ESCAMBIA COUNTY
FLORIDA

INVITATION TO BIDDERS

CONGESTION MANAGEMENT PLAN PHASE II SHERIFF'S PARKING LOT
SPECIFICATION NUMBER PD 17-18.074

BIDS WILL BE RECEIVED UNTIL 1:00 PM CDT, AUGUST 16, 2018
Office of Purchasing, Room 11.101
213 Palafox Place, Pensacola, FL 32502
Matt Langley Bell, III Building
Post Office Box 1591
Pensacola, FL 32591-1591

A non-mandatory Pre-Solicitation Conference will be held in the Office of Purchasing Conference Room, 11.407, at **1:00 PM CDT, July 31, 2018**

Board of County Commissioners
Jeff Bergosh, Chairman
Lumon J. May, Vice Chairman
Steven Barry
Grover C. Robinson, IV
Douglas B. Underhill

From:
Paul R. Nobles
Purchasing Manager

Assistance:
Jeffrey Lovingood
Purchasing Specialist
Office of Purchasing
2nd Floor, Matt Langley Bell, III Building
213 Palafox Place
Pensacola, FL 32502
Telephone: 850-595-4953
E-Mail: JDLovingood@myescambia.com

SPECIAL ACCOMMODATIONS:

Any person requiring special accommodations to attend or participate, pursuant to the Americans with Disabilities Act, should call the Office of Purchasing (850-595-4980) at least five (5) working days prior to the solicitation opening.

NOTICE

It is the specific legislative intent of the Board of County Commissioners that NO CONTRACT under this solicitation shall be formed between Escambia County and the awardee vendor until such time as the contract is executed by the last party to the transaction.

NOTICE
In accordance with Sec. 46-110(e) of the Escambia Code of Ordinances, all bid solicitation documents shall include the following notice to vendors of the local vendor preference policy:

Sec. 46-110.-Local Preference in Bidding

a) Legislative Intent:

The Escambia County Board of County Commissioners finds that local businesses are often at a disadvantage when competing with other non-local businesses in that the cost of doing business in Escambia County is higher than other areas of the state and giving local businesses a preference in the procurement of goods and services serves a compelling public purpose for the benefit of the taxpayer and residents of Escambia County as such preference encourages local industry, employment opportunities, and increases the County's overall tax base.

b) "Local Business" Defined:

For the purposes of this section, "Local Business" shall mean a business which meets all of the following criteria:

1. Has had a fixed office or distribution point located in and having a street address within Escambia County of Santa Rosa County for at least one (1) year immediately prior to the issuance of the request for competitive bids by the County. The fixed office or distribution point must be staffed by at least one (1) employee. Post Office boxes are not verifiable and shall not be used for the purpose of establishing a physical address, and

2. Holds any business license required by Escambia County or Santa Rosa County, and

3. Is the principal Offeror who is a single Offeror; a business which is the prime Contractor and not a Sub-Contractor, or a partner, or joint venture submitting an offer in conjunction with other businesses.

c) Certification:

Any vendor claiming to be a local business as defined above shall so certify in writing to the Escambia County Office of Purchasing. The certification shall provide all necessary information to meet the requirements provided herein. The purchasing agent shall not be required to verify the accuracy of any such certification, and shall have the sole discretion to determine if a vendor meets the definition of a "Local Business."

d) Preference in Purchase of Commodities and Services by Means of Competitive Bid:

Except where federal or state law, or any other funding source, mandates to the contrary, Escambia County may give preference to local businesses in the following manner:

Competitive Bid (Local Price Match Option): Each formal competitive bid solicitation (i.e. sealed bids) shall clearly identify how the price order of the bids received will be evaluated and determined.

When a qualified and responsive, non-local business submits the lowest price bid amount between $50,000.00 and $249,999.99, and the bid submitted by one or more qualified and responsive local businesses is within **five percent (5%)** of the price submitted by the non-

local business, then the local business with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualified and responsive non-local bidder.

When a qualified and responsive, non-local business submits the lowest price bid amount between $50,000.00 and $249,999.99, and the bid submitted by one or more qualified and responsive local businesses with a fixed office or distribution point located in a designated **Community Redevelopment Area (CRA)** is within **seven percent (7%)** of the price submitted by the non-local business, then the local business located in a designated CRA with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualifies and responsive non-local bidder.

When a qualified and responsive, non-local business submits the lowest price bid amount between $250,000.00 and $999,999.99, and the bid submitted by one or more qualified and responsive local businesses is within **three percent (3%)** of the price submitted by the non-local business, then the local business with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualified and responsive non-local bidder.

When a qualified and responsive, non-local business submits the lowest price bid amount between $250,000.00 and $999,999.99, and the bid submitted by one or more qualified and responsive local businesses with a fixed office or distribution point located in a designated **CRA** is within **five percent (5%)** of the price submitted by the non-local business, then the local business with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualified and responsive non-local bidder.

When a qualified and responsive, non-local business submits the lowest price bid amount in excess of $1,000,000.00, and the bid submitted by one or more qualified and responsive local businesses is within **two percent (2%)** of the price submitted by the non-local business, then the local business with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualified and responsive non-local bidder.

When a qualified and responsive, non-local business submits the lowest price bid amount in excess of $1,000,000.00, and the bid submitted by one or more qualified and responsive local businesses with a fixed office or distribution point located in a designated **CRA** is within **four percent (4%)** of the price submitted by the non-local business, then the local business with the apparent lowest bid offer (i.e., the lowest local bidder) shall have the opportunity to submit an offer to match the price(s) offered by the overall lowest, qualified and responsive non-local bidder.

In such instances, staff shall first verify whether the lowest non-local bidder and the lowest local bidder are in fact qualified and responsive bidders. Next, the purchasing department shall invite the lowest local bidder in writing to submit a matching offer which shall be submitted in writing to the Escambia County Office of Purchasing within five (5) business days thereafter.

If the lowest local bidder does not respond or otherwise submits a written offer that does not fully match the lowest bid from the lowest non-local bidder tendered previously then award shall be made to the lowest overall qualified and responsive non-local bidder.

In the event a local bidder is awarded a contract pursuant to this section, any requests for change orders increasing the cost of the project must be approved by the Escambia County Board of County Commissioners.

e) Notice:

All bid solicitation documents shall include notice to vendors of the local preference policy.

f) Waiver of the Application of Local Preference:

The application of local preference to a particular purchase or contract for which the Board of County Commissioners is the awarding authority may be waived upon approval of the Board of County Commissioners.

g) Limitations:

1. The provisions of this section shall apply only to procurements which are above the formal bid threshold as set forth in the Escambia County Purchasing Code.

2. The provisions of this section shall not apply where prohibited by federal or Florida law, or where prohibited under the conditions of any grant.

3. The provisions of this section shall not apply to any purchase exempted from the provisions of the Escambia County Purchasing Code.

4. The provisions of this section shall not apply to contracts made under the Consultants Competitive Negotiation Act (CCNA), F.S. § 287.055.

h) Penalties:

1. Misrepresentation:

A vendor who misrepresents the local preference status of its firm in a bid or proposal submitted to the County will lose the privilege to claim local preference status for a period of up to one (1) year from the date of the award of the contract or upon completion of the contract, whichever is greater.

2. Failure to Maintain Local Business Preference Qualifications:

Any vendor that does not maintain its local preference status resulted in the awarded contract shall be in breach of contract and will be subject to termination of the contract, suspension of payments under the contract, and loss of the local preference status on the contract awarded.

3. Lack of Good Faith:

The Contractor or firm may show that it attempted through reasonable and objective means and in good faith to comply with the terms of the contract relating to local businesses but was unable to comply. If the County determines that the Contractor or firm did not act in good faith, all amounts paid to the Contractor or firm under the County contract intended for expenditure with the local business shall be forfeited and recoverable by the County. In addition, the contract may be rescinded and the County may return all or a portion of the goods received and recover all amounts

paid under the contract for the goods which were returned.

Effective July 1, 2015, the County **may not** use a local preference for a "competitive solicitation for **construction services** in which **fifty percent (50%) or more** of the cost will be paid from state appropriated funds which have been appropriated at the time of the competitive solicitation." For any such solicitation, the County must disclose in the bid package that "any applicable local ordinance or regulation does not include any local preference…" See §255.0991, Florida Statutes.

ESCAMBIA COUNTY, FLORIDA
INVITATION TO BID
BIDDER'S CHECKLIST
CONGESTION MANAGEMENT PLAN PHASE II SHERIFF'S PARKING LOT
SPECIFICATION PD 17-18.074

HOW TO SUBMIT YOUR BID:

Please review this document carefully. Offers that are accepted by the County are binding contracts. **Incomplete bids are not acceptable.** All documents and submittals shall be received by the Office of Purchasing on or before the date and hour specified for receipt. Late bids will be returned unopened.

* *Documents submitted with Bids are to be on the forms provided in the Invitation to Bid and photocopies of other required documents.*

THE FOLLOWING DOCUMENTS SHALL BE RETURNED WITH THE BID:

- Solicitation, Offer, and Bid Form. The Bid Form must contain an original signature in indelible ink. Bids with photocopies or scanned signatures will not be accepted.
- Bid Surety (bond, check, etc.)

THE FOLLOWING DOCUMENTS SHOULD BE RETURNED WITH THE BID:

- Sworn Statement Pursuant to Section 287.133(3)(A), Florida Statutes on Entity Crimes.
- Drug-Free Workplace Form.
- Information Sheet for Transactions and Conveyances Corporate Identification.
- Certificate of Authority to do Business from the State of Florida.
- Occupational License.
- Florida Department of Business and Professional Regulation – License(s), Certification(s), and/or Registration(s).

BEFORE YOU SUBMIT YOUR BID, HAVE YOU:

Placed your bid with all required submittal items in a sealed envelope, clearly marked for specification number, project name, name of bidder, and due date and time of bid receipt?

THE FOLLOWING DOCUMENTS ARE REQUIRED UPON NOTICE OF AWARD:

- Certificate of Insurance
- Payment and Performance Bonds

HOW TO SUBMIT A NO BID:

If you do not wish to bid at this time, please remove the Solicitation, Offer, and Bid Form from the Bid Package and enter No Bid in the "Reason for No Offer" block, your company's name, address, signature, and return the Solicitation, Offer, and Bid Form in a sealed envelope. This will ensure your company's active status in our Bidder's list.

This form is for your convenience to assist in filling out your bid.
Do not return this form with your bid.

CONGESTION MANAGEMENT PLAN PHASE II SHERIFF'S PARKING LOT
PD 17-18.074

TABLE OF CONTENTS

Forms marked with an (* Asterisk) must be returned with the Bid.
Forms marked with a (** Double Asterisk) should be returned with the Bid.

* Solicitation, Offer, and Bid Form are located on the attached Excel spreadsheet. Please see following page for more details.

IMPORTANT NOTICE

THE BID FORM FOR THIS SOLICITATION IS NOW LOCATED ON THE ATTACHED EXCEL SPREADSHEET:
"*PD 17-18.074 CONGESTION MANAGEMENT PLAN PHASE II SHERIFF'S PARKING LOT BID SPREADSHEET*".

BIDDERS ARE REQUIRED TO COMPLETE THE BID FORM ON THE SPREADSHEET AND PRINT IT FOR SIGNATURE.

THE PRINTED BID FORM MUST BE SUBMITTED WITH AN ORIGINAL SIGNATURE OR THE BID WILL NOT BE ACCEPTED.

