeals are final. Any appeal of a ZBA decision shall be filed with a court of competent jurisdiction in Chatham County.

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Article 22. Nonconformities

Section 22.10 Intent and Purpose

A. It is recognized that there may exist within zoning districts certain lots, buildings, structures, and/or uses which were lawfully created before this ordinance was passed or amended, but are now prohibited, regulated, or otherwise restricted under the terms of this ordinance. It is the intent to permit these legal nonconformities to continue until removed, but not to encourage their survival.

B. Nonconforming lots, buildings, structures, and uses are hereby declared to be incompatible with the provisions of the district in which they are located. Such nonconformities shall not be enlarged upon, expanded, or extended, except as otherwise permitted in this article, and shall not be used as grounds for adding other buildings, structures, or uses prohibited elsewhere in the district.

C. Nothing in this ordinance shall be deemed to require a change in the plans, construction, or designated use of any building on which actual construction was lawfully begun prior to the effective date of adoption or amendment of this ordinance and upon which actual building construction has been diligently conducted.

D. Nothing in this ordinance shall be interpreted as authorization for, or approval of, continuing the use of a structure or premises which was not legally created and in existence at the time of the adoption or amendment of this ordinance.

Section 22.20 Nonconforming Lots of Record

A. Where a lot of record in existence at the time of adoption or amendment of this ordinance does not meet the minimum requirements for lot width or lot area, the lot of record may be used for any permitted or conditional use allowed in the district in which the lot is located; provided, any building or structure constructed on the lot complies with all other applicable requirements for the zoning district.

B. If two (2) or more vacant lots of record or combination of lots and portions of lots of record, in existence at the time of the passage of this ordinance, or an amendment thereto, with continuous frontage and under single ownership do not meet the requirements established for lot width or lot area, the lands involved shall be considered to be an undivided parcel for the purposes of this ordinance. No portion of that undivided parcel shall be used or divided in a manner which diminishes compliance with lot width and area requirements established by this ordinance.

Section 22.30 Nonconforming Uses

A. A nonconforming use shall not be enlarged or increased, nor extended to occupy a greater area of land than was occupied at the effective date of adoption or amendment of this ordinance. The extension of a lawful nonconforming use throughout all portions of a single building or structure existing at the effective date of this ordinance shall not be considered an expansion of a nonconforming use.

B. No part of any nonconforming use shall be moved unless that movement eliminates or reduces the nonconformity.

C. If a nonconforming use is abandoned for any reason for a period of more than 12 months, any subsequent use shall conform to the requirements of this ordinance. A nonconforming use shall be determined to be abandoned if one (1) or more of the following conditions exists, and which shall be

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deemed to constitute an intent on the part of the property owner to abandon the nonconforming use:

1. utilities, such as water, gas, and electricity to the property, have been disconnected;
2. the property, buildings, and grounds have fallen into disrepair;
3. signs or other indications of the existence of the nonconforming use have been removed;
4. equipment or fixtures necessary for the operation of the nonconforming use have been removed; or
5. other actions which, in the opinion of the Zoning Administrator, constitute an intention on the part of the property owner or lessee to abandon the nonconforming use.

D. A nonconforming use may be changed to another nonconforming use provided all the following determinations are made by the Zoning Administrator:

1. The proposed use shall be as, or more, compatible with the surrounding neighborhood than the previous nonconforming use, considering factors such as hours of operation, traffic, noise, and similar external impacts.
2. The proposed nonconforming use shall not be enlarged or increased, nor extended to occupy a greater area of land or building than the previous nonconforming use.
3. That appropriate conditions and safeguards are provided that will ensure compliance with the intent and purpose of this ordinance.

E. A nonconforming use which is changed to a conforming use or to another nonconforming use of a more restrictive classification shall not be permitted to revert to the original or less restrictive use.

F. Uses consisting of lots occupied by storage yards, used car lots, auto wrecking, junk yards, golf driving ranges, miniature golf courses, and similar outdoor uses, where the only buildings on the property are ancillary to the outdoor use and where the use is nonconforming, shall be subject to the following restrictions, in addition to all other applicable provisions of this article.

1. Nonconforming outdoor uses of land shall only be converted to a conforming use.
2. When a nonconforming outdoor use of land has been changed to a conforming use, it shall not be used again for any other nonconforming use.
3. A nonconforming outdoor use of land shall not be enlarged to cover more land than was occupied by that use when it became nonconforming.
4. When any nonconforming outdoor use of land is discontinued for a period of more than six (6) months, any future use of the land shall be limited to those uses permitted in the zoning district under which the property is governed. Vacancy and/or nonuse of the land for more than six (6) months, regardless of the intent of the owner or tenant, shall constitute discontinuance under this provision.

Section 22.40 Nonconforming Buildings and Structures

A. Where a lawful building or structure exists at the effective date of this ordinance, or an amendment thereto, but does not comply with one or more dimensional requirements of this ordinance such as lot coverage, height, or setbacks, that building or structure may continue to be occupied and used so long as it remains otherwise lawful, subject to the following provisions:

1. No nonconforming building or structure may be enlarged or altered in a way that increases its

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nonconformity, except in cases in which the setback of a building or structure is nonconforming by less than 50 percent of the distance required by this ordinance. Only in such cases, the building or structure may be extended along the same plane as the existing nonconforming setback, provided that in so doing, the setback itself is not further reduced.

2. In the event that a nonconforming building or structure is destroyed to an extent of more than 50 percent of its replacement value, exclusive of the foundation, it shall be reconstructed only in conformity with the provisions of this ordinance.

3. If a nonconforming building or structure is moved for any reason and for any distance, it shall be moved to a location which complies with the requirements of this ordinance.

B. None of the provisions of this section are meant to preclude normal repairs and maintenance on any nonconforming building or structure that would prevent strengthening or correcting any unsafe condition of the building or structure.

Section 22.50 Nonconforming Site Development

A. **Continued Use of Site.** The use of nonconforming sites may be continued, and sites are not required to be upgraded to conform with this ordinance, so long as no site development improvements are initiated.

B. **Conformance.** Conformance with all applicable site development requirements shall be demonstrated during site plan amendment review or plan reviews for the complete redevelopment of sites. However, for site plan changes, only the affected area of a site must be brought to conformance.

Section 22.60 Exceptions

A. **Uncompleted Structures**. If a permitted construction project remains dormant for more than 12 months, the building permit and all other permits shall become null and void. The owner of such uncompleted structure may maintain the structure in its existing condition for up to six (6) months while awaiting new permits. If the applicant does not receive the necessary permits within the six (6) month period, the uncompleted structure shall be removed. The City Council may grant one (1) extension of up to 12 additional months where it is found that circumstances beyond the owner's control such as extreme weather conditions, availability of materials, or labor shortages, have caused delays.

B. **Errors and Violations**. The issuance or granting a permit or approval of plans or specifications shall not be considered as approval for any violation of any provision in this ordinance. No permit presuming to give the authority to violate or cancel any provision of this ordinance shall be valid.

C. **Illegal Nonconformity**. Any lot, use, building, or structure established in violation of the provisions of this ordinance or any prior ordinance or amendment shall not be considered a legal nonconformity and shall not be entitled to the provisions, remedies, and safeguards of this article.

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Article 23. Enforcement

Section 23.10 Intent

A. **Intent.** In the interpretation and application of this ordinance, all provisions shall be held to be minimum requirements adopted for the promotion of the public health, morals, safety, comfort, convenience, or general welfare. It is not intended by this ordinance to repeal, abrogate, annul, or in any way to impair or interfere with any existing provision of law or ordinance other than this zoning ordinance; or with any rules, regulations, or permits previously adopted or issued or which shall be adopted or issued pursuant to the law relating to the use of buildings or premises; provided, however, that where this ordinance imposes a greater restriction than is required by any existing ordinance or by rules, regulations, or permits, the provisions of this ordinance shall control. Nothing in this ordinance shall be interpreted or construed to give rise to any permanent vested rights in the continuation of any particular use, district, zoning classification, or any permissible activities therein; and they are hereby declared to be subject to subsequent amendment, change, or modification as may be necessary to the preservation or protection of public health, safety, morals and general welfare.

B. **Administration.** The provisions of this ordinance shall be administered and enforced by the Mayor and City Council, Planning Commission, Zoning Board of Appeals, Zoning Administrator, and their respective designees. The Zoning Administrator shall, among other duties, issue all permits, and notices of violations provided for in this ordinance.

Section 23.20 Procedures

A. **Enforcement.** Enforcement of this ordinance is the responsibility of the Zoning Administrator, who shall, jointly with other inspections personnel, have the right to withhold permits. The Zoning Administrator shall not have the authority to grant approval to any permit for a use, activity, building, structure, or other physical change that does not meet the requirements of the zoning ordinance.

B. **Complaints Regarding Violations**. Whenever the Zoning Administrator receives a written, signed complaint alleging a violation of this ordinance, he or she shall investigate the complaint, take whatever action is warranted, and inform the complainant in writing what actions have been or will be taken.

C. **Persons Liable for Violations.** The owner, tenant, or occupant of any building or land, or part thereof and any architect, engineer, builder, contractor, agent, or other person who participates in, assists, directs, creates, or maintains any situation that is contrary to the requirements of this ordinance may be held responsible for the violation and suffer the penalties and be subject to the remedies herein provided.

D. **Enforcement**. When the Zoning Administrator finds that any provision of this ordinance is being violated, the Zoning Administrator or designee shall execute the following procedures:

1. Send a written notice to the person responsible for such violation, indicating the nature of the violation, ordering the action necessary to correct it, and setting a time limit for correction. Additional notices may be sent at the Zoning Administrator's discretion.

2. If no response is received from the owner or no action is taken, a second and final notice shall be sent by certified mail stating the action the Zoning Administrator intends to pursue if the violation is not corrected and shall advise that the Zoning Administrator's decision may be appealed to the City Council at the next scheduled meeting.

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3. If no appeal is filed or no corrective action is taken, the Zoning Administrator shall, upon approval by City Council, file the complaint with the clerk of the municipal court.

   a. Upon receipt of the complaint, the clerk of the municipal court shall cause the complaint to be served along with a notice of hearing. Such hearing shall be held before the judge of the municipal court not less than 10 days nor more than 30 days after service of the complaint.

   b. Complaints or orders issued by the municipal court pursuant to the provisions of this ordinance shall, in all cases, be served upon each person in possession of said property, each owner, and each party in interest. Return of service shall be signed by the public officer or his agent or an affidavit of service executed by any citizen of this state, other than the resident initiating the complaint; and the return of such public officer or agent thereof or the affidavit of such citizen that such party or parties were served either personally or by leaving a copy of the complaint or order at the residence shall be conclusive as to such service.

   c. If any owners and parties in interest reside out of the City, service shall be perfected by causing a copy of the complaint or orders to be served upon the party or parties by the sheriff or any lawful deputy of the county of residence of the party or parties; or service may be made by any citizen. The return of services signed by the public officer, his agent, or an affidavit of service executed by any citizen of this state, other than the resident initiating the complaint; and the return of such documentation attesting that the parties were served, either personally or by leaving a copy of the complaint or order at the residence, shall be conclusive as to such service.

   d. Nonresidents of this state shall be served by posting a copy of the complaint or orders in a conspicuous place on the premises affected by the complaint or orders. Where the address of such nonresidents is known, a copy of the complaint or orders shall be mailed to them by registered or certified mail.

   e. In the event either the owner or any party in interest is a minor or person laboring under disabilities, the guardian or other personal representative of such person shall be served and if such guardian or personal representative resides outside the county or City he shall be served as provided for in Subsection D.3.d. of this section. If such guardian or personal representative or in the event such minor or disabled person lives outside the City or is a nonresident, service by leaving a copy at the place of his residence shall be sufficient evidence as to the service of such person or persons; in the case of other persons who live outside of the City or are nonresidents, service shall be perfected by serving the judge of the probate court of the county wherein such property is located who shall stand in the place of and protect the rights of such minor or disabled person or appoint a guardian ad litem for such person.

   f. In the event the whereabouts of any owner or party in interest is unknown and the same cannot be ascertained by the Zoning Administrator in the exercise of reasonable diligence, the Zoning Administrator shall make an affidavit to that effect. Then the service of such complaint or order upon such persons shall be made in the same manner as provided in Subsection D.3.d. of this section or service may be perfected upon any person, firm, or corporation holding itself out as an agent for the property involved.

   g. A copy of such complaint or orders shall also be filed in the proper office or offices of the municipal court and such filing of the complaint or orders shall have the same force and effect of appropriate lis pendens notice and may contain a statement to the effect that a lien may arise against the described property and that an itemized statement of such lien is maintained on a lien docket maintained by the City clerk.

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C. **Stop Work Orders.**

1. Upon notice given by the Zoning Administrator or building official that any land use is occurring or that any work on a building or structure is being carried out contrary to or in violation of any provision of this ordinance, such land use or work shall be immediately stopped. The stop work order shall be in writing and shall be given in the name of the Zoning Administrator or building official. It shall be posted on the property involved and shall be sent by first class U.S. mail to the owner of the property involved, as the owner's address is shown in the current property tax assessment roll and may also be sent to any other last known address of the property owner.

2. Any person who shall continue to work in or about a building or structure, or to use land or a building or structure after a stop work order has been posted at the site and mailed to the property owner, shall be in violation of this ordinance, including provisions thereof cited in the stop work order, except such work as the Zoning Administrator or the building official may authorize to be performed in order to moderate or end a violation or address potentially hazardous conditions.

Section 23.30 Violations and Penalties

A. **Violations**.

1. Any use of land which is commenced or conducted, or any building or structure which is erected, moved, placed, reconstructed, razed, extended, enlarged, altered, maintained, or changed, in violation of any provision of this ordinance is hereby declared to be a nuisance per se.

2. Any person who disobeys, omits, neglects, or refuses to comply with any provision of this ordinance or any permit, approval or exception granted hereunder, or any lawful order of the building official, Zoning Administrator, Zoning Board of Appeals, Planning Commission, or the City Council issued in pursuance of this ordinance shall be in violation of this ordinance. Any such violation is hereby declared to be a nuisance per se.

B. **Penalties**.

1. The owner of any land, building, or structure that is erected, altered, converted, or maintained in violation of this ordinance shall be subject to a minimum penalty of $500.00. Continuance of a violation shall be considered a separate and distinct offense for each day the violation is continued. Furthermore, such land, building, or structure that is in violation of this ordinance is not eligible to petition for a variance or other zoning action and will be subject to fines until the land, building, or structure is brought within compliance with this ordinance.

2. Any person or entity that violates, or assists in the violation of, any provision of this ordinance or fails to comply with the requirements thereof shall be subject to a minimum penalty of $500.00 for each such violation. Continuation of any violation of this ordinance shall be considered a separate and distinct offense for each day any such violation is continued.

C. **Other Penalties Related to Subdivisions**. In addition to the penalties of Section 23.30 B, the follow shall apply until violation is abated:

1. The City shall not accept the dedication of any street within such subdivision; nor shall the City improve, maintain, grade, pave, or light any street within such subdivision unless such street or streets shall have received the status of public streets prior to the adoption of this ordinance.

2. The City shall not assume any responsibility for drainage problems within such subdivision unless City owned and maintained drainage structures already exist in such subdivision.

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3. The City shall not issue a building permit within such subdivision.
4. No unit of local government shall be authorized to extend any publicly operated service or utility into such subdivision.

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Part VI. Definitions

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Article 24. General Definitions

Section 24.10 Intent and Purpose

A. **Applicability**. The following listed rules of construction shall apply to the text of this ordinance.

1. The particular shall control the general.
2. The headings which title an article, section or subsection are for convenience only and are not to be considered in any construction or interpretation of this ordinance or as enlarging or restricting the terms and provisions of this ordinance in any respect.
3. The word "shall" is always mandatory and not discretionary. The word "may" is permissive.
4. Unless the context clearly indicates to the contrary:
   a. Words used in the present tense shall include the future tense;
   b. Words used in the singular number shall include the plural number; and
   c. Words used in the plural number shall include the singular number.
5. The word "person" includes a firm, association, partnership, joint venture, corporation, trust, municipal or public entity or equivalent entity or a combination of any of them as well as a natural person.
6. The word "used" or "occupied," as applied to any land, building or structure, shall be construed to include the words "intended," "arranged," "designed to be used," or "occupied."

B. **Common Understanding**. For the purpose of their use in this ordinance, the following terms and words are hereinafter defined. Any word or term not defined herein shall be considered to be defined in accordance with its common or standard definition.

Section 24.20 Definitions A, B, C

A. **Addition**. Any walled and roofed expansion to the perimeter of a building in which the addition is connected by a common load-bearing wall other than a firewall.

B. **Alley**. A street affording only secondary means of rear vehicular access to abutting lots and land and which is not intended for general traffic circulation.

C. **Altered or Alteration**. Any change, addition, or modification in the construction of any building or structure, including, without limitation, any change in the supporting members, bearing walls, columns, posts, beams, girders or roof structure, any architectural change of the interior or exterior of a building or structure which may affect its structural integrity, or any addition to or diminution of a structure or building.

D. **Animal, Domestic**. An animal commonly domesticated as a companion or pet and kept in a home or yard. Examples include dogs, cats, birds, fish, rabbits, small rodents, and similar animals, and are not used for commercial purposes. Household or domesticated animals do not present an unusual risk to a person or property and are not considered farm or wild animals.

E. **Animal, Farm**. Any animal or fowl customarily raised on a bonafide commercial farm for the production of income, including but not limited to goats, rabbits, horses, cows, pigs, chickens, turkeys, sheep,

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ducks, and geese or that are customarily raised for non-commercial consumption or production by the residents of the premises.

F. **Animal, Wild**. An animal not domesticated by humans or any animal which a person is prohibited from possessing by law.

G. **Arborist**. A professional in the practice of arboriculture and certified by The International Society of Arboriculture.

H. **Awning**. A shelter projecting from and supported by the exterior wall of a building and constructed of non-rigid materials on a supporting framework. Awnings are classified as a roof type.

I. **Basement**. That portion of a building which is partly or wholly below grade but so located that the vertical distance from the average grade to the floor is greater than the vertical distance from the average grade to the ceiling. A basement is not counted as a story.

J. **Buffer**. A strip of land which provides visual separation and aesthetic relief between potentially incompatible uses or provides protection to natural resources through the use of landscaping, preservation of existing vegetation, berms, or screening, or a combination of materials.

K. **Build Out or Built Out.** Full completion of the public infrastructure, private infrastructure, structures (residential, commercial, auxiliary, etc.), amenities, lot development, and the like.

L. **Building**. A permanent independent structure with a roof, supported by walls, columns or other supports that is designed for the shelter, housing or enclosure of persons, animals, possessions or property of any kind or to conduct business activities. A combination of materials, whether portable or fixed, forming a structure with a roof, affording a facility or shelter for use or occupancy by persons, animals, or property.

M. **Lot Coverage.** The lot area stated as a percentage of the total, covered by all buildings and areas under roofs.

N. **Building Frontage**. The outside wall of a building approximately parallel, nearest, and oriented to a street.

O. **Building Height**. The vertical distance from the average adjacent grade at the center of the front of the building to the highest point of the roof surface for a flat roof, to the deck line for a mansard roof and to the mean height level between eaves and ridge for gable, hip and gambrel roofs.

P. **Building, Principal**. A building in which is conducted the main or principal use of the lot on which the building is located.

Q. **Canopy**.

1. **Building canopy.** A permanent roof-like structure projecting from a building and open on at least one side for the purpose of shielding a pedestrian walkway from the elements.

2. **Freestanding canopy.** A freestanding roof-like structure supported by columns intended to shield a vehicular driveway or service area from the elements.

R. **City**. Unless the context clearly discloses a contrary intent, the word "City" shall mean the City of Port Wentworth, Georgia.

S. **City Council**. The City Council of the City of the City of Port Wentworth, Georgia.

T. **City Manager**. The City Manager of the City of Port Wentworth, Georgia.

U. **Commercial Use**. An activity involving the sale of goods or services carried out for profit.

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V. **Community Development Director**. The Community Development Director of the City of Port Wentworth, Georgia.

W. **Conditional Use**. A use identified by this ordinance which may have characteristics of its operation (such as traffic, noise, hours of operation, or other potential nuisance effects) that requires special review and may warrant additional conditions beyond the general requirements of the district in which it is located to mitigate its impacts and ensure its compatibility with its surroundings.

X. **Construction**. The erection of a new building or the alteration of an existing building in connection with its repair or renovation.

Y. **Cul-De-Sac**. A circular vehicle turn-around area constituting the terminus of a street that has only one outlet to another street.

Section 24.30 Definitions D, E, F

A. **Development**. Any manmade change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavating, drilling operations, and storage of materials or equipment. Shall also mean:

1. The division of a lot, tract, or parcel of land into two (2) or more lots, plots, sites, tracts, parcels, or other divisions by plat or deed;
2. The construction, installation, or alteration of a structure, impervious surface, or drainage facility;
3. Cleaning, scraping, grubbing, or other activities that significantly disturb the soil, vegetation, and trees of a site; or
4. Adding, removing, exposing, excavating, leveling, grading, digging, burrowing, dumping, piling, dredging, or otherwise disturbing the soil, vegetation, or trees of a site.

B. **Dwelling Unit**. A building or portion of a building designed for use and occupancy by one family, having permanent provisions for living, sleeping, cooking, and sanitation. A recreational vehicle, portable building, tent, or other transient residential use, such as hotels/motels and bed and breakfasts, are not considered a dwelling.

C. **Easement**. A designated area surveyed, legally described, and recorded, which authorizes a person, government, agency or public utility company to use public or private land owned by another for a specific purpose.

D. **Easement, Private Street**. A designated area surveyed, legally described, and recorded, applied to a private street, which authorizes vehicle travel and the installation and maintenance of public utilities.

E. **Exempt**. The release of the obligation to comply with specific sections of this ordinance.

F. **Façade**. The entire building front including the parapet, typically the front of a building, provided any face given special architectural treatment shall be considered a facade.

G. **Family**. An individual or group of two (2) or more persons related by blood, marriage or adoption, together with foster children of the principal occupants, with not more than one (1) additional unrelated person, who are domiciled together within a dwelling, or a collective number of individuals domiciled together in one dwelling whose relationship is of a continuing non-transient domestic character. This definition shall not include any society, club, fraternity, sorority, association, lodge, coterie, organization, or group of students or other individuals whose domestic relationship is of a transitory or seasonal nature or for an anticipated limited duration of a school term or terms or other

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similar determinable period.

H. **Fence**. A constructed barrier intended to prevent access, create an enclosure, or to mark a boundary.

I. **Fill**. A portion of land surface to which soil or other solid material has been added; the depth above the original ground surface or an excavation.

J. **Floor Area**.

1. **Floor Area, Gross.** The sum of all gross horizontal areas of the several floors of a building or buildings, measured from the outside dimensions of the structure or from the centerline of a wall separating two (2) buildings, but excluding any space where the floor-to-ceiling height is less than six (6) feet.

2. **Floor Area, Usable.** That area to be used for the sale of merchandise or services, or for use to serve patrons, clients or customers, measured from the interior faces of the exterior walls. Areas used principally for the storage or processing of merchandise, for hallways, stairways, and elevator shafts, or for utilities and sanitary facilities shall be excluded from this computation.

3. **Floor Area, Livable.** The finished area of a dwelling unit heated and/or air conditioned, located above ground, but not including garages, covered patios or porches, or other outdoor space.

Section 24.40 Definitions G, H, I

A. **Garage**. A detached accessory building or portion of a principal building for the parking or temporary storage of automobiles, recreational vehicles and/or incidental personal property of the occupants of the premises.

B. **Grade**.

1. **Grade, Finished**. The lowest point of elevation between the exterior wall of the structure and a line five (5) feet from the exterior wall of the structure.

2. **Grade, Natural**. The elevation of the ground surface in its natural state before man-made alterations.

C. **Grading**. Altering the shape of ground surfaces to a predetermined condition; this includes stripping, cutting, filling, stockpiling and shaping or any combination thereof and shall include the land in its cut or filled condition.

D. **Ground Cover**. Low growing, spreading plants, other than turf grass, such as but not limited to ivy, liriope, juniper, mondo grass or sedge.

E. **Household**. All persons occupying a house, apartment, group of rooms, or a single room occupied as separate living quarters, regardless of their relationship to one another.

F. **Impervious Surface**. Any surface composed of any material that greatly impedes or prevents the natural infiltration of water into the underlying native soils. Impervious surfaces include but are not limited to, rooftops, buildings, sidewalks, driveways, streets, and roads.

Section 24.50 Definitions J, K, L

A. **Land Development Activity**. Any project undertaken to change or improve a site that involves one or more land disturbing activities.

B. **Land Disturbing Activity**. Any activity that changes stormwater runoff rates, volumes, and pollutant

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loads on a site. These activities include but are not limited to, the grading, digging, cutting, scraping, or excavating of soil, the placement of fill materials, paving, construction, substantial removal of vegetation and any activity that bares soil or rock or involves the diversion or piping of any natural or manmade watercourse.

C. **Landscape Materials**. Any combination of living plant materials and nonliving materials such as rocks, pebbles, wood chips, mulch and pavers, and decorative features, including sculpture, patterned walks, fountains, and pools.

D. **Loading Space**. An off-street portion of a lot of record designated for the temporary parking of commercial vehicles while loading or unloading materials used, sold, or made on the premises.

E. **Lot Area**. The area of land included within a lot as defined by lot lines but excluding any public rights-of-way and private street easements.

F. **Lot**. A developed or undeveloped parcel or tract of land in one ownership, legally transferable as a single unit of land.

1. **Lot, Corner.** A lot with at least two contiguous sides abutting two intersecting streets and where the interior angle of the intersecting streets is less than 135 degrees. Also, a lot located on a curved street or streets if tangents of the curve, at the points of beginning with the lot or the points of intersection of the side lot lines with the street line, intersect at an interior angle of less than 135 degrees.

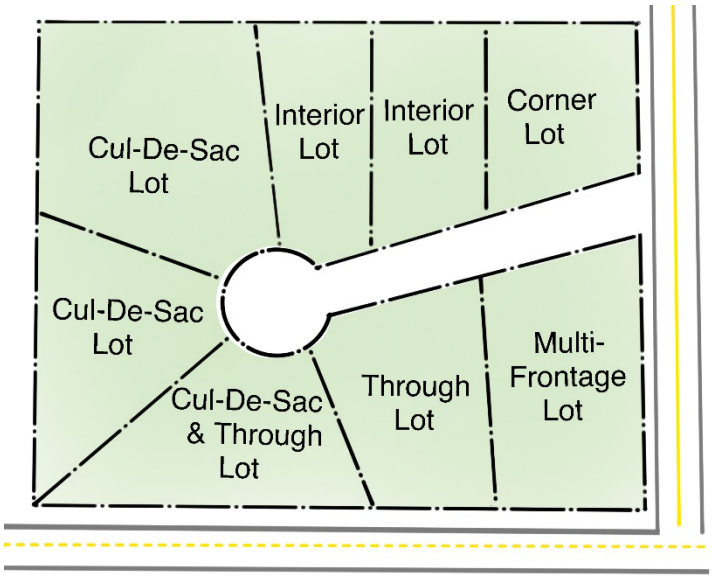

Figure 24-1 Lot Types

2. **Lot, Interior.** A lot other than a corner, multi-frontage, through, or corner lot, bordered on three sides by other lots.

3. **Lot, Multi-Frontage.** A lot bordered by streets on three (3) sides.

4. **Lot, Through**. An interior lot bordered by two, more or less parallel streets. For the purposes of this definition, if one side of the lot is bordered by an alley opposite of a street the lot is not considered a through lot.

5. **Lot, Waterfront.** A lot with one or more of its lot lines adjoining a stream, river, or lake.

G. **Lot Coverage**. The lot area, stated as a percentage of the total, covered by all buildings, areas under roof, drives and driveways, parking lots, patios, decks and other impervious surfaces.

H. **Lot Depth**. The average distance between the front lot line and the rear lot line. The average shall include measurements of the side lot lines if extending from front lot line to rear lot line and the shortest measurement from the front lot line to the farthest point of the rear lot line

I. **Lot Frontage**. The length of the front lot line measured at the public street right-of-way or private street easement.

J. **Lot Width**. The horizontal distance between side lot lines measured at the two (2) points where the required setback intersects the side lot lines or along the front property line on a curvilinear lot.

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K. **Lot Lines**. The lines bounding a lot, as defined below:

1. **Lot Line, Front.** In the case of an interior lot, the line separating the lot from the street right-of-way or road easement that is not classified as a secondary front lot line.
2. **Lot Line, Secondary Front.** On a corner lot or multi-frontage lot, the lot line separating the lot from the street right-of-way or road easement which is not the front lot line, opposite of the side lot line on a corner lot and the side lot line on a multi-frontage lot.
3. **Lot Line, Rear.** The lot line opposite and most distant from the front lot line. On a corner lot, the rear lot line is typically opposite the shorter of the two front lot lines. In the case of a triangular lot, the rear lot line shall be an imaginary line parallel to the front lot line, not less than ten feet long, lying furthest from the front lot line and wholly within the lot. On irregularly-shaped lots, the rear lot line is determined based on a line perpendicular to the front lot line extending to the point where a rear lot line would be 10 feet in width and parallel to the front lot line. This rear lot line is intended for the purpose of establishing the rear setback and lot depth only.
4. **Lot Line, Side**. The lot lines connecting the front and rear lot lines of an interior or corner lot or connecting the front lot lines of a through lot. Any lot line other than a front or rear lot line

Section 24.60 Definitions M, N, O

A. **Manufactured Home**. A factory-built, single-family structure manufactured under the authority of 42 U.S.C. Sec. 5401, the National Manufactured Home Construction and Safety Standards Act, is transportable in one or more sections, is built on a permanent chassis, and is designed to be used as a place of human habitation with or without a permanent foundation when connected to the required utilities. It is not constructed with a permanent hitch or other device allowing transportation of the unit other than for the purpose of delivery to a permanent site, and which does not have wheels or axles permanently attached to its body or frame. All manufactured housing must bear a decal issued by the Georgia Department of Community Affairs to certify the unit as to construction and safety standards.

B. **Mobile Food Vending Unit.** A mobile food vending unit shall mean any motorized or non-motorized vehicle, trailer or other enclosure designed to be portable and not permanently attached to the ground from which food is vended, served or offered for sale. A mobile food vending unit may include ancillary sales of branded items consistent with the food and beverage offered, such as a t-shirt that bears the name of the organization.

C. **Mulch**. Pine straw, pine or cypress bark, pebbles, lava rock, or synthetic landscaping materials.

D. **Nonconforming Building or Structure**. A structure or building lawfully constructed that does not conform to the dimensional requirements of the Zoning Ordinance but existed prior to the effective date of this ordinance or any amendment to this ordinance.

E. **Nonconforming Lot**. A lot lawfully existing on the effective date of this ordinance, or its subsequent amendment, that does not meet the current area and/or dimensional requirements of the zoning district in which it is located.

F. **Nonconforming Site**. A site that does not conform to the regulations of the zoning district in which it is situated, applicable conditional use requirements of Article 7, or any applicable development provisions.

G. **Nonconforming Use**. A land use that does not conform to the regulations of the zoning district in which it is situated, or applicable conditional use requirements of Article 7, and lawfully existed on the effective date of this ordinance, or any amendments to the ordinance.

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H. **Occupancy**. The portion of a building or premises owned, leased, rented, or otherwise occupied for a given use.

I. **Occupied**. Arranged, designed, built, altered, converted, rented or leased, or intended to be occupied.

Section 24.70 Definitions P, Q, R

A. **Parking**. The temporary, transient storage of motor vehicles used for transportation, while their operators are engaged in other activities. It shall not include storage of new or used motor vehicles for sale, services, rental or any other purpose other than specified above.

B. **Parking Space**. The space required to park one vehicle, exclusive of driveways and access aisles, in accordance with the requirements of this ordinance.

C. **Permit**. An official authorization issued by a representative of the City, to conduct a specific activity under the provisions of this ordinance.

D. **Permitted Use**. A use of property specifically allowed within a zoning district wherever that district exists in the City, provided all dimensional and other requirements applicable to that district are satisfied.

E. **Planning Commission**. The City of Port Wentworth Planning Commission.

F. **Pond**. An outdoor body of standing water, accumulated in a natural or artificially constructed basin or depression in the earth, either above or below or partly above and partly below grade, capable of holding water to a depth of greater than two (2) feet when filled to capacity.

G. **Porch**. A roofed-over space attached to the outside of an exterior wall of a building which has no enclosure other than exterior walls of the building.

H. **Principal Use**. The primary or predominant use of a lot.

I. **Recreational Equipment**. Any of the following: recreation camper, boat, boat trailer, snowmobile, snowmobile trailer, motorcycle or motorcycle trailer, all-terrain vehicle, all-terrain vehicle trailer, enclosed trailers, utility trailers, or similarly licensed vehicles, trailers, or equipment.

Section 24.80 Definitions S, T, U

A. **Setback**. The minimum horizontal distance that buildings and any structure 30 inches in height or greater shall be separated from a public street right-of-way or private street easement, lot line, shore of a lake, wetland, edge of a stream, or river bank, to meet the minimum requirements of this ordinance.

1. **Setback, Front**. The line marking the required setback from the public street right-of-way or private street easement.
2. **Setback, Rear**. The line marking the required setback distance from the rear lot line.
3. **Setback, Side**. The lines marking the required setback distance from the side lot lines.
4. **Setback, Street Side**. The line marking the required setback from the public street right-of-way or private street easement in the direction of the secondary front yard.

B. **Sewage, Public.** A system that is owned, maintained, and operated by the City, a community corporation, or a privately owned system serving a community and approved by the Chatham County Health Department.

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C. **Shipping Container**. A receptacle designed for the transport of cargo aboard ship and also by truck trailer or rail car, and which exhibits features designed to facilitate the movement of containerized cargo, including but not limited to corner fittings for pins, design for stacking, and which is otherwise designed and constructed in conformance with standards for shipping containers as set forth by the International Standards Organization.

D. **Site Plan**. A plan of a proposed project that shows all relevant features necessary to determine if it meets the requirements of this ordinance.

E. **Special Event**. A temporary and non-commercial community event, such as a festival, fair, car show, or sporting event.

F. **Start of Construction**. The date the first placement of permanent construction of the structure such as the pouring of slabs or footings, installation of piles, construction of columns, or any work beyond the stage of excavation, and includes the placement of a manufactured home on a foundation. (Permanent construction does not include initial land preparation, such as clearing, grading and filling; the installation of streets and/or walkways; excavation for a basement, footings, piers or foundations or the erection of temporary forms; installation on the property of buildings appurtenant to the permitted structure, such as garages or sheds not occupied as dwelling units or part of the main structure.) See also, "Substantial Improvement".

G. **Story**. The portion of a building included between the surface of any above floor grade and the surface of the floor next above it, or if there is no floor above it, then the space between any floor and the ceiling next above it. A story shall have vertical walls.

H. **Street**. Any public or private thoroughfare which affords the principal means of access to abutting property.

1. **Street, Arterial.** A road or highway, as shown on the official map maintained by the City of Port Wentworth, which carries large volumes of traffic at relatively high speed between population centers or from one section of the City to another.

2. **Street, Collector.** A public way, as shown on the official map maintained by the City of Port Wentworth, designed primarily to connect local streets with arterial streets or to provide access from residential areas to major destination points such as shopping or employment centers and which may be expected to carry a significant volume of traffic. Any street may be declared a collector street by city council at any time and shall be designated as such on the official street map.

3. **Street, Local.** These roads serve the final function in destination trips and the initial function at point of origin. They provide direct access to adjacent land as well as serve the purpose of short distance transportation needs. This category encompasses all streets, roads and highways not classified as either arterial or collector streets.

4. **Street, Marginal Access.** Those minor streets which are parallel to and adjacent to arterial streets and highways; and which provide access to abutting properties, and protection from through traffic.

5. **Street, Opened.** A street shall be deemed to be opened if it is either of the following:

   a. Available for public use prior to the adoption of this ordinance; or

   b. Was constructed to City specifications following the adoption of this ordinance.

6. **Street, Privately Maintained**. A street maintained by private parties through use of private funds.

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7. **Street, Publicly Maintained**. A street maintained by federal, state, county, or local public agencies.

8. **Street, Unopened.** A street or any part thereof shall be deemed to be unopened if it is not cleared, graded, and available for public use.

I. **Street Centerline**. That line surveyed to be the centerline of a street, or in the event that no centerline has been determined, it shall be that line running midway between and parallel to the outside right-of-way lines of such streets.

J. **Street Frontage**. The distance within which a front lot line of a lot adjoins a public street, measured between the two (2) lot lines intersecting the street right-of-way or easement.

K. **Street Intersection**. Any street which joins another street at an angle, whether or not it crosses the other.

L. **Structure**. A combination of materials constructed, erected, or placed in or upon the ground or is attached to something having such a location. Structures may include but are not limited to: buildings, elevated decks, radio towers, signs, and storage bins, but exclude sidewalks and paving on streets, driveways, parking areas, or patios placed at grade.

M. **Subdivider**. An individual, firm, association, syndicate, partnership, corporation, trust, or any other legal entity (or agent thereof) that undertakes any activities covered by this ordinance. The word "subdivider" is intended to include the terms "developer" and "builder" even though the persons involved in successive stages of a project may vary.

N. **Subdivision**. The division of a single lot, tract or parcel of land into two (2) or more lots, tracts, parcels or other divisions of land for the purpose of sale or development.

1. **Subdivision, Exempt.** An administrative subdivision process that addresses subdivisions that do not involve a new street, or change in existing streets or the extension of water, sewer or gas lines. The following are included within this definition:

   a. The combination or recombination of portions of previously platted lots, where the total number of lots is not increased, and the resultant lots are equal to the then current standards of the City.

   b. Lot line adjustments,

   c. The division of a single lot into two (2) lots, and

   d. The division of land into parcels of five (5) acres or more.

2. **Subdivision, Major.** All divisions of a tract or parcel of land not considered exempt or minor subdivisions, including:

   a. The division of land into six (6) or more lots, building sites, or other divisions for any purpose, whether immediate or future, of sale, legacy, or building development;

   b. Any division of land involving a new street or change in existing streets; or division of land involving the extension of water or sewer, including resubdivision and, where appropriate to the context, relates to the process of subdividing or to the land or area subdivided.

3. **Subdivision, Minor.** The division of a tract or parcel of land into five (5) lots or less, building sites, or other division for any purpose, whether immediate or future, of sale, legacy or building development, and where appropriate to the context relates to the process of subdividing or to the land or area subdivided and that does not involve a new street; a change of an existing street; or the extension of water or sewer.

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4. **Subdivision, Pre-Existing.** A subdivision which had previously received final plat approval from the City or a subdivision which had received final plat approval from another government entity annexed into the City after the adoption of this article

O. **Swimming Pool**. A structure located inside, outside, or partly in each, designed to hold water to a depth of greater than 24 inches when filled, and intended to be used for swimming purposes.

P. **Trailer, Utility**. A vehicle with or without its own motive power, which is mounted on wheels or is designed to be so mounted and transported.

Q. **Traffic Study**. A written report prepared by an transportation engineer or a professional planner, describing in detail the roads and streets which serve an area of the City, furnishing information on ingress and egress to and from lots, providing current traffic counts on existing streets and projected traffic counts on both existing and proposed streets, and additionally containing an impact statement describing the expected impact of the proposed activities on traffic flow and traffic patterns within a specific area of the City.

R. **Tree.**

1. **Tree, Canopy.** A deciduous shade tree.
2. **Tree, Evergreen.** A tree with foliage that persists and remains green throughout the year.
3. **Tree, Ornamental.** A small deciduous tree grown for its foliage and/or flowers.

Section 24.90 Definitions V, W, X, Y, Z

A. **Variance**. An allowed modification to a requirement of this ordinance, as authorized by the Zoning Board of Appeals under the provisions of this ordinance.

B. **Vehicles and Trailers, Commercial**. Any vehicle or trailer bearing or required to bear commercial license plates and/or DOT numbers. Examples include, but are not limited to:

1. Semi-truck tractors;
2. Semi-truck trailers, which shall include flat beds, stake beds, roll-off containers, tanker bodies, dump bodies, and full or partial box-type enclosures;
3. Food trucks and vehicles of a type that are commonly used for the delivery of food or vending supplies;
4. Pickup trucks, vans, and trailers commonly used by construction industry contractors;
5. Tow trucks and repair service trucks;
6. Vehicles designed to transport 16 or more passengers, including the driver; and
7. Commercial trailers designed to haul heavy equipment, materials, and supplies.

C. **Violation**. The failure of a use, structure or other development to be fully compliant with the provisions of this ordinance.

D. **Water, Public.** A system that is owned, maintained, and operated by the City, a community corporation, or a privately owned system serving a community and approved by the Chatham County Health Department.

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E. **Yard**. An open space at grade between a building and the adjoining lot lines.

1. **Yard, Front.** An open space between the front of a principal building and the front lot line, generally adjacent to a street and extending the full width of the lot.

2. **Yard, Front.** An open space between the front of a principal building and the front lot line and extending the full width of the lot. The narrower of the two (2) front lot lines on a corner lot. Where the lot lines are of equal length and/or the primary front yard is not evident, the Zoning Administrator shall determine the front yard. In the case where there is an existing principal building, it is the front yard that the front building elevation faces.

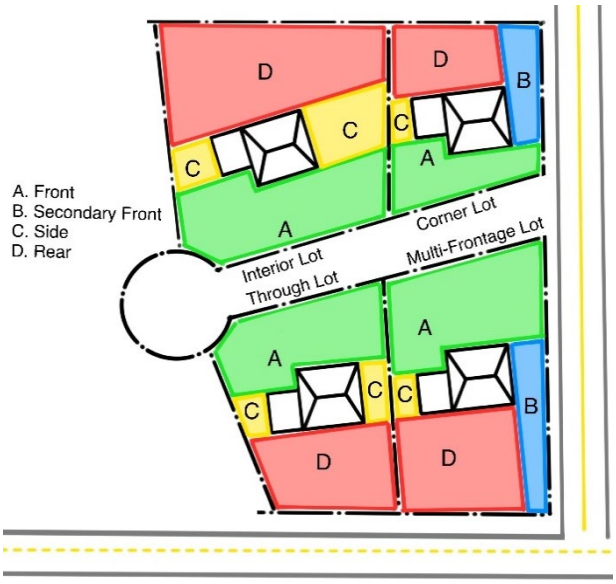

Figure 2 Yard Designations by Lot Type

3. **Yard, Rear.** An open space between the rear of a principal building and the rear lot line and extending the full width of the lot.

4. **Yard, Secondary Front.** A front yard on a corner lot that the front building elevation does not face which extends from the rear of the front yard designation to the rear lot line.

5. **Yard, Side.** An open space between the side of a principal building and the side lot line extending from the front yard to the rear yard.

F. **Zoning Administrator**. An official authorized by the City Manager to administer, interpret, and enforce the City of Port Wentworth Zoning Ordinance.

G. **Zoning District**. A designation on the Official Zoning Map in which requirements for the use and dimensions of the land and buildings are prescribed.

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Article 25. Land Use Definitions

Section 25.10 Intent and Purpose

This article includes all land use definitions included Tables 3.30 and 4.30.

Section 25.20 Accessory Uses

A. **Accessory Building or Structure.** A detached building or structure on the same lot with and of a customarily incidental nature that is subordinate to the principal structure and accommodates an accessory use.

B. **Accessory Dwelling Unit.** An attached or detached dwelling unit that contains an independent living area, including sleeping quarters, bathroom, living area, and kitchen facilities that is secondary and subordinate to a principal single-family dwelling.

1. **Accessory Dwelling Unit, Attached.** An accessory dwelling unit that is physically attached to a principal single-family dwelling as an addition; incorporated internally within a principal dwelling within the basement or attic; or above an attached garage. Except for an accessory dwelling unit above an attached garage, an attached accessory dwelling unit is connected by internal access between separate living spaces. The inclusion of a secondary kitchen or kitchenette within the principal dwelling does not alone result in the classification as an attached accessory dwelling unit.

2. **Accessory Dwelling Unit, Detached.** An accessory dwelling unit that is physically detached from a principal single-family dwelling as a standalone and separate building.

C. **Accessory Use.** A land use or activity that is customarily and clearly incidental and subordinate to the principal use of the land or building.

D. **Antennas and Over-the-Air Reception Devices.**

1. **Amateur Radio Service.** A federally licensed radio-communication service for the purpose of self-training, intercommunication, and technical investigations carried out by amateurs, that is, duly authorized persons interested in radio technique solely with a personal aim and without pecuniary interest particularly with respect to providing emergency communications.

2. **Over-The-Air Reception Device and Satellite Dish Antennas.** Antennas and dish antennas designed to receive direct broadcast satellite service, including direct-to-home satellite service, to receive or transmit fixed wireless signals via satellite, receive video programming services via broadband radio service (wireless cable), receive or transmit fixed wireless signals other than via satellite, or receive local television broadcast signals.

E. **Day Care Home, Adults.** An establishment where care and therapy is provided to elderly persons during normal business hours.

F. **Day Care Home, Children.** A private residence certified by the Georgia Department of Human Resources and operated by any person paid to supervise and care for three (3) but not more than six (6) children under 18 years of age who are not related to such person and whose parents or guardians are not residents in the same private residence. This service may be provided for a duration of less than 24 hours per day and does not include and is not limited to residents of the dwelling. Owner or manager shall reside on the premises.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

G. **Home Occupation, Major.** A business operated on a residential parcel that because of its nature, intensity, and characteristics, is not customary for a residential property and does not qualify as a minor home occupation. A major home occupation is an incidental and secondary use of the property. Business operations include financial advisors, accountants, business services, personal services, making of handcrafted products, accessory retail sales, and independent trucking.

H. **Home Occupation, Minor.** A use which includes any activity which is clearly secondary to residential use and carried out for economic gain. It is conducted within a dwelling, carried out by its occupants utilizing equipment typically found in a home, and it is not evident from the outside.

I. **Outdoor Display and Sales, Permanent.** The outdoor placement, storage, or keeping, for display purposes, of equipment, vehicles, trailers, and other similar goods for sale on premises.

J. **Outdoor Storage, Commercial.** The outdoor placement of goods such as building or construction materials, equipment, vehicles, trailers, and other supplies, for future use, production, assembly, preservation, or disposal, as an accessory function to a principal building and use. This definition does not include materials related to permitted on-site construction projects.

K. **Subdivision Amenity.** Improved areas designed and intended for the playing of a game such as basketball, volleyball or tennis, and indoor or outdoor facilities such as community meeting rooms, picnic areas, swimming pools, or playgrounds. These facilities serve dwelling units and are owned and/or controlled by a neighborhood club, homeowner's association, or similar organization. The term includes fences surrounding the recreational amenity and all surface area inside the fences and overhead lighting fixtures.

L. **Solar Energy, Building-Mounted.** A solar energy collector attached to the roof or wall of a building.

M. **Solar Energy, Ground-Mounted.** A solar energy collector that is mounted directly to a support structure on the ground and is not connected to a building. The system is intended to generate energy for the principal and accessory land uses and buildings on the lot or parcel of land on which the system is located.

Section 25.30 Accommodations, Hospitality, and Entertainment

A. **Banquet or Meeting Hall.** A use which provides rental space for such functions as, but not limited to: wedding parties, conferences, service club meetings, and other similar gatherings, along with the catering of food services off the premises.

B. **Bed and Breakfast.** A house, or portion of a house, where short-term lodging rooms and breakfast and light snacks are provided to overnight guests and where the operator lives on the premises or in adjacent premises.

C. **Campground or Recreational Vehicle Park.** A form of temporary lodging where guests bring tents, travel trailers, campers, or other similar forms of shelter to experience the natural environment. Campgrounds rent pads or spaces to guests and may also include accessory uses such as a camp store, shower/bathroom facilities, and recreational facilities.

D. **Commercial Indoor Recreation Facility.** A facility, open either to the general public or to members and their guests, located in an enclosed building that is designed to accommodate sports, recreational activities, training, or related enterprises. Also included are accessory uses that are clearly in support of the primary use, such as sporting goods shops, food service and party/banquet facilities serving patrons of the indoor recreation use, spectator accommodations, changing/locker rooms and employee offices.

E. **Commercial Outdoor Recreation Facility.** A facility providing a variety of outdoor recreational

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opportunities and entertainment services, often for a fee, including, but not limited to amusement and theme parks; go-cart tracks; golf driving ranges; miniature golf courses; marinas; watercraft rentals; and water parks. It may also include commercial facilities customarily associated with the above indoor commercial recreational uses, including bars and restaurants, arcades, etc.

F. **Commercial Outdoor Recreation, Low-Intensity.** An outdoor venue for nature-based recreation and ecotourism activities, including but not limited to disc golf, ropes courses, eco-challenges, adventure racing and events, zip-line courses, and other activities which rely primarily on the preserved natural environment as a core element of the activity and use.

G. **Golf Course.** A use consisting of regulation and par three golf courses having nine or more holes, and accessory facilities and uses, including driving ranges, clubhouses with bar and restaurant; locker and shower facilities; pro shops for on-site sales of golfing equipment and clothing; and golf cart storage facilities.

H. **Hotel or Motel.** A building under single management that provides rooms or suites intended primarily as sleeping accommodations for public rental on a daily basis for registered guests. Other supportive facilities may also be included, such as, but not limited to, meeting rooms, incidental retail sales, restaurants, lounges, swimming pools, recreational and fitness facilities, and similar facilities/services intended principally to serve registered guests.

I. **Indoor Theater.** A building or part of a building used to show movies or a facility used for drama, dance, musicals, or other live performances. This use may also include accessory concession and retail sales.

J. **Outdoor Theater.** An outdoor commercial facility which shows movies on outdoor screens. This use may also include accessory concession and retail sales.

K. **Restaurant.** A business establishment whose method of operation involves either the delivery of prepared food by servers to customers seated at indoor or outdoor areas, or prepared food is acquired by customers at a counter or cafeteria line and consumed at tables within a completely enclosed building, but does not include drive-through services, which are separately defined and regulated. Service of alcoholic beverages by the drink is incidental to the service of food, and food receipts exceed 50 percent of sales.

L. **Restaurant with Drive-Through.** A business establishment whose method of operation involves the delivery of prepared food or beverages to the customer in a motor vehicle, typically through a drive-through window, for consumption off the premises. A drive-through restaurant may also have indoor or outdoor seating.

M. **Tavern.** A commercial establishment licensed to sell at retail and serve beer, wine, liquor or other alcoholic beverages for consumption on the premises and where the service of food is incidental to the sales and consumption of such beverages. Taverns include nightclubs, lounges, and bars.

Section 25.40 Agricultural

A. **Farm.** The land, plants, animals, buildings, structures, including ponds used for agricultural or aquacultural activities, machinery, equipment, and other appurtenances used in the commercial production of farm products.

B. **Farm Market.** A year-round or seasonal location where transactions and marketing activities between farm market operators and customers take place. At least 75 percent of the products offered must be produced on and by the affiliated farm measured by retail floor space during peak production season, or 75 percent of the average gross sales. Processed products will be considered as produced on and by

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

the farm if at least 50 percent of the product's primary or namesake ingredient was produced on and by the farm.

C. **Farm-Related Businesses and Agritourism.** Agriculturally-oriented commercial and tourism endeavors on farms that are accessory to and have a direct and intrinsic relationship to the principal agricultural use of the subject property, conducted by a farmer or rancher for the enjoyment or education of the public to promote the products of the farm and generate additional farm income, including but not limited to: artisan craft sales, corn mazes, U-Pick operations, petting and feeding zoos, hay rides, demonstration farms; agricultural museums; living history farms; on-farm farmers' markets; winery tours and wine tasting, garden tours and the production and sale of cider, wine, and beer.

D. **Stables, Commercial.** A structure designed for the feeding, boarding, breeding, and exercising of horses that are owned by someone other than the owner of the premises and for which the owner of the premises receives compensation. This definition also includes riding stables, riding academies, and horse show facilities.

E. **Stables, Private.** A structure designed for the feeding, boarding, breeding, and exercising of horses that are owned by the occupant of a principal dwelling on the premises.

Section 25.50 Civic and Institutional

A. **Cemetery.** One (1) or a combination of more than one (1) of the following: a burial ground for earth interments, a mausoleum for crypt entombments, or a columbarium for the inurnment of cremated remains. For the purposes of this ordinance, a cemetery does not include a crematorium.

B. **Community-Oriented Cultural Facility.** A public or non-profit facility that provides educational and cultural experiences for the general public, examples of which include: aquariums, arboretums, art galleries, botanical gardens, libraries, museums, planetariums, civic centers, and theaters predominantly used for live performances, and zoos. It may also include accessory retail uses such as a gift/book shop, restaurant, etc.

C. **Community-Based Indoor Recreation Facility.** A facility providing a variety of indoor recreational opportunities including, but not limited to: gymnasium, swimming pool, tennis, racquetball and/or handball courts, batting cages, and other indoor sports activities. This use includes all public, government, and not-for-profit organizations chartered to provide community-based recreation services.

D. **Government Facility.** Buildings, structures, and facilities that may include administrative offices, public works services, law enforcement, fire protection, libraries, museums, cemeteries, recreational centers, and storage areas for public equipment and materials for local, county, state, and federal public adjacencies.

E. **Public Park or Preserve.** A facility providing a variety of outdoor recreational opportunities including, but not limited to: playground equipment, playing fields, tennis and basketball courts, swimming pools, boat ramps, and fishing piers, and areas for passive recreation such as hiking trails, picnic areas, and bird blinds.

F. **Place of Worship.** A building or structure or group of buildings or structures that, by design and construction, are primarily intended for conducting organized religious worship services. Associated accessory uses include, but are not limited to, classrooms, meeting halls, indoor and outdoor recreational facilities, daycare, counseling, and kitchens.

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G. **School:**

1. **College or University.** A facility for post-secondary education, other than a trade or commercial school, that provides education, whether full-time or part-time, and that grants associates, bachelors, masters, or doctoral degrees, and may include research functions. Includes professional schools (law, medicine, etc.) and technical colleges.
2. **Pre-school to 12.** A school that is not a publicly owned or publicly operated school that offers courses of instruction for students in one or more grades from kindergarten through 12th grade.
3. **Specialized Training.** A specialized instruction establishment that provides individual and group instruction, education, and/or training, including, but not limited to: the arts, dance, music, tutoring, photography, martial arts, health and wellness, business and vocational schools, passenger vehicle driver education schools, barbering, hairdressing, appliance and computer repair, and teaching of industrial or trade skills which machinery is employed as a means of instruction.
4. **Truck Driving.** Commercial facilities which provide instruction and education concerning the driving of trucks.

Section 25.60 Industrial, Infrastructure, and Transportation

A. **Brewery, Winery, Distillery**. The industrial production of beer, wine, and spirits.

B. **Commercial Solar Energy System.** A utility-scale facility of solar energy collectors with the primary purpose of wholesale or retail sales of generated electricity. Also known as a solar farm.

C. **Crematorium.** A facility consisting of one or more furnaces for cremation services.

D. **Essential Public Services and Utilities.** Any person furnishing to the public, transportation, water, gas, electricity, telephone, cable television, communication, steam, telegraph, sewage disposal or other similar service, including the township. The erection, construction, alteration, or maintenance by a public utility, or municipal department, of underground, surface or overhead gas, communication, telephone, electrical, steam, fuel or water, transmission, distribution collection, supply, or disposal systems. This includes related poles, wires, pipes, conduit, cables, public safety alarm and communication equipment, traffic signals, hydrants, and similar accessories that are necessary to furnish adequate service, addressing general public health, safety, convenience, or welfare. These do not include wireless telecommunication towers (unless located on public property and used as part of a municipal emergency communications network); wind energy turbines; offices, utility buildings, substations, or structures that are enclosures or shelters for service equipment; or maintenance depots.

E. **Manufacturing, Processing, and Packaging- Heavy.** A facility accommodating manufacturing processes that involve and/or produce basic metals, building materials, chemicals, fabricated metals, paper products, machinery, textiles, and/or transportation equipment, where the intensity and/or scale of operations may cause significant impacts on surrounding land uses or the community. Examples of heavy manufacturing uses include the following: chemical product manufacturing; concrete, gypsum, and plaster product manufacturing; glass product manufacturing; paving and roofing materials manufacturing; petroleum refining and related industries; plastics, other synthetics, and rubber product manufacturing; primary metal industries; pulp and pulp product manufacturing; textile and leather product manufacturing.

F. **Manufacturing, Processing, and Packaging- Light.** A facility accommodating manufacturing processes involving less intense levels of fabrication and/or production, such as the assembly, fabrication, and

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conversion of already processed raw materials into products, where the operational characteristics of the manufacturing processes and the materials used are unlikely to cause significant impacts on surrounding land uses or the community. The premises may include secondary retail or wholesale sales. Examples of light manufacturing uses include: artisan/craft product manufacturing; clothing and fabric product manufacturing; furniture and fixtures manufacturing, cabinet shop, media production, photo/film processing lab not accessory to a retail business, printing & publishing, and food preparation and packaging.

G. **Mineral Extraction.** The extraction, by mining, of natural resources from underground.

H. **Outdoor Storage, Principal.** The outdoor placement of building or construction materials, landscape materials, equipment, trailers, and other supplies, for future use, production, assembly, preservation, or disposal where there is no other principal use on the site.

I. **Outdoor Container Storage Yard.** An outdoor storage area for short-term or long-term placement of containers associated with port operations that are awaiting pick up for land or sea shipping transport.

J. **Propane Gas Sales.** An establishment providing LPG dispensing and bulk containers for sale.

K. **Salvage or Impound Operations.** Any land or structure used for storing, dismantling, reconditioning, collecting, purchasing or selling of scrap metal or other discarded goods and materials, including the collection, dismantlement, and salvage of two or more inoperative vehicles, boats, trucks, or other types of machinery or equipment, or the impounding of any operable or inoperable vehicle associated with towing or wrecker services.

L. **Sawmill or Planing Mill.** A facility where logs are sawn, split, shaved, stripped, chipped, or otherwise processed to produce lumber and other wood products.

M. **Self-Storage.** A building or group of buildings in a controlled access and/or fenced compound that contains varying sizes of individualized, compartmentalized, and controlled access rooms, stalls or lockers for the storage of customer's goods or wares.

N. **Truck Terminal.** A facility at which freight is consolidated to be shipped or where full load consignments may be loaded and off-loaded, and where vehicles and trailers are regularly maintained and stored.

O. **Warehousing and Distribution.** Facilities for redistributing goods from one truck to another that serve as intermediate transfer points and are primarily used for staging loads and temporary storage, where vehicles and trailers are regularly maintained and stored.

P. **Waste Management and Recycling.** A facility used for collecting waste and recyclables, sorting, and transferring materials.

Q. **Wholesaling and Distribution.** An establishment engaged in selling merchandise in bulk quantities to retailers; to contractors, industrial, commercial, agricultural, institutional, or professional business users; to other wholesalers; or acting as agents or brokers in buying merchandise for or selling merchandise to such persons or companies.

Section 25.70 Offices and Services

A. **Animal and Pet Services.** Any lot or premises on which six or more dogs or cats or other household pets, six months old or over, are kept temporarily or permanently for sale, boarding, breeding, training, shelter, competition, showing, or day care.

B. **Animal Clinic.** An establishment used by a veterinarian where animals are treated.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

C. **Child Day Care Center.** A facility operated by a person, partnership, association, society, agency, corporation, institution, or group that receives pay for the care of seven (7) or more children, under 18 years of age, where children remain less than 24 hours per day.

D. **Contractor Facility.** An office and storage or warehouse facility accommodating a construction, skilled trade, landscaping, extermination, tree care, industrial service contracting business, or other similar trades.

E. **Funeral Home or Mortuary.** A building used for the preparation of the deceased for burial or cremation, for the display of the deceased and/or for ceremonies or related services, including the storage of caskets, funeral urns, funeral vehicles, and other funeral supplies. For the purposes of this ordinance, this use does not include a crematorium.

F. **General Offices and Services.** Establishments that offer financial, business, business support, medical, personal, professional, and administrative services.

1. **Financial Services.** Financial institutions, including, but not limited to: banks, credit agencies, investment companies, security, and commodity exchanges.

2. **Business Services.** Establishments providing direct services to consumers, including, but not limited to: employment agencies, insurance agent offices, real estate offices, and travel agencies.

3. **Business Support Services.** Establishments providing services to other businesses, including, but not limited to: computer rental and repair, copying, quick printing, mailing and mailbox services.

4. **Medical.** A facility other than a hospital where medical, dental, mental health, surgical, and/or other personal health care services are provided on an outpatient basis (for example, chiropractors, medical doctors, psychiatrists, etc., other than nursing staff.

5. **Personal Services.** Establishments providing non-medical services to individuals, including, but not limited to: barber and beauty shops, tattoo parlors, dry cleaners pick-up and drop-off, small appliance repair, laundromats, massage therapists, shoe repair shops, and tanning salons. These uses may include incidental retail sales related to the services they provide.

6. **Professional and Administrative Services.** Office-type facilities occupied by businesses or agencies that provide professional or government services or are engaged in the production of intellectual property.

G. **General Offices and Services with Drive Through Service.** Facilities where services may be obtained by motorists without leaving their vehicles. Examples of drive-through services include bank teller windows and drive-up ATMs, dry cleaners pick-up and drop-off, etc.

H. **Hospital.** An institution licensed by the State, where people, including inpatients, receive medical, surgical or psychiatric treatment and nursing care.

I. **Temporary Office.**

1. **Temporary Construction Office.** An office, typically mobile, established at a permitted construction site to accommodate personnel. A location for outdoor storage of materials and equipment is commonly associated with the use.

2. **Temporary Sales Office.** An office, either mobile or located in a model home, used to accommodate real estate agents and associated administrative staff for the purposes of selling or renting real property in subdivisions or other housing developments.

J. **Truck Stop or Truck Fuel Sales.** An establishment that is engaged primarily in the fueling, servicing,

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

repair, or parking of semi-trucks and trailers or similar heavy commercial vehicles, and which may include the sale of accessories and equipment for such vehicles, food sales, and other services for truck drivers.

K. **Vehicle Repair, Major.** The servicing, repairing, refinishing, equipping, or adjusting of vehicles, or their components, for compensation, including but not limited to powertrain and suspension repair or rebuilding, body work, frame alignment, and other vehicle repair work creating noise, glare, fumes, or smoke; but not including vehicle wrecking, junking or salvaging or fuel sales.

L. **Vehicle Repair, Minor.** A business providing general maintenance on motor vehicles such as oil changes and lubrication; servicing and repair of spark plugs, batteries, pumps, belts, hoses, air filters, windshield wipers, and distributors; replacement of mufflers and exhaust systems, brakes and shock absorbers; radiator cleaning and flushing; sale and installation of automobile accessories such as tires, radios, and air conditioners; wheel alignment and balancing; but, excluding tire recapping or grooving or any major mechanical repairs, collision work or painting.

M. **Vehicle Service Station.** An establishment where motor vehicle fuel is dispensed for retail sale. This use may also collectively include minor vehicle repair services (see vehicle repair, minor); retail sales of convenience items (see retail), restaurant (see restaurant and restaurant with drive-through) and a single bay vehicle wash (see vehicle wash), but not overnight vehicle storage. This use does not include truck stops or truck fuel sales.

N. **Vehicle Wash, Cars.** A building or portion of a building with machine or hand-operated facilities used principally for the cleaning, washing, polishing or waxing of cars and light trucks and vans. This use may also include accessory outdoor vacuums.

O. **Vehicle Wash, Trucks.** A building or portion of a building with machine or hand-operated facilities used principally for the cleaning, washing, polishing, or waxing of commercial trucks and vans, and semi-trucks and trailers. This use may also include accessory outdoor vacuums.

Section 25.80 Residential Group Living

A. **Personal Care Home.** Any dwelling, whether operated for profit or not, which undertakes through its ownership or management to provide or arrange for the provision of housing, food service, and one or more personal services for two or more adults who are not related to the owner or administrator by blood or marriage. The owner or manager shall reside on the premises.

B. **Nursing Home.** A home for the aged, chronically ill, or incurable persons in which three (3) or more persons, not of the immediate family, are received, kept, or provided with food and shelter or care for compensation; but not including hospitals, clinics, or similar institutions devoted primarily to the diagnosis and treatment of the sick or injured.

Section 25.90 Residential Household Living

A. **Dwelling (note- ascending density, not alphabetical).**

1. **Single-Family Dwelling.** A freestanding dwelling unit designed and intended for one family that is physically separate from any other dwelling.

2. **Two-Family Dwelling.** A building containing two (2) dwelling units on a single lot designed for or used by two (2) families living independently of one another and may also be referred to as a duplex.

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3. **Townhome.** A Building containing three (3) or more dwelling units arranged side by side, separated from each other by a common walls and having separate direct means of egress and ingress to each unit from the outside

4. **Multiple-Family Dwelling.** A building containing three (3) or more dwelling units designed for occupancy by three (3) or more families living independently of one another.

B. **Manufactured Home Community.** A property that has been planned, designed, improved, and maintained for the placement of two (2) or more manufactured homes and permitted accessory uses where home sites are leased to individuals who retain customary leasehold rights.

C. **Mixed-Use Residential.** A dwelling attached to a commercial building or on an upper floor, or a single-family dwelling on the same parcel as a commercial business.

Section 25.100 Retail and Other Sales and Rental

A. **Bakery, small scale.** An establishment less than 5,000 square feet primarily engaged in the retail sale of baked products for consumption off-site. The products may be prepared either on or off-site, and the use may include accessory food service.

B. **Construction and Landscape Supply, Outdoor.** A commercial establishment that sells supplies for building construction and/or landscaping projects, where such supplies are placed outdoors.

C. **Greenhouse and Nursery.** A retail or wholesale business whose principal activity is the display and sales of plants grown on the site within an enclosed building (greenhouse) or outdoors (nursery).

D. **Retail Sales.** Stores and shops that sell goods and merchandise to the general public.

E. **Vehicle and Equipment Sales and Rental, Major.** An operation selling or renting commercial trucks and vans, boats, recreational vehicles, heavy equipment, manufactured homes, landscaping machinery, trailers, farm equipment, and similar items. It may also include accessory repair shops and the sales of parts and accessories incidental to dealerships.

F. **Vehicle and Equipment Sales and Rental, Minor.** An operation selling or renting cars, trucks, vans, and small equipment. It may also include accessory repair shops and the sales of parts and accessories incidental to dealerships.

Section 25.110 Other Uses

A. **Adult Establishment.** Any adult bookstore, adult entertainment establishment, adult motion picture theater, or adult motion picture arcade.

1. Adult Bookstore. A commercial establishment or facility in the city that maintains 25 percent or more of its floor area for the display, sale, and/or rental of the following items (aisles and walkways used to access these items shall be included in "floor area" maintained for the display, sale, and/or rental of the items):

a. Books, magazines, periodicals, or other printed matter, or photographs, films, motion pictures, videocassettes, CDs, DVDs or other video reproductions, or slides or other visual representations which are characterized by their emphasis upon the display of specified sexual activities or specified anatomical areas, as defined herein; or

b. Instruments, devices, novelties, toys or other paraphernalia that are designed for use in connection with specified sexual activities as defined herein or otherwise emulate, simulate, or

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

represent "specified anatomical areas" as defined herein.

2. Adult entertainment Establishment. Any establishment or facility in the City of Port Wentworth where adult entertainment is regularly sponsored, allowed, presented, sold, or offered to the public.
3. Adult motion picture arcade. A commercial establishment to which the public is permitted or invited wherein coin or slug-operated or electronically, electrically or mechanically controlled still or motion picture machines, projectors or other image producing devices are regularly maintained to show images to five or fewer persons per machine at any one time and where the images so displayed are distinguished or characterized by an emphasis upon matter displaying specified sexual activities or specified anatomical areas.
4. Adult motion picture theater. A commercial establishment where films, motion pictures, videocassettes, slides, or similar photographic reproductions which are characterized by their emphasis upon the display of specified sexual activities or specified anatomical areas are regularly shown to more than five persons for any form of consideration.

B. **Similar Land Use.** A land use determined to be similar in nature, character, function, and operation as a land use listed Tables 3.30 or 4.30.

C. **Temporary Land Use.** Outdoor sales approved for temporary durations and in temporary locations, including parking lot sales, mobile food units, garage sales, and yard sales.

Attachment: Planning Comm Review Draft 2-5-23 (2803 : Zoning Ordinance Restatement)

Planning Commission
305 South Coastal Highway
Port Wentworth, GA 31407

SCHEDULED

Meeting: 03/13/23 03:30 PM
Department: Development Services
Category: Planning/Zoning Item
Prepared By: Stephanie Cook
Department Head: Brian Harvey

AGENDA ITEM (ID # 2800)

DOC ID: 2800

Site Plan Review Application submitted by Guy Davidson, Rice Creek Landing LLC for PIN # 7-0906-01-018 and 7-0906-01-012 (Highway 21) for a General Development Site Plan to allow a multi-family development (Rice Creek Apartments) in a P-R-M (Planned Multifamily Residential) Zoning District

Issue/Item: Site Plan Review Application submitted by Guy Davidson, Rice Creek Landing LLC for PIN # 7-0906-01-018 and 7-0906-01-012 (Highway 21) for a General Development Site Plan to allow a multi-family development (Rice Creek Apartments) in a P-R-M (Planned Multifamily Residential) Zoning District

Background: The subject property is currently vacant woodland. There are no buildings or structures on the subject property.

Facts and Findings: Rice Creek Apartments will consist of approximately two hundred fifty-three (253) dwelling units (6 buildings), leasing center and amenities, associated parking, utilities, drainage and infrastructure improvements. The purposed main entrance is off of Rice Creek Road and a secondary entrance off of Highway 21.

Funding: N/A

Recommendation: The Planning Commission will hear this application on Monday, March 13, 2023 at 3:30 PM.

ATTACHMENTS:

- Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Application (PDF)
- Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-APO(PDF)
- Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Timeline (DOCX)
- Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Site Plan (PDF)

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

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: 0 Highway 21

PIN #(s): 70906 01018, 70906 01012

Zoning: P-R-M Estimated Cost of Construction: $_____

Type of Construction: Planned Multifamily

Applicant's Name: Rice Creek Landing LLC / Guy Davidson

Mailing Address: 110 Park of Commerce Drive, Suite #110
Savannah, GA 31405

Phone #: 912-944-4410 Email: gpd@daicommercial.com

Owner's Name (If Different form Applicant): Rice Creek Landing LLC / Guy Davidson

Mailing Address: 110 Park of Commerce Drive, Suite #110
Savannah, GA 31405

Phone #: 912-944-4410 Email: gpd@daicommercial.com

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

_____ 1/11/23
Applicant's Signature Date

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

Please see page 2 for required submittal checklist

Updated 4/28/2020

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Application (2800 : Site Plan Review Application (General) PIN # 7-

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)
- N/A ☐ 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)
- N/A ☐ 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

_____ 1/11/23

Applicant's Signature Date

Updated 4/28/2020

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Application (2800 : Site Plan Review Application (General) PIN # 7-

Adjacent Property Owners Within 250 Feet

Quentin Foster, Sr.
PIN: 70906 01008
Property Address: Highway 21,
Port Wentworth, Georgia 31407
Mailing Address: 127 Bridge View Drive,
Marietta, Georgia 30066

City of Port Wentworth
PIN: 70906 01009
Property Address: Highway 21,
Port Wentworth, Georgia 31407
Mailing Address: 305 S. Coastal Hwy,
Port Wentworth, Georgia 31407

Carolina Self Storage Centers, Inc.
PIN: 70906 01014
Property Address: 7975 Highway 21,
Port Wentworth, Georgia 31407
Mailing Address: 1476 Jefferies Hwy,
Walterboro, South Carolina 29488

Armando M. Sanches and Johana E. Insaurralde
PIN: 70906C05041
Property & Mailing Address: 10 Burnt Oak Road,
Port Wentworth, Georgia 31407

William Holden, Jr.
PIN: 70906C07011
Property & Mailing Address: 13 Burnt Oak Road, Port Wentworth, Georgia 31407

Darren C. Clay
PIN: 70906C07010
Property & Mailing Address: 15 Burnt Oak Road, Port Wentworth, Georgia 31407

Carolyn Eiland
PIN: 70906C07009
Property & Mailing Address: 17 Burnt Oak Road, Port Wentworth, Georgia 31407

James R. & Britany Jane Burrell
PIN: 70906C07008
Property & Mailing Address: 19 Burnt Oak Road, Port Wentworth, Georgia 31407

James G. & LaShuanda N. Hudson
PIN: 70906C05042
Property & Mailing Address: 12 Burnt Oak Road, Port Wentworth, Georgia 31407

Bridgett Bernadett Levine
PIN: 70906C05043
Property & Mailing Address: 14 Burnt Oak Road, Port Wentworth, Georgia 31407

Sonna R. Vanover
PIN: 70906C05044
Property & Mailing Address: 16 Burnt Oak Road, Port Wentworth, Georgia 31407

Karm D. Sourabie & Sherrell L. Adkins
PIN: 70906C05045
Property & Mailing Address: 18 Burnt Oak Road, Port Wentworth, Georgia 31407

John I. Farrell
PIN: 70906C05046
Property & Mailing Address: 20 Burnt Oak Road, Port Wentworth, Georgia 31407

Willie Warren Durdley II & Sheilla A. Durdley
PIN: 70906C05047
Property & Mailing Address: 22 Burnt Oak Road, Port Wentworth, Georgia 31407

American Homes 4 Rent Properties Eight LLC
PIN: 70906C05048
Property Address: 24 Burnt Oak Road,
Port Wentworth, Georgia 31407
Mailing Address: 23975 Park Sorrento,
Suite 300, Calabasas, California 91302

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-APO (2800 : Site Plan Review Application (General) PIN # 7-0906-01-

Earline E. Mason
PIN: 70906C06001
Property & Mailing Address: 2 Twelve Oaks Road, Port Wentworth, Georgia 31407

Ahmad J. Castle
PIN: 70906C06002
Property & Mailing Address: 4 Twelve Oaks Road, Port Wentworth, Georgia 31407

Daniel Rivera
PIN: 70906C06011
Property & Mailing Address: 3 Huntington Road, Port Wentworth, Georgia 31407

Linda Manies
PIN: 70906C06010
Property & Mailing Address: 1 Huntington Road, Port Wentworth, Georgia 31407

Rashida M. Sharp
PIN: 70906C05049
Property & Mailing Address: 26 Burnt Oak Road, Port Wentworth, Georgia 31407

Quentin Mungin, Sr.
PIN: 70906C05050
Property & Mailing Address: 28 Burnt Oak Road, Port Wentworth, Georgia 31407

Angela Dove
PIN: 70906C05051
Property & Mailing Address: 30 Burnt Oak Road, Port Wentworth, Georgia 31407

Rice Creek Homeowners Associate of Port Wentworth, Georgia, Inc.
PIN: 70906C05052
PIN: 70906C05073
Property Address: Burnt Oak Road, Port Wentworth, Georgia 31407
Mailing Address: 119 Canal Street, Suite 102, Pooler, Georgia 31322

Andrew T. Aponte &
Chantal K. Garzon-Aponte
PIN: 70906C05072
Property & Mailing Address: 32 Burnt Oak Road, Port Wentworth, Georgia 31407

Kontar L. Briggs
PIN: 70906C05071
Property & Mailing Address: 34 Burnt Oak Road, Port Wentworth, Georgia 31407

Parcardi Trappio
PIN: 70906C05070
Property & Mailing Address: 36 Burnt Oak Road, Port Wentworth, Georgia 31407

Jared Abraham Gaik
PIN: 70906C12007
Property & Mailing Address: 38 Burnt Oak Road, Port Wentworth, Georgia 31407

Marquitha S. Gibson
PIN: 70906C12006
Property & Mailing Address: 12 Mangrove Terrace, Port Wentworth, Georgia 31407

Patrick F. Thomas
PIN: 70906C12005
Property & Mailing Address: 10 Mangrove Terrace, Port Wentworth, Georgia 31407

Patrick B. Cope and Waltien Miller Cope
PIN: 70906C05069
Property & Mailing Address: 2 Lafayette Court, Port Wentworth, Georgia 31407

Willie B. & Danielle L. Wallace
PIN: 70906C05068
Property & Mailing Address: 4 Lafayette Court, Port Wentworth, Georgia 31407

John A. & Anna M. Stoutland
PIN: 70906C05067
Property & Mailing Address: 6 Lafayette Court, Port Wentworth, Georgia 31407

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-APO (2800 : Site Plan Review Application (General) PIN # 7-0906-01-

Troy A. Pollen
PIN: 70906C05066
Property & Mailing Address: 8 Lafayette Court, Port Wentworth, Georgia 31407

Albert E. & Janice F. Allen
PIN: 70906C05065
Property & Mailing Address: 10 Lafayette Court, Port Wentworth, Georgia 31407

Richard C. Calhoun
PIN: 70906C05064
Property & Mailing Address: 12 Lafayette Court, Port Wentworth, Georgia 31407

Rebecca Angelica Santibanez
PIN: 70906C05063
Property Address: 14 Lafayette Court, Port Wentworth, Georgia 31407
Mailing Address: 5000 Augusta Road, Savannah, Georgia 31408

Anthony L. Sesmundo
PIN: 70906C05062
Property & Mailing Address: 15 Lafayette Court, Port Wentworth, Georgia 31407

Chevella S. Stokes
PIN: 70906C05061
Property & Mailing Address: 13 Lafayette Court, Port Wentworth, Georgia 31407

Jamal Khari Manning & Cathy C. Williams-Manning
PIN: 70906C05060
Property & Mailing Address: 11 Lafayette Court, Port Wentworth, Georgia 31407

Gerry L. & Myra T. Lattimore
PIN: 70906C05059
Property & Mailing Address: 9 Lafayette Court, Port Wentworth, Georgia 31407

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-APO (2800 : Site Plan Review Application (General) PIN # 7-0906-01-

Project Timeline

Project Number: 230069

Project Name: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan March 2023

Applicant / Engineer: Rice Creek Landing LLC (Guy Davidson) / T&H

Owner: Rice Creek Landing LLC/Guy Davidson

City Review Engineer: N/A

- 01/27/2023 – Application received: Complete. [S.C.]
- 2/24/2023 – public notice letters mailed 2/24/23. [M.E.]
- 2/26/2023 – public notice published in Savannah Morning News. [M.E.]

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Timeline (2800 : Site Plan Review Application (General) PIN # 7-0906-

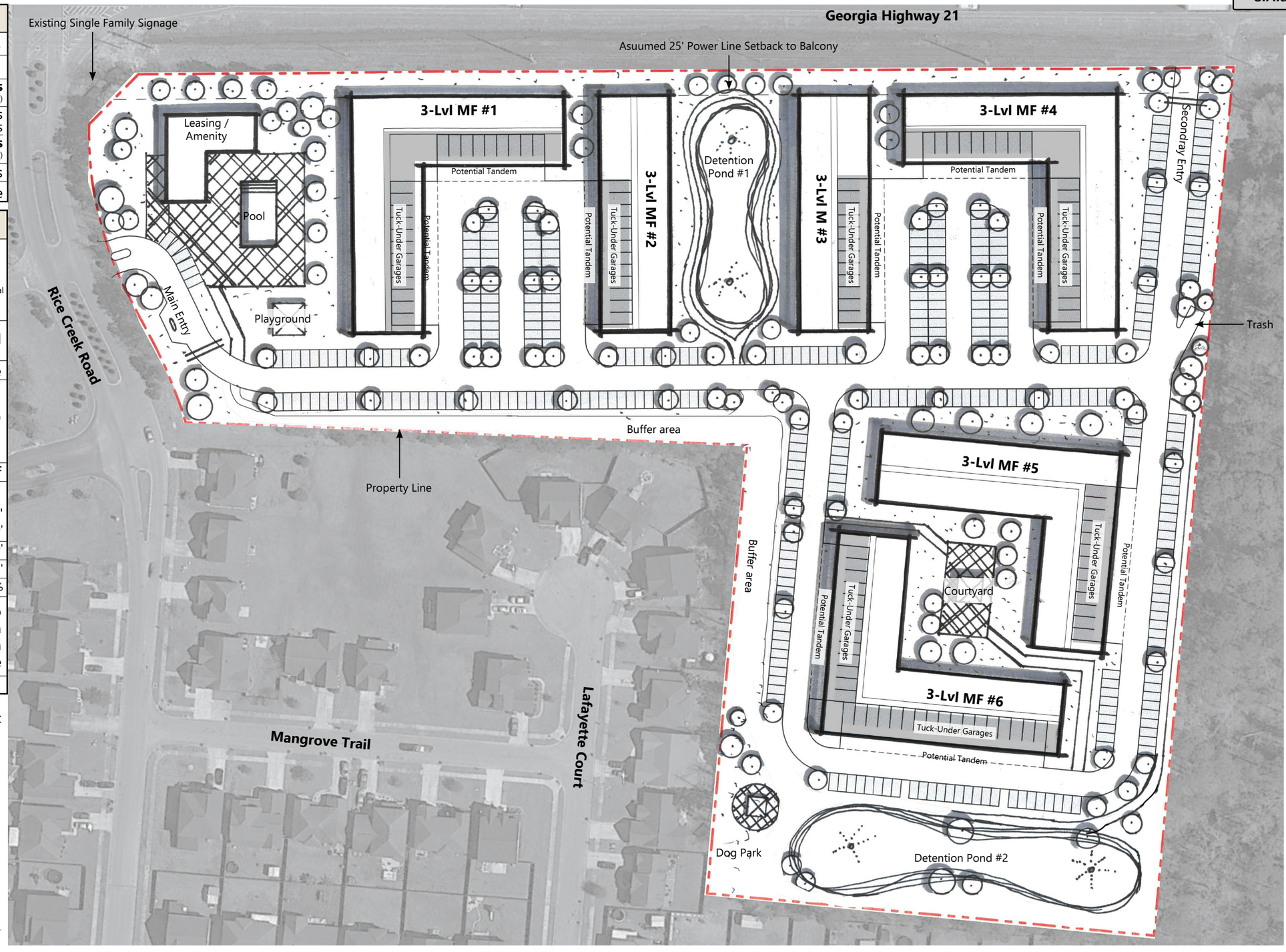
PROJECT DATA

Residential	assumed 40% 1 BR, 50% 2 BR, 10% 3 BR assumed 1,075 sf avg	**253 units**
Leasing/Amenity		8,000 s.f.
Parking Required		**431 sps** (1.7 sps/Unit)
Parking Provided	Surface: Tuck-Under: **Total:**	351 sps 109 sps **460 sps** (1.8 sps/Unit)
Site Area		14.1 acres
Density		18 units/acre

SITE CONDITIONS

Zoning District	**Current zoning:** Planned overlay-Multifamily Residential	**P-R-M**
Permitted Uses	**P-R-M:**	MF is permitted
Density		Max. 18 units/acre
Height		Max. 50'
Lot Area/Unit		Min. 2,400 sf
Setbacks	**Front yard:** (from center of the street) Major Artery: Conneting Route/All Others: **Side yard:** **Rear yard:**	 Min.70' Min.60' Min.10' Min.25'
Bldg. Coverage		45%
Required Parking		1.25 sps/studio 1.5 sps/1 bedroom 1.75 sps/2 bedroom 2 sps/3 or more
Easement		Existing power line along Hwy 21

Zoning Reviewed By: zz



JHP
Architecture / Urban Design

A FIRM WITH A VIBRANT & EXCITING CULTURE RECOGNIZED FOR ELEVATED DESIGN

STONERIVER COMPANY

Rice Creek Apartments

Port Wentworth, Georgia

SITE PLAN

Copyright © JHP 2022. Not for Regulatory Approval, Permit or Construction:
John Schrader.
Registered Architect of State of Georgia , Registration No. RA013349.

01.19.2023

01

Attachment: Rice Creek Apartments 7-0906-01-018, 012 G-Site Plan 2023-Site Plan (2800 : Site Plan Review Application (General) PIN # 7-0906-

Planning Commission
305 South Coastal Highway
Port Wentworth, GA 31407

SCHEDULED

Meeting: 03/13/23 03:30 PM
Department: Development Services
Category: Planning/Zoning Item
Prepared By: Melanie Ellis
Department Head: Brian Harvey

AGENDA ITEM (ID # 2712)

DOC ID: 2712

Site Plan Review Application submitted by Third Lake Development, LLC., on behalf of Bald Eagle Partners for PIN # 7-0906-04-091 (Rice Hope Rd) for a Specific Development Site Plan to allow a Multifamily Development (The Cottages at Rice Hope Plantation) in a M-P-O (Master Plan Overlay) Zoning District

Issue/Item: Site Plan Review Application submitted by Third Lake Development, LLC., on behalf of Bald Eagle Partners for PIN # 7-0906-04-091 (Rice Hope Rd) for a Specific Development Site Plan to allow a Multifamily Development (The Cottages at Rice Hope Plantation) in a M-P-O (Master Plan Overlay) Zoning District

Background: The subject property is currently vacant. There are no buildings or structures on the subject property. The general development plan for this project was approved during the regular City Council meeting on September 23, 2021.

Facts and Findings: This project is a specific development plan for a single family for rent neighborhood. The project will consist of four hundred forty-seven (447) homes, community center with amenities and all associated roads, drainage, water and sewer utilities, and parking. The site plan has been reviewed by City engineers, Thomas & Hutton and a final review letter has been issued.

Funding: N/A

Recommendation: The Planning Commission will hear this application on Monday, March 13, 2023 at 3:30 PM.