THE EXCEL SPREADSHEET MUST BE COMPLETED AND SUBMITTED VIA ELECTRONIC FORMAT (CD OR FLASH DRIVE)

If your company is located within a Community Redevelopment Area of Escambia County, Florida, please Indicate by marking an X in the blank (***Sec. 46-110.-Local Preference in Bidding)***.
Yes [ ] No [ ]

CONTRACTOR REQUIREMENTS

Acknowledgment is hereby made of receipt of the following addenda issued during the bidding period:

Addendum No. _____ Date _____ Addendum No._____ Date_____

Addendum No. _____ Date _____ Addendum No._____ Date_____

(PLEASE TYPE INFORMATION BELOW)

SEAL IF BID IS BY CORPORTATION

State of Florida Department of State Certificate of Authority Document Number
_____

Occupational License # _____

Florida DBPR Contractor's License, Certification, and/or Registration #
_____

Type of Contractor's License, Certification, and/or Registration _____

Expiration Date: _____

County Permits/Fees Required for this Project:
_____

Person to Contact Concerning This Bid:

Name: _____

Phone: _____

E-Mail: _____

Person to Contact for Emergency Service:

Name: _____

Phone: _____

E-Mail: _____

Attached to bid you shall find a bid bond, cashier's check, or certified check (circle one that applies) in the amount of five percent (5%) of bid.

The work shall be substantially completed within **one hundred twenty (120) calendar days** from the Commencement Date. The Bidder agrees to fully complete all work included above within **one hundred fifty (150) consecutive calendar days** from the date of Notice to Proceed. **Liquidated damages of $1,000.00 each day will be assessed for each day that completion of the project is delayed.** All work to be accomplished under this bid shall be the responsibility of Bidder and failure of Sub-Contractors to perform shall not relieve Bidder of any liquidated damages. A Bid Bond in the amount of **five percent (5%) of base bid** is to be furnished by each Bidder. Bidder further acknowledges that all of the work outlined above may not be required at the discretion of Escambia County. The total will be subject to total funds available during the course of the work. However, it is the intent of Escambia County at this time to substantially complete the listed work.

Names and addresses of proposed Subcontractors to be utilized for work on this project:

1.

2.

3.

4.

SWORN STATEMENT PURSUANT TO SECTION 287.133(3)(A),
FLORIDA STATUTES, ON ENTITY CRIMES

1. This sworn statement is submitted to _____
(Print Name of Public Entity)

By _____
(Print Individual's Name and Title)

For _____
(Print Name of Entity Submitting Sworn Statement)

Whose business address is:

_____

_____

And (if applicable) its Federal Employer Identification Number (FEIN) is:

_____

If the entity has no FEIN, include the Social Security Number of the Individual signing this sworn statement: _____

2. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), **Florida Statutes**, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with an agency or political subdivision of any other state or of the United States, including, but not limited to, any bid or contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

3. I understand that "convicted" or "conviction" as defined in paragraph 287.133(1)(b), **Florida Statutes**, means a finding of guilt or a conviction of a public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

4. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), **Florida Statutes**, means:

    a. A predecessor or successor of a person convicted of a public entity crime; or

    b. An entity under the control any natural person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one person controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding thirty-six (36) months shall be considered an affiliate.

c. I understand that a "person" as defined in Paragraph 287.133(1)(e), **Florida Statutes**, means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into binding contract and which bids or applies to bid on contracts for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

d. Based on information and belief, the statement which I have marked below is true in relation to the entity submitting this sworn statement. **Indicate which statement applies.**

☐ Neither the entity submitting this sworn statement, nor any of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, nor any affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of its officers, directors, executives, partners, shareholders, employees, members, or agents who are active in the management of the entity, or an affiliate of the entity has been charged with a convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of Administrative Hearings and the Final Order entered by the Hearing Officer determined that is not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. **(Attach a copy of the final order.)**

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY INDENTIFIED IN PARAGRAPH ONE (1) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
Signature

Sworn to and subscribed before me this _____ day of _____,
20_____. Personally known _____
OR produced identification _____ Type of Identification: _____
Notary Public: State of _____

My Commission Expires: _____

_____
(Printed, Typed, or Stamped Commissioned Name of Notary Public)

Drug-Free Workplace Form

The undersigned vendor, in accordance with Florida Statue 287.087 hereby certifies that _____ does:

(Name of Business)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business' policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, employee assistance programs, and the penalties that may be imposed upon employees for drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in Paragraph One (1).

4. In the statement specified in Paragraph One (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or please of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of Paragraphs 1 through 5.

Check One:

_☐_ As the person authorized to sign this statement, I certify that this firm complies fully with the above requirements.

_☐_ As the person authorized to sign this statement, this firm **does not** comply fully with the above requirements.

_____

Offeror's Signature

_____

Date

Information Sheet for Transactions and Conveyances
Corporate Identification
(Page 1 of 2)

The following information will be provided to the Escambia County Legal Department for incorporation in legal documents. It is, therefore, vital that all information is accurate and complete. Please be certain that all spelling, capitalization, etc. is exactly as registered with the state or Federal Government.

(Please Circle One)

Is this a Florida Corporation: Yes or No

If not a Florida Corporation:
In what state was it created: _____
Name as spelled in that state: _____

What kind of corporation is it: "For Profit" or "Not for Profit"

Is it in good standing: Yes or No

Authorized to transact business in Florida: Yes or No

State of Florida Department of State Certificate of Authority Document Number:
_____

Does it use a registered fictitious name: Yes or No

Names of Officers:
President: _____ Secretary: _____
Vice President: _____ Treasurer: _____
Director: _____ Director: _____
Other: _____ Other: _____

Name of Corporation (As Used in Florida)

_____
(Spelled Exactly as it is Registered with the state or Federal Government)

Corporate Address:
Post Office Box: _____
City, State, Zip: _____

Street Address: _____
City, State, Zip: _____

(Please provide both the Post Office Box and street address for mail and/or express delivery; also for recorded instruments involving land.)

Please complete this form on the following page.

Information Sheet for Transactions and Conveyances
Corporate Identification
(Page 2 of 2)

Federal Identification Number:

_____

(For all instruments to be recorded, taxpayer's identification is needed.)

Contact Person for Company:

_____

E-Mail: _____ **Telephone:** _____
Facsimile: _____

Name of Individual Who Will Sign the Instrument on Behalf of the Company:

_____

Upon Certification of Award, Contract shall be signed by the President or Vice President. Any other officer shall have permission to sign via a resolution approved by the Board of Directors on behalf of the company. Awarded Contractor shall submit a copy of the resolution together with the executed Contract to the Office of Purchasing.

(Spelled exactly as it would appear on the instrument.)

Title of the Individual Named Above Who Will Sign on Behalf of the Company:

_____

END

_____

Verified by: _____ Date: _____

ESCAMBIA COUNTY, FLORIDA GENERAL TERMS and CONDITIONS

The following General Terms and Conditions are incorporated by reference and have the same legal effect as if printed in its entirety.

A full textual copy of these conditions may be obtained by visiting the Office of Purchasing web site (see Bid Information below), by telephoning the Office of Purchasing at 850-595-4980, or by fax at 850-595-4806.

NOTE: Any and all Special Terms and Conditions and specifications referenced within the solicitation which varies from these General Terms and Conditions shall have precedence. Submission of the Solicitation, Offer, and Bid Form(s) in accordance with these General Terms and Special Terms and Conditions constitutes an offer from the Offeror. The conditions incorporated herein become a part of the written Agreement between the parties.

BID INFORMATION: See Escambia County Office of Purchasing web site at https://myescambia.com/our-services/purchasing then click "Solicitations".

1. Sealed Solicitations
2. Execution of Solicitation
3. No Offer
4. Solicitation Opening
5. Prices, Terms, and Payment
    - 5.01 Taxes
    - 5.02 Discounts
    - 5.03 Mistakes
    - 5.04 Condition and Packaging
    - 5.05 Safety Standards
    - 5.06 Invoicing and Payment
    - 5.07 Annual Appropriations
6. Additional Terms and Conditions
7. Manufacturers' Name and Approved Equivalents
8. Interpretations/Disputes
9. Conflict of Interest
    - 9.01 County Procedure on Acceptance of Gifts
    - 9.02 Contractors Required to Disclose Any Gift Giving
    - 9.03 Gratuities
10. Awards
11. Non-Conformation to Contract Conditions
12. Inspection, Acceptance, and Title
13. Governmental Restrictions
14. Legal Requirements
15. Patents and Royalties
16. Price Adjustments
17. Cancellation
18. Abnormal Quantities
19. Advertising
20. Assignment
21. Liability

The following General Terms and Conditions are incorporated by reference (Continued)

22. Facilities
23. Distribution of Certification of Contract
24. The Successful Bidder(s) Must Provide
25. Addition/Deletion of Items
26. Ordering Instructions
27. Public Records
28. Delivery
29. Samples
30. Additional Quantities
31. Service and Warranty
32. Default
33. Equal Employment Opportunity
34. Florida Preference
35. Contractor Personnel
36. Award
37. Uniform Commercial Code
38. Contractual Agreement
39. Payment Terms/Discounts
40. Improper Invoice; Resolution of Disputes
41. Public Entity Crimes
42. Suspended and Debarred Vendors
43. Drug-Free Workplace Form
44. Information Sheet for Transactions and Conveyances
45. Copies
46. License and Certifications – For access to Certification/Registration Form for doing Business in Florida, go to the Department of State, Division of Corporations, URL: http://dos.myflorida.com/sunbiz/search/
47. Execution of Contract
48. Purchase Order
49. No Contingent Fees
50. Solicitation Expenses
51. On-Line Auction Services

SPECIAL TERMS AND CONDITIONS

The Board of County Commissioners, Escambia County, Florida, invites your company to submit a sealed offer on the item(s) as listed in this solicitation request.

All terms and conditions below are a part of this request, and no offer will be accepted unless all these conditions have been complied with. The County reserves the right to waive informalities in any offer; to reject any or all offers, in whole or in part, and/or to accept the offer(s) that in its judgement is from the lowest, most responsible, and responsive Offeror(s).

Instructions to Offerors

1. General Information

All offers to be considered shall be in the possession of the Office of Purchasing prior to the time of the solicitation closing. Offers may be mailed or delivered to the Office of Purchasing, 2nd Floor, Room 11.101, Matt Langley Bell, III Bldg., 213 Palafox Place, Pensacola, FL 32502, in a sealed envelope clearly marked:

Specification Number PD 17-18.074, "Congestion Management Plan Phase II Sheriff's Parking Lot", Name of Submitting Firm, Time and Date due.
Note: If you are using a courier service (FedEx, Airborne, UPS, etc.) you must mark the air-bill and envelope or box with the Specification number and project name.

Regardless of the method of delivery, each Offeror shall be responsible for his offer(s) being delivered on time as the County assumes no responsibility for same. Offers offered or received after the time set for solicitation closing will be rejected and returned unopened to the Offeror(s).

The Following Policy will apply to all methods of source selection:

A. Conduct of Participants

After the issuance of any solicitation, all bidders/proposers/protestors or individuals acting on their behalf are hereby prohibited from **lobbying** as defined herein or otherwise attempting to persuade or influence any elected County officials, their agents or employees or any member of the relevant selection committee at any time during the **blackout period** as defined herein; provided, however, nothing herein shall prohibit bidders/proposers/protestors or individuals acting on their behalf from communicating with the purchasing staff concerning a pending solicitation unless otherwise provided for in the solicitation or unless otherwise directed by the Purchasing Manager.

B. Definitions

Blackout Period means the period between the time the bids for invitations for bid or the request for proposal, or qualifications, or information, or requests for letters of interest, or the invitation to negotiate, as applicable, are received at the Escambia County Office of Purchasing and the time the Board awards the contract and any resulting bid protest is resolved or the solicitation is otherwise cancelled.