ATTACHMENTS:

- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (PDF)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Timeline (DOCX)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Concurrence letter T&H 1.27.23 (PDF)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (PDF)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (PDF)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - LDA Letter 6.27.22 (PDF)
- The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (PDF)

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

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: 0 Rice Hope Road, Port Wentworth, GA 31407

PIN #(s): 70906 04091

Zoning: M-P-O Estimated Cost of Construction: $30,000,000

Type of Construction: Horizontal Multifamily

Project Name: Rice Hope Third Lake

Applicant's Name: Third Lake Development, Attn: Mr. Grant Barnes

Mailing Address: 1600 E. 8th Avenue, Suite A132, Tampa, FL 33605

Phone #: (727) 349-9100 Email: jbarnes@thirdlakedevelopment.com

---

Owner's Name (If Different form Applicant): Bald Eagle Partners Attn: Mr. Scott DeCain

Mailing Address: 4800 Hampden Lane, Suite 200, Bethesda, MD 20814

Phone #: (571) 426-4310 Email: sdecain@baldeaglepartners.com

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

Applicant's Signature — Date: 04/25/22

Owner's Signature (If Different form Applicant) — Date: 6/7/2022

Please see page 2 for required submittal checklist

Updated 10/19/2021

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (2712 : Site Plan Review Application (Specific) 7-0906-04-091

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 on a flash drive or download link ONLY (NO CD'S)
- ☒ 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

_____ 04/25/22_____

Applicant's Signature Date

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (2712 : Site Plan Review Application (Specific) 7-0906-04-091

CITY OF PORT WENTWORTH

(912) 964-4379

REC#: 00357323 6/09/2022 3:20 PM
OPER: ME TERM: 011
REF#: CK 1114

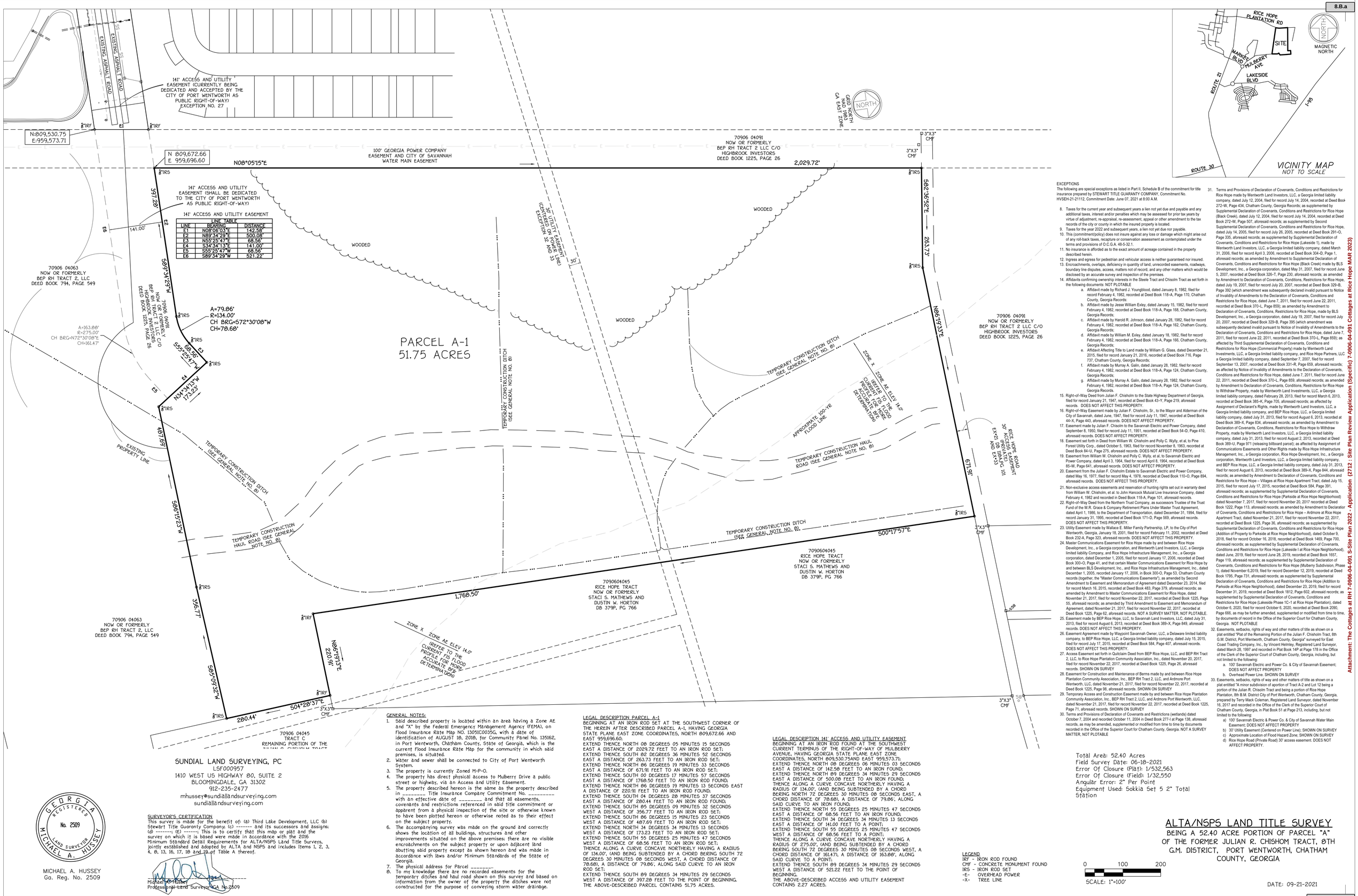
TRAN: 112.0000 BLDG PERMIT
220277 886.00CR
BALD EAGLE PARTNERS
7-0906-04-091
DEV-SPR 886.00CR

TENDERED: 886.00 CHECK
APPLIED: 886.00-

CHANGE: 0.00

WWW.CITYOFPORTWENTWORTH.COM

Attachment: The Cottages at RH 7-



SUNDIAL LAND SURVEYING, PC
LSF000937
1410 WEST US HIGHWAY 80, SUITE 2
BLOOMINGDALE, GA 31302
912-235-2477
mhussey@sundiallandsurveying.com
sundiallandsurveying.com

GEORGIA REGISTERED No. 2509 LAND SURVEYOR MICHAEL A. HUSSEY

MICHAEL A. HUSSEY
Ga. Reg. No. 2509

SURVEYOR'S CERTIFICATION
This survey is made for the benefit of: (a) Third Lake Development, LLC (b) Stewart Title Guaranty Company. (c) ------- and its successors and assigns; (d) --------; (e) --------. This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS and includes Items 1, 2, 3, 4, 8, 13, 16, 17, 18 and 19 of Table A thereof.

Michael A. Hussey
Professional Land Surveyor, GA No. 2509

GENERAL NOTES:
1. Said described property is located within an area having a Zone AE and "X" by the Federal Emergency Management Agency (FEMA), on Flood Insurance Rate Map NO. 13051C0035G, with a date of identification of AUGUST 18, 2018, for Community Panel No. 135162, in Port Wentworth, Chatham County, State of Georgia, which is the current Flood Insurance Rate Map for the community in which said premises, is situated.
2. Water and sewer shall be connected to City of Port Wentworth System.
3. The property is currently Zoned M-P-O.
4. The property has direct physical access to Mulberry Drive a public street or highway, via an Access and Utility Easement.
5. The property described hereon is the same as the property described in _____ Title Insurance Company Commitment No. _____ with an effective date of _____ and that all easements, covenants and restrictions referenced in said title commitment or apparent from a physical inspection of the site or otherwise known to have been plotted hereon or otherwise noted as to their effect on the subject property.
6. The accompanying survey was made on the ground and correctly shows the location of all buildings, structures and other improvements situated on the above premises; there are no visible encroachments on the subject property or upon adjacent land abutting said property except as shown hereon and was made in accordance with laws and/or Minimum Standards of the State of Georgia.
7. The physical address for Parcel _____.
8. To my knowledge there are no recorded easements for the temporary ditches and haul road shown on this survey and based on information from the owner of the property the ditches were not constructed for the purpose of conveying storm water drainage.

LEGAL DESCRIPTION PARCEL A-1
BEGINNING AT AN IRON ROD SET AT THE SOUTHWEST CORNER OF THE HEREIN AFTER DESCRIBED PARCEL A-1, HAVING GEORGIA STATE PLANE EAST ZONE COORDINATES, NORTH 809,672.66 AND EAST 959,696.60;
EXTEND THENCE NORTH 08 DEGREES 05 MINUTES 15 SECONDS EAST A DISTANCE OF 2029.72 FEET TO AN IRON ROD SET;
EXTEND THENCE SOUTH 82 DEGREES 36 MINUTES 52 SECONDS EAST A DISTANCE OF 263.73 FEET TO AN IRON ROD SET;
EXTEND THENCE NORTH 86 DEGREES 19 MINUTES 33 SECONDS EAST A DISTANCE OF 671.91 FEET TO AN IRON ROD SET;
EXTEND THENCE SOUTH 00 DEGREES 17 MINUTES 57 SECONDS EAST A DISTANCE OF 1760.50 FEET TO AN IRON ROD FOUND;
EXTEND THENCE NORTH 86 DEGREES 19 MINUTES 13 SECONDS EAST A DISTANCE OF 220.91 FEET TO AN IRON ROD FOUND;
EXTEND THENCE SOUTH 04 DEGREES 28 MINUTES 37 SECONDS EAST A DISTANCE OF 280.44 FEET TO AN IRON ROD FOUND;
EXTEND THENCE SOUTH 89 DEGREES 09 MINUTES 32 SECONDS WEST A DISTANCE OF 356.77 FEET TO AN IRON ROD SET;
EXTEND THENCE SOUTH 89 DEGREES 15 MINUTES 25 SECONDS WEST A DISTANCE OF 407.69 FEET TO AN IRON ROD SET;
EXTEND THENCE NORTH 34 DEGREES 34 MINUTES 13 SECONDS WEST A DISTANCE OF 173.23 FEET TO AN IRON ROD SET;
EXTEND THENCE SOUTH 55 DEGREES 25 MINUTES 47 SECONDS WEST A DISTANCE OF 68.56 FEET TO AN IRON ROD SET;
THENCE ALONG A CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 134.00', (AND BEING SUBTENDED BY A CHORD BEARING SOUTH 72 DEGREES 30 MINUTES 08 SECONDS WEST, A CHORD DISTANCE OF 78.68), A DISTANCE OF 79.86', ALONG SAID CURVE TO AN IRON ROD SET;
EXTEND THENCE SOUTH 89 DEGREES 34 MINUTES 29 SECONDS WEST A DISTANCE OF 397.28 FEET TO THE POINT OF BEGINNING.
THE ABOVE-DESCRIBED PARCEL CONTAINS 51.75 ACRES.

LEGAL DESCRIPTION 141' ACCESS AND UTILITY EASEMENT
BEGINNING AT AN IRON ROD FOUND AT THE SOUTHWEST CURRENT TERMINUS OF THE RIGHT-OF-WAY OF MULBERRY AVENUE, HAVING GEORGIA STATE PLANE EAST ZONE COORDINATES, NORTH 809,530.75AND EAST 959,573.71;
EXTEND THENCE NORTH 08 DEGREES 06 MINUTES 03 SECONDS EAST A DISTANCE OF 142.58 FEET TO AN IRON FOUND;
EXTEND THENCE NORTH 89 DEGREES 34 MINUTES 29 SECONDS EAST A DISTANCE OF 500.08 FEET TO AN IRON FOUND;
THENCE ALONG A CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 134.00', (AND BEING SUBTENDED BY A CHORD BEING NORTH 72 DEGREES 30 MINUTES 08 SECONDS EAST, A CHORD DISTANCE OF 78.68), A DISTANCE OF 79.86', ALONG SAID CURVE TO AN IRON FOUND;
EXTEND THENCE NORTH 55 DEGREES 25 MINUTES 47 SECONDS EAST A DISTANCE OF 68.56 FEET TO A POINT;
EXTEND THENCE SOUTH 34 DEGREES 34 MINUTES 13 SECONDS EAST A DISTANCE OF 141.00 FEET TO A POINT;
EXTEND THENCE SOUTH 55 DEGREES 25 MINUTES 47 SECONDS WEST A DISTANCE OF 68.56 FEET TO A POINT;
THENCE ALONG A CURVE CONCAVE NORTHERLY HAVING A RADIUS OF 275.00', (AND BEING SUBTENDED BY A CHORD BERING SOUTH 72 DEGREES 30 MINUTES 08 SECONDS WEST, A CHORD DISTANCE OF 161.47), A DISTANCE OF 163.88', ALONG SAID CURVE TO A POINT;
EXTEND THENCE SOUTH 89 DEGREES 34 MINUTES 29 SECONDS WEST A DISTANCE OF 521.22 FEET TO THE POINT OF BEGINNING.
THE ABOVE-DESCRIBED ACCESS AND UTILITY EASEMENT CONTAINS 2.27 ACRES.

LEGEND
IRF - IRON ROD FOUND
CMF - CONCRETE MONUMENT FOUND
IRS - IRON ROD SET
-E- OVERHEAD POWER
-X- TREE LINE

EXCEPTIONS
The following are special exceptions as listed in Part II, Schedule B of the commitment for title insurance prepared by STEWART TITLE GUARANTY COMPANY, Commitment No. HVSEH-21-21112, Commitment Date: June 07, 2021 at 8:00 A.M.

8. Taxes for the current year and subsequent years a lien not yet due and payable and any additional taxes, interest and/or penalties which may be assessed for prior tax years by virtue of adjustment, re-appraisal, re-assessment, appeal or other amendment to the tax records of the city or county in which the insured property is located.
9. Taxes for the year 2022 and subsequent years, a lien not yet due nor payable.
10. This (commitment/policy) does not insure against any loss or damage which might arise out of any roll-back taxes, recapture or conservation assessment as contemplated under the terms and provisions of O.C.G.A. 48-5-32.1.
11. No insurance is afforded as to the exact amount of acreage contained in the property described herein.
12. Ingress and egress for pedestrian and vehicular access is neither guaranteed nor insured.
13. Encroachments, overlaps, deficiency in quantity of land, unrecorded easements, roadways, boundary line disputes, access, matters not of record, and any other matters which would be disclosed by an accurate survey and inspection of the premises.
14. Affidavits confirming ownership interests in the Steele Tract and Chisolm Tract as set forth in the following documents: NOT PLOTABLE
    a. Affidavit made by Richard J. Youngblood, dated January 8, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 170, Chatham County, Georgia Records;
    b. Affidavit made by Jesse William Exley, dated January 15, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 168, Chatham County, Georgia Records;
    c. Affidavit made by Harold R. Johnson, dated January 28, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 162, Chatham County, Georgia Records;
    d. Affidavit made by William M. Exley, dated January 18, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 166, Chatham County, Georgia Records;
    e. Affidavit Affecting Title to Land made by William G. Glass, dated December 21, 2015, filed for record January 21, 2016, recorded at Deed Book 716, Page 737, Chatham County, Georgia Records;
    f. Affidavit made by Murray A. Galin, dated January 28, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 124, Chatham County, Georgia Records;
    g. Affidavit made by Murray A. Galin, dated January 28, 1982, filed for record February 4, 1982, recorded at Deed Book 118-A, Page 124, Chatham County, Georgia Records.
15. Right-of-Way Deed from Julian F. Chisholm to the State Highway Department of Georgia, filed for record January 21, 1947, recorded at Deed Book 43-Y, Page 219, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
16. Right-of-Way Easement made by Julian F. Chisholm, Sr., to the Mayor and Alderman of the City of Savannah, dated June, 1947, filed for record July 11, 1947, recorded at Deed Book 44-X, Page 443, aforesaid records. DOES NOT AFFECT PROPERTY.
17. Easement made by Julian F. Chisolm to the Savannah Electric and Power Company, dated September 8, 1950, filed for record July 11, 1951, recorded at Deed Book 54-D, Page 410, aforesaid records. DOES NOT AFFECT PROPERTY.
18. Easement set forth in Deed from William W. Chisholm and Polly C. Wylly, et al, to Pine Forest Utility Corp., dated October 5, 1963, filed for record November 8, 1963, recorded at Deed Book 84-U, Page 275, aforesaid records. DOES NOT AFFECT PROPERTY.
19. Easement from William W. Chisholm and Polly C. Wylly, et al, to Savannah Electric and Power Company, dated April 3, 1964, filed for record April 8, 1964, recorded at Deed Book 85-W, Page 641, aforesaid records. DOES NOT AFFECT PROPERTY.
20. Easement from the Julian F. Chisholm Estate to Savannah Electric and Power Company, dated May 16, 1977, filed for record May 4, 1978, recorded at Deed Book 110-O, Page 894, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
21. Non-exclusive access easements and reservation of hunting rights set out in warranty deed from William W. Chisholm, et al. to John Hancock Mutual Live Insurance Company, dated February 4, 1982 and recorded in Deed Book 118-A, Page 101, aforesaid records.
22. Right-of-Way Deed from the Northern Trust Company, as successors Trustee of the Trust Fund of the W.R. Grace & Company Retirement Plans Under Master Trust Agreement, dated April 1, 1986, to the Department of Transportation, dated December 31, 1994, filed for record January 31, 1995, recorded at Deed Book 171-D, Page 569, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
23. Utility Easement made by Wallace E. Miller Family Partnership, LP, to the City of Port Wentworth, Georgia, January 18, 2001, filed for record February 11, 2002, recorded at Deed Book 232-A, Page 323, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
24. Master Communications Easement for Rice Hope made by and between Rice Hope Development, Inc., a Georgia corporation, and Wentworth Land Investors, LLC, a Georgia limited liability Company, and Rice Hope Infrastructure Management, Inc., a Georgia corporation, dated December 1, 2005, filed for record January 17, 2006, recorded at Deed Book 300-O, Page 41, and that certain Master Communications Easement for Rice Hope by and between BLS Development, Inc., and Rice Hope Infrastructure Management, Inc., dated December 1, 2005, recorded January 17, 2006, in Book 300-O, Page 53, Chatham County records (together, the "Master Communications Easements"), as amended by Second Amendment to Easement and Memorandum of Agreement dated December 23, 2014, filed for record March 16, 2015, recorded at Deed Book 483, Page 379, aforesaid records; as amended by Amendment to Master Communications Easement for Rice Hope, dated November 21, 2017, recorded at Deed Book 1225, Page 55, aforesaid records; as amended by Third Amendment to Easement and Memorandum of Agreement, dated November 21, 2017, filed for record November 22, 2017, recorded at Deed Book 1225, Page 62, aforesaid records. NOT A SURVEY MATTER, NOT PLOTABLE.
25. Easement made by BEP Rice Hope, LLC, to Savannah Land Investors, LLC, dated July 31, 2013, filed for record August 6, 2013, recorded at Deed Book 389-X, Page 849, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
26. Easement Agreement made by Waypoint Savannah Owner, LLC, a Delaware limited liability company, to BEP Rice Hope, LLC, a Georgia limited liability company, dated July 15, 2015, filed for record July 17, 2015, recorded at Deed Book 584, Page 407, aforesaid records. DOES NOT AFFECT THIS PROPERTY.
27. Access Easement set forth in Quitclaim Deed from BEP Rice Hope, LLC, and BEP RH Tract 2, LLC, to Rice Hope Plantation Community Association, Inc., dated November 20, 2017, filed for record November 22, 2017, recorded at Deed Book 1225, Page 26, aforesaid records. SHOWN ON SURVEY
28. Easement for Construction and Maintenance of Berms made by and between Rice Hope Plantation Community Association, Inc., BEP RH Tract 2, LLC, and Ardmore Port Wentworth, LLC, dated November 21, 2017, filed for record November 22, 2017, recorded at Deed Book 1225, Page 98, aforesaid records. SHOWN ON SURVEY
29. Temporary Access and Construction Easement made by and between Rice Hope Plantation Community Association, Inc., BEP RH Tract 2, LLC, and Ardmore Port Wentworth, LLC, dated November 21, 2017, recorded at Deed Book 1225, Page 71, aforesaid records. SHOWN ON SURVEY
30. Terms and Provisions of Declaration of Covenants and Restrictions (wetlands) dated October 7, 2004 and recorded October 11, 2004 in Deed Book 277-I at Page 138, aforesaid records, as may be amended, supplemented or modified from time to time by documents recorded in the Office of the Superior Court for Chatham County, Georgia. NOT A SURVEY MATTER, NOT PLOTABLE
31. Terms and Provisions of Declaration of Covenants, Conditions and Restrictions for Rice Hope made by Wentworth Land Investors, LLC, a Georgia limited liability company, dated July 12, 2004, filed for record July 14, 2004, recorded at Deed Book 272-W, Page 434, Chatham County, Georgia Records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Black Creek), dated July 12, 2004, filed for record July 14, 2004, recorded at Deed Book 272-W, Page 507, aforesaid records; as supplemented by Second Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope, dated July 14, 2005, filed for record July 26, 2005, recorded at Deed Book 291-O, Page 335, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Lakeside 1), made by Wentworth Land Investors, LLC, a Georgia limited liability company, dated March 31, 2006, filed for record April 3, 2006, recorded at Deed Book 304-D, Page 1, aforesaid records; as amended by Amendment to Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Black Creek) made by BLS Development, Inc., a Georgia corporation, dated May 31, 2007, filed for record June 5, 2007, recorded at Deed Book 326-T, Page 230, aforesaid records; as amended by Amendment to Declaration of Covenants, Conditions, Restrictions for Rice Hope, dated July 19, 2007, filed for record July 20, 2007, recorded at Deed Book 329-B, Page 395 (which amendment was subsequently declared invalid pursuant to Notice of Invalidity of Amendments to the Declaration of Covenants, Conditions and Restrictions for Rice Hope, dated June 7, 2011, filed for record June 22, 2011, recorded at Deed Book 370-L, Page 859); as affected by Third Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Commercial Property) made by Wentworth Land Investments, LLC, a Georgia limited liability company, and Rice Hope Partners, LLC a Georgia limited liability company, dated September 7, 2007, filed for record September 13, 2007, recorded at Deed Book 331-R, Page 859, aforesaid records; as affected by Notice of Invalidity of Amendments to the Declaration of Covenants, Conditions and Restrictions for Rice Hope, dated June 7, 2011, filed for record June 22, 2011, recorded at Deed Book 370-L, Page 859, aforesaid records; as amended by Amendment to Declaration of Covenants, Conditions, Restrictions for Rice Hope to Withdraw Property, made by Wentworth Land Investments, LLC, a Georgia limited liability company, dated February 28, 2013, filed for record March 6, 2013, recorded at Deed Book 385-K, Page 705, aforesaid records; as affected by Assignment of Declarant's Rights, made by Wentworth Land Investors, LLC, a Georgia limited liability company, and BEP Rice Hope, LLC, a Georgia limited liability company, dated July 31, 2013, filed for record August 6, 2013, recorded at Deed Book 389-X, Page 834, aforesaid records; as amended by Amendment to Declaration of Covenants, Conditions, Restrictions for Rice Hope to Withdraw Property, made by Wentworth Land Investors, LLC, a Georgia limited liability company, dated July 31, 2013, filed for record August 2, 2013, recorded at Deed Book 389-U, Page 971 (releasing billboard parcel); as affected by Assignment of Communications Easements and Other Rights made by Rice Hope Infrastructure Management, Inc., a Georgia corporation, Rice Hope Development, Inc., a Georgia corporation, Wentworth Land Investors, LLC, a Georgia limited liability company, and BEP Rice Hope, LLC, a Georgia limited liability company, dated July 31, 2013, filed for record August 6, 2013, recorded at Deed Book 389-X, Page 844, aforesaid records; as amended by Amendment to Declaration of Covenants, Conditions and Restrictions for Rice Hope – Villages at Rice Hope Apartment Tract, dated July 15, 2015, filed for record July 17, 2015, recorded at Deed Book 584, Page 391, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Parkside at Rice Hope Neighborhood) dated November 7, 2017, filed for record November 20, 2017 recorded at Deed Book 1222, Page 113, aforesaid records; as amended by Amendment to Declaration of Covenants, Conditions and Restrictions for Rice Hope – Ardmore at Rice Hope Apartment Tract, dated November 21, 2017, filed for record November 22, 2017, recorded at Deed Book 1225, Page 36, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Addition of Property to Parkside at Rice Hope Neighborhood), dated October 9, 2018, filed for record October 18, 2018, recorded at Deed Book 1469, Page 700, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Lakeside I at Rice Hope Neighborhood), dated June, 2019, filed for record June 28, 2019, recorded at Deed Book 1557, Page 119, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Mulberry Subdivision, Phase 1), dated November 6,2019, filed for record December 12, 2019, recorded at Deed Book 1795, Page 731, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Addition to Parkside at Rice Hope Neighborhood), dated December 23, 2019, filed for record December 31, 2019, recorded at Deed Book 1812, Page 602, aforesaid records; as supplemented by Supplemental Declaration of Covenants, Conditions and Restrictions for Rice Hope (Lakeside Phase 1C-1 at Rice Hope Plantation), dated October 6, 2020, filed for record October 6, 2020, recorded at Deed Book 2090, Deed Book 1225, Page 62, aforesaid records. NOT A SURVEY MATTER, NOT PLOTABLE. as may be further amended, supplemented or modified from time to time, by documents of record in the Office of the Superior Court for Chatham County, Georgia. NOT PLOTABLE
32. Easements, setbacks, rights of way and other matters of title as shown on a plat entitled "Plat of the Remaining Portion of the Julian F. Chisholm Tract, 8th G.M. District, Port Wentworth, Chatham County, Georgia" surveyed for East Coast Trading Company, Inc., by Vincent Helmley, Registered Land Surveyor, dated March 28, 1997 and recorded in Plat Book 14P at Page 178 in the Office of the Clerk of the Superior Court of Chatham County, Georgia, including, but not limited to the following:
    a. 100' Savannah Electric and Power Co. & City of Savannah Easement; DOES NOT AFFECT PROPERTY
    b. Overhead Power Line. SHOWN ON SURVEY
33. Easements, setbacks, rights of way and other matters of title as shown on a plat entitled "A minor subdivision of aportion of Tract A-2 and Lot 12 being a portion of the Julian R. Chisolm Tract and being a portion of Rice Hope Plantation, 8th B.M. District City of Port Wentworth, Chatham County, Georgia, prepared by Terry Mack Coleman, Registered Land Surveyor, dated November 16, 2017 and recorded in the Office of the Clerk of the Superior Court of Chatham County, Georgia, in Plat Book 51 at Page 213, including, but not limited to the following:
    a) 100' Savannah Electric & Power Co. & City of Savannah Water Main Easement; DOES NOT AFFECT PROPERTY
    b) 30' Utility Easement (Centered on Power Line); SHOWN ON SURVEY
    c) Approximate Location of Flood Hazard Zone; SHOWN ON SURVEY
    d) Rice Hope Road (Private Road) 30' access easement. DOES NOT AFFECT PROPERTY.

Total Area: 52.40 Acres
Field Survey Date: 06-18-2021
Error Of Closure (Plat): 1/532,563
Error Of Closure (Field): 1/32,550
Angular Error: 2" Per Point
Equipment Used: Sokkia Set 5 2" Total Station

ALTA/NSPS LAND TITLE SURVEY

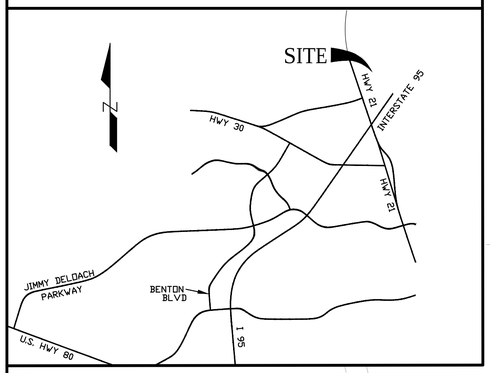
BEING A 52.40 ACRE PORTION OF PARCEL "A" OF THE FORMER JULIAN R. CHISHOM TRACT, 8TH G.M. DISTRICT, PORT WENTWORTH, CHATHAM COUNTY, GEORGIA

0 100 200
SCALE: 1"=100'

DATE: 09-21-2021

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

PROJECT LOCATION MAP



ADJACENT PROPERTY OWNER LABEL (TYPICAL)

PROJECT AREA

PARCEL A-1
46.39 ACRES

TOTAL PARCEL A-1 AND PARCEL A-2
52.40 ACRES

PARCEL A-2
6.01 ACRES

S04°28'37"E
280.44'

N86°19'13"E
270.91'

S85°09'32"W
336.77'

S86°15'23"W
487.69'

N34°34'13"W
173.23'

S55°25'47"W
69.36'

A=79.86'
R=134.00'
S72°50'08"W
CH=78.68'

CH BRG=S72°50'08"W

S89°34'29"W
397.28'

S00°17'57"E
1,798.99'

1,453.99'
S00°17'57"E

345.00'
S00°17'57"E

N86°19'33"E
672.62'

S82°36'50"E
258.59'

N08°05'15"E
245.00'

N08°05'15"E
1,814.81'

N08°05'15"E
2,059.81'

0 100 200 Feet

15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

REV.	DATE	BY	REVISIONS

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

ADJACENT PROPERTY OWNERS EXHIBIT

RICE HOPE 52 ACRES TRACT
CITY OF PORT WENTWORTH, GEORGIA

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	2021-TL
Drawn By:	JMGL
Designed By:	JMGL
Checked By:	JMGL
Scale:	1"=100'
Date:	7/28/21

SHEET
EX

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Owner Name	Mailing Address	PIN #	#
Clayton Properties Group, INC.	10 Wild Silk Way	70906D03001	1
Sheldon D Barnes & Chelsey Alexandria Snell	12 Wild Silk Way	70906D03002	2
Rice Hope Plantation Community	Wild Silk Way	70906D03003	3
Clayton Properties Group, INC.	14 Wild SilkWay	70906D03004	4
Rosena G. Best	16 Wild Silk Way	70906D03005	5
Derrick Butler	18 Wild Silk Way	70906D03006	6
Piyushkumar Hasmmukhrai Bhatt	20 Wild Silk Way	70906D03007	7
Clayton Properties Group, INC.	22 Wild Silk Way	70906D03008	8
Clayton Properties Group, INC.	24 Wild Silk Way	70906D03009	9
Clayton Properties Group, INC.	26 Wild Silk Way	70906D03010	10
Clayton Properties Group, INC.	28 Wild Silk Way	70906D03011	11
Rice Hope Plantation Community	Wild Silk Way	70906D03012	12
Clayton Properties Group, INC.	30 Wild Silk Way	70906D03013	13
Clayton Properties Group, INC.	32 Wild Silk Way	70906D03014	14
Clayton Properties Group, INC.	34 Wild Silk Way	70906D03015	15
BEP EH TRACT 2 LLC C/O HIGHBROOK INVESTORS	0 Rice Hope Rd	70906 04091	16
Harry Jack Stewart	502 Rice Hope Plantation Rd	70906 03023	17
Staci S Matthews	507 Rice Hope Plantation Rd	70906 04001	18
BEP EH TRACT 2 LLC	Mulberry Ave	70906 04063	19
John E Hill	Rice Hope Rd	70906 04012	20
BEP RH TRACT 2 LLC	Rice Hope Rd	70906 04011	21

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Application (2712 : Site Plan Review

5000

Project Timeline

Project Number: 220277

Project Name: The Cottages at Rice Hope

Applicant / Engineer: Third Lake Development/Pittman Engineering

Owner: Bald Eagle Partners

City Review Engineer: Thomas & Hutton

- 6/08/2022 – Application received; Need individual PDF file of Site Plan & Hydro
- 6/10/2022 – Called and spoke to Ray Pittman. Asked him to send me separate PDF's of the site plan and hydro
- 6/10/2022 – received the PDF's
- 6/24/2022 – send files to Thomas & Hutton for review.
- 7/18/2022 – received email from Jennifer Roach (T&H) stating that to complete the site plan review, they need the latest copy of the revised Comprehensive Stormwater Master Plan.
- 7/19/2022 – sent email to Jason Bryant (Pittman Engineering) asking him to send a copy of the revised Comprehensive Stormwater Master Plan.
- 7/22/2022 – received email from Kevin Smith (T&H) stating that once the Comprehensive Stormwater Master Plan has been received they should be able to complete the initial site plan review.
- 7/22/2022 – received email from Ray Pittman (Pittman Engineering) that they are working on the revisions and should take a week to update the Master Drainage Plan & Exhibits.
- 7/27/2022 – sent email to Jason Bryant (Pittman Engineering) that the site plan application would not be on the August 2022 agendas due to not having any review comments.
- 8/8/2022 – sent email to Kevin Smith & Jennifer Roach (T&H) asking if they had received the information that was requested from Pittman Engineering.
- 8/29/2022 – Received 1st comment letter from T&H. Pittman copied.
- 12/2/2022 – received 2nd comment letter from T&H. Pittman copied.
- 12/22/22 – 2nd resubmittal received from Pittman. T&H copied.
- 1/10/23 – received 3rd comment letter from T&H. Pittman Copied.
- 1/20/23 – received 3rd resubmittal from Pittman. T&H Copied.
- 1/27/23 – received final letter from T&H. Pittman copied. We will now schedule for the next available PC and Council meeting.

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Timeline (2712 : Site Plan Review Application (Specific) 7-0906-04-091

THOMAS & HUTTON
50 PARK OF COMMERCE WAY
SAVANNAH, GA 31405 | 912.234.5300
WWW.THOMASANDHUTTON.COM

January 27, 2023

Mr. Brian Harvey
Director of Development Services
City of Port Wentworth
305 South Coastal Highway
Port Wentworth, GA 31407

Re: The Cottages at Rice Hope
Port Wentworth, Georgia
Site Plan Review
J–25412.0034

Dear Mr. Harvey:

This site plan review was completed based on our interpretation of the latest City of Port Wentworth zoning ordinance and development regulations. Thomas & Hutton's review was performed in an effort to assess the application package for the proposed development is in general conformance with City of Port Wentworth regulations. Our review shall not be interpreted as a detailed technical analysis of the design or for verification of technical sufficiency for elements of design. Under no circumstances shall our review and comments related to the site plans relieve the Applicant's Design Professional of their professional obligations and professional standards of care. As such, the design submitted by the Applicant's Design Professional shall be the sole responsibility of the Applicant's Design Professional. Thomas & Hutton shall not accept any responsibility for any liability due to design and construction, in whole or in part, for any aspect of the design and construction of design documents.

We have reviewed the fourth submittal package of the Cottages at Rice Hope project and all outstanding comments appear to have been addressed except the following:

- EPD water approval – applicant to provide once received.
- Site Lighting Plan – applicant to provide Lighting Plan by Georgia Power once received.
- Current site plans indicate a sidewalk width of four or five feet throughout the site, while Sections 2.0–3.14 of the MPO Section of the Port Wentworth Code of Ordinances requires a minimum width of five feet. Please revise or provide clarification.
    - **Applicant has stated that sidewalk width has been discussed verbally with the City of Port Wentworth. City is to coordinate with the applicant regarding the request for reduced sidewalk width.**

Thank you for your attention to this project. If there are any questions or comments, please feel free to call us at (912) 721–4144.

Sincerely,

THOMAS & HUTTON

Jessica L. Routt

JR/kts

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Concurrence letter T&H 1.27.23 (2712 : Site Plan Review Application (Specific)

Wednesday, December 21, 2022 11:27:11 AM

CONSTRUCTION PLANS

FOR

THE COTTAGES AT RICE HOPE

PREPARED FOR:

THIRD LAKE DEVELOPMENT, LLC

MAY 31, 2022

JOB NUMBER: 21-286

I CERTIFY THAT I HAVE BEEN IN RESPONSIBLE CHARGE OF THE DESIGN OF THIS PROJECT IN ACCORDANCE WITH THE RULES OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS. I FURTHER CERTIFY, TO THE BEST OF MY KNOWLEDGE AND BELIEF, THAT THESE PLANS AND SPECIFICATIONS WERE PREPARED IN ACCORDANCE WITH CURRENT STANDARD ENGINEERING PRACTICES AND ACCURATELY REFLECT THE DESIGN DEVELOPMENT REPORT (DDR) PREVIOUSLY REVIEWED AND CONCURRED IN BY EPD. I FURTHER CERTIFY THAT THE SYSTEM AS DESIGNED CAN REASONABLY BE EXPECTED TO CONSISTENTLY MEET ALL CURRENTLY APPLICABLE PERMIT LIMITS, CONDITIONS, AND REGULATORY REQUIREMENTS, PROVIDED THE FACILITY IS CONSTRUCTED AS DESIGNED AND PROPERLY OPERATED AND MAINTAINED.

PREPARED BY:

PITTMAN ENGINEERING

2591 HWY 17 SUITE 303
RICHMOND HILL, GA 31324
912-445-0578
WWW.PITTMANENGINEERINGCO.COM

Know what's below. Call before you dig.

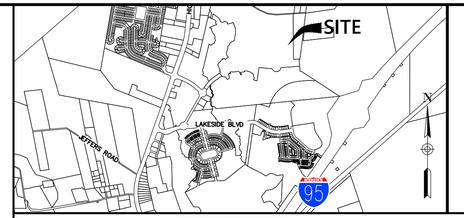
GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

PROJECT DATA

DEVELOPER:	THIRD LAKE DEVELOPMENT, LLC 1600 E. 8th AVE., SUITE A132 TAMPA, FLORIDA 33605 (704) 201-1922
24 HOUR CONTACT:	ROBERT HOGAN
TELEPHONE:	(704) 201-1922
JURISDICTION:	PORT WENTWORTH, GEORGIA
ZONING:	PUD
PROPERTY OWNER OF RECORD:	THIRD LAKE DEVELOPMENT, LLC
FEMA FLOOD ZONE:	X
FEMA FLOOD PANEL:	MAP NUMBER 13051C0030G MAP DATED 8/16/18
APPROXIMATE LOCATION OF SITE:	PORT WENTWORTH, GEORGIA 31407
LATITUDE:	N032.225100000000
LONGITUDE:	W081.184600000000
VERTICAL DATUM:	NAVD 88

REVISION LISTING

REV. NO.	REVISION	BY	DATE
1.	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22



VICINITY MAP

Sheet List Table

Sheet Number	Sheet Title
COV	COVER SHEET
C0.1	GENERAL CONSTRUCTION NOTES
C0.2	EXISTING CONDITIONS PLAN
C0.3	EXISTING CONDITIONS PLAN
C0.4	EXISTING CONDITIONS PLAN
C1.1	LAYOUT & STAKING PLAN
C1.2	LAYOUT & STAKING PLAN
C1.3	LAYOUT & STAKING PLAN
C2.0	SEWER COMPOSITE EXHIBIT
C2.1	WATER COMPOSITE EXHIBIT
C2.2	REUSE WATER COMPOSITE EXHIBIT
C2.3	WATER & SEWER PLAN
C2.4	WATER & SEWER PLAN
C2.5	WATER & SEWER PLAN
LAT-EXHB	WATER & SEWER LATERAL EXHIBIT
C2.6	WATER & SEWER LATERAL PLAN
C2.7	WATER & SEWER LATERAL PLAN
C2.8	WATER & SEWER LATERAL PLAN
C2.9	SEWER PROFILES
C2.10	SEWER PROFILES
C2.11	SEWER PROFILES
C2.12	SEWER PROFILES
C2.13	WATER & SEWER DETAILS
C2.14	WATER & SEWER DETAILS
C2.15	WATER & SEWER DETAILS
C2.16	WATER & SEWER DETAILS
C2.17	WATER & SEWER DETAILS
C2.18	WATER & SEWER DETAILS
C3.0	DRAINAGE COMPOSITE EXHIBIT
C3.1	PAVING, GRADING & DRAINAGE PLAN
C3.2	PAVING, GRADING & DRAINAGE PLAN
C3.3	PAVING, GRADING & DRAINAGE PLAN
C3.4	STORM DRAINAGE PROFILES
C3.5	STORM DRAINAGE PROFILES
C3.6	STORM DRAINAGE PROFILES
C3.7	STORM DRAINAGE PROFILES
C3.8	STORM DRAINAGE PROFILES
C3.9	NEIGHBORHOOD GRADING PLAN
C3.10	NEIGHBORHOOD GRADING PLAN
C3.11	NEIGHBORHOOD GRADING PLAN
C3.12	NEIGHBORHOOD GRADING PLAN
C3.13	NEIGHBORHOOD GRADING PLAN
C3.14	NEIGHBORHOOD GRADING PLAN
C3.15	NEIGHBORHOOD GRADING PLAN
C3.16	NEIGHBORHOOD GRADING PLAN
C3.17	PAVING, GRADING & DRAINAGE DETAILS
C3.18	PAVING, GRADING & DRAINAGE DETAILS
C3.19	PAVING, GRADING & DRAINAGE DETAILS
EC1.1	EROSION CONTROL PLAN – INITIAL
EC1.2	EROSION CONTROL PLAN – INITIAL
EC1.3	EROSION CONTROL PLAN – INITIAL
EC1.4	EROSION CONTROL PLAN – INITIAL
EC2.1	EROSION CONTROL PLAN – INTERMEDIATE
EC2.2	EROSION CONTROL PLAN – INTERMEDIATE
EC2.3	EROSION CONTROL PLAN – INTERMEDIATE
EC3.1	EROSION CONTROL PLAN – FINAL
EC3.2	EROSION CONTROL PLAN – FINAL
EC3.3	EROSION CONTROL PLAN – FINAL
EC4.1	EROSION CONTROL NOTES
EC4.2	EROSION CONTROL NOTES
EC4.3	EROSION CONTROL NOTES
EC4.4	EROSION CONTROL NOTES
EC5.1	EROSION CONTROL DETAILS
EC5.2	EROSION CONTROL DETAILS
EC5.3	EROSION CONTROL DETAILS
L1.0	LANDSCAPING PLAN
L1.1	LANDSCAPING PLAN
L1.2	LANDSCAPING PLAN
L1.3	LANDSCAPING PLAN

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Cover Sheet.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:27:22 AM

GENERAL NOTES:

OWNER/DEVELOPER:
THIRD LAKE DEVELOPMENT, LLC
1600 E. 8th AVE., SUITE A132
TAMPA, FLORIDA 33605
704-201-1922
RHogan@thirdlakedevelopment.com

ENGINEER:
PITTMAN ENGINEERING CO., LLC
2591 HWY 17S SUITE 303
RICHMOND HILL, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

SITE DATA:

ZONE:	M-P-O
TOTAL PROJECT ACREAGE:	51.75 AC.
DISTURBED AREA:	51.75 AC.
FLOOD MAP:	13051C0035G
DATED:	08/18/18
FLOOD ZONE:	X, AE (BFE14.0)

SURVEY INFORMATION:

THE TOPOGRAPHIC INFORMATION:
ALL ELEVATIONS BASED ON NAVD88

CONSTRUCTION NOTES & LEGEND

General Notes:

1. All elevations are based on NAVD88
2. Existing utility locations shown are generally schematic in nature and may not accurately reflect the size and location of each particular utility. Contractor shall field verify location of all existing utilities prior to beginning construction. All existing utilities may not be shown on these drawings. It is the contractor's responsibility to coordinate his operation with all utilities which may be in conflict with his work. The contractor must maintain and protect all utilities, or relocate utilities as needed.
3. Contractor is responsible for coordination with utility companies and adjustment of existing sanitary sewer cleanouts, manholes, water meters, storm inlets, manholes, and any other appurtenances to final grade as required.
4. Contractor is responsible for worksite safety. Occurrences at worksite shall be the complete responsibility of the contractor.
5. The contractor shall not begin construction until the proper permits have been issued.
6. The contractor shall be responsible for locating all existing utilities prior to beginning construction activities and for avoiding all conflicts with the same. Any damage to existing utilities shall be repaired at the contractor's expense.
7. The contractor shall completely clear and grub all areas within the limits of disturbance unless indicated otherwise.
8. All construction shall conform to the City of Port Wentworth Ordinances.
9. Contractor shall coordinate construction activities with local utility companies and adjacent property owners. Contractor shall be responsible for protection and any necessary repairs to existing utility lines.
10. Three days notice to city and local utility companies is required prior to each different construction activity.
11. Control of stormwater and groundwater throughout the construction period shall be the responsibility of the contractor. Existing drainage is not to be impeded during construction. All penalties, claims and fees imposed on owner as a result of damage caused by actions of the contractor, his employees or subcontractors shall be borne in full by the contractor. Storm drainage conveyance shall not be impeded and dewatering may be required for the contractor. These are considered "Means and Methods," and any and all cost associated with this activity shall be included in the respective pay category.
12. Contractor shall be responsible for repairs of damage to any existing infrastructure including but not limited to roads, sidewalk, curb & gutter, landscaping, structures, and all existing conditions.
13. All signs, mail boxes, shrubbery, fences, landscaping or existing structures interfering with construction shall be removed and replaced by the contractor at the contractor's expense.
14. Contractor shall be solely responsible for all construction means, methods, techniques, and procedures and shall at all times take all reasonable safety precautions for the safety of its employees on the project and shall comply with all applicable provisions of federal, state, and municipal safety laws and building construction codes.
15. Contractor shall comply to the fullest extent with the latest standards or OSHA directives or any other agency having jurisdiction for excavation and trenching procedures. The contractor shall provide support systems, sloping, benching or other means of protection. This shall include, but not be limited to, access and egress from all excavation and trenching. Contractor is responsible for his job site to be in complete compliance with all regulatory requirements.
16. All construction debris shall be removed from the site and disposed of in an approved waste disposal area. The contractor shall be responsible for disposal of all construction debris.
17. Contractor must provide proper traffic control devices for construction in accordance with "Manual of Uniform Traffic Control Devices" (latest edition).
18. Only new Reinforced Concrete Pipe Class III, shall be used in city road rights-of-ways or for drainage systems or if any storm runoff from adjoining properties drain through the proposed project.
19. Pipes up to thirty-six inches in diameter shall have flared end sections.
20. Pipes of dissimilar size shall be vertical aligned with their energy grade line or shall have crowns of the pipe converge at a manhole or other structure.
21. All pipe joints, in addition to the required rubber gaskets, shall be covered with approved geo-textile material of sufficient width to be secured to the pipe and completely encircle the joint with 50% overlap.
22. All pipe that crosses a road shall be imbedded in suitable material compacted to minimum 100% standard proctor. Suitable materials are GW, GP, GM, GC, SP, or SW soils as classified under the Unified System.
23. All stormwater inlets structures shall be of the standard design and shall have inverts built in bottoms.
24. Swales shall have a 5:1 side slopes or flatter.
25. All PVC pipe shall be stored out of the sunlight or appropriately covered with a UV resistant cover. All PVC pipe shall be properly supported so "sagging" of the pipe doesn't occur during storage. Any PVC pipe showing UV degradation or sagging shall be removed and replaced at the contractor's expense.

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages General Notes.dwg

Staking Notes:

1. All dimensions are to the edge of pavement unless shown otherwise on the plans.
2. Layout for manholes, inlets, etc., is not shown on this plan.
3. The contractor shall verify existing benchmarks shown on the plans to establish vertical control on the site. The contractor shall be responsible for protecting these from unauthorized removal or replacement of benchmarks. When a permanent benchmark is located such that it must be removed to complete the project, the contractor shall establish such temporary benchmarks as he may require prior to removing the permanent benchmark. The contractor shall provide the location, identification and elevation of any temporary benchmark established to the owner and engineer.

Paving, Grading and Drainage Notes:

1. The contractor shall be responsible for locating all existing underground utilities prior to beginning construction activities and for avoiding all conflicts with the same. Any damage to existing utilities shall be repaired at the contractor's expense.
2. Contours shown on these plans are for general guidance and informational purposes. The contractor shall grade the site in accordance with spot elevations shown. In cases of conflict between spot elevations and contours the spot elevations will govern.
3. Load bearing and structural fills shall be approved suitable material as defined in the project specs, geotechnical report, Georgia Department of Transportation specifications and International Builder's Code. The most stringent requirement shall be adhered to. Waste material may be used for flushing of shoulder or construction of pedestrian or landscaped areas if they can be stabilized and will support plant growth and meet the required degree of compaction.
4. Contractor shall be responsible for ensuring proper drainage of any areas which are field adjusted during construction.
5. See details for requirements for control, construction and expansion joints in concrete sidewalks and curb and gutter.
6. Standard curb and gutter will be used where the drawings indicate that the gutter is to carry water. Pitched curb and gutter will be used where the drawings indicate the water will drain away from the gutter. Transitions between the two conditions shall be made as smoothly as possible.
7. Invert elevations shown on the plans are to the invert of the lowest pipe.
8. All storm drainage pipe shall be Class III Reinforced Concrete Pipe.
9. Contractor to follow Geotechnical Engineering Report Project no. 09-08-21-5 prepared by Whitaker on September 8, 2021.

Signage and Striping Notes:

1. All traffic control measures shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices." The manual identification and dimensions are shown on staking sheets for each required sign. The orientation of each sign from an approaching driver's point of view is also shown. Sign and support post material and installation shall conform to the pertinent sections of the current edition of the Georgia Department of Transportation specifications (latest edition).
2. Street name markers are required at all intersections.

Water and Sewer Notes:

1. The contractor shall be responsible for locating all existing underground utilities prior to beginning construction activities and for avoiding all conflicts with the same. Any damage to existing utilities shall be repaired at the contractor's expense.
2. All water and sewer connections to existing active systems are to be coordinated with City of Port Wentworth Engineering and Public Works Departments a minimum of 72 hours prior to construction activities. Any damage to existing County utilities shall be repaired immediately at the Contractor's expense.
3. All construction shall be in accordance with the City of Port Wentworth Ordinances.
4. All water main pipe shall be AWWA C-900 Pressure Rated Pipe, Pressure Class 150, with dimension ratio 18 or lower and blue. If Ductile Iron water mains are necessary, they shall be Pressure Class 350, with cement interior lining in accordance with the latest revision of ANSI A-21.4 (AWWA C-104) and asphaltic exterior coating. The water service laterals shall be Polyethylene PE 3408 SDR 9 conforming to all requirements of AWWA C-901 and ASTM D-2737 latest revisions.
5. All sanitary sewer pipe shall be PVC and geeen, ASTM D-3034, SDR-26.
6. Minimum slope of 4-inch sewer laterals shall be 1.0%.
7. All PVC Water Main shall be blue and all PVC Sewer shall be green.
8. Sewer pipe deflection shall not exceed 5.0%. Deflection shall be verified using a spherical or cylindrical mandrel with a diameter no less than 95% of the inside pipe diameter.
9. All manhole and inlet castings shall be American made. Manufacturer's specification sheets shall be submitted for review and approval.
10. Manhole frame heights outside of paved areas shall be a minimum of 0.2 feet above finished grade.
11. 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 pipes, fittings and other accessories shall be kept free from dirt and foreign matter at all times.
12. All water main and water lateral thrust restraint shall be handled by use of joint restraint/mechanical joints equivalent to Ebaa Iron Megalug or push-on joint type restrained joints equivalent to "Lok-Ring", "TR Flex", or "Super Lock". Concrete thrust block shall not be allowed.
13. All water mains shall have a minimum cover of 3 feet and a maximum cover of 5 feet measured from finished grade. Where the water main crosses other utility lines, the water main shall be installed 18" (pipe to pipe) below the other utility lines (if required) to avoid conflicts and maintain cover.
14. Maintain a minimum horizontal separation of 10 feet between water, sewer, and drainage lines unless otherwise shown.
15. When pipe laying is not in progress, a mechanical joint plug or cap will be used to form a water tight seal at both ends of the line being installed.
16. The following procedure shall be followed during flushing of the lines prior to connection to the water system:
    a. Flush the water mains using a full size flush having a minimum velocity of 2.5 feet per second.
    b. Continue flushing for a minimum time period of thirty minutes or until water line is purged of foreign matter and water runs clear.
9. All water used for construction, if obtained from an unmetered line, must be metered through an approved fire hydrant meter with a backflow prevention device obtained from the municipality's water department.
10. Water distribution pipe shall have a #12 Gauge Solid Copper Tracing Wire installed along its length, including laterals up to the meter or backflow preventer.
11. All connections of the #12 Gauge Solid Copper Tracing Wire shall be made with 3m brand splice kits.
12. Mylar detectable warning tape shall be installed in sanitary sewer trenches or as required by city.
13. Gate Valves & Valve Boxes: Gate Valves shall be cast iron or ductile iron body, bronze mounted, double disc, or resilient wedge design, with non-rising stems conforming to AWWA C-500, C-509, or C-515. Valves shall have a working pressure of 200 psi, and be tested at 400 psi. 8" or larger valves are to be installed in manholes.
14. Hydrants shall be Mueller or approved equal with traffic yellow enamel finish and be equipped with a 4-1/2" outlet facing the street side with two 2-1/2" outlets on either side. Hydrants shall be restrained with mechanical joint fittings and rodded. Hydrant legs shall be ductile iron pressure class 350 pipe. Tracer wire shall be extended along hydrant legs, to hydrant isolation valves and up outside of valve box, and shall also extend up hydrant base terminating above grade.

Special Notes:

1. All earthworks for roadways shall be in accordance with Georgia Department of Transportation requirements.
2. The engineer shall make periodic site visits to observe construction of the project infrastructure and furnish an engineer's letter of completion with qualifiers at project close-out.
3. All sidewalks shall have no more than 2% cross slope, including driveway crossings.
4. All earthworks for lot areas and building pads shall be in conformance with the geotechnical report prepared for owner by others. The contractor shall request this report from the owner if it has not been furnished in the bid documents. Any recommendations contested by the contractor shall be submitted to the owner prior to commencing. Failing to notify the owner and resolving any conflicts, the contractor will be considered to have proceeded at their own risk and expense.
5. Contractor shall furnish as-built data for the water, sewer and storm lines which are to be stamped by a registered land surveyor registered in the state of Georgia. The survey shall be delivered in AutoCAD format and be in compliance with the city requirements.
6. The roads and drainage in this project are public and shall be owned and maintained by City of Port Wentworth.

LEGEND

LINE STYLES

- CENTER LINE
- DEMOLITION/ABANDONMENT
- CONSTRUCTION LIMITS
- C — C — PROPOSED OVERHEAD COMMUNICATION
- — — C — — C — EXISTING OVERHEAD COMMUNICATION
- Cu — Cu — PROPOSED UNDERGROUND COMMUNICATION
- — — Cu — — Cu — EXISTING UNDERGROUND COMMUNICATION
- E — E — PROPOSED OVERHEAD ELECTRICAL
- — Eu — — Eu — EXISTING OVERHEAD ELECTRICAL
- Eu — Eu — PROPOSED UNDERGROUND ELECTRICAL
- — Eu — — Eu — EXISTING UNDERGROUND ELECTRICAL
- FM — FM — PROPOSED FORCE MAIN
- — — FM — — FM — EXISTING FORCE MAIN
- G — G — PROPOSED NATURAL GAS MAIN
- — — G — — G — EXISTING NATURAL GAS MAIN
- NPW — NPW — PROPOSED NON-POTABLE WATER
- — — NPW — — NPW — EXISTING NON-POTABLE WATER
- SS — SS — PROPOSED SANITARY SEWER
- — — SS — — SS — EXISTING SANITARY SEWER
- W — W — PROPOSED WATER MAIN
- — W — — W — EXISTING WATER MAIN
- RIGHT OF WAY
- PROPERTY LINE
- FILL — LIMITS OF FILL
- X — X — WELDED WIRE FABRIC
- TREE LINE
- RAIL ROAD
- DRAINAGE CHANNEL
- SILT FENCE
- PROPOSED FENCE
- EXISTING FENCE
- GAURD RAIL
- BREAK LINE
- SB — STREAM BUFFER
- LIMITS OF 100 YEAR FLOOD PLANE
- SOIL — SOIL BOUNDARY
- 1000 — PROPOSED MAJOR CONTOUR
- 1000 — EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- EXISTING MINOR CONTOUR

PATTERNS

- POROUS
- BLOCK WALL
- BRICK WALL
- CONCRETE (PLAN)
- CONCRETE (SECTION)
- ASPHALT (PLAN)
- ASPHALT (SECTION)
- GRATING
- GROUT
- RIP-RAP
- GRAVEL
- SWAMP
- UNDISTURBED EARTH
- DISTURBED EARTH
- SAND
- ROCK

VEGETATION

- GENERIC TREE
- DECIDUOUS TREE
- CONIFEROUS TREE
- DECIDUOUS SHRUB
- CONIFEROUS SHRUB

LEGEND

- CENTER LINE
- FIRE HYDRANT
- TAG
- WATER MANHOLE
- WATER METER
- SANITARY SEWER MANHOLE
- GREASE TRAP
- STORM DRAIN MANHOLE
- COMMUNICATION MANHOLE
- COMMUNICATION VAULT
- UTILITY POLE
- IN LINE VALVE
- HORIZONTAL CONTROL POINT
- GUY WIRE
- ELECTRICAL MANHOLE
- BM BENCHMARK
- VALVE IN MANHOLE
- GRATE INLET

REV.	DESCRIPTION	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

REVISIONS

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #78897

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

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GENERAL NOTES

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	NTS
Date:	5/31/22

SHEET
C0.1

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:27:39 AM

MATCHLINE -- SEE SHEET C0.3

PROPERTY LINE (TYP)

ZONE X

ZONE AE (EL14)

PROPERTY LINE (TYP)

48" RCP
IE: 10.64

IE: 10.64

GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED
No. 38245
PROFESSIONAL ENGINEER
JASON JOSEPH LNW

PITTMAN ENGINEERING
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www.PittmanEngineeringCo.com

EXISTING CONDITIONS PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C0.2

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Existing Conditions Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:27:49 AM

MATCHLINE -- SEE SHEET C0.4

MATCHLINE -- SEE SHEET C0.2

PROPERTY LINE (TYP)

WATER VALVE

IE: 10.92

30" RCP

IE: 10.43

ZONE X

ZONE AE (EL:14)

ZONE AE (EL:13)

IE: 12.29

48" RCP

IE: 11.56

PROPERTY LINE (TYP)

50' 25' 0' 50'

GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON A. JOSEPH

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EXISTING CONDITIONS PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	PHASE 1
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C0.3

G:\Shared drives\Projects\Rice Hope\21-288 Third Lake\Drawings\Construction Plans\21-288 Cottages Existing Conditions Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:27:59 AM

MATCHLINE -- SEE SHEET C0.3

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA
No. 38245
PROFESSIONAL ENGINEER
JASON JOSEPH PITTMAN

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EXISTING CONDITIONS PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C0.4

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Existing Conditions Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 3:13:00 PM

MATCHLINE -- SEE SHEET C1.2

PARKING SUMMARY

REQUIRED PARKING SPACES:
TOTAL UNITS x 2 SPACES PER UNIT = REQUIRED SPACES
444 UNITS x 2 SPACES/UNIT = 888 SPACES (REQ'D)

PROVIDED PARKING SPACES:
928 TOTAL SPACES PROVIDED

REQUIRED HANDICAP SPACES:
2% OF TOTAL SPACES PROVIDED = REQUIRED HC SPACES
928 SPACES x 0.02 = 18.56 SPACES (SAY 19)

PROVIDED HANDICAP SPACES:
42 TOTAL HC SPACES + 21 TOTAL HC STRIPED ISLES = 63

TOTAL PROVIDED PARKING SPACES:
865 STANDARD SPACES
63 HANDICAP SPACES/STRIPED ISLES
928 TOTAL PROJECT SPACES PROVIDED

Parcel Line Table		
Line #	Length	Direction
L1	90.51	N0° 17' 56.90"W
L2	22.39	N89° 42' 03.10"E
L3	28.17	N0° 19' 26.52"W
L6	39.13	S89° 42' 03.10"W
L7	89.49	S0° 17' 56.90"E
L8	25.27	N55° 27' 31.14"W

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	121.83	118.00	59.16	N29° 16' 45"E	116.49
C2	45.26	47.06	55.11	N62° 08' 46"E	43.54
C3	28.15	47.08	34.26	N17° 27' 48"E	27.73
C8	73.84	47.00	90.01	S36° 54' 21"E	66.48
C9	31.03	212.00	8.39	S86° 06' 21"E	31.00
C10	85.45	88.00	55.64	N27° 31' 12"E	82.14
C11	19.46	32.00	34.84	S72° 52' 44"E	19.16

NOTE:
1. CONSTRUCTION OF ALL SIDEWALKS, ADA PARKING, AND ACCESSIBLE ROUTES SHALL BE IN CONFORMANCE WITH FEDERAL ADA STANDARDS, LATEST EDITION.
2. SIDEWALKS SHALL COMPLY WITH MINIMUM STANDARD REQUIREMENTS SPECIFIED IN ARTICLE V, SECTION 3.1.4 OF THE "MPO MASTER PLAN OVERLAY".
3. ALL SIDEWALKS ON PLAN SHALL BE 4' WIDE, EXCEPT WHERE ADJACENT TO PAVEMENT/PARKING, IN WHICH CASES THEY SHALL BE 5' WIDE.

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897
REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON J. BRYANT

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STAKING & LAYOUT PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

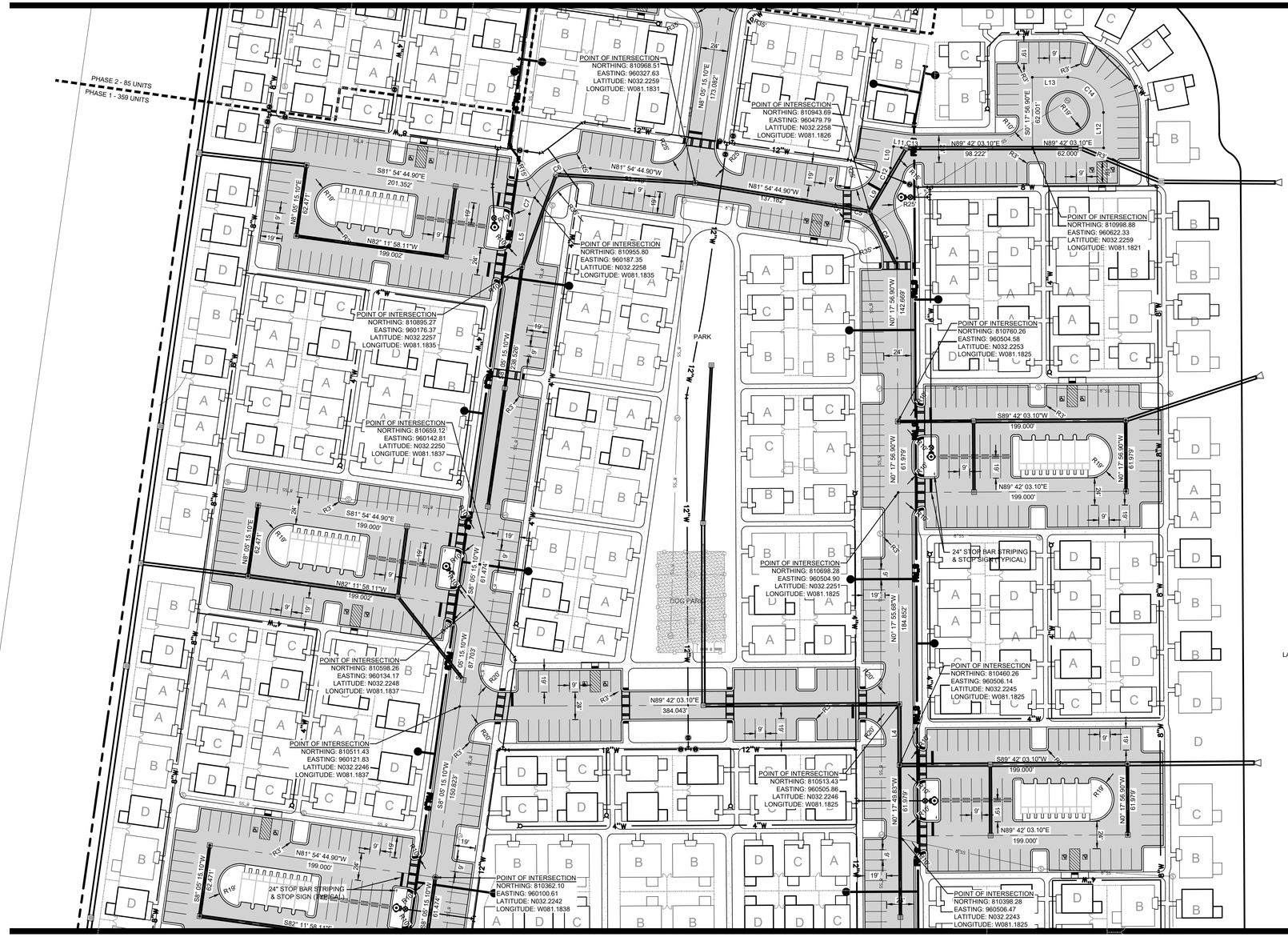
SHEET
C1.1

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Layout Staking Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 3:16:10 PM

MATCHLINE -- SEE SHEET C1.3



MATCHLINE -- SEE SHEET C1.1

NOTE:
1. CONSTRUCTION OF ALL SIDEWALKS, ADA PARKING, AND ACCESSIBLE ROUTES SHALL BE IN CONFORMANCE WITH FEDERAL ADA STANDARDS, LATEST EDITION.
2. SIDEWALKS SHALL COMPLY WITH MINIMUM STANDARD REQUIREMENTS SPECIFIED IN ARTICLE V, SECTION 3.1.4 OF THE "MPO MASTER PLAN OVERLAY".
3. ALL SIDEWALKS ON PLAN SHALL BE 4' WIDE, EXCEPT WHERE ADJACENT TO PAVEMENT/PARKING, IN WHICH CASES THEY SHALL BE 5' WIDE.

PARKING SUMMARY

REQUIRED PARKING SPACES:
TOTAL UNITS x 2 SPACES PER UNIT = REQUIRED SPACES
444 UNITS x 2 SPACES/UNIT = 888 SPACES (REQ'D)

PROVIDED PARKING SPACES:
928 TOTAL SPACES PROVIDED

REQUIRED HANDICAP SPACES:
2% OF TOTAL SPACES PROVIDED = REQUIRED HC SPACES
928 SPACES x 0.02 = 18.56 SPACES (SAY 19)

PROVIDED HANDICAP SPACES:
42 TOTAL HC SPACES + 21 TOTAL HC STRIPED ISLES = 63

TOTAL PROVIDED PARKING SPACES:
865 STANDARD SPACES
63 HANDICAP SPACES/STRIPED ISLES
928 TOTAL PROJECT SPACES PROVIDED

Parcel Line Table		
Line #	Length	Direction
L4	53.17	N0° 17' 49.83"W
L5	46.79	S8° 05' 15.10"W
L9	28.75	N29° 13' 58.76"E
L10	19.00	N8° 05' 15.10"E
L11	7.00	S81° 54' 44.90"E
L12	30.96	N0° 17' 56.90"W
L13	31.04	S89° 46' 29.73"W

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C4	49.60	47.00	60.47	N30° 31' 59"W	47.33
C5	17.35	47.00	21.15	N71° 20' 23"W	17.25
C6	58.89	47.00	71.80	S62° 11' 21"W	55.12
C7	14.93	47.00	18.20	S17° 11' 21"W	14.87
C12	13.66	37.00	21.15	N18° 39' 37"E	13.58
C13	16.39	112.00	8.39	S86° 06' 21"E	16.38
C14	48.65	31.00	89.93	N45° 15' 44"W	43.81

GRAPHIC SCALE: 1"=50'-0"
50' 25' 0' 50'

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA PROFESSIONAL ENGINEER No. 38245 JASON JOSEPH BRYANT

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LAYOUT & STAKING PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	PHASE 1
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C1.2

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Layout Staking Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Revision (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 3:22:52 PM

NOTE:
1. CONSTRUCTION OF ALL SIDEWALKS, ADA PARKING, AND ACCESSIBLE ROUTES SHALL BE IN CONFORMANCE WITH FEDERAL ADA STANDARDS, LATEST EDITION.
2. SIDEWALKS SHALL COMPLY WITH MINIMUM STANDARD REQUIREMENTS SPECIFIED IN ARTICLE V, SECTION 3.1.4 OF THE "MPO MASTER PLAN OVERLAY".
3. ALL SIDEWALKS ON PLAN SHALL BE 4' WIDE, EXCEPT WHERE ADJACENT TO PAVEMENT/PARKING, IN WHICH CASES THEY SHALL BE 5' WIDE.

Parcel Line Table

Line #	Length	Direction
L14	25.06	N8° 05' 15.10"E
L15	47.68	N8° 05' 15.10"E
L16	27.38	N8° 05' 15.10"E
L17	34.09	N8° 05' 15.09"E
L18	101.71	N8° 05' 15.10"E

Curve Table

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C15	47.98	32.00	85.90	N51° 02' 23"E	43.61
C16	4.79	9.00	30.47	N7° 08' 50"W	4.73
C17	28.05	27.00	59.53	N52° 08' 48"W	26.81
C18	2.29	32.00	4.09	S83° 57' 38"E	2.29
C19	59.84	47.00	72.95	S45° 26' 13"E	55.88
C20	13.99	47.01	17.05	S0° 26' 15"E	13.93

PARKING SUMMARY

REQUIRED PARKING SPACES:
TOTAL UNITS x 2 SPACES PER UNIT = REQUIRED SPACES
444 UNITS x 2 SPACES/UNIT = 888 SPACES (REQ'D)

PROVIDED PARKING SPACES:
928 TOTAL SPACES PROVIDED

REQUIRED HANDICAP SPACES:
2% OF TOTAL SPACES PROVIDED = REQUIRED HC SPACES
928 SPACES x 0.02 = 18.56 SPACES (SAY 19)

PROVIDED HANDICAP SPACES:
42 TOTAL HC SPACES + 21 TOTAL HC STRIPED ISLES = 63

TOTAL PROVIDED PARKING SPACES:
865 STANDARD SPACES
63 HANDICAP SPACES/STRIPED ISLES
928 TOTAL PROJECT SPACES PROVIDED

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
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JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

STAKING & LAYOUT PLAN

THE COTTAGES
AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: 1"=50'
Date: 5/31/22

SHEET
C1.3

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Layout Staking Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 2:18:01 PM

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

8"SS

SS

GRAPHIC SCALE: 1"=100'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

COMPOSITE SEWER PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=100'
Date:	10/25/22

SHEET
C2.0

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Sewer Composite Exhibit.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Revision Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 2:42:52 PM

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

PHASE 1 CONSTRUCTION (SHADED–TYP)

TEMPORARY 2"ø WATER SERVICE (PHASE 1)

GRAPHIC SCALE-1"=100'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

COMPOSITE WATER PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=100'
Date:	10/25/22

SHEET
C2.1

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Composite Exhibit.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Revision MAR 2023)

Wednesday, December 21, 2022 2:45:56 PM

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

GRAPHIC SCALE: 1"=100'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER * JASON JOSEPH BRYANT *

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

COMPOSITE REUSE WATER EXHIBIT

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: RAP
Checked By: RAP
Scale: 1"=100'
Date: 10/25/22

SHEET
C2.2

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Reuse Water Composite Exhibit.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:38:26 AM

NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

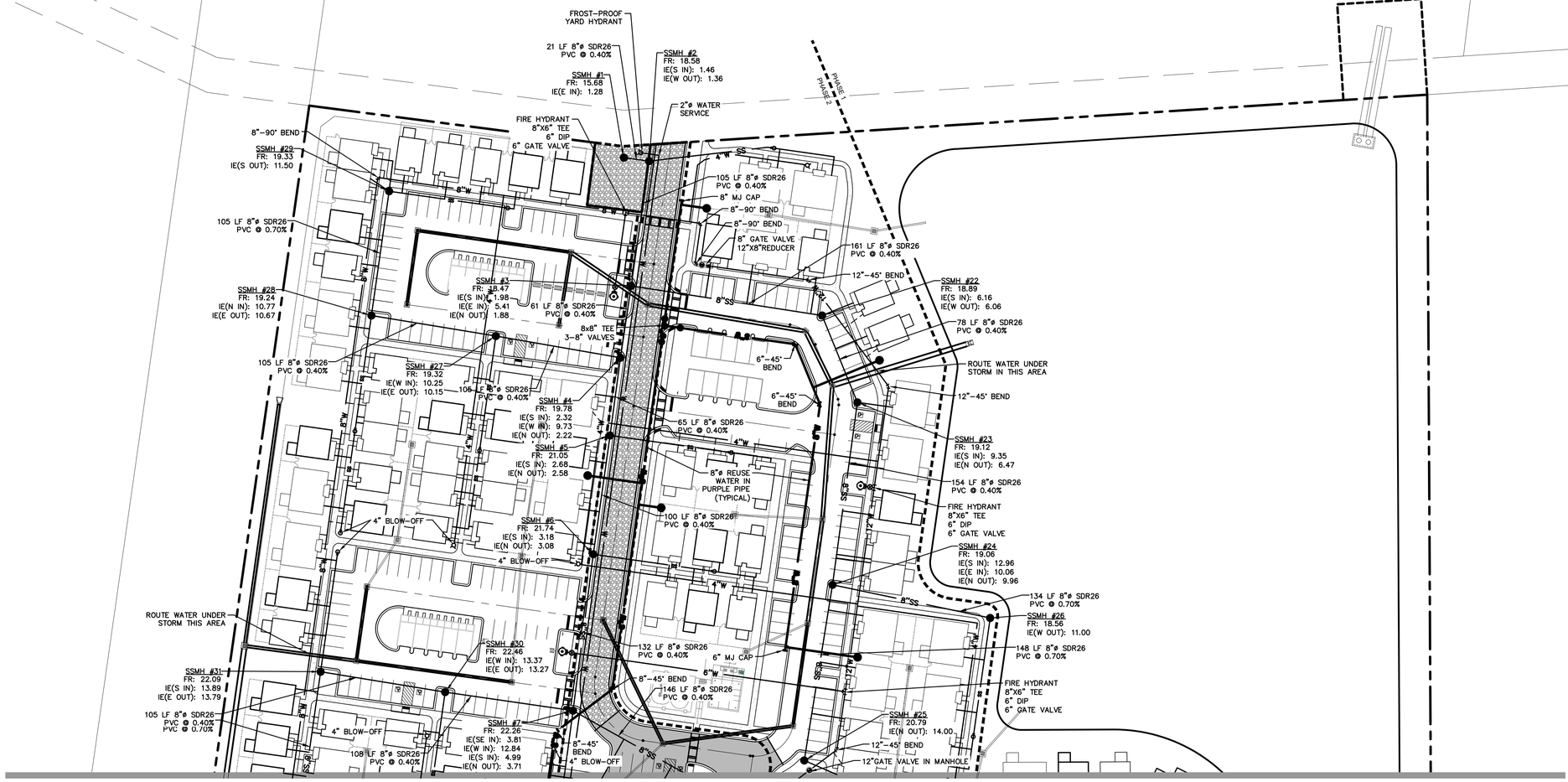
NOTE: AN ACCEPTABLE METHOD OF FLUSHING PRIOR TO CONNECTION TO THE CITY WATER SYSTEM. SPECIFY MINIMUM FLUSH TIME AND VELOCITY THAT ARE NECESSARY TO PURGE THE LINE OF ANY FOREIGN MATERIAL.

NOTE: WATER MAIN TO BE INSTALLED AT LEAST 3' HORIZONTALLY, AND 18" VERTICALLY ABOVE ANY PARALLEL NPRL. IF CROSSING AN NPRL, INSTALLED WATER MAIN SHALL PASS AT LEAST 18" ABOVE THAT PIPELINE.

NOTE: ALL 8" AND LARGER VALVES ARE TO BE INSTALLED MANHOLES PER THE CITY'S STANDARD DETAILS.

NOTE: FOR THE PURPOSE OF THE MINIMUM STANDARDS, ANY WATER LINE 2 INCHES IN DIAMETER OR LARGER MUST BE TREATED AS WATER MAINS. THEY MUST UNDERGO THE SAME DISINFECTION, MARKING, SEPARATION AND COVER REQUIREMENTS ETC. FOR MAINS IN THE SPECIFICATIONS.

LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE



100' 50' 0' 100'
GRAPHIC SCALE: 1"=100'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH WAY

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
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912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.3

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

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NOTE: ALL 8" AND LARGER VALVES ARE TO BE INSTALLED MANHOLES PER THE CITY'S STANDARD DETAILS.

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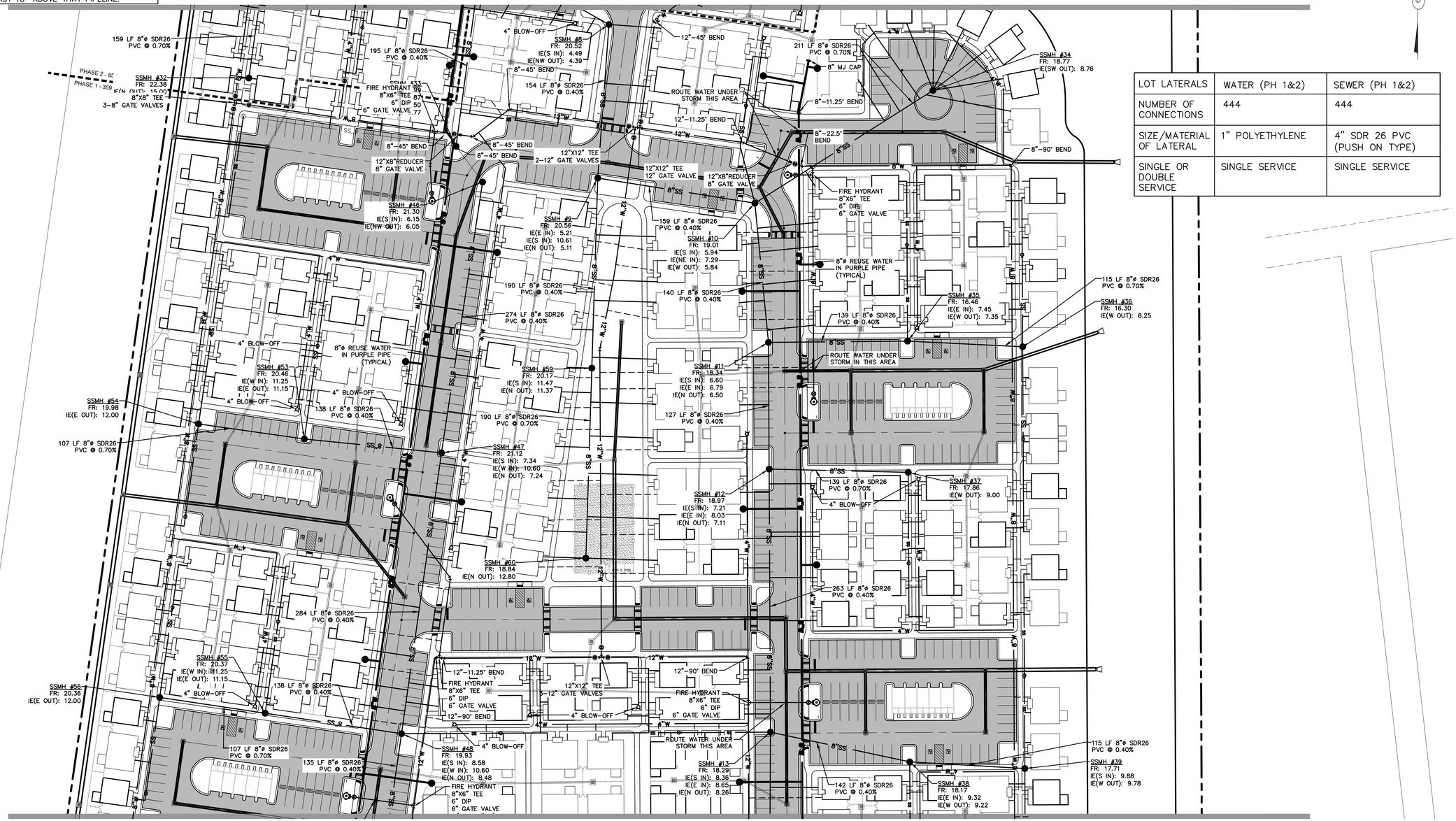
MATCHLINE -- SEE SHEET C2.3



MATCHLINE -- SEE SHEET C2.5

LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER PLAN
THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.4

100' 50' 0' 100'
GRAPHIC SCALE: 1"=100'-0"

Wednesday, December 21, 2022 11:38:36 AM
C:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Plan.dwg
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan 12 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:38:46 AM

NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

NOTE: AN ACCEPTABLE METHOD OF FLUSHING PRIOR TO CONNECTION TO THE CITY WATER SYSTEM. SPECIFY MINIMUM FLUSH TIME AND VELOCITY THAT ARE NECESSARY TO PURGE THE LINE OF ANY FOREIGN MATERIAL.

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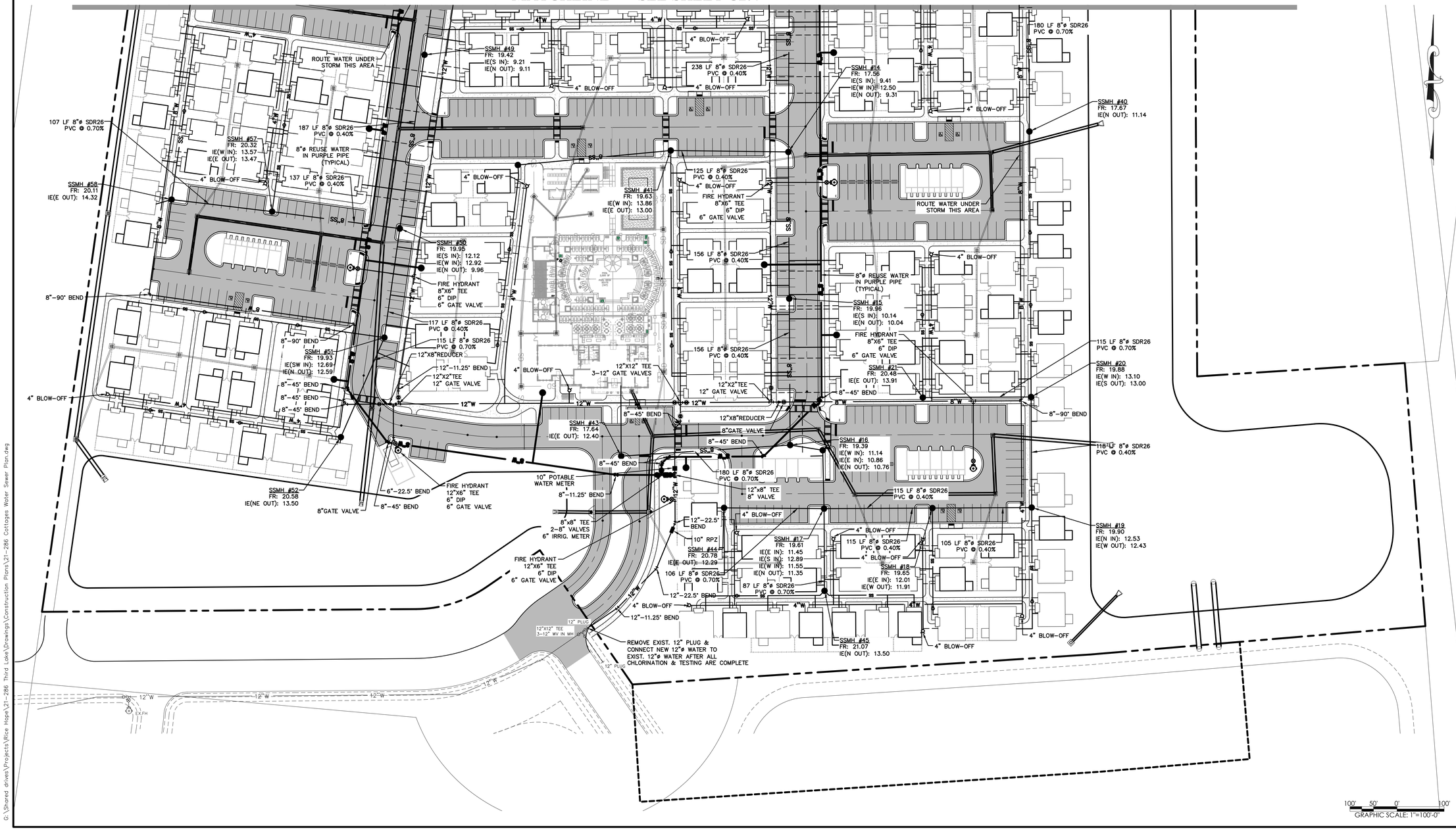
LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE

MATCHLINE -- SEE SHEET C2.4



REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.5

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Plan.dwg

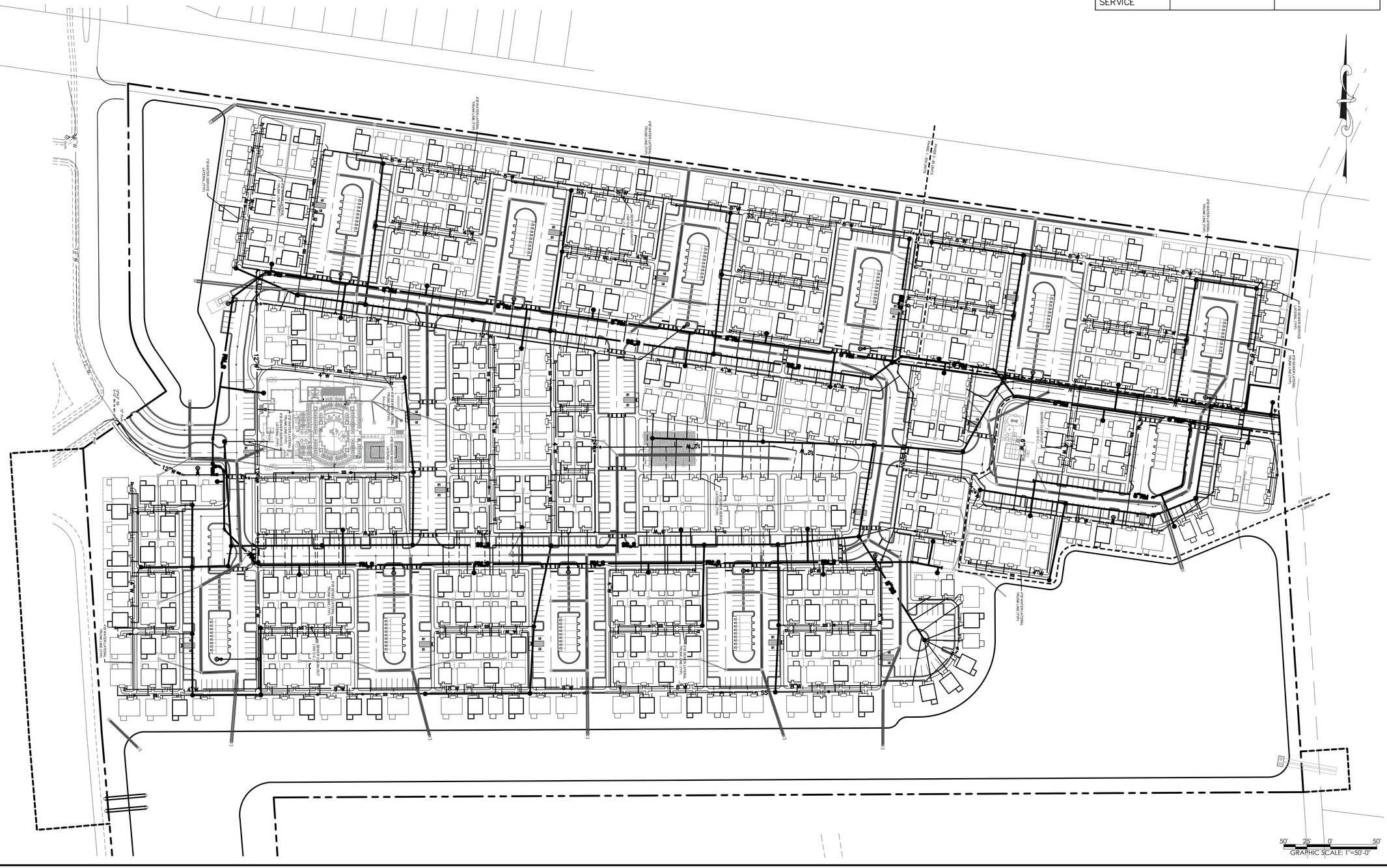
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 3:26:28 PM

NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

NOTE: AN ACCEPTABLE METHOD OF FLUSHING PRIOR TO CONNECTION TO THE CITY WATER SYSTEM. SPECIFY MINIMUM FLUSH TIME AND VELOCITY THAT ARE NECESSARY TO PURGE THE LINE OF ANY FOREIGN MATERIAL.

LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE



REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON BRYANT JOSEPH

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER LATERAL EXHIBIT

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=80'
Date:	

SHEET
LAT-EXH

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Lateral Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:41:10 AM

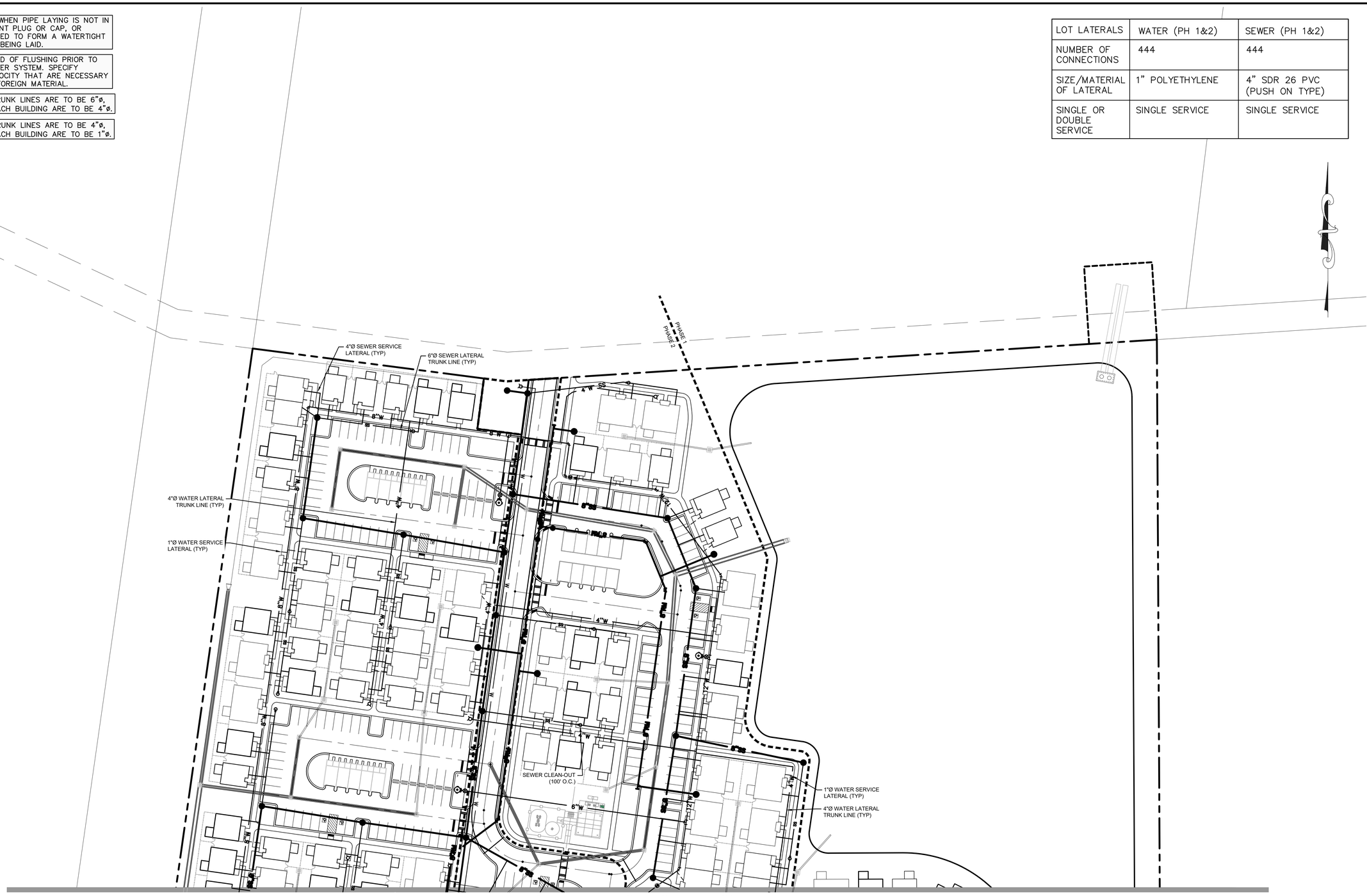
NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

NOTE: AN ACCEPTABLE METHOD OF FLUSHING PRIOR TO CONNECTION TO THE CITY WATER SYSTEM. SPECIFY MINIMUM FLUSH TIME AND VELOCITY THAT ARE NECESSARY TO PURGE THE LINE OF ANY FOREIGN MATERIAL.

NOTE: ALL SEWER LATERAL TRUNK LINES ARE TO BE 6"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 4"ø.

NOTE: ALL WATER LATERAL TRUNK LINES ARE TO BE 4"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 1"ø.

LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE



MATCHLINE -- SEE SHEET C2.7

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	DESCRIPTION	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

GEORGIA REGISTERED 38044 PROFESSIONAL ENGINEER JOSEPH MOSTAFANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER LATERAL PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.6

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Lateral Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:41:21 AM

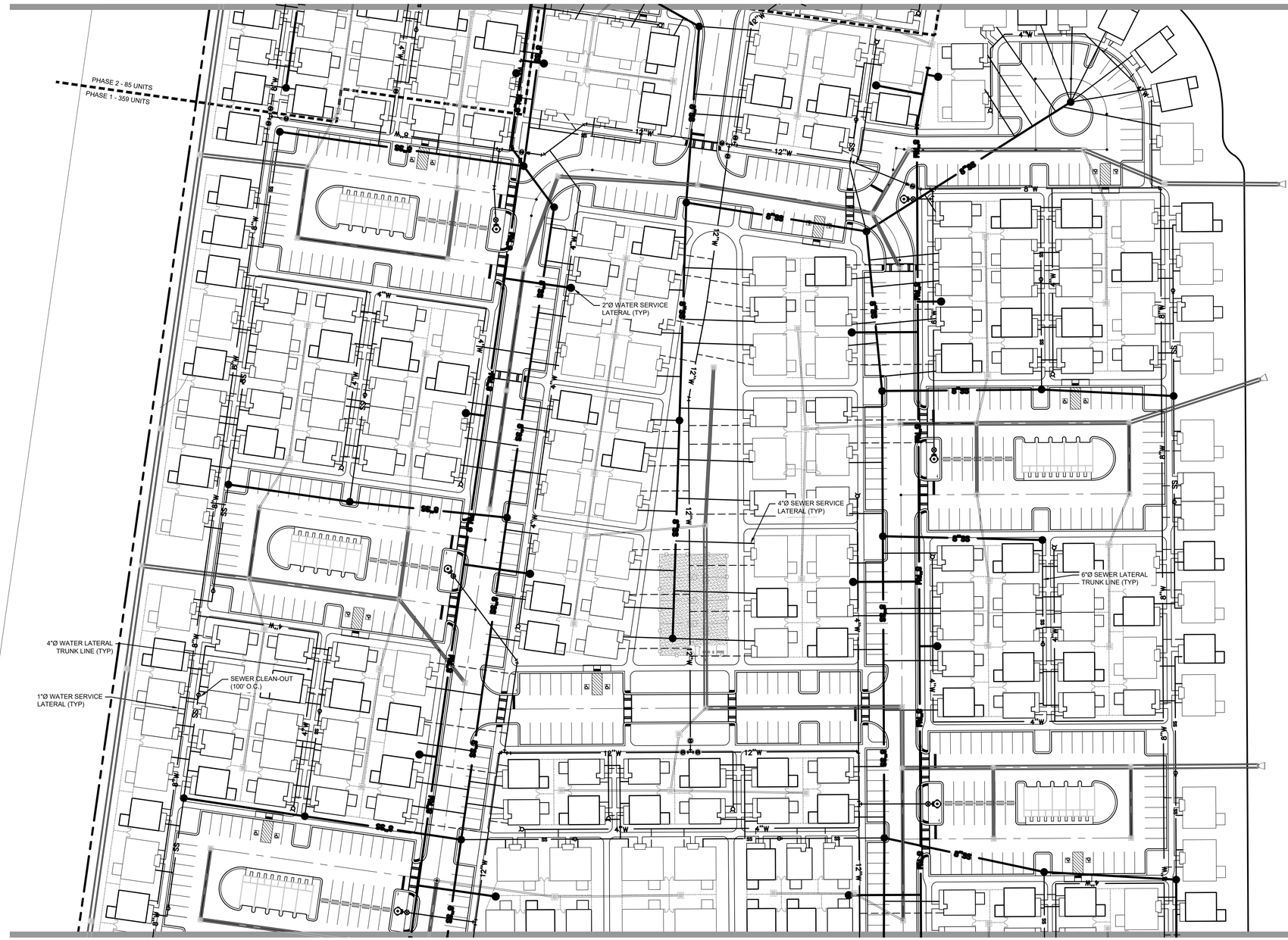
NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

NOTE: AN ACCEPTABLE METHOD OF FLUSHING PRIOR TO CONNECTION TO THE CITY WATER SYSTEM. SPECIFY MINIMUM FLUSH TIME AND VELOCITY THAT ARE NECESSARY TO PURGE THE LINE OF ANY FOREIGN MATERIAL.

NOTE: ALL SEWER LATERAL TRUNK LINES ARE TO BE 6"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 4"ø.

NOTE: ALL WATER LATERAL TRUNK LINES ARE TO BE 4"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 1"ø.

MATCHLINE -- SEE SHEET C2.6



LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE

MATCHLINE -- SEE SHEET C2.8

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

GEORGIA REGISTERED PROFESSIONAL ENGINEER JASON JOSEPH MOSTAFI

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER LATERAL PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.7

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Lateral Plan.dwg

Wednesday, December 21, 2022 2:47:49 PM

NOTE: DURING INSTALLATION, WHEN PIPE LAYING IS NOT IN PROGRESS, A MECHANICAL JOINT PLUG OR CAP, OR APPROVED EQUAL, WILL BE USED TO FORM A WATERTIGHT SEAL AT BOTH ENDS OF LINE BEING LAID.

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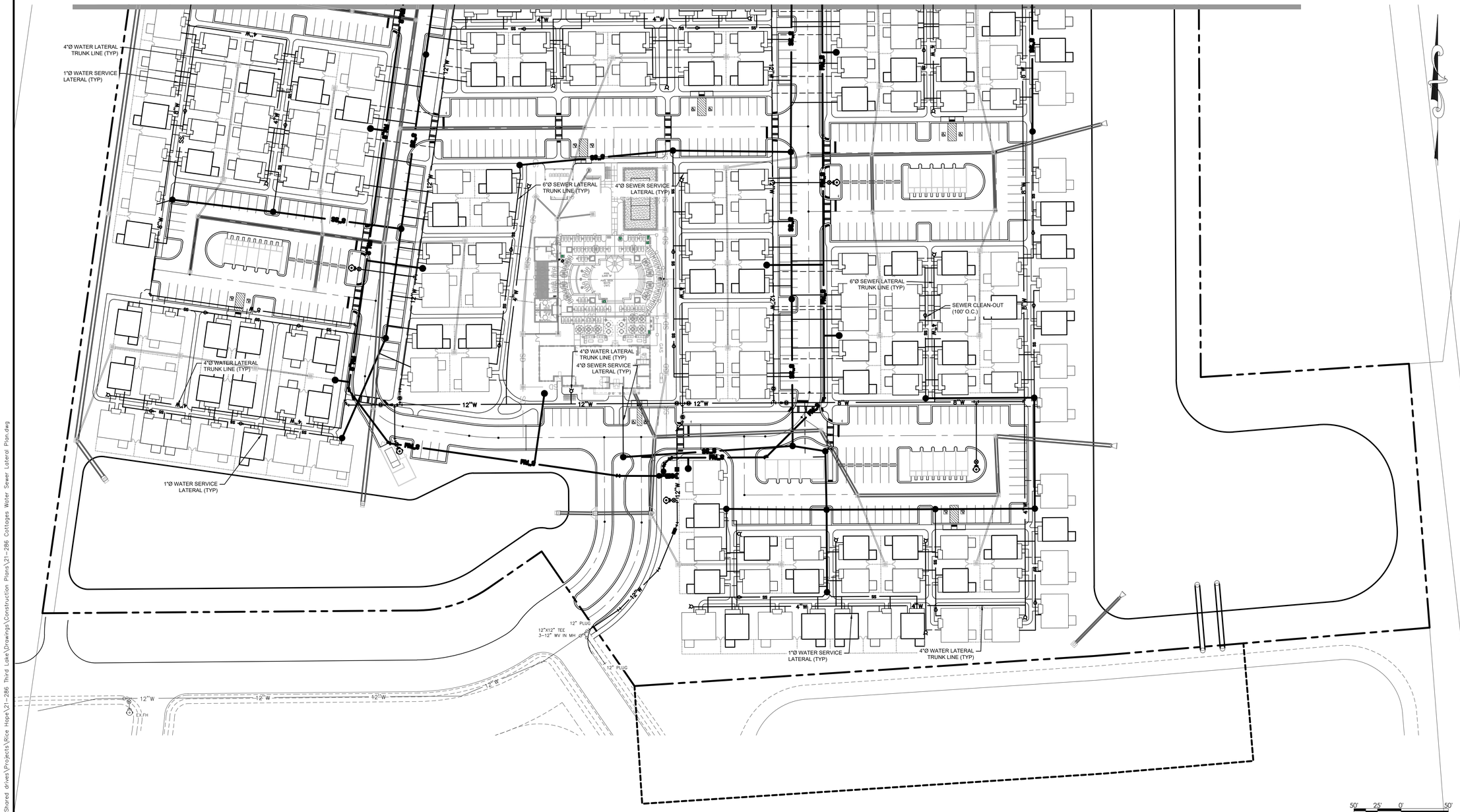
NOTE: ALL SEWER LATERAL TRUNK LINES ARE TO BE 6"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 4"ø.

NOTE: ALL WATER LATERAL TRUNK LINES ARE TO BE 4"ø, AND SERVICE LATERALS TO EACH BUILDING ARE TO BE 1"ø.

LOT LATERALS	WATER (PH 1&2)	SEWER (PH 1&2)
NUMBER OF CONNECTIONS	444	444
SIZE/MATERIAL OF LATERAL	1" POLYETHYLENE	4" SDR 26 PVC (PUSH ON TYPE)
SINGLE OR DOUBLE SERVICE	SINGLE SERVICE	SINGLE SERVICE

MATCHLINE -- SEE SHEET C2.7



REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER LATERAL PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
C2.8

C:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Lateral Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

REV.	DESCRIPTION	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA LICENSE #
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

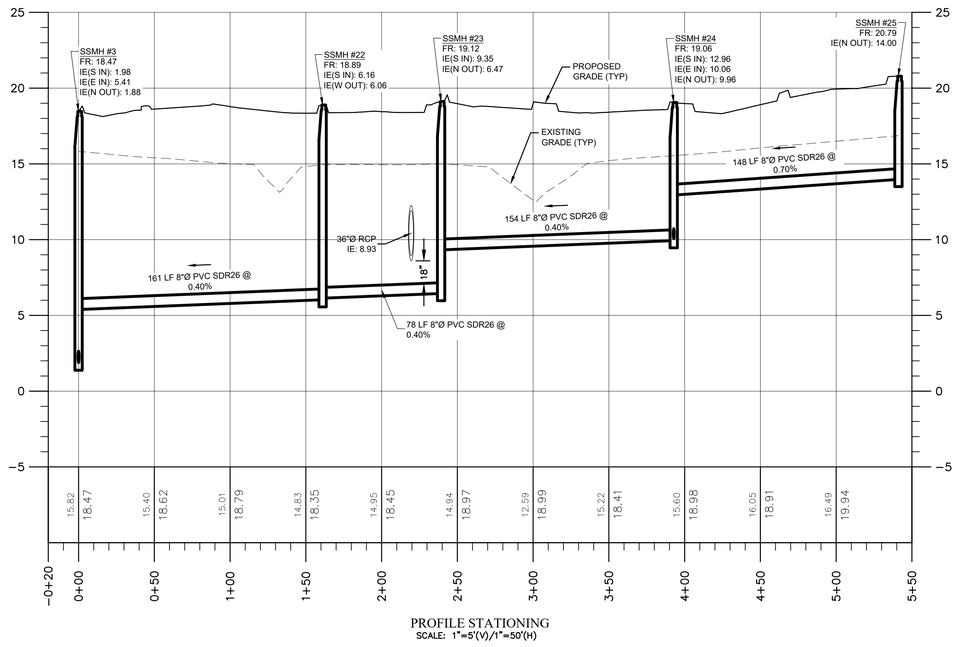
SANITARY SEWER PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

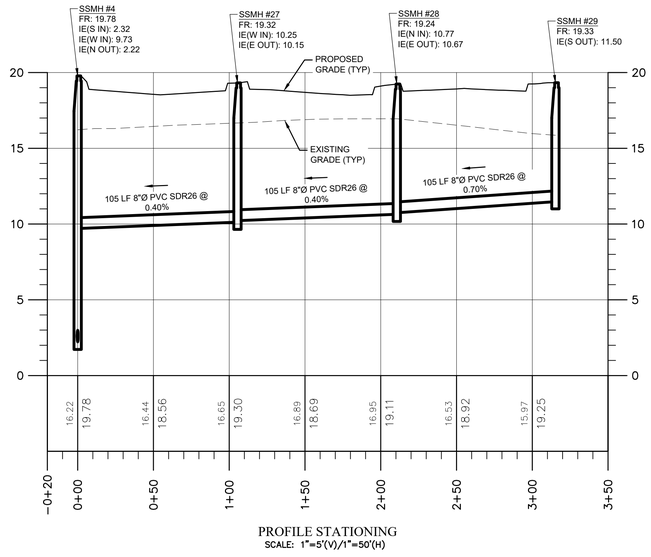
Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C2.9

Attachment: The Cottages at RH 7-0906-04-091 S:Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



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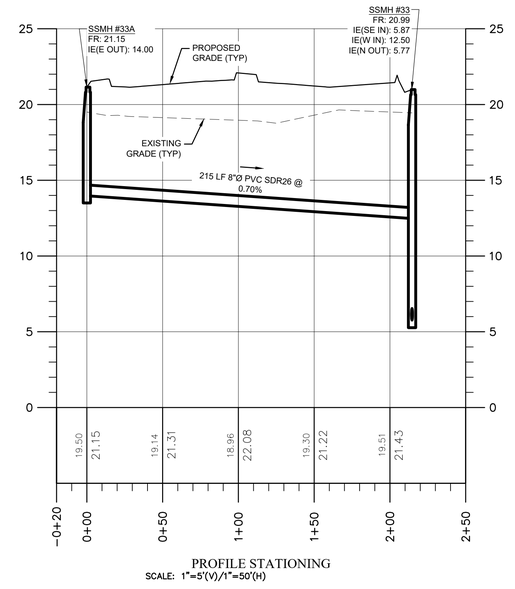

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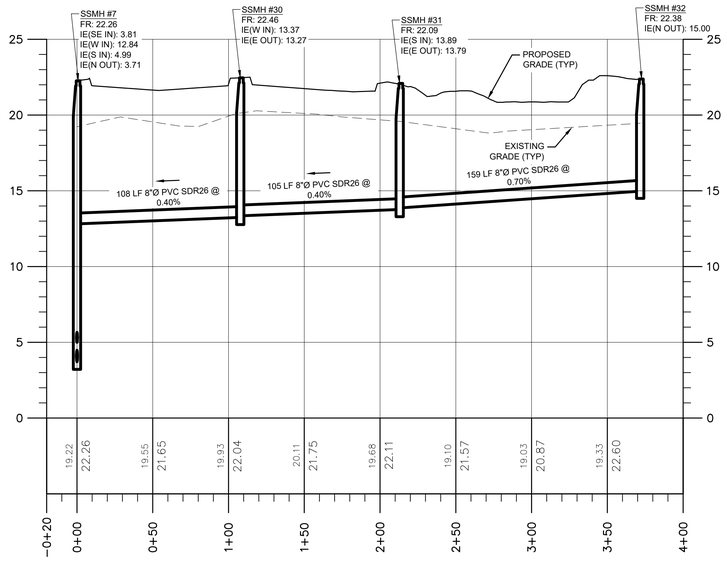

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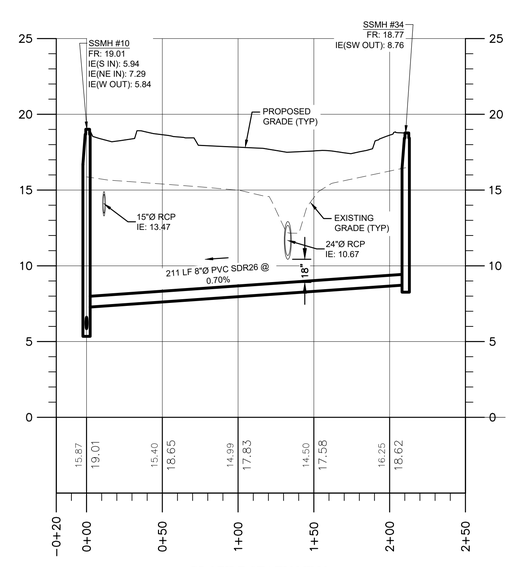

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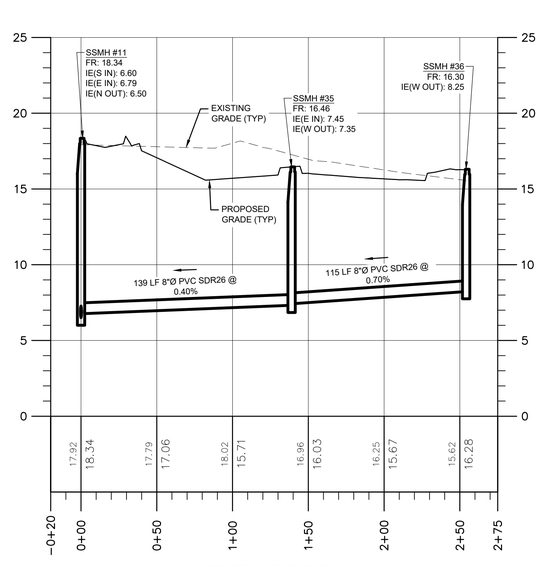

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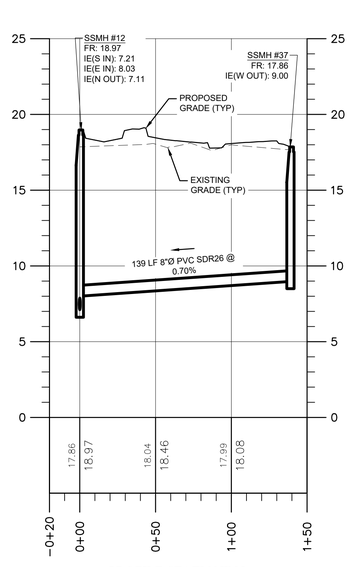

PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA PE #33111
DESIGN PROFESSIONAL
CERTIFICATION #73897

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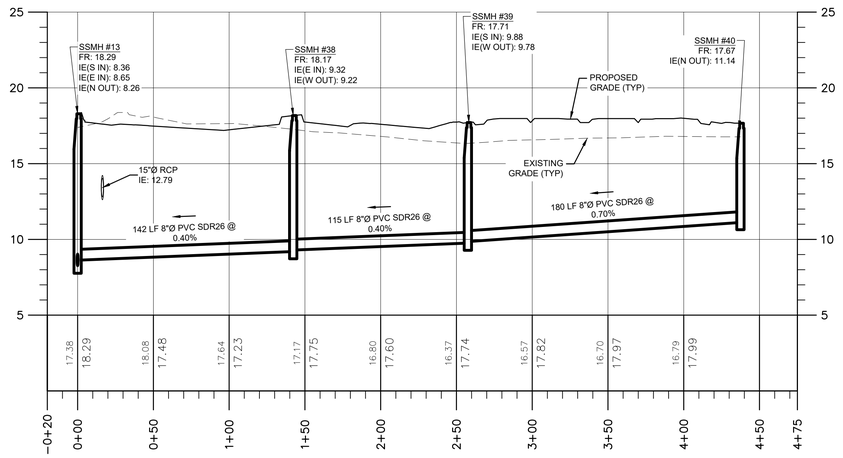
SANITARY SEWER PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C2.10

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



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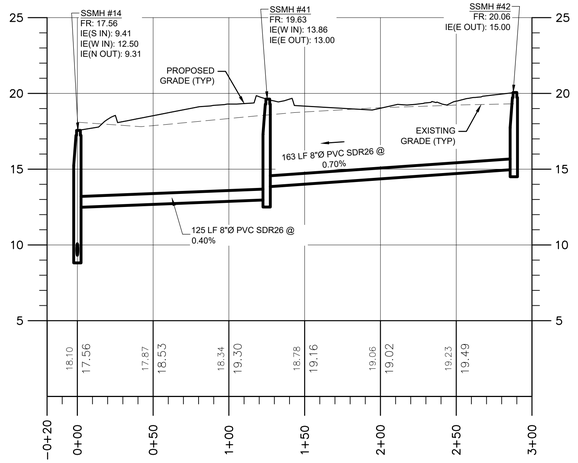

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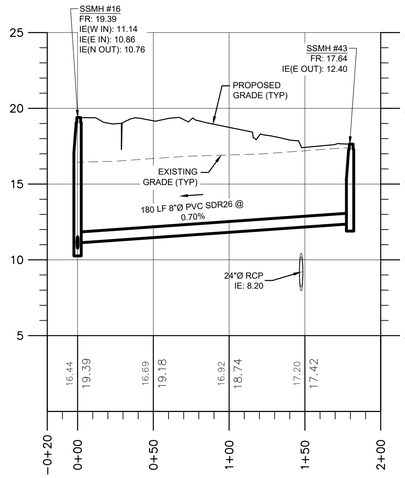

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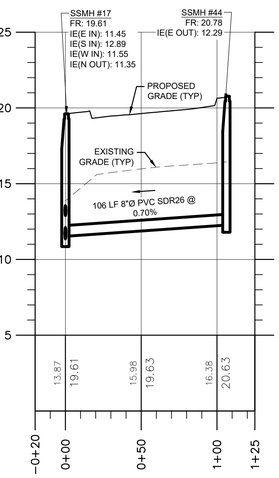

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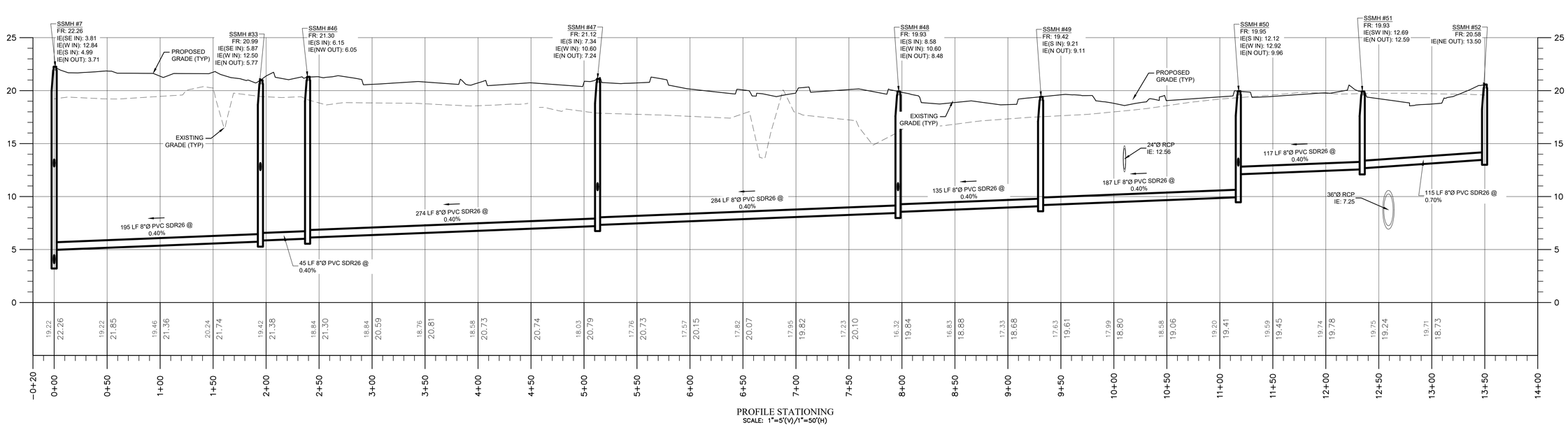

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DESIGN PROFESSIONAL
CERTIFICATION #73897

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SANITARY SEWER PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C2.11

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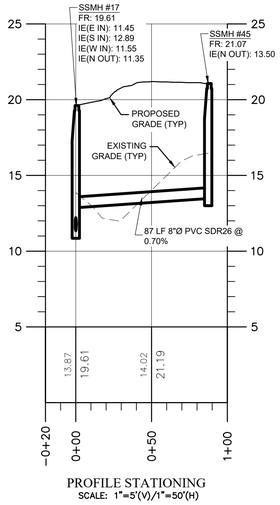

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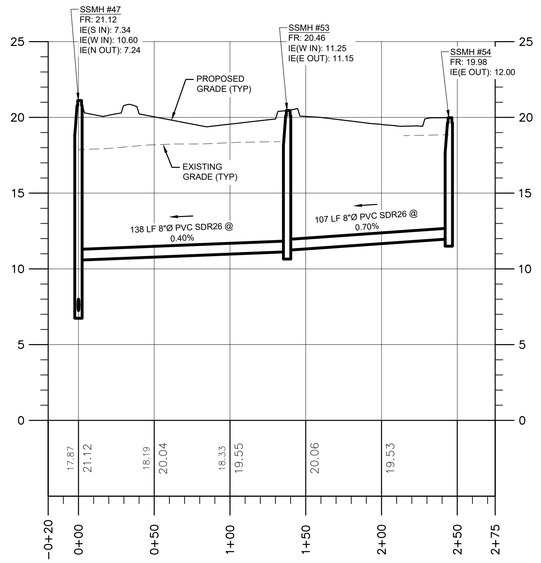

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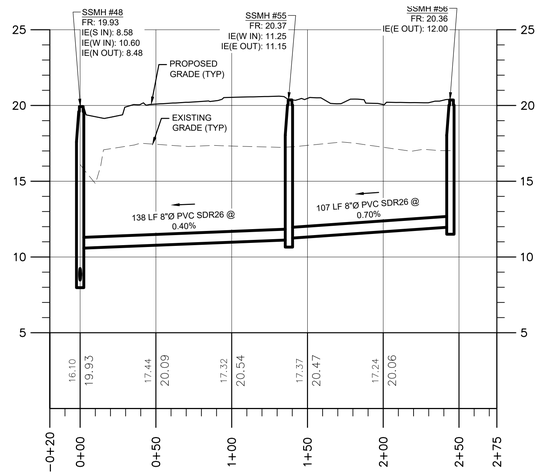

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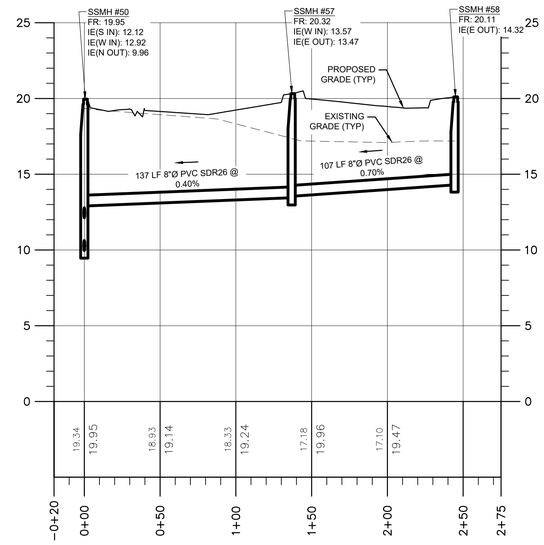

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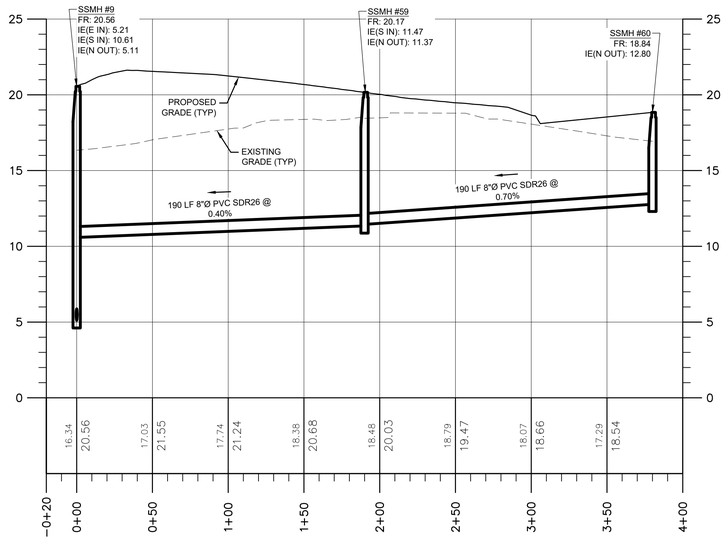

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GEORGIA LICENSE #
DESIGN PROFESSIONAL
CERTIFICATION #73897

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SANITARY SEWER PROFILES

THE COTTAGES AT RICE HOPE
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Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C2.12

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

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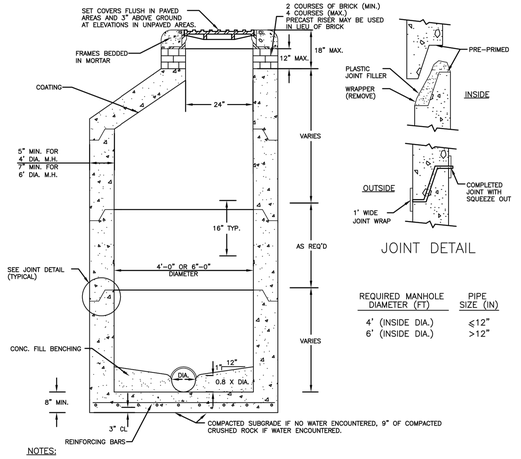


JOINT DETAIL

REQUIRED MANHOLE DIAMETER (FT)	PIPE SIZE (IN)
4' (INSIDE DIA.)	≤12"
6' (INSIDE DIA.)	>12"

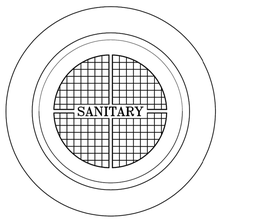
NOTES:

1. PRECAST REINFORCED CONCRETE TOPS, RISERS, BASES AND REBARS SHALL CONFORM TO LATEST ASTM C-478 STD. SPECIFICATIONS.
2. INTERIOR OF MANHOLE SHALL BE COATED IN ACCORDANCE WITH CITY OF PORT WENTWORTH STD. SPECIFICATIONS. THE EXTERIOR OF MANHOLE SHALL BE COATED WITH CONSEAL CS-55 DAMP-PROOF COATING OR EQUAL
3. MANUFACTURER CERTIFICATION THAT MANHOLE MEETS ASTM SPECIFICATION SHALL BE SUBMITTED TO CITY OF PORT WENTWORTH.
4. SEE DETAIL SHEET FOR MANHOLE COVER & FRAME.
6. BUOYANCY MAY NEED TO BE CHECKED IF NECESSARY
7. ALL PIPE PENETRATIONS SHALL HAVE A BOOT CONNECTION. SEE DETAIL S-6.

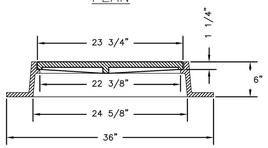
PRECAST CONCRETE MANHOLE

City of Port Wentworth
TECHNICAL DETAILS
S-1

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.

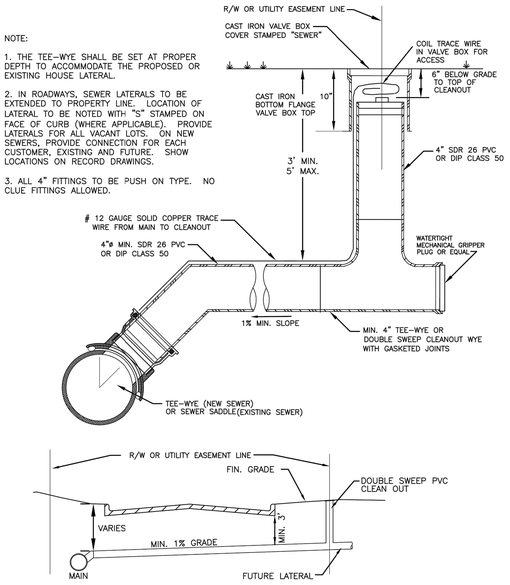
MANHOLE RING & COVER

City of Port Wentworth
TECHNICAL DETAILS
S-2

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

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.

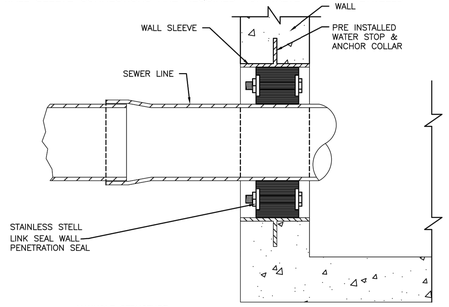


SANITARY SEWER SERVICE CONNECTION

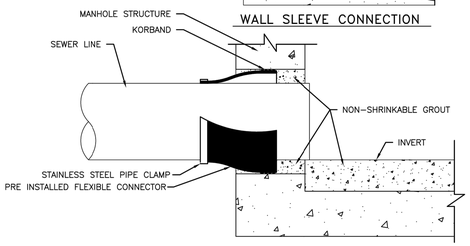
City of Port Wentworth
TECHNICAL DETAILS
S-4

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

NOTE:
WALL SLEEVE CONNECTIONS ARE REQUIRED FOR VALVE PITS & WETWELLS



WALL SLEEVE CONNECTION

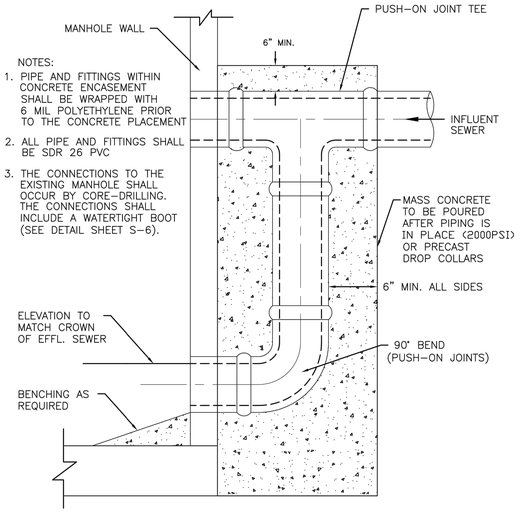


"BOOT" CONNECTION

PRECAST STRUCTURE PIPE CONNECTION

City of Port Wentworth
TECHNICAL DETAILS
S-6

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

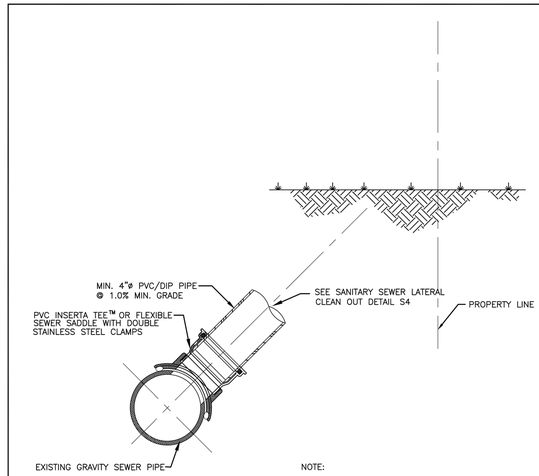


NOTES:
1. PIPE AND FITTINGS WITHIN CONCRETE ENCASEMENT SHALL BE WRAPPED WITH 6 MIL POLYETHYLENE PRIOR TO THE CONCRETE PLACEMENT
2. ALL PIPE AND FITTINGS SHALL BE SDR 26 PVC
3. THE CONNECTIONS TO THE EXISTING MANHOLE SHALL OCCUR BY CORE-DRILLING. THE CONNECTIONS SHALL INCLUDE A WATERTIGHT BOOT (SEE DETAIL SHEET S-6).

DROP MANHOLE CONNECTION

City of Port Wentworth
TECHNICAL DETAILS
S-7

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



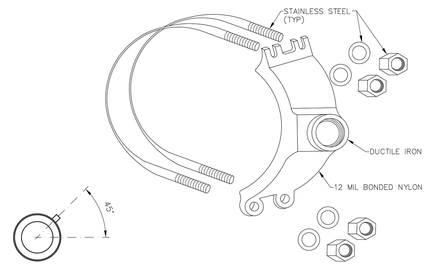
NOTE:

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



NOTES:

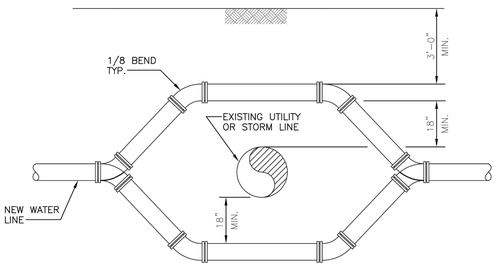
1. TAPPING SADDLE TO BE DUCTILE IRON WITH TYPE 304 STAINLESS STEEL FORGED DOUBLE STRAPS, STAINLESS STEEL BOLTS, NUTS AND WASHERS. FINISH IS FUSION-BONDED NYLON TO AVERAGE THICKNESS OF 12 MILS.
2. ALL TAPS ON WATER MAIN WILL REQUIRE A TAPPING SADDLE.

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

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 ON ACCORDANCE WITH CITY OF PORT WENTWORTH STANDARD DETAILS.



THE SEPARATION OF WATER MAINS, SEWERS AND URBAN REUSE MAINS SHALL COMPLY WITH THE GEORGIA ENVIRONMENTAL PROTECTION DIVISION MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS, WHICH ARE GENERALLY AS FOLLOWS:
A: PARALLEL INSTALLATION:
1. NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.
2. UNUSUAL CONDITIONS: WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, AND WHEN APPROVED BY THE ENGINEER, THE INSIDE EDGE OF A WATER MAIN MAY BE LAID A MINIMUM OF 5 FEET FROM THE INSIDE EDGE OF A SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES HIGHER THAT THE TOP OF THE SEWER (SEE DETAIL), AND THE WATER IS LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF.
B: CROSSING:
1. NORMAL CONDITIONS: WHENEVER POSSIBLE, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER.
2. UNUSUAL CONDITIONS: IF A WATER MAIN MUST CROSS UNDER A SEWER OR REUSE MAIN, THE TOP OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES LOWER THAN THE BOTTOM OF THE SEWER. THE WATER MAIN PIPE SHALL BE CENTERED AT THE CROSSING SO THAT THE JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, AND ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE SEWER AT THE CROSSING. ADEQUATE STRUCTURAL SUPPORT SHALL INCLUDE BACKFILLING THE ENTIRE UTILITY CROSSING AREA WITH 3/4" CRUSHED STONE

WHEN WATER MAINS AND WATER SERVICE LINES (BEFORE THE CURB STOP AND CUSTOMER METER) OWNED BY THE PUBLIC WATER SYSTEMS CROSS UNDER SEWERS, ADDITIONAL MEASURES SHALL BE TAKEN BY PROVIDING BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF WATER MAIN MATERIALS EXTENDING ON EACH SIDE OF THE CROSSING UNTIL AT LEAST 10 FEET SEPARATES THE TWO PIPES AND SUBJECTED TO HYDROSTATIC TESTS, AS PRESCRIBED IN THIS DOCUMENT. OTHER OPTIONS THAT ARE ACCEPTABLE INCLUDE:

-ENCASEMENT OF THE WATER MAIN OR SEWER IN A CARRIER PIPE CONSTRUCTED OF WATER MAIN MATERIALS, EXTENDING ON EACH SIDE OF THE CROSSING UNTIL AT LEAST 10 FEET SEPARATES THE TWO PIPES.

-THE SEWER HAS A STRUCTURAL LINING THAT MEETS ASTM F1216 EXTENDING ON EACH SIDE OF THE CROSSING UNTIL AT LEAST 10 FEET SEPARATES THE TWO PIPES

STANDARD UTILITY CROSSING

City of Port Wentworth
TECHNICAL DETAILS
W-6

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

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON J. BRYANT, P.E.
GEORGIA REGISTERED
DESIGN PROFESSIONAL
CERTIFICATION #73897

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WATER & SEWER DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: ----
Date: 5/31/22

SHEET
C2.13

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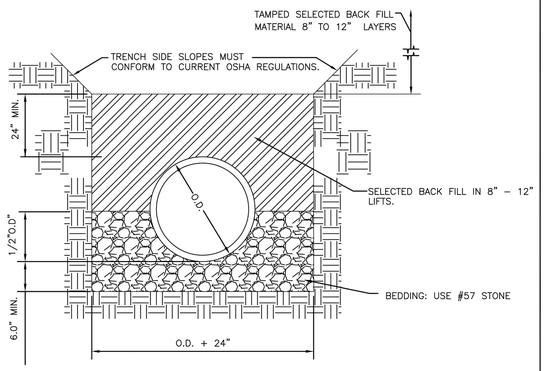
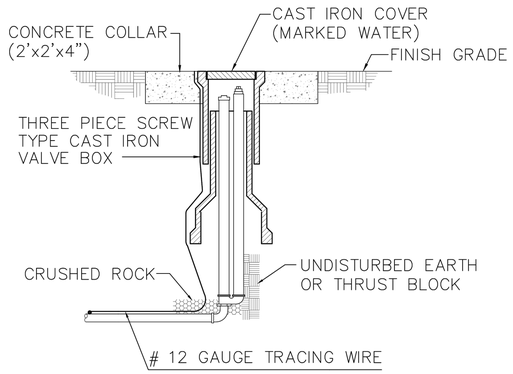


PIPE BEDDING

City of Port Wentworth
TECHNICAL DETAILS
W–8

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



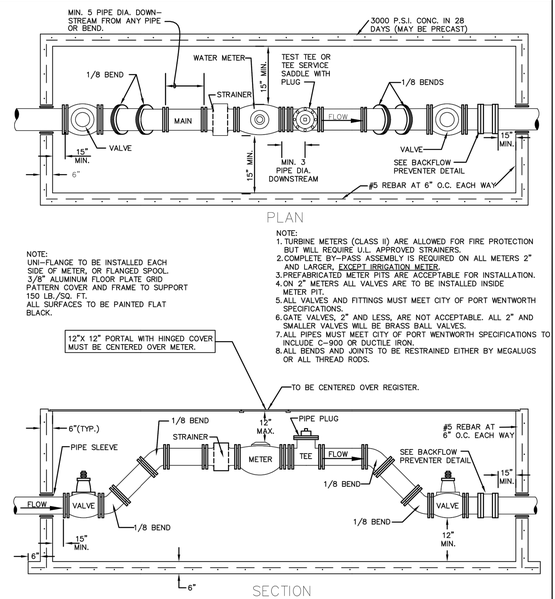
NOTE:

1. MAINGUARD #79 BLOW–OFF HYDRANT BY THE KUPFERLE FOUNDRY COMPANY. SEE MANUFACTURER'S SPECIFICATION FOR FURTHER DETAIL.

BLOW–OFF HYDRANT

City of Port Wentworth
TECHNICAL DETAILS
W–10

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



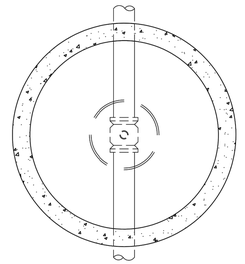
STANDARD IRRIGATION

City of Port Wentworth
TECHNICAL DETAILS
W–33

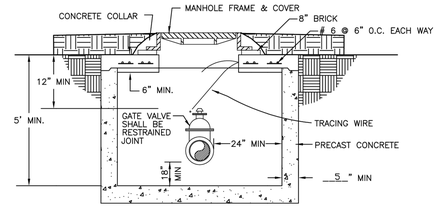
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

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.



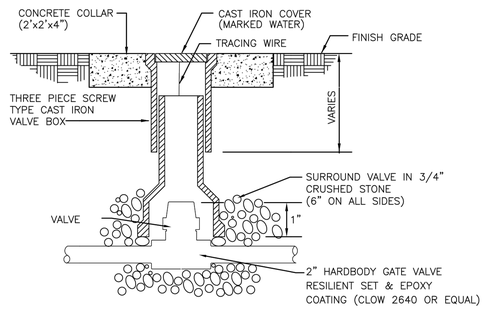
PLAN



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



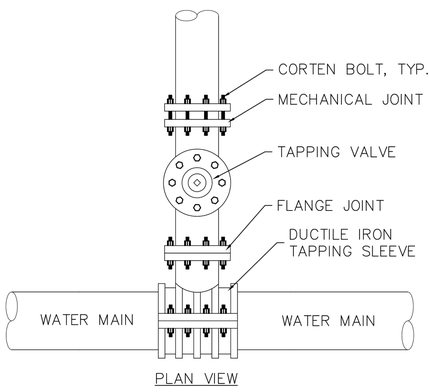
NOTE:

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



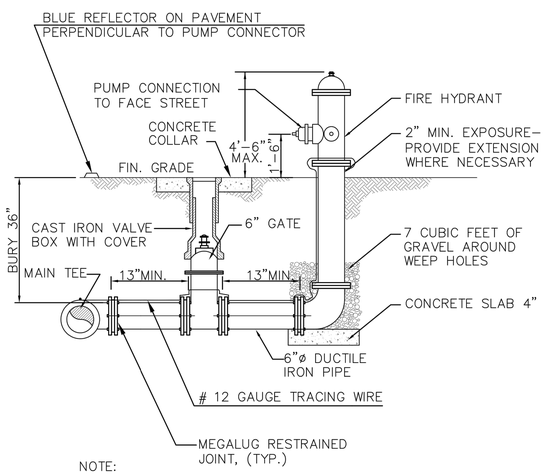
PLAN VIEW

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



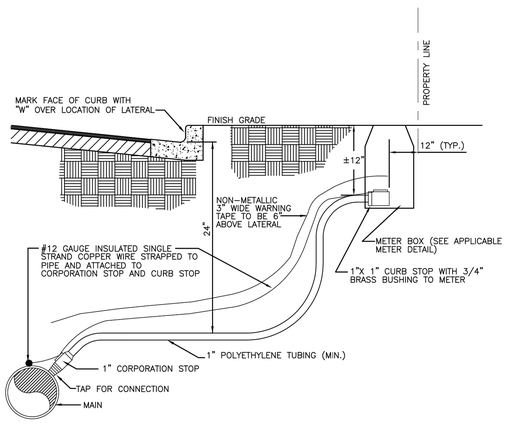
NOTE:

1. ALL JOINTS FROM MAIN TO HYDRANT SHALL BE RESTRAINED.
2. PROTECT BOLTS AND THREADS FROM CONCRETE.

STANDARD FIRE HYDRANT

City of Port Wentworth
TECHNICAL DETAILS
W–9

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



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

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON J. BRYANT, P.E.
GEORGIA LICENSE #
DESIGN PROFESSIONAL
CERTIFICATION #73897

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

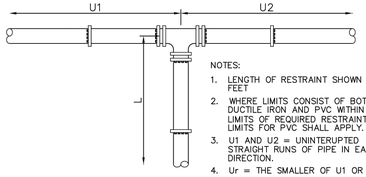
Project No. 21–286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: ----
Date: 5/31/22

SHEET
C2.14

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Details.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:43:47 AM



NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET
2. WHERE LIMITS CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. U1 AND U2 = UNINTERUPTED STRAIGHT RUNS OF PIPE IN EACH DIRECTION.
4. Ur = THE SMALLER OF U1 OR U2.
5. L = MINIMUM RESTRAINED LENGTH ALONG THE BRANCH
6. WHERE Ur IS LESS THAN 5', RESTRAIN TEE AS A 90° HORIZONTAL BEND.

TEE Ur	5'–10"	11'–20"	21'–35"	> 35'
4x4	43	28	4	*
6x4	38	17	*	*
6x6	64	49	25	*
8x4	34	6	*	*
8x6	61	42	10	*
8x8	87	72	48	12
10x4	29	*	*	*
10x6	58	34	*	*
10x8	84	66	35	*
10x10	106	91	67	31
12x4	24	*	*	*
12x6	54	26	*	*
12x8	82	60	23	*
12x10	104	86	57	13
12x12	126	112	87	51

MINIMUM RESTRAINED LENGTH (L)

* RESTRAIN AT TEE ONLY

STANDARD TEE RESTRAINT (PVC LINE)

City of Port Wentworth
TECHNICAL DETAILS
W–29

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

DUCTILE IRON LINE

PIPE DIA.	L
4	28
6	40
8	52
10	62
12	73
16	94
20	114
24	132

PVC LINE

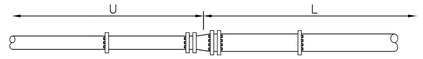
PIPE DIA.	L
4	52
6	74
8	96
10	115
12	136

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LIMITS CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.
3. FOR LINE STUBS (SEE DETAIL W39). THE LENGTH OF RESTRAINT (L) SHALL BE FROM THE VALVE AND NOT THE CAP.

STANDARD DEAD END RESTRAINT

City of Port Wentworth
TECHNICAL DETAILS
W–31

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



DUCTILE IRON LINE

REDUCER	U	L
6x4	30	21
8x4	72	38
8x6	29	22
10x4	123	51
10x6	63	38
10x8	26	21
12x4	186	64
12x6	106	53
12x8	59	39
12X10	26	21
16x6	214	79
16x8	141	68
16x10	91	56
16x12	54	40
20x10	174	84
20x12	123	71
20x16	51	40
24x12	207	97
24x16	113	72
24x20	48	39

PVC LINE

REDUCER	U	L
6x4	56	38
8x4	134	69
8x6	53	40
10x4	227	94
10x6	117	71
10x8	49	39
12x4	343	118
12x6	196	99
12x8	109	72
12x10	48	40

U = MINIMUM UNITERRUPTED STRAIGHT RUN OF PIPE ON SMALL SIDE OF REDUCER.

L = MINIMUM RESTRAINED LENGTH.

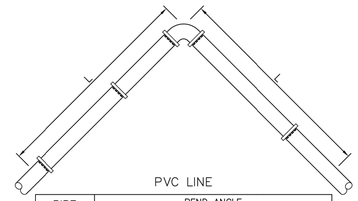
* WHERE MINIMUM "U" IS NOT MET, PIPE ON LARGE SIDE OF REDUCER SHALL BE RESTAINED FOR A MINIMUM OF "L" FEET.

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LIMITS CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

STANDARD REDUCER RESTRAINT

City of Port Wentworth
TECHNICAL DETAILS
W–32

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



PVC LINE

PIPE DIA.	BEND ANGLE			
	11 1/4°	22 1/2°	45°	90°
4	3	6	12	29
6	4	8	17	41
8	5	11	22	53
10	6	13	26	64
12	7	15	31	75

DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE			
	11 1/4°	22 1/2°	45°	90°
4	2	4	8	20
6	3	6	12	28
8	4	7	15	36
10	4	9	18	43
12	5	10	21	51
16	6	13	27	65
20	8	16	33	79
24	9	18	38	92

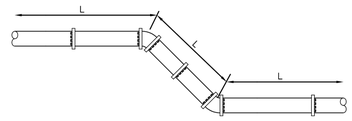
MINIMUM RESTRAINED LENGTH (L)

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

STANDARD HORIZONTAL BEND RESTRAINT

City of Port Wentworth
TECHNICAL DETAILS
W–27

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



PVC LINE

PIPE DIA.	BEND ANGLE			
	11 1/4°	22 1/2°	45°	90°
4	5	10	22	52
6	7	15	30	74
8	9	19	40	96
10	11	23	48	115
12	13	27	56	136

DUCTILE IRON LINE

PIPE DIA.	BEND ANGLE			
	11 1/4°	22 1/2°	45°	90°
4	3	6	12	28
6	4	8	17	40
8	4	10	22	52
10	5	12	26	62
12	6	15	30	73
16	7	19	39	94
20	11	23	47	114
24	13	26	55	132

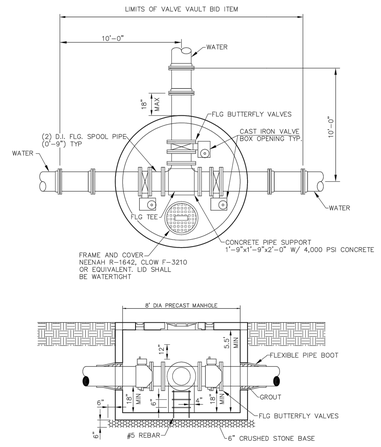
MINIMUM RESTRAINED LENGTH (L)

NOTES:
1. LENGTH OF RESTRAINT SHOWN IS IN FEET.
2. WHERE LINES CONSIST OF BOTH DUCTILE IRON AND PVC WITHIN THE LIMITS OF REQUIRED RESTRAINT, LIMITS FOR PVC SHALL APPLY.

STANDARD VERTICAL BEND RESTRAINT

City of Port Wentworth
TECHNICAL DETAILS
W–28

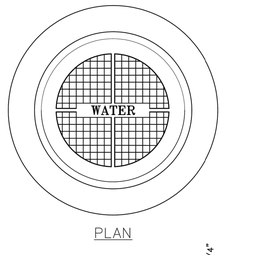
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



WATER VALVE VAULT

City of Port Wentworth
TECHNICAL DETAILS
W–35

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

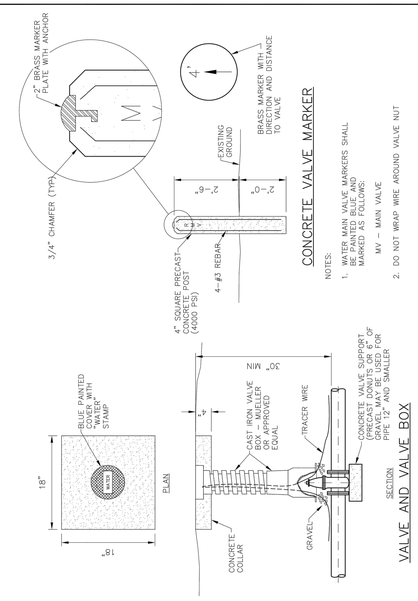


NOTE:
MANHOLE RING & COVER SHALL BE HEAVY DUTY RATED EQUAL TO U. S. FOUNDRY CO. USF 195–ORS. TOTAL WEIGHT 325# TYPE "C" LID TO HAVE MACHINED BEARING SURFACES. LID TO BE LETTERED 2 1/2" –3" LETTER HEIGHT "WATER" (NON VENTED). MANHOLE RING SHALL INCLUDE A WATERTIGHT GASKET. STACKING CLEATS ON THE BOTTOM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

MANHOLE RING & COVER

City of Port Wentworth
TECHNICAL DETAILS
W–34

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



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

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON J. BRYANT, P.E.
GEORGIA FIRE PROTECTION
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED PROFESSIONAL ENGINEER 38045 JASON JOSEPH BRYANT

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

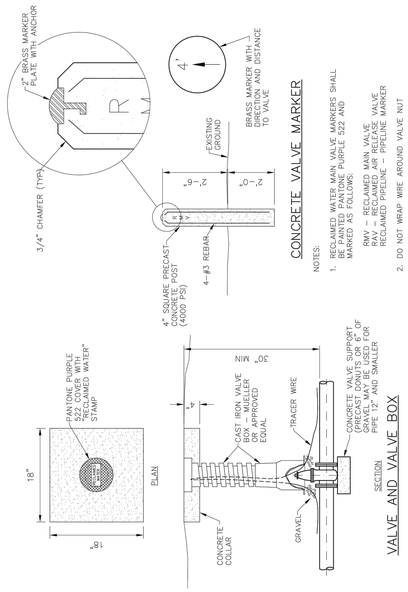
Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	----
Date:	5/31/22

SHEET
C2.15

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Details.dwg

Attachment: The Cottages at RH 7-0906-04-091 S:Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

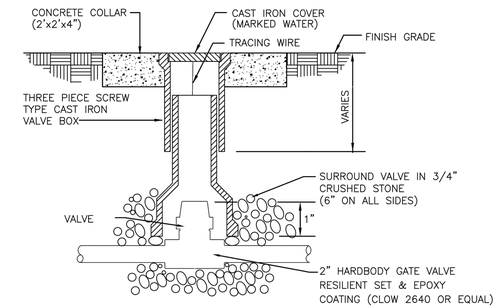
Wednesday, December 21, 2022 11:43:57 AM



WATER VALVE 4" OR 6"

City of Port Wentworth
TECHNICAL DETAILS
RW–6

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



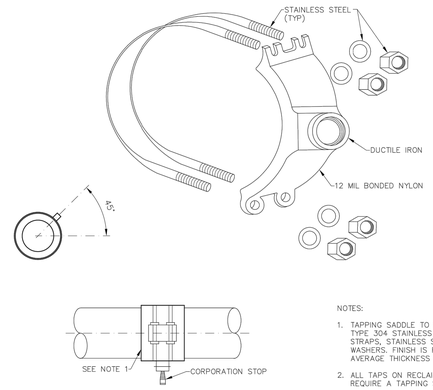
NOTE:

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
RW–7

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



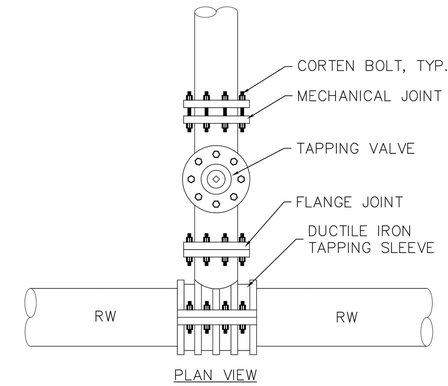
NOTES:

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 RECLAIMED WATER MAIN WILL REQUIRE A TAPPING SADDLE.

1" AND 2" TAPPING SADDLE

City of Port Wentworth
TECHNICAL DETAILS
RW–8

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



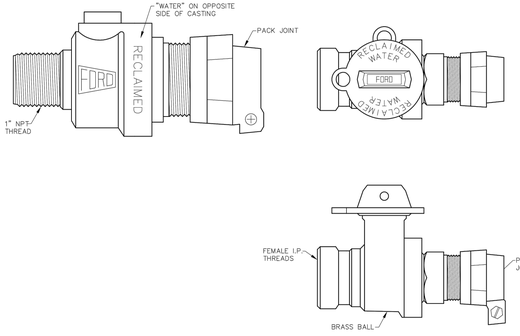
PLAN VIEW

NOTE:
1. THE TAPPING SLEEVE AND VALVE MUST BE INSTALLED IN A MANHOLE. SEE DETAIL RW–5 FOR THE MANHOLE DETAIL.

STANDARD TAPPING SLEEVE

City of Port Wentworth
TECHNICAL DETAILS
RW–9

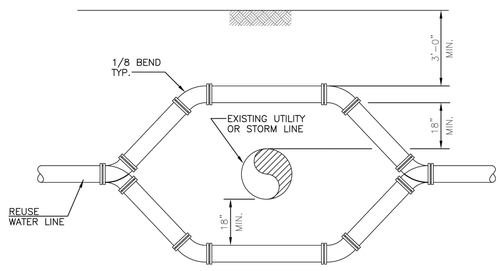
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



BRASS FITTINGS FOR WATER METER

City of Port Wentworth
TECHNICAL DETAILS
RW–14

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



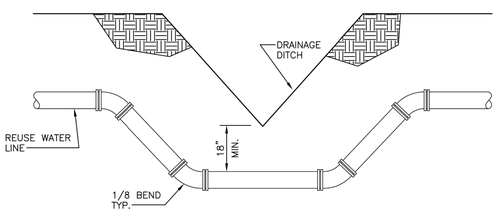
NOTES:

1. REUSE 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 REUSE 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
RW–16

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



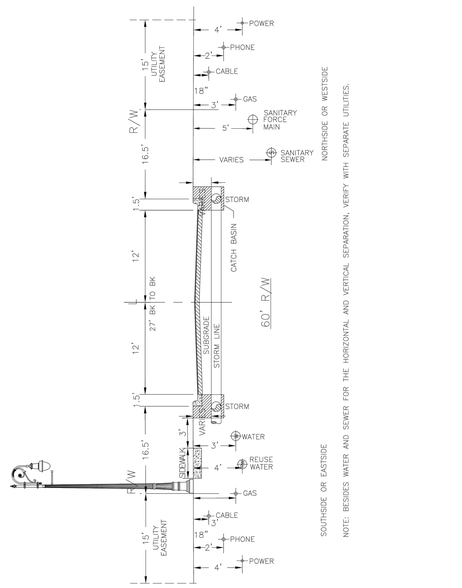
NOTES:

1. REUSE WATER LINE SHALL BE DUCTILE IRON BELOW STORM DRAINAGE DITCH.
2. STRAIGHT RUN OF REUSE WATER LINE DIRECTLY BELOW NEW OR EXISTING DRAINAGE DITCH MUST BE 10' MINIMUM WITH NO JOINT.
3. JOINTS SHALL BE RESTRAINED IN ACCORDANCE WITH CITY OF PORT WENTWORTH STANDARD DETAILS.

UTILITY CROSSING DRAINAGE DITCH

City of Port Wentworth
TECHNICAL DETAILS
RW–17

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



TYP. SECTION UNDERGROUND UTILITY INSTALLATION

City of Port Wentworth
TECHNICAL DETAILS
U–1

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

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA REGISTERED
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

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www.PittmanEngineeringCo.com

WATER & SEWER DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

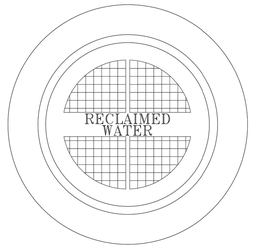
Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: ----
Date: 5/31/22

SHEET
C2.16

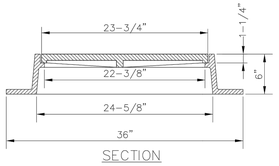
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Details.dwg

Wednesday, December 21, 2022 11:44:03 AM



PLAN



SECTION

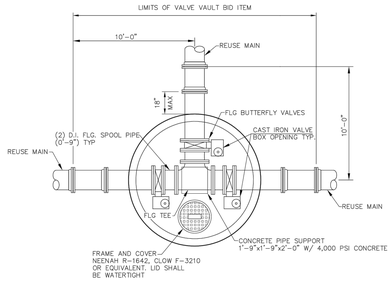
NOTE:

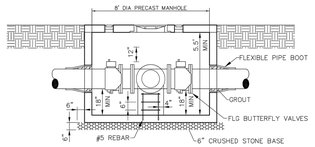
MANHOLE RIM & COVER EQUIVALENT TO U.S. FOUNDRY CO. USF 195-ORS. TOTAL WEIGHT 325#. TYPE "E" LID TO HAVE MACHINED BEARING SURFACES. LID TO BE LETTERED "RECLAIMED WATER" FOR RECLAIMED WATER ARV MANHOLES OR RECLAIMED WATER VALVE MANHOLES.

REUSE WATER MANHOLE RING & COVER

City of Port Wentworth
TECHNICAL DETAILS
RW-2

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





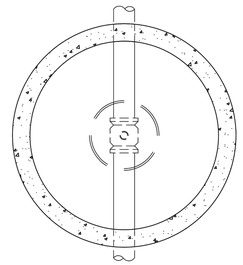
REUSE VALVE VAULT

City of Port Wentworth
TECHNICAL DETAILS
RW-3

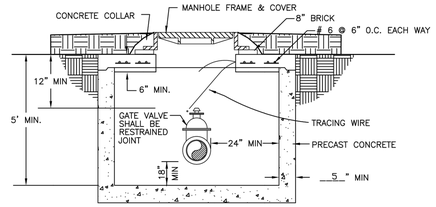
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

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.
5. POLYPROPYLENE MANHOLE STEPS SHALL BE PROVIDED AT 12" O.C. FOR MANHOLES GREATER THAN 4 FEET DEEP.



PLAN



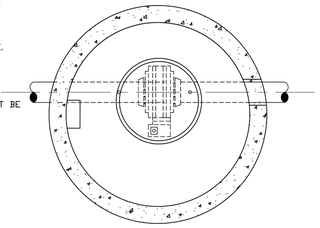
VALVE MANHOLE FOR 8" & GREATER GATE VALVE

City of Port Wentworth
TECHNICAL DETAILS
RW-5

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.
5. POLYPROPYLENE MANHOLE STEPS SHALL BE PROVIDED AT 12" O.C. FOR MANHOLES GREATER THAN 4 FEET DEEP.



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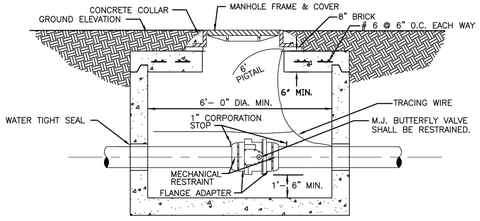
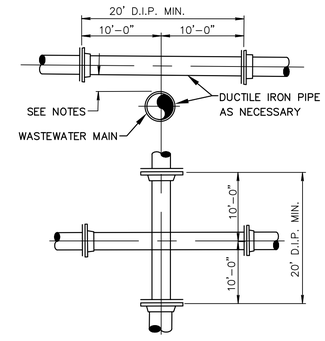


SECTION

VALVE MANHOLE FOR BUTTERFLY VALVES

City of Port Wentworth
TECHNICAL DETAILS
RW-4

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



NOTES:

1. STORM SEWER, GRAVITY WASTEWATER AND RECLAIMED WATER MAIN CROSSING UNDER POTABLE WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE. WHERE THIS MINIMUM SEPARATION CANNOT BE MAINTAINED, THE CROSSING SHALL BE ARRANGED SO THAT THE STORM/WASTEWATER/RECLAIMED WATER PIPE JOINTS AND POTABLE WATER MAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN (10) FEET BETWEEN ANY TWO JOINTS, BOTH PIPES SHALL BE D.I.P., AND THE MINIMUM VERTICAL SEPARATION SHALL BE 6 INCHES. WHERE THERE IS NO ALTERNATIVE TO STORM/WASTEWATER/RECLAIMED WATER PIPES CROSSING OVER A POTABLE WATER MAIN, THE CRITERIA FOR MINIMUM 18" VERTICAL SEPARATION BETWEEN LINES AND JOINT ARRANGEMENT, AS STATED ABOVE, SHALL BE REQUIRED, AND BOTH PIPES SHALL BE D.I.P. IRRESPECTIVE OF SEPARATION. D.I.P. IS NOT REQUIRED FOR STORM SEWERS.
2. MAINTAIN MIN. TEN (10) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN POTABLE WATER MAIN AND STORM SEWER, WASTEWATER MAIN, OR FORCE MAIN MAINTAIN MIN. THREE (3) FEET HORIZONTAL DISTANCE (WALL TO WALL) BETWEEN RECLAIMED WATER MAIN AND POTABLE WATER MAIN, STORM SEWER, WASTEWATER GRAVITY MAIN OR FORCE MAIN.

RECLAIMED WATER PIPE SEPARATION		
APPROVED BY: RD	DATE: 4/21/06	DRAWING NO. RW 8a
SCALE:	REVISED:	SHT. 1 OF 2

NOTES:

3. FORCE MAIN CROSSING POTABLE WATER MAIN OR RECLAIMED WATER MAIN SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN (18) INCHES BETWEEN THE OUTSIDE OF THE FORCE MAIN AND OUTSIDE OF THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN WITH THE POTABLE WATER MAIN OR RECLAIMED WATER MAIN CROSSING OVER THE FORCE MAIN.
4. DO NOT EXCEED 75% OF MANUFACTURERS RECOMMENDED MAXIMUM JOINT DEFLECTION FOR DUCTILE IRON PIPE. PVC PIPE CURVATURE MAY ONLY BE ACCOMPLISHED BY INSTALLING APPROPRIATE BENDS.
5. POTABLE WATER SERVICE LINES SHALL CROSS OVER WASTEWATER MAINS WITH MIN. 12" VERTICAL SEPARATION. WHERE THIS MIN. SEPARATION CAN NOT BE MAINTAINED, THE WATER SERVICE SHALL BE ENCASED IN A MIN. 10' LONG CASING CENTERED OVER THE CROSSING WITH MIN. 6" VERTICAL SEPARATION.