Lobbying means the attempt to influence the thinking of elected County officials, their agents or employees or any member of the relevant Selection Committee for or against a specific cause related to a pending solicitation for goods or services, in person, by mail, by facsimile, by telephone, by electronic mail, or by any other means of communication.

C. Sanctions

The Board may impose any one or more of the following sanctions on a non-employee for violations of the policy set forth herein:

1) Rejection/Disqualification of Submittal,

2) Termination of Contract; or

3) Suspension or Debarment as Provided in Sec. 46-102 of the Escambia County Code of Ordinances.

This policy is not intended to alter the procedure for Protested Solicitations and Awards as set forth in the Sec. 46-101 of the Escambia County Code of Ordinances.

2. Project Narrative

The Casino Beach parking area includes the construction of 80 parking spaces on the county owned property south and west of the Pensacola beach Sheriff's substation. The parking lot will provide a new full access driveway connection and right turn lane on Fort Pickens Road as well as a connection to the existing Casino Beach Parking Area. The project includes clearing and grubbing, grading, paving, storm water, striping, sidewalk, fencing and stamped asphalt. The project will also convert the existing storm water pond to an underground storm water facility.

3. Bid Surety

Each offer shall be accompanied by a bid bond, cashier's check or certified check in the amount of **5%** of the total offer.

Checks or bonds are to be made payable to Escambia County, Florida. The amount of the bond or check is the amount of liquidated damages agreed upon should the Offeror fail or refuse to enter into a contract with the County.

A County warrant in the amount of the bid check(s) of the successful Offeror(s) will be returned immediately after the Offeror and the County are mutually bound by contract as evidenced by signatures thereto by an authorized representative of both the Offeror and the County, and/or the Offeror accepts the purchase order by signing the Solicitation, Offer and Bid Form and returning to the County Purchasing department. Any unsuccessful Offeror(s) will have the amounts of his cashier's or certified check returned via County warrant promptly after award.

All Offerors agree that any interest earned on any bid surety while in possession of the County, or its agents, shall be retained by the County.

4. Performance and Payment Bonds

The County **shall** require the successful Offeror(s) to furnish **separate performance and payment bonds**, under pledge of adequate surety and covering up to **100% of the dollar**

value of award on the forms provided by the County. Such bonds shall be issued by sureties authorized to act as a surety by the State of Florida. Bonds of the successful Offeror(s) shall be reviewed by the Office of Purchasing to assure compliance, then recorded in the Office of the Clerk of the Circuit Court Recording Office, 1st Floor, 221 Palafox Place, Pensacola, Florida, by the successful Offeror at his expense before the contract is executed. The cost of recording is $10.00 for the first page and $8.50 for each additional page.

5. Procurement Questions

Questions shall be directed, in writing, to Jeffrey Lovingood, Purchasing Specialist, at JDLovingood@myescambia.com. Last day for questions will be August 06, 2018 at 5:00 p.m. CDT. Responses to questions shall be issued in the form of an Addendum to all known potential bidders by August 15, 2018 at 5:00 PM CDT.

6. Bid Forms

This Solicitation contains a Solicitation, Offer, and Bid Form which shall be submitted in a sealed envelope, with Original signatures signed using indelible ink and signed in the proper spaces. Responses on vendor forms will not be accepted.

The Offeror's Checklist included in this Solicitation provides instructions to the Offeror on the documentation to be submitted during the procurement process.

7. Pre-Solicitation Conference

A Non-Mandatory Pre-Solicitation Conference will be held at the Office of Purchasing, 213 Palafox Place, Pensacola, FL 32502, Conference Room 11.407, on July 31, 2018, at 2:00 PM CDT.

It is strongly encouraged that all potential bidders attend this non-mandatory conference so they can ask questions and be automatically notified of any updates prior to the Bid Opening.

8. Liquidated Damages

Should the awarded vendor fail to complete the required services or make delivery of the commodities or equipment within the time(s) specified in the contract, or within such additional time(s) as may be granted by Escambia County, the County will suffer damage, the amount of which is difficult, if not impossible to ascertain therefore, the vendor shall pay to the County, as liquidated damages, the sum of **$1,000.00** for each calendar day of delay that actual completion extends beyond the time limit specified until such reasonable time as may be required for final completion of the work. Such sum is mutually agreed upon as a reasonable and proper amount of damages the County will sustain per diem by failure of the vendor to complete the services or make delivery within the specified time. The costs for liquidated damages shall not be construed as a penalty on the vendor.

9. Codes and Regulations

The awarded vendor shall strictly comply with all federal, state and local construction and safety codes.

10. Payment

Partial payments in the full amount for the value of items received and accepted may be requested by the submission of a properly executed **original** invoice, with supporting documents if required. Payment for accepted equipment/supplies/services will be accomplished by submission of an **original** invoice, in duplicate, to:

Clerk of the Circuit Court
Attention: Accounts Payable
221 Palafox Place
Pensacola, FL 32502

11. Warranty

The awarded vendor shall fully warrant all equipment furnished hereunder against defect in materials and/or workmanship for a period of two (2) years from date of delivery/acceptance by Escambia County.

Should any defect in materials or workmanship, except ordinary wear and tear, appear during the above stated warranty period, the awarded vendor shall repair or replace same at no cost to the County, immediately upon written notice from the Purchasing Chief.

12. Measurements

The linear footage noted are only estimates. Offerors will be responsible for their own measurements and shall submit a firm price accordingly.

There will be no adjustments, for increase or decrease, of footage required for the job; therefore, the total offer shall be based on accurate measurements by Offerors during inspection. Failure to do so will be at Offeror's risk. Any request for unit price on the bid form is for information only.

Award shall be based solely on "total offer", with no adjustments made for increased/decreased quantities after award.

13. Debris

Awarded vendor shall be responsible for the prompt removal of all debris, which is a result of this contractual service.

14. Protection of Property/Security

The awarded vendor shall provide all barricades and take all necessary precautions to protect buildings and personnel.

All work shall be completed in every respect and accomplished in a professional manner and awarded vendor shall provide for removal of all debris from County property.

The awarded vendor shall at all times guard against damage or loss to property of Escambia County, or of other vendors or contractors, and shall be held responsible for replacing or repairing any such loss or damage.

The County may withhold payment or make such deductions as deemed necessary to insure reimbursement or replacement for loss or damage to property through negligence of the awarded Offeror or his agent.

The awarded vendor shall at all times guard against injury to Escambia County employees. The vendor shall properly fence and secure the construction site(s) at all times, including

evenings and weekends.

The awarded vendor must, at all times, comply with State of Florida and Occupational Safety and Health Administration (OSHA) safety regulations.

15. Permits

The County and/or its contracted consultant(s) have conducted a review of required permits and fees required to be purchased by the contractor from the County permitting agencies for this specific project and they are listed on the bid form(s) to the best of our knowledge.

16. Compliance with Governing Laws and Regulations

The Offeror or contractor will be required to fully comply with all applicable federal, state, and local regulations. The Offeror should carefully review these requirements which are detailed in this solicitation.

17. Pricing

All items sold to the County as a result of this award are subject to post sale audit adjustment. In the event an audit indicates Offeror has not honored quoted price lists and discounts, Offeror will be liable for any and all overage charges.

18. Termination

A. The contract may be canceled by the contractor, for good cause, upon ninety (90) days prior written notice.

B. The County retains the right to terminate the contract, with or without good cause, upon thirty (30) days prior written notice.

C. In the event of termination by either party as provided herein, the awarded vendor shall be paid for services performed through the date of termination.

19. Licenses, Certifications, Registrations

The Offeror shall at any time of bid submission meet the license, certification, registration and any other requirements of the State, County, City and/or any other agency of authority with jurisdiction in such matters as necessary to perform the contractual services requested in this solicitation.

Copies of such licenses, certifications, registrations and any other requirements should be provided with the bid submission; and, the Offeror shall provide follow-up evidence that as the Contractor they maintain such credentials throughout the period of agreement.

20. Term of Offer

An offer shall constitute an irrevocable offer for a period of ninety (90) days from the solicitation opening date or until the date of award, whichever is earlier, without forfeiting bid bond or check. In the event that an award is not made by the County within ninety (90) days from the solicitation opening date, the Offeror may withdraw his offer or provide a written extension of his offer.

21. Award

Award shall be made on an "all-or-none total" basis.

22. Termination (Public Records Request)

If the contractor refuses to allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the contractor in conjunction with this agreement then the County may, without prejudice to any right or remedy and after giving the contractor and his surety, if any, seven (7) days written notice, during which period contractor still fails to allow access, terminate the employment of the contractor and take possession of the site and of all materials, equipment, tools, construction equipment and machinery thereon, owned by the contractor, and may finish the project by whatever method it may deem expedient. In such case, the contractor shall not be entitled to receive any further payment until the project is finished. Reasonable terminal expenses incurred by the County may be deducted from any payments left owing the contractor (excluding monies owed the contractor for subcontract work.)

Non-Contract Insurance Requirements

23. Standard Insurance Requirements and Certificates

This offer contains an extensive insurance requirement. Offerors are encouraged to review these requirements with their insurance agents before submitting offers.

It is not necessary to have this level of insurance in effect at the time of submitting the offer.

A letter from the Offeror's insurance carrier will be required as evidence that the Offeror will be able to obtain the levels of insurance as required by the contract and indicated on the Sample Certificate of Insurance should your firm be awarded the contract.

A. County Insurance Required

The contractor shall procure and maintain the following described insurance, except for coverages specifically waived by the County. Such policies shall be from insurers with a minimum financial size of VII according to the latest edition of the AM Best Rating Guide. An A or better Best Rating is "preferred"; however, other ratings if "Secure Best Ratings" may be considered. Such policies shall provide coverages for any or all claims which may arise out of, or result from, the services, work and operations carried out pursuant to and under the requirements of the contract documents, whether such services, work and operations be by the contractor, its employees, or by subcontractor(s), or anyone employed by or under the supervision of any of them, or for whose acts any of them may be legally liable.

The contractor shall require, and shall be responsible for assuring throughout the time the agreement is in effect, that any and all of its subcontractors obtain and maintain until the completion of that subcontractor’s work, such of the insurance coverages described herein as are required by law to be provided on behalf of their employees and others.

The required insurance shall be obtained and written for not less than the limits of liability specified hereinafter, or as required by law, whichever is greater.

These insurance requirements shall not limit the liability of the contractor.

The County does not represent these types or amounts of insurance to be sufficient or adequate to protect the contractor’s interests or liabilities, but are merely minimums.

Except for worker's compensation and professional liability, the contractor's insurance policies shall be endorsed to name Escambia County as an additional insured to the extent of its interests arising from this agreement, contract or lease.

The contractor waives its right of recovery against the County, to the extent permitted by its insurance policies.

The contractor's deductibles/self-insured retentions shall be disclosed to the County and may be disapproved by the County. They shall be reduced or eliminated at the option of the County. The contractor is responsible for the amount of any deductible or self-insured retention.

Insurance required of the contractor or any other insurance of the contractor shall be considered primary, and insurance of the County, if any, shall be considered excess, as may be applicable to claims obligations which arise out of this agreement, contract or lease.

B. Workers Compensation Coverage

The contractor shall purchase and maintain worker's compensation insurance for all worker's compensation obligations imposed by state law and with employer's liability limits of at least $100,000 each accident and $100,000 each employee/$500,000 policy limit for disease, or a valid certificate of exemption issued by the state of Florida, or an affidavit in accordance with the provisions of Florida Workers Compensation law.