RECLAIMED WATER PIPE SEPARATION		
APPROVED BY: RD	DATE: 4/21/06	DRAWING NO. RW 8b
SCALE:	REVISED:	SHT. 2 OF 2

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON J. BRYANT, P.E.
GEORGIA REGISTERED
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

WATER & SEWER DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: ----
Date: 5/31/22

SHEET
C2.17

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Water Sewer Details.dwg

Wednesday, December 21, 2022 2:51:53 PM

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

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PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (SHADED-TYP)

PHASE 1 CONSTRUCTION (TEMP. FES)

100' 50' 0' 100'
GRAPHIC SCALE-1"=100'-0"

REV.	REVISIONS	BY	DATE
1.	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

COMPOSITE STORM DRAINAGE PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=100'
Date:	10/25/22

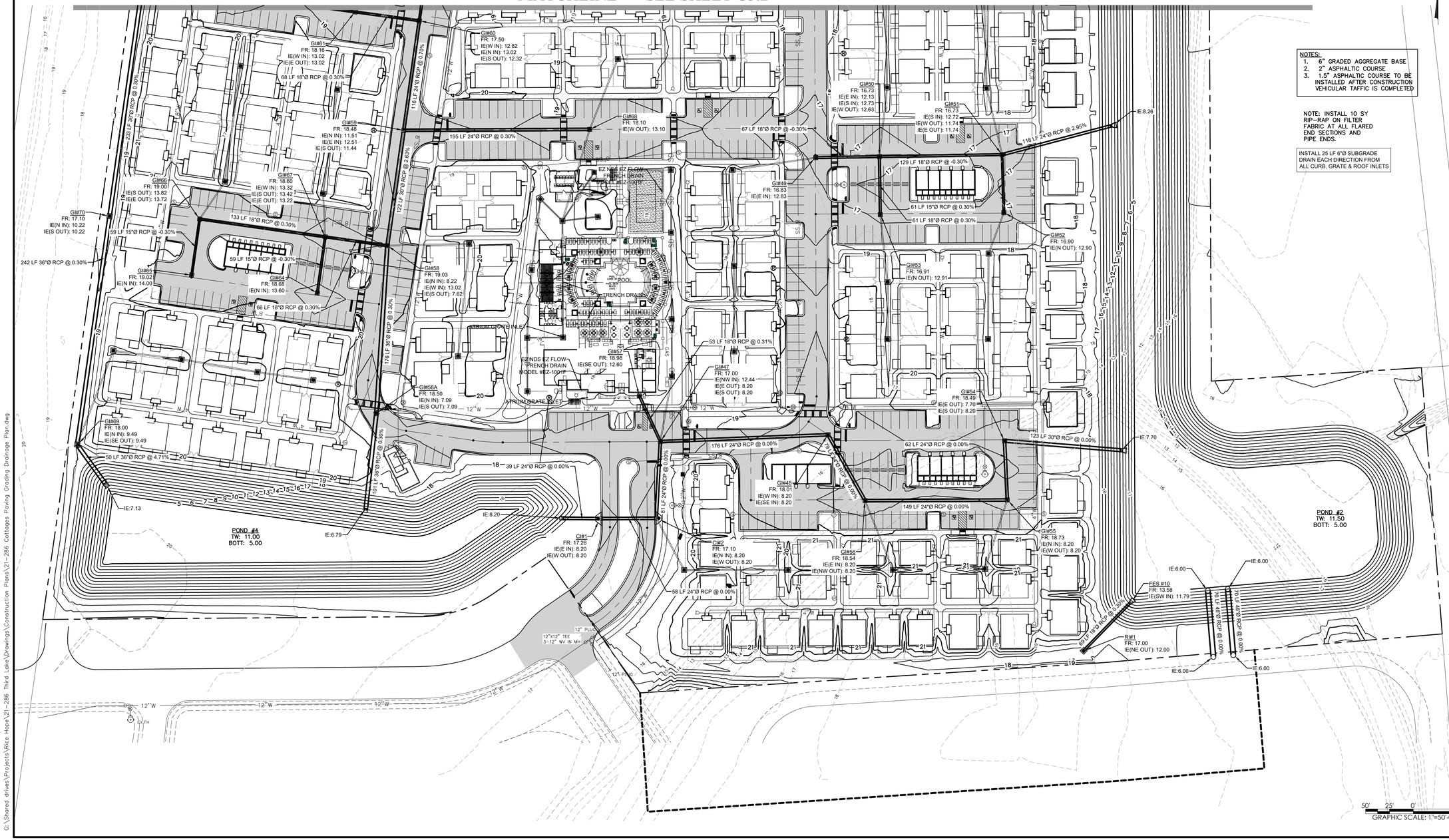
SHEET
C3.0

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Drainage Composite Exhibit.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Revision MAR 2023)

Thursday, December 22, 2022 11:00:31 AM

MATCHLINE -- SEE SHEET C3.2


GI#61
FR: 18.16
IE(W IN): 13.02
IE(E OUT): 13.02
68 LF 18"Ø RCP @ 0.30%
GI#59
FR: 18.48
IE(N IN): 11.51
IE(E IN): 12.51
IE(S OUT): 11.44
GI#60
FR: 17.50
IE(W IN): 12.82
IE(N IN): 13.02
IE(S OUT): 12.32
GI#58
FR: 19.03
IE(N IN): 8.22
IE(W IN): 13.02
IE(S OUT): 7.62
GI#57
FR: 18.98
IE(SE OUT): 12.60
GI#58A
FR: 18.50
IE(N IN): 7.09
IE(S OUT): 7.09
GI#69
FR: 18.00
IE(N IN): 9.49
IE(SE OUT): 9.49
GI#70
FR: 17.10
IE(N IN): 10.22
IE(S OUT): 10.22
GI#65
FR: 19.02
IE(N IN): 14.00
GI#64
FR: 18.68
IE(N IN): 13.60
GI#67
FR: 18.60
IE(W IN): 13.32
IE(S OUT): 13.42
IE(E OUT): 13.22
GI#66
FR: 19.00
IE(S OUT): 13.82
IE(E OUT): 13.72
GI#68
FR: 18.10
IE(W OUT): 13.10
GI#49
FR: 16.83
IE(E IN): 12.83
GI#50
FR: 16.73
IE(E IN): 12.13
IE(S IN): 12.73
IE(W OUT): 12.63
GI#51
FR: 16.73
IE(S IN): 12.72
IE(W OUT): 11.74
IE(E OUT): 11.74
GI#52
FR: 16.90
IE(N OUT): 12.90
GI#53
FR: 16.91
IE(N OUT): 12.91
GI#54
FR: 18.48
IE(E OUT): 7.70
IE(S OUT): 8.20
GI#55
FR: 18.73
IE(N IN): 8.20
IE(W OUT): 8.20
GI#56
FR: 18.54
IE(E IN): 8.20
IE(NW OUT): 8.20
GI#47
FR: 17.00
IE(NW IN): 12.44
IE(E OUT): 8.20
IE(S OUT): 8.20
GI#48
FR: 18.01
IE(W IN): 8.20
IE(SE IN): 8.20
CI#1
FR: 17.26
IE(E IN): 8.20
IE(W OUT): 8.20
CI#2
FR: 17.10
IE(N IN): 8.20
IE(W OUT): 8.20
RI#1
FR: 17.00
IE(NE OUT): 12.00
FES #10
FR: 13.58
IE(SW IN): 11.79
242 LF 36"Ø RCP @ 0.30%
233 LF 36"Ø RCP @ 0.30%
176 LF 36"Ø RCP @ 0.30%
50 LF 36"Ø RCP @ 4.71%
116 LF 24"Ø RCP @ 0.70%
122 LF 30"Ø RCP @ 2.63%
195 LF 24"Ø RCP @ 0.30%
133 LF 18"Ø RCP @ 0.30%
59 LF 15"Ø RCP @ -0.30%
59 LF 15"Ø RCP @ -0.30%
66 LF 18"Ø RCP @ 0.30%
39 LF 24"Ø RCP @ 0.00%
67 LF 18"Ø RCP @ -0.30%
129 LF 18"Ø RCP @ -0.30%
61 LF 15"Ø RCP @ 0.30%
61 LF 18"Ø RCP @ 0.30%
118 LF 24"Ø RCP @ 2.95%
53 LF 18"Ø RCP @ 0.31%
176 LF 24"Ø RCP @ 0.00%
91 LF 24"Ø RCP @ 0.00%
91 LF 30"Ø RCP @ 0.00%
149 LF 24"Ø RCP @ 0.00%
62 LF 24"Ø RCP @ 0.00%
123 LF 30"Ø RCP @ 0.00%
58 LF 24"Ø RCP @ 0.00%
69 LF 18"Ø RCP @ 0.30%
101 LF 48"Ø RCP @ 0.00%
EZ Next EZ FLOW FRENCH DRAIN MODEL #EZ-100TF
EZ-ENDS EZ FLOW FRENCH DRAIN MODEL #EZ-100TF
ATRIUM GRATE INLET
POOL
TRENCH DRAIN
12"x12" TEE 3-12" W IN MH
12" PLUG
POND #4
TW: 11.00
BOTT: 5.00
POND #2
TW: 11.50
BOTT: 5.00
IE:7.13
IE:8.20
IE:6.79
IE:8.26
IE:7.70
IE:6.00
IE:6.00
IE:6.00
IE:6.00
12"W
12"W
12"W

Thursday, December 22, 2022 12:58:25 PM

MATCHLINE -- SEE SHEET C3.3

MATCHLINE -- SEE SHEET C3.1

NOTES:
1. 6" GRADED AGGREGATE BASE
2. 2" ASPHALTIC COURSE
3. 1.5" ASPHALTIC COURSE TO BE INSTALLED AFTER CONSTRUCTION VEHICULAR TAFFIC IS COMPLETED

INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

POND #2
TW: 11.50
BOTT: 5.00

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

REGISTERED GEORGIA
No. 38245
PROFESSIONAL ENGINEER
JASON JOSEPH LANIER

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

PAVING, GRADING & DRAINAGE PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	PHASE 1
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	3/25/22

SHEET
C3.2

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Paving Grading Drainage Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:48:32 AM

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Paving Grading Drainage Plan.dwg

NOTES:
1. 6" GRADED AGGREGATE BASE
2. 2" ASPHALTIC COURSE
3. 1.5" ASPHALTIC COURSE TO BE INSTALLED AFTER CONSTRUCTION VEHICULAR TAFFIC IS COMPLETED

INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

MATCHLINE -- SEE SHEET C3.2

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

GEORGIA REGISTERED 38245 PROFESSIONAL ENGINEER JASON JOSEPH MOSLEY

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

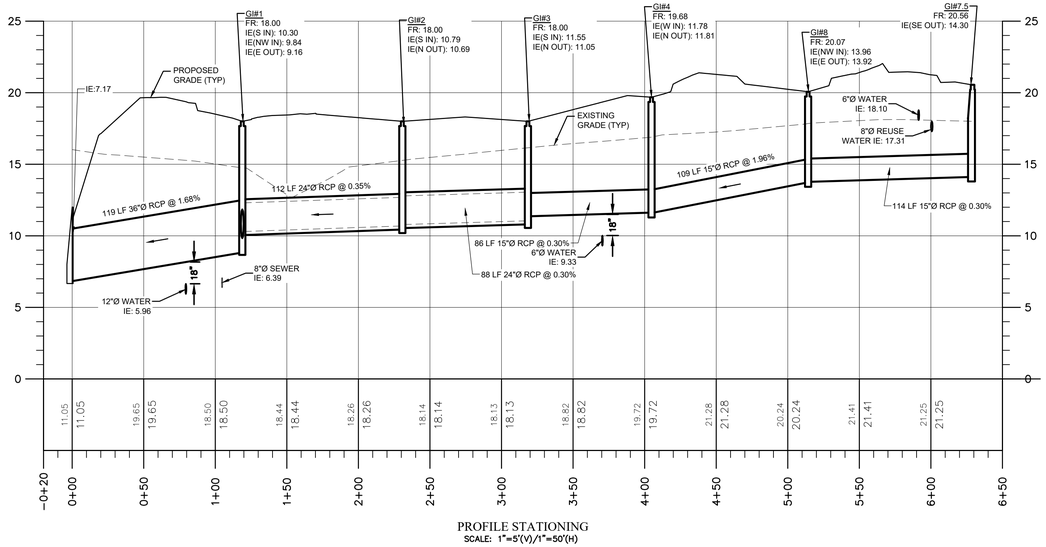
PAVING, GRADING & DRAINAGE PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: 1"=50'
Date: 3/25/22

SHEET
C3.3

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan 2022 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



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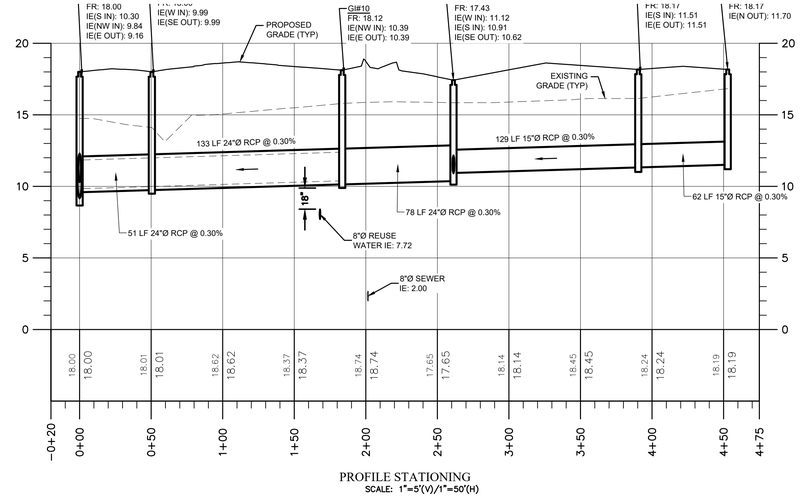

PROFILE STATIONING
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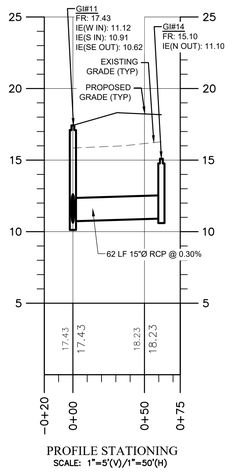

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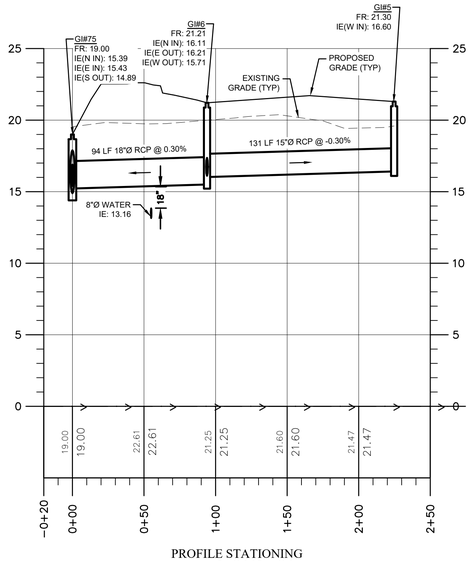

PROFILE STATIONING
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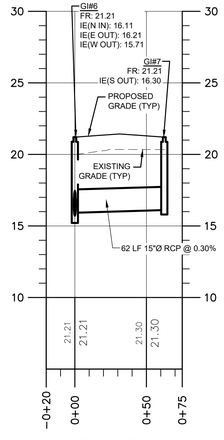

PROFILE STATIONING
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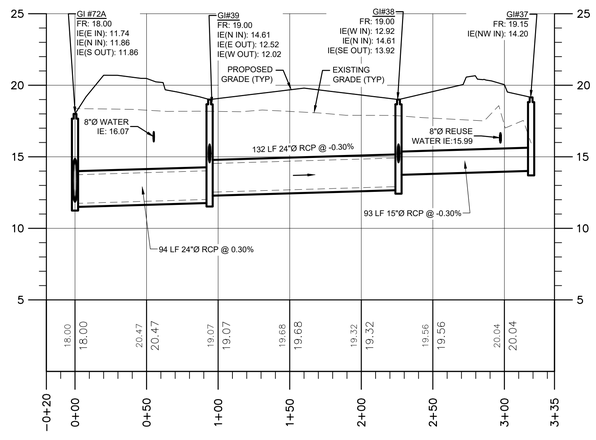
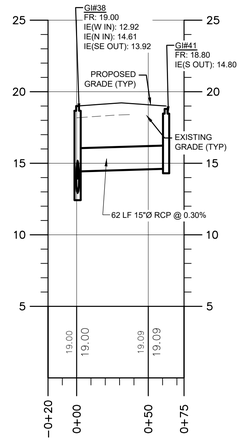
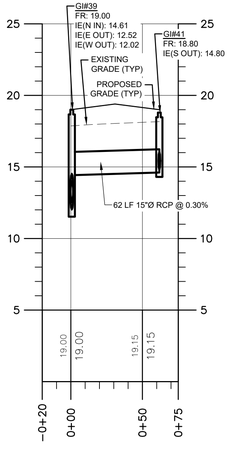


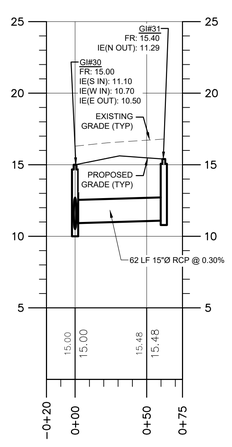
PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA
No. 38245
PROFESSIONAL ENGINEER
JASON JOSEPH BRYANT

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

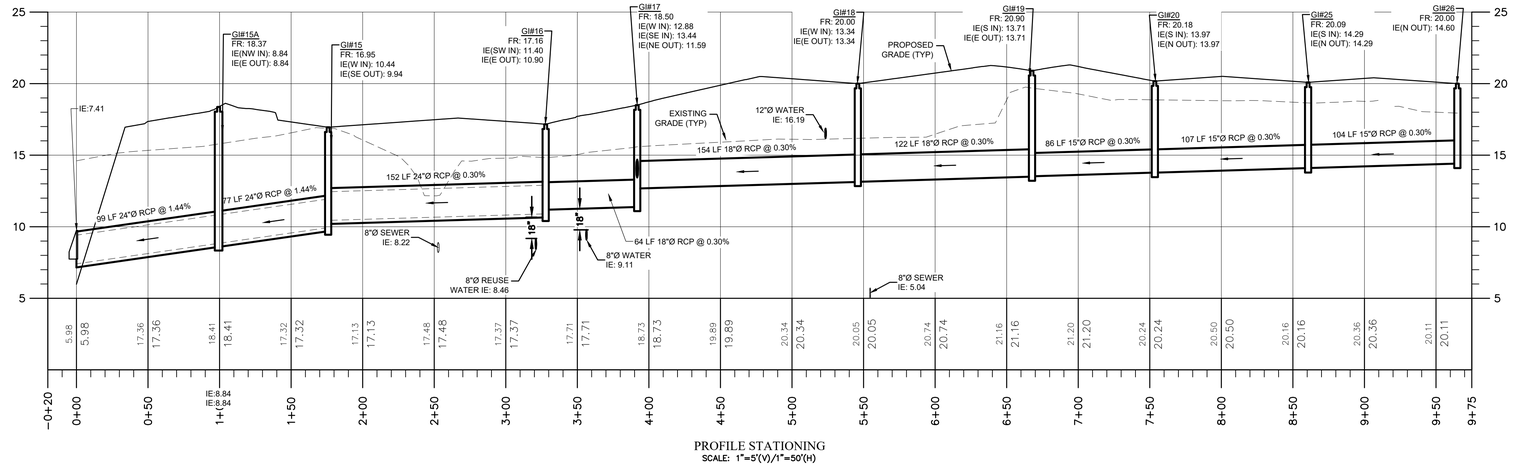
STORM DRAINAGE PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

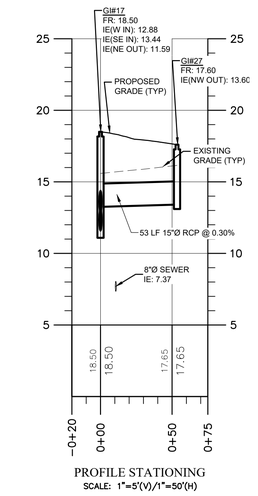
Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	AS SHOWN
Date:	5/31/22

SHEET
C3.4

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
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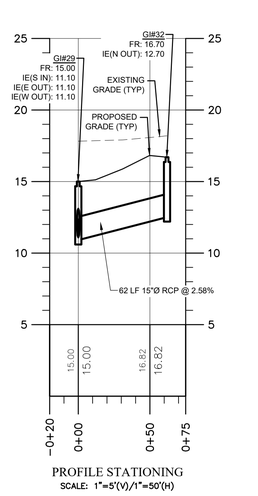
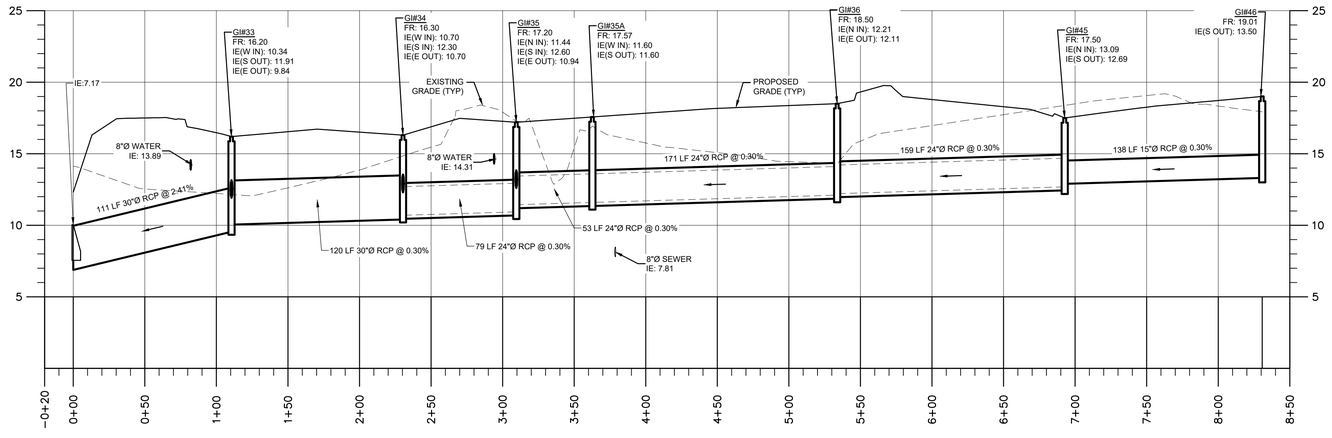
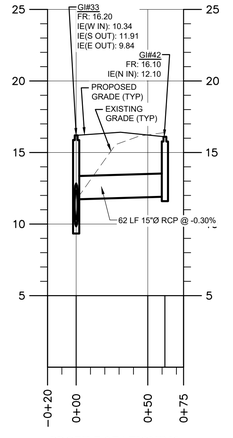


PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
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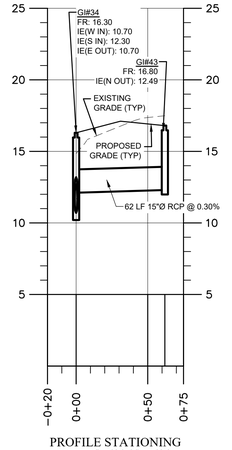

PROFILE STATIONING
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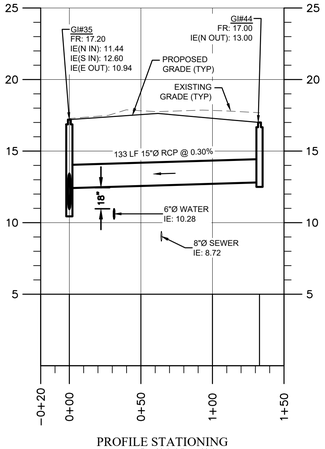

PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7397

REGISTERED GEORGIA PROFESSIONAL ENGINEER No. 38245 JASON J. BRYANT JOSEPH

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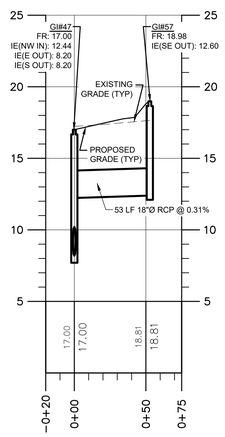
STORM DRAINAGE PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	AS SHOWN
Date:	5/31/22

SHEET
C3.5

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



PROFILE STATIONING
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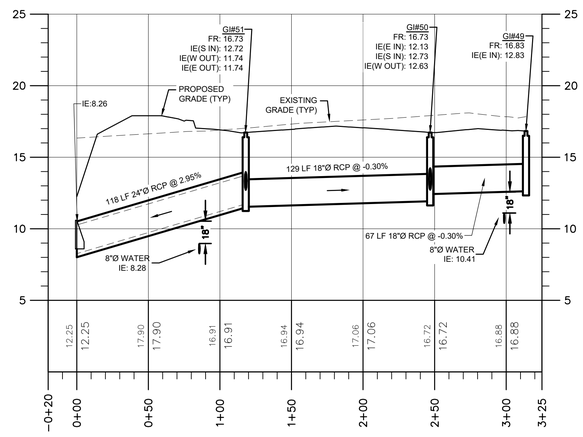

PROFILE STATIONING
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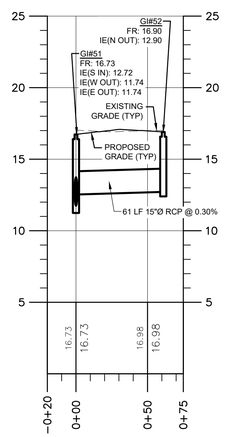
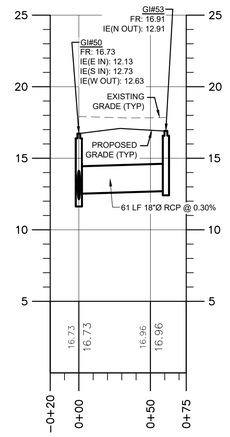
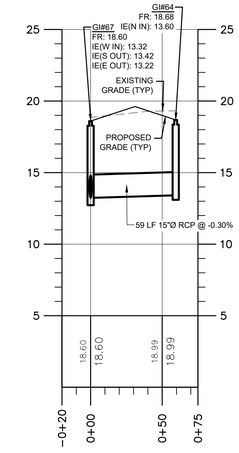


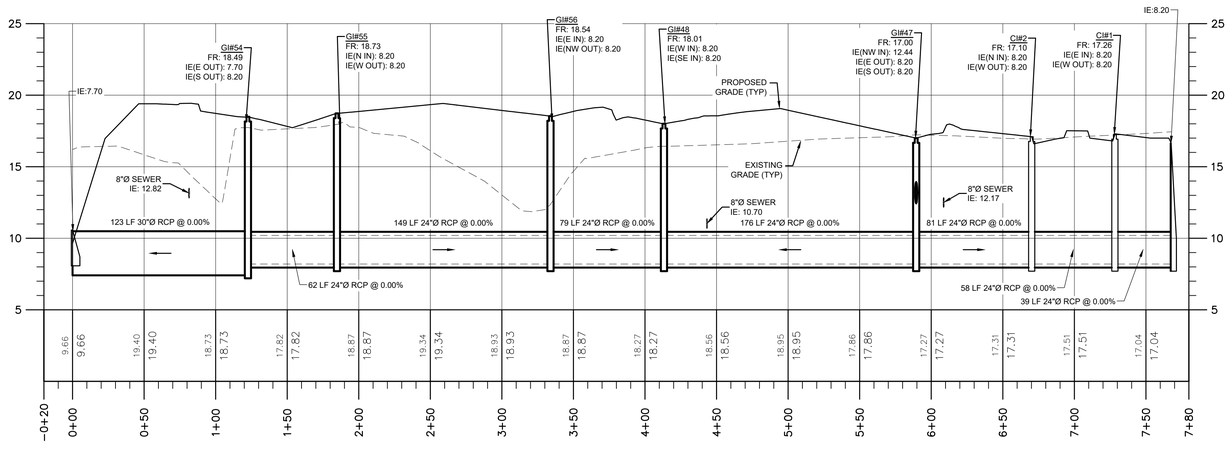
PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
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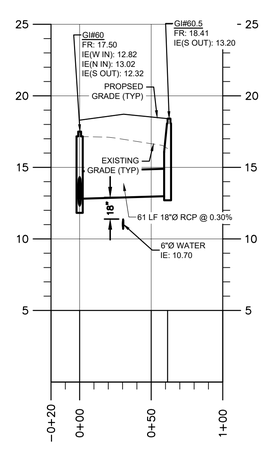

PROFILE STATIONING
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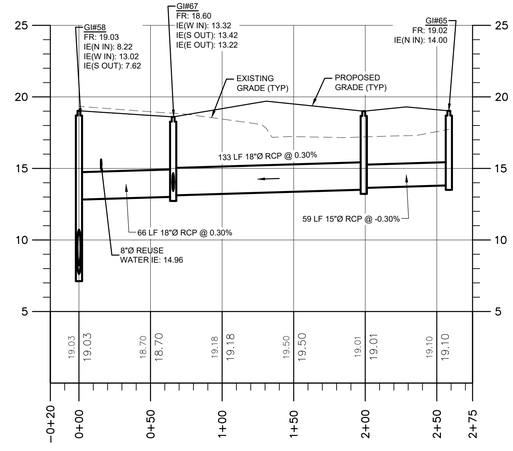

PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA
No. 38245
PROFESSIONAL ENGINEER
JASON JOSEPH BRYANT

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www.PittmanEngineeringCo.com

STORM DRAINAGE PROFILES

THE COTTAGES AT RICE HOPE

THE COTTAGES AT RICE HOPE

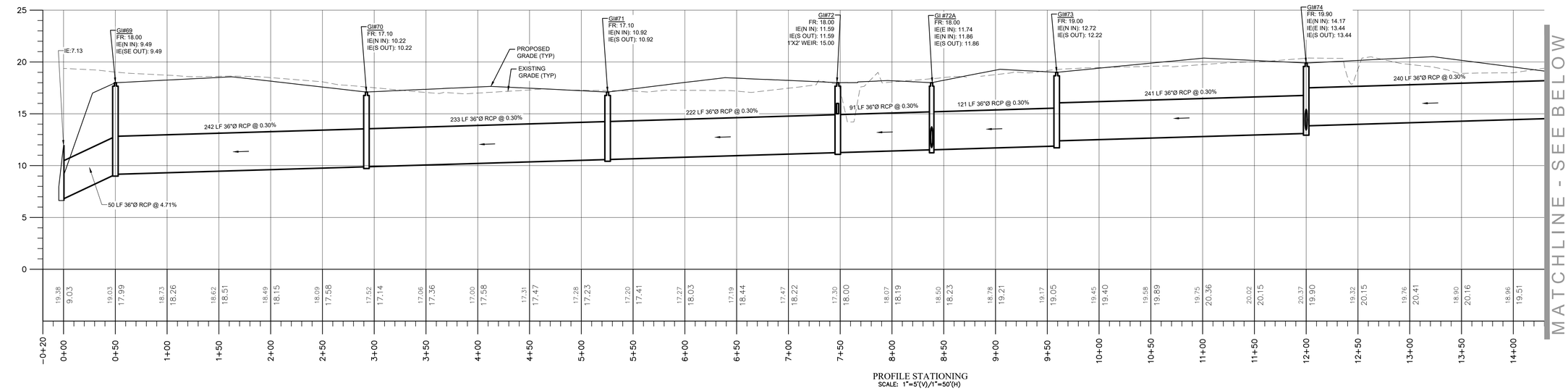
Prepared For

THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C3.6

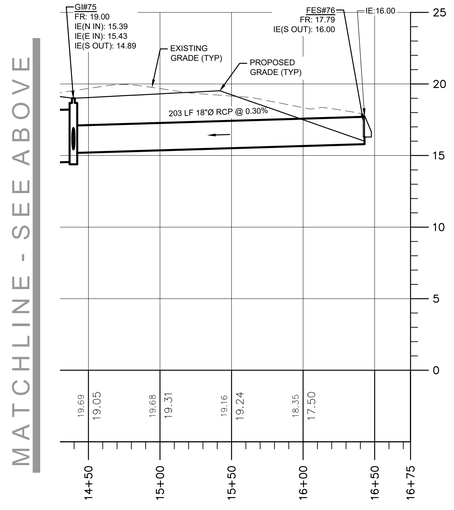
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

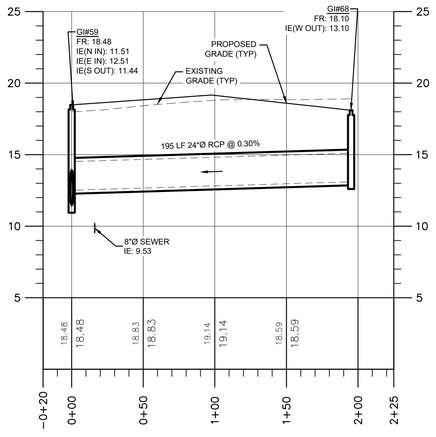


PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

MATCHLINE - SEE BELOW

MATCHLINE - SEE ABOVE





PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	REVISIONS	BY	DATE
	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED
GEORGIA
No. 38245
PROFESSIONAL
ENGINEER
JASON JOSEPH BRYANT

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STORM DRAINAGE PROFILES

THE COTTAGES AT RICE HOPE
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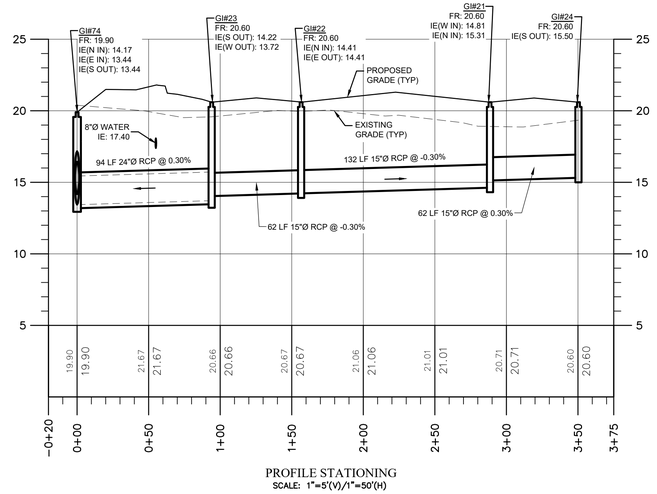
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	AS SHOWN
Date:	5/31/22

SHEET
C3.7

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



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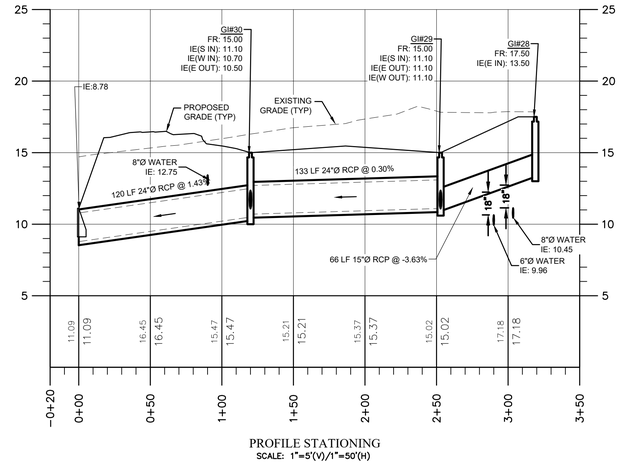
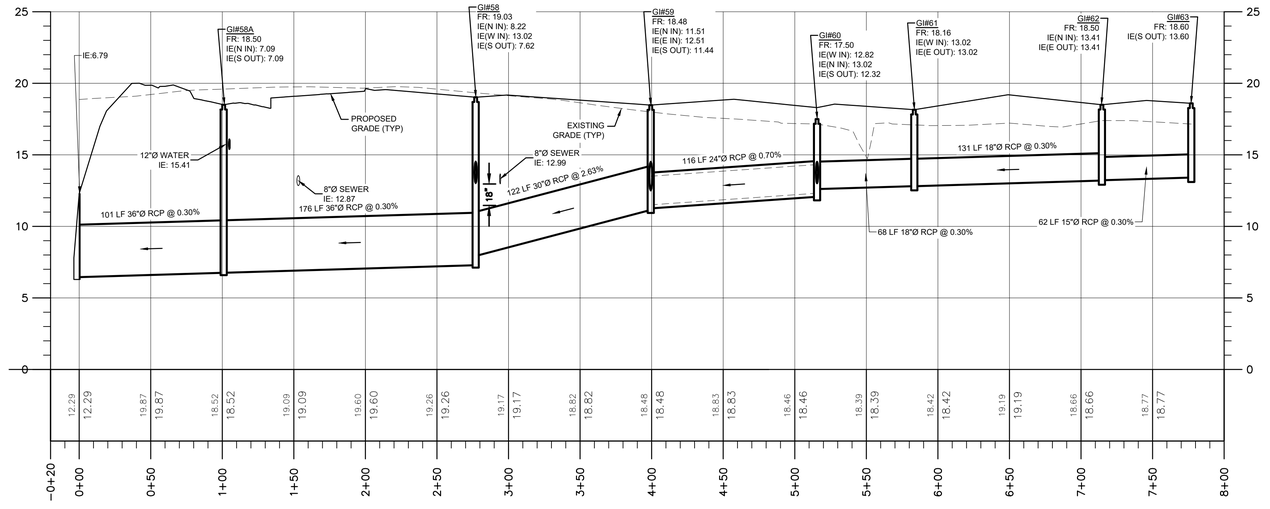


PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)



PROFILE STATIONING
SCALE: 1"=5'(V)/1"=50'(H)

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

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STORM DRAINAGE PROFILES

THE COTTAGES AT RICE HOPE
THE COTTAGES AT RICE HOPE
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: AS SHOWN
Date: 5/31/22

SHEET
C3.8

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Thursday, December 22, 2022 11:03:41 AM

MATCHLINE -- SEE SHEET C3.10

MATCHLINE -- SEE SHEET C3.8

NOTE:
YARD INLETS (Y) TO BE NYLOPLAST INLINE TEE DRAINS WITH 15" X 12" CAST IRON GRATES. ALL YARD DRAINAGE PIPES TO BE 12"ø ADS N-12 PERFORATED PIPE WITH SOCK.

GRAPHIC SCALE: 1"= 30'-0"

Know what's below. Call before you dig.

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

21-286 COTTAGES at RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON J. BRYANT

Pittman Engineering Co., LLC
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Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=30'
Date:	5/31/22

SHEET
C3.9

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Neighborhood Grading Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

MATCHLINE -- SEE SHEET C3.12

MATCHLINE -- SEE SHEET C3.9

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

21-286 COTTAGES at RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED PROFESSIONAL ENGINEER GEORGIA No. 38245 JASON JOSEPH BRYANT

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Richmond Hill, GA 31324
912-445-0578
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NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=30'
Date:	5/31/22

SHEET
C3.10

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

30' 15' 0' 30'
GRAPHIC SCALE: 1"= 30'-0"

Thursday, December 22, 2022 11:10:41 AM

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:53:44 AM

MATCHLINE -- SEE SHEET C3.13

MATCHLINE -- SEE SHEET C3.9

MATCHLINE -- SEE SHEET C3.12

Know what's below.
Call before you dig.

GRAPHIC SCALE: 1"=30'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA PE LIC. #34241
DESIGN PROFESSIONAL
CERTIFICATION #73897

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

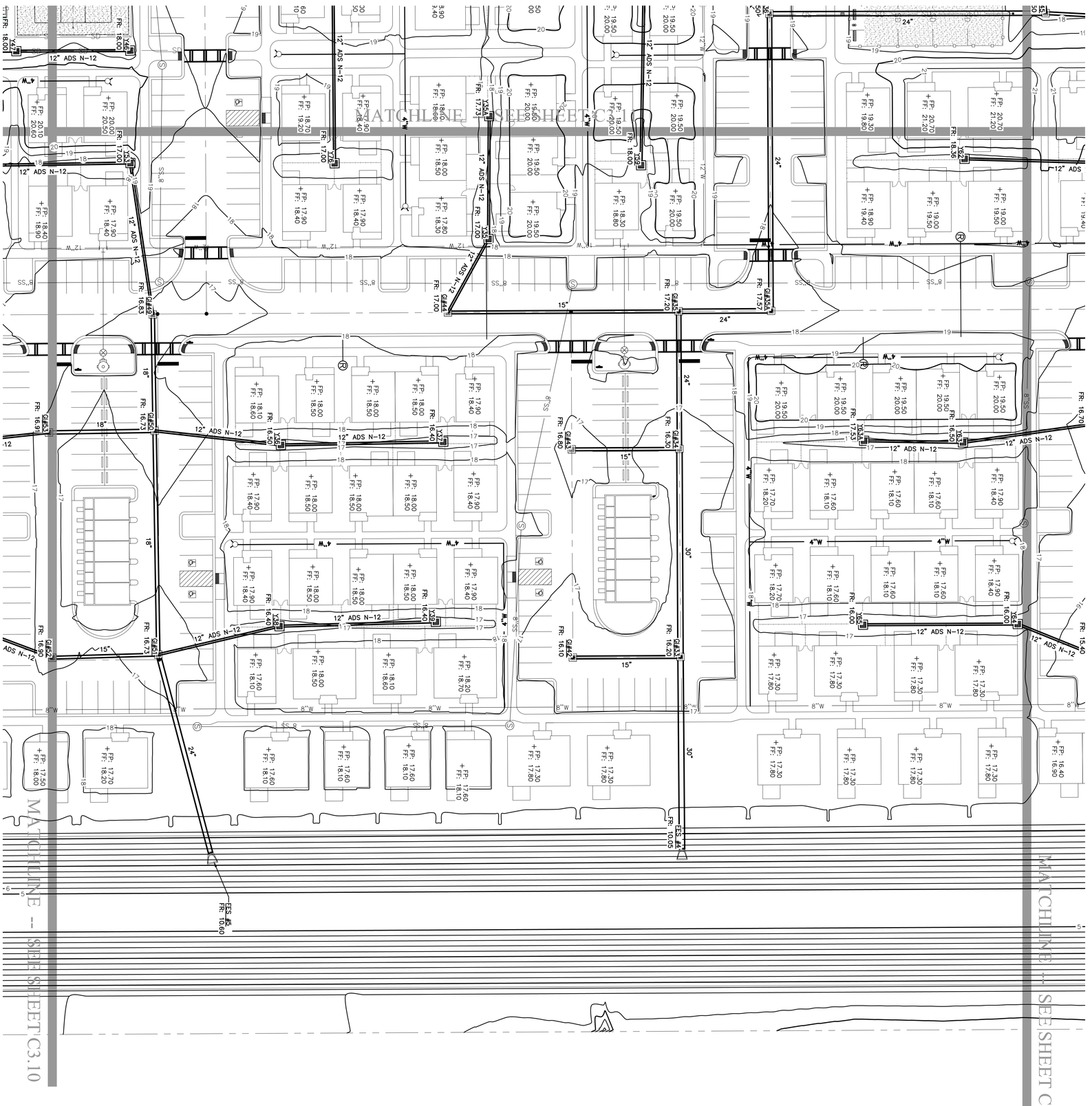
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=30'
Date:	5/31/22

SHEET
C3.11

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Neighborhood Grading Plan.dwg



Know what's below. Call before you dig.

811

GRAPHIC SCALE: 1" = 30'-0"

NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE

PHASE 1

Prepared For

THIRD LAKE DEVELOPMENT, LLC

Pittman Engineering Co., LLC

2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RJP
Scale: 1"=30'
Date: 5/31/22

SHEET
C3.12

Wednesday, December 21, 2022 11:54:03 AM

MATCHLINE -- SEE SHEET C3.15

MATCHLINE -- SEE SHEET C3.11

Know what's below. Call before you dig.

30' 15' 0' 30'
GRAPHIC SCALE: 1"= 30'-0"

REV.	DESCRIPTION	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA REGISTERED PROFESSIONAL ENGINEER
CERTIFICATION #73897

Pittman Engineering Co., LLC
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NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
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Scale: 1"=30'
Date: 5/31/22

SHEET
C3.13

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

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Wednesday, December 21, 2022 11:54:13 AM

MATCHLINE -- SEE SHEET C3.16

MATCHLINE -- SEE SHEET C3.13

MATCHLINE -- SEE SHEET C3.12

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA REG. NO. 38245
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED PROFESSIONAL ENGINEER JASON J. BRYANT JOSEPH

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NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Know what's below. Call before you dig.

GRAPHIC SCALE: 1"= 30'-0"

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=30'
Date:	5/31/22

SHEET
C3.14

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:54:23 AM

MATCHLINE -- SEE SHEET C3.16

MATCHLINE -- SEE SHEET C3.13

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA POWER LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED PROFESSIONAL ENGINEER 38245 JASON JAMES BRYANT JOSEPH

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Richmond Hill, GA 31324
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NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1`

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: 1"=30'
Date: 5/31/22

SHEET
C3.15

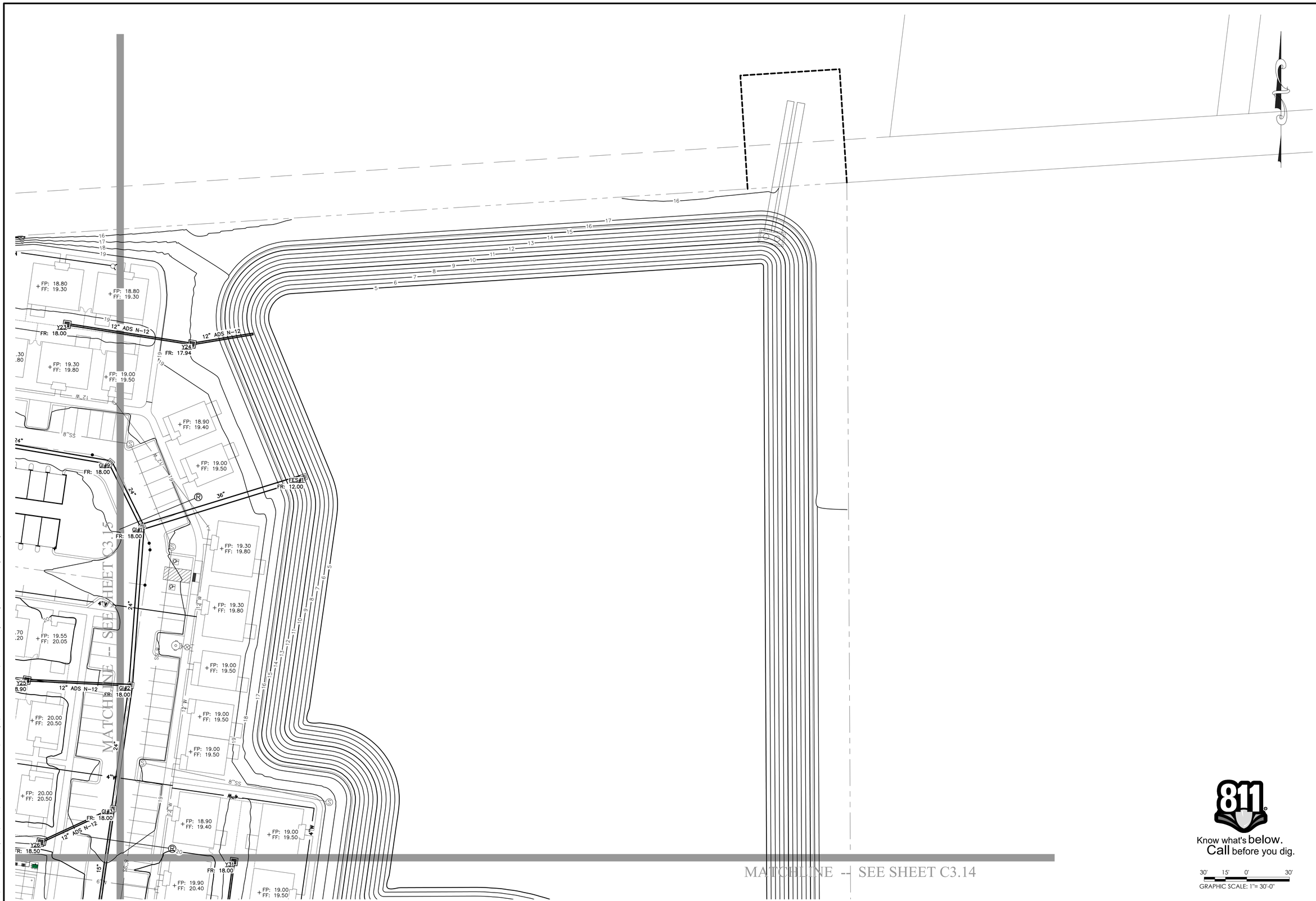
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

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

30' 15' 0' 30'
GRAPHIC SCALE: 1"= 30'-0"

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Neighborhood Grading Plan.dwg

Wednesday, December 21, 2022 11:54:32 AM



REV.	DESCRIPTION	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA REGISTERED
DESIGN PROFESSIONAL
CERTIFICATION #73897
GEORGIA REGISTERED PROFESSIONAL ENGINEER
JASON JOSEPH BRYANT
No. 38245

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

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

GRAPHIC SCALE: 1"= 30'-0"
30' 15' 0' 30'

NEIGHBORHOOD GRADING PLAN

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=30'
Date:	5/31/22

SHEET
C3.16

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Neighborhood Grading Plan.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

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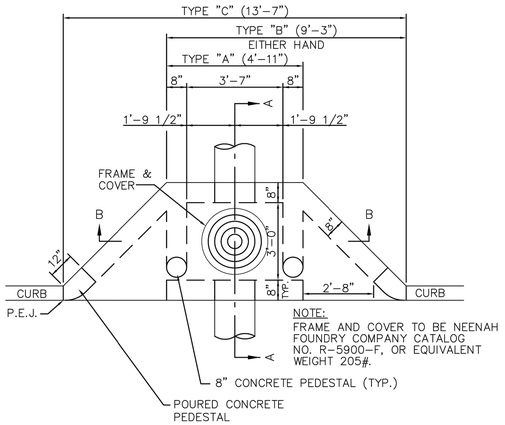


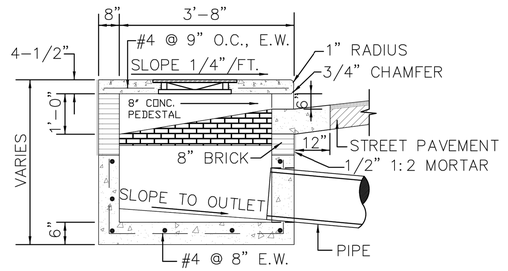
NOTE:
FRAME AND COVER TO BE NEENAH FOUNDRY COMPANY CATALOG NO. R-5900-F, OR EQUIVALENT WEIGHT 205#.

INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

PLAN OF CURB INLET

City of Port Wentworth
TECHNICAL DETAILS
SD-1

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



NOTES:
1. CHAMFER ALL EXPOSED CONCRETE EDGES 3/4"
2. PIPE TIEING TO CURB INLET MUST BE SEALED INSIDE AND OUTSIDE OF STRUCTURE WITH BRICK AND MORTAR

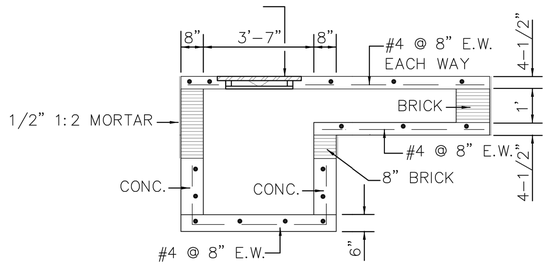
INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

CURB INLET SECTION A – A

City of Port Wentworth
TECHNICAL DETAILS
SD-3

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

NOTE:
C.I. MANHOLE FRAME AND COVER EQUIVALENT TO NEENAH R-5900-F. FRAME AND COVER TO BE MACHINE FITTED PRIOR TO LEAVING SHOP. WEIGHT – 205 LBS.



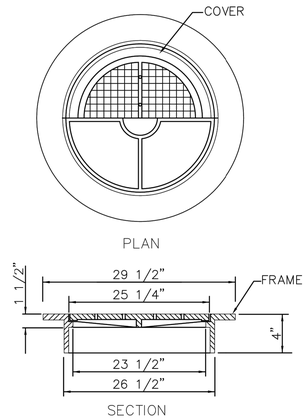
NOTES:
1. MATCH TOP OF PIPE ELEVATIONS WHEN DIFFERENT SIZE PIPES ARE CONSTRUCTED IN CURB INLET.
2. TYPE "B" INLET SHOWN

INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

CURB INLET SECTION B – B

City of Port Wentworth
TECHNICAL DETAILS
SD-4

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



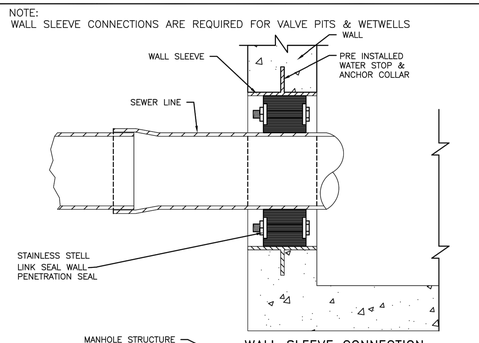
NOTES:
1. FRAME AND COVER TO BE NEENAH FOUNDRY COMPANY CATALOG NO. R-5900-F OR EQUIVALENT WEIGHT 205#.
2. COVER MUST HAVE FOUNDRY STAMP SHOWING THE UTILITY (DRAINAGE).

INLET FRAME & COVER

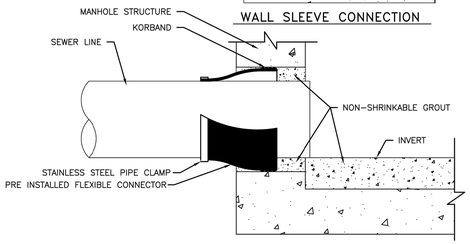
City of Port Wentworth
TECHNICAL DETAILS
SD-5

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

NOTE:
WALL SLEEVE CONNECTIONS ARE REQUIRED FOR VALVE PITS & WETWELLS



WALL SLEEVE CONNECTION

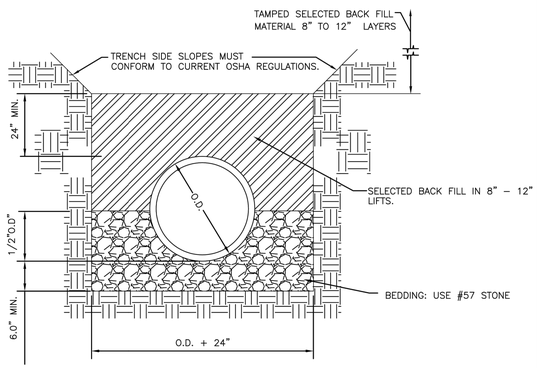


"BOOT" CONNECTION

PRECAST STRUCTURE PIPE CONNECTION

City of Port Wentworth
TECHNICAL DETAILS
S-6

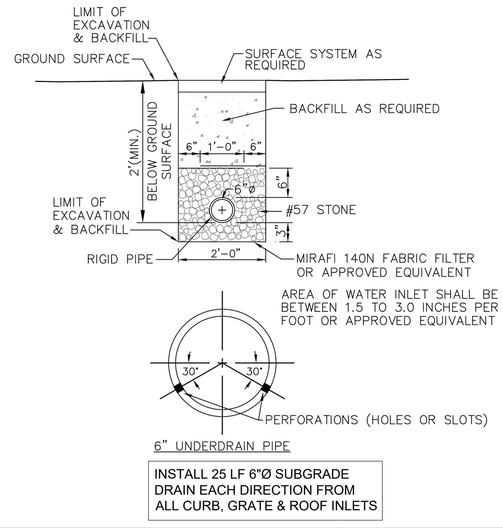
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



PIPE BEDDING

City of Port Wentworth
TECHNICAL DETAILS
S-8

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



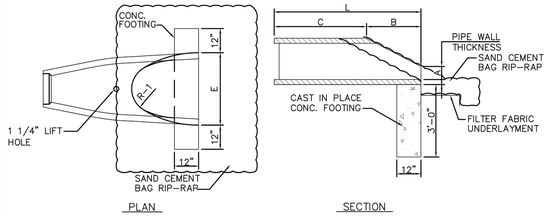
6" UNDERDRAIN PIPE

INSTALL 25 LF 6"Ø SUBGRADE DRAIN EACH DIRECTION FROM ALL CURB, GRATE & ROOF INLETS

6" UNDERDRAIN PIPE

City of Port Wentworth
TECHNICAL DETAILS
SD-10

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



FLARE DIMENSIONS						
PIPE DIA.	A	B	C	L	E	R-1
15"	6"	2'-3"	3'-10"	6'-1"	2'-6"	1'-0"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	1'-4"
24"	10"	3'-8"	2'-6"	6'-2"	4'-0"	1'-5"
30"	12"	4'-6"	1'-8"	6'-2"	5'-0"	1'-6"
36"	16"	5'-3"	2'-11"	8'-2"	6'-0"	2'-0"
42"	21"	5'-3"	2'-11"	8'-2"	6'-6"	2'-4"
REINFORCEMENT CONFORMS TO ASTM A-82						

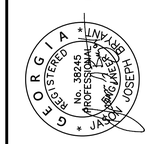
FLARED END SECTION

City of Port Wentworth
TECHNICAL DETAILS
SD-11

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

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON J. BRYANT, P.E.
GEORGIA REG. #
DESIGN PROFESSIONAL
CERTIFICATION #73897



Pittman Engineering Co., LLC
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PAVING, GRADING & DRAINAGE DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: ----
Date: 5/31/22

SHEET
C3.17

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

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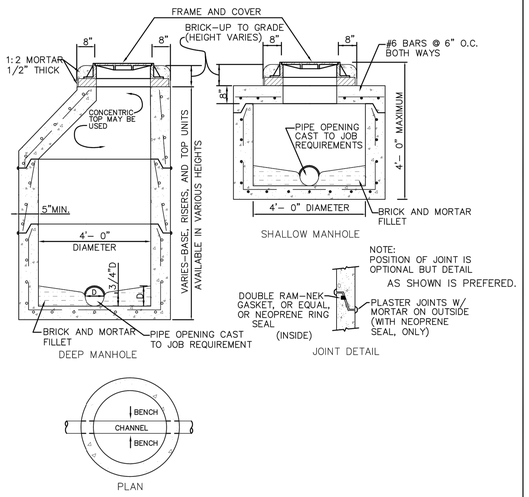
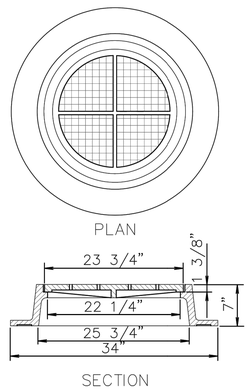


PRECAST STORM MANHOLE

City of Port Wentworth
TECHNICAL DETAILS
SD-12

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



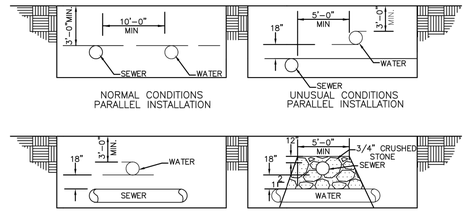
NOTE:

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



NOTES:

THE SEPARATION OF WATER MAINS AND SEWERS SHALL COMPLY WITH THE GEORGIA ENVIROMENTAL PROTECTION DIVISION MINIMUM STANDARDS FOR PUBLIC WATER SYSTEMS, WHICH ARE GENERALLY AS FOLLOWS:

A. PARALLEL INSTALLATION:

1. NORMAL CONDITIONS: THE INSIDE EDGE OF A WATER LINE SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM THE INSIDE EDGE OF ANY SANITARY SEWER, STORM SEWER OR SEWER MANHOLE.

2. UNUSUAL CONDITIONS: WHEN LOCAL CONDITIONS PREVENT A HORIZONTAL SEPARATION OF 10 FEET, AND WHEN APPROVED BY THE ENGINEER, THE INSIDE EDGE OF A WATER MAIN MAY BE LAID A MINIMUM OF 5 FEET FROM THE INSIDE EDGE OF A SEWER PROVIDED THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER (SEE DETAIL), AND THE WATER MAIN IS LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF.

B. CROSSINGS:

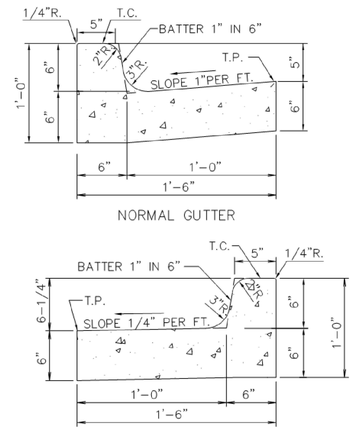
1. NORMAL CONDITIONS: WHENEVER POSSIBLE, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES HIGHER THAN THE TOP OF THE SEWER.

2. UNUSUAL CONDITIONS: IF A WATER MAIN MUST CROSS UNDER A SEWER, THE TOP OF THE WATER MAIN SHALL BE AT LEAST 18 INCHES LOWER THAN THE BOTTOM OF THE SEWER, THE WATER MAIN PIPE SHALL BE CENTERED AT THE CROSSING SO THAT THE JOINTS ARE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE SEWER, AND ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO PREVENT EXCESSIVE DEFLECTION OF THE SEWER AT THE CROSSING. ADEQUATE STRUCTURAL SUPPORT SHALL INCLUDE BACKFILLING THE ENTIRE UTILITY CROSSING AREA WITH 3/4" CRUSHED STONE AS SHOWN IN THE DETAIL.

MINIMUM WATER & SEWER PIPE SEPARATION

City of Port Wentworth
TECHNICAL DETAILS
U-3

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



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

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON J. BRYANT

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
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PAVING, GRADING & DRAINAGE DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	----
Date:	5/31/22

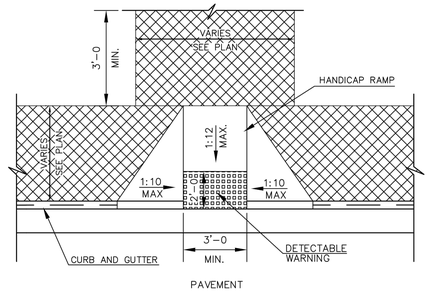
SHEET
C3.18

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

SURFACES SHALL MEET THE ADA ACCESSIBILITY GUIDELINES SECTION 4.29.2.



HANDICAP RAMP TYPE "A"

City of Port Wentworth
TECHNICAL DETAILS
P-4

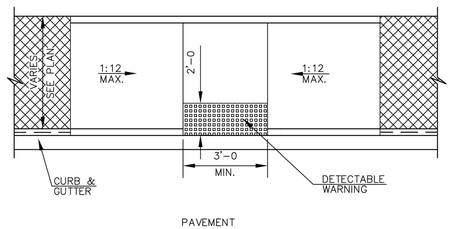
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007

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.

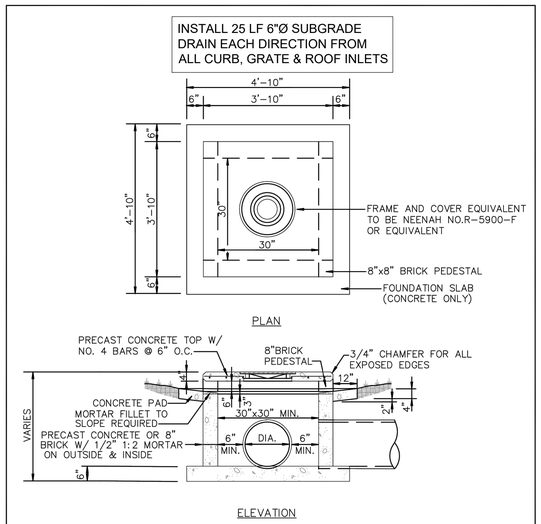
SURFACES SHALL MEET THE ADA ACCESSIBILITY GUIDELINES SECTION 4.29.2.



HANDICAP RAMP TYPE "B"

City of Port Wentworth
TECHNICAL DETAILS
P-5

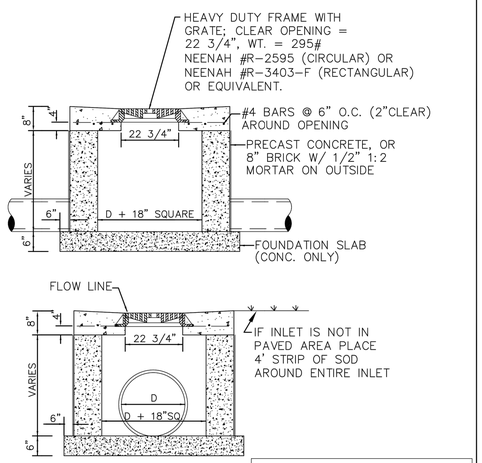
PREPARED BY SAUSSY ENGINEERING, LLC.
SCALE: N.T.S.
DATED: FEBRUARY 2007



ROOF INLET DETAIL

City of Port Wentworth
TECHNICAL DETAILS
SD-6

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

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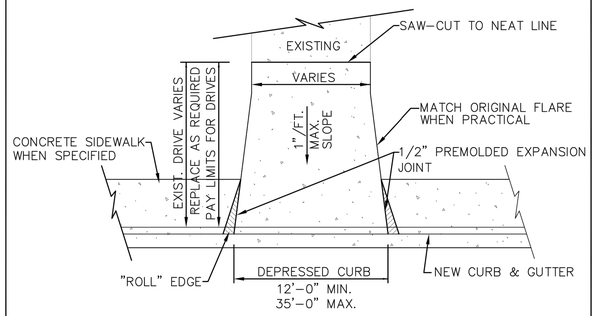
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:55:09 AM



PLAN VIEW

NOTE:

1. % OF THE SLOPE FROM DRIVE TO STREET
2. DRIVEWAY THICKNESS SHALL BE 6" FIBER REINFORCED CONCRETE.

DRIVEWAY

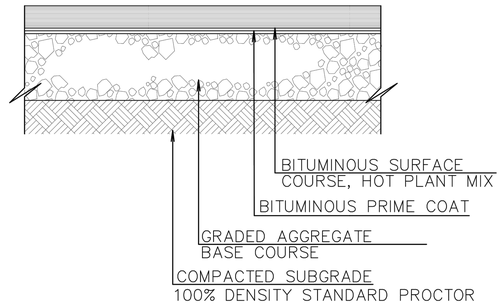
City of Port Wentworth

TECHNICAL DETAILS

P-8

PREPARED BY SAUSSY ENGINEERING, LLC.

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



NOTES:
1. 6" GRADED AGGREGATE BASE
2. 2" ASPHALTIC SURFACE COURSE
3. 1.5" ASPHALTIC SURFACE COURSE TO BE INSTALLED ONCE ALL CONSTRUCTION TRAFFIC IS COMPLETED.
4. CONTRACTOR TO FOLLOW GEOTECHNICAL ENGINEERING REPORT PROJECT NO. 09-08-21-5 PREPARED BY WHITAKER ON SEPTEMBER 8, 2021.

TYPICAL BITUMINOUS PAVING SECTION

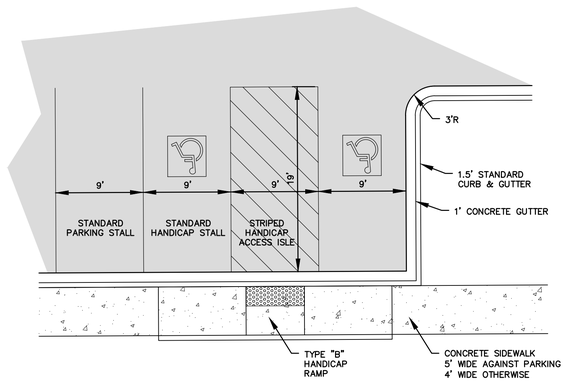
City of Port Wentworth

TECHNICAL DETAILS

P-1

PREPARED BY SAUSSY ENGINEERING, LLC.

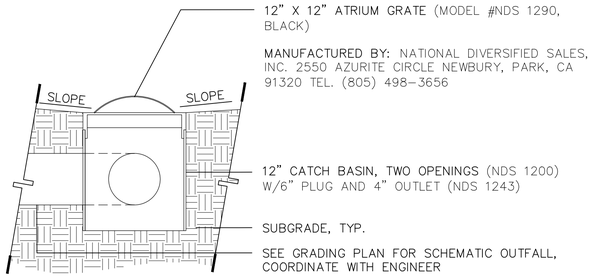
SCALE: N.T.S.
DATED: FEBRUARY 2007



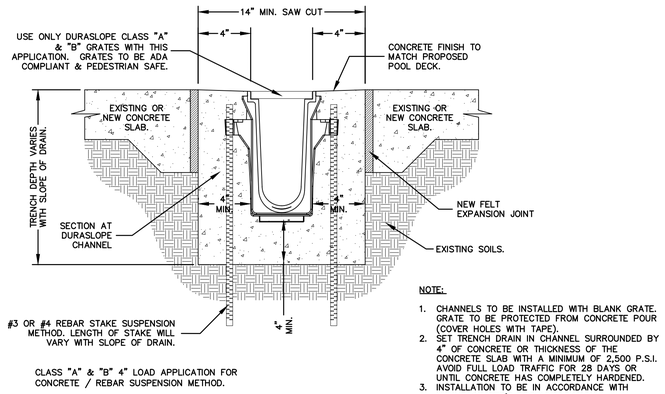
TYPICAL PARKING & HANDICAP STALL DETAIL

PITTMAN ENGINEERING CO., LLC

SCALE: N.T.S.
DATED: 10/2022



ATRIUM LANDSCAPE DRAIN



CLASS "A" & "B" 4" LOAD APPLICATION FOR CONCRETE / REBAR SUSPENSION METHOD.

TYPICAL DURASLOPE INSTALLATION
INSTALLATION LOAD "B"
(PER MANUFACTURER'S GUIDELINE)

SCALE: N.T.S.

NOTE:

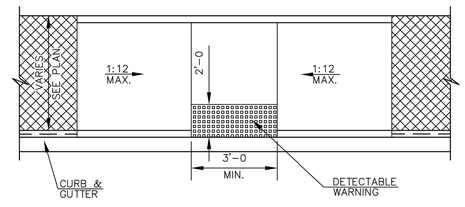
1. CHANNELS TO BE INSTALLED WITH BLANK GRATE. GRATE TO BE PROTECTED FROM CONCRETE POUR (COVER HOLES WITH TAPE).
2. SET TRENCH DRAIN IN CHANNEL SURROUNDED BY 4" OF CONCRETE OR THICKNESS OF THE CONCRETE SLAB WITH A MINIMUM OF 2,500 P.S.I. AVOID FULL LOAD TRAFFIC FOR 28 DAYS OR UNTIL CONCRETE HAS COMPLETELY HARDENED.
3. INSTALLATION TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

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

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED PROFESSIONAL ENGINEER No. 38245 GEORGIA JASON JOSEPH BRYANT

Pittman Engineering Co., LLC
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

PAVING, GRADING & DRAINAGE DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	----
Date:	5/31/22

SHEET
C3.19

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Paving Grading Drainage Details.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:55:27 AM

SOILS LEGEND:		
Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

EROSION CONTROL PLAN LEGEND	
CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P

DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

MATCHLINE -- SEE SHEET EC1.2

OFFSITE DRAINAGE = 0.50 AC

SOIL TYPE NAME (TYP)

DRAINAGE AREA #3 = 4.50 AC

DRAINAGE AREA #2 = 5.00 AC

DRAINAGE AREA #12 = 4.37 AC

DRAINAGE AREA #1 = 4.85 AC

DRAINAGE AREA #16 = 0.99 AC

DRAINAGE AREA #15 = 0.72 AC

DRAINAGE AREA #14 = 1.53 AC

DRAINAGE AREA #13 = 1.16 AC

LIMITS OF DISTURBANCE

SOIL TYPE LINE (TYP)

Sd1-NS
TEMPORARY SILT FENCE SINGLE ROW, TYPE "NON-SENSITIVE"

48" RCP
IE: 10.64

CONSTRUCTION ENTRANCE/EXIT
GRID N: 809681.76670772
GRID E: 960264.23024599
LATITUDE: N032.22232151
LONGITUDE: W081.18330083

NOTE:
CALCULATIONS FOR TEMPORARY SEDIMENT TRAP w/ROCK OUTLET SIZES ON SHEET EC1.4

GRAPHIC SCALE: 1"=50'

REVISIONS			
REV.		BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7897

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON J. BRYANT

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EROSION CONTROL PLAN - INITIAL

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

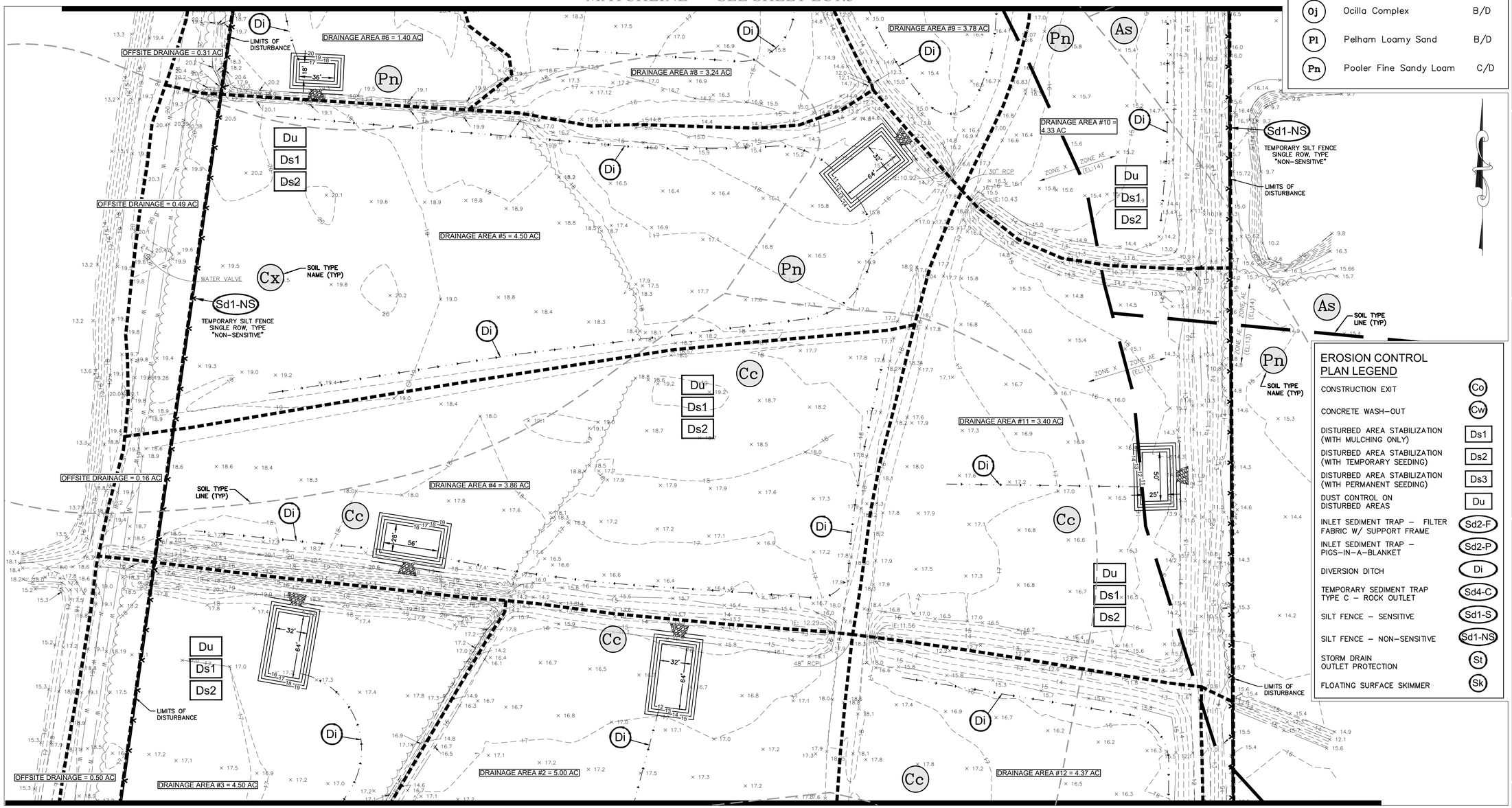
SHEET
EC1.1

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages ESPC Plan - Initial.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan 12 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:55:37 AM

MATCHLINE -- SEE SHEET EC1.3



MATCHLINE -- SEE SHEET EC1.1

NOTE:
CALCULATIONS FOR TEMPORARY SEDIMENT TRAP w/ROCK OUTLET SIZES ON SHEET EC1.4

GRAPHIC SCALE: 1"=50'-0"

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

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GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED PROFESSIONAL ENGINEER No. 38245 GEORGIA JASON J. BRYANT

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

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EROSION CONTROL PLAN - INITIAL

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC1.2

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages ESPC Plan – Initial.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:55:46 AM

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

SOIL TYPE NAME (TYP) — Cx — SOIL TYPE LINE (TYP)

ZONE X — ZONE AE (EL:14)

LIMITS OF DISTURBANCE

TEMPORARY SILT FENCE SINGLE ROW, TYPE "NON-SENSITIVE" — Sd1-NS

15" RCP — IE:12.02 — IE:12.41

60" RCP — IE:7.83 — IE:8.22

50' × 25' × 13"

58' × 29' × 17"

27' × 54' × 15"

OFFSITE DRAINAGE = 0.44 AC

OFFSITE DRAINAGE = 0.31 AC

DRAINAGE AREA #6 = 1.40 AC

DRAINAGE AREA #7 = 2.89 AC

DRAINAGE AREA #8 = 3.24 AC

DRAINAGE AREA #9 = 3.78 AC

DRAINAGE AREA #10 = 4.33 AC

MATCHLINE -- SEE SHEET EC1.2

NOTE:
CALCULATIONS FOR TEMPORARY SEDIMENT TRAP w/ROCK OUTLET SIZES ON SHEET EC1.4

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7897

REGISTERED PROFESSIONAL ENGINEER — GEORGIA — No. 38245 — JASON J. BRYANT

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EROSION CONTROL PLAN - INITIAL

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC1.3

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:55:53 AM

Sd4-C TEMPORARY SEDIMENT TRAP W/ROCK OUTLET CALCULATIONS

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #1
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #1: 4.85 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 4.85 AC X 67 CY/AC = 324.95 CY = 8,773.65 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 2,048 SF
ELEV. 15 = AREA: 4,100 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (2,048 SF + 4,100 SF)/2 = 6,148 SF/2 = 3,074 SF X 3' DEPTH = 9,222 CF STORAGE

9,222 CF > 8,773.65 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #9
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #9: 3.78 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 3.78 AC X 67 CY/AC = 253.26 CY = 6,838.02 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 1,458 SF
ELEV. 15 = AREA: 3,240 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,458 SF + 3,240 SF)/2 = 4,698 SF/2 = 2,349 SF X 3' DEPTH = 7,047 CF STORAGE

7,047 CF > 6,838.02 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #2: 5.00 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 5.00 AC X 67 CY/AC = 335.00 CY = 9,045.00 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 2,048 SF
ELEV. 15 = AREA: 4,100 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (2,048 SF + 4,100 SF)/2 = 6,148 SF/2 = 3,074 SF X 3' DEPTH = 9,222 CF STORAGE

9,222 CF > 9,045.00 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #10
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #10: 4.33 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 4.33 AC X 67 CY/AC = 290.11 CY = 7,832.97 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 11 = AREA: 1,682 SF
ELEV. 14 = AREA: 3,572 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,682 SF + 3,572 SF)/2 = 5,254 SF/2 = 2,627 SF X 3' DEPTH = 7,881 CF STORAGE

7,881 CF > 7,832.97 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #3
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #3: 4.50 AC
OFFSITE DRAINAGE: 0.50 AC
REQUIRED STORAGE 5.00 AC X 67 CY/AC = 335.00 CY = 9,045.00 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 16 = AREA: 2,048 SF
ELEV. 19 = AREA: 4,100 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (2,048 SF + 4,100 SF)/2 = 6,148 SF/2 = 3,074 SF X 3' DEPTH = 9,222 CF STORAGE

9,222 CF > 9,045.00 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #11
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #11: 3.40 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 3.40 AC X 67 CY/AC = 227.80 CY = 6,150.60 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 11 = AREA: 1,250 SF
ELEV. 14 = AREA: 2,924 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,250 SF + 2,924 SF)/2 = 4,174 SF/2 = 2,087 SF X 3' DEPTH = 6,261 CF STORAGE

6,261 CF > 6,150.60 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #4
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #4: 3.86 AC
OFFSITE DRAINAGE: 0.16 AC
REQUIRED STORAGE 4.02 AC X 67 CY/AC = 269.34 CY = 7,272.18 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 16 = AREA: 1,568 SF
ELEV. 19 = AREA: 3,404 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,568 SF + 3,404 SF)/2 = 4,972 SF/2 = 2,486 SF X 3' DEPTH = 7,458 CF STORAGE

7,458 CF > 7,272.18 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

5COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #12
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #12: 4.37 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 4.37 AC X 67 CY/AC = 292.79 CY = 7,905.33 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 1,800 SF
ELEV. 15 = AREA: 3,744 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,800 SF + 3,744 SF)/2 = 5,544 SF/2 = 2,772 SF X 3' DEPTH = 8,316 CF STORAGE

8,316 CF > 7,905.33 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #5
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #5: 4.50 AC
OFFSITE DRAINAGE: 0.49 AC
REQUIRED STORAGE 4.99 AC X 67 CY/AC = 334.33 CY = 9,026.91 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 11 = AREA: 2,048 SF
ELEV. 14 = AREA: 4,100 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (2,048 SF + 4,100 SF)/2 = 6,148 SF/2 = 3,074 SF X 3' DEPTH = 9,222 CF STORAGE

9,222 CF > 9,026.91 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #13
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #13: 1.16 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 1.16 AC X 67 CY/AC = 77.72 CY = 2,098.44 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 13 = AREA: 392 SF
ELEV. 16 = AREA: 1,472 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (392 SF + 1,472 SF)/2 = 1,864 SF/2 = 932 SF X 3' DEPTH = 2,796 CF STORAGE

2,796 CF > 2,098.44 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #6
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #6: 1.40 AC
OFFSITE DRAINAGE: 0.31 AC
REQUIRED STORAGE 1.71 AC X 67 CY/AC = 114.57 CY = 3,093.39 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 17 = AREA: 648 SF
ELEV. 20 = AREA: 1,944 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (648 SF + 1,944 SF)/2 = 2,595 SF/2 = 1,296 SF X 3' DEPTH = 3,888 CF STORAGE

3,888 CF > 3,093.39 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #14
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #14: 1.53 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 1.53 AC X 67 CY/AC = 102.51 CY = 2,767.77 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 512 SF
ELEV. 15 = AREA: 1,700 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (512 SF + 1,700 SF)/2 = 2,212 SF/2 = 1,106 SF X 3' DEPTH = 3,318 CF STORAGE

3,318 CF > 2,767.77 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #7
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #7: 2.89 AC
OFFSITE DRAINAGE: 0.44 AC
REQUIRED STORAGE 3.33 AC X 67 CY/AC = 223.11 CY = 6,023.97 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 1,250 SF
ELEV. 15 = AREA: 2,924 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,250 SF + 2,924 SF)/2 = 4,174 SF/2 = 2,087 SF X 3' DEPTH = 6,261 CF STORAGE

6,261 CF > 6,023.97 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #15
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #15: 0.72 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 0.72 AC X 67 CY/AC = 48.24 CY = 1,302.48 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 200 SF
ELEV. 15 = AREA: 1,064 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (200 SF + 1,064 SF)/2 = 1,264 SF/2 = 632 SF X 3' DEPTH = 1,896 CF STORAGE

1,896 CF > 1,302.48 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #8
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #8: 3.24 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 3.24 AC X 67 CY/AC = 217.08 CY = 5,861.16 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 12 = AREA: 1,250 SF
ELEV. 15 = AREA: 2,924 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (1,250 SF + 2,924 SF)/2 = 4,174 SF/2 = 2,087 SF X 3' DEPTH = 6,261 CF STORAGE

6,261 CF > 5,861.16 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

COTTAGES AT RICE HOPE - TEMPORARY SEDIMENT STORAGE IN Sd4-C
TEMPORARY SEDIMENT TRAP - ROCK OUTLET #16
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #16: 0.99 AC
OFFSITE DRAINAGE: 0.00 AC
REQUIRED STORAGE 0.99 AC X 67 CY/AC = 66.33 CY = 1,790.91 CF

STORAGE PROVIDED IN TEMPORARY SEDIMENT BASIN:
ELEV. 13 = AREA: 242 SF
ELEV. 16 = AREA: 1,160 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT
TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (242 SF + 1,160 SF)/2 = 1,402 SF/2 = 701 SF X 3' DEPTH = 2,103 CF STORAGE

2,103 CF > 1,790.91 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

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912-445-0578
www.PittmanEngineeringCo.com

EROSION CONTROL PLAN - INITIAL

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC1.4

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Thursday, December 22, 2022 10:44:51 AM

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

COTTAGES at RICE HOPE – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DISTURBED AREA: 51.75 AC
REQUIRED STORAGE 51.75 AC X 67 CY/AC = 3,467.25.00 CY = 93,615.75 CF

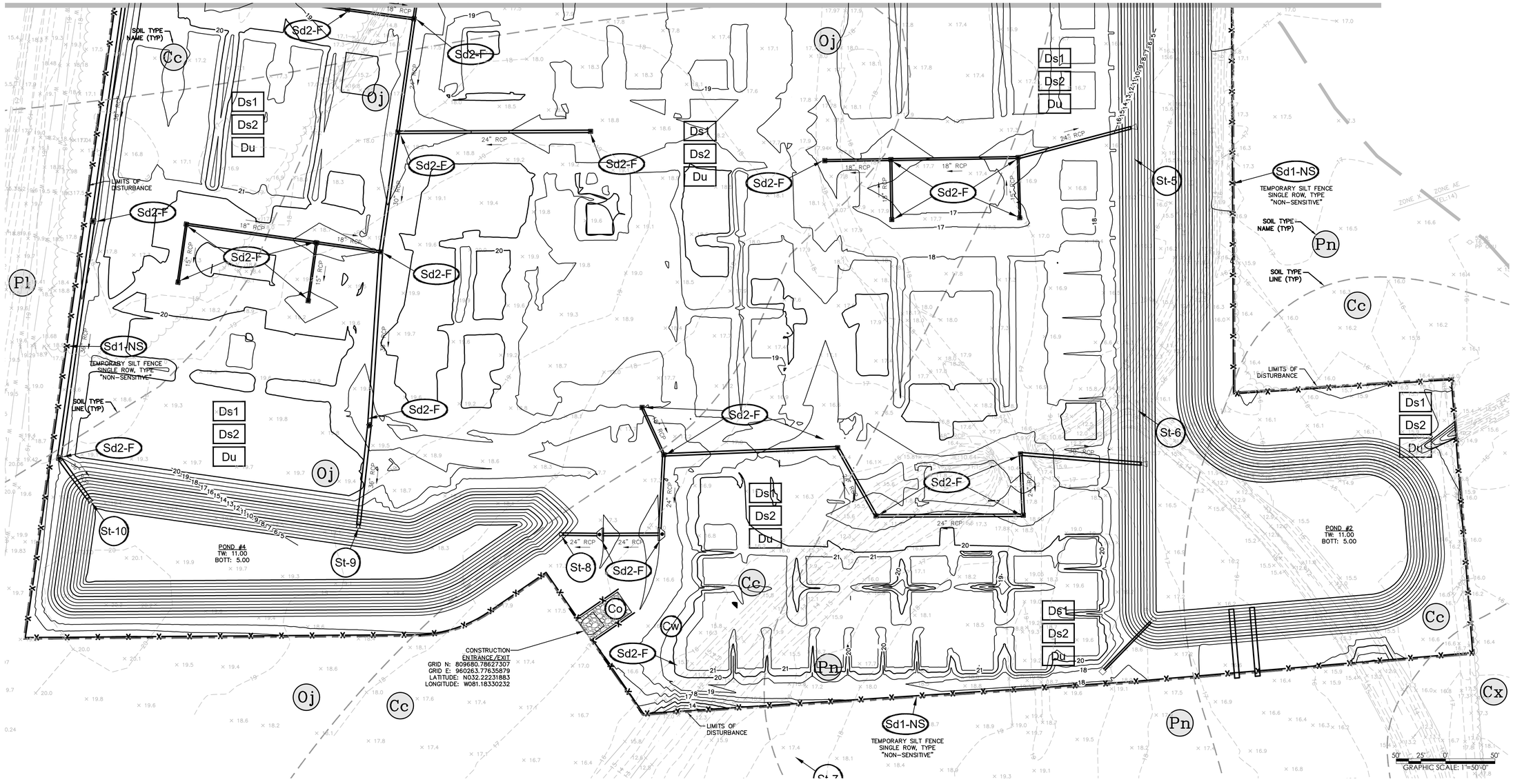
STORAGE PROVIDED IN PERMANENT PONDS #2:
BOTT. ELEV. 5.0 = AREA: 202,490 SF
STATIC ELEV. 11.5 = AREA: 297,578 SF
(BOTT. ELEV. AREA + TOW ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (202,490 SF + 297,578 SF)/2 = 500,068 SF/2 = 250,034 SF X 6.5' DEPTH = 1,625,221 CF STORAGE

1,625,221 CF > 93,615.75 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

MATCHLINE -- SEE SHEET EC2.2



REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

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EROSION CONTROL PLAN - INTERMEDIATE

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC2.1

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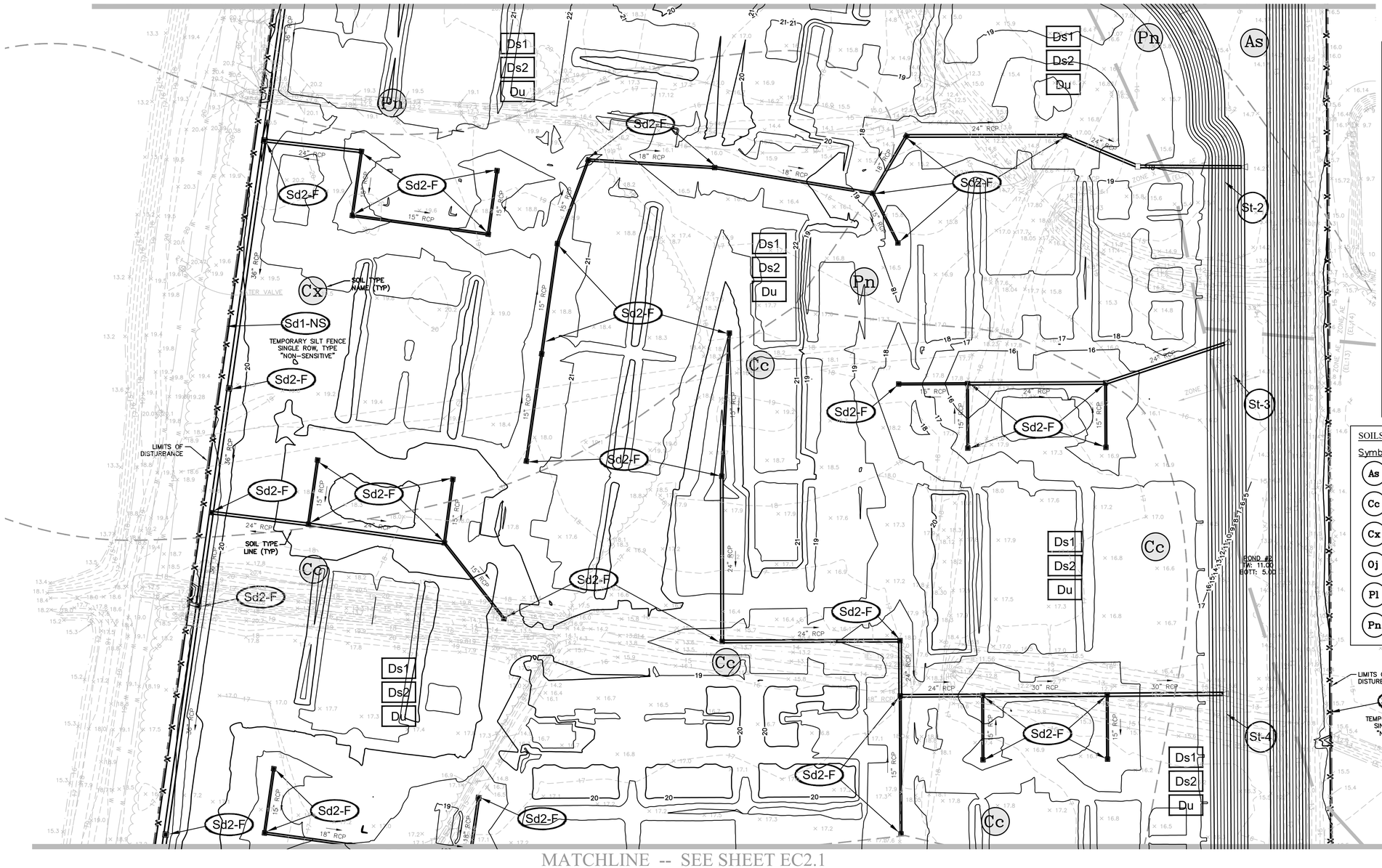
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 11:57:48 AM

COTTAGES at RICE HOPE – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DISTURBED AREA: 51.75 AC
REQUIRED STORAGE 51.75 AC X 67 CY/AC = 3,467.25.00 CY = 93,615.75 CF

STORAGE PROVIDED IN PERMANENT PONDS #2:
BOTT. ELEV. 5.0 = AREA: 202,490 SF
STATIC ELEV. 11.5 = AREA: 297,578 SF
(BOTT. ELEV. AREA + TOW ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (202,490 SF + 297,578 SF)/2 = 500,068 SF/2 = 250,034 SF X 6.5' DEPTH = 1,625,221 CF STORAGE

1,625,221 CF > 93,615.75 CF THEREFORE ADEQUATE STORAGE IS PROVIDED



EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH–OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS–IN–A–BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON–SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

50' 25' 0' 50'
GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7897

REGISTERED PROFESSIONAL ENGINEER No. 38245 GEORGIA JASON JOSEPH BRYANT

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EROSION CONTROL PLAN - INTERMEDIATE

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC2.2

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Wednesday, December 21, 2022 11:57:57 AM

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

COTTAGES at RICE HOPE – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DISTURBED AREA: 51.75 AC
REQUIRED STORAGE 51.75 AC X 67 CY/AC = 3,467.25.00 CY = 93,615.75 CF

STORAGE PROVIDED IN PERMANENT PONDS #2:
BOTT. ELEV. 5.0 = AREA: 202,490 SF
STATIC ELEV. 11.5 = AREA: 297,578 SF
(BOTT. ELEV. AREA + TOW ELEV. AREA)/2 = AREA IN SF X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (202,490 SF + 297,578 SF)/2 = 500,068 SF/2 = 250,034 SF X 6.5' DEPTH = 1,625,221 CF STORAGE

1,625,221 CF > 93,615.75 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds1
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds2
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7897

REGISTERED PROFESSIONAL ENGINEER No. 38245 GEORGIA JASON JOSEPH BRYANT

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EROSION CONTROL PLAN - INTERMEDIATE

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC2.3

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Thursday, December 22, 2022 10:47:16 AM

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

PINE HILL COMMUNITY – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #1: 15.00 AC
REQUIRED STORAGE 15.00 AC X 67 CY/AC = 1005.00 CY = 27,135.00 CF

STORAGE PROVIDED IN PERMANENT POND #2:
ELEV. 37 = AREA: 3,159.30 SF
ELEV. 42 = AREA: 13,456.50 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN S.F. X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (3,159.30 SF + 13,456.50 SF)/2 = 16,615.80 SF/2 = 8,0307.90 SF X 5'
DEPTH = 41,539.50 CF STORAGE

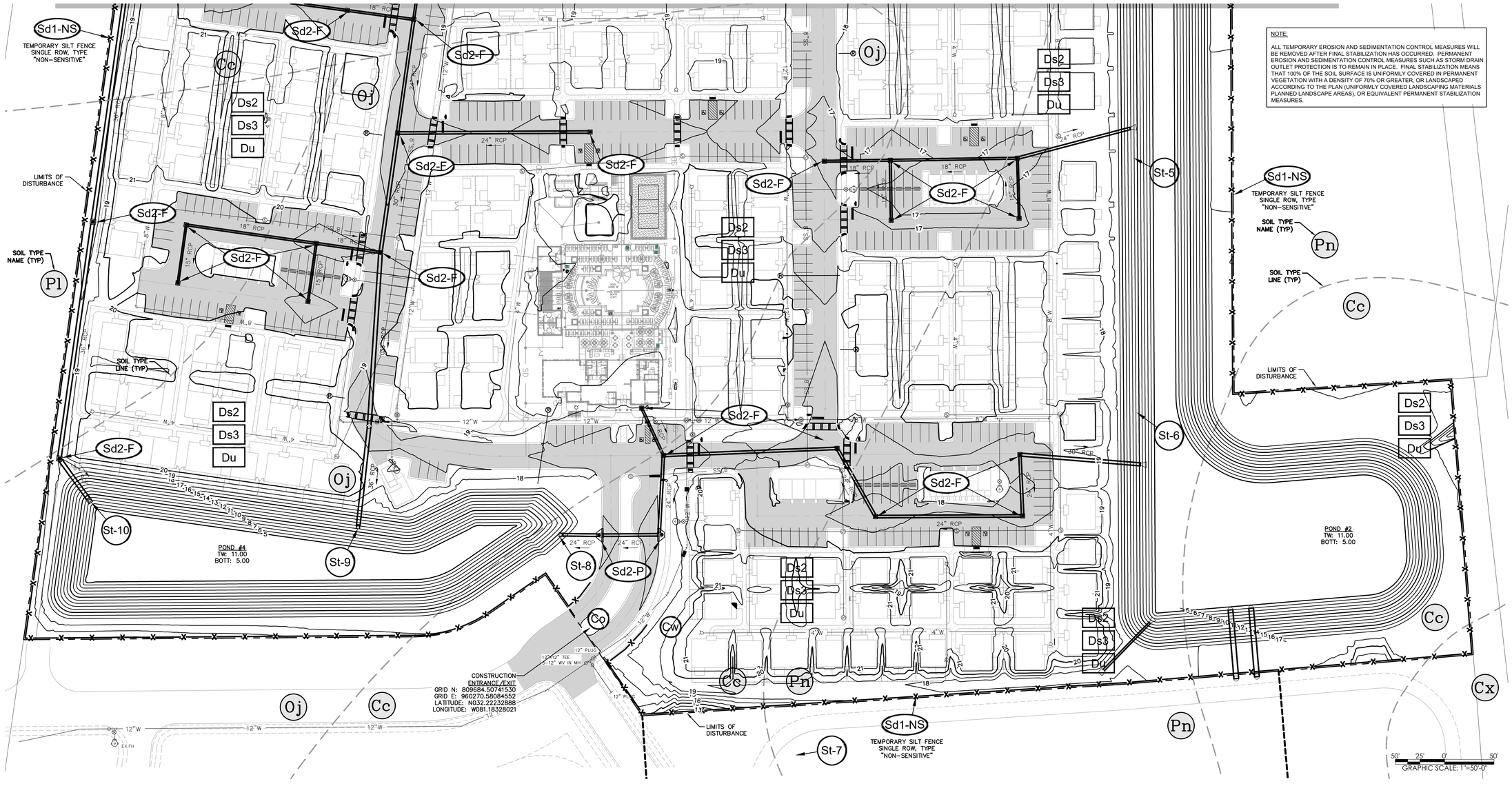
41,539.50 CF > 27,135.00 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH-OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds2
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds3
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS-IN-A-BLANKET	Sd2-P

DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON-SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

MATCHLINE -- SEE SHEET EC3.2



NOTE:

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE REMOVED AFTER FINAL STABILIZATION HAS OCCURRED. PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES SUCH AS STORM DRAIN OUTLET PROTECTION IS TO REMAIN IN PLACE. FINAL STABILIZATION MEANS THAT 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 LANDSCAPING MATERIALS PLANNED LANDSCAPE AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES.