Contractor shall also purchase any other coverages required by law for the benefit of employees.

C. General, Automobile and Excess or Umbrella Liability Coverage

The contractor shall purchase and maintain coverage on forms no more restrictive than the latest editions of the commercial general liability and business auto policies of the insurance services office.

Minimum limits of $1,000,000.00 per occurrence for all liability must be provided, with excess or umbrella insurance making up the difference, if any, between the policy limits of underlying policies (including employer's liability required in the worker's compensation coverage section) and the total amount of coverage required.

D. General Liability Coverage - Occurrence Form Required

Coverage A shall include bodily injury and property damage liability for premises, operations, products and completed operations, independent contractors, contractual liability covering this agreement, contract or lease, broad form property damage coverages, and property damage resulting from explosion, collapse or underground (x,c,u) exposures.

Coverage B shall include personal injury.

Coverage C, medical payments, is not required.

The contractor is required to continue to purchase products and completed operations coverage, at least to satisfy this agreement, contract or lease, for a minimum of three years beyond the County's acceptance of renovation or construction projects.

E. Business Auto Liability Coverage

Business auto liability coverage is to include bodily injury and property damage arising out of ownership, maintenance or use of any auto, including owned, non-owned and hired automobiles and employee non-ownership use.

The General Liability and Business Auto Liability policies shall be endorsed to include Escambia County as an additional insured and provide for 30-day notification of cancellation.

F. Excess or Umbrella Liability Coverage (If utilized to achieve required policy limits)

Umbrella liability insurance is preferred, but an excess liability equivalent may be allowed. Whichever type of coverage is provided, it shall not be more restrictive than the underlying insurance policy coverages. Umbrella coverage shall drop down to provide coverage where the underlying limits are exhausted.

G. Evidence/Certificates of Insurance

Required insurance shall be documented in certificates of insurance. If and when required by the County, certificates of insurance shall be accompanied by documentation that is acceptable to the County establishing that the insurance agent and/or agency issuing the certificate of insurance has been duly authorized, in writing, to do so by and on behalf of each insurance company underwriting the insurance coverage(s) indicated on each certificate of insurance.

New certificates of insurance are to be provided to the County at least 30 days prior to coverage renewals. Failure of the contractor to provide the County with such renewal certificates may be considered justification for the County to terminate this agreement, contract or lease.

Certificates should contain the following additional information:

1. Indicate that Escambia County is an additional insured on the general liability and business auto liability policies.

2. Include a reference to the project and the Office of Purchasing number.

3. Disclose any self-insured retentions in excess of $1,000.

4. Designate Escambia County as the certificate holder as follows:

   Escambia County
   Attention: Jeffrey Lovingood, Purchasing Specialist
   Office of Purchasing, Room 11.101
   P.O. Box 1591
   Pensacola, FL 32591-1591
   Fax (850) 595-4806

5. Indicate that the County shall be notified at least 30 days in advance of cancellation.

Receipt of certificates or other documentation of insurance or policies or copies of policies by the County, or by any of its representatives, which indicate less coverage than required does not constitute a waiver of the contractor's obligation to fulfill the

insurance requirements herein.

If requested by the County, the contractor shall furnish complete copies of the contractor's insurance policies, forms and endorsements, and/or such additional information with respect to its insurance as may be requested.

For commercial general liability coverage, the contractor shall, at the option of the County, provide an indication of the amount of claims payments or reserves chargeable to the aggregate amount of liability coverage.

H. Endorsements/Additional Insurance

The County may require the following endorsements or additional types of insurance:

Termination/Adverse Change Endorsement

All of contractor's policies, except for professional liability and worker's compensation insurance, are to be endorsed, and the contractor's certificate(s) of insurance shall state, that the County shall be notified at least 30 days in advance of cancellation, nonrenewal or adverse change.

Fidelity/Dishonesty/Liability Coverage - for County

Fidelity/dishonesty/liability insurance is to be purchased or extended to cover dishonest acts of the contractor's employees resulting in loss to the County.

Pollution/Environmental Impairment Liability Coverage

Pollution/environmental impairment liability insurance is to be purchased to cover pollution and/or environmental impairment which may arise from this agreement or contract.

24. Indemnification

Contractor agrees to save harmless, indemnify, and defend County and Architect/Engineer and their, agents, officers and employees from any and all claims, losses, penalties, interest, demands, judgments, and costs of suit, including attorneys' fees and paralegals' fees, for any expense, damage or liability incurred by any of them, whether for personal injury, death, property damage, direct or consequential damages, or economic loss, including environmental impairment, arising directly or indirectly on account of or in connection with the Work done by Contractor under this Agreement or by any person, firm or corporation to whom any portion of the Work is subcontracted by Contractor or resulting from the use by Contractor, or by any one for whom Contractor is legally liable, of any materials, tools, machinery or other property of County. County and Contractor agree the first $100.00 of the Contract Amount paid by County to Contractor shall be given as separate consideration for this indemnification, and any other indemnification of County by Contractor provided for within the Contract Documents, the sufficiency of such separate consideration being acknowledged by Contractor by Contractor's acceptance and execution of the Agreement. The Contractor's obligation shall not be limited by, or in any way to, any insurance coverage or by any provision in or exclusion or omission from any policy of insurance. The Contractor agrees to pay on behalf of Escambia County, as well as provide a legal defense for the County, both of which will be done only if and when requested by the County, for all claims made. Such payment on the behalf of the County shall be in addition to any and all other legal remedies available to the County and shall not be considered to be the County's exclusive remedy.

BOARD OF COUNTY COMMISSIONERS
ESCAMBIA COUNTY, FLORIDA
PUBLIC WORKS DEPARTMENT
TRANSPORTATION & TRAFFIC OPERATIONS DIVISION

INDEX OF PLANS

PLANS PREPARED BY:

VOLKERT
Engineers • Surveyors • Planners
6601 N. DAVIS HWY. SUITE 102
PENSACOLA, FL. 32504
Telephone (850) 477-7485
www.volkert.com

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE LATEST ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS.

ANY REFERENCE TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION I, GENERAL REQUIREMENTS AND COVENANTS, SHALL BE EXCLUDED AND NOT APPLICAPABLE TO ANY SPECIFICATION REFERED HEREIN OR OTHERWISE LISTED IN THESE PLANS OR RELATED DOCUMENTS OR THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS.

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

PLANS PROPOSED FOR

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN-PHASE II

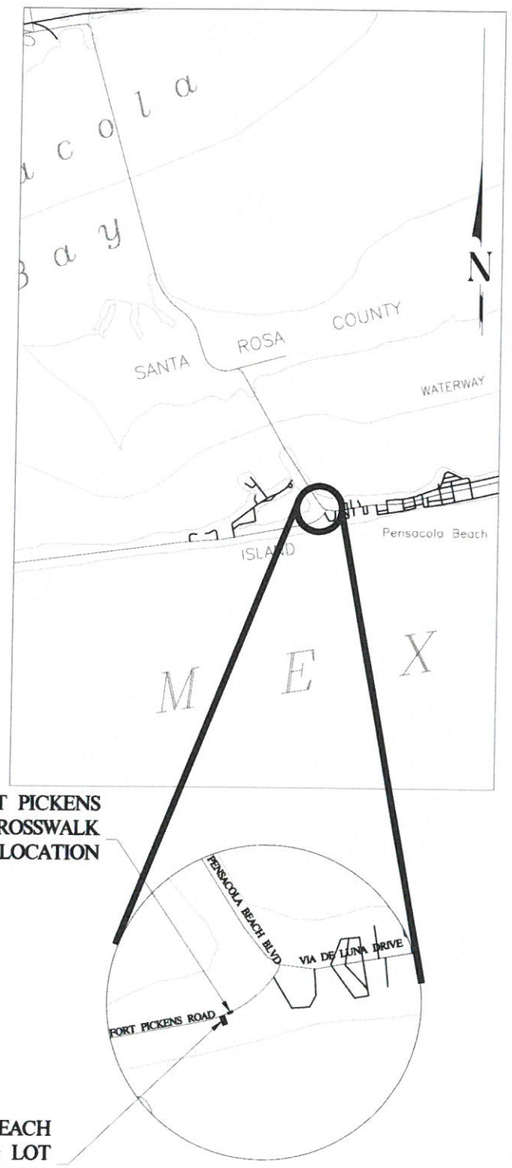
CASINO BEACH PARKING LOT

PD 15-16.007/PO 161017
VOLKERT PROJECT #635501.WR

100% SUBMITTAL
RELEASED FOR CONSTRUCTION
MAY 2018

COMMISSIONERS

DISTRICT ONE	JEFF BERGOSH, CHAIRMAN
DISTRICT TWO	DOUG UNDERHILL
DISTRICT THREE	LUMON MAY, VICE CHAIRMAN
DISTRICT FOUR	GROVER C. ROBINSON IV
DISTRICT FIVE	STEVEN BARRY



VICINITY MAP
NOT TO SCALE

MIKE J WARNKE
LICENSE
No PE64091
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5/21/18

PROJECT MANAGER: DAVID FORTE	
SECTION / TOWNSHIP / RANGE: 28 / 2S / 26	DISTRICT: 4
PROJECT ENGINEER: MIKE WARNKE	REG FLA ENG NO: 64091
SIGNATURE:	DATE:

C:\volkert_pw_workingdir\amy.oloughlin\d0103849\C01_KEY.dwg, May 07, 2018 - 1:52:29PM, amy.oloughlin

GENERAL NOTES:

1. THE CONTRACTORS SHALL NOTIFY THE COUNTY DESIGN ENGINEER OR DESIGNEE 48 HOURS PRIOR TO CONSTRUCTION.

2. ALL CONDITIONS AND STIPULATIONS OF THE CONSTRUCTION PERMITS AND THE APPROVALS ISSUED BY THE ESCAMBIA COUNTY ENGINEER SHALL BE COMPLIED WITHIN EVERY DETAIL.

3. ALL ROADS DAMAGED BY CONSTRUCTION OPERATIONS ARE TO BE PATCHED OR RECONSTRUCTED AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE.

4. THE CONTRACTOR SHALL TAKE STEPS NECESSARY TO PREVENT EROSION AND ANY OFF SITE SEDIMENT TRANSPORT RESULTING FROM INCREASED RUNOFF DURING CONSTRUCTION BY PROVIDING SILT FENCE AND/OR STAKED HAY BALES AS REQUIRED BY FDOT INDEX 102, THE FLORIDA STORMWATER, EROSION, AND SEDIMENT CONTROL INSPECTOR'S MANUAL, 2000 EDITION, OR AS INDICATED ON THE PLANS. ALL EROSION CONTROL MEASURES SHALL REMAIN IN PLACE UNTIL ASSOCIATED DISTURBED AREAS ARE STABILIZED AS TO REDUCE SEDIMENT RUNOFF, UNLESS OTHERWISE DIRECTED BY THE ENGINEER OR DESIGNEE.

5. ANY NECESSARY PERMITS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR. ESCAMBIA COUNTY OR ITS DESIGNEE WILL ASSIST CONTRACTOR WITH REQUIRED PERMITS.

6. THE CONTRACTOR IS CAUTIONED TO VISIT THE SITE AND FAMILIARIZE HIMSELF WITH THE PROJECT PRIOR TO BIDDING AND/OR CONSTRUCTION.

7. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PRESERVE OR RELOCATE ALL BENCHMARKS (VERTICAL CONTROL) AS NEEDED DURING CONSTRUCTION. ALL PUBLIC OR PRIVATE CORNER MONUMENTATION SHALL BE PROTECTED. IF A PUBLIC OR PRIVATE CORNER MONUMENTATION IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OR DESIGNEE IMMEDIATELY. ANY ESCAMBIA COUNTY HARN/GPS NETWORK MONUMENTS OR BUREAU OF SURVEY AND MAPPING GPS NETWORK MONUMENTS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED. IF A HARN/GPS NETWORK MONUMENTS OR BUREAU OF SURVEY AND MAPPING GPS NETWORK MONUMENTS ARE DISTURBED OR DESTROYED THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF THE MONUMENTS AND HAVE THE MONUMENTS POSITION DETERMINED BY A FLORIDA LICENSED PROFESSIONAL SURVEYOR AND MAPPER USING GUIDELINES AS ESTABLISHED BY NATIONAL GEODETIC SURVEY FOR BLUE BOOKING AND APPROVAL.

8. EXISTING DRAINAGE FEATURES WITHIN CONSTRUCTION LIMITS SHALL REMAIN UNLESS OTHERWISE NOTED.

9. THE CONTRACTOR SHALL MATCH EXISTING CONDITIONS AT THE BEGINNING AND END OF CONSTRUCTION AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE.

10. ALL ROADWAY CONSTRUCTION SHALL COMPLY WITH THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS, LATEST EDITION.

11. ALL MATERIALS, TESTING AND CONSTRUCTION METHODS SHALL CONFORM TO THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS, LATEST EDITION.

12. ANY REFERENCE TO FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, DIVISION 1, GENERAL REQUIREMENTS AND COVENANTS, SHALL BE EXCLUDED AND NOT APPLICABLE TO ANY SPECIFICATION REFERRED HEREIN OR OTHERWISE LISTED IN THESE PLANS OR RELATED DOCUMENTS OR THE ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS.

13. EXISTING STREET AND ROAD NAME SIGNS ON THE PROJECT SHALL BE KEPT VISIBLE AT ALL TIMES FOR THE FACILITATION OF ACCESS BY EMERGENCY VEHICLES. ALL OTHER EXISTING SIGNS THAT CONFLICT WITH CONSTRUCTION OPERATIONS SHALL BE TAKEN DOWN AND STOCKPILED WITHIN THE R/W LIMITS BY THE CONTRACTOR AS DIRECTED BY THE COUNTY ENGINEER OR DESIGNEE. ANY EXISTING SIGNS THAT ARE TO BE RELOCATED AND ARE DAMAGED BEYOND USE BY THE CONTRACTOR SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

14. CONTRACTOR SHALL COMPLY WITH ALL F.D.E.P. AND ARMY CORP. OF ENGINEERS REQUIREMENTS.

15. ONLY ACCESS TO THE ROAD R/W AS SHOWN IS GUARANTEED BY THE COUNTY. PRIVATE R/W REQUIRED BY THE CONTRACTOR TO FACILITATE CONSTRUCTION SHALL BE ACQUIRED BY THE CONTRACTOR WITH NO ADDITIONAL COMPENSATION OR ASSISTANCE FROM THE COUNTY.

16. IN THE EVENT THAT SURVEY MONUMENTATION OR REFERENCE POINTS ARE MISSING OR HAVE BEEN DESTROYED, PLEASE CONTACT:

JOE BARRET
ESCAMBIA COUNTY
3363 WEST PARK PLACE
PENSACOLA, FL 32505
PH: (850)595-3427

WESLEY BUMPERS, P.L.S.
VOLKERT, INC.
3809 MOFFETT ROAD
MOBILE, AL 36618
PH(251)342-1070

17. VEGETATION ON R/W AND EASEMENTS SHALL BE RESTORED TO ORIGINAL CONDITION UNLESS OTHERWISE NOTED ON THE PLAN SHEETS. COST OF SAID RESTORATION SHALL BE CONSIDERED INCIDENTAL TO OTHER PAY ITEMS.

18. ALL TREES WITHIN LIMITS OF CONSTRUCTION SHALL BE REMOVED UNLESS OTHERWISE NOTED IN PLANS.

19. ALL COMPACTED FILL SHALL BE PLACED IN 4" LIFTS FOR HAND POWERED TAMPERS AND 8" LIFTS FOR HEAVY EQUIPMENT OPERATED TAMPERS.

20. MAINTENANCE OF TRAFFIC AS PER FDOT INDEX 600.

GENERAL NOTES CONT.:

21. THE CONTRACTOR SHALL, AT A MINIMUM, MATCH EXISTING SIGNING AND PAVEMENT MARKINGS. ALL SIGNING AND PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE LATEST FDOT DESIGN STANDARDS. THE CONTRACTOR SHALL CONTACT THE COUNTY TRAFFIC DEPARTMENT PRIOR TO INSTALLATION OF ANY SIGNING AND PAVEMENT MARKINGS.

22. WHERE UNSUITABLE MATERIAL, AS DEFINED BY THE COUNTY SPECIFICATIONS SECTION 02300, 1.3(I), IS ENCOUNTERED IN THE AREAS PROPOSED FOR PAVING, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY ENGINEER OR DESIGNEE PRIOR TO ANY EXCAVATION.

23. PIPE LENGTHS SHOWN IN THE PLANS DO NOT INCLUDE THE LENGTH OF PIPE THAT MUST BE INSTALLED WITH THE MITERED END SECTION. THEREFORE, ALL PIPES LENGTHS ASSOCIATED WITH MITERED END SECTIONS SHALL BE PAID FOR IN THE UNIT COST OF THE MITERED END SECTION.

24. ALL CONTRACTORS, COUNTY REPRESENTATIVES, AND UTILITY COMPANIES ARE RESPONSIBLE FOR THEIR RESPECTIVE SURVEYING AND LAYOUT. ANY SURVEYING MONUMENTATION DISTURBED DURING CONSTRUCTION SHALL BE REPLACED UPON COMPLETION OF THE WORK BY A REGISTERED LAND SURVEYOR IN THE STATE OF FLORIDA.

25. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXISTING SITE CONDITIONS, INCLUDING SOIL CONDITIONS PRIOR TO BIDDING ON THE PROJECT. A COPY OF THE GEOTECHNICAL REPORT IS INCLUDED IN THE CONTRACT DOCUMENTS FOR THE CONTRACTORS REFERENCE.

27 THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE REQUIRED TESTING TO ENSURE THAT PROPER COMPACTION HAS BEEN ACHIEVED ON THE SUBGRADE, BASE AND ALL OTHER PERTINENT AREAS THAT HAVE BEEN COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS OF TESTING AND RETESTING AS REQUIRED AND SHALL PROVIDE THE COUNTY WITH COPIES OF CERTIFIED TESTING REPORTS.

28. THE LOCATION OF ALL EXISTING UTILITIES AND STORM DRAINAGE SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE ACCURACY. IT IS THE CONTRACTORS RESPONSIBILITY PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITIES TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE ANY REQUIRED ARRANGEMENTS FOR ANY RELOCATIONS OF THESE UTILITIES WITH THE OWNER OF SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING UNDERGROUND UTILITIES, WHETHER SHOWN ON THE PLAN OR LOCATION BY THE UTILITY. ANY UTILITIES THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL TO BROUGHT TO THE ATTENTION OF THE ENGINEER. ANY FEES ASSOCIATED WITH UTILITY RELOCATIONS SHALL BE BORNE IN ACCORDANCE WITH RESPECTIVE UTILITY COMPANY STANDARDS. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE RELOCATION OF ANY UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED.

29. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE COUNTY, ENGINEER OF RECORD, UTILITY COMPANIES AND CONTRACTOR PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

30. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING A UTILITY PERMIT FROM THE COUNTY ROAD DEPARTMENT PRIOR TO COMMENCING ANY WORK WITHIN THE R/W.

31. THE CONTRACTOR SHALL MAINTAIN A CURRENT SET OF CONSTRUCTION PLANS AND ALL PERMITS ON THE JOB SITE AT ALL TIMES.

32. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT NO CONSTRUCTION ACTIVITIES TAKE PLACE OUTSIDE OF THE EXISTING R/W OR EASEMENTS SHOWN ON THE PLANS. ANY ON-SITE OR OFFSITE AREAS THAT ARE DISTURBED SHALL BE RESTORED TO ORIGINAL CONDITION OR BETTER AS DIRECTED BY THE ENGINEER.

33. THE CONTRACTOR SHALL BE RESPONSIBLE TO SAFETY BARRICADE ALL EXCAVATIONS AND OTHER HAZARDS.

34. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS. THE DRAWINGS REPRESENT KNOWN STRUCTURES AND UTILITIES LOCATED WITHIN THE PROJECT AREA, THE CONTRACTOR IS CAUTIONED THAT OTHER STRUCTURES AND UTILITIES, ABOVE OR BELOW GROUND, MAY BE ENCOUNTERED DURING THE COURSE OF CONSTRUCTION.

35. ALL MATERIALS AND CONSTRUCTION TO BE IN ACCORDANCE WITH THE COUNTY'S LATEST CONSTRUCTION SPECIFICATIONS. ALL MATERIALS STORAGE AREAS SHALL BE CLEARLY IDENTIFIED AND SECURED BY THE CONTRACTOR. STOCKPILES ON THE ISLAND ARE LIMITED AND REQUIRE PRIOR APPROVAL.

36. ALL NEW CONCRETE FOR THE PROJECT SHALL ACHIEVE A 28 DAY STRENGTH OF 3000 PSI (MIN.), UNLESS OTHERWISE NOTED.

37. ALL TREES IN THE PROJECT AREA ARE TO REMAIN UNDAMAGED UNLESS OTHERWISE NOTED FOR REMOVAL.

38. THE CONTRACTOR IS TO REPLACE TO EXISTING CONDITION OR BETTER ANY FENCES, SPRINKLER SYSTEMS, TREES, SHRUBS, FLOWER BEDS, OR OTHER EXISTING IMPROVEMENTS IMPACTED DURING CONSTRUCTION, WHETHER DEPICTED ON THE PLANS OR NOT.

39. ALL EXISTING MAILBOXES INTERFERING WITH NEW CONSTRUCTION SHALL BE RELOCATED OR REPLACED BY THE CONTRACTOR IN ACCORDANCE WITH POSTAL REQUIREMENTS AND IN ACCORDANCE WITH ESCAMBIA COUNTY TECHNICAL SPECIFICATION, FDOT DESIGN STANDARDS AND UNITED POSTAL REQUIREMENTS. ALL EXISTING BRICK MAILBOXES WITHIN LIMITS OF CONSTRUCTION OR COUNTY RIGHT OF WAY SHALL BE REMOVED AND PLACED ON THE PROPERTY LINE OF THE OWNER. CONTRACTOR SHALL REPLACE EXISTING BRICK MAILBOX WITH APPROVED PLASTIC BREAK AWAY MAILBOX.

GENERAL NOTES CONT.:

40. DAMAGE TO ANY EXISTING ROADS DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR PRIOR TO FINAL "AS-BUILT" SIGN-OFF FROM THE COUNTY AT NO ADDITIONAL COST TO THE COUNTY.

41. SHOP DRAWINGS OF ALL MATERIALS BEING USED SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDER, SHIPMENT, OR INSTALLATION.

42. THE CONTRACTOR SHALL MAINTAIN RECORD DRAWINGS DURING CONSTRUCTION WHICH SHOW "AS-BUILT" CONDITIONS OR ALL WORK. RECORD DRAWINGS SHALL BE PROVIDED TO THE ENGINEER PRIOR TO REQUESTING A FINAL INSPECTION.