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

REGISTERED ENGINEER GEORGIA No. 38245 PROFESSIONAL JASON JOSEPH BRYANT

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EROSION CONTROL PLAN - FINAL

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC3.1

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages ESPC Plan - Final.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

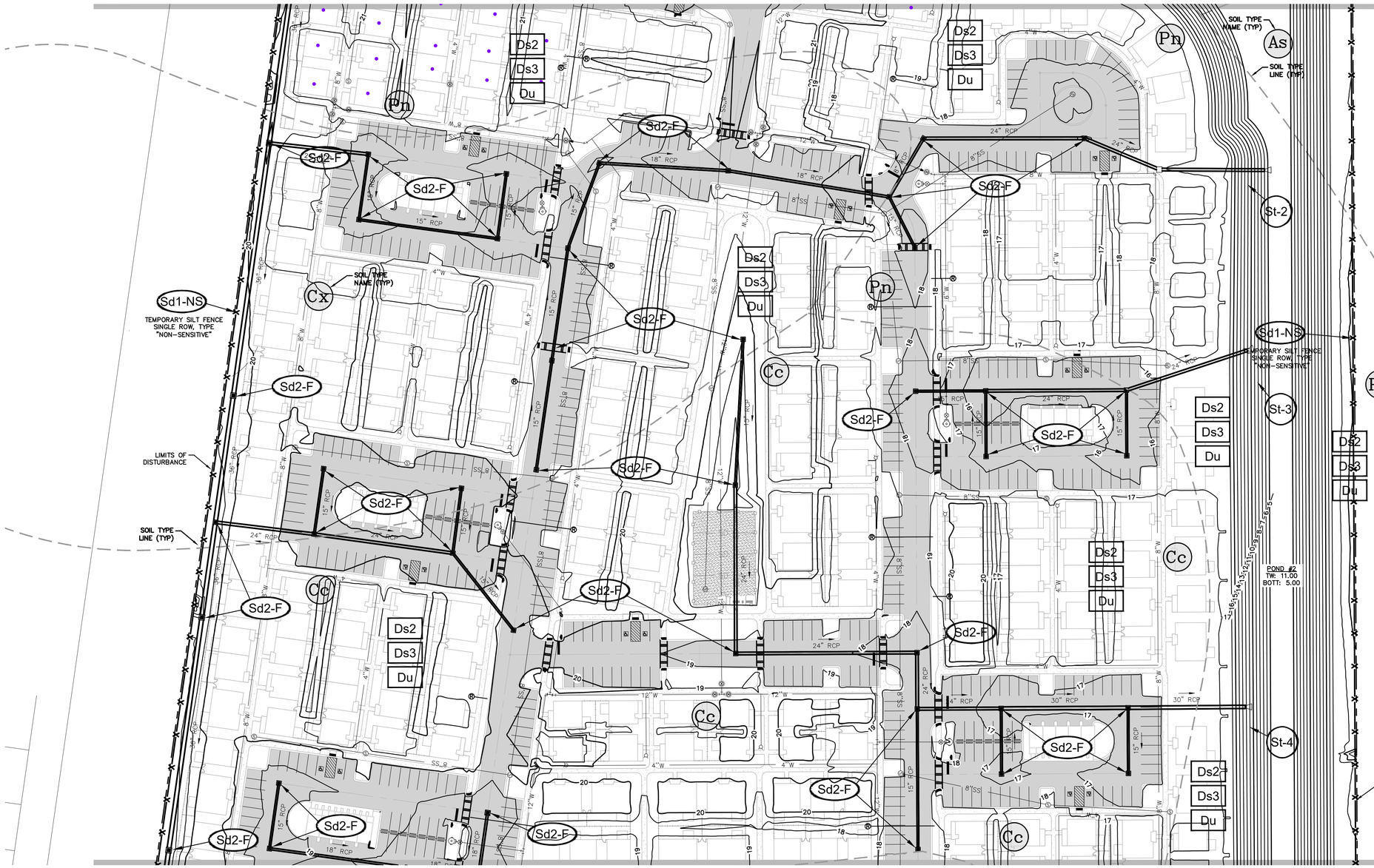
Wednesday, December 21, 2022 12:00:11 PM

PINE HILL COMMUNITY – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #1: 15.00 AC
REQUIRED STORAGE 15.00 AC X 67 CY/AC = 1005.00 CY = 27,135.00 CF

STORAGE PROVIDED IN PERMANENT POND #2:
ELEV. 37 = AREA: 3,159.30 SF
ELEV. 42 = AREA: 13,456.50 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN S.F. X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
AREA: (3,159.30 SF + 13,456.50 SF)/2 = 16,615.80 SF/2 = 8,0307.90 SF X 5'
DEPTH = 41,539.50 CF STORAGE

41,539.50 CF > 27,135.00 CF THEREFORE ADEQUATE STORAGE IS PROVIDED

MATCHLINE -- SEE SHEET EC3.3



MATCHLINE -- SEE SHEET EC3.1

EROSION CONTROL PLAN LEGEND

CONSTRUCTION EXIT	Co
CONCRETE WASH–OUT	Cw
DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)	Ds2
DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)	Ds3
DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)	Ds3
DUST CONTROL ON DISTURBED AREAS	Du
INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME	Sd2-F
INLET SEDIMENT TRAP – PIGS–IN–A–BLANKET	Sd2-P
DIVERSION DITCH	Di
TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET	Sd4-C
SILT FENCE – SENSITIVE	Sd1-S
SILT FENCE – NON–SENSITIVE	Sd1-NS
STORM DRAIN OUTLET PROTECTION	St
FLOATING SURFACE SKIMMER	Sk

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

NOTE:

ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE REMOVED AFTER FINAL STABILIZATION HAS OCCURRED. PERMANENT EROSION AND SEDIMENTATION CONTROL MEASURES SUCH AS STORM DRAIN OUTLET PROTECTION IS TO REMAIN IN PLACE. FINAL STABILIZATION MEANS THAT 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 LANDSCAPING MATERIALS PLANNED LANDSCAPE AREAS), OR EQUIVALENT PERMANENT STABILIZATION MEASURES.

GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7389?

REGISTERED PROFESSIONAL ENGINEER No. 38245 GEORGIA JASON JOSEPH BRYANT

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Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

EROSION CONTROL PLAN - FINAL

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC3.2

C:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages ESPC Plan – Final.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 12:00:17 PM

SOILS LEGEND:

Symbol	Name	Rating
As	Albany Fine Sand	A/D
Cc	Cape Fear Soils	C/D
Cx	Craven Loamy Fine Sand	C
Oj	Ocilla Complex	B/D
Pl	Pelham Loamy Sand	B/D
Pn	Pooler Fine Sandy Loam	C/D

PINE HILL COMMUNITY – TEMPORARY SEDIMENT STORAGE IN PERMANENT POND #2
TEMPORARY SEDIMENT STORAGE REQUIREMENTS
DRAINAGE AREA #1: 15.00 AC
REQUIRED STORAGE 15.00 AC X 67 CY/AC = 1005.00 CY = 27,135.00 CF

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ELEV. 37 = AREA: 3,159.30 SF
ELEV. 42 = AREA: 13,456.50 SF
(BOTTOM ELEV. AREA + TOP ELEV. AREA)/2 = AREA IN S.F. X DEPTH OF SEDIMENT TRAP IN FEET = CF (AVERAGE END METHOD)
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NOTE:

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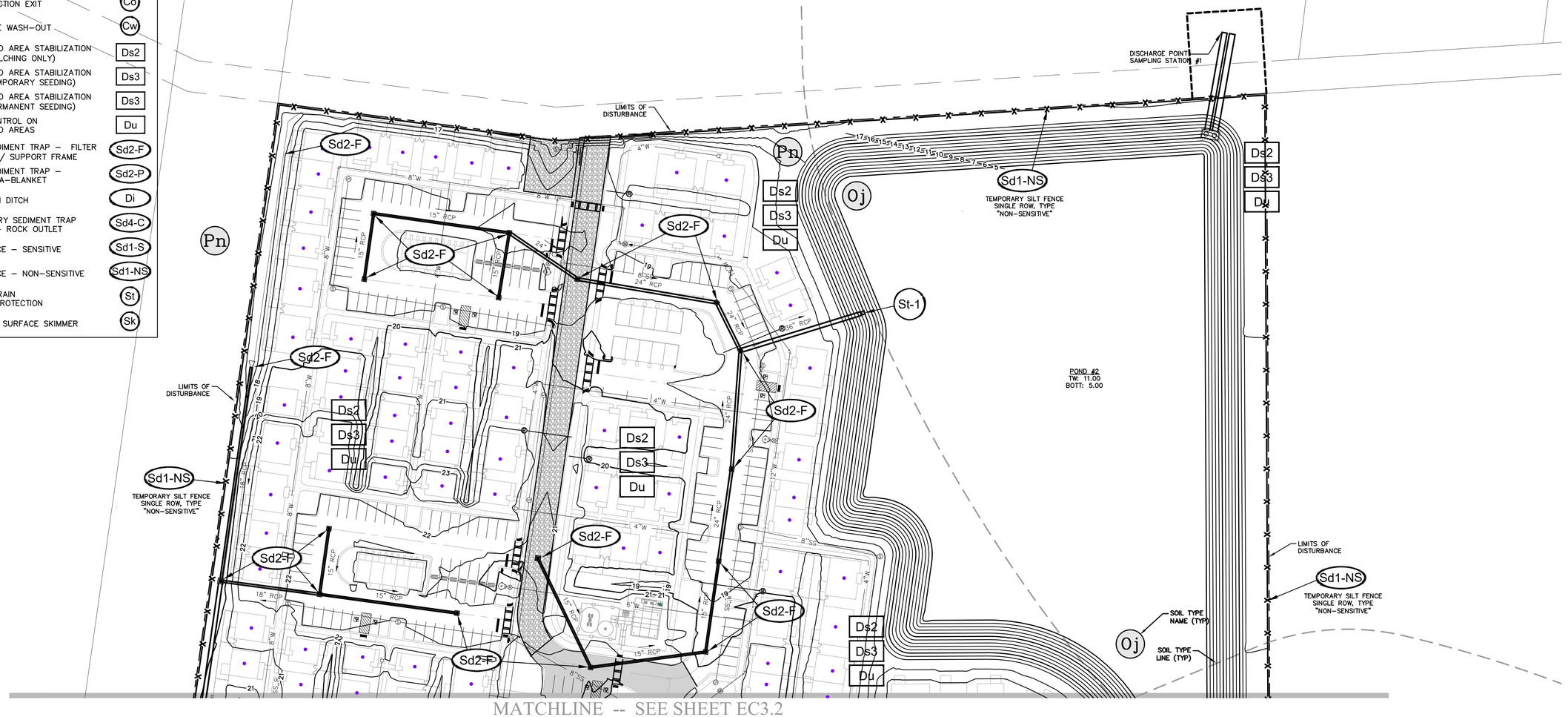
EROSION CONTROL PLAN LEGEND

- CONSTRUCTION EXIT — Co
- CONCRETE WASH–OUT — Cw
- DISTURBED AREA STABILIZATION (WITH MULCHING ONLY) — Ds2
- DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING) — Ds3
- DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING) — Ds3
- DUST CONTROL ON DISTURBED AREAS — Du
- INLET SEDIMENT TRAP – FILTER FABRIC W/ SUPPORT FRAME — Sd2-F
- INLET SEDIMENT TRAP – PIGS–IN–A–BLANKET — Sd2-P
- DIVERSION DITCH — Di
- TEMPORARY SEDIMENT TRAP TYPE C – ROCK OUTLET — Sd4-C
- SILT FENCE – SENSITIVE — Sd1-S
- SILT FENCE – NON–SENSITIVE — Sd1-NS
- STORM DRAIN OUTLET PROTECTION — St
- FLOATING SURFACE SKIMMER — Sk



GRAPHIC SCALE: 1"=50'-0"

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

THE COTTAGES AT RICE HOPE

JASON J. BRYANT, P.E.
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7897

REGISTERED PROFESSIONAL ENGINEER — No. 38245 — GEORGIA — JASON JOSEPH BRYANT

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EROSION CONTROL PLAN - FINAL

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21–286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	1"=50'
Date:	5/31/22

SHEET
EC3.3

G:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages ESPC Plan – Final.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 12:00:29 PM

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

SWCD: COASTAL

Project Name: RAYDIENT PLACES + PROPERTIES Address: BELFAST KELLER RD.

City/County: RICHMOND HILL / BRYAN COUNTY Date on Plans: 03/25/2022

Provide name and email of the person filling out the checklist: Jason Bryant, jason@pittmanengineeringco.com

Plan Page #	Included Y/N		TO BE SHOWN ON ES&PC PLAN
EC4.1–EC4.3	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.
EC1.1–EC5.3	YES	2.	Level II certification number issued by the Commission, signature and seal of the certified design professional.
EC4.4	YES	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 checklist.*
EC4.1	YES	4.	The name and phone number of the 24–hour local contact responsible for erosion, sedimentation and pollution controls. MR. ROBERT HOGAN THIRD LAKE DEVELOPMENT, LLC 1600 E. 8th Ave., SUITE A132 TAMPA, FLORIDA 33605 Rhogan@thirdlakedevelopment.com
EC4.1	YES	5.	Provide the name, address, email and phone number of the primary permittee. MR. ROBERT HOGAN THIRD LAKE DEVELOPMENT, LLC 1600 E. 8th Ave., SUITE A132 TAMPA, FLORIDA 33605 Rhogan@thirdlakedevelopment.com
EC4.1	YES	6.	Note total and disturbed acreage of the project or phase under construction. TOTAL ACREAGE: 49.5 DISTURBED ACREAGE: 49.5
EC1.1–EC3.3	YES	7.	Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees.
COVER–EC5.2	YES	8.	Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions.
EC4.1	YES	9.	Description of the nature of construction activity. CONSTRUCTION OF RESIDENTIAL DEVELOPMENT AND ALL ASSOCIATED INFRASTRUCTURE.
COVER	YES	10.	Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary.
EC4.1	YES	11.	Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, etc. which may be affected. RECEIVING WATERS = EAST CHANNEL MEDWAY RIVER
EC4.1	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 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 MY AUTHORIZED AGENT, UNDER MY SUPERVISION." 01/31/22 JASON J. BRYANT, P.E. DATE GSWCC LEVEL II DESIGN PROFESSIONAL – CERTIFICATION #73897
EC4.1	YES	13.	Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on Part IV page 19 of the permit.* "I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND 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 STORMWATER 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. GAR100001." 01/31/22 JASON J. BRYANT, P.E. DATE GSWCC LEVEL II DESIGN PROFESSIONAL – CERTIFICATION #73897
EC4.1	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 BMPs within 7 days after installation." in accordance with Part IV.A.5 page 25 of the permit.* THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN (EXCEPT WHEN THE PRIMARY PERMITTEE HAS REQUESTED IN WRITING AND EPD HAS AGREED TO AN ALTERNATE DESIGN PROFESSIONAL), TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMPS WHICH THE DESIGN PROFESSIONAL DESIGNED WITHIN SEVEN (7) DAYS AFTER INSTALLATION. THE DESIGN PROFESSIONAL SHALL DETERMINE IF THESE BMPS HAVE BEEN INSTALLED AND ARE BEING MAINTAINED AS DESIGNED. THE DESIGN PROFESSIONAL SHALL REPORT THE RESULTS OF THE INSPECTION TO THE PRIMARY PERMITTEE WITHIN SEVEN (7) DAYS AND THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL (UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED).

Plan Page #	Included Y/N		TO BE SHOWN ON ES&PC PLAN
EC4.1	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 BMPs within 7 days after installation." in accordance with Part IV.A.5 page 25 of the permit.*

DESIGN PROFESSIONAL'S 7-DAY VISIT CERTIFICATION:

DATE OF INSPECTION: _____

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

_____

JASON J. BRYANT, P.E. DATE

GSWCC LEVEL II DESIGN PROFESSIONAL – CERTIFICATION #73897

INSPECTION REVEALED THE FOLLOWING DISCREPANCIES FROM THE ES&PC PLAN:

_____

_____

_____

_____

_____

THE PERMITTEE MUST CORRECT ALL DEFICIENCIES WITHIN TWO (2) BUSINESS DAYS OF RECEIPT OF THE INSPECTION REPORT FROM THE DESIGN PROFESSIONAL UNLESS WEATHER RELATED SITE CONDITIONS ARE SUCH THAT ADDITIONAL TIME IS REQUIRED.

EC4.1	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." "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."
N/A	NO	16.	Provide a description of any buffer encroachments and indicate whether a buffer variance is required. NO BUFFERS REQUIRED.
EC4.1	YES	17.	Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."* "AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMPS WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL."
EC4.1	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."* WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT. Waste Materials All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied a minimum of once per week or more often if necessary and trash will be hauled as required by local regulations. No construction waste will be buried onsite. All personnel will be instructed on proper procedures for waste disposal. A notice stating these practices will be posted at the jobsite and the Contractor will be responsible for seeing that these procedures are followed.
EC4.1	YES	19.	Clearly note 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."
EC4.1	YES	20.	Clearly note 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."
EC4.1	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." "ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING."
N/A	NO	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 a Biota Impaired Stream Segment must comply with Part III. C. of the Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.*
N/A	NO	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.*

Plan Page #	Included Y/N		TO BE SHOWN ON ES&PC PLAN
EC1.1, 2.1, 3.1	YES	24.	BMPs 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.* CONCRETE WASHDOWN FOR TOOLS, CONCRETE MIXER CHUTES, HOPPERS AND REAR OF THE VEHICLES PLACED NEXT TO CONSTRUCTION EXIT. WASHOUT OF THE DRUM AT THE CONSTRUCTION SITE IS PROHIBITED.
EC4.1	YES	25.	Provide BMPs for the remediation of all petroleum spills and leaks. 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. • Material 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, gloves, goggles, cat litter, sand, sawdust and properly labeled plastic and metal waste container. • Spill prevention practices and procedures will be reviewed after a spill and adjusted as necessary to prevent future spills. • All spills will be cleaned up immediately upon discovery. All spills will be reported as required by local, State, and Federal Regulations. • 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 AT 1–800–424–8802. • FOR SPILLS GREATER 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–EC5.3	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.*

THE FOLLOWING PERMANENT MEASURES HAVE BEEN ESTABLISHED:

1. WET DETENTION PONDS FITTED WITH MULTI–STAGE WEIR CONTROL STRUCTURES WILL PROVIDE AN OPPORTUNITY FOR POLLUTANTS TO SETTLE OUT PRIOR TO DISCHARGING FROM THE SITE.
2. RIP–RAP APRONS WILL REDUCE EROSIVE VELOCITIES.
3. DISTURBED AREA STABILIZATION WITH PERMANENT GRASSING AND VEGETATION WILL HELP REDUCE SOIL EROSION.

CONTROLS:

EROSION AND SEDIMENT CONTROLS:

- ALL PERIMETER SILT FENCES AND CONSTRUCTION EXITS SHALL BE IN PLACE PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- EXISTING VEGETATION SHALL BE LEFT IN PLACE UNTIL SUCH TIME THAT LAND DISTURBING ACTIVITIES ARE TO TAKE PLACE UPON THAT PORTION OF THE SITE. WHEN CONSTRUCTION ACTIVITIES HAVE CEASED IN AN AREA, THAT AREA SHALL BE STABILIZED WITHIN 14 DAYS. IF THE AREA IS NOT TO FINAL GRADE, THE AREA SHALL BE MULCHED. AREAS BROUGHT TO FINAL GRADE THAT WILL REMAIN PERVIOUS ARE TO BE PERMANENTLY SEEDED. ALLOWABLE EXCEPTIONS FROM THE NPDES GENERAL PERMIT NO. GAR 100001, ARE NOTED BELOW.
- "WHERE THE INITIATION OF STABILIZATION MEASURES BY THE 14th DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASES DUE TO SNOW COVER OR OTHER ADVERSE WEATHER CONDITIONS, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE."
- "WHERE CONSTRUCTION ACTIVITY WILL RESUME ON A PORTION OF THE SITE WITHIN 21 DAYS FROM WHEN ACTIVITIES CEASED, (e.g. THE TOTAL TIME PERIOD THAT CONSTRUCTION ACTIVITY IS TEMPORARILY CEASED IS LESS THAN 21 DAYS) THEN STABILIZATION MEASURES DO NOT HAVE TO BE INITIATED ON THAT PORTION OF THE SITE BY THE 14th DAY AFTER CONSTRUCTION ACTIVITY TEMPORARILY CEASED."
- PLEASE REFER TO ATTACHED SHEETS FOR THE LAND DISTURBANCE CONSTRUCTION SCHEDULE (SHEET EC4.1) AND TEMPORARY AND PERMANENT GRASSING SCHEDULE (SHEET EC5.2). THE STORMWATER WILL BE DISCHARGED BY SHEET FLOW EVENTUALLY MAKING ITS WAY TO THE TIVOLI RIVER.

NON–STORMWATER DISCHARGE:

- ALL NON–STORMWATER DISCHARGES WILL BE ROUTED THROUGH ON–SITE BMP'S AND THE STORMWATER MANAGEMENT SYSTEM WHERE POSSIBLE. THESE DISCHARGES INCLUDE FLUSHING OF WATER AND FIRE LINES, IRRIGATION WATER, GROUND WATER, DEWATERING OF PITS OR DEPRESSIONS WITHIN THE CONSTRUCTION SITE AND RINSE–OFF WATER OF NON–MATERIALS.

OTHER CONTROLS:

- NO WASTE WILL BE DISPOSED INTO STORMWATER INLETS OR WATERS OF THE STATE.

WASTE MATERIALS:
ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED A MINIMUM OF ONCE A WEEK OR MORE OFTEN IF NEEDED AND TRASH WILL BE HAULED AS REQUIRED BY LOCAL REGULATIONS. NO CONSTRUCTION WASTE WILL BE BURIED ON–SITE. ALL PERSONNEL WILL BE INSTRUCTED ON PROPER PROCEDURE FOR WASTE DISPOSAL. A NOTICE STATING THESE PRACTICES WILL BE POSTED AT THE JOBSITE AND THE CONTRACTOR WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTES
ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE, AND/OR FEDERAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. THE JOB SITE SUPERINTENDENT (WHO WILL ALSO BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED) WILL INSTRUCT SITE PERSONNEL IN THESE PRACTICES. MATERIAL SAFETY DATA SHEETS (MSDS's) FOR EACH SUBSTANCE WITH HAZARDOUS PROPERTIES THAT IS USED ON THE JOB SITE WILL BE OBTAINED AND USED FOR THE PROPER MANAGEMENT OF POTENTIAL WASTES THAT MAY RESULT FROM THESE PRODUCTS. AN MSDS WILL BE POSTED IN THE IMMEDIATE AREA WHERE SUCH PRODUCT IS STORED AND/OR USED AND ANOTHER COPY OF EACH MSDS WILL BE MAINTAINED IN THE ESPCP FILE AT THE JOB SITE CONSTRUCTION TRAILER OFFICE. EACH EMPLOYEE WHO MUST HANDLE A SUBSTANCE WITH HAZARDOUS PROPERTIES WILL BE INSTRUCTED ON THE USE OF MSDS AND THE SPECIFIC INFORMATION IN THE APPLICABLE MSDS FOR THE PRODUCT HE/SHE IS USING, PARTICULARLY REGARDING SPILL CONTROL TECHNIQUES.

THE CONTRACTOR WILL IMPLEMENT THE SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN FOUND WITHIN THE ESPCP AND WILL TRAIN ALL PERSONNEL IN THE PROPER CLEANUP AND HANDLING OF SPILLED MATERIALS. NO SPILLED HAZARDOUS MATERIAL OR HAZARDOUS WASTES WILL BE ALLOWED TO COME IN CONTACT WITH STORM WATER DISCHARGES. IF SUCH CONTACT OCCURS, THE STORM WATER DISCHARGE WILL BE CONTAINED ON SITE UNTIL APPROPRIATE MEASURES (IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS) ARE TAKEN TO DISPOSE OF SUCH CONTAMINATED STORM WATER. IT SHALL BE THE RESPONSIBILITY OF THE JOB SITE SUPERINTENDENT TO PROPERLY TRAIN ALL PERSONNEL IN THE USE OF THE SPCC PLAN.

SANITARY WASTES:
A MINIMUM OF ONE PORTABLE SANITARY UNIT WILL BE PROVIDED FOR EVERY 10 WORKERS ON THE SITE. ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONE TIME PER WEEK BY A LICENSED PORTABLE FACILITY PROVIDER IN COMPLETE COMPLIANCE WITH LOCAL AND STATE REGULATIONS. ALL SANITARY WASTE UNITS WILL BE LOCATED IN AN AREA WHERE THE LIKELIHOOD OF THE UNIT CONTRIBUTION TO STORM WATER DISCHARGE IS NEGLIGIBLE. ADDITIONAL CONTAINMENT BMP'S MUST BE IMPLEMENTED SUCH AS GRAVEL BAGS OR SPECIALTY DESIGNED PLASTIC SKID CONTAINERS AROUND THE BASES, TO PREVENT WASTE FROM CONTRIBUTING TO STORM WATER DISCHARGE. THE LOCATION OF SANITARY WASTE UNITS MUST BE IDENTIFIED IN THE EROSION CONTROL GRADING PLAN, BY THE CONTRACTOR ONCE THE LOCATIONS HAVE BEEN DETERMINED. SANITARY SEWER WILL BE PROVIDED BY BRYAN COUNTY AT THE COMPLETION OF THIS PROJECT.

OFF–SITE VEHICLE TRACKING:
A STABILIZED CONSTRUCTION EXIT HAS BEEN PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENT. SEE SHEETS EC1.1–EC3.1 FOR CONSTRUCTION EXIT LOCATIONS AND SHEET EC5.1 FOR DETAILS. THE PAVED STREET ADJACENT TO THE SITE EXIT WILL BE INSPECTED DAILY FOR TRACKING OF DIRT, MUD, OR ROCK. DUMP TRUCKS HAULING MATERIAL TO OR FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #73897

GEORGIA REGISTERED * ENGINEER * JASON JOSEPH BRYANT No. 38245 PROFESSIONAL

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EROSION CONTROL NOTES
THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21–286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: NTS
Date: 5/25/21

SHEET
EC4.1

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Wednesday, December 21, 2022 12:00:32 PM

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

Plan Page # | Included Y/N | TO BE SHOWN ON ES&PC PLAN

INVENTORY FOR POLLUTION PREVENTION PLAN:
THE FOLLOWING MATERIALS ARE EXPECTED ON-SITE DURING CONSTRUCTION: CONCRETE PRODUCTS, ASPHALT, PETROLEUM BASED FUEL AND LUBRICANTS FOR EQUIPMENT, TAR, METAL BUILDING MATERIALS, LUMBER, SHEET ROCK, FLOOR COVERINGS, ELECTRICAL WIRE AND FIXTURES, PAINT/STAINS/FINISHING TREATMENTS, PAINT, PAINT SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, CLEANING SOLVENTS, PESTICIDES, FERTILIZERS, HERBICIDES, CRUSHED STONE, AND METAL PIPES.

SPILL PREVENTION:
PRACTICES SUCH AS GOOD HOUSEKEEPING, PROPER HANDLING OF HAZARDOUS PRODUCTS AND PROPER SPILL CONTROL PRACTICES WILL BE FOLLOWED TO REDUCE THE RISKS OF SPILLS AND SPILLS FROM DISCHARGING INTO STORMWATER RUNOFF.

GOOD HOUSEKEEPING:
1. QUANTITIES OF PRODUCTS STORED ON-SITE WILL BE LIMITED TO THE AMOUNT NEEDED FOR THE JOB.
2. PRODUCTS AND MATERIALS WILL BE STORED IN A NEAT, ORDERLY MANNER IN APPROPRIATE CONTAINERS PROTECTED FROM RAINFALL, WHERE POSSIBLE.
3. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH MANUFACTURER LABELS VISIBLE.
4. PRODUCTS MIXING, DISPOSAL AND DISPOSAL OF PRODUCT CONTAINERS WILL BE ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.
5. THE CONTRACTOR WILL INSPECT SUCH MATERIALS TO ENSURE PROPER USE, STORAGE, AND DISPOSAL.

MAINTENANCE & INSPECTION OF EROSION & SEDIMENT CONTROLS:

MAINTENANCE:

THE FOLLOWING BEST MANAGEMENT PRACTICE MAINTENANCE CRITERIA ARE TAKEN FROM THE "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA," LATEST EDITION.

CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC DRESSING WITH 1.5-3.5 INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANING OF ANY STRUCTURES TO TRAP SEDIMENT. ALL MATERIAL SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES OR SITE ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

RETROFIT STRUCTURES SHALL BE KEPT CLEAR OF TRASH AND DEBRIS. THIS WILL REQUIRE CONTINUOUS MONITORING AND MAINTENANCE, WHICH INCLUDES SEDIMENT REMOVAL WHEN ONE-THIRD OF THE SEDIMENT STORAGE CAPACITY HAS BEEN LOST.

SEDIMENT SHALL BE REMOVED FROM SILT FENCES ONCE IT HAS ACCUMULATED ONE-THIRD 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).

SEDIMENT SHALL BE REMOVED FROM SEDIMENT TRAPS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE HEIGHT OF THE TRAP. SEDIMENT SHALL BE REMOVED FROM CURB INLET PROTECTION IMMEDIATELY. FOR EXCAVATED INLET SEDIMENT TRAPS, SEDIMENT SHALL BE REMOVED WHEN ONE-HALF OF THE SEDIMENT STORAGE CAPACITY HAS BEEN LOST TO SEDIMENT ACCUMULATION.

SEDIMENT SHALL NOT BE WASHED INTO THE INLET. IT SHALL BE REMOVED FROM THE SEDIMENT TRAP AND DISPOSED OF AND STABILIZED SO THAT IT WILL NOT ENTER THE INLET AGAIN.

WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED, ALL MATERIALS AND ANY SEDIMENT SHALL BE REMOVED, AND EITHER SALVAGED OR DISPOSED OF PROPERLY. THE DISTURBED AREA SHALL BE BROUGHT TO PROPER GRADE, SMOOTHED AND COMPACTED.

APPROPRIATELY STABILIZE ALL DISTURBED AREAS AROUND THE INLET.

REPAIR ALL DAMAGES CAUSED TO TEMPORARY SEDIMENT BASINS BY SOIL EROSION OR CONSTRUCTION EQUIPMENT AT OR BEFORE THE END OF EACH WORKING DAY. SEDIMENT SHALL BE REMOVED FROM THE BASIN WHEN IT REACHES THE TOP OF THE RISER. SEDIMENT SHALL NOT ENTER ADJACENT STREAMS OR DRAINAGE WAYS DURING SEDIMENT REMOVAL OR DISPOSAL. THE SEDIMENT SHALL NOT BE DEPOSITED DOWNSTREAM FROM THE EMBANKMENT, ADJACENT TO A STREAM OR FLOODPLAIN.

INSPECT RIPRAP OUTLET STRUCTURES AFTER HEAVY RAINS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

ROUGHENED AREAS SHALL BE SEEDED AND MULCHED AS SOON AS POSSIBLE TO OBTAIN OPTIMUM SEED GERMINATION AND SEEDING GROWTH.

MULCH OR TEMPORARY GRASSING SHALL BE APPLIED TO ALL EXPOSED AREAS WITHIN 14 DAYS OF DISTURBANCES. MULCH CAN BE USED AS A SINGULAR EROSION CONTROL DEVICE FOR UP TO 6 MONTHS, BUT IT SHALL BE APPLIED AT THE APPROPRIATE DEPTH (DEPENDING ON THE MATERIALS USED), ANCHORED, AND HAVE A CONTINUOUS 90% COVER. TEMPORARY VEGETATION MAY BE EMPLOYED INSTEAD OF MULCH IF THE AREA WILL REMAIN UNDISTURBED FOR LESS THAN 8 MONTHS. IF THE AREA WILL REMAIN UNDISTURBED FOR GREATER THAN 6 MONTHS, PERMANENT VEGETATIVE TECHNIQUES SHALL BE EMPLOYED.

PERMANENT VEGETATION SHALL BE APPLIED IMMEDIATELY TO ROUGH GRADED AREAS THAT WILL BE UNDISTURBED FOR LONGER THAN 6 MONTHS. THIS PRACTICE OF SODDING SHALL BE APPLIED IMMEDIATELY TO ALL AREAS AT FINAL GRADE. FINAL STABILIZATION MEANS THAT ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED, AND THAT FOR THE UNPAVED AREAS AND AREAS NOT COVERED IN PERMANENT STRUCTURES AT LEAST 70% COVERAGE OF THE SOIL SURFACE IS UNIFORMLY COVERED IN PERMANENT VEGETATION OR EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS THE USE OF RIPRAP, GABIONS, PERMANENT MULCHES OR GEOTEXTILES) HAVE BEEN EMPLOYED. PERMANENT VEGETATION SHALL CONSIST OF PLANTED TREES, SHRUBS, PERENNIAL VINES, A CROP OF PERENNIAL VEGETATION APPROPRIATE FOR THE REGION, SUCH THAT WITHIN THE GROWING SEASON, A 70% COVERAGE BY PERENNIAL VEGETATION SHALL BE ACHIEVED. FINAL STABILIZATION APPLIES TO EACH PHASE OF CONSTRUCTION UNTIL THIS STANDARD IS SATISFIED AND PERMANENT CONTROL MEASURES AND FACILITIES ARE OPERATIONAL. INTERIM STABILIZATION MEASURES AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED.

EC4.2	YES	27. DESCRIPTION OF PRACTICES TO PROVIDE COVER FOR BUILDING MATERIALS AND BUILDING PRODUCTS ON SITE.*

FOR BUILDING MATERIALS, BUILDING PRODUCTS, CONSTRUCTION WASTES, TRASH, LANDSCAPE MATERIALS, FERTILIZERS, PESTICIDES, HERBICIDES, DETERGENTS, SANITARY WASTE AND OTHER MATERIALS PRESENT ON THE SITE, PROVIDE COVER (E.G. PLASTIC SHEETING, TEMPORARY ROOFS) TO MINIMIZE THE EXPOSURE OF THESE PRODUCTS TO PRECIPITATION AND TO STORMWATER, OR A SIMILARLY EFFECTIVE MEANS DESIGNED TO MINIMIZE THE DISCHARGE OF POLLUTANTS FROM THESE AREAS. MINIMIZATION OF EXPOSURE IS NOT REQUIRED IN CASES WHERE EXPOSURE TO PRECIPITATION AND TO STORMWATER WILL NOT RESULT IN A DISCHARGE OF POLLUTANTS, OR WHERE EXPOSURE OF A SPECIFIC MATERIAL OR PRODUCT POSES LITTLE RISK TO STORMWATER CONTAMINATION (SUCH AS FINAL PRODUCTS AND MATERIALS INTENDED FOR OUTDOOR USE).

EC4.2	YES	28. Description of the practices that will be used to reduce the pollutants in storm water discharges.*

Product Specific Practices

Petroleum Based Products – Containers for products such as fuel, lubricants and tars will be inspected daily for leaks and spills. This includes on-site vehicle and machinery daily inspections and regular preventative maintenance of 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.

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 manufacturer's specifications and recommendations.

Concrete Truck Washing – NO concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water onsite.

Fertilizer/Herbicides – These products 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 Sediment Control in Georgia. Any storage of these materials will be under roof in sealed containers.

Building Materials – No building or construction materials will be buried or disposed of onsite. All such materials will be disposed of using proper waste disposal procedures.

EC4.2	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 BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).

CONSIDERATIONS FOR CONSTRUCTION SCHEDULING

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

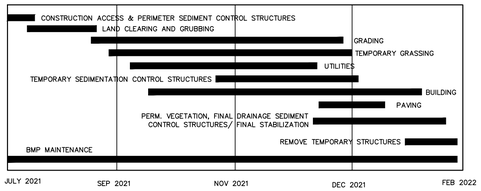
THE PURPOSE OF THE SCHEDULE IS TO REDUCE ON-SITE EROSION AND OFF-SITE SEDIMENTATION BY PERFORMING LAND DISTURBING ACTIVITIES AND INSTALLING EROSION AND SEDIMENTATION CONTROL PRACTICES IN ACCORDANCE WITH A PLANNED SCHEDULE.

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.

Plan Page # | Included Y/N | TO BE SHOWN ON ES&PC 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. CLEAR BORROW AND DISPOSAL AREAS ONLY AS NEEDED. 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. UTILITIES, PAVING, BUILDING	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.

PROPOSED CONSTRUCTION SCHEDULE:



EC4.2	YES	30. Provide complete requirements of inspections and record keeping by the primary permittee.*

INSPECTIONS

A. PERMITTEE REQUIREMENTS.

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 AT THE PRIMARY PERMITTEE'S SITE WHERE PETROLEUM PRODUCTS ARE STORED, USED, OR HANDLED FOR SPILLS AND LEAKS FROM VEHICLES AND EQUIPMENT AND
   (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 PERSONNEL (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 RAINFALL OR GREATER (UNLESS SUCH STORM ENDS AFTER 5:00 PM ON ANY FRIDAY OR ON ANY NON-WORKING SATURDAY, NON-WORKING SUNDAY OR ANY NON-WORKING 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 THE 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 SITE 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.

Plan Page # | Included Y/N | TO BE SHOWN ON ES&PC PLAN

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

ROBERT HOGAN – THIRD LAKE DEVELOPMENT, LLC
1600 E. 8th AVE., SUITE A132
TAMPA, FLORIDA 33605
704-201-1922
EMAIL: RHogan@thirdlakedevelopment.com

ATTN.:
PITTMAN ENGINEERING CO., LLC
2591 HWY 17 SUITE 303
RICHMOND HILL, GA 31324
912-445-0578
JASON@PITTMANENGINEERINGCO.COM

EC4.2	YES	31. Provide complete requirements of sampling frequency and reporting of sampling results.*

STORM WATER SAMPLING:

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 STORMWATER DISCHARGE TO A MONITORED RECEIVING WATER AND/OR FROM A MONITORED OUTFALL LOCATION WITHIN IN 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 STORMWATER 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 STORMWATER 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 STORMWATER DISCHARGE THAT OCCURS DURING NORMAL BUSINESS HOURS AS DEFINED IN THIS 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 LOCATION, 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. SAMPLING AND ANALYSIS OF ANY STORMWATER 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 REPORTS 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.

GOVERNING AGENCY:
COASTAL DISTRICT – BRUNSWICK OFFICE
GEORGIA ENVIRONMENTAL PROTECTION DIVISION
400 COMMERCE CENTER DRIVE
BRUNSWICK, GA 31523-8251
(912) 264-7284

ROBERT HOGAN – THIRD LAKE DEVELOPMENT, LLC
1600 E. 8th AVE., SUITE A132
TAMPA, FLORIDA 33605
704-201-1922
EMAIL: RHogan@thirdlakedevelopment.com

ATTN.:
PITTMAN ENGINEERING CO., LLC
2591 HWY 17 SUITE 303
RICHMOND HILL, GA 31324
912-445-0578
JASON@PITTMANENGINEERINGCO.COM

EC4.2	YES	32. Provide complete details for retention of records as per Part IV.F. 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 THE DESIGNATED ALTERNATE LOCATION) FROM COMMENCEMENT OF CONSTRUCTION UNTIL SUCH TIME AS A NOTICE OF TERMINATION IS SUBMITTED IN ACCORDANCE WITH PART VI.
   a. A COPY OF NOTICES OF INTENT SUBMITTED TO EPD.
   b. A COPY OF THE EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN REQUIRED BY THIS PERMIT.
   c. THE DESIGN PROFESSIONAL'S REPORT OF THE RESULTS OF THE INSPECTION CONDUCTED IN ACCORDANCE WITH PART IV.A.5 OF THIS PERMIT.
   d. A COPY OF ALL MONITORING INFORMATION, RESULTS AND REPORTS REQUIRED BY THIS PERMIT.
   e. A COPY OF ALL INSPECTION REPORTS GENERATED IN ACCORDANCE WITH PART IV.D.4.(a) OF THIS PERMIT.
   f. A COPY OF VIOLATION SUMMARIES AND VIOLATION SUMMARY REPORTS GENERATED IN ACCORDANCE WITH PART III.D.2 OF THIS PERMIT.
   g. DAILY RAINFALL INFORMATION COLLECTED IN ACCORDANCE WITH PART IV.D.4.(a).(1)(c) OF THIS PERMIT.
2. COPIES OF ALL NOTICES OF INTENT, NOTICE OF TERMINATION, REPORTS, PLANS, MONITORING INFORMATION (INCLUDING ALL CALIBRATION AND MAINTENANCE RECORDS AND ALL ORIGINAL STRIP CHART RECOR

Wednesday, December 21, 2022 12:00:37 PM

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

Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN
EC4.3	YES	33. DESCRIPTION OF ANALYTICAL METHODS TO BE USED TO COLLECT AND ANALYZE THE SAMPLES FROM EACH LOCATION.*

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 AS SHOWN ON A USGS TOPOGRAPHIC MAP, AND ALL OTHER PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES LOCATED DURING MANDATORY FIELD VERIFICATION, INTO WHICH THE STORMWATER 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 OF THE RECEIVING WATER(S) MUST BE HAND-DRAWN ON THE USGS TOPOGRAPHIC MAP FROM WHERE THE STORMWATER(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) ON OUTFALLS BEYOND THE MINIMUM FREQUENCY STATED IN THIS PERMIT MUST BE REPORTED TO EPD AS SPECIFIED IN PART IV.E.

c. SAMPLING POINTS.
(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 STORMWATER OUTFALLS 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 STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST UPSTREAM AT THE SITE) BUT DOWNSTREAM OF ANY OTHER STORMWATER 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
(B). THE DOWNSTREAM SAMPLE FOR EACH RECEIVING WATER(S) MUST BE TAKEN DOWNSTREAM OF THE CONFLUENCE OF THE LAST STORMWATER DISCHARGE FROM THE PERMITTED ACTIVITY (I.E., THE DISCHARGE FARTHEST DOWNSTREAM AT THE SITE) BUT UPSTREAM OF ANY OTHER STORMWATER 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 STORMWATER OUTFALL CHANNEL(S).
(D). CARE SHOULD BE TAKEN TO AVOID STIRRING THE BOTTOM SEDIMENTS IN THE RECEIVING WATER(S) OR IN THE OUTFALL STORMWATER 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 SHEET FLOW 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).
(H). 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 STORMWATER 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.

EC4.3	YES	34. Appendix B rationale for NTU values at all outfall sampling points where applicable.* FOR A SITE ACREAGE SIZE OF 60.2 AND WATERS SUPPORTING WARM WATER FISHERIES DRAINAGE AREA LESS THAN 5 SQUARE MILES, THE NTU VALUE TO USE IN PART III.D.4. IS 50 NTU.

APPENDIX B
Nephelometric Turbidity Unit (NTU) Table
Warm Water (Supporting Warm Water Fisheries)

SITE SIZE (ACRES)	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

Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN
EC2.1-EC3.3	YES	35. Delineate all sampling locations if applicable, perennial and intermittent streams and other water bodies into which storm water is discharged. *
EC1.1-EC3.3	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 BMPs, (2) Intermediate Grading and Drainage BMPs, and (3) Final BMPs. For construction sites where there will be no mass grading and the initial Perimeter Control BMPs, Intermediate Grading and Drainage BMPs, and Final BMPs are the same, the plan may combine all of the BMPs into a single phase.* A temporary sediment trap(s) will accommodate the 67 cy of initial sediment storage. Silt fence will provide perimeter control. Intermediate grading and drainage BMPs include construction exit, detention ponds with outfall control structures with storm outlet protection, concrete wash down, dust control, mulching, temporary seeding and silt fence. Final phase BMPs include construction exit, concrete wash down, detention ponds with outfall control structures with storm outlet protection, dust control and permanent vegetation stabilization. Each phase of the plan includes the appropriate controls and measures, including the initial sediment storage requirements, intermediate grading and drainage BMPs and Final BMPs. Refer to Sheets EC1.1-1.2, EC2.1-2.2 and EC3.1-3.2.
EC1.1-EC3.3	YES	37. Graphic scale and North arrow.
EC1.1-EC3.3	YES	38. Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:

Map Scale	Ground Slope	Contour Intervals, ft.
1 inch = 100ft or larger scale	Flat 0 - 2% Rolling 2 - 8% Steep 8% +	0.5 or 1 1 or 2 2,5 or 10

N/A	NO	39. Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs 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.
N/A	NO	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.*
EC1.1-EC3.7	NO	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. THERE ARE NOT ANY STATE WATERS LOCATED ON OR WITHIN 200' OF THIS PROJECT SITE. BUFFERS ARE NOT REQUIRED SINCE THERE IS NOT ANY WRESTED VEGETATION.
N/A	NO	42. Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site. THERE ARE NOT ANY ON-SITE WETLANDS OR STATE WATERS LOCATED ON OR WITHIN 200' OF THIS PROJECT SITE.
EC1.1-EC3.3 EC4.3	YES	43. Delineation and acreage of contributing drainage basins on the project site. LIMITS OF DISTURBANCE = 51.75 AC OFFSITE DRAINAGE = XX.X AC TOTAL CONTRIBUTING DRAINAGE = XX.XX AC
EC4.3	NO	44. Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions.* N/A
EC4.3	YES	45. An estimate of the Runoff Coefficient or Peak Discharge Flow of the site prior to and after construction activities are completed. RUNOFF CURVE NUMBER (SCS METHOD USED): PRE-DEVELOPMENT: CN=75 (WOODED, HSG TYPE C) POST-DEVELOPMENT: CN=83 (WOODED, HSG TYPE C)
NA	NO	46. Storm-Drain Pipe and Weir Velocities with appropriate Outlet Protection to accommodate discharges without erosion. Identify/Delineate all Storm Water Discharge Points.
EC1.1-EC3.3 EC4.3	YES	47. Soil series for the project site and their delineation.

SOILS LEGEND:

SYMBOL	NAME	RATING
OI	OCILLA COMPLEX	B/D
PI	PELHAM LOAMY SAND	B/D
Pn	POOLER FINE SANDY LOAM	C/D
As	ALBANY FINE SAND	A/D
Cc	CAPE FEAR SOILS	C/D
Cx	CRAVEN LOAMY FINE SAND	C

EC1.1-EC3.3	YES	48. The Limits of Disturbance for each phase of construction.
EC1.1-EC3.3 EC4.3, EC5.1-EC5.3	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 Design Professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees 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.

67 CY SEDIMENT STORAGE PER DISTURBED ACRE REQUIREMENT

- TOTAL PROJECT ACREAGE = 60.2
- TOTAL DISTURBED ACREAGE = 60.2
- TOTAL REQUIRED SEDIMENT STORAGE: 60.2 X 67 c.y./Ac. = 4,033.4 c.y.

- THIS PROJECT WILL MEET THE SEDIMENT STORAGE REQUIREMENT UTILIZING 11 PROPOSED TEMPORARY SEDIMENT TRAPS DURING THE INITIAL AND INTERMEDIATE PHASES, AND REVERT BACK TO SHEET FLOW (OVER-LAND FLOW) THE REMAINING PHASE.
- THE PROPOSED LAND DISTURBING ACTIVITIES FOR THIS PROJECT INCLUDE GRADING THE SITE TO PROVIDE POSITIVE DRAINAGE FOR SPECIFIC AND LIMITED AREAS OF THE SITE.
- SEE SHEETS EC1.1-EC2.7 FOR SEDIMENT TRAP CALCULATIONS.

EC1.1-EC3.3 EC5.1-EC5.3	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.
EC5.1-EC5.3	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.

Plan Page #	Included Y/N	TO BE SHOWN ON ES&PC PLAN
EC4.3, EC1.1-EC5.3	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 the appropriate geographic region of Georgia.

LIME RATES AND ANALYSIS

* AGRICULTURAL LIME SHALL BE APPLIED AT THE RATE OF ONE TO TWO TONS PER ACRE UNLESS SOIL TESTS INDICATE OTHERWISE. GRADED AREAS REQUIRE LIME APPLICATION. IF LIME IS APPLIED WITHIN SIX MONTHS OF PLANTING PERMANENT PERENNIAL VEGETATION, ADDITIONAL LIME IS NOT REQUIRED. AGRICULTURAL LIME SHALL BE WITHIN THE SPECIFICATIONS OF THE GEORGIA DEPARTMENT OF AGRICULTURE.

MULCHING (MULCHING IS REQUIRED FOR ALL PERMANENT VEGETATION APPLICATIONS). MULCH APPLIED TO SEEDED AREAS SHALL ACHIEVE 75% SOIL COVER. SELECT THE MULCHING MATERIAL FROM THE FOLLOWING AND APPLY AS INDICATED:

* DRY STRAW OR DRY HAY OF GOOD QUALITY AND FREE OF WEED SEEDS CAN BE USED. DRY STRAW SHALL BE APPLIED AT THE RATE OF TWO TONS PER ACRE. DRY HAY SHALL BE APPLIED AT THE RATE OF 2-1/2 TONS PER ACRE.
* WOOD CELLULOSE MULCH OR WOOD PULP FIBER SHALL BE USED WITH HYDRAULIC SEEDING. IT SHALL BE APPLIED AT A RATE OF 500 POUNDS PER ACRE. DRY STRAW OR DRY HAY SHALL BE APPLIED (AT THE RATE INDICATED BELOW) AFTER HYDRAULIC SEEDING.
* ONE THOUSAND POUNDS OF WOOD CELLULOSE OR WOOD PULP FIBER, WHICH INCLUDES TACKIFIER, SHALL BE USED WITH HYDRAULIC SEEDING ON SLOPES 4:1 OR STEEPER.
* SERICEA LESPEDEZA HAY CONTAINING MATURE SEED SHALL BE APPLIED AT A RATE OF 3 TONS PER ACRE.
* PINE STRAW OR PINE BARK SHALL BE APPLIED AT A THICKNESS OF 3 INCHES FOR BEDDING PURPOSES. OTHER SUITABLE MATERIALS IN SUFFICIENT QUANTITY MAY BE USED WHERE ORNAMENTALS OR OTHER GROUND COVERS ARE PLANTED. THIS IS NOT APPROPRIATE FOR SEEDED AREAS.
* WHEN USING TEMPORARY EROSION CONTROL BLANKETS OR BLACK SOD, MULCH IS NOT REQUIRED.

FERTILIZER REQUIREMENTS

TYPE OF SPECIES	YEAR	ANALYSIS OR EQUIVALENT N-P-K	RATE	N TOP DRESSING RATE
1. COOL SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 1/2/ - 30
2. COOL SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	0-50 lbs./ac. 1/ - -
3. GROUND COVERS	FIRST SECOND MAINTENANCE	10-10-10 10-10-10 10-10-10	1300lbs./ac. 3/ 1300lbs./ac. 3/ 1100 lbs./ac.	- - -
4. PINE SEEDLINGS	FIRST	20-10-5	ONE 21-GRAM PELLET PER SEEDLING PLACED IN THE CLOSING HOLE	-
5. SHRUB LESPEDEZA	FIRST MAINTENANCE	0-10-10 0-10-10	700lbs./ac. 700lbs./ac. 4/	- -
6. TEMPORARY COVER CROPS SEEDED ALONE	FIRST	10-10-10	500lbs./ac.	30 lbs./ac. 5/
7. WARM SEASON GRASSES	FIRST SECOND MAINTENANCE	6-12-12 6-12-12 10-10-10	1500lbs./ac. 800lbs./ac. 400 lbs./ac.	50-100 lbs./ac. 2/6/ 50-100 lbs./ac. 2/ 30 lbs./ac.
8. WARM SEASON GRASSES AND LEGUMES	FIRST SECOND MAINTENANCE	6-12-12 0-10-10 0-10-10	1500lbs./ac. 1000lbs./ac. 400 lbs./ac.	50 lbs./ac. 6/

1/ APPLY IN SPRING FOLLOWING SEEDING.
2/ APPLY IN SPLIT APPLICATIONS WHEN HIGH RATES ARE USED.
3/ APPLY IN 3 SPLIT APPLICATIONS.
4/ APPLY WHEN PLANTS ARE PRUNED.
5/ APPLY TO GRASS SPECIES ONLY.
6/ APPLY WHEN PLANTS GROW TO A HEIGHT OF 2 TO 4 INCHES.

*IF USING THIS CHECKLIST FOR A PROJECT THAT IS LESS THAN 1 ACRE AND NOT PART OF A COMMON DEVELOPMENT BUT WITHIN 200 FT OF A PERENNIAL STREAM THE * CHECKLIST ITEMS WOULD BE N/A.

Effective January 1, 2022

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #13897

REGISTERED GEORGIA No. 38245 PROFESSIONAL ENGINEER JASON JOSEPH BRYANT

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EROSION CONTROL NOTES
THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21-286
Drawn By: MKJ
Designed By: JJB
Checked By: RAP
Scale: NTS
Date: 5/25/21

SHEET
EC4.3

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan 12 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 12:00:42 PM

APPENDIX 1
THE ES&PC PLAN MUST INCLUDE AT LEAST FOUR (4) OF THE FOLLOWING BMPS FOR THOSE AREAS OF THE SITE WHICH DISCHARGE TO A IMPAIRED STREAM SEGMENT AND FOR SITES WHICH EPD HAS APPROVED IN WRITING A REQUEST TO DISTURB 50 ACRES OR MORE AT ANY ONE TIME.
The four items chosen must be appropriate for the site conditions.

Plan Page #	Included Y/N	
N/A	NO	a. During construction activities, double the width of the 25 foot undisturbed vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer along all State waters classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width.
N/A	NO	b. Increase all temporary sediment basins and retrofitted storm water management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.
N/A	NO	c. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at least double the conventional flow path length to the outlet structure.
EC4.1–EC4.4	YES	d. A large sign (minimum 4 feet x 8 feet) must be posted on site by the actual start date of construction. The sign must be visible from a public roadway. The sign must identify the following: (1) construction site, (2) the permittee(s), (3) the contact person(s) and telephone number(s), and (4) the permittee–hosted website where the Plan can be viewed must be provided on the submitted NOI. The sign must remain on site and the Plan must be available on the provided website until a NOT has been submitted. A COPY OF THE PLANS CAN BE VIEWED AND DOWNLOADED FROM THE FOLLOWING URL: https://bit.ly/3mCFvlQ
N/A	NO	e. Use flocculants or coagulants and/or mulch to stabilize areas left disturbed for more than seven (7) calendar days in accordance with Section III. D.1. of the NPDES Permit.
EC4.1–EC4.4	YES	f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Section IV.D.6.d. of the NPDES Permits.
N/A	NO	g. Comply with the applicable end–of–pipe turbidity effluent limit, without the "BMP defense" as provided for in O.C.G.A. 12–7–6 (a)(1).
N/A	NO	h. Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State–mandated buffer areas from such calculations). All calculations must be included on the Plan.
N/A	NO	i. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less. All calculations must be included on the Plan.
N/A	NO	j. Use "Dirt II" techniques available on the EPD website to model and manage construction storm water runoff (including sheet flow). All calculations must be included on the Plan. (https: //epd.georgia.gov/erosion–and–sedimentation)
N/A	NO	k. Add appropriate organic soil amendments (e.g., compost) and conduct pre– and post–construction soil sampling to a depth of six (6) inches to document improved levels of soil carbon after final stabilization of the construction site.
N/A	NO	l. Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow.
N/A	NO	m. Use appropriate erosion control slope stabilization instead of concrete in all construction storm water ditches and storm drainages designed for a 25 year, 24 hour rainfall event.
N/A	NO	n. Use flocculants or coagulants under a passive dosing method (e.g., flocculant blocks) within construction storm water ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.
N/A	NO	o. Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved, along the site perimeter wherever storm water (including sheet flow) may be discharged.
EC4.1–EC4.4	YES	p. Conduct soil tests to identify and to implement site–specific fertilizer needs.
N/A	NO	q. Certified personnel for primary permittees shall conduct inspections at least twice every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) –(c); secondary permittees, Section IV.D.4.b.(3)(a) –(c); and tertiary permittees Section IV.D.4.c.(3)(a) –(c) *
N/A	NO	r. Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity.
N/A	NO	s. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). (If using this item please refer to the Alternative BMP guidance document found at www.gaswcc.georgia.gov)
N/A	NO	t. Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any state mandated buffer areas from such calculations). All calculations must be included in the Plan.
EC4.1–EC4.4	YES	u. Conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase of the project by the design professional who prepared the Plan in accordance with Section IV.A.5 of the permit. The Plan must include a statement that the primary permittee must retain the design professional who prepared the Plan to conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase.
N/A	NO	v. Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in the Georgia Stormwater Management Manual known as the Blue Book or an equivalent or more stringent design manual.

* This requirement is different for infrastructure projects:
Certified personnel for primary permittees shall conduct inspections at least once every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Section IV.D.4.a.(3)(a) –(c) of the permit.

NOTE:
THE PRIMARY PERMITTEE MUST RETAIN THE DESIGN PROFESSIONAL WHO PREPARED THE PLAN TO CONDUCT INSPECTIONS DURING THE INTERMEDIATE GRADING AND DRAINAGE BMP PHASE AND DURING THE FINAL BMP PHASE.

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #13897

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EROSION CONTROL NOTES

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No. 21–286
Drawn By: MKJ
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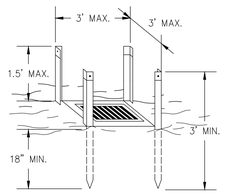
Wednesday, December 21, 2022 12:00:54 PM

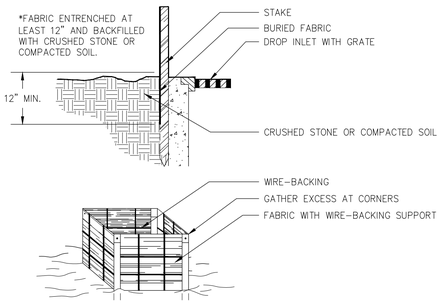
FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

Sd2-F

STEEL FRAME AND SILT FENCE INSTALLATION



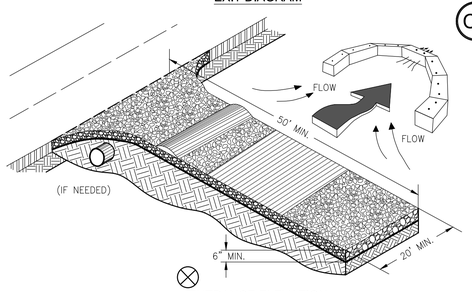
NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.



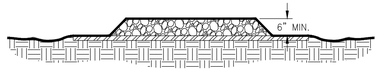
CRUSHED STONE CONSTRUCTION EXIT

EXIT DIAGRAM

Co



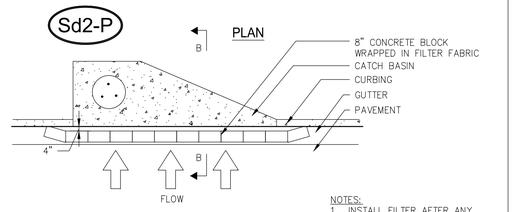
ENTRANCE ELEVATION



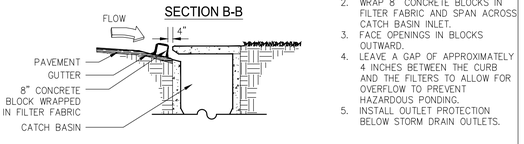
NOTES:
1. AVOID LOCATING ON STEEP SLOPES OR AT CURVES ON PUBLIC ROADS.
2. REMOVE ALL VEGETATION AND OTHER UNSUITABLE MATERIAL FROM THE FOUNDATION AREA, GRADE, AND CROWN FOR POSITIVE DRAINAGE.
3. AGGREGATE SIZE SHALL BE IN ACCORDANCE WITH NATIONAL STONE ASSOCIATION R-2 (1.5"-3.5" STONE).
4. GRAVEL PAD 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.

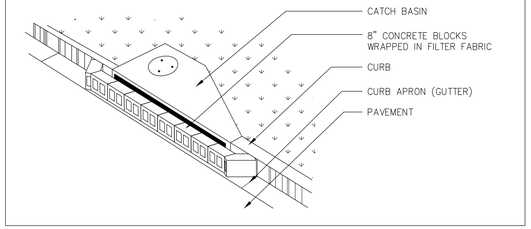
CURB INLET FILTER "PIGS IN BLANKET"

Sd2-P



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.

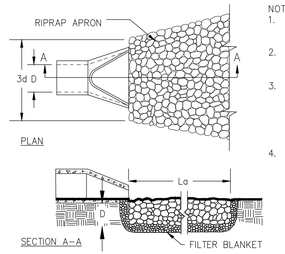




RIPRAP OUTLET PROTECTION

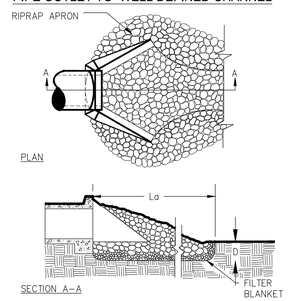
PIPE OUTLET TO FLAT AREA -- NO WELL DEFINED CHANNEL

St



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.

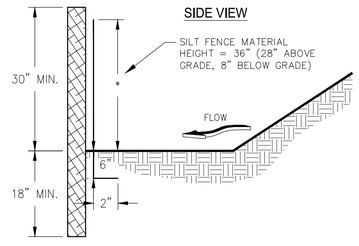
PIPE OUTLET TO WELL DEFINED CHANNEL



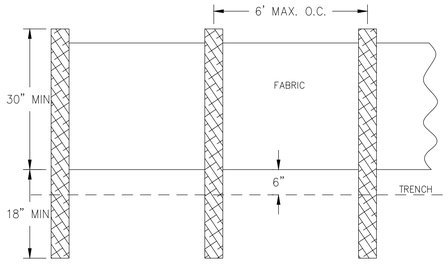
SILT FENCE - TYPE NON-SENSITIVE

Sd1-NS

SIDE VIEW



FRONT VIEW

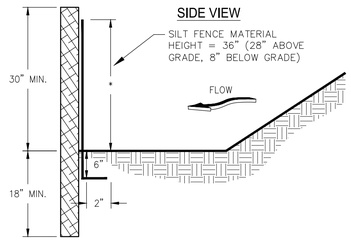


NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

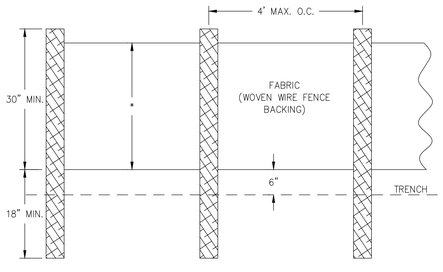
SILT FENCE - TYPE SENSITIVE

Sd1-NS

SIDE VIEW



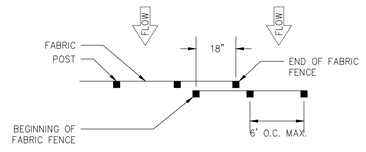
FRONT VIEW



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

FASTENERS FOR SILT FENCES

OVERLAP AT FABRIC ENDS



TOP VEIW - NOT TO SCALE

FRONT VIEWS - NOT TO SCALE

NOTES:
1. THE FABRIC AND WIRE SHOULD BE SECURELY FASTENED TO POSTS AND FABRIC ENDS MUST BE OVERLAPPED A MINIMUM OF 18" OR WRAPPED TOGETHER AROUND A POST TO PROVIDE A CONTINUOUS FABRIC BARRIER AROUND THE INLET.

REV.	REVISIONS	BY	DATE
1	REVISED AS PER OWNER & CITY COMMENTS	MKJ	11/3/22

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #75897

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EROSION CONTROL DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1

Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	NTS
Date:	5/31/22

SHEET
EC5.1

C:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Erosion Control Details.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 12:00:59 PM

GEORGIA
UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT		Co (LABEL)	A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION		Cr (LABEL)	A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE		Dn1 (LABEL)	A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE		Dn2 (LABEL)	A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE		Gr (LABEL)	Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL		Re (LABEL)	A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING		Rt (LABEL)	A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER		(INDICATE TYPE)	A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN		Sd3 (LABEL)	A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER		Sk (LABEL)	A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM		Spb (LABEL)	Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING		Sr (LABEL)	A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION		St	A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING		Su	A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING		(SHOW STRIPPING AND STORAGE AREAS)	The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION		(SHOW TREE COVERS)	To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE		Bf (LABEL)	Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedlings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP. SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM. SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS		Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

GaSWCC (Amended – 2013)

DISTURBED AREA STABILIZATION (WITH MULCH ONLY) Ds1

DEFINITION
Applying plant residues or other suitable materials not produced on the site to the soil surface.

PURPOSE
To reduce runoff and erosion; conserve moisture, prevent surface compaction or crusting; to control undersirable vegetation; to modify soil temperature; to increase biological activity in the soil.

SPECIFICATIONS
A. For temporary protection of critical areas without seeding.

This standard applies to graded or cleared areas which may be subjected to erosion for 6 months or less, where seedings may not have a suitable growing season to produce an erosion retardant cover, but which can be stabilized with a mulch cover.

Site Preparation
1. Grade, as needed and feasible, 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. As needed and feasible, loosen compact soil to a minimum depth of 3 inches.

Mulching Materials
1. Dry straw of hay - spread at a rate of 2 1/2 tons per acre.
2. Wood waste, chips, sawdust or bark-spread 2 to 3 inches deep (about 6 to 0 tons per acre).
3. Erosion control matting or netting, such as excelsior, jute, textile and plastic matting and netting - applied in accordance with manufac-turerers recommendations.
4. Cutback asphalt, slow curing - applied at 1200 gallons per acre (or 1/4 gallon per sq. yd.)
5. Polyethylene film - secured over banks or stockpiled soil material for temporary protection.

Applying and Anchoring Mulch
1. Apply straw or hay mulch uniformly by hand or mechanically. Anchor as appropriate and feasible. It may be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk". The disk may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position.
   Straw hay mulch spread with special blower-type equipment may be anchored with emulsi-fied asphalt (Grade AE-5 or SS-1). The asphalt emulsion must be sprayed onto the mulch as it is ejected from the machine. Use 100 gallons of water per ton of mulch.
2. Spread wood waste uniformly on slopes that are 3:1 and flatter. No anchoring is needed.
3. Commercial matting and netting. Follow manufacturer's specification included with the material.
4. Apply asphalt so area has uniform appear-ance. (Note: Use in areas of pedestrian traffic could cause problems of "tracking in" or dam-age to shoes, clothing, etc.)

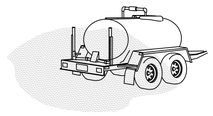
B. To conserve moisture and control weeds in nurseries, ornamental beds, around shrubs, and on bare areas on lawns.
   Mulching Materials
   Use one of the material given below and apply at thickness indicated.

Material	Depth
1. Grain straw or grass hay	6" to 10"
2. Pine Needles	4" to 6"
3. Wood waste (sawdust, bark, chips)	4" to 8"
4. Shredded residues (crop, leaves, etc.)	4" to 8"

5. Completely cover area with black polyethylene film and hold in place by placing soil on the outer edge.

When using organic mulches, apply 20-30 pounds of nitrogen in addition to the normal amount needed for plant growth to offset the tie up of N by decomposition of mulch.

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 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 specifications 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, snow fences, 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 Areas Stabilization (With Permanent Vegetation). Existing trees and large shrubs may afford valuable protection if left in place.

Topsoilling. This entails covering the surface with less erosive soil material . See specification Tp - Topsoilling.

Stone. Cover surface with crushed stone or coarse gravel. See specification Cr - Construction Road Stabilization.

DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDINGS) Ds2

PLANTS, PLANTING RATES, AND PLANTING DATES FOR TEMPORARY COVER OR COMPANION CORPS 1/

Species	Broadcast Rates 2/-PLS3/ Per Acre	Broadcast Rates 2/-PLS3/ Per 1000 sq. ft.	Resource Planting Dates by Resource Area: Area	Planting Dates (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
MILLET, PEARL (Pennesetum glaucum) alone	50 lbs.	1.1 lb.	M-L P C	J F M A M J J A S O N D	88,000 Seed per pound. Quick dense cover. May reach 5 feet in height. Not recommended for mixtures.
RYEGRASS, ANNUAL (Lolium Temulentum) alone	40 lbs.	0.9 lb.	M-L P C	J F M A M J J A S O N D	227,000 seed pound. Dense cover. Very competitive and is not to be used in mixtures.

1. Temporary cover crops are very competitive and will crowd perennials if seeded to heavily.
2. Reduce seeding rates by 50% when drilled.
3. PLS is an abbreviation for Pure Live Seed.
4. M-L represents the Mountain: Blue Ridge: and Ridges and Valleys MLRAs
   P represents the Southern Piedmont MLRA
   C represents Southern Coastal Plain: Sand Hills: Black Lands: and Atlantic Coast Flatwoods MLRAs

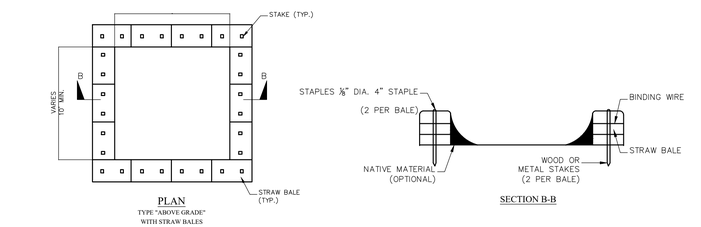
DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION) Ds3

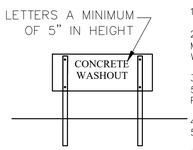
PLANTS, PLANTING RATES, AND PLANTING DATES FOR PERMANENT COVER

Species	Broadcast Rates 2/-PLS3/ Per Acre	Broadcast Rates 2/-PLS3/ Per 1000 sq. ft.	Resource Planting Dates by Resource Area: Area	Planting Dates (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
BERMUDA, COMMON (Cynodon dactylon) Hulled seed alone	10 lbs.	0.2 lb.	P C	J F M A M J J A S O N D	1,787,000 seed per pound. Quick cover. Low growing and sod forming. Full sun. Good for athletic fields.
with other perennials	6 lbs.	0.1 lb.			
BERMUDA, COMMON (Cynodon dactylon) Unhulled seed with temporary cover	10 lbs.	0.2 lb.	P C	J F M A M J J A S O N D	Plant with winter annuals.
with other perennials	6 lbs.	0.1 lb.			Plant with Tall fescue.
BERMUDA SPRIGS (Cynodon dactylon) Coastal, Common, Midland, or Tift 44	40 cu. ft. or sod pulgs 3'x 3'	0.9 cu. ft.	M-L P C	J F M A M J J A S O N D	A cubic foot contains approximately 650 sprigs. A bushel contains 1.25 cubic feet or approximately 800 srigs.
Coastal, Common, or Tift 44					Same as above
Tift 78			C		Southern costal Plain only.
CENTIPEDE (Eremochloa ophiuroides)	Block sod only		P C	J F M A M J J A S O N D	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 north as Athens and Atlanta.
LOVEGRASS, WEEPING (Eragrostis curvula) alone	4 lbs.	0.1 lb.	M-L P C	J F M A M J J A S O N D	1,500,000 Seed per pound. May last for several years. Mix with Sericea lespedeza.
in mixtures	2 lbs.	0.05 lb.			

1. Reduce seeding rates by 50% when drilled.
2. PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specification..
3. M-L represents the Mountain: Blue Ridge: and Ridges and Valleys MLRAs
   P represents the Southern Piedmont MLRA; C represents Southern Coastal Plain: Sand Hills: Black Lands: and Atlantic Coast

STRAW BALE BARRIER CONCRETE WASHOUT





CONCRETE WASHOUT SIGN DETAIL

NOTES:
1. ACTUAL LAYOUT DETERMINED IN FIELD.
2. INSTALL CONCRETE WASHOUT SIGN (24"X24", MINIMUM) WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.
3. TEMPORARY WASHOUT AREA MUST BE AT LEAST 50' FROM A STORM DRAIN, CREEK BANK OR PERIMETER CONTROL.
4. CLEAN OUT CONCRETE WASHOUT AREA WHEN 50% FULL.
5. THE KEY TO FUNCTIONAL CONCRETE WASHOUTS IS WEEKLY INSPECTIONS, ROUTINE MAINTENANCE, AND REGULAR CLEAN OUT.
6. SILT FENCE SHALL BE INSTALLED AROUND PERIMETER OF CONCRETE WASHOUT AREA EXCEPT FOR THE SIDE UTILIZED FOR ACCESSING THE WASHOUT.
7. A ROCK CONSTRUCTION ENTRANCE MAY BE NECESSARY ALONG ONE SIDE OF THE WASHOUT TO PROVIDE VEHICLE ACCESS.

CONCRETE WASHOUT
STRAW BALES OR ABOVE GROUND
NOT TO SCALE

REV.	DATE	BY
1	11/3/22	MKJ

REVISIONS

REVISED AS PER OWNER & CITY COMMENTS

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #7307

REGISTERED GEORGIA PROFESSIONAL ENGINEER JASON BRYANT JOSEPH

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EROSION CONTROL DETAILS

THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
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SHEET
EC5.2

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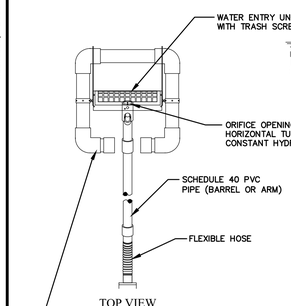
Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

Wednesday, December 21, 2022 12:01:03 PM

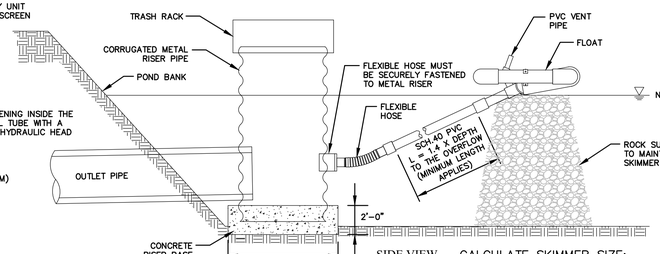
GENERAL NOTES:

1. PROPER DESIGN MUST BE COMPLETED TO MINIMIZE PIPING AROUND DISCHARGE PIPE.
2. PROPER ORIFICE OPENING MUST BE SELECTED TO ENSURE POND DRAINS IN CORRECT AMOUNT OF TIME. MODIFICATIONS MAY BE REQUIRED IF FIELD CONDITIONS WARRANT A CHANGE.
3. EROSION PROTECTION MUST BE INSTALLED ALONG THE EMBANKMENT AND AT THE DISCHARGE END OF THE PIPE.
4. INSPECT SYSTEM REGULARLY TO ENSURE IT IS FUNCTIONING IN A CORRECT MANNER.
5. EIGHT SIZES OF SKIMMERS ARE AVAILABLE, REFER TO THE FLOW SHEET, CUT SHEET, AND INSTRUCTIONS ON WEB SITE FOR EACH SIZE.

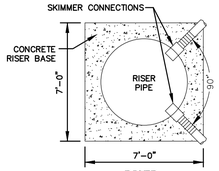


TOP VIEW

END VIEW



SIDE VIEW
(N.T.S.)



RISER
PLAN VIEW
(N.T.S.)

CALCULATE SKIMMER SIZE:

2 SKIMMERS REQUIRED – SIZES BELOW ARE PER SKIMMER
BASIN VOLUME: 370,589 CF
DAYS TO DRAIN: 3 DAYS
SKIMMER SIZE: 8.0 INCHES
ORIFICE RADIUS: 3.2 INCHES
ORIFICE DIAMETER: 6.5 INCHES

VOLUME ABOVE N.W.L.:

AREA OF BASINS AT ELEVATION 14.0: 377,367 SF
AREA OF BASINS AT ELEVATION 15.0: 403,811 SF
VOLUME OF STORAGE = (377,367 SF + 403,811 SF)/2 x (1.0' FT.)
= 370,589 CF (2 SKIMMERS WILL BE REQUIRED)

CALCULATE SKIMMER SIZE:

2 SKIMMERS REQUIRED – SIZES BELOW ARE PER SKIMMER
BASIN VOLUME: 370,589 CF
DAYS TO DRAIN: 3 DAYS
SKIMMER SIZE: 8.0 INCHES
ORIFICE RADIUS: 3.2 INCHES
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VOLUME ABOVE N.W.L.:

AREA OF BASINS AT ELEVATION 14.0: 377,367 SF
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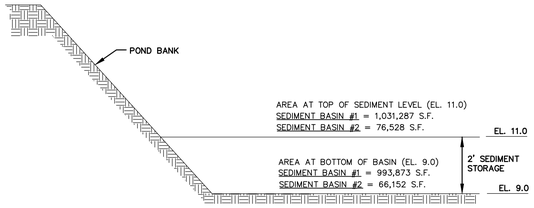
VOLUME OF STORAGE = (377,367 SF + 403,811 SF)/2 x (1.0' FT.)
= 370,589 CF (2 SKIMMERS WILL BE REQUIRED)

Sk FAIRCLOTH SKIMMER DISCHARGE SYSTEM

SCALE: N.T.S.



SIDE VIEW
(N.T.S.)

- TOTAL PROJECT ACREAGE = 65
- TOTAL DISTURBED ACREAGE = 64.8
- TOTAL REQUIRED SEDIMENT STORAGE: 64.8 X 134 c.y./Ac. = 8,683.2 c.y.
  (134 CY/AC. WILL BE PROVIDED TO MEET REQUIREMENT FOR 50+ AC DISTURBANCE)
- THIS PROJECT WILL UTILIZE EXISTING DETENTION PONDS FOR THE SEDIMENT STORAGE REQUIREMENT. THE PROPOSED LAND DISTURBING ACTIVITIES FOR THIS PROJECT ARE TO GRADE TO PROVIDE POSITIVE DRAINAGE TO SPECIFIC AREAS OF THIS TRACT OF LAND.

SEDIMENT BASIN #1 (LARGER DETENTION POND):
AREA AT BOTTOM OF BASIN (EL. 9.0) = 993,873.4 S.F.
AREA AT TOP OF SEDIMENT LEVEL (EL. 11.0) = 1,031,287.4 S.F.
AVERAGE AREA: (993,873 + 1,031,287 S.F.)/2 = 1,012,580 S.F.
VOLUME OF SEDIMENT STORAGE: 1,012,580 S.F. X 2 FT. = 2,025,160 C.F./27 = 75,005 C.Y.
SEDIMENT BASIN #1 STORAGE = 75,005 C.Y.

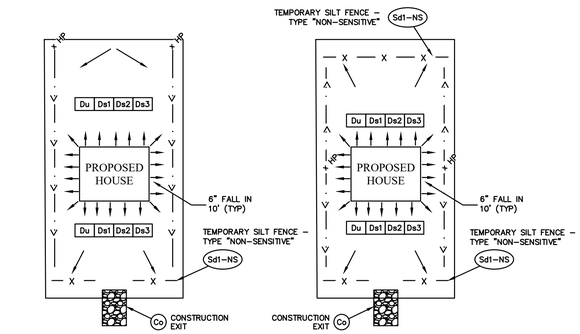
SEDIMENT BASIN #2 (DETENTION TO THE EAST):
AREA AT BOTTOM OF BASIN (EL. 9.0) = 66,152.5 S.F.
AREA AT TOP OF SEDIMENT LEVEL (EL. 11.0) = 76,528.7 S.F.
AVERAGE AREA: (66,152 + 76,528 S.F.)/2 = 71,340 S.F.
VOLUME OF SEDIMENT STORAGE: 71,340 S.F. X 2 FT. = 142,680 C.F./27 = 5,284 C.Y.
SEDIMENT BASIN #2 STORAGE = 5,284 C.Y.

SEDIMENT BASIN #1 STORAGE = 75,005 C.Y.
SEDIMENT BASIN #2 STORAGE = 5,284 C.Y.
TOTAL SEDIMENT BASIN STORAGE = 80,289 C.Y.

80,289 C.Y. EXCEEDS THE REQUIRED 8,683 CY OF SEDIMENT STORAGE

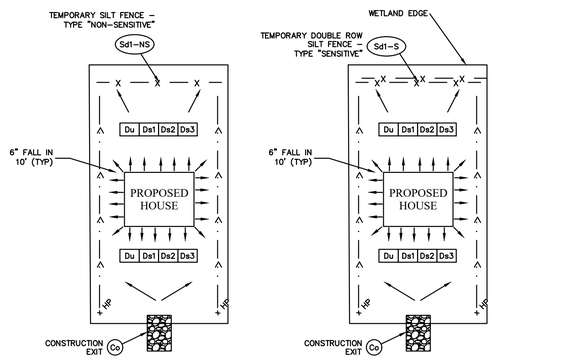
Sd3 TEMPORARY SEDIMENT BASIN

SCALE: N.T.S.



TYPE "A" LOT
TYPICAL DRAINAGE ALL TO FRONT (STREET)
(NOT TO SCALE)

TYPE "B" LOT
TYPICAL DRAINAGE TO BOTH FRONT (STREET) AND REAR (LOT LINE)
(NOT TO SCALE)



TYPE "C" LOT
TYPICAL DRAINAGE ALL TO REAR (LOT LINE)
(NOT TO SCALE)

TYPE "C" LOT DRAINING TO WETLAND
TYPICAL DRAINAGE ALL TO REAR (LOT LINE)
(NOT TO SCALE)

SITUATIONAL LOT EROSION CONTROL DETAILS

SCALE: N.T.S.

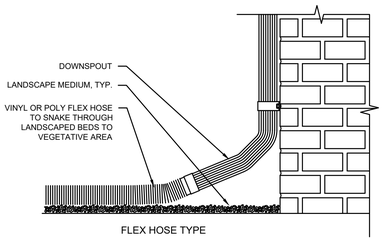
DESCRIPTION
WHERE SITE CHARACTERISTICS PERMIT, SIMPLE DOWNSPOUT DISCONNECTIONS CAN BE USED TO SPREAD ROOFTOP RUNOFF FROM INDIVIDUAL DOWNSPOUTS ACROSS LAWNS AND OTHER PERVIOUS AREAS, WHERE IT IS SLOWED, FILTERED AND ALLOWED TO INFILTRATE INTO NATIVE SOILS. THEY ARE TYPICALLY USED IN AREAS THAT HAVE BEEN DISTURBING ACTIVITIES AND ARE TYPICALLY VEGETATED WITH MANAGED TURF. IF PROPERLY DESIGNED, SIMPLE DOWNSPOUT DISCONNECTIONS CAN PROVIDE MEASURABLE REDUCTIONS IN POST-CONSTRUCTION STORMWATER RUNOFF RATES, VOLUMES AND POLLUTANT LOADS ON DEVELOPMENT SITES. CONSEQUENTLY, THEY CAN BE USED TO HELP SATISFY THE SWM CRITERIA PRESENTED IN THIS CSS.