43. THE CONTRACTOR SHALL SCHEDULE WITH THE COUNTY A FINAL INSPECTION UPON COMPLETION OF ALL WORK AND ANY INTERMEDIATE INSPECTIONS AT 850-595-3472. AS-BUILT CERTIFICATION IS REQUIRED PRIOR TO REQUEST FOR FINAL INSPECTION.

44. ALL ASPECTS OF STORMWATER/DRAINAGE AND/OR TRANSPORTATION COMPONENTS SHALL BE COMPLETED PRIOR TO REQUESTING A FINAL INSPECTION.

45. NO DEVIATIONS OR REVISION FROM THE PLANS BY THE CONTRACTOR SHALL BE ALLOWED WITHOUT PRIOR APPROVAL FROM BOTH THE ENGINEER OF RECORD AND ESCAMBIA COUNTY. ANY DEVIATION MAY RESULT IN DELAYS IN THE COUNTY'S ACCEPTANCE OF IMPROVEMENTS.

46. IF ARCHAELOGICAL MATERIAL/PREHISTORIC ARTIFACTS SUCH AS POTTERY OR CERAMICS, STONE TOOLS OR METAL IMPLEMENTS, OR ANY OTHER PHYSICAL REMAINS THAT COULD BE ASSOCIATED WITH NATIVE AMERICAN CULTURES, OR EARLY COLONIAL OR AMERICAN SETTLEMENT ARE ENCOUNTERED AT ANY TIME, THE PROJECT SHOULD CEASE ALL ACTIVITIES INVOLVING SUBSURFACE DISTURBANCE IN THE IMMEDIATE VICINITY OF SUCH DISCOVERIES. THE APPLICANT/RECIPIENT, OR OTHER DESIGNEE, SHOULD CONTACT THE FLORIDA DEPARTMENT OF STATE, DIVISION OF HISTORICAL RESOURCES, THE STATE HISTORIC PRESERVATION OFFICER (SHPO) AND THE DSH/FEMA REGION IV ENVIRONMENTAL OFFICER AND FDEM STATE ENVIRONMENTAL LIAISON OFFICER FOR FURTHER GUIDANCE. PROJECT ACTIVITIES SHOULD NOT RESUME WITHOUT VERBAL AND/OR WRITTEN AUTHORIZATION FROM THE THE DIVISION OF HISTORICAL RESOURCES.

47. IN THE EVENT THAT UNMARKED HUMAN REMAINS ARE ENCOUNTERED DURING PERMITTING ACTIVITIES, ALL WORK MUST STOP IMMEDIATELY AND THE PROPER AUTHORITIES NOTIFIED IN ACCORDANCE WITH SECTION 872.05, FLORIDA STATUTE.

48. ALL CONSTRUCTION SHALL MEET ALL REQUIREMENTS CONCERNING ADA STANDARDS, LATEST EDITION OF DESIGN STANDARDS AND PUBLIC RIGHTS-OF-WAYS ACCESSIBILITY GUIDELINES (PROWAG).

49. ALL MATERIALS BROUGHT ONTO PENSACOLA BEACH MUST MEET THE BARRIER ISLAND SAND PROVISIONS OF THE LAND DEVELOPMENT CODE AND DESIGN MANUAL.

UTILITY NOTES:

1. THE LOCATION SHOWN FOR EXISTING UNDERGROUND UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK IN EACH AREA. THE CONTRACTOR AGREES TO BE COMPLETELY RESPONSIBLE FOR ALL DAMAGES WHICH MIGHT OCCUR BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UTILITIES.

2. UTILITY OWNERS SHALL BE NOTIFIED AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION SO THAT THE UTILITY OWNER CAN SPOT VERIFY AND/OR EXPOSE THEIR UTILITIES. KNOWN UTILITIES OWNERS INCLUDE:

SEWER/WATER - EMERALD COAST UTILITY AUTHORITY
MR. BRANDON KNIGHT
P.O. BOX 15311
PENSACOLA, FL. 32514 PH: (850) 698-4609

NATURAL GAS - ENERGY SERVICES OF PENSACOLA
MR. CLINT SHEVAT
1625 ATWOOD DRIVE
PENSACOLA, FL. 32514 PH: (850) 791-5285

TELEPHONE - AT&T FLORIDA
MR. BARRY POWELL
605 WEST GARDEN STREET
PENSACOLA, FL. 32501 PH: (850) 436-1483

TRAFFIC DEPARTMENT - ESCAMBIA COUNTY PUBLIC WORKS
MS. JOHNNY PETTIGREW
3363 WEST PARK PLACE
PENSACOLA, FL. 32505 PH:(850) 595-3404

ELECTRIC - GULF POWER
MR. CHAD SWAILS
5120 DOGWOOD DRIVE
MILTON, FL. 32570 PH: (850) 549-1031

CABLE - COX CABLE
MR. TROY YOUNG
2421 EXECUTIVE PLAZA
PENSACOLA, FL. 32504
PH: (850)232-5044

SUNSHINE STATE ONE-CALL
7200 LAKE ELLENOR DRIVE, SUITE 200
ORLANDO, FL. 32809 PH: (800) 432-4770

3. AT&T FLORIDA WILL COMPLETE ALL WORK DURING THE HOURS OF 7:30 AM - 4:30 PM, MONDAY THRU FRIDAY. NO NIGHT OR WEEKEND WORK.

4. ALL CABLE DAMAGE MUST BE REPORTED TO THE ATT FLORIDA REPAIR SERVICE DEPARTMENT AT 611 FROM A LAND LINE OR 877-737-2478 IF USING A CELL PHONE.

5. CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES AND UNDERGROUND UTILITIES.

6. UTILITIES TO REMAIN AND BE PROTECTED DURING CONSTRUCTION. NECESSARY REPAIRS SHALL BE CONSIDERED INCIDENTAL TO OTHER PAY ITEMS AND SHALL BE TO THE SATISFACTION OF UTILITY OWNERS.

7. ADEQUATE PROVISIONS SHALL BE MADE FOR THE FLOW OF SEWERS, DRAINS, WATER COURSES AND OTHER UTILITIES ENCOUNTERED DURING CONSTRUCTION.

8. THE CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER IMPROVEMENTS SHOWN AND NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR REPAIRS OF UTILITIES AND OTHER IMPROVEMENTS(SHOWN AND UN-SHOWN) DAMAGED DURING CONSTRUCTION AND SHALL MAINTAIN SUFFICIENT PROTECTION FOR ALL UTILITIES TO REMAIN. THE CONTRACTOR SHALL SUPPORT ALL EXISTING UTILITIES AS REQUIRED FOR THE INSTALLATION OF THE PROPOSED IMPROVEMENTS. ALL COSTS ASSOCIATED WITH PROTECTING, SUPPORTING, REPAIRING, AND OTHER ACTIVITIES RESULTING FROM CONTRACTOR DAMAGE TO THE UTILITIES OR PROTECTION OF THE UTILITIES SHALL BE THE CONTRACTORS RESPONSIBILITY AT NO ADDITIONAL COST TO THE COUNTY.

ENGINEERS ESTIMATED QUANTITIES, CASINO BEACH PARKING AREA

Item	DESCRIPTION	UNIT	BID QUANITY
1	Performance Bond	LS	1
2	Mobilization	LS	1
3	Clearing and Grubbing, per County Specifications 2230	AC	1
4	Remove Shrubs	EA	12
5	Remove Palm Trees	EA	15
6	Earthwork Excavate, Haul, and Install, On-site/Off-site	CY	1800
7	Earthwork Establishing Grade, County Specs 2300	SY	3674
8	Remove and Replace Unsuitable Materials	CY	100
9	Final grading and seal rolling prior to paving	SY	3674
10	1" County Spec 2500 Type SP 12.5 Asphalt Concrete Surface	SY	239
11	1 1/2" County Spec 2500 Type SP 12.5 Asphalt Concrete Surface	SY	3273
12	2" County Spec 2500 Type SP 12.5 Asphalt	SY	239
13	Remove Existing Asphalt, 2" Average Depth	SY	38
14	12" Stabilized Subgrade, County Spec 2300	SY	3674
15	6" Bahamian base	SY	3405
16	8" Bahamian base	SY	270
17	6" Pipe Bollards, Per County Detail	EA	2
18	Thermoplastic 6" Solid Stripe, White or Yellow	LF	1479
19	Thermoplastic 6" Double Solid Stripe, White or Yellow	LF	25
20	Thermoplastic Stop Bar	LF	24
21	Thermoplastic Directional Arrow, Single Head (Turn Left/ Right) 16sf	EA	2
22	Thermoplastic Directional Arrow, Double Head (Straight Ahead W/Turn) 27sf	EA	1
23	Thermoplastic High Intensity Pedestrian Crosswalk	LF	25
24	Thermoplastic Handicap Parking Space with Symbol	EA	4
25	Thermoplastic "LEO ONLY" Pavement Message	EA	2
26	Stop Sign, R1-1	EA	2
27	Authorized Vehicles Only Sign	EA	4
28	Develop and provide an approved MOT traffic safety plan both map type and written type by a Certified Work Zone Safety Traffic Supervisor	EA	1
29	MOT	LS	1
30	FDOT Type F Curb And Gutter	LF	194
31	Concrete Bumper Guards	EA	83
32	Header Curb, Per County Detail	LF	1471
33	1' Ribbon Curb, Per County Detail	LF	82
34	5' Fiber Reinforced Concrete Sidewalk	LF	170
35	Construct Curb Ramp (Approved Mat, Color included)	EA	4
36	Saw cut Existing Concrete	LF	33
37	Remove Existing Concrete, 6" thick	SY	65
38	Remove Curb	LF	350
39	Remove Ex. 1' Wide Block Wall	LF	85
40	Misc. Concrete	CY	5
41	Street Print (Offset Brick, Terracotta or Brick color)	SY	805
42	Ditch Bottom Inlet, Type F	EA	3
43	Storm Manhole	EA	2
44	Remove Ditch Bottom Inlet (including top and bottom)	EA	2
45	Tie to Existing Inlets, Pipe, Manhole, R-Tank System	EA	6
46	18" RCP Pipe	LF	150
47	24" RCP Pipe	LF	2
48	R-Tank Stormwater System	LS	1
49	R- Tank Stormwater System Installation	LS	1
50	Silt Fence Type IV	LF	1200
51	Construct Stabilized Gravel Construction Entrance	EA	1
52	NPDES NOI and NOT Permit, including SWPPP and monitoring (for use only with disturbed areas over 1.0 Acre)	EA	1
53	Wood Split Rail Fence	LF	910
54	Split Rail Fence Gate	EA	1
55	Remove Existing Chain Link Fence	LF	390
56	Jobsite Board for posting project information, permits, etc.	EA	1
57	Lighting	LS	1
58	Landscaping & irrigation	LS	1

MIKE J WARNKE
LICENSE
No PE64091
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

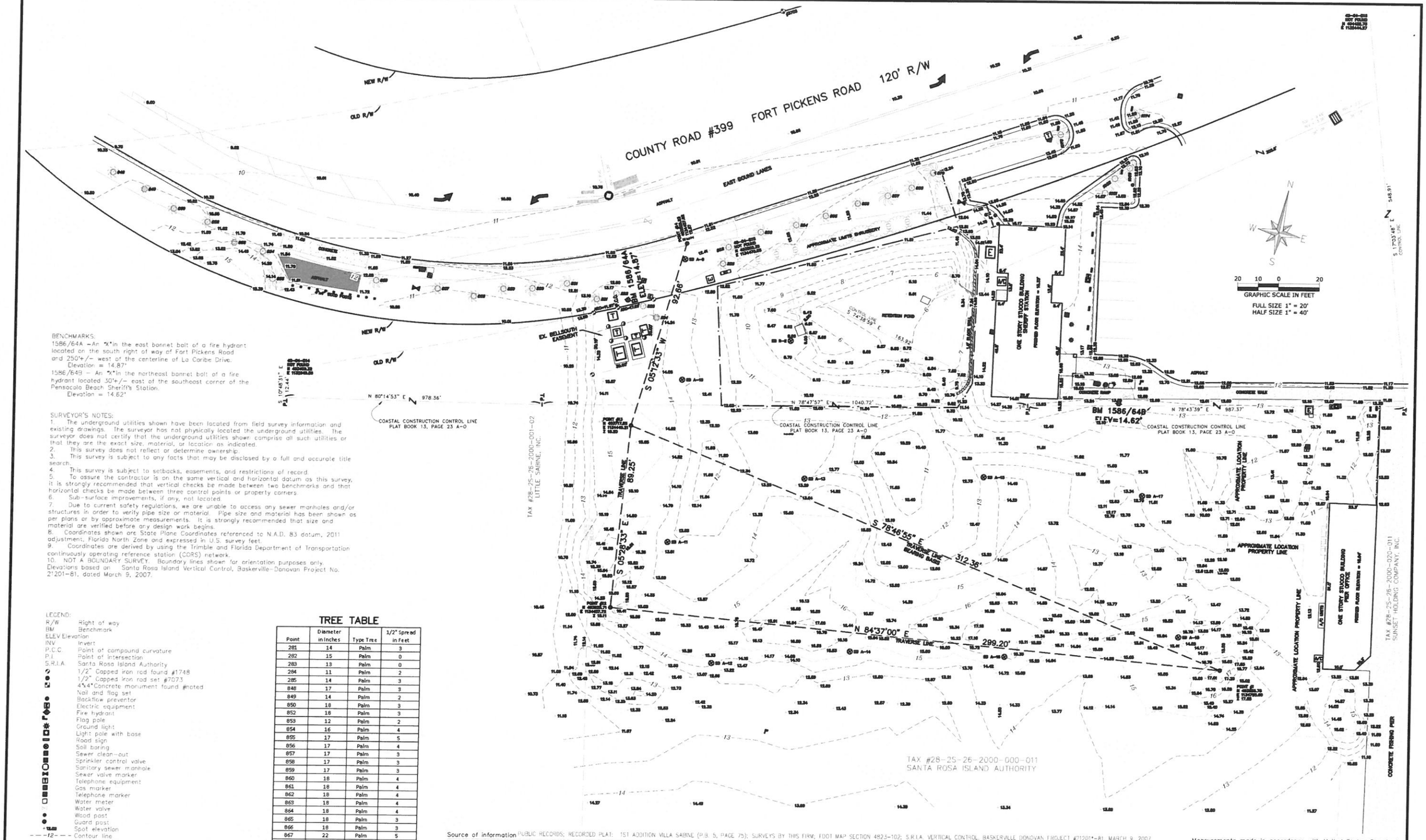
PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
GENERAL NOTES/SUMMARY OF QUANTITIES

VOLKERT
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 572-8935

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
DATE: MARCH 2018
CHECKED BY:
QA/QC MANAGER: DAVID FORTE
FIELD BOOK/ PAGES:
DISTRICT: 4
SECTION / TOWNSHIP / RANGE
REG. FL ENG. NO.: 64091
DATE:
SIGNATURE:

REVISIONS: NUMBER | DATE | APPROVED BY

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 2 OF 31



BENCHMARKS:
1586/64A – An "X" in the east bonnet bolt of a fire hydrant located on the south right of way of Fort Pickens Road and 250'+/– west of the centerline of La Caribe Drive.
Elevation = 14.87'
1586/64B – An "X" in the northeast bonnet bolt of a fire hydrant located 30'+/– east of the southeast corner of the Pensacola Beach Sheriff's Station.
Elevation = 14.62'

SURVEYOR'S NOTES:
1. The underground utilities shown have been located from field survey information and existing drawings. The surveyor has not physically located the underground utilities. The surveyor does not certify that the underground utilities shown comprise all such utilities or that they are the exact size, material, or location as indicated.
2. This survey does not reflect or determine ownership.
3. This survey is subject to any facts that may be disclosed by a full and accurate title search.
4. This survey is subject to setbacks, easements, and restrictions of record.
5. To assure the contractor is on the same vertical and horizontal datum as this survey, it is strongly recommended that vertical checks be made between two benchmarks and that horizontal checks be made between three control points or property corners.
6. Sub-surface improvements, if any, not located.
7. Due to current safety regulations, we are unable to access any sewer manholes and/or structures in order to verify pipe size or material. Pipe size and material has been shown as per plans or by approximate measurements. It is strongly recommended that size and material are verified before any design work begins.
8. Coordinates shown are State Plane Coordinates referenced to N.A.D. 83 datum, 2011 adjustment, Florida North Zone and expressed in U.S. survey feet.
9. Coordinates are derived by using the Trimble and Florida Department of Transportation continuously operating reference station (CORS) network.
10. NOT A BOUNDARY SURVEY. Boundary lines shown for orientation purposes only.
Elevations based on: Santa Rosa Island Vertical Control, Baskerville-Donovan Project No. 21201-81, dated March 9, 2007.

LEGEND:
R/W Right of way
BM Benchmark
ELEV Elevation
INV Invert
P.C.C. Point of compound curvature
P.I. Point of intersection
S.R.I.A Santa Rosa Island Authority
1/2" Capped iron rod found #1748
1/2" Capped iron rod set #7073
4"x4" Concrete monument found #noted
Nail and flag set
Backflow preventor
Electric equipment
Fire hydrant
Flag pole
Ground light
Light pole with base
Road sign
Soil boring
Sewer clean-out
Sprinkler control valve
Sanitary sewer manhole
Sewer valve marker
Telephone equipment
Gas marker
Telephone marker
Water meter
Water valve
Wood post
Guard post
12.00 Spot elevation
12 Contour line
Gas line
Sanitary sewer line
Underground electric line
Waterline
Force main
Chain link fence
Palm tree

TREE TABLE

Point	Diameter in Inches	Type Tree	1/2" Spread in Feet
281	14	Palm	3
282	15	Palm	0
283	13	Palm	0
284	11	Palm	2
285	14	Palm	3
848	17	Palm	3
849	14	Palm	2
850	18	Palm	3
852	18	Palm	3
853	12	Palm	2
854	16	Palm	4
855	17	Palm	5
856	17	Palm	4
857	17	Palm	3
858	17	Palm	3
859	17	Palm	3
860	18	Palm	4
861	18	Palm	4
862	18	Palm	4
863	18	Palm	4
864	18	Palm	4
865	18	Palm	3
866	18	Palm	3
867	22	Palm	5
868	16	Palm	4
870	13	Palm	5
1050	9	Palm	6
1051	11	Palm	5
1052	10	Palm	5
1074	10	Palm	4
1078	14	Palm	5

Source of information: PUBLIC RECORDS; RECORDED PLAT: 1ST ADDITION VILLA SABINE (P.B. 5, PAGE 75); SURVEYS BY THIS FIRM; FDOT MAP SECTION 4825-102; S.R.I.A. VERTICAL CONTROL, BASKERVILLE DONOVAN PROJECT #21201-81, MARCH 9, 2007

Bearing Reference: NORTH BASED ON TRAVERSE LINE AS S 78°46'55" E PER GPS OBSERVATION

Ordered By: MR. MIKE WARNKE Elevation Reference: NAVD 88

Encroachments: N.A.

A TOPOGRAPHIC SURVEY, LOCATION OF IMPROVEMENTS AND TREE LOCATION OF OF A PORTION OF BLOCK K, FIRST ADDITION TO VILLA SABINE, PLAT BOOK 5, PAGES 78 & 75A

ITTMAN, LAZE AND ASSOCIATES, INC.
LAND SURVEYORS
5080 N. DAVIS HIGHWAY, SUITE 3
PENSACOLA, FL. 32503
Phone: (850) 434-6666 Fax: (850) 434-6661
Email: pgasurvey@bellsouth.net

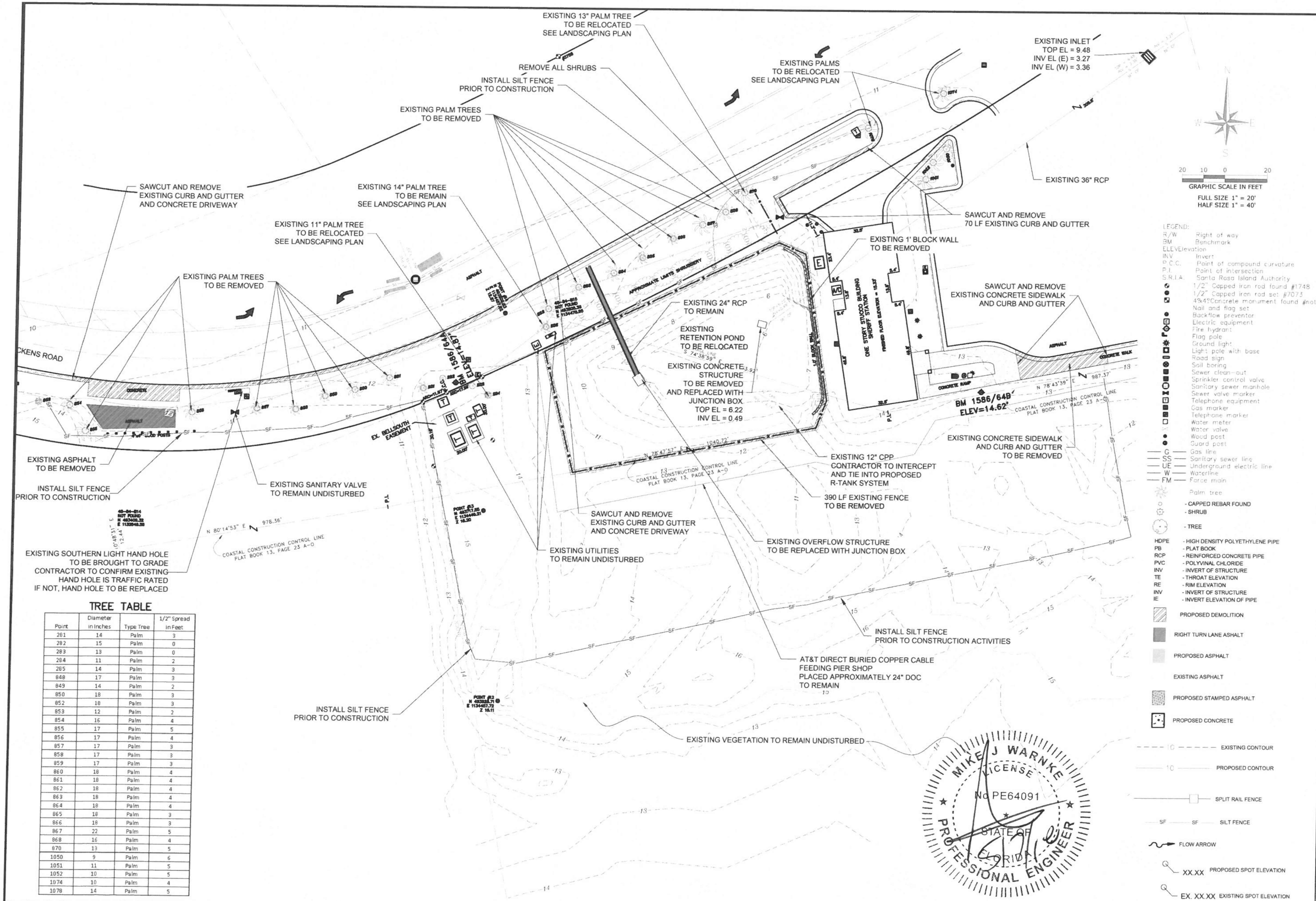
I hereby certify that this survey was made under my responsible charge and meets the Standards of Practice as set forth by the Florida Board of Professional Surveyors & Mappers in Chapter 5J-17.050, 5J-17.051 and 5J-17.052, pursuant to Section 472.027 Florida Statutes.