KEY CONSIDERATIONS

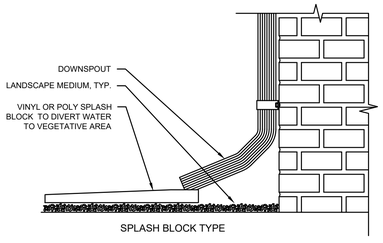
DESIGN CRITERIA:
- LENGTH OF FLOW PATH IN CONTRIBUTING DRAINAGE AREAS SHOULD BE 75 FEET OR LESS
- LENGTH OF FLOW PATH IN PERVIOUS AREAS BELOW SIMPLE DOWNSPOUT DISCONNECTIONS SHOULD BE AT LEAST 15 FEET LONG AND EQUAL TO OUR GREATER THAN THE LENGTH OF THE FLOW PATH IN THEIR CONTRIBUTING DRAINAGE AREAS
- DOWNSPOUT DISCONNECTIONS SHOULD BE DESIGNED TO CONVEY STORMWATER RUNOFF AWAY FROM BUILDINGS TO PREVENT DAMAGE TO BUILDING FOUNDATIONS

BENEFITS:
- HELPS RESTORE PRE-DEVELOPMENT HYDROLOGY ON DEVELOPMENT SITES AND REDUCES POST-CONSTRUCTION STORMWATER RUNOFF RATES, VOLUMES AND POLLUTANT LOADS
- RELATIVELY LOW CONSTRUCTION COST AND LONG-TERM MAINTENANCE BURDEN

LIMITATIONS:
- CAN ONLY BE USED TO "RECEIVE" RUNOFF FROM SMALL DRAINAGE AREAS OF 2,500 SQUARE FEET OR LESS
- PROVIDES GREATER STORMWATER MANAGEMENT BENEFITS ON SITES WITH PERMEABLE SOILS (I.E., HYDROLOGIC SOIL GROUP A AND B SOILS)



FLEX HOSE TYPE



SPLASH BLOCK TYPE

STORMWATER MANAGEMENT "CREDITS"

- ☑ RUNOFF REDUCTION
- ☑ WATER QUALITY PROTECTION
- ☑ AQUATIC RESOURCE PROTECTION
- ☑ OVERBANK FLOOD PROTECTION
- ☑ EXTREME FLOOD PROTECTION

☑ = PRACTICE HAS BEEN ASSIGNED QUANTIFIABLE STORMWATER MANAGEMENT "CREDITS" THAT CAN BE USED TO ADDRESS THIS SWM CRITERIA

STORMWATER MANAGEMENT PRACTICE PERFORMANCE

RUNOFF REDUCTION
25%-50% - ANNUAL RUNOFF VOLUME
30%-60% - RUNOFF REDUCTION VOLUME

POLLUTANT REMOVAL[1]
80% - TOTAL SUSPENDED SOLIDS
25% - TOTAL PHOSPHORUS
25% TOTAL NITROGEN
40% - METALS
N/A - PATHOGENS

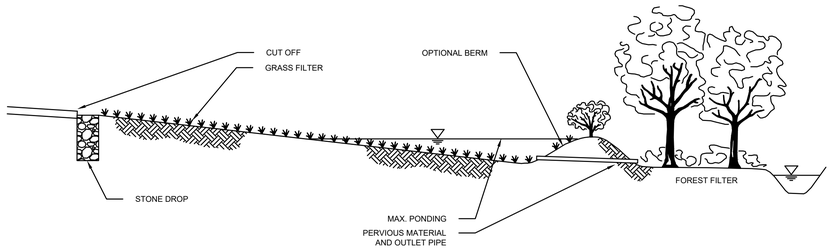
1 = EXPECTED ANNUAL POLLUTANT LOAD REMOVAL

SITE APPLICABILITY

- ☑ RURAL USE
- ☑ SUBURBAN USE
- ✳ URBAN USE
- [L] CONSTRUCTION COST
- [L] MAINTENANCE
- [H] AREA REQUIRED

DOWNSPOUT DISCONNECTIONS REQUIRED FOR ALL SINGLE-FAMILY HOMES WITHIN THE LAKESIDE DEVELOPMENT, UNLESS OTHERWISE NOTED.

TYPICAL DOWNSPOUT DETAIL
NOT TO SCALE



DESCRIPTION
VEGETATED FILTER STRIPS ARE UNIFORMLY GRADED, DENSELY VEGETATED AREAS OF LAND DESIGNED TO SLOW AND FILTER STORMWATER RUNOFF. THEY ARE TYPICALLY INSTALLED IN AREAS THAT HAVE BEEN DISTURBED BY CLEARING, GRADING AND OTHER LAND DISTURBING ACTIVITIES AND ARE TYPICALLY VEGETATED WITH MANAGED TURF. IF STORMWATER RUNOFF CAN BE EVENLY DISTRIBUTED OVER THEM AS OVERLAND SHEET FLOW, VEGETATED FILTER STRIPS CAN PROVIDE SIGNIFICANT REDUCTIONS IN POST-CONSTRUCTION STORMWATER RUNOFF RATES, VOLUMES AND POLLUTANT LOADS ON DEVELOPMENT SITES. CONSEQUENTLY VEGETATED FILTER STRIPS CAN BE USED TO HELP SATISFY THE SWM CRITERIA PRESENTED IN THIS CSS.

KEY CONSIDERATIONS

DESIGN CRITERIA:
- STORMWATER RUNOFF SHOULD ENTER VEGETATED FILTER STRIPS AS OVERLAND SHEET FLOW
- LENGTH OF FLOW PATH IN CONTRIBUTING DRAINAGE AREAS SHOULD BE 150 FEET OR LESS IN PERVIOUS DRAINAGE AREAS AND 75 FEET OR LESS IN IMPERVIOUS DRAINAGE AREAS
- LENGTH OF FLOW PATH IN VEGETATIVE FILTER STRIP SHOULD BE 25 FEET OR MORE
- VEGETATED FILTER STRIPS SHOULD HAVE A SLOPE OF AT LEAST 0.5% TO ENSURE ADEQUATE DRAINAGE

BENEFITS:
- HELPS RESTORE PRE-DEVELOPMENT HYDROLOGY ON DEVELOPMENT SITES AND REDUCES POST-CONSTRUCTION STORMWATER RUNOFF RATES, VOLUMES AND POLLUTANT LOADS
- RELATIVELY LOW CONSTRUCTION COST AND LONG-TERM MAINTENANCE BURDEN

LIMITATIONS:
- CAN BE DIFFICULT TO MAINTAIN OVERLAND SHEET FLOW WITHIN A VEGETATED FILTER STRIP, WHICH NEEDS TO BE PROVIDED TO PREVENT SOIL EROSION AND ENSURE PRACTICE PERFORMANCE

STORMWATER MANAGEMENT "CREDITS"

- ☑ RUNOFF REDUCTION
- ☑ WATER QUALITY PROTECTION
- ☑ AQUATIC RESOURCE PROTECTION
- ☑ OVERBANK FLOOD PROTECTION
- ☑ EXTREME FLOOD PROTECTION

☑ = PRACTICE HAS BEEN ASSIGNED QUANTIFIABLE STORMWATER MANAGEMENT "CREDITS" THAT CAN BE USED TO ADDRESS THIS SWM CRITERIA

STORMWATER MANAGEMENT PRACTICE PERFORMANCE

RUNOFF REDUCTION
25%-50% - ANNUAL RUNOFF VOLUME
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POLLUTANT REMOVAL[1]
80% - TOTAL SUSPENDED SOLIDS
25% - TOTAL PHOSPHORUS
25% TOTAL NITROGEN
40% - METALS
N/A - PATHOGENS

1 = EXPECTED ANNUAL POLLUTANT LOAD REMOVAL

SITE APPLICABILITY

- ☑ RURAL USE
- ☑ SUBURBAN USE
- ✳ URBAN USE
- [L] CONSTRUCTION COST
- [L] MAINTENANCE
- [H] AREA REQUIRED

VEGETATED FILTER STRIPS ARE TYPICAL WITHIN ALL AREAS MARKED DS3 (DISTURBED AREA STABILIZATION WITH PERMANENT VEGETATION)

VEGETATIVE FILTER STRIPS DETAIL
NOT TO SCALE

REV.	DATE	BY	REVISIONS
1	11/3/22	MKJ	REVISED AS PER OWNER & CITY COMMENTS

JASON BRYANT
GSWCC LEVEL II
DESIGN PROFESSIONAL
CERTIFICATION #75897

GEORGIA REGISTERED No. 38245 PROFESSIONAL ENGINEER JASON BRYANT JOSEPH

PITTMAN ENGINEERING
2591 Hwy 17S Suite 303
Richmond Hill, GA 31324
912-445-0578
www.PittmanEngineeringCo.com

EROSION CONTROL DETAILS
THE COTTAGES AT RICE HOPE
PHASE 1
Prepared For
THIRD LAKE DEVELOPMENT, LLC

Project No.	21-286
Drawn By:	MKJ
Designed By:	JJB
Checked By:	RAP
Scale:	NTS
Date:	5/31/22

SHEET
EC5.3

C:\Shared drives\Projects\Rice Hope\21-286 Third Lake\Drawings\Construction Plans\21-286 Cottages Erosion Control Details.dwg

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Site Plan 12.22.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

LANDSCAPE CONSTRUCTION NOTES:

1. THE LANDSCAPE ARCHITECT SHALL APPROVE ALL PLANT SUBSTITUTIONS PRIOR TO PURCHASE OR INSTALLATION.
2. THE PLANT SCHEDULE INCLUDED IN THIS DRAWING WAS PREPARED FOR ESTIMATING PURPOSES & FOR THE CONTRACTORS CONVENIENCE ONLY, AND ITS ACCURACY IS NOT GUARANTEED. THE CONTRACTOR SHALL PERFORM HIS OR HER OWN QUANTITY TAKE-OFFS USING THE DRAWINGS TO DETERMINE THE QUANTITIES TO HIS OR HER SATISFACTION. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE LANDSCAPE ARCHITECT PRIOR TO SUBMITTING A FINAL BID.
3. **CONTRACTOR SHALL WARRANTY ALL EXTERIOR PLANTS FOR ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION, AGAINST DEFECTS INCLUDING BUT NOT LIMITED TO DEATH AND UNSATISFACTORY GROWTH.** DEFECTS ASSOCIATED WITH A LACK OF ADEQUATE MAINTENANCE, NEGLECT, OR ABUSE BY THE OWNER OR INCIDENTS THAT ARE BEYOND CONTRACTOR'S CONTROL WILL NOT BE COVERED BY THE ONE-YEAR WARRANTY.
4. THE CONTRACTOR SHALL VERIFY THAT ALL SELECTED PLANT SPECIES ARE DETERMINED AVAILABLE AT THEIR SPECIFIED SIZES WHEN THE TIME OF BIDDING. THE CONTRACTOR SHALL NOT MAKE PLANT SUBSTITUTIONS. IF THERE ARE DIFFICULTIES LOCATING PLANT MATERIAL AS SPECIFIED, CONTACT THE LANDSCAPE ARCHITECT PRIOR TO SUBMITTING THE BID.
5. ALL PLANT MATERIAL SHALL HAVE A WELL FORMED HEAD WITH THE MINIMUM CALIPER, HEIGHT, SPREAD AS SHOWN IN THE PLANT SCHEDULE. TRUNKS SHALL BE UNDAMAGED AND SHAPE SHALL BE TYPICAL OF THE SPECIES.
6. ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL BY THE LANDSCAPE ARCHITECT OR OWNERS REPRESENTATIVE BEFORE, DURING AND AFTER INSTALLATION.
7. ALL PLANTING TECHNIQUES SHALL CONFORM TO APPROVED INDUSTRY STANDARDS.
8. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER'S REPRESENTATIVE TO ESTABLISH A PLANTING SCHEDULE THAT PRIORITIZES THE PLANTING OF ALL TREES AND LAWN AREAS.
9. ALL PLANT BEDS TO HAVE NO VISIBLE WEEDS BEFORE, DURING OR AFTER PLANTINGS ARE INSTALLED.
10. ALL PLANT BEDS SHALL RECEIVE A WEED INHIBITOR APPLICATION PRIOR TO PLANT INSTALLATION.
11. ALL PLANT BEDS SHALL BE COVERED WITH PINE STRAW AT A RATE OF 1 BALE PER 35 SF, EXCEPT INSIDE THE POOL PERIMETER FENCE WHERE ALL PLANT BEDS SHALL BE MULCHED WITH DOUBLE SHREDDED HARDWOOD MULCH TO A DEPTH OF 4".
12. ALL LANDSCAPE MATERIAL SHALL BE CORRECTLY LAID OUT AND INSTALLED PER THE PLANS. THE CONTRACTOR IS RESPONSIBLE BY ANY MEANS (SURVEY, STAKING, ETC.) TO INSURE THE CORRECT PLANT LAYOUT AND MAY SEEK THE LANDSCAPE ARCHITECTS APPROVAL FOR LANDSCAPE MATERIAL LAYOUTS PRIOR TO INSTALLATION. THE CONTRACTOR SHALL COORDINATE WITH THE LANDSCAPE ARCHITECT FOR THESE APPROVALS AND SHALL HAVE ALL REQUIRED PLANT MATERIAL PLACED IN THEIR PROPOSED LOCATIONS PRIOR TO THE LANDSCAPE ARCHITECTS ON-SITE APPROVAL. ALL PLANT MATERIAL PLACEMENT IS SUBJECT TO RE-PLACEMENT AND LAYOUT PER THE LANDSCAPE ARCHITECTS DISCRETION IF THE LAYOUT DOES NOT FOLLOW THE PLANS.
13. THE LANDSCAPE CONTRACTOR SHALL LEAVE ALL PLANT IDENTIFICATION HANGTAG'S ON EACH PLANT UNTIL FINAL APPROVAL HAS BEEN GRANTED PER THE LANDSCAPE ARCHITECTS FINAL PUNCH / FIELD REPORT. ONCE THE FINAL APPROVAL IS OBTAINED, THE HANGTAG'S MAY BE REMOVED.

IRRIGATION NOTES:

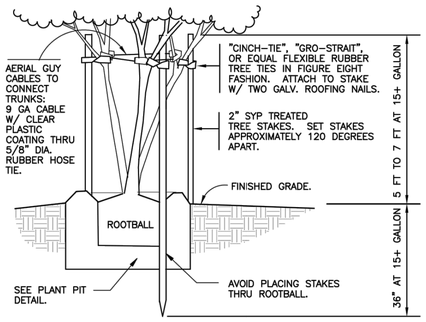
1. CONTRACTOR TO SUPPLY AUTOMATIC IRRIGATION SYSTEM, COMPLETE AND INSTALLED. SYSTEM SHALL INCLUDE ALL VALVES, PIPES, HEADS, FITTINGS, BACK-FLOW, & CONTROLLERS. THE INSTALLED SYSTEM SHALL PROVIDE 100% COVERAGE OF ALL SOD, HYDRO-SEED AND PLANTING BEDS.
2. CONTRACTOR TO ADJUST ALL IRRIGATION HEADS TO ENSURE THEY DO NOT SPRAY ON ANY STRUCTURES.

GRADING NOTES:

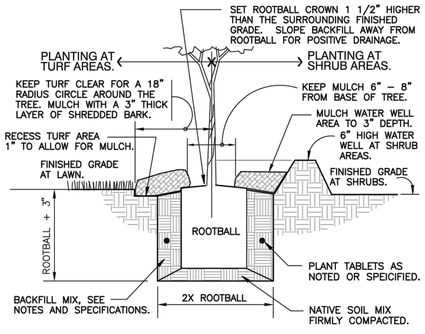
1. CONTRACTOR TO PERFORM FINE GRADING WITHIN ALL TURF AND PLANT BEDS. FINE GRADING SHALL CONSIST OF A HAND RAKED, SMOOTH SOIL FREE OF ROCKS, ROOTS, AND DEBRIS.

GENERAL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR LOCATING EXISTING UTILITIES AND IS RESPONSIBLE FOR ANY DAMAGE THAT MAY OCCUR TO EXISTING UTILITIES.
2. CONTRACTOR IS RESPONSIBLE FOR INSPECTION OF EXISTING CONDITIONS AND PROMPTLY REPORTING ANY DISCREPANCIES. CONTRACTOR TO PERFORM SOIL TESTS AS SPECIFIED.
3. NOTIFY LANDSCAPE ARCHITECT OF ANY SITE CONDITIONS WHICH MAY NECESSITATE A MODIFICATION TO THE PLANS. LANDSCAPE ARCHITECT SHALL, IF NECESSARY, MAKE "IN-FIELD MODIFICATIONS".
4. ANY DEVIATION FROM THESE PLANS MUST BE SPECIFICALLY APPROVED BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE.



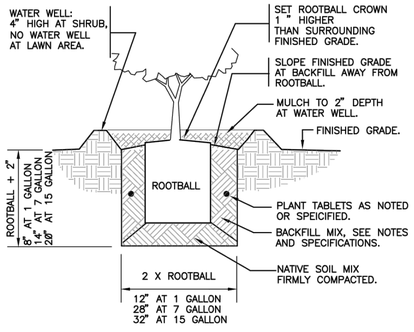
STAKING DETAIL



PLANT PIT DETAIL

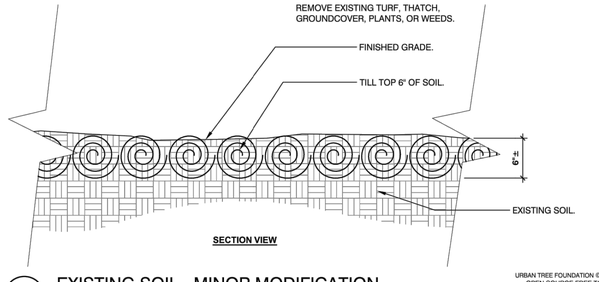
1 TREE PLANTING MULTI-STAKE

1" = 1'–0"



2 SHRUB PLANTING

1" = 1'–0"



SECTION VIEW

URBAN TREE FOUNDATION © 2014 OPEN SOURCE FREE TO USE

4 EXISTING SOIL - MINOR MODIFICATION

3/4" = 1'-0"

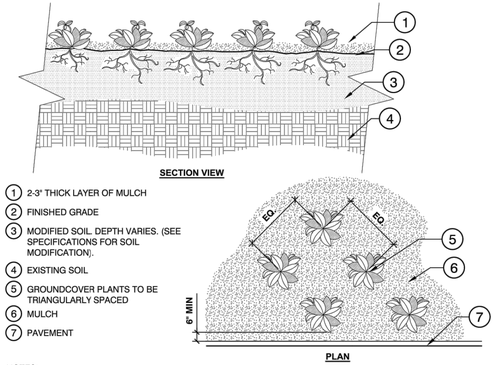
PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	HEIGHT
ACE RBR	41	Acer rubrum	Red Maple	B&B or Cont.	2" Cal	
CAL RIG	2	Callistemon rigidus 'Red Cluster'	Red Cluster Bottlebrush Tree	30 gal		
FAT JPN	1	Fatsia japonica	Japanese Fatsia	15 Gal.		
LAG N40	37	Lagerstroemia indica x fauriei 'Natchez' STD Single Trunk	Natchez Crape Myrtle on Standard	30 gal		
LAG T32	4	Lagerstroemia indica x fauriei 'Tonto' STD Single Trunk	Tonto Crape Myrtle on Standard	30 gal		
LAG IN2	13	Lagerstroemia indica x fauriei 'Tuscarora'	Tuscarora Crape Myrtle Multi-Trunk	30 gal		
MAG STE	2	Magnolia stellata 'Royal Star'	Royal Star Magnolia	30 gal		
PIS CHI	61	Pistacia chinensis 'Keith Davey'	Keith Davey Chinese Pistache	B&B or Cont.	2" Cal	
QUE HEM	9	Quercus hemisphaerica	Laurel Oak	B&B or Cont.	2" Cal	
QUE VIR	61	Quercus virginiana	Southern Live Oak	B&B or Cont.	2" Cal	
SAB PAL	15	Sabal palmetto	Cabbage Palmetto	FG B&B		14`
VIT AGN	1	Vitex agnus-castus	Chaste Tree	30 gal		

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
AGA AFR	38	Agapanthus africanus 'Queen Anne'	Queen Anne African Lily	3 gal	
ALO MAC	2	Alocasia macrorrhizos	Giant Elephant's Ear	7 gal	
AZA ENC	10	Azalea encore 'Autumn Chiffon' TM	Autumn Chiffon Encore Azalea	3 gal	
AZA EN2	5	Azalea encore 'Autumn Embers' TM	Autumn Embers Encore Azalea	3 gal	
AZA ZTC	9	Azalea encore 'Autumn Embers' TM	Autumn Embers Encore Azalea	3 gal	
AZA TEM	11	Azalea encore 'Autumn Sundance' TM	Autumn Sundance Encore Azalea	3 gal	
AZA FOR	6	Azalea indica 'Formosa'	Formosa Indica Azalea	7 gal	
CAM SAS	3	Camellia sasanqua 'Shishi Gashira'	Shishi Gashira Camellia	15 gal	
CAM SA2	2	Camellia sasanqua 'Shishi Gashira' STD Standard clear trunk 48"	Shishi Gashira Camellia on Standard	B&B or Cont.	
DIE VEG	3	Dietes vegeta	African Iris	3 gal	
GAR FRO	4	Gardenia jasminoides 'Frostproof'	Frostproof Gardenia	3 gal	
GAR R17	19	Gardenia jasminoides 'Radicans'	Radicans Gardenia	3 gal	
HYD QUE	5	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oakleaf Hydrangea	7 gal	
ILE DWA	17	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	7 gal	
ILE ST2	1,594	Ilex vomitoria 'Stokes Dwarf'	Stokes Dwarf Yaupon Holly	3 gal	
ILL PU2	1,184	Illicium floridanum Located along unit foundations	Florida Anise	3 gal	
ILL FLO	23	Illicium floridanum Located in amenity areas	Florida Anise	3 gal	
JUN PAR	7	Juniperus chinensis 'Parsonii'	Parsoni Juniper	3 gal	
JUN CHI	1	Juniperus chinensis 'Torulosa'	Hollywood Juniper	30 gal	
JUN X M	7	Juniperus x media 'Hetzii'	Hetzii Juniper	B&B or Cont.	8` FTG
LAN MOU	12	Lantana camara 'Gold Mound'	Gold Mound Lantana	3 gal	
LIR SBL	46	Liriope muscari 'Super Blue'	Super Blue Lilyturf	1 gal	
POD MAC	69	Podocarpus macrophyllus 'Dwarf Pringles'	Dwarf Podocarpus	7 gal	
POD MA2	52	Podocarpus macrophyllus 'Maki'	Maki Podocarpus	7 gal	
TUL VIO	9	Tulbaghia violacea	Society Garlic	1 gal	
VIB ODO	52	Viburnum odoratissimum	Sweet Viburnum	7 gal	
VIB SU2	44	Viburnum suspensum	Sandankwa Viburnum	7 gal	

SHRUB AREAS	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
LAN CHA	147	Lantana x 'Chapel Hill Yellow'	Chapel Hill Yellow Lantana	3 gal	
MUH CAP	134	Muhlenbergia capillaris	Pink Muhly Grass	1 gal	

GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	HEIGHT
ERE OP2	86,818 sf	Eremochloa ophiuroides	Centipede	Seed	
ERE OPH	541,773 sf	Eremochloa ophiuroides	Centipede	Sod	
OPH JAP	270	Ophiopogon japonicus	Mondo Grass	1 gal	
TRA ASI	31	Trachelospermum asiaticum	Asiatic Jasmine	1 gal	



SECTION VIEW

1. 2-3" THICK LAYER OF MULCH
2. FINISHED GRADE
3. MODIFIED SOIL DEPTH VARIES. (SEE SPECIFICATIONS FOR SOIL MODIFICATION).
4. EXISTING SOIL
5. GROUNDCOVER PLANTS TO BE TRIANGULARLY SPACED
6. MULCH
7. PAVEMENT

PLAN

NOTES:
1- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
2- SMALL ROOTS (1/4" OR LESS) THAT GROW AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
3- SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

3 GROUNDCOVER

3/4" = 1'-0"

URBAN TREE FOUNDATION © 2014 OPEN SOURCE FREE TO USE

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COTTAGES AT RICE HOPE

Port Wentworth, GA

PROFESSIONAL SEAL:

DRAWN BY: EW,BH

CHECKED BY: EW

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#	REVISION	DATE	BY
1	AHJ PERMITTING COMMENT	12-21-22	EW

DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Schedule, Notes & Details

SHEET NUMBER
L-400

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SEE SHEETS L-402 & L-403 FOR OVERALL SITE PLANTING PLANS

(1) — CAM SAS
(17) — VIB SU2
(24) — LIR SBL
(9) — POD MAC
(7,812 sf) — ERE OPH

SEE SHEETS L-406 FOR TYPICAL UNIT PLANTING PLANS

SEE SHEETS L-403 - L-405 FOR OVERALL SITE PLANTING PLANS

(9) — VIB SU2
(2) — CAM SAS
(5) — ILE DWA

(10) — ILL FLO
(7) — JUN PAR
(2) — CAL RIG
(5) — AZA ENC
(4) — GAR FRO
(9) — TUL VIO
(5) — AZA EN2
(22) — LIR SBL

(15) — POD MAC
(6) — AZA TEM
(1) — LAG T32
(1) — HYD QUE
(6) — LAN MOU
(1) — ALO MAC
(1) — CAM SA2

(5) — ILL FLO
(7) — POD MAC
(5) — AZA ENC

(56) — OPH JAP

(2) — MAG STE

(18) — VIB ODO

(6) — SAB PAL

(214) — OPH JAP

(8) — VIB SU2
(8) — ILL FLO
(11) — GAR R17
(2) — LAG IN2
(370 sf) — ERE OPH
(31) — TRA ASI
(1) — VIT AGN
(3) — HYD QUE
(5) — POD MAC
(8) — GAR R17

(2) — SAB PAL
(34) — VIB ODO

(36) — LAN CHA
(2) — SAB PAL
(10) — POD MAC
(1) — CAM SA2
(1) — ALO MAC
(1) — HYD QUE
(1) — LAG T32
(6) — LAN MOU
(5) — AZA TEM

SEE SHEETS L-404 - L-406 FOR OVERALL SITE PLANTING PLANS

(1) — FAT JPN
(6) — AZA FOR
(11) — POD MAC
(1) — JUN CHI
(5) — LAG IN2
(19) — AGA AFR
(3,384 sf) — ERE OPH
(19) — AGA AFR
(7) — POD MAC
(24) — POD MA2
(7) — JUN X M

N

0' 5' 10' 20' 30' 40'

SCALE: 1" - 10'-0"

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COTTAGES AT RICE HOPE

Port Wentworth, GA

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EW

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#	REVISION	DATE	BY
1	AHJ PERMITTING COMMENT	12-21-22	EW

DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan
Pool Amenity

SHEET NUMBER
L-401

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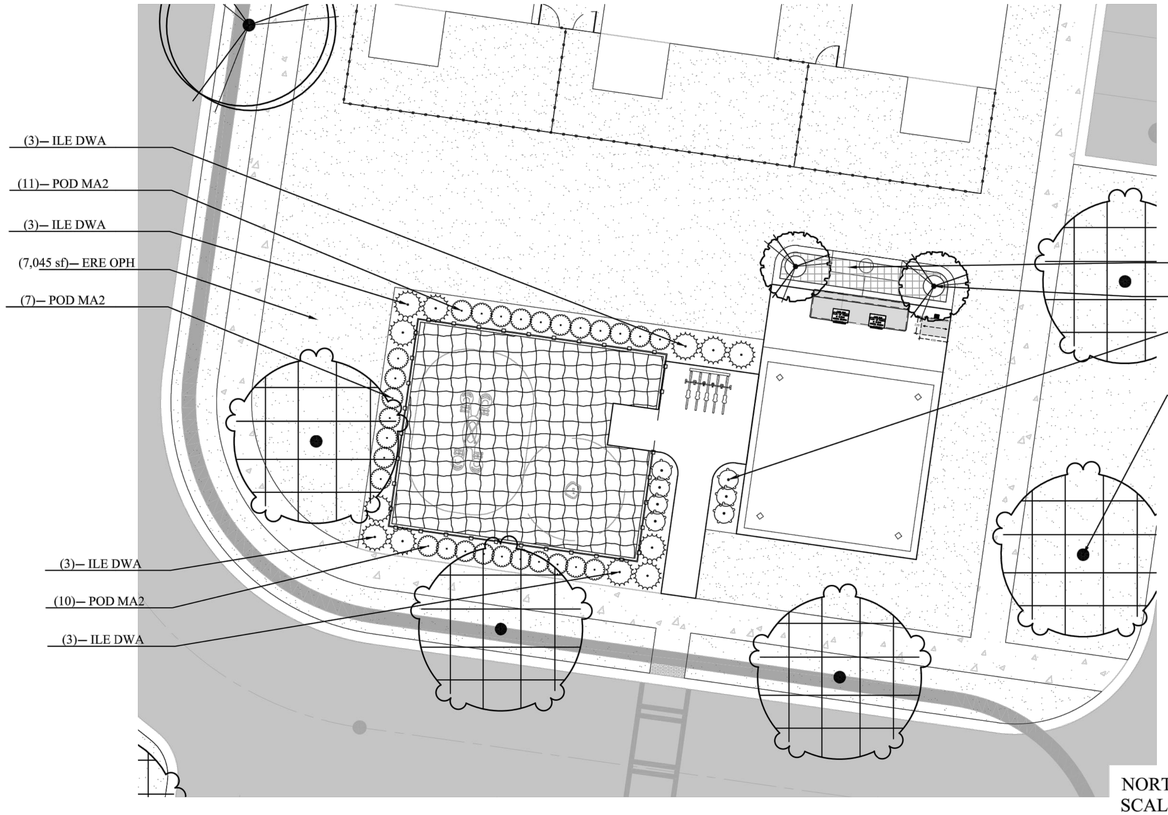

NORTH PARK
SCALE: 1'=20'

N

0' 5' 10' 20' 30' 40'

SCALE: 1" - 10'-0"

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COTTAGES AT RICE HOPE

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DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan
North Park

SHEET NUMBER
L-402

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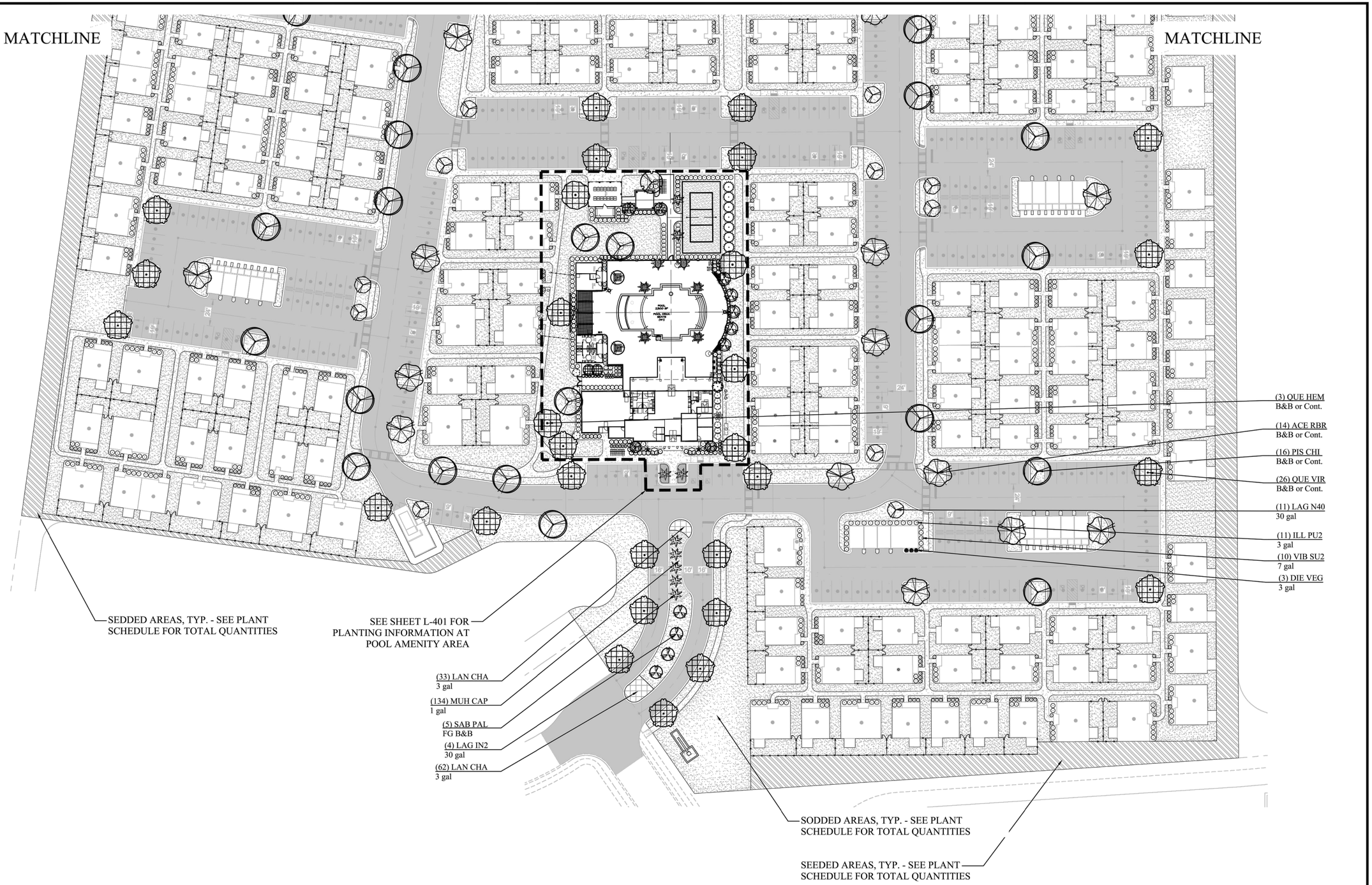

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DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan
Overall Site

SHEET NUMBER
L-403

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MATCHLINE

MATCHLINE

SEEDED AREAS, TYP. - SEE PLANT SCHEDULE FOR TOTAL QUANTITIES

SODDED AREAS, TYP. - SEE PLANT SCHEDULE FOR TOTAL QUANTITIES

SEEDED AREAS, TYP. - SEE PLANT SCHEDULE FOR TOTAL QUANTITIES

SODDED AREAS, TYP. - SEE PLANT SCHEDULE FOR TOTAL QUANTITIES

(16) LAG N40
30 gal

(19) ACE RBR
B&B or Cont.

(25) PIS CHI
B&B or Cont.

(20) QUE VIR
B&B or Cont.

(6) QUE HEM
B&B or Cont.

(2) LAG IN2
30 gal

ZONE AE (EL 13)

MATCHLINE

MATCHLINE

N

0' 20' 40' 80' 120' 160'

SCALE: 1" - 40'-0"

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Port Wentworth, GA

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DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan
Overall Site

SHEET NUMBER
L-404

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COTTAGES AT RICE HOPE

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DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan Overall Site

SHEET NUMBER
L-405

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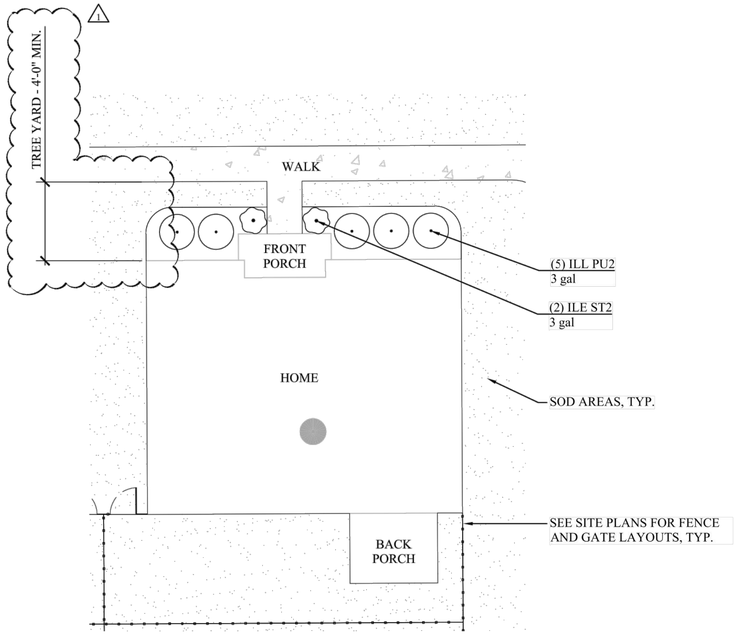
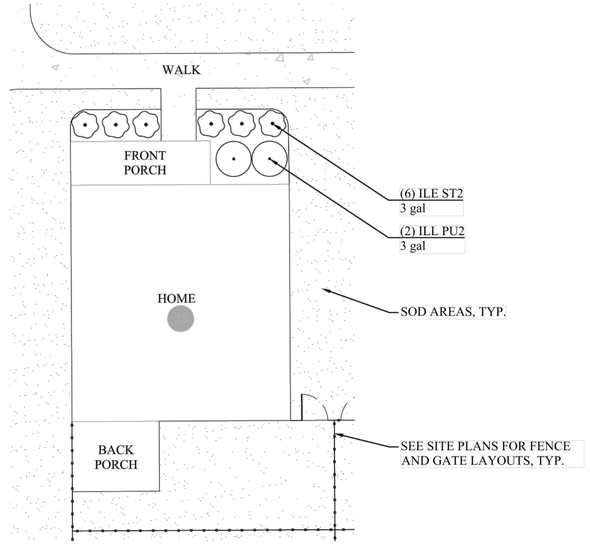
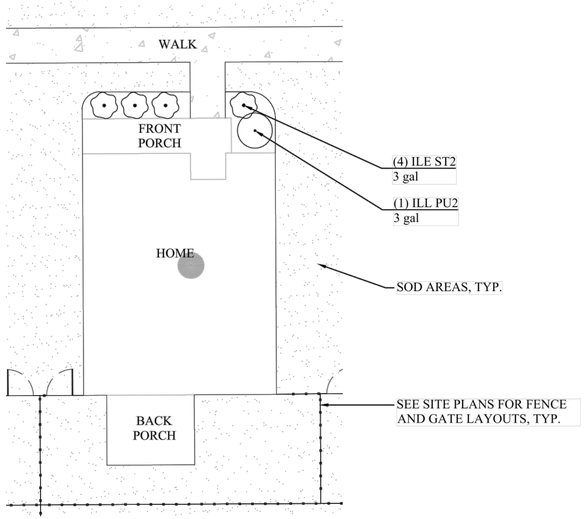


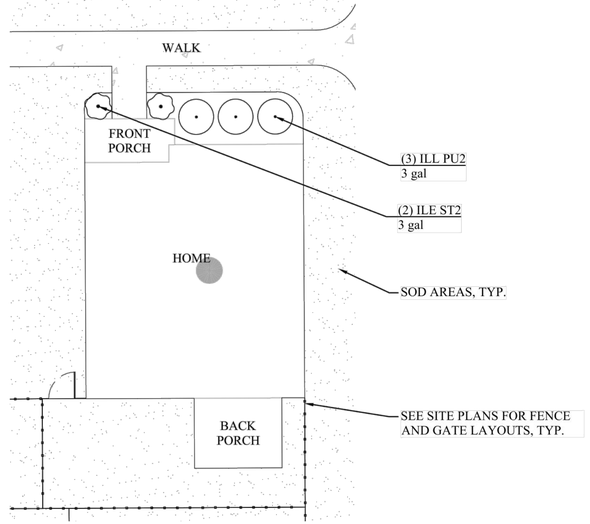
UNIT TYPE A - TWO BEDROOM UNIT



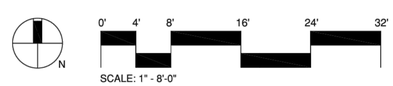
UNIT TYPE B - THREE BEDROOM 2 STORY



UNIT TYPE C - TWO BEDROOM 2 STORY



UNIT TYPE D - ONE BEDROOM



SCALE: 1" - 8'-0"

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COTTAGES AT RICE HOPE

Port Wentworth, GA

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#	REVISION	DATE	BY
1	AHJ PERMITTING COMMENT	12-21-22	EW

DATE
11-15-2022
PROJECT NUMBER
01-22023
SHEET TITLE
Planting Plan per Unit Type

SHEET NUMBER
L-406

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Pittman Engineering Co., LLC
Post Office Box 822
Richmond Hill, Georgia 31324
912-445-0578

May , 2022

EPD-Construction Land Disturbance Fees
PO Box 932858
Atlanta, GA 31193-2858

Re: **Rice Hope – Third Lake Development**
Third Lake Development-Attn: Grant Barnes
NOI Submittal Fee
Port Wentworth, Chatham County, Georgia

To Whom it May Concern:

On behalf of our client, Third Lake Development, please find enclosed the submittal fee in the amount of $3,960.00 ($80 per disturbed acre 49.5 disturbed acres). A copy of the GEOS submittal receipt is also enclosed for reference.

If you have any questions or comments, or require any additional information, please do not hesitate to contact me at 912-445-0578 or jason@pittmanengineeringco.com .

Sincerely,

PITTMAN ENGINEERING CO. LLC

Jason J. Bryant, P.E.

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (2712 : Site Plan Review Application (Specific) 7-0906-04-

Coastal Soil and Water Conservation District
C/O – Jerry Holcomb
415 Willow Oak Lane
Hinesville, Georgia 31313
912-271-0133

TO: Applicants for Land Disturbing Activity Permits

FROM: Coastal Soil and Water Conservation District

DATE: **April 20, 2022**

SUBJECT: Erosion and Sediment Control Plan Review

A conservation education contribution of $50.00 per Erosion and Sediment Control Plan is requested by the Coastal Soil and Water Conservation District. This is in addition to any charges by the local issuing authorities.

Please complete the following and attach a check in the amount of $50.00 payable to:
Coastal Soil and Water Conservation District

RICE HOPE - THIRD LAKE DEVELOPMENT
Project Name

CHATHAM
County

THIRD LAKE DEVELOPMENT Attn: Grant Barnes
Applicant Name

1600 E. 8th Avenue, Suite A132, Tampa, FL 33605
Address

(727) 349-9100
Phone Number

To help us in processing your application mail check and this form within five (5) days to:

Coastal Soil and Water Conservation District
C/O: Jerry Holcomb
415 Willow Oak Lane
Hinesville, Georgia 31313
Phone: 912-271-0133

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (2712 : Site Plan Review Application (Specific) 7-0906-04-

SANITARY SEWER EXTENSION SUBMITTAL FORM

Submitted for review pursuant Georgia Rules for Water Quality Control Chapter 391-3-6-.02(3)(a) are this form and attachments (as applicable):

[X] Project Description, design data
[X] **Funding Source** PRIVATE
[X] General map of proposed sewer extensions, outlined proposed service area, connection to the existing system, and flood plain contours and elevations if applicable
[X] Downstream Flow Schematic
[X] Plans (**one copy**)
[X] Specifications (**one copy**)

Part I- General Information

a. Name of local government CITY OF PORT WENTWORTH

b. Local government official BRIAN HARVEY

c. Mailing Address 7306 HIGHWAY 21, SUITE 301

City, County, State, Zip Code PORT WENTWORTH, GEORGIA, 31407

d. Project name or identification RICE HOPE LAKESIDE PHASES 20-23 & 29A

e. Designing engineer(s) PITTMAN ENGINEERING CO, LLC - JASON BRYANT, P.E.,

f. GA P.E. # 38245 Expiration Date 12/31/22

g. Mailing Address PO BOX 822

City, County, State, Zip Code RICHMOND HILL, BRYAN COUNTY, GA 31324

Part II. – Treatment System Information

a. Wastewater treatment plant to which extensions are tributary

Name CITY OF PORT WENTWORTH WASTEWATER TREATMENT FACILITY

Permit flow 2.0 MGD Current Peak Flow 1.0 MGD

Permit # GA0038814

b. In the table below list the average daily flow (MGD) and effluent concentrations (mg/l) for biochemical oxygen demand (BOD_5), suspended solids (SS), Nitrogen (as NH3), and phosphorus (P) for the last 12 months (preceding the sewer extension submittal) for the wastewater (from discharge monitoring reports).

Month	Flow	BOD_5	SS	NH_3	P	Month	Flow	BOD_5	NH_3	P	SS
January	0.74	1.26	1.42	0.32	0.29	July	1.12	2.76	0.62	0.32	2.55
February	1.02	1.43	1.72	0.13	0.43	August	1.02	2.85	0.42	0.42	4.61
March	1.01	1.60	1.87	0.19	0.55	September	0.92	2.58	0.60	0.43	4.89
April	0.83	1.39	1.35	0.05	0.54	October	0.88	1.97	0.39	0.48	4.79
May	0.76	1.23	1.11	0.06	0.79	November	0.87	1.28	0.03	0.78	0.84
June	0.57	1.74	2.10	0.32	0.49	December	0.79	1.23	0.22	0.37	0.86

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (2712 : Site Plan Review Application (Specific) 7-0906-04-

SANITARY SEWER EXTENSION SUBMITTAL FORM

Part III- Project Information

a. Name and address of the Developer. If not a local government please include a certified statement (as indicated in Section IV of this form).

THIRD LAKE DEVELOPMENT ATTN: GRANT BARNES
Name

1600 E. 8TH AVENUE, SUITE A132
Mailing Address

TAMPA, FLORIDA, 33605
City, County, State, Zip Code

b. Proposed service area for this project.

Immediate 49.5 ACRES acres Ultimate 49.5 ACRES acres

c. Type of developments: (check as applicable)

Industrial _____ Residential ✓ Commercial _____

Other_____ (explain)_____

d. Population to be served

Population 2.7 People/REU x 446 REU = 1,204 Density/acre 24.3 People/acre

e. Per capita wastewater contribution

Average 300 GPD/REU GPD Peak 300 GPD/REU x 3.5 PEAK FACTOR = 1,050 PEAK/REU GPD

f. If receiving industrial wastewater, describe industrial waste characteristics.

N/A

Quantity N/A GPD. Describe pretreatment received (if any)

(use extra sheet if needed)

g. Average Design Flow (this project) 300 GPD/REU x 446 REUs=133,800 GPD Peak 133,800 GPD x 3.5 Peaking Factor = 468,300 GPD

or max. pipe capacity n/a

h. Design BOD (this project)

Average .1338 MGD X 200 MG/L x 8.34 = 223.2 lbs/day

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (2712 : Site Plan Review Application (Specific) 7-0906-04-

SANITARY SEWER EXTENSION SUBMITTAL FORM

i. List nominal pipe diameter(s) and length

8-Inch diameter = 2,172 LF

12-Inch diameter = 2,872 LF

j. List number, size and type of pump stations (if any)

n/a

Please submit design calculations with this form. Include system head calculations; pump curves, system curves, and buoyancies calculations, etc.

Part IV- Certification

a. Provide the name of the Georgia P.E. that the project inspector will report to:

PITTMAN ENGINEERING CO - JASON BRYANT, P.E. Georgia P.E. # 38245

b. Provide the name of the local government who will own and maintain the proposed sewers if it is different from the authority responsible for treatment of wastewater from this project.

SAME

c. As the authority responsible for the treatment of wastewater from this project, I certify that: a) this project has been reviewed, b) the existing system has adequate transport and treatment capacity to treat wastewater generated from this project, c) we are willing to accept the project wastewater for treatment; d) that the sewers are not constructed on or serving structures constructed or proposed to be constructed on solid waste landfills; and e) we are willing to accept ownership and maintain the proposed sewers.

To the best of my knowledge, I certify that the above information is true and correct.

Signature_____
Responsible Local Official

Name (Print)_____

Title or Position _____

Date _____

Please provide any additional comments on a separate sheet of paper.

Submit completed form to: **DEPARTMENT OF NATURAL RESOURCES**
ENVIRONMENTAL PROTECTION DIVISION
WASTEWATER REGULATORY PROGRAM
2 MARTIN LUTHER KING, JR. DRIVE, SUITE 1152 EAST
ATLANTA, GEORGIA 30334

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Rice Hope Third Lake
WASTEWATER EXTENSION CALCULATIONS
March 15, 2022
Third Lake
Pittman Engineering Co., LLC

The proposed Lift Station to be designed and installed by Bald Eagle Partners shall serve the master planned 446 units Third Lake Development.

The sewer is to consists of installing 8-Inch diameter sewer mains extending from the on-site manhole.

The maximum expected domestic flow through the 8 diameter mains is approximately 192 gpm, based on a peaking factor of 3.5.

- (446 residences x 300 gpd per residence x 3.5 peak) / 1440 min/day = 325 gpm

The capacity of an 8-Inch diameter main at minimum slope is approximately 313 gpm. The capacity of an 8-inch diameter main at 0.5% slope = 350 gpm. Therefore, the last sections of the 8 mains shall be installed with minimum slope of 0.5% to have adequate capacity to serve this project.

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RICE HOPE - THIRD LAKE DEVELOPMENT
SANITARY SEWER SPECIFICATIONS

City of Port Wentworth

Georgia

Comprehensive Development Manual

Section 2: **TECHNICAL SPECIFICATIONS**

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SECTIONS INCLUDED WITH RICE HOPE - THIRD LAKE SUBMITTAL

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SECTION 02532
SANITARY SEWERS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Supplementary Conditions and Division-1 Specification sections, apply to work of this section.

1.02 DESCRIPTION OF WORK:

A. General:

Extent of sanitary sewer work is indicated on drawings and schedules, and by requirements of this section.

B. Damage to Existing Utility Lines:

Any damage done to existing utility lines, services, poles and structures of every nature shall be repaired or replaced by the Contractor at his own expense. The approximate position of certain known underground lines are shown on the Plans for information. Existing small lines may not be shown. The Contractor shall locate these and other possible unknown utility lines and shall excavate and expose all existing underground lines in advance of trenching operations.

Removing and relaying of such lines and appurtenances which constitute an obstruction to the completed lines and grade of the new work will be made at the expense of the Owner, unless otherwise shown on Plans to be altered by the Contractor.

At locations where the sewer is to be constructed in roadways, the Contractor shall take all precautions, and comply with all requirements, as may be necessary to protect the improvements, including installation and maintenance of lights and barricades for protection of traffic.

1.03 RELATED WORK:

Section 02317 - Excavation, Trenching and Backfilling for Utility Systems

1.04 QUALITY ASSURANCE:

A. Manufacturer's Qualifications:

Firms regularly engaged in manufacture of sanitary sewer system's products of types, materials, and sizes required, whose products have been in satisfactory use in similar service for not less than 5 years.

B. Installers Qualifications:

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Firm with at least 3 years of successful installation experience on projects with sanitary sewage work similar to that required for project.

1.05 SUBMITTALS:

A. Product Data:

Submit manufacturer's technical product data and installation instructions for sewage system materials and products.

B. Certification:

Each length of pipe shall be marked with the following information: Manufacturer, Size, PVC Cell Classification, Type PSM, SDR, PVC Gravity Sewer Pipe, ASTM D3033, D3034, F679 or F789 and Code Number.

At the time of shipment, the manufacturer shall submit 3 copies of written certification and test results to the Engineer that the pipe was manufactured and tested in accordance with the specifications.

C. Shop Drawings:

Submit shop drawings in accordance with Section 01800 for sanitary sewage systems, showing piping materials, size, locations, and inverts. Include details of underground structures, connections, and cleanouts. Show interface and spatial relationship between piping and proximate structures.

D. Maintenance Data:

Submit maintenance data and parts lists for sanitary sewage system materials and products. Include this data, product data, shop drawings, and record drawings in maintenance manual.

PART 2 - PRODUCTS

2.01 IDENTIFICATION:

A. Underground-Type Plastic Line Markers

Manufacturer's standard permanent, bright-colored, continuous-printed plastic tape, intended for direct-burial service; not less than 5.0 MIL overall thickness. Tape shall be a minimum of 3" wide. Tape shall be buried continuously over the pipeline no more than 18" below the ground surface. For sanitary sewer lines provide green tape with black printing reading "CAUTION SEWER LINE BURIED BELOW".

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering identification markers which may be incorporated in the work include, but are not limited to, the following:

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Allen Systems, Inc.
Emed Co., Inc.
Seton Name Plate Corp.

2.02 PIPES AND PIPE FITTINGS:

A. General:

Provide pipes of one of the following materials, of weight/class indicated. Provide pipe fittings and accessories of same material and weight/class as pipes, with joining method as indicated.

B. Ductile Iron Pipe:

ANSI A21.51. Ductile iron pipe shall be of the thickness in accordance with ANSI A21.50 for Laying Condition 2, Class 50 minimum. The pipe shall be coated on the interior with with Protecto 401 Ceramic Epoxy interior lining thickness according to AWWA C150, Laying Condition 2, Class 50 minimum unless otherwise indicated. Ductile Iron Pipe designed and manufactured in accordance with ANSI A21.51 centrifugally cast in metal or sand lined molds. Exterior surface shall be seal coated with 1 mil thick approved asphaltic coating in accordance with ANSI/AWWA C151/A21.51. Joints shall conform to AWWA C111, push-on-type unless otherwise indicated.

1. Fittings: ANSI A21.10, push-on type unless otherwise shown; Ductile-iron, exterior one mil petroleum asphaltic seal coat AWWA C110 or 153; mechanical joint type, 40 mils nominal dry film thickness of Protecto 401 Ceramic Epoxy interior lining.

2. Joints: ANSI A21.11, push-on type unless otherwise shown.

3. Exterior Coating: Exterior coating shall be an approved bituminous coating 1 mil thick unless otherwise shown and/or specified.

C. Polyvinyl Chloride (PVC) Sewer Pipe:

ASTM D 3033, Type PSP, SDR 26; or ASTM D 3034, Type PSM, SDR 26.

1. Fittings: PVC, ASTM D3033 or ASTM D 3034, elastomeric joints complying with ASTM D 3212 using elastomeric seals complying with ASTM F 477.

2.04 CLEANOUTS:

A. General:

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Provide as indicated, pipe extension to grade with furrule and countersunk cleanout plug. Provide round cast-iron access frame over cleanout, with heavy-duty secured scoriated cover with lifting device.

PART 3 - EXECUTION

3.01 INSTALLATION OF IDENTIFICATION:

A. General:

During back-filling/top-soiling of sanitary sewage systems, install continuous underground-type plastic line marker, located directly over buried line at 6" to 8" below finished grade.

3.02 INSTALLATION OF PIPE AND FITTINGS:

A. General:

Install piping in accordance with governing authorities having jurisdiction, except where more stringent requirements are indicated.

B. Inspect Piping:

Inspect piping before installation to detect apparent defects. Mark defective materials with white paint and promptly remove from site.

C. Lay Pipe:

Lay piping beginning at low point of system, true to grades and alignment indicated, with unbroken continuity of invert.

D. Bell Ends:

Place bell ends or groove ends of piping facing upstream.

E Gaskets:

Install gaskets in accordance with manufacturer's recommendations for use of lubricants, cements, and other special installation requirements.

F. Ductile Iron Pipe:

Install in accordance with 1994 DIPRA, “Installation Guide to Ductile Iron Pipe”.

G. PVC or ABS Pipe:

Install in accordance with manufacturer's installation recommendations, and in accordance with ASTM D 2321.

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H. Cleaning Piping:

Clear interior of piping of dirt and other superfluous material as work progresses. Maintain swab or drag in line and pull past each joint as it is completed.

In large, accessible piping, brushes and brooms may be used for cleaning.

Place plugs in ends of uncompleted conduit at end of day or whenever work stops.

Flush lines between manholes if required to remove collected debris.

I. Joint Adapters:

Make joints between different types of pipe with standard manufactured adapters and fittings intended for that purpose.

J. Interior Inspection:

All sewer pipes, manholes and appurtenances shall be inspected by the Engineer and the Contractor. Inspection shall include lamping each sewer segment from manhole to manhole. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects, and reinspect.

3.03 SANITARY MANHOLES:

A. General:

Place precast concrete sections as indicated. Where manholes occur in pavements, set tops of frames and covers flush with finish surface. Elsewhere, set tops 3" above finish surface, unless otherwise indicated.

B. Installation:

Install in accordance with ASTM C 891.

C. Rubber Joint Gasket:

Provide rubber joint gasket complying with ASTM C 443 at joints of sections.

D. Stone Bedding:

Precast manholes shall be bedded on not less than 6 inches of compacted crushed stone. The crushed stone shall extend not less than 6 inches outside the walls of the manhole and under the entire length of pipe within the excavation for the manhole.

E. Drop Manholes:

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Drop manholes shall be built at the locations and in conformance with the details shown where the difference in invert elevation between incoming pipe and manhole invert is more that 2 feet. The drop pipe shall be the same size as the influent sewer. Payment for drop manholes will be made at the unit prices for the various depths stated in the Proposal, and shall include all necessary pipe, pipe fittings, concrete encasement of drop pipe, extension of manhole base slab and compacted crushed stone under sewer spanning the manhole excavation.

F. Interior Coating
Coating requires 2 coats of 100% solids, coal tar epoxy resin, for a final thickness of 21 mils.

G. Ring and 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 ½ "-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.

3.04 SERVICE CONNECTIONS:

Service connections shall be provided at locations shown on the Plans. The connection shall be made as shown on the Drawings, or shall be a pipe stubbed out from a manhole, and shall extend to the street right of-way line at an elevation at least 2 feet below the finished floor elevation of the building being served or deeper if necessary to provide service to a building or to the property line as shown on the Plans. Service connections shall be inspected and approved prior to any backfill being placed.

Service pipe shall be extra strength cast iron soil pipe or PVC Sewer Pipe conforming to ASTM D3034 SDR 35. Mylar detectable tape shall be installed where PVC pipe is used.

A 2" x 4" 30 inch long pressure treated flag stake painted red shall be located at the end of each sewer lateral.

3.05 CONCRETE ENCASEMENT OF PIPE:

Where called for on the Plans sewer pipe shall be completely encased with concrete. The trench shall first be excavated not less than 6 inches below the bell of the pipe and the pipe laid to the line and grade on concrete blocking. Concrete shall then be placed to the full width of the trench, but in no case less than 6 inches from the pipe bell on either side of the trench, and to a height of not less than 6 inches above the top of the pipe bell. No backfill material shall be placed in the trench for a period of at least 24 hours after the concrete encasement has been placed. Payment for concrete encasement will be according to the unit price bid in the Proposal and in accordance with Section 01200.

3.06 FIELD QUALITY CONTROL:

A. Testing and Cleaning:

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Before acceptance of the sewer lines, they shall be tested and cleaned. Where obstruction is met, the Contractor shall be required to clean the sewers by means of rods or swabs or other instruments. The pipe line shall be straight and show a uniform grade between manholes.

The Contractor shall notify the Engineer when the sewer lines have been cleaned and are ready for inspection. The Engineer in cooperation with the Contractor and the Owner will agree upon a date when all parties will be present and make the inspection and perform the tests specified hereinafter.

B. Test for Deflection:

When PVC Sewer Pipe is used, the Contractor will be required to perform a deflection test. The deflection may be checked by one of two techniques. One of these is through the use of a specially designed deflectometer which when pulled through a sewer section automatically measures and records at frequent intervals the pipe's vertical and horizontal diameters.

The other technique is to use a "go, no-go" mandrel which is sized to such dimension that it will not "go" when encountering a deflection greater than 5 percent. This type of mandrel, as well as a deflectometer, must be of such design as to minimize the possibility of its being hung up in the pipe by silt or other residues.

If a deflection of 5 percent or greater is encountered, the Contractor shall repair the pipe as necessary, wait 30 days, and retest that portion of the pipe repaired. The cost of the deflection tests and any required repairs shall be included in the appropriate bid item and no separate payment will be made for them.

C. Infiltration and Exfiltration Tests:

Test all sewers for infiltration by one of the following methods. The Contractor shall furnish, install and maintain a V-notch sharp crested weir in a wood frame tightly secured in a manhole at the low end of each sewer lateral and at locations on the main sewers designated by the Engineer. Maximum allowable infiltration shall be 25 gallons per mile per inch of diameter of sewer per 24 hour day at any time. All joints shall be tight and any visible leakage in the joints or leakage in excess of that specified above shall be repaired at the Contractor's expense. When infiltration is demonstrated to be within the allowable limits, the Contractor shall remove the weirs. Prior to making an infiltration test, all groundwater drainage shall be stopped to permit the groundwater to return to its normal level.

In areas where groundwater is not encountered, exfiltration tests shall be run to determine the acceptance of the sewer. The Contractor shall furnish and install all necessary materials, equipment, water supply, etc. for the tests. The maximum allowable exfiltration shall be 25 gallons per mile per inch of diameter of sewer per 24 hour day at any time, based on a 2 foot minimum internal head. An allowance of 10 percent of gallonage shall be permitted for each additional 2 foot head over the basic head. The joints shall be tight and leakage in excess of that specified above shall be repaired at the Contractor's expense. Precaution shall be taken to prevent forcing of stoppers from house service laterals.

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Infiltration and exfiltration tests will be made as soon as possible after construction of sufficient lines to warrant a test. The Contractor shall notify the Engineer when he is ready to conduct the tests. The cost of these tests shall be included in the appropriate bid item and no separate payment will be made for them.

D. Air Testing:

Air test shall be conducted in strict accordance with testing equipment manufacturer's instructions, including all recommended safety precautions. No one will be allowed in manholes while testing. Equipment used for air testing shall be specifically designed for this type of test and is subject to the approval of the Engineer. The Contractor shall furnish an air compressor, which will provide at least three hundred cubic feet per minute of air at one hundred pounds per square inch along with all necessary plugs, valves, air hoses, connections and other equipment necessary to conduct air test. Pressure gauges on test apparatus shall be a minimum of 4-inch diameter with a minimum of 1-psi graduations and a maximum range of 0-10 psi. Plugs in sewer eighteen inches (18") in size and larger shall be connected by cable for thrust protection.

The sewer section shall be plugged at both ends and air pressure shall be applied until the pressure inside the pipe reaches 4 psig. When a stable condition has been reached, the pressure shall be bled back to 3.5 psig above the average backpressure of any ground water above the pipe's invert. At this starting pressure, the time shall be observed and recorded. If there has been no leakage (zero pressure drop) after one hour of testing, the test section shall be accepted and the test complete.

If the time for the air pressure to decrease from the starting pressure (3.5 psig) to 3.0 psig is equal to that shown in the following table, the pipe shall be presumed to be free of defects. When designated times are not attained, pipe breakage, joint leakage, or leaking plugs are indicated the cause must be determined and corrected. After repairs have been made, the sewer sections shall be retested. This process shall be repeated until all sewer sections pass the air test.

AIR TEST LEAKAGE ALLOWANCE TIMETABLE (PER 100 FEET OF PIPE)

PIPE SIZE (INCHES)	MINUTES	SECONDS
4	1	53
6	2	50
8	3	47
10	4	43
12	5	40
15	7	05
18	8	30
21	9	55
24	11	24
27	14	25
30	17	48
36	25	39
42	34	54
48	45	35

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3.07 MEASUREMENT AND PAYMENT:

RESERVED

END OF SECTION

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SECTION 02533
SEWER FLOW CONTROL

PART 1 GENERAL

1.01 SCOPE

It is the intent of these specifications to provide a basis by which the sewage flow in a sanitary sewer line may be controlled or by-passed for the purpose of making renovations to the existing pump station and/or sewer line. It shall be the responsibility of the Contractor to make provisions to meet all requirements of these specifications and to correct any problems, which may arise as a result of the flow control operations.

A. The contractor shall use all procedures and equipment necessary for controlling or by-passing (the pumping of raw sewage from one manhole to another to eliminate flow through a section of pipe) flow at no additional costs to the owner.

B. The contractor is solely responsible for ensuring coordination with the owner and/or appropriate officials in re-routing flows.

PART 2 PRODUCTS

2.01 MATERIALS: Furnish as required.

PART 3 EXECUTION

3.01 PROCEDURES AND METHODS

A. Plugging or Blocking

A sewer line plug shall be inserted into the line at a manhole upstream from the section being inspected and/or sealed. The plug shall be so designed that all or any portion of the sewage flows can be released. After the work tasks have been completed, flow shall be restored to normal.

B. Pumping and Bypassing

When pumping/bypassing is required, the Contractor shall supply the necessary pumps, conduits and other equipment to divert the flow of sewage around the manhole section in which work is to be performed and to supply the necessary labor and supervision to set up and operate the pumping and bypassing system. The bypass system shall be of sufficient capacity to handle existing flows plus additional flow that may occur during periods of rain. If pumping is required on a 24-hour basis, all engines shall be equipped in a manner to keep the pump noise at a minimum.

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C. Discharge Pumping

Pumping or bypassing of raw wastewater onto the ground, or to areas not intended for sewage (i.e.: ditches, creeks and storm sewers), or into receiving streams is prohibited.

END OF SECTION

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SECTION 02534
CLEANING OF SANITARY SEWER LINES

PART 1 GENERAL

1.01 SCOPE

It is the intent of these specifications to provide a basis by which a sanitary sewer line can be cleaned of all excess debris so that further work can carried out. This basis shall include methods, equipment, and payment of work.

PART 2 EXECUTION

2.01 CLEANING

A. Cleaning of sanitary sewer lines shall be conducted on lines as specified in line and manhole repair specifications.

B. Cleaning of sewer lines shall be accomplished by trapping and collecting all sand, debris, and grease at the next manhole, upstream or downstream of the line being cleaned, and removal and proper disposal of said materials.

C. All data pertinent to the line cleaned shall be duly recorded on an adequate cleaning log form as supplied by the Contractors. This form shall be turned over to and remain in the possession of the Engineer after a section of line has been completed.

D. The cleaning of an entire section cannot be successfully performed from one manhole, the equipment shall be re-setup on the other manhole and cleaning again attempted. If successful cleaning still cannot be performed or the equipment fails to traverse the entire manhole section, the cleaning effort will be abandoned at Owner's or Engineer's approval. Sewer line repairs shall then be made at the discretion of the Engineer.

2.02 METHODS

A. The methods of cleaning a sanitary sewer line, which are acceptable for use, are outlined below. Approval from the Engineer for the method chosen shall be obtained prior to any cleaning work.

B. Bucket Machine Method: This method shall consist of:

1. Rodding the sewer line with a power-driven continuous steel rod of sufficient length and gauge and with the proper cleaning beads or augers, so as to loosen all solid materials. It shall also provide a means to tread a cable for the power winch.

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2. Removal of all solids, materials and other debris by means of a claw-shell type bucket and/or other appliances dragged through the sewer line with power winches of suitable size and horsepower.
3. Brushing of the sewer line with a brush large enough to assure that the line has been cleaned sufficiently. This brush shall be mechanically driven, with the power mechanism properly sized.

C. Hydraulic Cleaning Method - The equipment used shall be of a movable dam type and be constructed in such a way that a portion of the dam may be collapsed at any time during the cleaning operation to protect against flooding of the sewer. The movable dam shall be equal diameter as the pipe being cleaned and shall provide a flexible scraper around the outer periphery to ensure total removal of grease. If sewer cleaning balls or other such equipment, which cannot be collapsed instantly, are used, special precautions against flooding of the sewers and public or private property, shall be taken.

D. High Velocity Hydro-Cleaning Equipment - All high velocity sewer cleaning equipment shall be constructed for ease and safety of operation. The equipment shall have a selection of two or more high velocity nozzles. The nozzles shall be capable of producing a scouring action from 15 degrees to 45 degrees in all size lines designated to be cleaned. Equipment shall also include a high velocity gun for washing and scouring manhole walls and floors. The gun shall be capable of producing flows from a fine spray to a long distance solid stream. The equipment shall carry its own water tank, auxiliary engines, pumps, and hydraulically driven hose reel. All controls shall be located so that the equipment can be operated above ground.

2.03 EQUIPMENT

All equipment used for cleaning operations, either method, shall be equipment designed to do that type of work which is specified. When at all possible, the equipment shall be a self-contained unit to handle all operations.

A. The equipment used shall be the product of a manufacturer actively engaged in the research, development and manufacturing of said equipment.

B. If any equipment becomes "hung up" in the sewer line it is the responsibility of the Contractor to retrieve the equipment. If in freeing the equipment the Contractor has to make an excavation, he does so at his own expense, and any pipe, equipment, it shall be replaced to original condition following required specification. No equipment shall be left in the sewer line unattended or overnight.

2.04 DISPOSAL OF DEBRIS AND CLEAN-UP

After removal of all debris out of a manhole, then the contractor shall dispose of all debris at a sanitary landfill or other approved place.

A. Clean-up operations shall consist of cleaning all debris out of a manhole, and then

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the contractor shall dispose of all debris at a sanitary landfill or other approved place.

B. All materials shall be removed from the site no less often than at the end of each workday unless they are stored in totally enclosed containers as approved by the Owner and Engineer.

2.05 CLEANING PRECAUTIONS

During all sewer-cleaning operations, satisfactory precautions shall be taken to protect the sewer lines from damage that might be inflicted by the improper use of cleaning equipment. Whenever hydraulically improper use of cleaning tools, which depend upon water pressure to provide their cleaning force or any tools which retard the flow of water in the sewer line are used, precautions shall be taken to ensure that the water pressure created does not cause any damage or flooding to public or private property being served by the manhole section involved. The flow of sewage in the sewer lines shall be utilized to provide necessary pressures for hydraulic cleaning devices whenever possible. When additional quantities of water from fire hydrants are necessary to avoid delay in normal working procedures, the water shall be conserved and not used unnecessarily. No fire hydrant shall be obstructed in case of a fire in the area served by the hydrant nor shall a hydrant be used for the purpose described unless a vacuum break is provided. Contractor shall be responsible for any damage caused by the cleaning operation.

2.06 ROOT REMOVAL

Roots shall be removed in the sections where root intrusion is a problem. Special precautions should be exercised during the cleaning operation to assure almost complete removal of visible roots from the joint area. Any extensive visible roots, which could prevent the sealing of the packer or could prevent the proper application of chemical sealants, shall be removed. Procedures may include the use of mechanical devices such as rodding machines, expanding root cutters and porcupines, and hydraulic procedures such as high pressure jet cleaners. A method of chemical root treatment to insure root removal may be used at the option of the Contractor.

2.07 CHEMICAL TREATMENT OF ROOTS

To aid in the removal of roots and at the option of the Contractor, manhole sections that have root intrusion may be treated with an approved label herbicide. The application of the herbicide to the roots shall be done in strict accordance with the manufacturer's recommendations and specifications in such a manner to preclude any damage to surrounding vegetation. The Contractor at no additional cost to the Owner shall replace any damaged vegetation so designated by the Engineer. All safety precautions as recommended by the manufacturer shall be strictly adhered to concerning handling and application of the herbicide.

2.08 FINAL ACCEPTANCE:

Inspection of all cleaning operations shall be made on a daily basis by the Engineer and/or his daily authorized representative. A daily log shall be kept by the inspector and

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acknowledged by the Contractor of his superintendent at the end of each day.

1. Acceptance of this portion of the work shall be made upon the successful completion of the television inspection and shall be to the satisfaction of the Engineer's representative. In areas where television inspection is not performed, or where a double squeegee with each squeegee the same size as the sewer, shall be pulled through each manhole section as evidence of being adequately cleaned. If internal sealing is to follow the television inspection phase of the work, then particular attention should be given to the adequacy of the cleaning to insure that proper seating of the sealing packers can be achieved.

2. If upon starting the sealing operation, a portion of the sewer line is encountered that is not satisfactorily cleaned, the sealing equipment shall be removed and the line recleaned at no additional cost to the Owner.

END OF SECTION

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SECTION 02535
TELEVISING SANITARY SEWER LINES

PART 1 GENERAL

1.01 SCOPE

It is the intent of these specifications to provide a basis for which a sanitary sewer line can be internally inspected by means of a closed circuit television camera. This basis shall include all aspects of televising including method, equipment, and payment for work.

A. Televising of sanitary sewer lines shall be defined as television inspection by the insertion of a closed circuit television camera into a sanitary sewer line for the purpose of visual inspection of the interior portion of the sewer line.

B. The sewer lines for which televising are required is as specified shall be as shown on the construction drawings and as directed by the Engineer in the field.

C. All visual observations shall be duly recorded on a "Television Inspection Report Form" as supplied by the Contractor. A report form shall be made for each line inspected and shall be turned over to the Engineer after inspection is made.

D. It shall be the Contractor's responsibility to provide for the televising of sewer lines.

E. If there is an interference in the sewer line that will not allow the television camera to pass, then the camera shall be backed out of the line and an attempt shall be made to televise the line from the manhole at the other end. If the entire length of the sewer line cannot be televised because of two or more obstructions, then the Engineer shall be notified and a determination of how to proceed shall be made by the Engineer.

PART 2 PRODUCTS

2.01 The method by which televising sewer lines shall take place shall follow the procedure listed below and shall conform to all standard practices used.

The television camera shall be pulled through the sewer line by use of a mechanical or power-driven winch. It shall be pulled at a rate which will allow the inspector at the monitor to completely and thoroughly inspect the sewer line.

2.02 Video tapes shall be made upon the request of the Engineer. When requested, the videotape shall be made continuously as the camera is pulled through the line. Each tape shall be of the grade and quality best adapted to show the sewer in sharp detail. Each tape shall be numbered, dated and identified with sewer line number and location. The tape shall become the property of the Owner.

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2.03 Black and white or colored Polaroid photographs shall be taken at the discretion of the Engineer to show bad joints, cracks, and any other problem spots.

2.04 A sewer line shall be cleaned prior to insertion of the television camera.

2.05 Any electrical service required by the Contractor for televising sewer lines shall be provided for by the Contractor.

2.06 Visual inspection shall be done one manhole section at a time and the flow in the section being inspected shall be controlled as specified in Section 02533-Sewer Flow Control.

2.07 If any equipment becomes "hung up" in the sewer line it is the responsibility of the Contractor to retrieve the equipment. If in freeing the equipment the Contractor has to make an excavation, he does so at his own expense, and any pipe, pavement or other existing structure has to be broken to retrieve equipment, it shall be replaced to original condition of following required specifications. No equipment shall be left in the sewer line unattended or overnight.

2.08 EQUIPMENT

The television camera used for the inspection shall be one specifically designed and constructed for such inspection. Lighting for the camera shall be suitable to allow a clear picture for the entire periphery of the pipe. The camera shall be operative in 100% humidity conditions. The camera, television monitor and other components of the video system shall be capable of producing a minimum 500 line resolution video satisfaction of the Owner's representative and if unsatisfactory, equipment shall be removed and no payment made for unsatisfactory inspections.

The television system shall be a contained system complete with winches, (power and mechanical), cable, closed circuit television camera, monitor, video tape recorder, Polaroid camera, film, suitable measuring device to accurately determine the position of the camera in the line being televised at all times, and all necessary equipment for the successful completion of television inspection.

2.09 INSPECTION

All televising of sewer lines shall be inspected daily by the Engineer or his duly authorized representative. A daily log of work accomplished shall be duly recorded and acknowledged by the Engineer and/or inspector and the Contractor's superintendent. Printed location records shall be kept by the Contractor and will clearly show the location, in relation to adjacent manholes, of each infiltration point discovered by the television camera. In addition, other points of significance such as locations of building sewer, joints, unusual conditions, roots, storm sewer connections, collapsed sections, presence of scale and corrosion and other discernible features will be recorded and a copy of such records will be supplied to the Engineer.

END OF SECTION

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SECTION 02539
TESTING AND SEALING SEWER LINES

PART 1 TESTING SEWER LINES

1.01 GENERAL

1. Scope: This section consists of furnishing all labor, equipment and material to complete testing and sealing of sewer lines as shown on the drawings and specified in the following paragraphs.

2. Provide equipment such as pumps, gauges, regulators, and hoses necessary to perform air tests of each joint in all gravity sewer mains during final inspection. Equipment configuration shall be such that there are no valves on or along airline between measuring point at joint and pressure transducer or sensing device located in control unit on surface. Amount of pressure being exerted on joints shall be readable above ground on pressure gauge.

3. A reliable testing firm shall have certified the accuracy and calibration of the pressure sensing/monitoring system within a one-month period preceding use of equipment. Proof of certification shall be submitted.

PART 2 PRODUCTS/EQUIPMENT

2.01 TESTING EQUIPMENT

1. Equipment consists of a television camera and joint testing device that can be pulled through sewer lines. Construct testing device so one joint can be tested at a time.

2. Maintain continuous monitoring of void pressure at all times by means of an electronic pressure measuring system and pressure meter read-out on control panel.

3. Pressure meter device shall accurately show PSIG to nearest tenth (1/10) of one pound and shall respond and record any change in void pressure instantly. Make pressure measurements at void area.

4. Systems which incorporate bladders, hoses or the like for monitoring the pressures and which have questionable accuracy will not be allowed.

2.02 SEALING PRODUCTS & EQUIPMENT

1. Equipment used for mixing and pumping of chemical solutions shall consist of two approved, separate pumping and proportioning systems capable of supplying an uninterrupted flow of sealing material to completely fill point of infiltration and providing seal which will withstand specified joint air testing.

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2. Sealing equipment shall not damage, break, move or cause settlement, assuming lines are structurally sound.

3. Repairs shall take place at joints, cracks, holes or similar points of infiltration as identified.

4. Method of repair shall be such that original cross-sectional area and shape of interior of sewer pipe shall not be permanently reduced or changed.

5. Materials; 3M 5610 polyurethane gel is the preferred material. Alternates will be evaluated upon request and must be approved by the engineer prior to installation.

PART 3 EXECUTION

3.01 TESTING

1. Clearing of Testing Device

2. Prior to performing pressure test and subsequent to sealing joint or crack, clear pressure-testing device.

3. This will normally require that sealing packer be deflated and the testing system purged to assure that hoses, check valves or other assemblies are free of the grouting material or other restrictions.

4. Pipe Test Criteria

5. Some pipe materials are porous. To confirm that joint testing is not a more severe test than the pipe itself can pass, perform an on-job barrel test between joints in each pipe line to be tested to determine that pipe barrel can pass test criteria.

6. If pipe barrel will not pass decay rate limits, it may be necessary to adjust maximum test pressure applied.

7. Adjustment of maximum pressure levels will be evaluated jointly between CONTRACTOR, ENGINEER and OWNER. OWNER will render final decision on each situation.

8. Barrel test shall be performed for each line segment and results documented.

9. Testing Procedures

10. Test by isolating area to be tested within testing device and applying positive pressure into created void area.

11. Apply positive air pressure to each pipe joint.

12. Introduce pressurized air into isolated void created by testing device.

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a) Apply until:

It is determined pressure cannot be built in void.

Until test pressure of one-half (1/2) PSI per foot of depth plus four (4) PSI to maximum of ten (10) PSI is reached as recorded by void pressure monitor.

b) When either of these conditions is reached, shut off air supply.

13. If required pressure cannot be developed, joint shall have failed test. If required test pressure in void was built to one-half (1/2) PSI per foot of depth plus four (4) PSI, rate of decay of this pressure should not exceed ½ PSI in 30 seconds. Joint being tested will also have failed if pressure drops more than ½ PSI in 30 seconds.

14. Failure of joint indicates need for sealing. Sealing shall be as specified in this section.

15. Testing of ductile iron pipe joints is not required except at points where a transition from ductile iron to another pipe material occurs.

16. Where joints show obvious evidence of past leakage, testing of the joint is not required, unless directed by the Engineer.

17. Test Records

18. During joint testing, records shall be kept which includes:

a) Identification of sewer line section tested.

b) Test pressure used.

c) Location (footage) of each joint tested and location of joints not tested due to close proximity to building service connections and sanitary sewer manholes.

d) Statement indicating test results (passed or failed) for each joint tested.

e) Test pressure achieved and maintained for each joint passing air test.

f) Weekly equipment pressure test results.

g) Sewer line section barrel test results.

h) Daily gel check results.

i) Air temperature at time of testing joints.

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j) VHS tape of televised testing and sealing procedures. Recorder may be turned off in between joints, or left running, at the direction of the Engineer.

19. SEALING

1. Do not inject chemical sealant at an excessive pressure to damage existing pipe. Repair damage to existing pipe, which may result due to excessive chemical sealant injection pressures. Sealing shall be performed in accordance with the latest National Association of Sewer Service Companies Specification Guidelines.

2. Handling of Materials

3. Mixing and handling of chemical grout may be toxic by passing through unbroken skin, by inhalation of dust or droplets of materials, by swallowing or by ingestion. Safe mixing, handling and pumping of chemicals shall be the responsibility of the Contractor and shall be done by personnel thoroughly familiar with handling of chemicals involved.

4. Furnish appropriate safety equipment.

5. Placement of Chemical Grout

6. Position sealing packer over area of infiltration by means of metering device at surface and closed circuit television camera in line. Accurate measurement of location of defect to be sealed shall be made using portion sealing packer as "Datum" or measurement point or target. Such measurement, target or joint shall also be used to obtain necessary measurement for positioning injection area of sealing packer over area to be sealed.

7. Expand sealing packer sleeves using controlled pressures. Expanded sleeve shall seal against inside periphery of pipe to form void area at point of infiltration, completely isolated from remainder of pipeline. Pump sealant materials into this isolated area through hose systems at controlled pressures, which are in excess of groundwater pressures.

8. Integrate pumping, metering and scaling packer device so that proportions and quantities of materials and pressures for material and sealing can be instantly regulated in accordance with type and size of leak, percentage of voids be filled, type of soil surrounding pipe, and rate of flow of sealing solution in relation to back pressures.

9. Upon completion of injection, retest point of repair. If retesting shows seal was not completely effective, process shall be repeated until defect successfully passes pressure test.

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10. After sealing entire sewer line section, remove surplus grouting material from section at immediate downstream manhole. Removal shall not be permitted at succeeding downstream manholes except where immediate manhole is located within private property. If surplus-grouting materials left in sewer line section by Contractor result in surcharging and subsequent damage to public or private property, Contractor shall be responsible for damage to property and expenses incurred by Owner and shall hold Owner harmless.

11. Volume of sealant per joint shall be recorded. Sealant shall be pumped "to resist." Sealant volume shall not exceed 1 gallon per inch diameter of sewer line without authorization from Engineer.

12. Sealing of sewers may require grouting to occur against the flow of sewage in a number of locations due to access and bypassing pumping may be required.

13. Gel Checks

14. Make gel checks daily for each sealing vehicle to monitor both induction period and gel characteristics.

15. Make checks for every mixed batch or at least twice a day if only one batch is used.

16. Owner reserves the right to request adjustment of gel times or reject entire batch if acceptable gel characteristics do not exist.

17. Periodic gel checks shall also be made in pipe (at the request of Owner) by seating sealing packer on pipe barrel and filling packer void with grout solutions. Pressure will then be monitored until rise in pressure is observed, indicating that grout has gelled in packer void.

18. Field Records

19. Keep field records for each sewer line section prior to, during and after completion of chemical grouting operation.

20. Records shall include information such as accurate locations, gel times, grout volumes, grout pressure, air temperatures and joint not sealed due to close proximity to building service connections and sanitary sewer manholes.

21. VHS tapes of the sealing shall be furnished to the Owner.

22. Retesting

23. After a period of time equal to two times gel set time has elapsed, each point of repair shall be subjected to pressure of one-half (1/2) PSI per foot of depth plus 4 PSI. Rate of decay of this pressure shall not exceed ½ PSI in 30 seconds, except as otherwise approved by the Owner.

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24. Repairs failing to meet this condition shall be resealed and retested until an acceptable result is obtained.

25. Final Acceptance Test

26. Upon completion of testing and sealing of all joints in the project the Owner shall select approximately 10% of the line for final acceptance testing.

27. Final acceptance testing shall consist of a low-pressure air test of entire line segments. Contractor shall plug line segments at upstream and downstream manholes and have entire line segment pressurized to 3 ½ PSI.

28. Pressure drop of 1 PSI in the time period as defined in ASTM C828 shall constitute a failure of the final acceptance testing.

29. If the line segment fails, Contractor shall retest each joint along this line segment and seal individual joints at no additional cost to the Owner.

30. Field Quality Assurance

31. The work of the Contractor shall be warranted for a period of 24 months following substantial completion.

32. At the time agreed by the Owner (approximately 24 months after initial sealing) an initial retest area consisting of specific sewer line sections shall be conducted. Sewer line sections to be retested will be randomly selected throughout Project Area by the Owner and shall be representative of majority of sealing work performed. Initial retest area shall consist of approximately 10% of linear feet contained in Work.

33. Within initial retest area, retest pipe joints and cracks designated. Joints and cracks, which were sealed previously and fail retest, shall be resealed.

    a) If failure rate of these retested joints and cracks is less than 5% of joints and cracks retested, work shall be considered satisfactory and no further retesting will be required.

    b) If failure rate of retested joints and cracks exceeds 5% of joints and cracks retested, an additional retest area of equivalent size shall be selected and all pipe joints and cracks shall be retested. Additional testing and sealing, if necessary, will continue until failure rate of less than 5% of total retested joints or cracks is met.

34. Grout joints, which were tested previously and passed air test but retest, failed. These joints will not be included in determining if initial work was completed satisfactorily.

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35. Should as much as 25% of work be retested and fail to meet 5% requirement, Contractor shall provide same number of crews as utilized in original project so that retesting will proceed at a rapid rate.

36. Field Personnel: Personnel as named in the information submitted with the bid shall not be replaced without approval of the Owner.

END OF SECTION

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SECTION 02541
PROTECTIVE COATING FOR SANITARY SEWER STRUCTURES

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

A. Section 02531 – Sewer Force Mains

B. Section 02532 - Sanitary Sewers.

C. Section 02547 - Lift Station Wetwell.

1.02 DESCRIPTION OF WORK:

Lift station wetwell and receiving manhole rehabilitation to prevent/stop inflow, infiltration, and exfiltration; repair voids; restore structural integrity; and provide protection against corrosion. A monolithic, fiber-reinforced, structurally enhanced, cementitious-based liner material is spray applied to the wall, bench surfaces of the manhole and the underside of the top slab.

1.03 DESCRIPTION OF WORK:

REFERENCES

A. ASTM C 78 - Flexural Strength of Concrete (Using Simple Beam With Third-Point Loading).

B. ASTM C 94 - Ready-Mixed Concrete.

C. ASTM C 109 - Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or 50-mm Cube Specimens).

D. ASTM C 234 - Comparing Concretes on the Basis of the Bond Developed with Reinforcing Steel.

E. ASTM C 267 - Chemical Resistance of Mortars, Grouts, and Monolithic Surfacings.

F. ASTM C 321 - Bond Strength of Chemical-Resistant Mortars.

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G. ASTM C 496 - Splitting Tensile Strength of Cylindrical Concrete Specimens.

H. ASTM C 596 - Drying Shrinkage of Mortar Containing Portland Cement.

I. ASTM C 666 - Resistance of Concrete to Rapid Freezing and Thawing.

J. ASTM C 827 - Change in Height at Early Ages of Cylindrical Specimens from Cementitious Mixtures.

K. ASTM C 952 - Bond Strength of Mortar to Masonry Units.

L. ASTM C 1244 - Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test.

1.04. SUBMITTALS

A. Product Data: Submit manufacturer's product data, including physical properties, surface preparation, repair, application, curing, and field quality control.

B. Manufacturer Qualifications: Submit list of a minimum of 10 manhole rehabilitation projects completed during past 3 years.

C. Applicator Qualifications: Submit qualifications of applicator.

1. Certification stating applicator is factory trained and approved by manufacturer in application of the specified products.
2. List of recently completed manhole rehabilitation projects, including project name and location, names of owner and engineer, and description of products used, substrates, and application procedures.

1.05. QUALITY ASSURANCE

A. Material Qualifications: Minimum of 9 year history of being used for rehabilitation of sanitary system manholes.

B. Applicator Qualifications:

1. Factory trained and approved by manufacturer in application of the specified products.
2. Employs persons trained for the application of the specified products.

1.06 DELIVERY, STORAGE, AND HANDLING

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A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.

B. Storage:

1. Store materials in accordance with manufacturer's instructions.
2. Keep containers sealed until ready for use.
3. 3. Store materials in a cool dry environment. c) Handling: Protect materials during handling and application to prevent damage.

1.07. ENVIRONMENTAL CONDITIONS

A. Do not apply materials if ambient temperature is below 40 degrees F.
B. Do not apply materials to frozen surfaces or if freezing is expected within substrate within 24 hours after application.
C. Keep mix temperature at time of application below 90 degrees F.
D. Do not exceed water temperature of 80 degrees F.

1.08. PRODUCTS

A. MANUFACTURER

Strong-Seal Systems Corporation, PO Box 9209, Pine Bluff, Arkansas 71611. Toll Free (800) 982-8009. Fax (870) 850-6933. Web Site www.strongseal.com. or approved equal.

1.09. MATERIALS

A. General:

1. Materials from single manufacturer.
2. Materials compatible with substrate and with each other.
3. Materials approved by manufacturer.

B. Patching Material: Strong-Seal QSR. Rapid-setting, fiber-reinforced, high-early-strength, corrosion-resistant, hand-mixed and hand-applied, calcium aluminate based cementitious material.

1. Cement: Calcium aluminate cement.
2. Minimum Compressive Strength, ASTM C 109: 1,400 psi at 6 hours.
3. Minimum Bond, ASTM C 321: 145 psi at 28 days.
4. Applied Density: 105 plus or minus 5 pounds per cubic foot. Shrinkage, ASTM C 596: 0 percent at 90 percent relative humidity.

C. Infiltration Control Material: Strong-Seal Strong-Plug. Rapid-setting, high-early-strength, hand-applied, cementitious material.

1. Compressive Strength, ASTM C 109: 400 to 600 psi at 1 hour; 1,800

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to 2,400 psi at 24 hours.
2. Expansion, ASTM C 827: 0.10 percent.
3. Sulfate Resistance, ASTM C 267: No weight loss after 15 cycles; 2,000 ppm; test continuing.
4. Freeze/Thaw Resistance, ASTM C 666, Method A: 100 cycles.
5. Pull-Out Strength, ASTM C 234: 14,000 pounds.
6. Placement Time: Less than 1 minute.

D. Cementitious Grout: Strong-Seal Grout 1000. Cementitious grout, volume stable.

1. Minimum Compressive Strength, ASTM C 109: 1,000 psi at 28 days.

E. Liner Material: Strong-Seal MS-2C. Fiber-reinforced, spray-applied, cementitious mortar. (Apply as skim coat.)

1. Cement: Calcium aluminate cement.
2. Minimum Compressive Strength, ASTM C109: 5,000 psi at 28 days.
3. Minimum Tensile Strength, ASTM C 496: 580 psi at 28 days.
4. .Minimum Flexural Strength, ASTM C 78: 780 psi at 28 days.
5. Shrinkage, ASTM C596: 0 percent at 28 days, 90 percent relative humidity.
6. Minimum Bond, ASTM C952: 2000 psi at 28 days.
7. Applied Density: 115 plus or minus 5 pounds per cubic foot.
8. Freeze/Thaw Resistance, ASTM C666, Method A: 100 cycles, no visible damage.
9. Factory Blended: Requires only addition of water at site.
10. Minimum Cement Content: 40 percent of total bag weight.
11. Dry Bulk Density: 65 to 67 pounds per cubic foot
12. Fiber Reinforcement: 2 to 5/8 inch alkaline-resistant fiberglass rods

F. Liner Material: Strong-Seal High Performance Mix. Fiber-reinforced, spray-applied, cementitious mortar.

1. Cement: 100 percent pure fused calcium aluminate clinker and calcium aluminate cement.
2. Minimum Compressive Strength, ASTM C 109: 8,000 psi at 28 days.
3. Minimum Tensile Strength, ASTM C 496: 800 psi at 28 days.
4. Minimum Flexural Strength, ASTM C 78: 1,200 psi at 28 days.

5. Shrinkage, ASTM C 596: 0 percent at 28 days, 90 percent relative humidity.
6. Minimum Bond, ASTM C 952: 2000 psi at 28 days.
7. Applied Density: 150 plus or minus 5 pounds per cubic foot.
8. Freeze/Thaw Resistance, ASTM C 666, Method A: 100 cycles, no visible damage.
9. Factory Blended: Requires only addition of water at site.
10. Dry Bulk Density: 88 to 92 pounds per cubic foot.
11. Fiber Reinforcement: 1/2 to 5/8 inch alkaline-resistant fiberglass rods.

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G. Water: Clean and potable. Test nonpotable water in accordance with ASTM C 94.

1.10. EXAMINATION

Examine surfaces to receive protective coating. Notify the Engineer in writing if surfaces are not acceptable. Do not begin surface preparation, repair, or application until unacceptable conditions have been corrected.

1.11. SURFACE PREPARATION

A. Prepare surfaces in accordance with manufacturer's instructions.

B. Protection: Place covers over invert to prevent extraneous material from entering sewer lines.

C. Cleaning: Clean manhole walls and bench by using a minimum of 1,500 psi water spray to remove contaminants, dirt, debris, and other foreign materials.

D. Remove loose, unsound, and protruding brick, mortar, and concrete.

E. Inspection by Engineer: Before application of each material, surfaces to be sprayed or coated will be inspected by the Engineer. Correct defects or deficiencies identified by the Engineer before application of subsequent material.

F. Voids: Repair and fill voids greater than 2 inches in depth with patching material. Apply patching material in accordance with manufacturer's instructions.

G. Active Leaks:

1. Stop active leaks with patching material or infiltration control material. Apply material in accordance with manufacturer's instructions.
2. Install weep holes as required to localize infiltration during application of patching material or infiltration control material.
3. Plug weep holes after application with infiltration control material before application of liner material.
4. Severe Infiltration: Drill as required to pressure grout using a cementitious grout. Apply grout in accordance with manufacturer's instructions.

H. Advance Notice: Give the Engineer a minimum of 3 days advance notice of start of application.

1.12. INVERT REPAIR

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A. Remove loose and unsound materials and wash walls, after surface preparation is complete.

B. Repair bench, invert, or service line using patching material. Apply in accordance with manufacturer's instructions.

C. Repair inverts with visible damage, where infiltration is present, or when vacuum testing is specified.

D. Apply patching material to invert, after blocking flow through manhole and thoroughly cleaning invert.

E. Uniformly trowel patching material onto damaged invert at a minimum thickness of 1/2 inch at invert. Extend out onto bench of manhole sufficiently to tie into liner material.

F. Ensure finished invert surfaces are smooth and free of ridges.

G. Reestablish flow in manhole after a minimum of 30 minutes after application of patching material.

1.13. APPLICATION OF LINER MATERIAL

A. Apply liner material in accordance with manufacturer's instructions.

B. Equipment: Spray apply liner material using approved equipment designed and manufactured by material manufacturer for the specific application.

C. Mixing:

1. Mix liner material with water in accordance with manufacturer's
2. instructions.
3. Discharge prepared mix into hopper.
4. Continue mixing as liner material is continuously sprayed.

D. Cleaning: Ensure surface is clean and free of foreign material.

E. Saturated Surface: Ensure surface is damp and totally saturated with water without noticeable free water droplets or running water, just before application of liner material.

F. Apply skim coat.

G. Spraying: Spray apply liner material in 1 or more passes from bottom of wall to bottom of frame to form a structurally enhanced monolithic liner. The underside of the top slab is included.

1. Minimum Total Thickness: 1 inch.

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H. Finishing:

1. Trowel surface of sprayed liner material to relatively smooth finish. Do not over trowel.
2. Apply brush finish to trowel finished surface.

I. Follow manufacturer's instructions whenever more than 24 hours have elapsed between applications.

J. Application to Bench:

1. Remove wood covers.
2. Spray bench with liner material mixed in accordance with manufacturer's instructions.
3. Spray apply liner material to produce a gradual slope from walls to invert to form a structurally enhanced monolithic liner. Minimum thickness at invert of 1/2 inch.
4. Round full circumference of intersection of wall and bench to a uniform radius.

K. Application to New Cast-In-Place or Precast Concrete Wetwells:

1. Prepare surface with bonding agent in accordance with manufacturer's instructions.
2. Apply skim coat.
3. Spray application of Strong-Seal High Performance Mix liner material in one or more coats.
4. Walls, bottom slab and underside of top slab are included.
5. Minimum Total Thickness: 1 inch.

1.14. CURING

A. Cure materials in accordance with manufacturer's instructions.

B. Exposure:

1. Minimize exposure of applied materials to sunlight and air movement.
2. Cover structure if time between application of additional coats is to be longer than 15 minutes.
3. Do not expose finished materials to sunlight or air movement for longer than 15 minutes before covering or closing access.
4. Shade manhole while rehabilitation is in process in hot and arid climates.

C. Concrete Curing Compound:

1. Apply concrete curing compound if relative humidity is less than 70 percent within manhole.

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2. Apply curing compound in accordance with manufacturer's instructions.

D. Cure Time: Allow a minimum of 6 hours cure time before subjecting wetwells or manholes to flows.

1.15. FIELD QUALITY CONTROL

A. Inspection by the Engineer or the waiver of inspection of any portion of the work shall not relieve the Contractor of responsibility to perform the work as specified.

B. Field Quality Control Testing: Performed by the Engineer at Contractor's expense.

C. Compressive Strength Test:

1. Cast four 2 inch cubes each day or from each pallet of material.
2. Label, package, and mail cubes to manufacturer.
3. Manufacturer shall test cubes for compressive strength in accordance with ASTM C 109 and submit test results to the Contractor and Engineer.

D. Leaks: Visually verify absence of leaks.

E. Exfiltration Test: Perform exfiltration test. Wetwells and receiving manholes

F. Over 6 Feet Deep: New protective liner and manhole rehabilitation is acceptable if water loss is a maximum of 1 inch plus 1/8 inch for each additional foot of depth in five minutes.

END OF SECTION

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Georgia Department of Natural Resources
Environmental Protection Divis
205 Butler Street, S.E., Suite 1362 East Tower, Atlanta, Georgia 30334-4100
Drinking Water Program
(404) 656-2750
FAX: (404) 651-9590

DRINKING WATER PROJECT SUBMITTAL FORM

Water System Name: CITY OF PORT WENTWORTH WSID Number: 0510002

General Project Information

Project Name: RICE HOPE THIRD LAKE DEVELOPMENT

Project Description: HORIZONTAL MULTIFAMILY CONSISTING OF 446 DETACHED UNITS

Project Location: End of Mulberry Blvd accessible via from Georgia Hwy 21 County: CHATHAM

Type of Development: HORIZONTAL MULTIFAMILY RESIDENTIAL

Maximum Elevation in Development: 25 (feet)

Number of Service Connections Proposed: 446

Size(s) of Water Main in Project: 8 & 12 (inches)

Length of Water Main to be Installed: 1,500 (feet) Water Main Material: PVC - C900

Wastewater for this Project will be handled by: Septic Tank: ☐ or Sewer System: ☑ (check one)

Is this project an addition to an existing water system? Y ☑ N ☐ If YES, please indicate: CITY OF PORT WENTWORTH

a) Static Pressure (point of tie-in): 50 (psi) at 20 feet elevation

b) Elevation at the point of tie-in: 20 feet

c) Flow Available: 1,270 (gpm) at 40 (psi) residual, at the point of tie-in.

d) Size of Water Main at Point of Tie-in to Project: 12 (inches)

e) ***Include 24-hour pressure test results for projects connecting to existing systems*.**

General Existing Water Supply Information

Number of Sources: _____ Total Production Capacity: _____ (gpm)

Number of Existing Service Connections: _____

Finished Water Storage Type(s): _____ Total Storage Volume: _____ (gallons)

PLEASE NOTE: ALL APPLICABLE APPROVALS AND/OR PERMITS RELATING TO THE CONSTRUCTION OF THE PROJECT MUST BE OBTAINED PRIOR TO THE START OF ANY CONSTRUCTION, AS REQUIRED.

To the best of my knowledge, the above named project conforms with all applicable state and local government requirements for the approval of public drinking water supply construction projects.

Name	Signature	Title	Date

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City Officials Name: Robert

Time of Test: 7:0

Champion Fire Protection, Inc.

825 WHEATON STREET · SAVANNAH, GEORGIA 31401 · PHONE: (912) 234-0111 · FAX: (912) 236-1303

HYDRANT FLOW TEST SHEET

MULBERRY BLVD

PORT WENTWORTH, GA

Hydrant	Static/Residual	Color	GPM Flow	PSI	Size	Date
A	NA	Orange	1270	11	4.5	04/21/2022
B	50/40	Orange	NA	NA		

Inspector Name: Joseph Madden

Inspector Signature:

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Rice Hope Third Lake
WATER DISTRIBUTION CALCULATIONS
March 15, 2022
Third Lake Development
Pittman Engineering Co., LLC

Third Lake Development is master planned for 446 units. The Water System is served by a 12-Inch diameter water main extension of Mulberry Blvd. The proposed 12-Inch diameter water main will extend approximately 750 linear feet to the Third Lake Entrance. Thereafter a proposed 12-inch water main will extend approximately 2,100 linear feet. The tie-ins will occur at Mulberry Blvd. The proposed mains will create a loop with the existing system. The Fire Hydrants will all be connected to a 12" main and the looped line will be 8".

The City of Port Wentworth requirement for fire flow at the most distant point within the project is 1,000 gpm.

The maximum peak instantaneous (peak) demand for residential communities with 446 connections expected through the proposed water mains is 315 gpm. (Refer page 38 from the "Minimum Standards For Public Water Systems")

Number of Connections	Gallons Per Minute
400	295
446	**315**
500	335

The total flow demand for the project = 1,000 gpm + 315 gpm = 1,315 gpm

The total head loss using the Hazen-Williams formula with C=120 is:

Head Loss = 0.2083 x (100/C)^1.852 x Q^1.852 / D^4.8655

Head Loss = friction head loss in feet of water per 100 feet of pipe,
C = coefficient for roughness of the interior pipe surface
Q = flow rate in gallons per minute
D = inside diameter of pipe in inches

For the 8-Inch diameter water main,
If C=120, Q=1,335 gpm and D=8-Inches, then Head Loss = 5.08 ft/100 ft

For the 10-Inch diameter water main,
If C=120, Q=1,335 gpm and D=10-Inches, then Head Loss = 1.71 ft/100 ft

For the 12-Inch diameter water main,
If C=120, Q=1,335 gpm and D=12-Inches, then Head Loss = 0.0385 ft/100 ft

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Determine the head loss for an 8-Inch diameter water main,

Head Loss = 5.08 ft/100 ft x 2850= ft = 144.78 ft
Converting ft to psi = 144.78 ft x 1 psi/2.31 ft = 62.6 psi pressure drop

Determine the head loss for a 10-Inch diameter water main,

Head Loss = 1.71 ft/100 ft x 2850= ft = 48.7 ft
Converting ft to psi = 48.7 ft x 1 psi/2.31 ft = 21.1 psi pressure drop

Determine the head loss for a 12-Inch diameter water main,

Selected Pipe Size

Head Loss = .0385 ft/100 ft x 2850= ft = 1.1 ft
Converting ft to psi = 4.8 ft x 1 psi/2.31 ft = 2.1 psi pressure drop

Minimum residual starting pressure at tie-in location must be sufficient to account for the 16.2 psi drop, while providing 20 psi minimum at the farthest hydrant from the tie-in location.

Minimal residual starting pressure at tie-in,
= 20 psi minimum + 16.2 psi pressure drop = 36.2 psi

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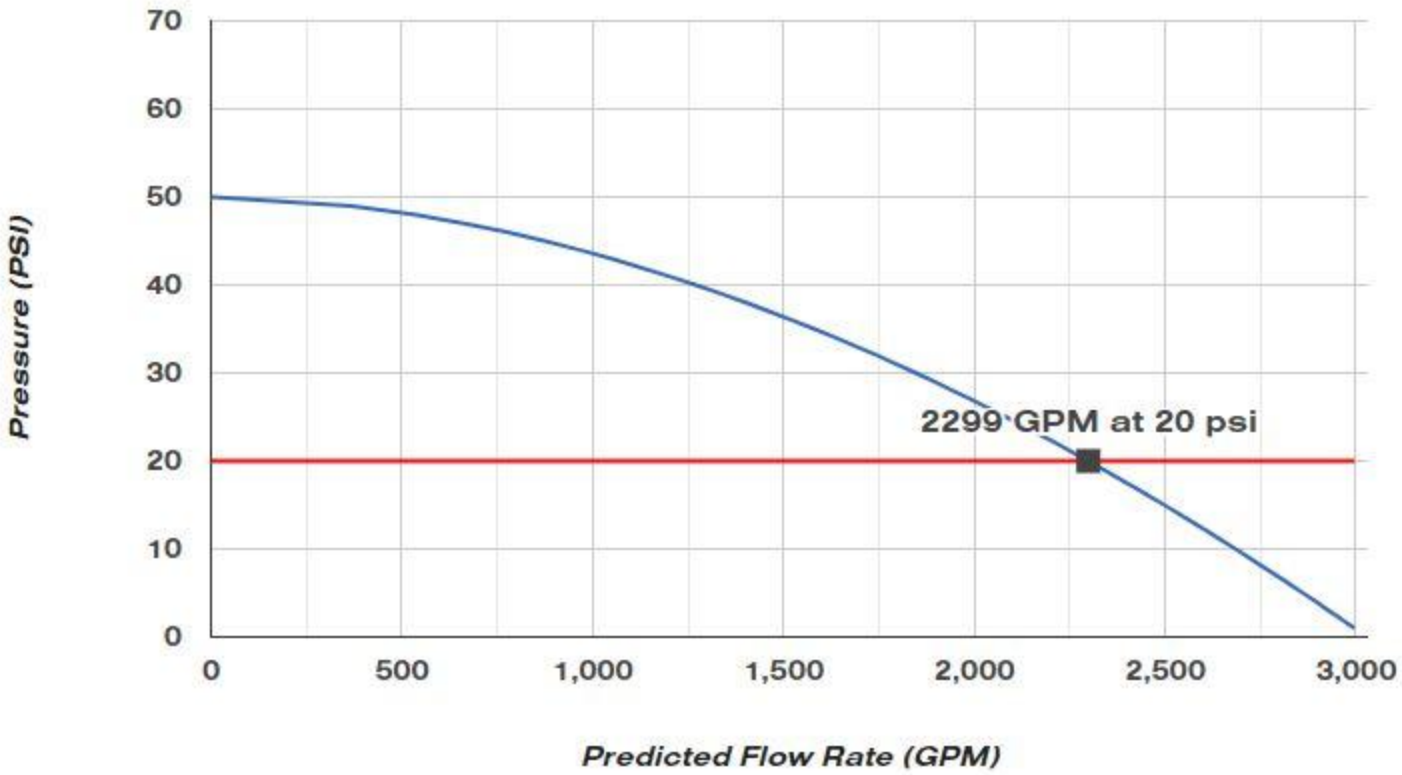
GPM at 20 psi: 2299
Class: AA
Marking color: Light Blue
% Pressure Drop: 20%

Static = 50 psi
Residual = 40 psi
Flow = 1270 gpm



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RICE HOPE - THIRD LAKE DEVELOPMENT
WATER SPECIFICATIONS

City of Port Wentworth

Georgia

Comprehensive Development Manual

Section 2: **TECHNICAL SPECIFICATIONS**

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02510	Water Pipe and Fittings
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02821	Polyolefin Coated Chain Link Fence Gates and Operator
02822	Ornamental Metal Fencing System
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SECTIONS INCLUDED WITH RICE HOPE - THIRD LAKES SUBMITTAL

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SECTION 02510
WATER PIPE AND FITTINGS

PART 1 GENERAL

1.01 SCOPE

A. Provide all labor, materials, equipment and incidentals necessary to construct, pressure test and disinfect all potable water piping, fittings and appurtenances as shown on the Construction Drawings and as specified herein.

B. Site piping covered under this Section shall begin at the outside face of structures and buildings, except where there is no joint at the outside face, then site piping shall begin not more than two feet beyond the face of the structure or building. Piping covered under this section shall also include piping within miscellaneous vaults such as meter and backflow prevention vaults.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02317 - Trench Excavation and Backfill.

B. Section 02445 - Jack and Bore Crossings.

C. Section 02511 - Valves, Meters, and Accessories.

D. Section 02532 – Sanitary Sewers

E. Section 03305 – Cast-In-Place Concrete.

1.03. SUBMITTALS

Complete product data and engineering data, including shop drawings, shall be submitted.

1.04 TRANSPORTATION AND HANDLING

A. Unloading: Furnish equipment and facilities for unloading, handling, distributing and storing pipe, fittings and accessories. Make equipment available at all times for use in unloading. Do not drop or dump materials. Any materials dropped or dumped will be subject to rejection without additional justification. Pipe handled on skids shall not be rolled or skidded against the pipe on the ground.

B. Handling: Handle pipe, fittings, valves and accessories carefully to prevent shock or damage. Handle pipe by rolling on skids, forklift, or front end loader. Do not use material damaged in handling. Slings, hooks or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior coatings or internal lining of the pipe. Do not use chains in handling pipe, fittings and appurtenances.

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1.05 STORAGE AND PROTECTION

A. Store all pipe which cannot be distributed along the route. Make arrangements for the use of suitable storage areas.

B. Stored materials shall be kept safe from damage. The interior of all pipe, fittings and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves and hydrants shall be drained and stored in a manner that will protect them from damage by freezing.

C. Pipe shall not be stacked higher than the limits recommended by the manufacturer. The bottom tier shall be kept off the ground on timbers, rails or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. At least two rows of timbers shall be placed between tiers and chocks, affixed to each other in order to prevent movement. The timbers shall be large enough to prevent contact between the pipe in adjacent tiers.

D. Stored mechanical and push-on joint gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis.

E. Mechanical-joint bolts shall be handled and stored in such a manner that will ensure proper use with respect to types and sizes.

PART 2 PRODUCTS

2.01 PIPE

A. DUCTILE IRON PIPE

Shall be Pressure Class 350 from 4” to 24” diameter unless otherwise shown on the plans and shall conform to AWWA C151/ANSI A21.51, latest revision.

Ductile iron pipe, specials, and fittings shall have an approved exterior asphaltic coating ANSI/AWWA C151/A21.51 and an approved interior coating of standard cement lining with an asphaltic seal coating, 1 mil in accordance with AWWA C104/ANSI A21.4.

The seal coat shall not impair the potability or impart color, taste, odor, phenols, toxicity, caustic alkalinity, or have deleterious effect to the water shall be certified to meet the requirements of ANSI/NSF Standard 61. Each pipe shall bear a mark denoting its class. All pipe shall be manufactured within the limits of the continental United States.

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B. POLYVINYL CHLORIDE PIPE (C900)

PVC pipe shall be Underwriters' Laboratories approved and listed and must meet all requirements of ASTM D2241 and bear the seal of conformance to NSF61. PVC pipe used for water mains shall be blue in color only. It shall meet or exceed AWWA C900 with the following supplemental specifications:

PVC pressure pipe 4" to 12" shall be DR 18, Class 150 unless otherwise shown on the plans and shall conform to AWWA C900, latest designation, made from compounds meeting standard code designation PVC 1120 and shall meet or exceed all requirements of ASTM D2241. Couplings, bells, gaskets and lubricants to be used with PVC pipe shall also conform to AWWA C900 requirements. Pipe shall have ductile iron pipe equivalent outside diameters. Each joint of pipe shall be marked with the nominal size and OD Base, material code designation, dimension ratio number, AWWA pressure class, AWWA designation number, manufacturer's name or trademark and production record code, and seal of the National Sanitation Foundation verifying the suitability of the pipe material for potable water service. Gaskets and lubricants shall be of proper size and shape and suitable for potable water and shall be furnished as required by the pipe manufacturer.

Pressure pipe 24" and larger shall be ductile iron see Section 02510-2.

Pressure pipe less than 4" shall be Polyethylene Pipe, 200 psi, DISR-7CTS. Pipe 4" to 12" shall be Class 150 with Dimension Ratio 18 or lower (thicker).

PVC Pressure Pipe 14" and larger shall be Class 235 C905 DR18.

PVC Pressure Pipe 6" to 12" shall be Class 150 C-900 DR18
The contractor shall furnish manufacturer's affidavit certifying that the pipe meets AWWA C900 latest designation standards. Size and class shall be as called for in the Bid Form or plans.

C. HIGH DENSITY POLYETHYLENE PIPE (C906)

This specification covers the requirements of high density polyethylene water transmission and distribution pipe in sizes 4" to 36" joined by means of zero leak-rate heat-fusion, and approved mechanical joints, meeting the specifications and requirements of American Water Works Association Standard C906.

The polyethylene pipe and fittings shall be made from virgin resins exhibiting a cell classification of PE 345464C as defined in ASTM D3350-Type III, Grade PE34 with an established hydrostatic-design-basis of 1600 psi for water at 73 Degrees F. The resin shall be listed by the PPI (Plastic Pipe Institute) in its pipe-grade registry Technical Report (TR) 4, "*Listing of Plastic Pipe Compounds*".

Pipe and fittings must be marked as prescribed by AWWA C906 and NSF 14 & 16. Pipe markings will include nominal size, OD base (i.e. 12" ductile iron pipe

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sizing, DIPS), dimension ration, pressure class, WPR, AWWA C906, manufacturers name, manufacturer's production code including day, month, year extruded, and manufacturer's plant and extrusion line; and NSF logo.

The wall thickness shall follow the Dimension Ration (DR) system prescribed in AWWA C906. Laying lengths are 40 ft standard. The pipe is to be joined by heat fusion, flanges or other mechanical joint systems proven for HDPE pipes. Both pipe and fittings must be NSF listed by the manufacturer with the pipe bearing the "NSF" logo or mark. HDPE shall be the DR as shown on plans and/or in the bid form. The DIPS longitudinal color stripe pattern shall have three equally spaced pairs of **BLUE** color stripes extruded in to the pipe OD. The pipe shall be Driscoplex 4000 or approved equal. Size and class shall be as called for in the Bid Form or plans.

E. COPPER TUBING

Type K copper 3 inches and smaller shall conform to AWWA Specification 7S-CR, ASTM Specifications B-88, and Federal Specification WW-T-799. All service lines from the main to the meter up to 1" shall be copper tubing. Service lines from 1-1/4" up to 3" can be copper tubing or HDPE water service tubing as defined below.

F. PLASTIC SDR 9 HDPE WATER SERVICE TUBING (C901)

Polyethylene Copper Tube Size Water Service Tubing - 3 inches and Smaller may be used in lieu of copper tubing except as defined above. Pipe shall be manufactured from a PE 3408 resin listed with the Plastic Pipe Institute (PPI) as TR-4. The resin material will meet the specifications of ASTM D3350-02 with a cell classification of PE:345464C. Pipe shall have a manufacturing standard of ASTM D2737 (CTS). Pipe shall be DR 9 (200psi WPR) @ 73.4 degrees F unless otherwise specified on the plans. The pipe shall contain no recycled compounds except that generated in the manufacturer's own plant from resin of the same specification from the same raw material. All pipes shall be suitable for use as pressure conduits, and per AWWA C901, have nominal burst values of three times the Working Pressure Rating (WPR) of the pipe. Pipe shall also have the following agency listing of NSF 61. The pipe shall be Driscoplex 5100 Ultra-Line or approved equal.

G. WATER SYSTEM MATERIALS

All materials utilized in the construction of the water system shall be new. Used water mains that meet these standards may be used again after the pipe has been thoroughly cleaned and restored practically to its original condition.

2.02 JOINTS AND GASKETS

A. PUSH-ON JOINTS

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1. DIP Push-on joints shall conform to AWWA C111/ANSI A21.11 (latest revision) - Rubber Gasket Joints for Cast Iron Pressure Pipe and Fittings. Details of the joint design shall be in accordance with the manufacturer's standard practice such as "Fastite", "Bell-Tite," "Tyton," or equal joints. Gasket material shall be standard styrene butadiene copolymer (SBR).

   Whenever the pipe is cut in the field, the cut end shall be conditioned so it can be used in making up a joint by filing or grinding the cut end to remove burrs or sharp edges that might damage the gasket.
2. PVC Push-on joints shall be an elastomeric gasketed joint. Insertion and lubrication of the elastomeric gasket in the annular groove must be as recommended by the manufacturer.

B. RESTRAINED JOINTS

Restrained joints for DIP shall be obtained by the installation of “Field Lok”, “TR Flex”, “Fast-Grip”, “Flex-Ring”, MEGALUG by EBAA Iron, Inc. or approved equal. These restraint glands shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1.

Tyton Joint Pipe with “Field Lok Gaskets”, Fastite Pipe with “Fast-Grip Gaskets” or DIP or PVC Pipe with EBAA Iron, Inc. pipe restraints or approved equal.

All underground creek crossings and jack and bores with steel casing shall use “Field Lok” or “Fast-Grip” restrained joints.

C. FLEXIBLE JOINTS

Flexible joints shall be American Pipe "Flex-Lok", Clow "Ball and Socket", U.S. Pipe "Usiflex", EBAA Iron Inc. FLEX-900 or approved equal. Piping shall have a minimum working pressure rating of 250 PSI and a minimum allowable joint deflection of 15^{o}.

D. MECHANICAL JOINTS

Mechanical joints for DIP and PVC shall consist of a bolt joint of the stuffing box type as detailed in AWWA C110/ANSI A21.10 (latest revision) and described in AWWA C111/ANSI A21.11 (latest revision) - Rubber Gasket Joints shall be SBR rubber and conform to AWWA C111/ANSI A21.11 (latest revision).

E. FLANGED JOINTS

Flanged joints shall conform to AWWA C110/ANSI A21.10 (latest revision). Gaskets shall be SBR rubber per ANSI/AWWA C111/A21.11. This rubber compound is NSF 61 certified for contact with potable water or other approved quality shall be used in all flanged joints. The bolts and nuts shall conform in dimensions to the American Standard heavy series.

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"KWIK" or Uni-Flange adaptors for plain and pipe shall be used only when authorized by the Engineer. Set screws shall be self-torquing or be properly torqued during installation with a torque wrench.

F. FUSION JOINTS

1. Sections of polyethylene pipe should be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. All welds will be made using a Data Logger to record temperature, fusion pressure, with a graphic representation of the fusion cycle shall be part of the Quality Control records.
2. Sidewall fusions for connections to outlet piping shall be performed in accordance with HDPE pipe and fitting manufacturer's specifications. The heating irons used for sidewall fusion shall have an inside diameter equal to the outside diameter of the HDPE pipe being fused. The size of the heating iron shall be ¼ inch larger than the size of the outlet branch being fused.
3. Mechanical joining will be used where the butt fusion method can not be used. Mechanical joining will be accomplished by either using a HDPE flange adapter with a Ductile Iron back-up ring or HDPE Mechanical Joint adapter with a Ductile Iron back-up ring.
4. Socket fusion, hot gas fusion, threading, solvents, and epoxies will not be used to join HDPE pipe.

G. THREADED FLANGE JOINTS

These joints shall be in accordance with AWWA C115/ANSI A21.15. All flanges shall have a taper pipe thread (NPT) in accordance with ANSI B2.1, Pipe Threads (except dryseal), adapted to DIP and CIP outside diameters.

H. COPPER AND HDPE SERVICE PIPE

Use brass flare fittings or compression joints for copper and "Double 'O' Seal" Central Plastics Co. transition fittings for HDPE.

2.03 PIPE FITTINGS AND SPECIALS

A. DIP FITTINGS AND SPECIALS

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Shall be manufactured in the USA. Mechanical joint fittings 4 inches through 24 inches shall conform to either AWWA C110 or AWWA C153 (Compact Fittings). Minimum pressure rating for fittings shall be 350 psi. All other fittings shall conform to AWWA C110. Unless otherwise noted on the plans, fittings for underground installation shall be mechanical joint conforming to AWWA C111, and fittings for above ground installation shall be flanged conforming to ANSI B16.1 Class 125. Minimum pressure rating for fittings shall be 250 psi. Fittings and specials shall be completed with rings, bolts, gaskets, etc., for joints.

B. POLYVINYL CHLORIDE PIPE

Fittings used on 4" thru 16" PVC Pipe transitions shall be mechanical or restrained joints as manufactured by American Pipe, U.S. Pipe, Clow or EBAA Iron Inc.

C. POLYETHYLENE PIPE (HDPE)

1. Butt Fusion Fittings - Fittings shall be PE3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02, and approved for AWWA use. Butt Fusion Fittings shall have a manufacturing standard of ASTM D3261. Molded & fabricated fittings shall have a pressure rating equal to the pipe unless otherwise specified in the plans. Fabricated fittings are to be manufactured using Data Loggers. Temperature, fusion pressure and a graphic representation of the fusion cycle shall be part of the quality control records. All fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half times the Working Pressure Rating (WPR) of the fitting.
2. Electrofusion Fittings - Fittings shall be PE3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02. Electrofusion Fittings shall have a manufacturing standard of ASTM F1055. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans. All electrofusion fittings shall be suitable for use as pressure conduits, and per AWWA C906, have nominal burst values of three and one-half times the Working Pressure Rating (WPR) of the fitting.
3. Flanged and Mechanical Joint Adapters - Flanged and Mechanical Joint Adapters shall be PE 3408 HDPE, Cell Classification of 345464C as determined by ASTM D3350-02. Flanged and Mechanical Joint Adapters shall have a manufacturing standard of ASTM D3261. Fittings shall have a pressure rating equal to the pipe unless otherwise specified on the plans.

D. BRASS NIPPLES AND BRASS PIPE FITTINGS (DOMESTIC MADE):

Threads shall be cleanly cut with sharp tools and the jointing procedure shall conform to the best practice. Before jointing, all scale shall be removed from pipe by some suitable means. After cutting, all pipe shall be screwed together with an application for graphite and engine oil, Teflon tape, or other sealing compound applied to all threads and once a joint has been screwed on it shall not be backed

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off unless the threads are re-cleaned and new compound or Teflon tape applied. Unions shall be installed at every connection to the supply line.

E. VALVES:

All 8-inch or larger gate valves that are installed on the reclaimed transmission line(s) and /or tie into a major transmission line shall be installed in a manhole. All Gate Valves that are located at the entrance of subdivision or other development that tie into a transmission line shall be installed in a manhole. All other Gate Valves can be installed in a cast iron valve box with a concrete collar and concrete valve marker post.

PART 3 EXECUTION

3.01 EXISTING UNDERGROUND UTILITIES AND OBSTRUCTIONS

A. The plans indicate utilities and obstructions that are known to exist according to the best information available to the Owner.

B. Existing Utility Location: The following steps shall be exercised to avoid interruption of existing utility service.

1. Expose the facility, for a distance of at least 100 feet in advance of pipeline construction, to verify its true location and grade. Repair, or have repaired, any damage to utilities resulting from locating or exposing their true location.
2. Avoid utility damage and interruption by protection with means or methods recommended by the utility owner.

C. Conflict with Existing Utilities:

1. Horizontal Conflict: Horizontal conflict shall be defined as when the actual horizontal separation between a utility, main, or service and the proposed piping does not permit safe installation of the piping by the use of sheeting, shoring, tying-back, supporting, or temporarily suspending service of the parallel or crossing facility. The Contractor may change the proposed alignment of the piping to avoid horizontal conflicts if the new alignment complies with regulatory agency requirements and after a written request to and subsequent approval by the Engineer. Where such relocation of the piping is denied by the Engineer, the Contractor shall arrange to have the utility, main, or service relocated.
2. Vertical Conflict: Vertical conflict shall be defined as when the actual vertical separation between a utility, main, or service and the proposed piping does not permit the crossing without immediate or potential future damage to the utility, main, service, or the piping. The Contractor may change the proposed grade of the piping to avoid vertical conflicts if the changed grade maintains adequate cover and complies with regulatory

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agencies requirements after written request to and subsequent approval by the Engineer.

D. Electronic Locator: Have available at all times an electronic pipe locator and a magnetic locator, in good working order, to aid in locating existing pipe lines or other obstructions.

E. Water and Sewer Separation:

1. Water mains shall be laid at least ten (10) feet horizontally from any existing or proposed sanitary sewer, storm sewer or sewer manhole. The distance shall be measured edge-to-edge. When local conditions prevent a horizontal separation of 10 feet, the water main may be laid closer to a sewer (on a case-by-case basis) provided the water main is laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer. It is advised that the sewer be constructed of materials and with joints that are equivalent to water main standards of construction and be pressure tested to assure water-tightness prior to backfilling.
2. Water mains crossing house sewers, storm sewers or sanitary sewers shall be laid to provide a separation of at least 18 inches between the bottom of the water main and the top of the sewer. At the crossings, one full length of water pipe shall be located so that both joints will be as far from the sewer as possible (bisected at the point of crossing). Special structural support for the water and sewer pipes may be required.
3. When local conditions prevent a vertical separation of 18 inches and/or less than 10 feet of horizontal separation, the sewer passing over or under water mains shall be constructed of materials and with joints that are equivalent to water main standards of construction and shall be pressure tested to assure water-tightness prior to backfilling. At the crossings, one full length of water pipe shall be located so that both joints will be as far from the sewer as possible (bisected at the point of crossing).
4. When water mains cross under sewers, additional measures shall be taken by providing:
    a. a vertical separation of at least 18 inches between the bottom of the sewer and the top of the water main;
    b. adequate structural support for the sewers to prevent excessive deflection of joints and settling on and breaking the water mains;
    c. that the length of water pipe be centered at the point of crossing so that the joints will be equidistant and as far as possible from the sewer; and,
    d. both the sewer and the water main shall be constructed of water pipe materials and subjected to hydrostatic tests, as prescribed in this document. Encasement of the water pipe in concrete shall also be considered.
5. No water main shall pass through, or come in contact with, any part of a sanitary sewer manhole.

F. Surface Water Crossings:

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Surface water crossings, both over and under water, may present special concerns and should be discussed with the Division before the final plans are prepared.

1. At above water crossings, the pipe shall be adequately supported and anchored, protected from damage and freezing, and accessible for repairs or replacement.
2. At underwater crossings, a minimum of two (2) feet of cover shall be provided over the pipe.
3. The installation of ductile iron pipe with restrained push-on joints and encased in concrete, may be considered with the prior approval of the Engineer. Otherwise, when crossing water courses which are greater than 15 feet in width, only pipes of special construction, having flexible, watertight joints shall be installed.
4. Valves shall be provided at both ends of water crossings so that the section can be isolated for testing or repair (valves shall be easily accessible and not subject to flooding); the valve closest to the supply source shall be in a manhole.
5. Sampling taps shall be installed at each end of the crossing, and permanent taps shall be made for testing and determining leaks.

3.02 INSTALLATION IN TRENCH

A. Proper and suitable tools and appliances for safe and convenient handling and installing of pipe and fittings shall be used. Great care shall be taken to prevent pipe coatings from being damaged, particularly cement linings on the inside of D.I.P. pipes and fittings. Any damage shall be remedied as directed. All pipe and fittings shall be carefully examined by the Contractor for defects just before installing and no pipe or fitting shall be installed which is defective.

B. If any defective pipe or fitting is discovered after having been installed, it shall be removed and replaced in a satisfactory manner with a sound pipe or fitting by the Contractor at his own expense. All pipes and fittings shall be thoroughly cleaned before they are installed and shall be kept clean until they are used in the completed work. Open ends of pipe shall be kept plugged with a bulkhead during construction.

C. Water mains shall be installed on a 4" Class II or III select natural material bedding as specified in Section 02317 Trench Excavation and Backfill with O.D./2 haunching. The compaction for bedding and haunching shall be 90% of Standard Proctor Density as determined by (ASTM D698). Pipe shall not be installed within 6 inches of rock. In trench rock conditions, a minimum of 6 inches of sand or approved suitable soil shall be placed on rock prior to pipe installation. Trenches shall be kept free of water.

D. Where bends and tees occur in pressure mains, the Contractor will pour a block of concrete at the bend or tee as detailed on the Plans. The block shall consist of 3000 psi concrete, and shall be of size and shape as shown on the plans or as

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directed by the Engineer. The Contractor may use forms or either walls to mold the "thrust block;" however, if earth walls are used they shall be cut true to shape with all excess earth removed and the work shall be done in such a manner that no loose earth will become mixed with the fresh concrete. Thrust restraint shall be provided at all points where hydraulic thrust may develop. This will include providing reaction blocking, tie rods or joints designed to prevent movement to all bends, tees, valves, plugs, hydrants and other points where thrust may develop. The Engineer shall inspect all thrust blocks prior to them being covered.

E. All ductile iron pipe laid underground shall be mechanical joint pipe and fittings or "push-on" type joint unless otherwise shown on the plans or directed by the Engineer.

F. All water mains laid underground shall have a minimum of 42 inches of cover above the top of the pipe unless otherwise shown on the plans, or unless otherwise directed by the Engineer.

G. All water mains laid under existing sewers, storm drains, culverts, structures, etc., shall have a minimum clearance of 18 inches between the outside wall of the water pipe and the outside surface of the existing pipe or structure.

3.03 PIPE JOINTING

A. MECHANICAL AND RESTRAINED JOINTS

Clean spigot and bell of foreign material and apply soapy water containing chlorine solution before slipping gasket and gland over spigot end of pipe. Small side of gasket and lip of gland must face the socket. Paint gasket with soapy solution and place spigot end of pipe securely home in socket. Push gasket evenly into position in socket, slide gland into position and tighten bolts with fingers.

Tighten bolts to uniform tightness with ratchet wrench by tightening bottom bolt and then top bolt. Thereafter, all bolts shall be tightened in sequence of 180 degrees apart until all bolts are within the range of torque recommended by the manufacturer.

B. PUSH-ON JOINTS

Jointing shall be made with rubber gaskets and lubricant furnished by the manufacturer in strict accordance with the manufacturer's recommendations. Prepare field cut pipe by filing 1/8 inch 30 degree bevel on pipe end to avoid injuring gasket.

C. THREADED FLANGE JOINTS

Insert recommended manufacturer’s gasket and tighten bolts to uniform tightness with ratchet wrench by tightening bottom bolt and then top bolt. Thereafter, all

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bolts shall be tightened in sequence of 180 degrees apart until all bolts are within the range of torque recommended by the manufacturer.

D. POLYVINYL CHLORIDE PIPE

Do not thread PVC pipe. When threads are necessary, adaptors will be used. Use strap wrenches to couple threaded PVC pipe fittings and use lubricant recommended by pipe manufacturer.

Avoid excessive torque and do not score pipe. Use couplings furnished with pipe for fittings and install in strict accordance with the manufacturer's recommendations.

E. POLYETHYLENE PIPE (HDPE)

Sections of polyethylene pipe should be joined into continuous lengths on the jobsite above ground. The joining method shall be the butt fusion method and shall be performed in strict accordance with the pipe manufacturer's recommendations. The butt fusion equipment used in the joining procedures should be capable of meeting all conditions recommended by the pipe manufacturer, including, but not limited to, temperature requirements of 400 degrees Fahrenheit, alignment, and an interfacial fusion pressure of 75 PSI. The butt fusion joining will produce a joint weld strength equal to or greater than the tensile strength of the pipe itself. All welds will be made using a Data Logger to record temperature, fusion pressure, with a graphic representation of the fusion cycle shall be part of the Quality Control records.

3.04 MISCELLANEOUS CONSTRUCTION

A. CONNECTIONS TO EXISTING MAINS

These shall be made at the locations shown on the plans or as directed by the Engineer.

When existing gate valves on the distribution system must be shut off in order to make connections, this work will be done by the Contractor with approval of the Owner. Whenever the Contractor elects to proceed with a connection without a complete shut-off, this work will be done without additional cost to the Owner.

When an existing main has been cut or a plug removed for a connection, the work of making a connection shall proceed without interruption until complete at no increase in contract price.

Connections to existing mains shall be governed by all applicable provisions of these specifications. The contractor shall locate, excavate and cut the existing main, remove the section of old pipe, rework the trench, connect the new pipe with the old and set necessary specials and valves as shown on the plans or as directed by the Engineer. Tapping sleeves, crosses and valves may be used at the option of the Contractor at no addition to the contract price. All necessary

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precautions shall be taken to brace valves and mains under pressure to prevent blowouts.

B. CONCRETE VALVE MARKER POSTS

A concrete valve marker post shall be furnished and installed as directed, with each gate valve (excluding fire hydrant valves). The concrete marker post shall have a four inch minimum square section and a minimum length of 42 inches with beveled edges and containing at least one three-eighths inch diameter bar of reinforcing steel. Markers shall be placed as directed by the Engineer and set so as to leave 18 inches exposed above grade. The exposed portion of the valve markers shall be engraved with the word "WATER". The concrete valve marker shall be painted BLUE.

C. SERVICE CONNECTIONS

Corporation stops and service saddles shall be used for all service connections. They shall have tapered threads for iron or steel pipe and pipe threads for plastic pipe saddles. Use approved tapping machine to make all ductile or cast iron taps.

D. EXPANSION COUPLINGS

Expansion couplings shall be installed where shown on the plans, required or directed. Unless otherwise shown or specified, the pipe couplings shall be of a gasketed short sleeve type, with a diameter to fit the pipe properly.

E. PIPE SLEEVES

Contractor shall furnish and install cast iron wall sleeves or wall pipe as indicated on the plans where cast iron and ductile iron piping connects with or passes through concrete walls or floors and in locations where small piping and electric wiring and conduits connect with or pass through concrete walls or floors. Wall pipe or sleeves shall be accurately located and securely fastened in place before concrete is poured. All wall sleeves and wall pipes shall have wall collars properly located to be in the center of the wall where the respective pipes are to be installed.

F. BUILT-IN PIPE AND FITTINGS

Where shown on the plans or where directed, pipe and fittings shall be carefully built into or supported on concrete or brick masonry. Where pipe or fittings are shown through concrete or brick walls, the pipe or fittings shall be carefully supported and the masonry work poured or built against them. Under no circumstances will blocking out of walls be permitted for pipe insertion later.

G. INSTALLATION OR REPAIR

Any pipe, solder or flux which is used in the installation or repair of the public water distribution system shall be lead free with not more than 8.0% lead in pipes

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and fittings and not more than 0.2% lead in solders and flux.

3.05 DRILLING AND TAPPING

A. Wherever required, cast iron and ductile iron pipes and fittings shall be drilled and tapped to other piping. All holes shall be drilled accurately at right angles to the axis of any pipe or fitting. Where plugs are drilled, holes shall be at right angles to the face of the plug.

B. All tapping shall be carefully and neatly done by skilled workmen with suitable tools.

C. Where connections are made between new and old water piping the connections shall be made in a thorough and workmanlike manner using proper fittings and specials to suit actual conditions.

D. Under the direction, supervision and observation of the City of Port Wentworth or approved representative.

3.06 PIPELINE DETECTION MARKING

A. All water mains shall be protected by a plastic marking tape placed a minimum of 12 inches above the top of pipe for its full length. The tape shall be similar to Reef Industries Terra Tape Standard. It will have sufficient thickness; tensile strength; elongation and resistance to alkalis, acids and other destructive agents to remain a permanent marker of the line buried below. A message shall be printed on the tape at least every 30 inches "**CAUTION WATER LINE BURIED BELOW**".

B. All non-metallic water mains shall be protected by a metalized foil tape buried a minimum of 12 inches above the top of the pipe for its full length. The foil shall be protected by plastic film laminated on each side. The lamination shall be strong enough to prevent the separation of foil and plastic film. The tape should be similar to Reef Industries' Terra Type Detectable. It shall be inductively locatable and conductively traceable using a standard pipe and cable-locating device. A message shall be printed on the tape every 30 inches "**CAUTION WATER LINE BURIED BELOW**".

C. Tracing Wire shall be single strand #12 AWG, Vinylon – A THWN or THHN or gasoline and oil resistant II VW 600V or AWM.

No. 12 AWG solid plastic-coated copper wire shall be installed on top of all water mains where non-metallic pipe is used and attached by means of securing the wire on top of the water main with a 12-inch long by 2-inch wide piece of duct tape. Attach the wire to the main every ten (10) feet.

Wire shall be bonded at splices with 3M DBY-6 Direct Bury Splice Kit at every connection

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The wire shall be laid the entire length of the trench and shall be continuous. The Contractor shall demonstrate continuity in wire through the entire length of the project. At every valve manhole the wire shall be run through the pipe opening, up to the ring and cover, secured at the ring by means of grouting the ring to the top of the manhole. The wire shall continue in the same loop back to the opposite pipe opening, through it and continuing in one continuous loop along the main.

At every fire and post hydrant, the wire shall be run from the main to the hydrant tee, to the gate valve, wrapped around the gate valve once, then run to the bottom of the hydrant flange, up the hydrant, wrapped around it once at the finish grade, then back to the main in one continuous loop, and continuing along the water main.

At every water service lateral, the wire shall be run from the main and corporation stop to the curb stop and attached to the polyethylene pipe by a piece of duct tape wrapped around the wire and tubing. The wire shall be connected to the tracer wire at the main with a single strand from the water main to the curb stop or into the meter box.

The City of Port Wentworth will test all tracer wire prior to acceptance.

3.07 PRESSURE TESTING

A. Hydrostatic testing shall be performed on lines after pipe has been laid and backfilled between joints, all newly laid pipe, or any valved section thereof. The pipe shall be subjected to a hydrostatic gauge pressure of at least (150%) of the rated working pressure of the pipe for two hours and not less than (125%) at the high point per AWWA C600 (DIP) and AWWA C605 (PVC). Working pressure is defined as maximum anticipated sustained operating pressure. In no case shall the test pressure be allowed to exceed the design pressure for pipe, appurtenances, or thrust restraints.

1. The Contractor shall have the responsibility to ensure that all outlets are closed by valves or plugged and braced to prevent blowouts. Pressurizing equipment shall be constantly monitored or include a regulator or relief valve to avoid over pressurizing and damaging an otherwise acceptable line. No one shall be allowed in manholes, wet wells, valve pits, etc. during testing.
2. To prepare the line for testing, the contractor shall backfill all pipe and provide all reaction blocking before hydrostatic testing. The Engineer may direct the Contractor to leave certain joints and connections uncovered until testing has been completed. All pipe outlets shall be secured to resist the test pressure. Clean out all debris in the pipe.
   The section of pipe under test shall be slowly filled with water and all air shall be expelled from the pipe. If blow-offs are not available at high places, taps at points of highest elevation shall be made before the test and plugged during and after test.
3. Procedure; the specified test pressure, based on the elevation of the lowest point of the line or lowest point of the section under test and corrected to the elevation of the test gauge, shall be applied by means of a gasoline driven test pump connected to the pipe in a manner satisfactory to the Engineer. The Contractor shall meter the amount

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of water used during the test. The duration of the test shall be at least two consecutive hours.
The Contractor shall locate and repair any and all leaks that may develop. All exposed pipe, fittings, valves, hydrants, and joints will be carefully examined during the test. Any cracked or defective pipe, fittings or valves A>discovered as a result of this test shall be removed and replaced with sound material, and the test shall be repeated until satisfactory to the Engineer.

B. Allowable leakage. The contractor shall furnish the gauges and measuring device or the leakage test, pump, pipe, connections, and all other necessary apparatus, unless otherwise specified, and shall furnish the necessary assistance to conduct the test. The duration of each leakage test shall be 2 hours, unless otherwise specified. During the test, the pipeline shall be subjected to the pressure stated above. Leakage shall be defined as the quantity of water that must be supplied into the pipe section being tested to maintain a pressure within 5 psi of the specified leakage-test pressure after the pipe has been filled with water and the air in the pipeline has been expelled. No installation will be accepted if the leakage is greater than that determined by the formula per AWWA C600 (DIP) and AWWA C605:

1) For DIP use:

$$L = \frac{SD\sqrt{P}}{133{,}200}$$

Where:
L = allowable leakage, in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in pounds per square inch (gauge)

This formula is based on an allowable leakage of 11.65 gpd/mi/in. of nominal diameter at a pressure of 150 psi.

2) For PVC use:

$$L = \frac{ND\sqrt{P}}{7{,}400}$$

Where:
L = allowable leakage, in gallons per hour
N = number of joints in the length of pipeline tested
D = nominal diameter of the pipe, in inches
P = average test pressure during the leakage test, in pounds per square inch (gauge)

This formula is based on an allowable leakage of 10.50 gpd/mi/in. of nominal diameter at a pressure of 150 psi.

3) Hydrostatic Leak Testing for HDPE:

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This hydrostatic leak test procedure consists of filling, an initial expansion phase, a test phase, and depressurizing in accordance with **Chevron Phillips Chemical Co. Publication – Technical Note 802 – Leak Testing.**

a) Filling: Fill the restrained test section completely with a test liquid acceptable to the Owner.

WARNING – Ensure that there is no air trapped in the test section. Failure with entrapped air can result in explosive release and result in death or serious bodily injury. Use equipment vents at high points to remove air.

b) Initial Expansion Phase:
Gradually pressurize the test section to test pressure, and maintain test pressure for three (3) hours. During the initial expansion phase, polyethylene pipe will expand slightly. Additional test liquid will be required to maintain pressure. It is not necessary to monitor the amount of water added during the initial expansion phase.

c) Test Phase:
This alternative is applicable when the test pressure is 150% of the system design pressure.
Immediately following the initial expansion phase, monitor the amount of make-up water required to maintain test
pressure for one (1), or two (2), or three (3) hours. If the amount of make-up water needed to maintain test pressure does not exceed the amount in Table 2, no leakage is indicated.

Table 2 Test Phase – Make-Up Water Allowance:

Make-Up Water Allowance for Test Phase – (U.S. Gal/100 ft of pipe)			
Nominal Pipe size (in.)	1-Hour Test	2-Hour Test	3-Hour Test
4	0.13	0.25	0.40
6	0.3	0.6	0.9
8	0.5	1.0	1.5
10	0.8	1.3	2.1
12	1.1	2.3	3.4
14	1.4	2.8	4.2
16	1.7	3.3	5.0
18	2.0	4.3	6.5
20	2.8	5.5	8.0
22	3.5	7.0	10.5
24	4.5	8.9	13.3

d) Depressurizing:

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At the conclusion of the test, carefully depressurize the test section by the controlled release of test liquid. The test liquid may need to be drained and its disposal may be subject to regulations.

3.08 STERILIZATION OF POTABLE WATER MAINS

Precaution should be taken when installing pipes, valves, and hydrants to keep them as clean as possible to minimize contamination. After each line between valves has been tested and all necessary repairs made, and the lines flushed clean, water containing not less than 25 parts per million of chlorine shall be fed in the line and allowed to stand 24 hours, after which the lines shall be flushed and samples taken at various points. Water mains shall be disinfected by the continuous feet method. The chlorine solution shall be slowly fed through a suitable device within 10 feet of the point of filling the new main. Care should be taken in filling the mains so that all air pockets are eliminated so as to permit intimate contact of the disinfection agent with the entire inside diameter of the pipe. The water and chlorine solution should be slowly fed until 25 mg/l free chlorine is throughout the main. An acceptable method is by preparing a 1% chlorine solution using sodium hypochlorite or calcium hypochlorite. For example, one pound of calcium hypochlorite to 8 gallons of water will produce a 1% solution. The required amount of chlorine to produce a 25 mg/l concentration per 100 feet of pipe is as follows:

Pipe Diameter	**1% Chlorine Solution (gal.)**
4”	0.16
6”	0.36
8”	0.65
10”	1.02
12”	1.44
16”	2.60

The disinfection solution shall be allowed to remain in the lines for not less than 24 hours. At the end of the 24-hour period, all portions of the main shall show a chlorine residual of not less than 10 mg/l. The highly chlorinated water shall be drained to a sanitary sewer or neutralized with an approved chemical prior to draining to other than a sanitary sewer.

Disinfection of the new mains and the disposal of the heavily chlorinated water, following the disinfection, shall be accomplished in accordance with the latest edition of AWWA Standard C651. There shall be no physical connection between the distribution system and any pipes, pumps, hydrants, or tanks whereby unsafe water and other contaminating materials may be discharged or drawn into the system.

Following chlorination all water shall be flushed from the lines until the replacement water has a chlorine content not more than 0.1 p.p.m. in excess of the residual in the water from the supplying main. Water samples shall be taken by the Contractor and sent to an approved laboratory for bacteriological examination. The lines shall not be placed into service until a satisfactory bacteriological report is received.

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The "**tablet method**" of disinfection which consists of placing calcium hypochlorite granules or tablets in the water main as it is being installed and then filling the main with potable water when installation is complete **is not allowed**.

3.09 CLEANUP

Remove all surplus materials, tools, excess dirt, rubbish, and debris from the site as installation progresses. Clean as directed by the Engineer. Obtain letter of approval from the State Highway Department covering work installed in areas of State Highway jurisdiction. Contractor to maintain surface of ditches, unpaved streets, road shoulders, sod, grass, and other disturbed surfaces for a period of thirty (30) days thereafter.

END OF SECTION

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SECTION 02511
VALVES, METERS AND ACCESSORIES

PART 1 GENERAL

1.01 SCOPE

Furnish all materials, labor, and equipment to properly install all valves, valve boxes, hydrants, and related accessories at the locations shown on the plans or as directed by the Engineer for the proper completion of the work included under this contract whether shown expressly on the plans or implied by other requirements.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. Section 02510 - Water Pipe and Fittings.

B. Section 02531 - Sanitary Sewer Force Main

1.03 SUBMITTALS

Complete product data and engineering data, including shop drawings, shall be submitted to the Engineer in accordance with the requirements of Section 01330 of the Contract Documents.

PART 2 PRODUCTS

2.01 GENERAL

A. All valves shall have the name of the manufacturer, pressure, and size of the valve cast upon the body or bonnet in raised letters.

B. Valves and operating mechanisms shall be of the proper size and dimensions to fit the pipe connections thereto and shall be installed in the position and within the space shown on the plans.

C. All castings, whether bronze, iron or steel, shall be sound and smooth, without swells, lumps, blisters, sand holes or other imperfections and shall be made in accordance with best foundry practice. All materials, unless specifically noted otherwise, shall be of the grade and qualities as established by the specifications of the ASTM listed as follows:

Iron Castings	A126, Grade B
Steel Castings	A216
Stem, Bolts, & Nuts	B21, Grade A, Half Hard
Stem Nut & Yoke Nut	B132, Grade B
Stuffing Box Gland	B62, with some modifications
Bushings	B62, Permissible as approved

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2.02 GATE VALVES/BALL VALVES

A. Ball valves 1 inch and smaller shall be designed for a working pressure of not less than 300 psi, domestic made brass, and shall conform to AWWA Standard C 800-89.

B. 2 inch through 3 inch valves: Shall be resilient wedge type rated for 250 psig cold water working pressure. All ferrous components shall be ductile iron or cast iron.

C. Valves 4"-12" shall be in full compliance with AWWA C509 and be UL listed, FM approved. The words "Ductile Iron" or "Cast Iron" shall be cast on the valve or stamped on a permanently attached corrosion resistant metal tag. The wedge shall be ductile iron encapsulated with nitrile rubber or SBR rubber and be symmetrical and seal equally well with flow in either direction. There shall be no exposed metal seams, edges or screws within the waterway.

1. The stem shall be bronze in full compliance with section 4.7 of AWWA C509.
2. Valves shall be NSF Standard 61 certified.
3. Bolting materials shall develop the physical strength requirements of ASTM A307 and may have either regular square or hexagonal heads with dimensions conforming to ANSI B18.2.1. Metric size socket head cap screws therefore are not allowed.
4. Operating nut shall be constructed of ductile iron and shall have four flats at stem connection to assure even input torque to the stem.
5. All gaskets shall be pressure energized O-rings.
6. Stem shall be sealed by three O-rings. The top two O-rings shall be replaceable with valve fully open and while subject to full rated working pressure. O-rings set in a cartridge shall not be allowed.
7. Valve shall have thrust washers located with (1) above and (1) below the thrust collar to assure trouble-free operation of the valve.
8. All internal and external surfaces of the valve body and bonnet shall have a fusion bonded epoxy coating, complying with ANSI/AWWA C550, applied electrostatically prior to assembly, 250# raised face flanges shall be provided when required.
9. Valves shall be American Flow Control, Mueller, Clow, M&H, or approved equal.

D. Joints: Below ground valves shall be mechanical joint, above ground valves shall be flanged, unless otherwise shown on the plans. Flanged joints shall meet the requirements of ANSI B16.1, Class 125.

E. Opening: The direction of opening in all cases shall be counterclockwise, or to the left. The direction of opening shall be clearly marked with the word "OPEN" and an arrow at least two inches long pointing in the direction of "OPEN". The markings shall appear on the wrench nut base for valves installed below ground and on the handwheel of all valves having handwheels.

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F. Position Indicators: All gate valves for above ground service shall be equipped with needle and slot type position indicators with a bronze pointer mounted on a threaded collar moving through the valve range and indicating on a marked plate attached to the valve.

G. Handwheels: Handwheels shall be furnished for all gate valves installed above ground or in valve pits below ground where access to handwheels is provided.

2.03 CHECK VALVES

A. Air cushioned check valves shall prevent backflow and be watertight. Valves shall be designed for the operating head indicated and shall not slam shut on pump shutdown. Valves shall be hinged disc type with cast iron body and cover conforming to ASTM A126, Class B and cast or ductile iron disc. The valve shall have a resilient Buna-N rubber disc seat held in place by a stainless steel follower ring and screws. The body seat shall be stainless steel and replaceable. The flow area shall be greater than or equal to the nominal inlet size. The shaft shall continuous and stainless steel, extending both sides of the body be and be sealed where it passes through the body to prevent leakage. A lever and an easily moved counterweight shall initiate closure and shall be steel or ductile iron. The external, side mounted, adjustable, air cushion cylinder shall cushion closure of the valve and be corrosion resistant. Valves shall be equipped with a 1/2-inch tap at the high point of the valve for bleeding air from the line.

B. Oil cushioned check valves shall prevent backflow and be watertight. Valves shall be designed for the operating head indicated and shall not slam shut on pump shutdown. Valves shall be hinged disc type with cast iron body and cover conforming to ASTM A126, Class B and cast or ductile iron disc. The valve shall have a resilient Buna-N rubber disc seat held in place by a stainless steel follower ring and screws. The body seat shall be stainless steel and replaceable. The flow area shall be greater than or equal to the nominal inlet size. The shaft shall continuous and stainless steel, extending both sides of the body be and be sealed where it passes through the body to prevent leakage. A lever and an easily moved counterweight shall initiate closure and shall be steel or ductile iron. An oil controlled, side mounted cylinder shall provide two speed control closing for the prevention of surge control and water hammer. Each stage shall be independently adjustable and the oil system will be self-contained and separate from the main line media. Valves shall be equipped with a 1/2-inch tap at the high point of the valve for bleeding air from the line.

C. Valve ends shall be flanged, meeting the requirements of ANSI B16.1, Class 125.

D. Valves shall be manufactured by APCO, GA Industries, Crispin or approved equal.

2.04 "DUCKBILL" ELASTOMERIC CHECK VALVES

A. Check Valves are to be all rubber of the flow operated check type with a slip-on connection. The Check Valve is designed to slip over the specified pipe outside

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diameter and attached by means of vendor furnished stainless steel clamps. The port area shall contour down to a duckbill, which shall allow passage of flow in one direction while preventing reverse flow. The valve shall be one-piece rubber construction with nylon reinforcement. In sizes 20" and larger, the bill portion shall be thinner and more flexible than the valve body, and formed into a curve of 180°.

B. Company name, plant location, valve size and serial number shall be bonded to the check valve. Elastomeric duckbill check valve shall be manufactured in the United States of America. A single manufacturer shall provide all elastomer duckbill check valves.

C. All valves shall be "Tideflex" of the Series TF-2 as manufactured by the Red Valve Co., Inc. or approved equal.

2.05 FLAP VALVES

A. Flap valves 8 inches and larger shall have a resilient seat. Valve body and flap shall be cast iron in accordance with ASTM A 126, Class B. The flange shall be drilled for mounting to ASME/ANSI B16.1, Class 125 flange. The valve shall operate without leakage with seating and unseating heads as indicated on the Drawings. Resilient seat shall be wide seating Buna-N or neoprene, bonded in a groove machined into the valve body. Hinge links shall be 304 stainless steel. Each hinge arm shall have two pivot points. A lubrication fitting shall be provided for each pivot. Valves shall be manufactured by Rodney Hunt, Waterman, Hydro Gate or approved equal.

B. Flap valves 6 inches and smaller shall have a bronze seat and brass hinge pins. Valve body and flap shall be cast iron in accordance with ASTM A 126, Class B. Valves shall be manufactured by Troy, Clow or approved equal.

2.06 BUTTERFLY VALVES

A. Butterfly Valves for Liquid Service – 14" and Larger

1. Butterfly valves shall be resilient seated, short body design, and shall be designed, manufactured, and tested in accordance with all requirements of AWWA C504 for Class 150B. Valves shall be rated for 150 psi working pressure unless otherwise specified or shown.
2. Valve bodies shall be ductile iron conforming to ASTM A 536, Grade 65-45-12 or ASTM A 126, Grade B cast iron. Shafts shall be ASTM A 276, Type 304 stainless steel, machined and polished. Valve discs shall be ductile iron, ASTM A 536, Grade 65-45-12, ASTM A48 cast iron or ASTM A 126, Grade B cast iron. The resilient valve seat shall be located in the valve body and for valves 30-inch and greater, shall be fully field adjustable and field replaceable.
3. Actuators

   a. Valves for non-buried service, 3 through 8-inches in diameter, shall

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be lever operated. The lever shall be capable of being locked in 10 positions. Valves for non-buried service, 10-inches in diameter and larger, shall be handwheel operated.

b. Valves for buried service or non-buried service, 10-inches or greater in diameter shall be equipped with traveling nut or worm gear type, self-locking type manual actuators designed, manufactured and tested in accordance with AWWA C504. Actuators shall be capable of holding the disc in any position between full open and full closed without any movement or fluttering of the disc. Actuators shall be furnished with fully adjustable mechanical stop-limiting devices. Actuators that utilize the sides of the actuator housing to limit disc travel are unacceptable.

c. Valves shall be equipped with motorized actuators where shown on the Drawings.

4. Operators

a. Valves for non-buried service, six feet or more above the operating floor shall be furnished with a chainwheel operator and chain for operation from floor level.

b. Valves for buried service shall be equipped with a valve box and stem extension required to bring the operation nut within 6-inches of finished grade. Valve boxes and extension stems shall be as specified in this Section. Three inch and larger valves shall have two-inch square operating nuts.

c. Valves shall be equipped with pedestal type operators where shown on the Drawings and as specified in this Section.

5. Valves shall be installed with disc shaft horizontal, except where extended bonnets or levers are used. Valves and actuators shall have seals on all shafts and gaskets on valve actuator covers to prevent the entry of water.

6. Valve ends shall be mechanical joint type and meet the requirements of AWWA C111/ANSI 21.11, except where flanged or restrained joint ends are shown. Flange joints shall meet the requirements of ANSI B16.1, Class 125. At the contractor's option, grooved mechanical fittings meeting the requirements of AWWA C606 may be used in lieu of flanged connections in all interior ductile iron piping.

7. Butterfly valves shall be manufactured by Mueller, SPX/DeZurik, Pratt or approved equal.

2.07 PLUG VALVES

A. Valves shall be 90-degree turn, non-lubricated, eccentric type with resilient faced plugs. Design of the valve shall provide that contact between the seat and the plug shall only occur in the final degrees of plug movement. Valves shall be suitable for minimal throttling service and service where valve operation is infrequent.

B. Valves shall be capable of providing drip-tight shut-off up to the full pressure rating

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with pressure in flow direction. Pressure ratings shall be established by hydrostatic tests conducted in accordance with ANSI B16.1. Valves shall be rated at a minimum of 150 psi.

C. Valves shall have a port area equal to at least 80 percent of the full pipe area for valves 24-inches and less. Valves 30-inches and greater shall have a port area equal to at least 70 percent of the full pipe area.

D. Bodies shall be cast-iron, conforming to ASTM A 126, Class B

E. Valve ends shall be a mechanical joint type, except where flanged or restrained joint ends are shown on the Drawings. Mechanical joint valves shall have bell ends conforming to applicable requirements of AWWA C111/ANSI A21.11. Flanged joints shall meet the requirements of ANSI B16.1, Class 125. Flanged valves with flange-to-MJ adapters shall not be acceptable in lieu of MJ valves. At the contractor's option, grooved mechanical fittings meeting the requirements of AWWA C606 may be used in lieu of flanged connections in all interior ductile iron piping.

F. Valve seats shall be a raised, welded-in overlay of not less than 90 percent pure nickel, machined to mate with the resilient faced plug. Overlay shall be minimum of 1/8-inch thick.

G. The plug shall be of semi-steel, conforming to ASTM A 126, Class B. The plug facing shall be a synthetic rubber compound of approximately 70 durometer hardness bonded to the plug. Facing material shall be abrasion resistant and suitable for service in sewage and sludge applications.

H. Valves shall be furnished with replaceable, sleeve-type bearings in the upper and lower journals. Bearings shall comply with applicable requirements of AWWA C507. Bearing materials shall have a proven record of service of not less than five years.

I. The valve body shall be fitted with a bolted bonnet incorporating a stuffing box and pull-down packing gland. Packing shall be the split chevron type. Design of exposed valves shall allow visible inspection of the shaft seal, adjustment of the packing, and replacement of the packing, all without disturbing the bonnet or valve operator. The shaft seal shall comply with the requirements of AWWA C504.

J. Actuators

1. Valves for exposed service, 3 through 8-inches in diameter, shall be lever operated.
2. Actuators for buried service and valves 10-inches and larger, shall be equipped with manual operated geared actuators. Geared actuators shall be totally enclosed, oil or grease lubricated, worm and gear type. Shaft seals shall be provided to prevent entry of dirt and water into the actuator. All shaft bearings shall be permanently lubricated bronze bushings. Actuators

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shall clearly indicate valve position and an adjustable stop shall be provided to set closing torque. Construction of actuator housing shall be semi-steel. Gear actuators shall comply with requirements of AWWA C504.

3. Valves for buried service shall be equipped with a valve box and stem extension required to bring the operation nut within 6-inches of finished grade. Valve boxes and extension stems shall be as specified in this Section.
4. Motorized actuators shall be provided where shown on the Drawings.
5. Valves and operators for submerged or buried service shall have seals on all shafts and gaskets on valve operator covers to prevent the entry of water. Operator mounting brackets for submerged service shall be totally enclosed and shall have gasket seals.
6. Valves for non-buried service, six feet or more above the operating floor shall be furnished with a chainwheel operator and chain for operation from floor level.
7. Valves shall be equipped with pedestal type operators where shown on the Drawings and as specified in this Section.
8. Where shown on the Drawings, provide an extended bonnet and mount the gear actuator on top of the extended bonnet.

K. Plug valves shall be manufactured by SPX/DeZurik, Pratt, Clow, Val-matic or approved equal.

2.08 PRESSURE GAUGES

A. For installation on pump discharge as shown on the plans shall be of Bourdon tube design with brass tube and polished steel case, equal to Ashcroft general service gauge, Type 1009. The size shall be 3-1/2 inches with a range of 0 - 160 psi.

B. For installation on the base of elevated water tank riser use Ashcroft: Model No. 35-1032S-20L. The size shall be 3-1/2 inches with a range of 0 - 100 psi.

2.09 VALVE MANHOLE

A. General.
Manholes shall be constructed at such points as designated on the Drawings. Riser and top sections shall be installed level and plumb, such that all manhole steps are in alignment. The top of manholes outside of roads, streets and highways shall be built to grades 2 inches above ground surface, unless otherwise shown. Manholes in roads, streets and highways shall be built to grades shown on the Drawings.

B. Precast Concrete Manholes.
Precast Concrete manholes shall be constructed of reinforced Class "A" Concrete. Walls shall be not thinner than 5 inches, or 1/12 of the inside diameter, which ever is greater. Precast manholes shall meet all requirement of ASTM C478, "Specification for Precast Reinforced Concrete Manhole Sections."

Rings shall be custom made with openings to meet the necessary pipe alignment conditions and invert elevations. All inlets and outlets shall be cast in or core drilled.

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Joints and gaskets shall conform to the applicable provisions of ASTM C443, "Joints for Circular Concrete Sewer and Culvert Pipe using Rubber Gasket" or Ram-Nek Pre-molded Plastic Joint Sealer. The sealing compound shall not leak at the joints (while being tested, if required, at 10 psi) for a period of 24 hours. Bell and spigot surfaces shall be smooth, accurately formed, and provide a loose, sliding fit, with a clearance between the bell and spigot of not more than 1/6 inch. Precast manholes shall be bedded on not less than 6 inches of compacted crushed stone at the Contractor's expense. The crushed stone shall extend not less than 6 inches outside the walls of the manhole and under the entire length of pipe within the excavation for the manhole.

C. Manhole Castings.

Provide covers with the inscription “RECLAIMED WATER” cast into the cover in lettering at least 2 inches high. Covers shall be 25-3/4 inches in diameter and shall be 2-inches thick at the bearing surface. Frame shall provide a 24-inch clear opening. Manhole covers and frames shall be USF 227, or equal.

2.10 AIR RELEASE VALVES (WATER)

A. Air Release Valves: The air release valve shall automatically release air accumulations from the pipeline due to the action of the float. When the air valve body fills with air, the float falls freely from the orifice to allow the air to escape to the atmosphere. When all the air has been exhausted from the valve body, the float will be buoyed up to seat against the orifice and prevent water from being exhausted from the valve. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. A synthetic orifice button shall be affixed to the valve cover to provide a non-corrosive seat for the float. The float shall be constructed of stainless steel. A resilient, Buna-N seat shall be attached to the float for drop-tight closure. The float shall be free floating within the valve body.

B. Air/Vacuum Valve: The air/vacuum valve shall discharge large amounts of air as the pipeline fills and allow air to enter the pipeline as it drains or in the event of vacuum conditions. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. The valve shall operate by means of a non-collapsible stainless steel float and Buna-N seat, which seals an orifice. As air enters the valve the float shall drop from the orifice and allow the air to escape. As water rises in the valve, the float will again seal the orifice. The valve will be of such design that the float cannot blow shut at any air velocity including sonic velocity. All working parts shall be of stainless steel. A surge check shall be installed on the inlet to reduce the flow of extremely high velocity water during closing to minimize slam and shock. The rate of closure shall be adjustable. The surge check shall have an ASTM A126, Class B cast iron body and bronze internals.

C. Combination Air Valves: Combination air valves shall combine the features of an air release valve and an air/vacuum valve and shall be of one of the following types:

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1. Combination air valves 3 inches and larger shall consist of an air/vacuum valve described in paragraph B. above, with an air release valve described in A. above tapped into its body. The valve shall be of two-piece body design with an isolation gate valve separating the two valves.
2. Combination air valves smaller than 3 inches shall be single body, double orifice, allowing large volumes of air to escape out the larger diameter air and vacuum orifice when filling a pipeline and closes watertight when the liquid enters the valve. During large orifice closure, the smaller diameter air release orifice will open to allow small pockets of air to escape automatically and independently of the large orifice. The large air/vacuum orifice shall also allow large volumes of air to enter through the orifice during pipeline drainage to break the vacuum. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. The Buna-N seats must be fastened to the valve, without distortion, for drop-tight shut-off. The float shall be stainless steel. The valve will be of such design that the float cannot blow shut at any air velocity including sonic velocity. A surge check shall be installed on the inlet to reduce the flow of extremely high velocity water during closing to minimize slam and shock.

D. Potable Water Systems: All air valves and accessories shall be supplied by a single manufacturer and shall be GA Industries, APCO Valve Corporation, Crispin, Val-Matic or approved equal.

2.11 AIR RELEASE AND VACUUM VALVES (SEWAGE)

A. Air Release Valves: The air release valve shall automatically release air accumulations from the pipeline due to the action of the float and lever mechanism. When the air valve body fills with air, the float falls. Through the leverage mechanism, this causes the resilient seat to open the orifice and allow the air to escape to the atmosphere. When all the air has been exhausted from the valve body, the float will be buoyed up. Through the leverage mechanism, this will cause the resilient seat to close the orifice, preventing water from being exhausted from the valve. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. The float shall be constructed of stainless steel and attached to a stainless steel lever mechanism. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure. The valve shall be equipped with the necessary attachments, including valves, quick disconnect couplings and hose, to permit back flushing after installation without diverting the valve.

B. Air/Vacuum Valve: The air/vacuum valve shall discharge large amounts of air as the pipeline fills and allow air to enter the pipeline as it drains or in the event of vacuum conditions. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. The valve shall operate by means of a non-collapsible stainless steel float which seals an orifice. As air enters the valve the float shall drop from the orifice and allow the air to escape. As water rises in the valve, the float will again seal the orifice. The valve will be of such design that the float cannot blow shut at any air velocity. All working parts shall be of stainless steel. The valve shall be equipped with the necessary attachments, including valves, quick disconnect

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couplings and hose, to permit back flushing after installation without diverting the valve.

C. Combination Air Valves: Combination air valves shall combine the features of an air release valve and an air/vacuum valve and shall be of one of the following types:

1. Combination air valves 3 inches and larger shall consist of an air/vacuum valve described in B. above, with an air release valve described in A. above tapped into its body. The valve shall be of two-piece body design with an isolation gate valve separating the two valves.
2. Combination air valves less than 3 inches shall be single body, double orifice, allowing large volumes of air to escape out the larger diameter air and vacuum orifice when filling a pipeline and closes watertight when the liquid enters the valve. During large orifice closure, the smaller diameter air release orifice will open to allow small pockets of air to escape automatically and independently of the large orifice. The large air/vacuum orifice shall also allow large volumes of air to enter through the orifice during pipeline drainage to break the vacuum. The valve body and cover shall be constructed of cast iron conforming to ASTM A 126, Class B. The Buna-N seats must be fastened to the valve, without distortion, for drop-tight shut-off. The float and other internal metal components shall be stainless steel. The valve shall be equipped with the necessary attachments, including valves, quick disconnect couplings and hose, to permit back flushing after installation without diverting the valve.

D. All air and/or vacuum valves and accessories shall be supplied by a single manufacturer and shall be GA Industries, APCO Valve Corporation, Crispin, Val-Matic or approved equal.

2.12 REDUCED PRESSURE ZONE, DOUBLE CHECK & DOUBLE CHECK DETECTOR VALVE TYPE, BACKFLOW PREVENTER

A. The device shall consist of a pressure differential relief valve located in a zone between two positive seating check valves. The relief valve shall contain a separate means whereby free air will enter the zone, and contained water will be discharged to the atmosphere when the valve is fully open. The assembly shall include two tightly closing shut-off valves before and after the device, test cocks, and a strainer. The device shall meet the requirements of AWWA C511, latest revision, UL EX3185, and the SBCCI Plumbing Code. The device shall be Watts Regulator Co. Series 909 or approved equal.

B. The size shall be as shown on the plans. Size 3 inch and smaller shall have ball valves for shut-off. Size 4 inch and larger shall have OS & Y4 gate valves for shut-off. A 2-inch diameter bypass line with shut off valve shall be provided for size 4 inches and larger.

C. If intended for below grade service, the backflow preventer shall be installed in a precast or cast-in-place concrete enclosure. The bottom shall have a minimum of 4-

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three inch diameter weep holes. The enclosure shall be installed on a minimum of 6 inches of No. 57 stone. An aluminum watertight lid of non-traffic design and a clear opening exceeding the length of the backflow preventer shall be provided.

2.13 WATER PRESSURE REGULATOR/REDUCING VALVES

A. The reducing valve shall maintain a uniform downstream pressure as preadjusted on the control pilot handwheel or adjusting screw. The control pilot shall be capable of field adjustments from near 25 psi to 10 percent above the factory-preset pressure. The valve shall be completely piped and ready for installation.

B. The main valve shall operate on the differential piston principle, such that the area on the underside of the piston is no less than the pipe area, and the area on the upper surface of the piston is of a greater area than the underside of the piston. The valve piston shall be guided on its outside diameter by ports that minimize the effects of throttling. Throttling shall be done by the ports and not by the valve seating surfaces.

C. Valves shall be of a cast iron body per the requirements of ATSM A126 with ANSI flanges. The valve interior shall be bronze.

D. The valve shall be capable of operating in any position and shall incorporate only one flanged cover at the valve top from which all internal valve parts shall be accessible. There shall be no stems, stem guides or spokes within the waterway, or springs to assist in valve operation.

E. Valve seals shall be easily renewable. All controls and piping shall be of non-corrosive construction.

F. Valve and control system shall lower line pressure to a predetermined set point and shall maintain that set point, regardless of variations in flow or inlet pressure. Valve shall be capable of operating with inlet pressure up to 300 psi and an adjustable outlet pressure of 25 to 75 psi. Valve shall be as manufactured by Watts Regulator, Series 25AUBZ3 (1/2” to 2”) for standard capacity water or approved equal.

2.14 DUAL CHECK BACKFLOW PREVENTER

The dual check backflow preventer shall meet the domestic requirements of ANSI/ASSE Standard 1024, and bear the seal of approval. It shall be bronzed bodied and include not less than one union, with the union nut drilled to accept a tamper-proofing lock wire. A brass identification tag shall be securely attached to the valve body by corrosion-resistant mechanical fasteners. The dual check valve shall be as manufactured by Watts Regulator Co., Series 7, or approved equal.

2.15 VALVE BOXES AND COVERS

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All valves below ground level shall be furnished with a valve box and cover. Each shall be of the roadway extension type, or proper length and base size with suitable detachable cover, bituminous coated inside and out. Boxes shall be 5 1/4 inch inside diameter, "Standard Telescopic Valve Box" as manufactured by American Cast Iron Pipe Co. or approved equal.

2.16 FIRE HYDRANTS

A. All fire hydrants shall conform to the requirements of AWWA C502, latest revision for 250 psi working pressure. Hydrants shall be the compression type, closing with line pressure. The valve opening shall not be less than 4 1/2 -inches. Hydrants shall meet Georgia Fire Insurance Commission Standards, and Local Fire Department requirements and be furnished in accordance with owner's standards.

B. In the event of a traffic accident, the hydrant barrel shall break away from the standpipe at a point above grade and in a manner which will prevent damage to the barrel and stem, preclude opening of the valve, and permit rapid and inexpensive restoration without digging or cutting off the water.

C. The means for attaching the barrel to the standpipe shall permit facing the hydrant a minimum of eight different directions.

D. Hydrants shall be fully bronze mounted with all working parts of bronze. Valve seat ring shall be bronze and shall screw into a bronze retainer.

E. All working parts, including the seat ring shall be removable through the top without disturbing the barrel of the hydrant.

F. The operating nut and direction of operation shall match the current Owner standard. The operating threads shall be totally enclosed in an operating chamber, separated from the hydrant barrel by a rubber O-ring stem seal and lubricated by a grease or an oil reservoir.

G. Hydrant shall be a non-freezing design and be provided with a simple, positive, and automatic drain which shall be fully closed whenever the main valve is opened.

H. Hose and pumper connections shall be breech-locked, pinned, or threaded and pinned to seal them into the hydrant barrel. Each hydrant shall have two 2-1/2-inch hose connections and one 4-1/2-inch pumper connection, all with National Standard threads and each equipped with cap and non-kinking chain.

I. Hydrants shall be furnished with a mechanical joint connection to the spigot of the 6-inch hydrant lead.

J. The minimum bury depth shall be 42 inches (48 inches in State Highway right-of-way) with 30 to 36 inches above grade. Provide extension section where necessary for proper vertical installation and in accordance with manufacturer's recommendations.

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K. All outside surfaces of the barrel above grade shall be painted with enamel equal to Koppers Glamortex 501 in a color to be selected by the Owner.

L. Hydrants shall be traffic model and shall be American-Darling B-84-B, Mueller Super Centurion, M & H Valve 129.

2.17 WATER METERS

A. 1 (one) inch and Smaller Water Meters: Shall conform to AWWA C700, latest revision. The water meter shall be the positive displacement type with frost-protection bottom covers that are enamel coated. The meter shall also be tamper resistant. Residential size shall be Invesus(Sensus) T-10 Full 3/4" and 1" meters with ProRead AutoDetect Register, magnetic drive reading cubic feet. Two-inch meters shall be Invesus(Sensus) compound meter and shall conform to AWWA C702, latest revision with encoder registers and R900 RF Pit MIUs. All meters shall be approved by the City prior to ordering.

B. 12 inch to 3 inch Water Meters: Shall conform to AWWA C701, latest revision, Class II. All meters shall be approved by the City prior to ordering.

C. 14 inch and Larger Water Meters: Shall conform to AWWA C704, latest revision. All meters shall be approved by the City prior to ordering.

2.18 METER BOXES

A. 1 inch and Smaller:

- Ford Long Yokebox For 5/8”X3/4” Meter (Potable Residential Use Only)
  Number LYLV141-243-TR
- Ford Long Yokebox For 5/8”X3/4” Meter (Potable Commercial Use Only) Testable Backflow Preventer Supplied By Water Customer
  Number LYLV141-242-SP-TR
- Ford Long Yokebox For 1” Meter (Potable Residential Use Only)
  Number LYLBB141-444-TR
- Ford Long Yokebox For 1” Meter (Potable Commercial Use Only) Testable Backflow Preventer Supplied By Water Customer
  Number LYLBB141-SP-TR

B. 1-1/2” or 2”: Refer to City of Port Wentworth’s Technical Detail W-19

2.19 SERVICE PIPE COUPLINGS

A. 3 inch and smaller shall use CTS compression fittings or approved equal by City.

B. 4” or greater shall use M.J. (mechanical joint) D.I. (ductile iron) sleeves or approved equal by the City.

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2.20 SERVICE SADDLES

Tapping saddles shall be used for making service connections on PVC and/or Ductile Iron Pipe. A JCM 406 coated service saddle with double stainless steel strap or approved equal.

2.21 CORPORATION STOPS

Corporation Stops shall be of bronze alloy, size 1" inch or as shown on the plans, with compression joint for copper or polyethylene pipe, and with ground key. Shall be Mueller H-15008, Ford F1000 or approved equal.

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2.22 CURB STOPS

Curb Stops shall have a body of heavy cast bronze construction, bronze tie head and stem, spherical brass ball valve seated in molded Buna N rubber. The meter valve shall be provided with a female meter connection and a compression joint for connection to both 3/4" plastic or copper tube. Shall be Mueller H-14350, Ford B43-232W or approved equal.

2.23 VALVE MARKERS

A concrete valve marker post shall be furnished and installed as directed, with each gate valve (excluding fire hydrant valves). The concrete marker post shall have a four-inch minimum square section and a minimum length of 42 inches with beveled edges and containing at least one three-eighths inch diameter bar of reinforcing steel. Markers shall be placed as directed by the Engineer and set so as to leave 18 inches exposed above grade. The exposed portion of the valve markers shall be stamped "WATER".

2.24 ELECTRONICALLY DETECTABLE LINE MARKING TAPE

Reef Industries Terra Tape Standard or approved equal.

2.25 VALVE VAULTS

Precast Manufacturing shall be in conformance with ASTM C913.

Furnish and install for each valve vault an aluminum access assembly as shown on plans, complete with hinged and hasp-equipped cover. Frame shall be securely mounted. The door shall have a safety locking handle in the open position. Designed to withstand vehicular traffic in off-street locations. Single or Double leaf covers are constructed of ¼" diamond pattern plate and reinforced for AASHTO H-20 wheel loading.

2.26 YARD HYDRANTS

Shall be the non-freezing, compression type with 1 inch threaded inlet and 1 inch hose thread on the nozzle discharge. It shall be a high capacity 1-inch "Any Flow" frost proof yard hydrant made by Merrill Manufacturing Co. or approved equal. Vacuum breakers shall be provided with each one.

2.27 T-HANDLE OPERATING WRENCH

The contractor shall furnish two wrenches, 30 inches long, standard waterworks type with socket for square operating nuts of gates or other valves. All below grade valves shall be adapted with an extension stem and fittings so that they can be operated with a 30-inch long wrench.

2.28 CUTTING IN SLEEVES AND VALVES

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Shall be Clow Class 150 meeting latest AWWA Specifications.

2.29 TAPPING SLEEVES

Tapping sleeves and valves shall be used for making branch connections to an existing water main. Tapping sleeves shall be provided at the locations indicated on the drawings and shall be mechanical joint type, Mueller No. H-615, Clow F-5205 or approved equal. Tapping valves shall be mechanical joint type gate valves, Mueller No. 667, Clow F-5093 or approved equal.

2.30 JOINT RESTRAINTS:

All restraints shall be used in accordance with engineering and manufacturer=s specifications. Thrust block is not allowed. Joint restraints shall be:
Ford 1390 Series, Mega-Lug, EBBA Series 1100 for Ductile Iron 4" and larger, EBBA Series 2000 PV for PVC Pipe 4" and larger, Flexlock, T-lock, Uni-Flange, or approved equal.

2.31 BRASS NIPPLES AND BRASS PIPE FITTINGS (DOMESTIC MADE):

Threads shall be cleanly cut with sharp tools and the jointing procedure shall conform to the best practice. Before jointing, all scale shall be removed from pipe by some suitable means. After cutting, all pipe shall be screwed together with an application for graphite and engine oil, Teflon tape, or other sealing compound applied to all threads and once a joint has been screwed on it shall not be backed off unless the threads are re-cleaned and new compound or Teflon tape applied. Unions shall be installed at every connection to the supply line.

PART 3 EXECUTION

3.01 All items specified under this section shall be installed in conjunction with piping that is specified under the appropriate section. Locations are to be as shown on the plans or as otherwise specified.

3.02 Valves, brackets, and fittings where not constructed of brass, aluminum, bronze, or finished steel, shall be factory finished in accordance with approved manufacturer's standards. Machined surfaces shall be given a suitable coating of grease or other protective material. After installation, exposed items shall be field painted as specified elsewhere.

3.03 All valves shall be tested at point of manufacture. After the valves are installed, the contractor shall test them under the working pressure, and any valves found to leak shall be satisfactorily repaired or replaced.

END OF SECTION

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Appendix A Water/Wastewater Availability

WATER/WASTEWATER AVAILABILITY REQUEST FORM

Date: 4//20/2022

A. Owner/Developer BEP Rice Hope, LLC Phone# (301) 915-0460
Address 4800 Hampden Lane, Suite 200 Bethesda, Maryland 20814
Contact Person Scott Decain Phone # (843) 473-5200
Address 2591 U.S, GA-17 SUITE 303, Richmond Hill, GA 31324
Engineer Pittman Engineering Co. Phone # (912) 445-0578
Development Name Rice Hope - Third Lake

B. Development Location 0 Rice Hope Road, Port Wentworth, Georgia 31407

Township, Map & Parcel # (Attach Plat) 70906 04091

C. Type of Development (Circle appropriate choice)

Residential Multi-Family Commercial Industrial Institutional

Number of lots/single family units 446 Building Square Footage _____

Number of multi/family units N/A

Type of Business(es) N/A

Rezoning Required: Yes **No** **Subdivision Required:** Yes **No**

D. Maximum number of employees in 24 hour period N/A

If restaurant, seating capacity N/A

If car wash, number of bays N/A

If Laundromat, number of washers N/A If church, number of seats N/A

E. **SITE PLANS AND WATER/WASTEWATER USE CALCULATIONS ARE NEEDED FOR FEE QUOTES**

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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	✓
16) For pump station design:	
a. Attach design calculations with pump curves	N/A
b. City of Port Wentworth pump station design standards used to prepare drawings, details and specifications	N/A
17) City of Port Wentworth sewer specifications and details used	✓
18) Proposed water/sewer agreement attached	N/A
19) Georgia Registered Professional Engineer stamp and signature	✓

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Engineering Docs (2712 : Site Plan Review Application (Specific) 7-0906-04-

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

June 27, 2022

Third Lake Development
James Barnes
jbarnes@thirdlakedevelopment.com

Re: Proposed Land Disturbing Activity
Third Lake (The Cottages at Rice Hope) Phase 1
Chatham County, Georgia
File: SW-025-04-171

Dear Mr. Barnes:

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.

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - LDA Letter 6.27.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-

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: Pittman Engineering
c/o Jason Bryant, P.E.
jason@pittmanengineeringco.com

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

File: SW-025-04-171

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - LDA Letter 6.27.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-

COTTAGES AT RICE HOPE DRAINAGE STUDY

PREPARED FOR:

THIRD LAKE DEVELOPMENT, LLC

CHATHAM COUNTY, GEORGIA

PREPARED BY:

PITTMAN ENGINEERING

May 26, 2022

REVISED: October 26, 2022

December 19, 2022

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

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ICPR NODE MAX RESULTS

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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

PROJECT DESCRIPTION

The Cottages at Rice Hope are located in Rice Hope Plantation, east of the existing I&D line, and north of Mulberry Blvd. The Cottages at Rice Hope proposes the construction of the road, sanitary sewer, domestic water, storm drainage and other associated infrastructure to support the residential and amenity site within Rice Hope Plantation. Access will be from the existing Mulberry Blvd. The property is currently undeveloped and is included as part of the larger Rice Hope Plantation Composite Stormwater Drainage Study.

METHODOLOGY FOR STORMWATER ATTENUATION

Stormwater collection for the site will consist primarily of pipes which will outfall to a pipe network with an ultimate outfall into two proposed detention lagoons. These lagoons will then discharge into an existing channel north of the Cottages at Rice Hope as shown in the master plan. Water quality will be controlled by allowing solids to settle in the onsite detention ponds before being released from the site. Water quantity will be maintained by sizing the outlets from on-site detention ponds in a manner such that post-development runoff rates do not exceed the pre-development max stages for applicable design storms. Port Wentworth, State, and Federal stormwater ordinances will be followed in the design of the stormwater system.

DESIGN TAIL WATER

The max water elevation for each lagoon was determined in the Rice Hope Comprehensive Stormwater Drainage Study. These 25-year max stages were used for each lagoon as the downstream tailwater elevation for the pipe sizing analysis. Each inlet has a frame elevation higher than the Post-Development ICPR model max stage for the 100-year storm.

DESIGN STORM

DESIGN STORM SUMMARY (INCHES OVER 24 HOURS)						
1-YEAR	**2-YEAR**	**5-YEAR**	**10-YEAR**	**25-YEAR**	**50-YEAR**	**100-YEAR**
3.79	4.51	5.79	6.96	8.73	10.20	11.80

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

SECTION 2: POST-DEVELOPMENT

POST-DEVELOPMENT SUMMARY

The post development model is a comprehensive model consisting of several future development sites. This report is concentrated on the L4, L2-Third Lake, and Pipe Xing nodes in the Rice Hope Comprehensive Stormwater Drainage Model. This pipe network is designed to drain on-site runoff from the proposed Cottages at Rice Hope basin areas. The site ultimately outfalls to the north into a temporary channel that outfalls into Riceboro Creek and into the Savannah River. Below are the Post Development basins zoomed in to the area of interest. A minimum travel time of 10 minutes was used for all basins in the proposed area. Curve numbers were based on a build out Land Use grid and soils calculated in ICPR for each basin.

WATER QUALITY

The ICPR program was used to model 1-year, 24-Hour rain event over a 72-Hour period to determine the corresponding lagoon maximum water surface elevations and the drawdown time. The upstream connections (Lakeside-ThirdLake) was turned off in the Rice Hope Composite Stormwater Model so that the drawdown times would correspond to the Cottages at Rice Hope only. Based on the results, the maximum water surface elevations of the lagoons are:

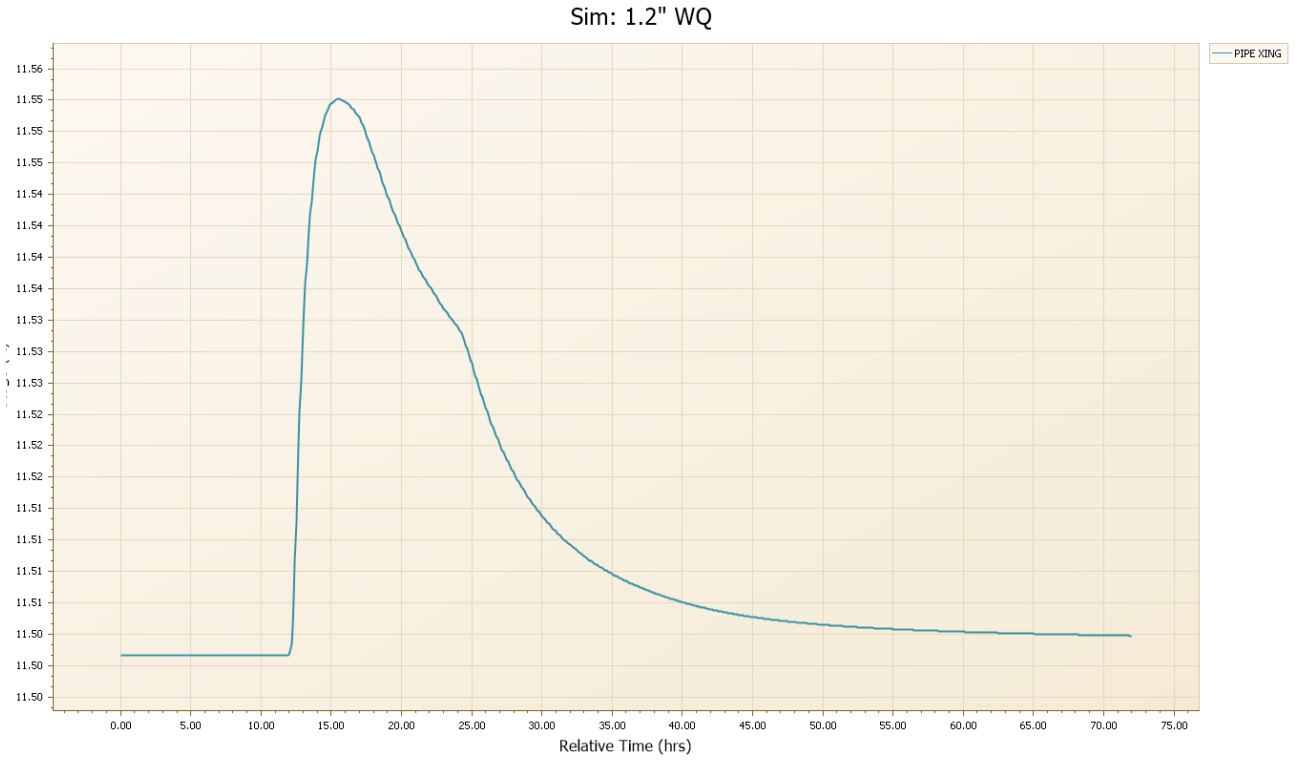
1.2-INCH 24-HOUR STORM

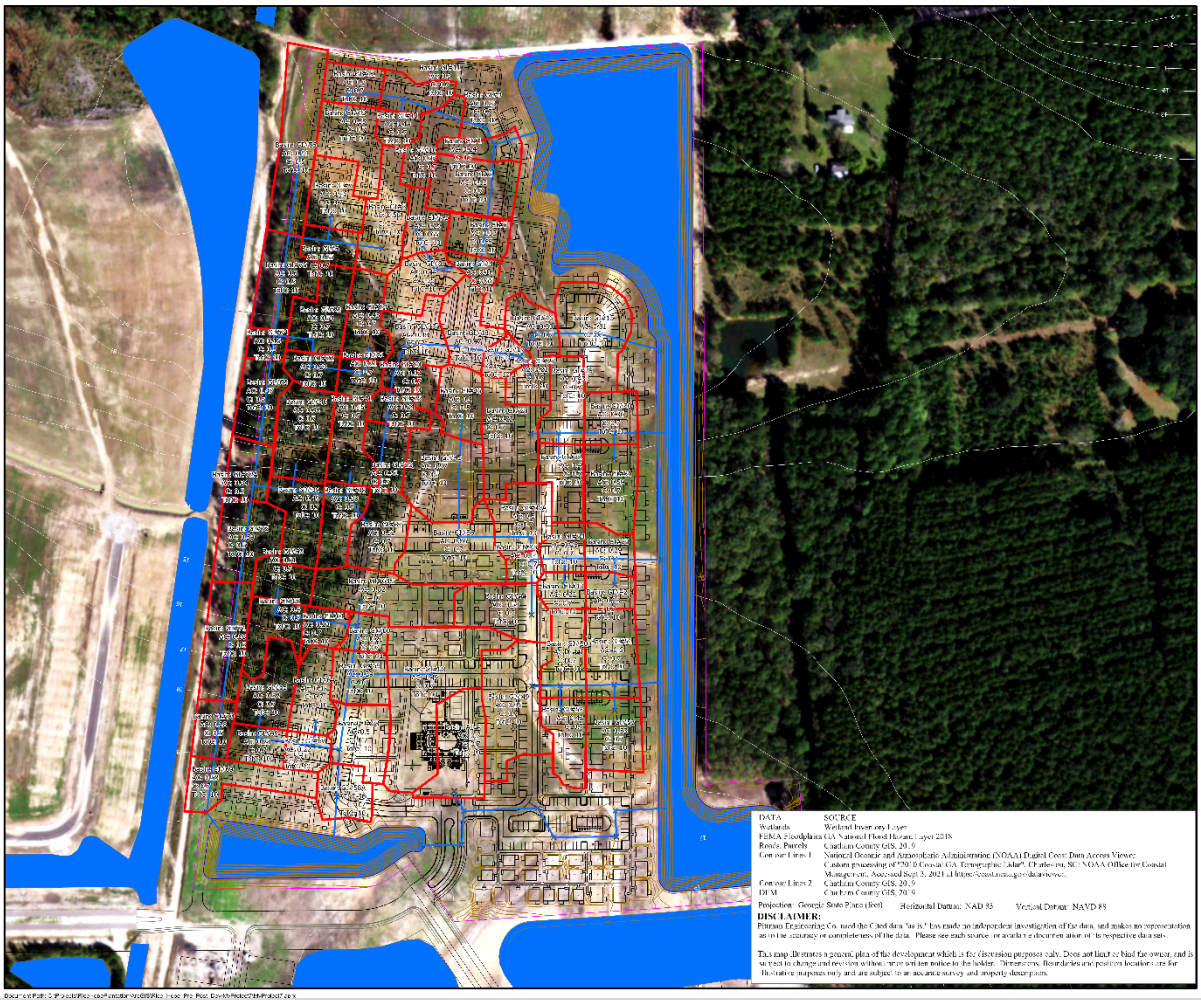
LAGOON NODE	CONTROL ELEVATION (FT)	MAX SURFACE ELEVATION (FT)
L4	11.56	11.50
L2-3RD LAKE	11.55	11.50
PIPE X-ING	11.55	11.50

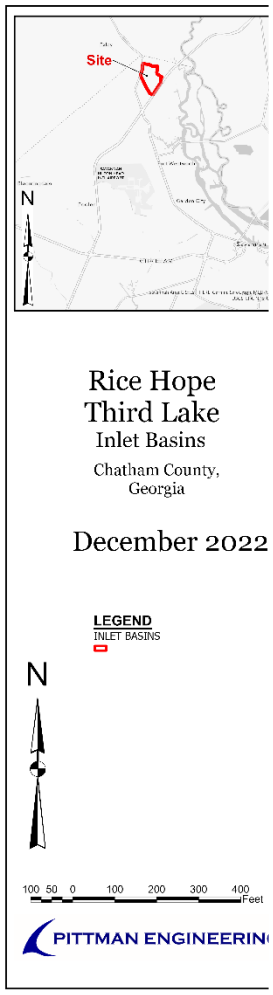
The drawdown times of PIPE X-ING, occurs within the recommended 72-hour timeframe. A graph of the discharge versus time, table of maximum water surface elevations, and node time series table begins on the next page.

Cottages at Rice Hope Drainage Study
Chatham County, GA

Prepared By: PITTMAN ENGINEERING
Date: December 19, 2022

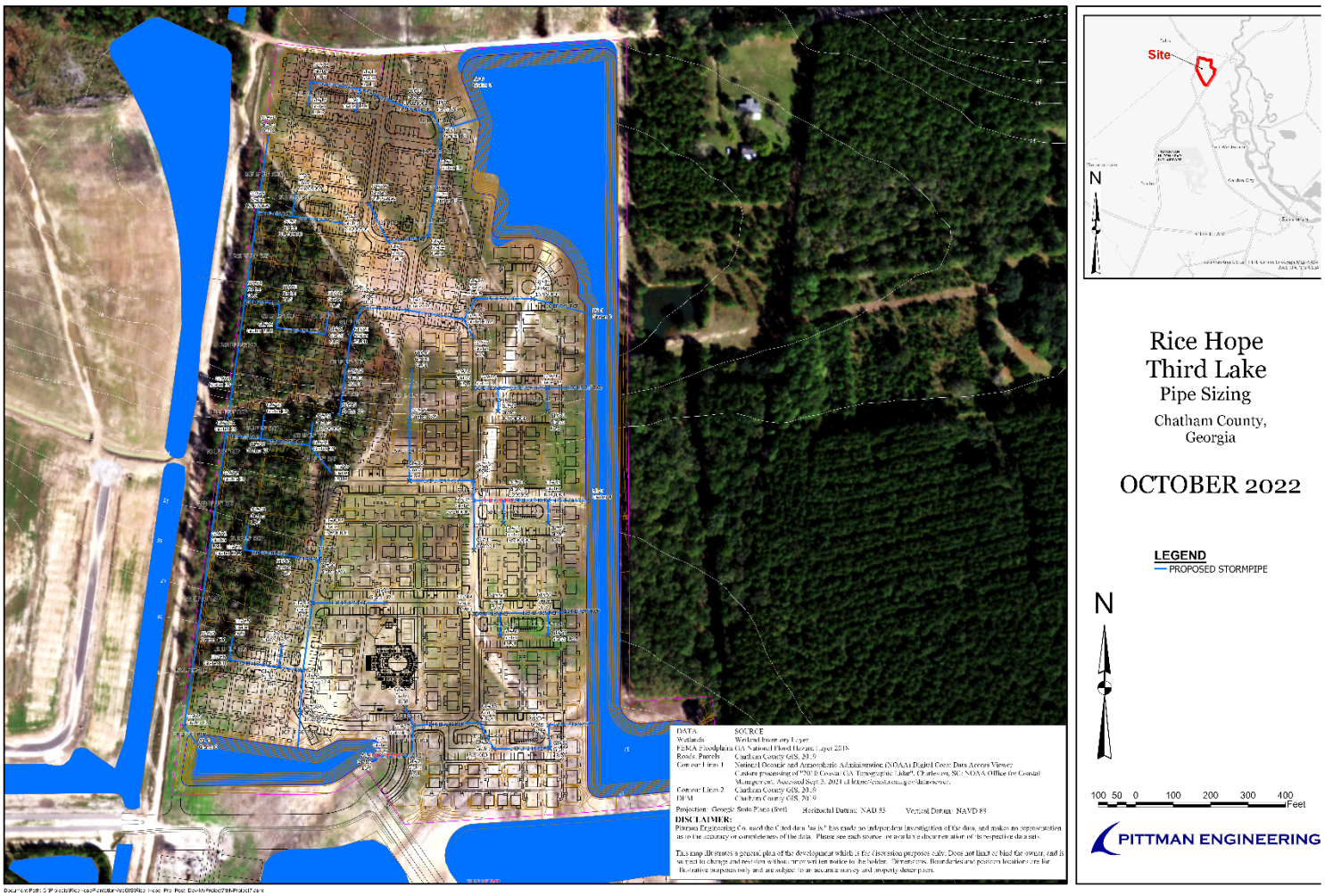






Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

The proposed pipe sizing map and spreadsheet is shown below.



Results:

The hydrology for the Cottages at Rice Hope Drainage Study was performed by means of the TR-55 method. The Post-development conditions were designed to accommodate the 100-year frequency, twenty-four (24) hour storm event in the onsite lagoons and the 25-year frequency, twenty-four (24) hour storm event in the pipe system. The design tail water for the pipe network outfalls was calculated using the 25-year max elevation for on-site lagoons as shown in the Rice Hope Comprehensive Drainage Study. In addition, watersheds have been delineated for each inlet to generally reflect the proposed grading and routed to lagoons represented in the stormwater master plan. The times of concentration were calculated using the TR-55 method, based on the travel times for overland and shallow concentrated flows. The overland flow lengths were limited to fifty (50) feet and the remaining flow lengths consisted of shallow concentrated flow.

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

The Rice Hope Comprehensive Drainage Study ICPR model was created from 2010 LIDAR, aerial photography, the Wetland Inventory, Landuse maps, the Chatham County Parcel and road layout, field reconnaissance, and existing and proposed site plans where available. Cross Sections at each of the road and intermediate locations were created from the LIDAR and survey information and input into the ICPR computer model. In addition, cross sections upstream and downstream of each of the crossing were created from LIDAR topography and input into the computer model. Please note LiDAR does NOT penetrate water and thus in some cases the topographic elevation shown in the cross sections is the top of water and not the actual ground elevation. This report was previously submitted "Rice Hope Comprehensive Drainage Study (dated 10/3/22)"

Summary of Results:

The 100-Year flood elevation has been calculated utilizing the SCS Methodology to calculate the respective Peak Discharge Rates. These Peak Discharge Parameters inputted into the ICPR Model resulted in a respective flood elevation for The Cottages at Rice Hope of varying elevations shown in the Rice Hope Comprehensive Drainage Study Post development max stage elevations are equal or below the pre-development master plan max stage elevations due to the use of storm drainage ponds.

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

POST-DEVELOPMENT

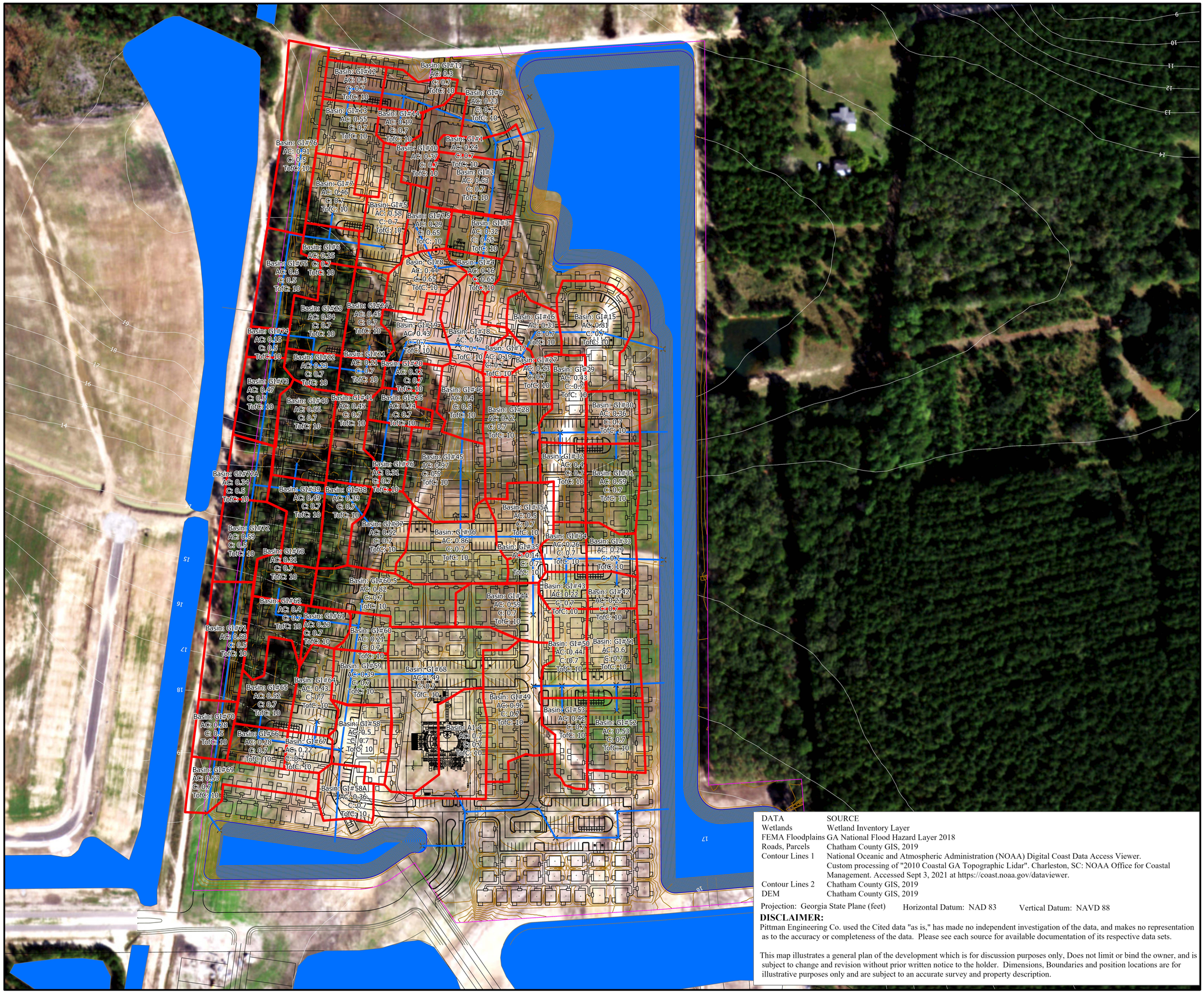
Appendix A

BASIN MAP AND PIPE NETWORK MAP

PROJECT

COTTAGES AT RICE HOPE DRAINAGE STUDY CHATHAM COUNTY, GEORGIA

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091



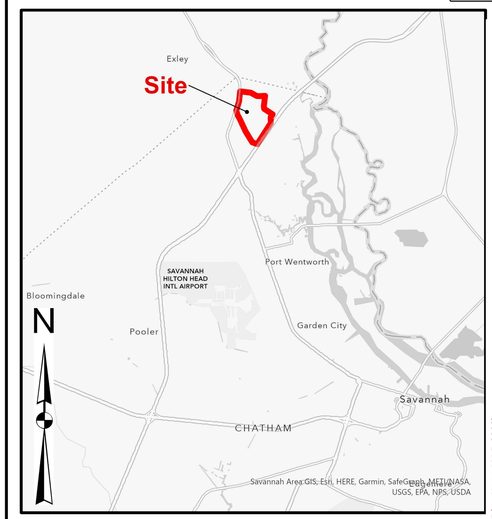
DATA	SOURCE
Wetlands	Wetland Inventory Layer
FEMA Floodplains	GA National Flood Hazard Layer 2018
Roads, Parcels	Chatham County GIS, 2019
Contour Lines 1	National Oceanic and Atmospheric Administration (NOAA) Digital Coast Data Access Viewer. Custom processing of "2010 Coastal GA Topographic Lidar". Charleston, SC: NOAA Office for Coastal Management. Accessed Sept 3, 2021 at https://coast.noaa.gov/dataviewer.
Contour Lines 2	Chatham County GIS, 2019
DEM	Chatham County GIS, 2019

Projection: Georgia State Plane (feet) Horizontal Datum: NAD 83 Vertical Datum: NAVD 88

DISCLAIMER:

Pittman Engineering Co. used the Cited data "as is," has made no independent investigation of the data, and makes no representation as to the accuracy or completeness of the data. Please see each source for available documentation of its respective data sets.

This map illustrates a general plan of the development which is for discussion purposes only, Does not limit or bind the owner, and is subject to change and revision without prior written notice to the holder. Dimensions, Boundaries and position locations are for illustrative purposes only and are subject to an accurate survey and property description.



Rice Hope Third Lake
Inlet Basins

Chatham County, Georgia

December 2022

LEGEND

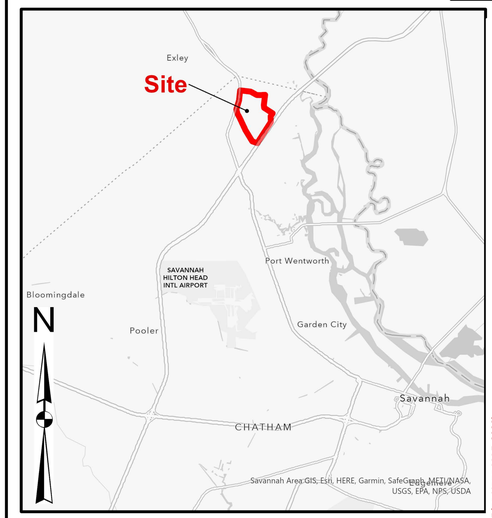
INLET BASINS

N

100 50 0 100 200 300 400 Feet

PITTMAN ENGINEERING

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)



Rice Hope Third Lake

Pipe Sizing

Chatham County, Georgia

OCTOBER 2022

LEGEND

— PROPOSED STORMPIPE

N

100 50 0 100 200 300 400 Feet

DATA	SOURCE
Wetlands	Wetland Inventory Layer
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Roads, Parcels	Chatham County GIS, 2019
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PITTMAN ENGINEERING

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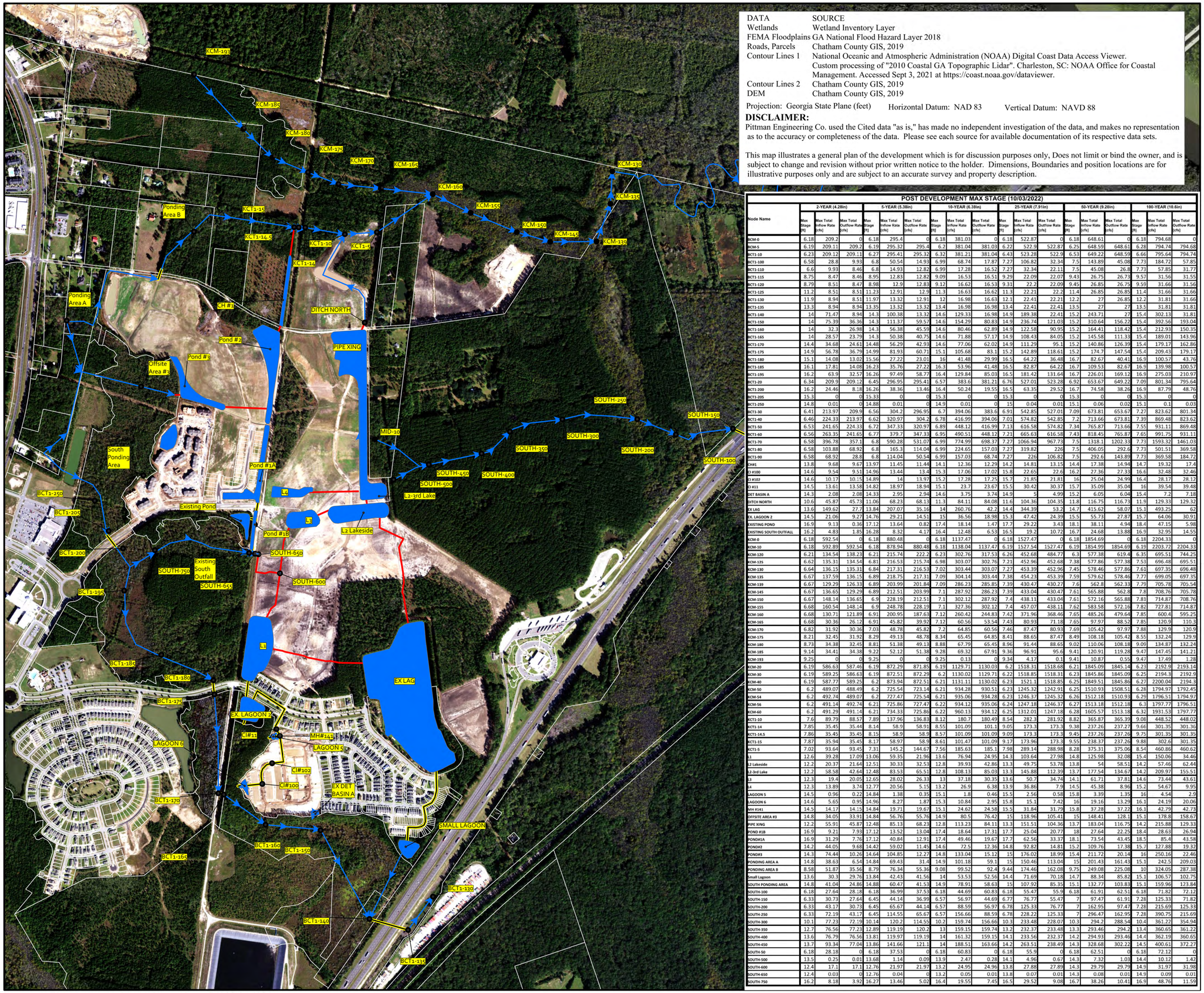

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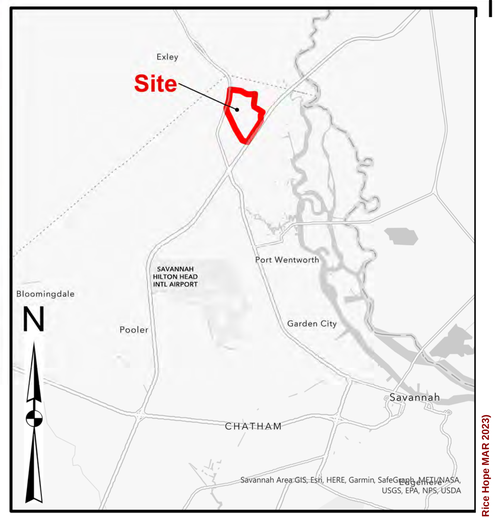
POST DEVELOPMENT MAX STAGE (10/03/2022)

Node Name	2-YEAR (4.28in)			5-YEAR (5.38in)			10-YEAR (6.38in)			25-YEAR (7.91in)			50-YEAR (9.20in)			100-YEAR (10.6in)		
	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]	Max Stage [ft]	Max Total Inflow Rate [cfs]	Max Total Outflow Rate [cfs]
BCM-0	6.18	209.2	0	6.18	295.4	0	6.18	381.03	0	6.18	522.87	0	6.18	648.61	0	6.18	794.68	0
BCM-5	6.19	209.11	209.2	6.19	295.32	295.4	6.2	381.04	381.03	6.22	522.9	522.87	6.25	648.59	648.61	6.28	794.74	794.68
BCT1-10	6.23	209.12	209.11	6.27	295.41	295.32	6.32	381.21	381.04	6.43	523.28	522.9	6.53	649.22	648.59	6.66	795.64	794.74
BCT1-100	6.58	28.8	9.93	6.8	50.54	14.93	6.99	68.74	17.87	7.27	106.82	32.34	7.5	143.89	45.08	7.73	184.72	57.85
BCT1-110	6.6	9.93	8.46	6.8	14.93	12.82	6.99	17.28	16.52	7.27	32.34	22.11	7.5	45.08	26.8	7.73	57.85	31.77
BCT1-115	8.75	8.47	8.46	8.95	12.83	12.82	9.09	16.53	16.51	9.29	22.09	22.07	9.43	26.75	26.73	9.57	31.56	31.55
BCT1-120	8.79	8.51	8.47	8.98	12.9	12.83	9.12	16.62	16.53	9.31	22.2	22.09	9.45	26.85	26.75	9.59	31.66	31.56
BCT1-125	11.2	8.51	8.51	11.23	12.91	12.9	11.3	16.63	16.62	11.3	22.21	22.2	11.4	26.85	26.85	11.4	31.66	31.66
BCT1-130	11.9	8.94	8.51	11.97	13.32	12.91	12	16.98	16.63	12.1	22.41	22.21	12.2	27	26.85	12.2	31.81	31.66
BCT1-135	13.3	8.94	8.94	13.35	13.32	13.32	13.4	16.98	16.98	13.4	22.41	22.41	13.5	27	27	13.5	31.81	31.81
BCT1-140	14	71.47	8.94	14.3	100.38	13.32	14.6	129.33	16.98	14.9	189.38	22.41	15.2	243.71	27	15.4	302.13	31.81
BCT1-150	14	75.39	36.36	14.3	111.37	59.57	14.6	154.29	80.83	14.9	236.74	121.03	15.2	310.64	156.22	15.4	392.56	193.04
BCT1-160	14	32.3	26.98	14.3	56.38	45.59	14.6	80.46	62.89	14.9	122.58	90.95	15.2	164.41	118.42	15.4	212.93	150.35
BCT1-165	14	28.57	23.79	14.3	50.38	40.75	14.6	71.88	57.17	14.9	108.43	84.05	15.2	145.58	111.33	15.4	189.01	143.96
BCT1-170	14.4	34.68	24.61	14.48	56.29	42.93	14.6	77.06	62.02	14.9	111.29	95.1	15.2	140.86	126.39	15.4	179.17	162.86
BCT1-175	14.9	56.78	36.79	14.99	81.93	60.71	15.1	105.68	83.1	15.2	142.89	118.61	15.2	174.7	147.54	15.4	209.43	179.17
BCT1-180	15.1	14.08	13.02	15.56	27.22	23.01	16	41.48	29.99	16.5	64.22	36.48	16.7	82.67	40.41	16.9	100.57	43.76
BCT1-185	16.1	17.81	14.08	16.23	35.76	27.22	16.3	53.96	41.48	16.5	82.87	64.22	16.7	109.53	82.67	16.9	139.98	100.57
BCT1-195	16.2	63.9	32.57	16.26	97.49	58.77	16.4	129.84	85.03	16.5	181.42	131.64	16.7	226.01	169.12	16.9	275.03	210.97
BCT1-20	6.34	209.9	209.12	6.45	296.95	295.41	6.57	383.6	381.21	6.76	527.01	523.28	6.92	653.67	649.22	7.09	801.34	795.64
BCT1-200	16.2	24.46	8.18	16.26	38.36	13.46	16.4	50.24	19.55	16.5	63.35	29.52	16.7	74.58	38.26	16.9	87.79	48.76
BCT1-205	15.3	0	0	15.33	0	0	15.3	0	0	15.3	0	0	15.3	0	0	15.3	0	0
BCT1-250	14.8	0.01	0	14.88	0.01	0	14.9	0.01	0	15	0.04	0.01	15.1	0.06	0.02	15.1	0.1	0.03
BCT1-30	6.41	213.97	209.9	6.56	304.2	296.95	6.7	394.06	383.6	6.91	542.85	527.01	7.09	673.81	653.67	7.27	823.62	801.34
BCT1-40	6.46	224.33	213.97	6.62	320.97	304.2	6.78	416.99	394.06	7.01	574.82	542.85	7.2	713.66	673.81	7.39	869.48	823.62
BCT1-50	6.53	241.65	224.33	6.72	347.33	320.97	6.89	448.12	416.99	7.13	616.58	574.82	7.34	765.87	713.66	7.55	931.11	869.48
BCT1-60	6.56	263.35	241.65	6.77	379.7	347.33	6.95	490.51	448.12	7.21	665.63	616.58	7.43	818.45	765.87	7.65	991.75	931.11
BCT1-70	6.58	396.78	357.1	6.8	590.28	531.07	6.99	774.99	698.37	7.27	1066.94	967.73	7.5	1318.1	1202.33	7.73	1593.32	1461.03
BCT1-80	6.58	103.88	68.92	6.8	165.3	114.04	6.99	224.65	157.03	7.27	319.82	226	7.5	406.05	292.6	7.73	501.51	369.58
BCT1-90	6.58	68.92	28.8	6.8	114.04	50.54	6.99	157.03	68.74	7.27	226	106.82	7.5	292.6	143.89	7.73	369.58	184.72
CH#1	13.8	9.68	9.67	13.97	11.45	11.44	14.1	12.36	12.29	14.2	14.81	13.15	14.4	17.38	14.94	14.7	19.32	17.4
CI #100	14.6	9.54	9.51	14.96	13.44	13.4	15.3	17.06	17.02	15.8	22.65	22.6	16.2	27.36	27.33	16.6	32.48	32.46
CI #102	14.6	10.17	10.15	14.89	14	13.97	15.2	17.28	17.25	15.7	21.85	21.81	16	25.04	24.99	16.4	28.17	28.12
CI #11	14.5	13.61	13.58	14.82	18.97	18.94	15.1	23.7	23.67	15.5	30.42	30.37	15.7	35.09	35.04	16	39.54	39.48
DET BASIN A	14.3	2.08	2.08	14.33	2.95	2.94	14.6	3.75	3.74	14.9	5	4.99	15.2	6.05	6.04	15.4	7.2	7.18
DITCH NORTH	10.6	45.87	45.73	11.06	68.23	68.13	11.3	84.11	84.08	11.6	104.36	104.35	11.8	116.75	116.73	11.9	129.33	129.32
EX LAG	13.6	149.62	27.7	13.84	207.07	35.16	14	260.76	42.2	14.4	344.39	53.2	14.7	415.62	58.07	15.1	493.25	62
EX. LAGOON 2	14.5	21.06	9.27	14.76	29.21	14.51	15	36.56	18.98	15.3	47.42	24.39	15.5	55.73	27.87	15.7	64.06	30.91
EXISTING POND	16.9	9.13	0.36	17.12	13.64	0.82	17.4	18.14	1.47	17.7	29.22	3.43	18.1	38.11	4.94	18.4	47.15	5.98
EXISTING SOUTH OUTFALL	16.2	4.83	1.85	16.28	8.32	4.17	16.4	12.48	6.53	16.5	19.2	10.72	16.7	24.68	13.88	16.9	32.95	14.55
KCM-0	6.18	592.54	0	6.18	880.48	0	6.18	1137.47	0	6.18	1527.47	0	6.18	1854.69	0	6.18	2204.33	0
KCM-10	6.18	592.89	592.54	6.18	878.94	880.48	6.18	1138.04	1137.47	6.19	1527.54	1527.47	6.19	1854.99	1854.69	6.19	2203.72	2204.33
KCM-120	6.21	134.54	138.23	6.21	215.74	222.2	6.23	302.76	317.53	6.26	452.68	484.77	6.3	577.38	619.4	6.35	695.51	744.25
KCM-125	6.62	135.31	134.54	6.81	216.53	215.74	6.98	303.07	302.76	7.21	452.96	452.68	7.38	577.86	577.38	7.53	696.48	695.51
KCM-130	6.64	136.15	135.31	6.84	217.31	216.53	7.02	303.44	303.07	7.27	453.39	452.96	7.45	578.46	577.86	7.61	697.35	696.48
KCM-135	6.67	137.59	136.15	6.89	218.75	217.31	7.09	304.14	303.44	7.38	454.23	453.39	7.59	579.62	578.46	7.77	699.05	697.35
KCM-139	6.67	129.29	126.33	6.89	203.99	201.84	7.09	286.23	285.85	7.39	430.47	430.27	7.6	562.8	562.33	7.79	705.78	705.54
KCM-145	6.67	136.65	129.29	6.89	212.51	203.99	7.1	287.92	286.23	7.39	433.04	430.47	7.61	565.88	562.8	7.8	708.76	705.78
KCM-150	6.67	148.14	136.65	6.9	228.19	212.51	7.1	302.12	287.92	7.4	438.11	433.04	7.61	572.16	565.88	7.81	714.87	708.76
KCM-155	6.68	160.54	148.14	6.9	248.78	228.19	7.1	327.36	302.12	7.4	457.07	438.11	7.62	583.58	572.16	7.82	727.81	714.87
KCM-160	6.68	130.71	121.89	6.91	200.95	187.63	7.12	260.42	244.83	7.42	371.96	368.46	7.65	485.26	479.64	7.85	600.4	595.25
KCM-165	6.68	30.36	26.12	6.91	45.82	39.92	7.12	60.56	53.54	7.43	80.93	71.18	7.65	97.97	88.52	7.85	120.9	110.3
KCM-170	6.82	31.92	30.36	7.03	48.78	45.82	7.2	64.85	60.56	7.46	87.47	80.93	7.69	105.42	97.97	7.88	129.9	120.9
KCM-175	8.21	32.45	31.92	8.29	49.13	48.78	8.34	65.45	64.85	8.41	88.65	87.47	8.49	108.18	105.42	8.55	132.24	129.9
KCM-180	8.73	34.38	32.45	8.81	51.38	49.13	8.88	67.79	65.45	8.96	91.44	88.65	9.02	110.06	108.18	9.09	134.87	132.24
KCM-185	9.14	34.41	34.38	9.22	52.12	51.38	9.28	69.32	67.91	9.36	96.91	95.6	9.41	120.91	119.28	9.47	147.45	141.21
KCM-193	9.25	0	0	9.25	0	0	9.25	0.13	0	9.34	4.17	0.1	9.41	10.87	0.55	9.47	17.49	1.28
KCM-20	6.19	586.63	587.46	6.19	872.29	871.85	6.19	1129.71	1130.03	6.2	1518.31	1518.68	6.21	1845.09	1845.14	6.23	2192.9	2193.14
KCM-30	6.19	589.25	586.63	6.19	872.51	872.29	6.2	1130.02	1129.71	6.22	1518.85	1518.31	6.23	1845.86	1845.09	6.25	2194.3	2192.9
KCM-40	6.19	587.77	589.25	6.2	873.94	872.51	6.21	1131.11	1130.02	6.23	1521.1	1518.85	6.25	1849.51	1845.86	6.27	2200.04	2194.3
KCM-50	6.2	489.07	488.49	6.2	725.54	723.14	6.21	934.28	930.51	6.23	1245.32	1242.91	6.25	1510.93	1508.51	6.28	1794.97	1792.45
KCM-54	6.2	492.74	489.07	6.2	727.47	725.54	6.21	935.06	934.28	6.23	1246.37	1245.32	6.26	1512.18	1510.93	6.29	1796.51	1794.97
KCM-56	6.2	491.14	492.74	6.21	725.86	727.47	6.22	934.12	935.06	6.24	1247.18	1246.37	6.27	1513.18	1512.18	6.3	1797.77	1796.51
KCM-60	6.2	491.29	491.14	6.21	734.33	725.86	6.22	960.13	934.12	6.25	1312.01	1247.18	6.28	1605.57	1513.18	6.32	1931.53	1797.77
KCT1-10	7.6	89.79	88.57	7.89	137.96	136.83	8.12	180.7	180.49	8.54	282.3	281.92	8.82	365.87	365.39	9.08	448.52	448.02
KCT1-14	7.85	35.45	35.44	8.14	58.9	58.91	8.55	101.09	101.1	9.05	173.3	173.3	9.38	237.26	237.27	9.66	301.35	301.36
KCT1-14.5	7.86	35.45	35.45	8.15	58.9	58.9	8.57	101.09	101.09	9.09	173.3	173.3	9.45	237.26	237.26	9.75	301.35	301.35
KCT1-15	7.87	35.94	35.45	8.17	58.97	58.9	8.61	101.47	101.09	9.17	173.96	173.3	9.55	238.37	237.26	9.88	302.6	301.35
KCT1-5	7.02	93.64	93.45	7.31	145.2	144.67	7.56	185.63	185.1	7.98	289.14	288.98	8.28	375.31	375.06	8.54	460.86	460.62
L1	12.6	39.28	17.09	13.06	59.35	21.96	13.6	76.94	24.95	14.3	103.64	27.98	14.8	125.98	32.08	15.4	150.06	34.46
L2 Lakeside	12.2	20.37	21.64	12.51	30.33	32.53	12.8	39.93	42.86	13.3	49.75	53.78	13.8	54	58.51	14.2	57.46	62.44
L2-3rd Lake	12.2	58.58	42.64	12.48	83.53	65.51	12.8	108.13	85.03	13.3	145.88	112.39	13.7	177.54	134.67	14.2	209.97	155.51
L3	12.3	19.4	20.05	12.65	28.02	26.33	13	37.18	30.35	13.6	50.7	34.74	14.1	61.71	37.81	14.6	73.44	43.61
L4	12.3	13.89	3.74	12.77	20.56	5.15	13.2	26.9	6.38	13.9	36.86	7.9	14.5	45.38	8.96	15.2	54.67	9.95
LAGOON 5	14.5	0.96	0.22	14.84	1.38	0.35	15.1	1.8	0.46	15.5	2.56	0.58	15.8	3.39	1.35	16	4.54	2.9
LAGOON 6	14.6	5.65	0.95	14.96	8.27	1.87	15.3	10.84	2.95	15.8	15.1	7.42	16	19.16	13.29	16.1	24.19	20.06
MH #141	14.5	14.17	14.15	14.84	19.71	19.67	15.1	24.62	24.58	15.5	31.84	31.79	15.8	37.28	37.22	16.1	42.79	42.73
OFFSITE AREA #3	14.8	34.05	33.91	14.84	56.76	55.76	14.9	80.5	76.42	15	118.96	105.41	15	148.41	128.1	15.1	178.8	158.67
PIPE XING	12.2	55.91	45.87	12.48	85.13	68.23	12.8	113.23	84.11	13.3	151.51	104.36	13.7	183.04	116.75	14.2	215.88	129.33
POND #1B	16.9	9.21	7.93	17.12	13.52	13.04	17.4	18.64	17.31	17.7	25.04	20.77	18	27.64	22.25	18.4	28.63	26.94
POND#1A	16.9	31.29	7.76	17.12	40.84	12.91	17.4	49.46	19.67	17.7	62.56	33.37	18.1	73.54	43.45	18.5	85.4	43.58
POND#2	14.2	44.05	9.68	14.42	59.02	11.45	14.6	72.5	12.36	14.8	92.82	14.81	15.2	109.76	17.38	15.7	127.88	19.32
POND#3	14.3	74.44	10.26	14.64	104.85	12.27	14.8	133.04	15.12	15	176.02	18.99	15.4	211.72	20.14	16	250.16	22.46
PONDING AREA A	14.8	38.63	6.54	14.84	69.43	31.4	14.9	101.18	59.1	15	150.46	113.04	15	201.43	161.43	15.1	242.5	209.03
PONDING AREA B	8.58	51.87	35.56	8.75	76.34	55.36	9.08	99.52	92.4	9.44	174.46	162.08	9.75	249.08	225.08	10	324.05	287.38
Small Lagoon	13.6	30.3	29.76	13.84	42.43	41.56	14	53.53	52.56	14.4	71.69	70.18	14.7	88.34	85.82	15.1	106.57	102.75
SOUTH PONDING AREA	14.8	41.04	24.86	14.88	60.47	41.53	14.9	78.91	58.63	15	107.92	85.35	15.1	132.77	103.83	15.1	159.96	123.84
SOUTH-100	6.18	27.64	28.18	6.18	36.99	37.53	6.18	44.69	60.83	6.18	55.47	55.9	6.18	61.91	62.51	6.18	71.82	72.12
SOUTH-150	6.33	30.73	27.64	6.45	44.14	36.99	6.57	56.97	44.69	6.77	76.77	55.47	7	97.47	61.91	7.28	125.33	71.82
SOUTH-200	6.33	43.17	30.73	6.45	65.67	44.14	6.57	88.59	56.97	6.78	125.33	76.77	7	162.95	97.47	7.28	215.69	125.33
SOUTH-250	6.33	72.19	43.17	6.45	114.55	65.67	6.57	156.66	88.59	6.78	228.22	125.33	7	296.47	162.95	7.28	390.75	215.69
SOUTH-300	10.1	77.23	72.19	10.14	120.2	114.55	10.2	159.74	156.66	10.3	233.48	228.07	10.3	294.2	288.54	10.4	361.22	354.94
SOUTH-350	12.7	76.56	77.23	12.89	119.19	120.2	13	159.15	159.74	13.2	232.37	233.48	13.3	293.46	294.2	13.4	360.65	361.22
SOUTH-400	13.6	76.79	76.56	13.81	119.97	119.19	14	161.32	159.15	14.1	233.56	232.37	14.2	294.93	293.46	14.4	362.19	360.65
SOUTH-450	13.7	93.34	77.04	13.86	141.66	121.1	14	188.51	163.66	14.2	263.51	238.49	14.3	328.68	302.22	14.5	400.61	372.27
SOUTH-50	6.18	28.18	0	6.18	37.53	0	6.18	60.83	0	6.18	55.9	0	6.18	62.51	0	6.18	72.12	0
SOUTH-500	13.5	0.25	0.01	13.68	1.14	0.09	13.9	2.47	0.28	14.1	4.96	0.67	14.3	7.32	1.03	14.4	10.12	1.42
SOUTH-600	12.4	17.1	17.1	12.76	21.97	21.97	13.2	24.95	24.96	13.8	27.88	27.89	14.3	29.79	29.79	14.9	31.97	31.98
SOUTH-650	12.4	0.03	0	12.76	0.04	0	13.2	0.05	0.01	13.8	0.07	0.01	14.3	0.08	0.01	14.9	0.09	0.01
SOUTH-750	16.2	8.18	3.92	16.27	13.46	5.02	16.4	19.55	7.45	16.5	29.52	9.08	16.7	38.26	10.41	16.9	48.76	11.59



Rice Hope Comprehensive Drainage Study

ICPR Post Development Max Node Map

Chatham County, Georgia

October 2022

Legend
- POST_LAGOONS_10032022
- Post_Node
- Channel
- Proposed Pipe
- Existing Pipe

N

GEORGIA REGISTERED No. 017550 PROFESSIONAL 10/3/2022 ENGINEER RAYMOND A. PITTMAN

0 500 1,000 2,000 Feet

PITTMAN ENGINEERING

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091 Cottages at Rice Hope MAR 2023)

POST-DEVELOPMENT

Appendix B

PIPE SIZING SPREADSHEET

PROJECT

COTTAGES AT RICE HOPE DRAINAGE STUDY CHATHAM COUNTY, GEORGIA

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Project: ThirdLake (12/19/2022)																							
				A	n	Tc	C	Cc	Ii	Ic	Qi	Qc	S		Dm	L		hf	hm			FREEBOARD	Manning's
									INLET	COMPOSITE										DOWNSTREAM	INLET		
FROM	TO	DS I.E.	INLET	TOTAL	MANNING'S	TIME OF	RUNOFF	COMPOSITE	RAINFALL	RAINFALL	INLET	CUMULATIVE		MANNING'S	MANNING'S	SEGMENT	FRAME	FRICTION	MINOR	MAX. STAGE	PONDING	(FT)	n
INLET	INLET		AREA	AREA	COEFF.	CONC.	COEFF.	RUNOFF	INTENSITY	INTENSITY	DISCHARGE	DISCHARGE	SLOPE	Dtheo	SIZE	LENGTH	ELEV	LOSSES	LOSSES	ELEV	ELEV	(FRAME-INLET	Velocity
			(ACRES)	(ACRES)		(MIN)		COEFF.	(IN./HR.)	(IN./HR.)	(CFS)	(CFS)	(FT/FT)	(IN)	(IN)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	ONDING-0.5 FT)	
																						(FT)	
GI#13	GI#12	11.51	0.55	0.55	0.013	10	0.70	0.70	8.49	8.49	3.27	3.27	0.003	15	**15**	68	18.17	0.1736	0.06	15.19	15.42	2.25	2.89
GI#12	GI#11	11.12	0.30	0.85	0.013	10	0.70	0.70	8.49	8.49	1.78	5.05	0.003	18	**15**	129	18.17	0.7854	0.13	14.27	15.19	2.48	2.89
GI#14	GI#11	10.91	0.19	0.19	0.013	10	0.70	0.70	8.49	8.49	1.13	1.13	0.003	10	**15**	62	15.10	0.0189	0.01	14.27	14.30	0.30	2.89
GI#11	GI#10	10.39	0.30	1.34	0.013	10	0.70	0.70	8.49	8.49	1.78	7.96	0.003	21	**24**	78	17.43	0.0962	0.05	14.12	14.27	2.66	3.95
GI#10	GI#9	9.99	0.37	1.71	0.013	10	0.70	0.70	8.49	8.49	2.20	10.16	0.003	23	**24**	133	18.12	0.2672	0.08	13.77	14.12	3.50	3.95
GI#9	GI#1	9.84	0.23	1.94	0.013	10	0.70	0.70	8.49	8.49	1.37	11.53	0.003	24	**24**	51	18.00	0.1319	0.10	13.54	13.77	3.73	3.95
GI#7.5	GI#8	13.96	0.29	0.29	0.013	10	0.65	0.65	8.49	8.49	1.60	1.60	0.003	12	**15**	114	20.56	0.0697	0.01	15.13	15.21	4.85	2.89
GI#8	GI#4	11.81	0.44	0.73	0.013	10	0.65	0.65	8.49	8.49	2.43	4.03	0.019	12	**15**	109	20.07	0.4226	0.08	14.63	15.13	4.44	7.28
GI#4	GI#3	11.55	0.16	0.89	0.013	10	0.65	0.65	8.49	8.49	0.88	4.91	0.003	17	**15**	86	19.68	0.4950	0.12	14.01	14.63	4.55	2.89
GI#3	GI#2	10.79	0.32	1.21	0.013	10	0.65	0.65	8.49	8.49	1.77	6.68	0.003	20	**24**	88	18.00	0.0764	0.04	13.89	14.01	3.49	3.95
GI#2	GI#1	10.3	0.63	1.84	0.013	10	0.70	0.70	8.49	8.49	3.74	10.94	0.003	23	**24**	112	18.00	0.2609	0.09	13.54	13.89	3.61	3.95
GI#1	POND A	7.17	0.24	4.02	0.013	10	0.70	0.70	8.49	8.49	1.43	23.89	0.017	23	**36**	119	18.00	0.1520	0.09	13.30	13.54	3.96	12.34
GI#26	GI#25	14.25	0.31	0.31	0.013	10	0.70	0.70	8.49	8.49	1.84	1.84	0.003	12	**15**	117	20.00	0.0946	-0.02	18.85	18.92	0.58	2.89
GI#25	GI#20	13.97	0.24	0.55	0.013	10	0.70	0.70	8.49	8.49	1.43	3.27	0.003	15	**15**	95	20.09	0.2425	0.06	18.55	18.85	0.74	2.89
GI#20	GI#19	13.71	0.12	0.67	0.013	10	0.70	0.70	8.49	8.49	0.71	3.98	0.003	16	**15**	86	20.18	0.3252	0.08	18.14	18.55	1.13	2.89
GI#19	GI#18	13.34	0.43	1.10	0.013	10	0.70	0.70	8.49	8.49	2.56	6.54	0.003	19	**18**	122	20.90	0.4711	0.11	17.56	18.14	2.26	3.26
GI#18	GI#17	12.88	0.47	1.57	0.013	10	0.70	0.70	8.49	8.49	2.79	9.33	0.003	22	**18**	154	20.00	1.2102	0.22	16.13	17.56	1.94	3.26
GI#27	GI#17	13.44	0.23	0.23	0.013	10	0.70	0.70	8.49	8.49	1.37	1.37	0.003	11	**15**	53	17.60	0.0237	0.01	16.13	16.16	0.94	2.89
GI#17	GI#16	11.4	0.19	1.76	0.013	10	0.70	0.70	8.49	8.49	1.13	10.46	0.003	23	**18**	64	18.50	0.6322	0.27	15.23	16.13	1.87	3.26
GI#16	GI#15	10.44	0.33	2.32	0.013	10	0.70	0.70	8.49	8.49	1.96	13.79	0.003	25	**24**	152	17.16	0.5625	0.15	14.52	15.23	1.43	3.95
GI#15	POND A	7.69	0.81	3.13	0.013	10	0.70	0.70	8.49	8.49	4.81	18.60	0.014	21	**24**	156	16.95	1.0503	0.27	13.20	14.52	2.13	8.54
GI#28	GI#29	11.1	0.72	0.72	0.013	10	0.70	0.70	8.49	8.49	4.28	4.28	0.036	11	**15**	66	17.50	0.2886	0.09	14.06	14.44	2.76	10.01
GI#32	GI#29	11.1	0.40	0.40	0.013	10	0.70	0.70	8.49	8.49	2.38	2.38	0.026	9	**15**	62	16.70	0.0838	0.03	14.06	14.17	2.23	8.51
GI#29	GI#30	10.7	0.43	1.55	0.013	10	0.70	0.70	8.49	8.49	2.56	9.21	0.006	19	**24**	62	15.00	0.1023	0.07	13.89	14.06	0.64	5.59
GI#31	GI#30	11.1	0.59	0.59	0.013	10	0.70	0.70	8.49	8.49	3.51	3.51	0.003	15	**15**	62	15.40	0.1824	0.06	13.89	14.13	0.97	2.89
GI#30	POND A	8.78	0.36	2.50	0.013	10	0.70	0.70	8.49	8.49	2.14	14.86	0.014	20	**24**	120	15.00	0.5157	0.17	13.20	13.89	0.81	8.54
GI#46	GI#45	13.09	0.40	0.40	0.013	10	0.50	0.50	8.49	8.49	1.70	1.70	0.003	12	**15**	138	19.01	0.0952	0.01	16.78	16.89	1.82	2.89
GI#45	GI#36	12.61	0.97	1.37	0.013	10	0.50	0.50	8.49	8.49	4.12	5.82	0.003	19	24	159	17.50	0.1048	0.03	16.65	16.78	0.42	3.95
GI#36	GI#35A	11.6	0.86	2.23	0.013	10	0.70	0.70	8.49	8.49	5.11	13.25	0.003	25	**24**	171	18.50	0.5842	0.14	15.93	16.65	1.55	3.95
GI#35A	GI#35	11.44	0.50	2.73	0.013	10	0.70	0.70	8.49	8.49	2.97	16.22	0.003	27	**24**	53	17.57	0.2714	0.21	15.45	15.93	1.34	3.95
GI#44	GI#35	12.6	0.59	0.59	0.013	10	0.70	0.70	8.49	8.49	3.51	3.51	0.003	15	**15**	133	17.00	0.3912	0.06	15.45	15.90	0.80	2.89
GI#35	GI#34	10.7	0.14	3.46	0.013	10	0.70	0.70	8.49	8.49	0.83	20.56	0.003	29	**24**	79	17.20	0.6499	0.33	14.47	15.45	1.45	3.95
GI#43	GI#34	12.3	0.22	0.22	0.013	10	0.70	0.70	8.49	8.49	1.31	1.31	0.003	11	**15**	62	16.80	0.0254	0.01	14.47	14.51	1.99	2.89
GI#34	GI#33	10.34	0.26	3.94	0.013	10	0.70	0.70	8.49	8.49	1.55	23.42	0.003	31	**30**	120	16.30	0.3896	0.18	13.90	14.47	1.53	4.59
GI#42	GI#33	11.9	0.23	0.23	0.013	10	0.70	0.70	8.49	8.49	1.37	1.37	0.003	11	**15**	62	16.10	0.0278	0.01	13.90	13.94	1.86	2.89
GI#33	POND A	7.17	0.29	4.46	0.013	10	0.70	0.70	8.49	8.49	1.72	26.51	0.024	22	**30**	112	16.20	0.4659	0.23	13.20	13.90	2.00	12.98

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review

				A	n	Tc	C	Cc	Ii	Ic	Qi	Qc	S		Dm	L		hf	hm				
									INLET	COMPOSITE										DOWNSTREAM	INLET	FREEBOARD	Manning's
FROM	TO	DS I.E.	INLET	TOTAL	MANNING'S	TIME OF	RUNOFF	COMPOSITE	RAINFALL	RAINFALL	INLET	CUMULATIVE		MANNING'S	MANNING'S	SEGMENT	FRAME	FRICTION	MINOR	MAX. STAGE	PONDING	(FT)	n
INLET	INLET		AREA	AREA	COEFF.	CONC.	COEFF.	RUNOFF	INTENSITY	INTENSITY	DISCHARGE	DISCHARGE	SLOPE	Dtheo	SIZE	LENGTH	ELEV	LOSSES	LOSSES	ELEV	ELEV	(FRAME-INLET	Velocity
			(ACRES)	(ACRES)		(MIN)		COEFF.	(IN./HR.)	(IN./HR.)	(CFS)	(CFS)	(FT/FT)	(IN)	(IN)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	ONDING-0.5 FT)	
																						(FT)	
GI#13	GI#12	11.51	0.55	0.55	0.013	10	0.70	0.70	8.49	8.49	3.27	3.27	0.003	15	**15**	68	18.17	0.1736	0.06	15.19	15.42	2.25	2.89
GI#49	GI#50	12.63	0.96	0.96	0.013	10	0.70	0.70	8.49	8.49	5.71	5.71	0.003	18	**18**	67	16.83	0.1972	0.08	15.87	16.15	0.38	3.26
GI#53	GI#50	12.73	0.42	0.42	0.013	10	0.70	0.70	8.49	8.49	2.50	2.50	0.003	14	**15**	61	16.91	0.0910	0.03	15.87	15.99	0.62	2.89
GI#50	GI#51	11.74	0.44	1.82	0.013	10	0.70	0.70	8.49	8.49	2.61	10.82	0.007	20	**18**	129	16.73	1.3634	0.29	14.22	15.87	0.56	4.99
GI#52	GI#51	12.72	0.53	0.53	0.013	10	0.70	0.70	8.49	8.49	3.15	3.15	0.003	15	**15**	61	16.90	0.1445	0.05	14.22	14.41	2.19	2.89
GI#51	POND A	8.26	0.60	2.95	0.013	10	0.70	0.70	8.49	8.49	3.57	17.53	0.031	18	**24**	114	16.73	0.6818	0.24	13.30	14.22	2.21	12.71
GI#57	CONNECTO	12.44	0.70	0.70	0.013	10	0.70	0.70	8.49	8.49	4.16	4.16	0.003	16	**15**	55	18.98	0.2272	0.09	13.30	13.62	5.06	2.89
GI#63	GI #62	13.41	0.31	0.31	0.013	10	0.70	0.70	8.49	8.49	1.84	1.84	0.003	12	**15**	62	17.60	0.0501	0.02	15.45	15.52	1.78	2.89
GI #62	GI#61	13.02	0.40	0.71	0.013	10	0.70	0.70	8.49	8.49	2.38	4.22	0.003	17	**18**	131	17.50	0.2106	0.04	15.20	15.45	1.75	3.26
GI#61	GI#60	12.82	0.23	0.94	0.013	10	0.70	0.70	8.49	8.49	1.37	5.59	0.003	18	**18**	68	17.60	0.1918	0.08	14.93	15.20	2.10	3.26
GI#60.5	GI#60	13.02	0.82	0.82	0.013	10	0.70	0.70	8.49	8.49	4.87	4.87	0.003	17	**18**	61	17.20	0.1306	0.06	14.93	15.12	1.78	3.26
GI#60	GI#59	11.97	0.21	1.97	0.013	10	0.70	0.70	8.49	8.49	1.25	11.71	0.007	21	**24**	116	17.50	0.3095	0.11	14.51	14.93	2.27	6.04
GI#68	GI#59	12.51	1.49	1.49	0.013	10	0.70	0.70	8.49	8.49	8.86	8.86	0.003	22	**18**	195	17.10	1.3819	0.20	14.51	16.09	0.71	3.26
GI#59	GI#58	8.22	0.39	3.85	0.013	10	0.70	0.70	8.49	8.49	2.32	22.88	0.026	21	**30**	122	17.40	0.3780	0.17	13.96	14.51	2.59	13.51
GI#65	GI#66	13.82	0.52	0.52	0.013	10	0.70	0.70	8.49	8.49	3.09	3.09	0.003	15	**15**	59	17.50	0.1345	0.05	14.91	15.09	2.11	2.89
GI#66	GI#67	13.32	0.28	0.80	0.013	10	0.70	0.70	8.49	8.49	1.66	4.75	0.004	16	**18**	133	18.00	0.2709	0.06	14.58	14.91	2.79	3.77
GI#64	GI#67	13.42	0.43	0.43	0.013	10	0.70	0.70	8.49	8.49	2.56	2.56	0.003	14	**15**	59	16.90	0.0923	0.03	14.58	14.70	1.90	2.89
GI#67	GI#58	13.02	0.22	1.45	0.013	10	0.70	0.70	8.49	8.49	1.31	8.62	0.005	20	**18**	66	17.60	0.4427	0.18	13.96	14.58	2.72	4.21
GI#58	GI#58A	7.11	0.50	5.80	0.013	10	0.70	0.70	8.49	8.49	2.97	34.47	0.003	36	**36**	170	17.40	0.4521	0.18	13.33	13.96	3.14	5.18
GI#58A	POND B	6.69	0.36	6.16	0.013	10	0.70	0.70	8.49	8.49	2.14	36.61	0.003	36	**36**	107	17.30	0.3210	0.21	12.80	13.33	3.67	5.18
GI#5	GI#6	16.21	0.58	0.58	0.013	10	0.70	0.70	8.49	8.49	3.45	3.45	0.003	15	**15**	131	21.30	0.3723	0.06	18.34	18.77	2.23	2.89
GI#7	GI#6	16.11	0.46	0.46	0.013	10	0.70	0.70	8.49	8.49	2.73	2.73	0.003	14	**15**	62	21.21	0.1103	0.04	18.34	18.49	2.42	2.89
GI#6	GI#75	15.43	0.25	1.29	0.013	10	0.70	0.70	8.49	8.49	1.49	7.67	0.003	21	**18**	94	21.21	0.4992	0.15	17.69	18.34	2.57	3.26
GI#76	GI#75	15.39	0.91	0.91	0.013	10	0.50	0.50	8.49	8.49	3.86	3.86	0.003	16	**18**	203	20.42	0.2731	0.04	17.69	18.00	2.12	3.26
GI#75	GI#74	14.17	0.60	2.80	0.013	10	0.50	0.50	8.49	8.49	2.55	11.89	0.003	24	**30**	240	19.14	0.2008	0.05	17.44	17.69	1.15	4.59
GI#24	GI#21	15.31	0.45	0.45	0.013	10	0.70	0.70	8.49	8.49	2.67	2.67	0.003	14	**15**	62	20.60	0.1055	0.04	18.74	18.89	1.41	2.89
GI#21	GI#22	14.41	0.21	0.66	0.013	10	0.70	0.70	8.49	8.49	1.25	3.92	0.003	16	**15**	132	20.60	0.4843	0.08	18.18	18.74	1.56	2.89
GI#22	GI#23	14.22	0.23	0.89	0.013	10	0.70	0.70	8.49	8.49	1.37	5.29	0.003	18	**15**	62	20.60	0.4142	0.14	17.63	18.18	2.12	2.89
GI#23	GI#74	13.44	0.54	1.43	0.013	10	0.70	0.70	8.49	8.49	3.21	8.50	0.003	21	**24**	94	20.60	0.1322	0.06	17.44	17.63	2.67	3.95
GI#74	GI#73	12.72	0.23	4.46	0.013	10	0.50	0.50	8.49	8.49	0.98	18.93	0.003	29	**36**	241	19.90	0.1933	0.06	17.19	17.44	2.16	5.18
GI#73	GI#72A	11.86	0.47	4.93	0.013	10	0.50	0.50	8.49	8.49	2.00	20.93	0.003	30	**36**	121	19.00	0.1186	0.07	17.00	17.19	1.51	5.18
GI#37	GI#38	13.92	0.52	0.52	0.013	10	0.70	0.70	8.49	8.49	3.09	3.09	0.003	15	**15**	93	19.15	0.2120	0.05	17.81	18.07	0.78	2.89
GI#41	GI#38	14.61	0.45	0.45	0.013	10	0.70	0.70	8.49	8.49	2.67	2.67	0.003	14	**15**	62	18.80	0.1055	0.04	17.81	17.96	0.54	2.89
GI#38	GI#39	12.52	0.39	1.36	0.013	10	0.70	0.70	8.49	8.49	2.32	8.08	0.003	21	**24**	132	19.00	0.1677	0.05	17.59	17.81	0.89	3.95
GI#40	GI#39	14.61	0.66	0.66	0.013	10	0.70	0.70	8.49	8.49	3.92	3.92	0.003	16	**15**	62	19.00	0.2275	0.08	17.59	17.90	0.80	2.89
GI#39	GI#72A	11.86	0.49	2.51	0.013	10	0.70	0.70	8.49	8.49	2.91	14.92	0.002	28	**24**	94	19.00	0.4072	0.18	17.00	17.59	1.11	3.23
GI#72A	GI#72	11.59	0.34	7.78	0.013	10	0.50	0.50	8.49	8.49	1.44	33.03	0.002	38	**36**	91	18.00	0.2222	0.17	16.61	17.00	0.70	4.23

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review

				A	n	Tc	C	Cc	Ii	Ic	Qi	Qc	S		Dm	L		hf	hm				
									INLET	COMPOSITE										DOWNSTREAM	INLET	FREEBOARD	Manning's
FROM	TO	DS I.E.	INLET	TOTAL	MANNING'S	TIME OF	RUNOFF	COMPOSITE	RAINFALL	RAINFALL	INLET	CUMULATIVE		MANNING'S	MANNING'S	SEGMENT	FRAME	FRICTION	MINOR	MAX. STAGE	PONDING	(FT)	n
INLET	INLET		AREA	AREA	COEFF.	CONC.	COEFF.	RUNOFF	INTENSITY	INTENSITY	DISCHARGE	DISCHARGE	SLOPE	Dtheo	SIZE	LENGTH	ELEV	LOSSES	LOSSES	ELEV	ELEV	(FRAME-INLET	Velocity
			(ACRES)	(ACRES)		(MIN)		COEFF.	(IN./HR.)	(IN./HR.)	(CFS)	(CFS)	(FT/FT)	(IN)	(IN)	(FT)	(FT)	(FT)	(FT)	(FT)	(FT)	ONDING-0.5 FT)	
																						(FT)	
GI#13	GI#12	11.51	0.55	0.55	0.013	10	0.70	0.70	8.49	8.49	3.27	3.27	0.003	15	**15**	68	18.17	0.1736	0.06	15.19	15.42	2.25	2.89
GI#72	GI#71	10.92	0.59	8.37	0.013	10	0.50	0.50	8.49	8.49	2.50	35.53	0.003	36	**36**	222	18.00	0.6272	0.20	15.78	16.61	1.09	5.18
GI#71	GI#70	10.22	0.63	9.00	0.013	10	0.50	0.50	8.49	8.49	2.67	38.21	0.003	37	**36**	233	17.10	0.7614	0.23	14.79	15.78	1.02	5.18
GI#70	GI#69	9.49	0.28	9.28	0.013	10	0.50	0.50	8.49	8.49	1.19	39.39	0.003	37	**36**	242	17.10	0.8404	0.24	13.71	14.79	2.01	5.18
GI#69	POND B	7.13	0.53	9.81	0.013	10	0.70	0.70	8.49	8.49	3.15	58.30	0.047	26	**36**	50	18.00	0.3804	0.53	12.80	13.71	3.99	20.51

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review

POST-DEVELOPMENT

Appendix C

WATER QUALITY TIME SERIES DATA

PROJECT

COTTAGES AT RICE HOPE DRAINAGE STUDY CHATHAM COUNTY, GEORGIA

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.2507
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.3348
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.4186
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.5869
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.6684
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.7545
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.8399
3rd-Lake_WQ	1.2" WQ	PIPE XING	0.9206
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.0039
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.0872
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.1706
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.2539
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.3372
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.4206
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.5039
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.5872
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.6706
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.7539
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.8372
3rd-Lake_WQ	1.2" WQ	PIPE XING	1.9206
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.0039
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.0872
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.1706
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.2539
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.3372
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.4206
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.5039
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.5872
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.6706
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.7539
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.8372
3rd-Lake_WQ	1.2" WQ	PIPE XING	2.9206
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.0039
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.0872
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.1706
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.2539
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.3372
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.4206

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.000
0.000
0.000

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.5039
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.5872
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.6706
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.7539
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.8372
3rd-Lake_WQ	1.2" WQ	PIPE XING	3.9206
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.0022
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.0877
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.1698
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.2511
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.3347
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.4174
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.5010
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.5848
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.6672
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.8346
3rd-Lake_WQ	1.2" WQ	PIPE XING	4.9177
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.0011
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.0840
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.3338
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.4178
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.5009
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.5841
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.6675
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.8365
3rd-Lake_WQ	1.2" WQ	PIPE XING	5.9185
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.0039
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.0841
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.3342
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.4184
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.5024
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.6672
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.7518
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.8348
3rd-Lake_WQ	1.2" WQ	PIPE XING	6.9172

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.000
0.000
0.000

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.0837
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.1680
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.2505
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.5009
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.5841
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.7505
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.8339
3rd-Lake_WQ	1.2" WQ	PIPE XING	7.9172
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.0008
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.0841
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.1676
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.5006
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.7507
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	8.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.0006
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.0837
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.1674
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.5006
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.7505
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.8338
3rd-Lake_WQ	1.2" WQ	PIPE XING	9.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.3338
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.4169

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.000
0.000
0.000

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	10.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	11.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	12.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	13.9167

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.000
0.007
0.030
0.064
0.109
0.161
0.214
0.267
0.318
0.368
0.415
0.460
0.503
0.543
0.580
0.615
0.648
0.678
0.705
0.730
0.753
0.774

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	14.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	15.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	16.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.4168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.793
0.810
0.825
0.838
0.850
0.861
0.870
0.879
0.887
0.894
0.899
0.904
0.907
0.910
0.913
0.915
0.916
0.918
0.918
0.918
0.917
0.915
0.914
0.913
0.911
0.909
0.907
0.904
0.902
0.899
0.895
0.892
0.888
0.885
0.881
0.877
0.873
0.868
0.861
0.854
0.846
0.839

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	17.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	18.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	19.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	20.9168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.831
0.822
0.814
0.806
0.798
0.790
0.782
0.775
0.767
0.759
0.752
0.744
0.736
0.728
0.719
0.711
0.703
0.696
0.688
0.681
0.675
0.668
0.661
0.654
0.648
0.641
0.635
0.629
0.623
0.617
0.611
0.605
0.599
0.594
0.588
0.582
0.576
0.571
0.565
0.560
0.555
0.549

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	21.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.8333
3rd-Lake_WQ	1.2" WQ	PIPE XING	22.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	23.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.4167

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.545
0.540
0.535
0.531
0.527
0.522
0.518
0.514
0.511
0.507
0.503
0.500
0.496
0.493
0.489
0.486
0.482
0.478
0.474
0.470
0.467
0.463
0.459
0.456
0.452
0.449
0.446
0.443
0.440
0.436
0.433
0.430
0.428
0.425
0.422
0.419
0.416
0.413
0.409
0.405
0.401
0.395

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	24.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.3346
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.4175
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.5008
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.6677
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.7506
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.8342
3rd-Lake_WQ	1.2" WQ	PIPE XING	25.9175
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.0007
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.5008
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.6674
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	26.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.0006
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.0839
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.5837
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.6672
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	27.9168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.389
0.383
0.376
0.369
0.362
0.355
0.348
0.341
0.334
0.328
0.321
0.314
0.308
0.302
0.295
0.289
0.283
0.278
0.272
0.266
0.261
0.256
0.251
0.246
0.241
0.236
0.231
0.227
0.223
0.218
0.214
0.210
0.206
0.202
0.199
0.195
0.191
0.188
0.184
0.181
0.178
0.175

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.5838
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.7502
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	28.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.0837
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.8337
3rd-Lake_WQ	1.2" WQ	PIPE XING	29.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.1672
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.5837
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	30.9172
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.4170

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.172
0.169
0.166
0.163
0.160
0.157
0.155
0.152
0.149
0.147
0.144
0.142
0.140
0.137
0.135
0.133
0.131
0.129
0.127
0.125
0.123
0.121
0.119
0.117
0.115
0.113
0.112
0.110
0.108
0.107
0.105
0.103
0.102
0.100
0.099
0.097
0.096
0.095
0.093
0.092
0.091
0.089

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.6672
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	31.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	32.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.0005
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.7502
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	33.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.0837
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.7502
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	34.9169

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.088
0.087
0.086
0.084
0.083
0.082
0.081
0.080
0.079
0.078
0.077
0.076
0.075
0.074
0.073
0.072
0.071
0.070
0.069
0.068
0.067
0.066
0.065
0.065
0.064
0.063
0.062
0.061
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0.054
0.053
0.052
0.052

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.7504
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	35.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.5837
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.8338
3rd-Lake_WQ	1.2" WQ	PIPE XING	36.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	37.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.4169

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.051
0.050
0.050
0.049
0.049
0.048
0.048
0.047
0.047
0.046
0.045
0.045
0.044
0.044
0.043
0.043
0.042
0.042
0.042
0.041
0.041
0.040
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.7505
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	38.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.7504
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	39.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.4170
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.8333
3rd-Lake_WQ	1.2" WQ	PIPE XING	40.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.7505
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	41.9169

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.032
0.032
0.032
0.031
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0.031
0.030
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.4170
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	42.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.4170
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.8333
3rd-Lake_WQ	1.2" WQ	PIPE XING	43.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.4170
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	44.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.4168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.8338
3rd-Lake_WQ	1.2" WQ	PIPE XING	45.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	46.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	47.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.7504
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.8337
3rd-Lake_WQ	1.2" WQ	PIPE XING	48.9167

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.3338
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.5839
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.8339
3rd-Lake_WQ	1.2" WQ	PIPE XING	49.9171
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.0836
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.1671
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	50.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	51.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.4168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.8333
3rd-Lake_WQ	1.2" WQ	PIPE XING	52.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.7502
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	53.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	54.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	55.9168

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.0833
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	56.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	57.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	58.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.4167

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	59.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.1669
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.2503
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	60.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.0001
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.3333
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	61.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.7502
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	62.9169

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
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Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.0003
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	63.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.1670
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.5003
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	64.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.4171
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.5004
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	65.9168
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.0838
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.2501
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.4170

Attachment: The Cottages at RH 7-0906-04-091 S-Site Plan 2022 - Hydro 12.19.22 (2712 : Site Plan Review Application (Specific) 7-0906-04-091

Total Outflow Rate [cfs]
0.003
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Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.5836
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	66.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.0835
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.2504
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.5833
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.6669
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.7503
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.8335
3rd-Lake_WQ	1.2" WQ	PIPE XING	67.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.3335
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.5000
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.6668
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	68.9167
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.0002
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.3336
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.4168
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.6667
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	69.9167

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Total Outflow Rate [cfs]
0.002
0.002
0.002

Scenario	Sim	Node Name	Relative Time [hrs]
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.0000
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.1668
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.2500
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.3334
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.4169
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.5001
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.5835
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.6671
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.7501
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.8336
3rd-Lake_WQ	1.2" WQ	PIPE XING	70.9169
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.0004
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.0834
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.1667
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.2502
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.3337
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.4167
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.5002
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.5834
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.6670
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.7500
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.8334
3rd-Lake_WQ	1.2" WQ	PIPE XING	71.9170
3rd-Lake_WQ	1.2" WQ	PIPE XING	72.0001

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Total Outflow Rate [cfs]
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