David D. Glaze ☐ PSM #5605 **Walter J. Glaze** ■ PSM #6190

Measurements made in accordance with United States Standards.

SHEET 1 OF 1
LB No. 7073
NOT VALID UNLESS IMPRINTED WITH EMBOSSED SEAL AND SIGN BY SURVEYOR

File No. C-7764
Job No. 37469-17-B
Job No. 37674-17
Scale 1" = 20'
Date of Survey 9-28-2017
Date of Plat 9-29-2017
Date of Revision 12-5-2017
FB 1580 PG 61-65, 73
Drawn by PMJ
Checked By W.G.


EXISTING 13" PALM TREE TO BE RELOCATED SEE LANDSCAPING PLAN
REMOVE ALL SHRUBS
INSTALL SILT FENCE PRIOR TO CONSTRUCTION
EXISTING PALM TREES TO BE REMOVED
EXISTING PALMS TO BE RELOCATED SEE LANDSCAPING PLAN
EXISTING INLET TOP EL = 9.48 INV EL (E) = 3.27 INV EL (W) = 3.36
EXISTING 36" RCP
SAWCUT AND REMOVE EXISTING CURB AND GUTTER AND CONCRETE DRIVEWAY
EXISTING 14" PALM TREE TO BE REMAIN SEE LANDSCAPING PLAN
EXISTING 11" PALM TREE TO BE RELOCATED SEE LANDSCAPING PLAN
SAWCUT AND REMOVE 70 LF EXISTING CURB AND GUTTER
EXISTING 1' BLOCK WALL TO BE REMOVED
EXISTING PALM TREES TO BE REMOVED
EXISTING 24" RCP TO REMAIN
EXISTING RETENTION POND TO BE RELOCATED
EXISTING CONCRETE STRUCTURE TO BE REMOVED AND REPLACED WITH JUNCTION BOX TOP EL = 6.22 INV EL = 0.49
SAWCUT AND REMOVE EXISTING CONCRETE SIDEWALK AND CURB AND GUTTER
ONE STORY STUCCO BUILDING SHERIFF STATION
CKENS ROAD
BM 1586/64A ELEV=14.57'
BM 1586/64B ELEV=14.62'
EX. BELLSOUTH EASEMENT
EXISTING ASPHALT TO BE REMOVED
INSTALL SILT FENCE PRIOR TO CONSTRUCTION
EXISTING SANITARY VALVE TO REMAIN UNDISTURBED
EXISTING 12" CPP CONTRACTOR TO INTERCEPT AND TIE INTO PROPOSED R-TANK SYSTEM
EXISTING CONCRETE SIDEWALK AND CURB AND GUTTER TO BE REMOVED
390 LF EXISTING FENCE TO BE REMOVED
SAWCUT AND REMOVE EXISTING CURB AND GUTTER AND CONCRETE DRIVEWAY
EXISTING UTILITIES TO REMAIN UNDISTURBED
EXISTING OVERFLOW STRUCTURE TO BE REPLACED WITH JUNCTION BOX
COASTAL CONSTRUCTION CONTROL LINE PLAT BOOK 13, PAGE 23 A-O
N 78°47'52" E 1040.72'
N 78°43'39" E 987.37'
N 80°14'53" E 978.36'
EXISTING SOUTHERN LIGHT HAND HOLE TO BE BROUGHT TO GRADE CONTRACTOR TO CONFIRM EXISTING HAND HOLE IS TRAFFIC RATED IF NOT, HAND HOLE TO BE REPLACED
INSTALL SILT FENCE PRIOR TO CONSTRUCTION ACTIVITIES
AT&T DIRECT BURIED COPPER CABLE FEEDING PIER SHOP PLACED APPROXIMATELY 24" DOC TO REMAIN
INSTALL SILT FENCE PRIOR TO CONSTRUCTION
EXISTING VEGETATION TO REMAIN UNDISTURBED
MIKE J WARNKE LICENSE No PE64091 STATE OF FLORIDA PROFESSIONAL ENGINEER
GRAPHIC SCALE IN FEET
FULL SIZE 1" = 20'
HALF SIZE 1" = 40'
LEGEND:
R/W Right of way
BM Benchmark
ELEV Elevation
INV Invert
P.C.C. Point of compound curvature
P.I. Point of intersection
S.R.I.A. Santa Rosa Island Authority
1/2" Capped iron rod found #1748
1/2" Capped iron rod set #7073
4"x4" Concrete monument found #noted
Nail and flag set
Backflow preventor
Electric equipment
Fire hydrant
Flag pole
Ground light
Light pole with base
Road sign
Soil boring
Sewer clean-out
Sprinkler control valve
Sanitary sewer manhole
Sewer valve marker
Telephone equipment
Gas marker
Telephone marker
Water meter
Water valve
Wood post
Guard post
G Gas line
SS Sanitary sewer line
UE Underground electric line
W Waterline
FM Force main
Palm tree
CAPPED REBAR FOUND
SHRUB
TREE
HDPE - HIGH DENSITY POLYETHYLENE PIPE
PB - PLAT BOOK
RCP - REINFORCED CONCRETE PIPE
PVC - POLYVINAL CHLORIDE
INV - INVERT OF STRUCTURE
TE - THROAT ELEVATION
RE - RIM ELEVATION
INV - INVERT OF STRUCTURE
IE - INVERT ELEVATION OF PIPE
PROPOSED DEMOLITION
RIGHT TURN LANE ASHALT
PROPOSED ASPHALT
EXISTING ASPHALT
PROPOSED STAMPED ASPHALT
PROPOSED CONCRETE
EXISTING CONTOUR
PROPOSED CONTOUR
SPLIT RAIL FENCE
SILT FENCE
FLOW ARROW
XX.XX PROPOSED SPOT ELEVATION
EX. XX.XX EXISTING SPOT ELEVATION

TREE TABLE

Point	Diameter in Inches	Type Tree	1/2" Spread in Feet
281	14	Palm	3
282	15	Palm	0
283	13	Palm	0
284	11	Palm	2
285	14	Palm	3
848	17	Palm	3
849	14	Palm	2
850	18	Palm	3
852	18	Palm	3
853	12	Palm	2
854	16	Palm	4
855	17	Palm	5
856	17	Palm	4
857	17	Palm	3
858	17	Palm	3
859	17	Palm	3
860	18	Palm	4
861	18	Palm	4
862	18	Palm	4
863	18	Palm	4
864	18	Palm	4
865	18	Palm	3
866	18	Palm	3
867	22	Palm	5
868	16	Palm	4
870	13	Palm	5
1050	9	Palm	6
1051	11	Palm	5
1052	10	Palm	5
1074	10	Palm	4
1078	14	Palm	5

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

DEMOLITION/EROSION CONTROL PLAN

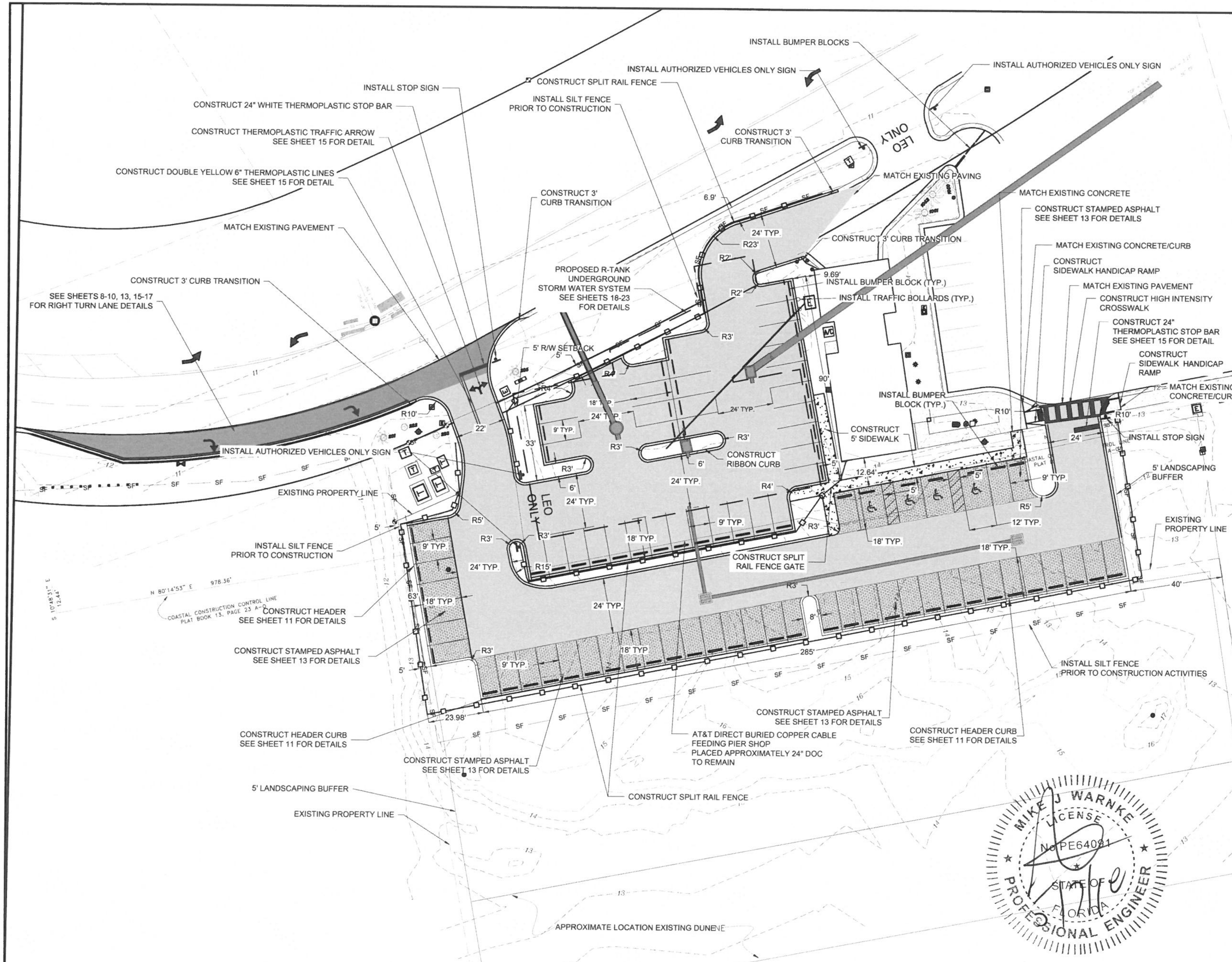
VOLKERT
Engineers • Surveyors • Planners
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

REG. FLA. ENG. NO. 64091

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
CHECKED BY:
DATE: MARCH 2018
QA/QC MANAGER: DAVID FORTE
DISTRICT: 4
FIELD BOOK / PAGES:
SECTION/TOWNSHIP/RANGE:
SIGNATURE:
DATE:

NUMBER | REVISIONS | DATE | APPROVED BY

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER



INSTALL BUMPER BLOCKS
INSTALL AUTHORIZED VEHICLES ONLY SIGN
CONSTRUCT SPLIT RAIL FENCE
INSTALL STOP SIGN
INSTALL SILT FENCE PRIOR TO CONSTRUCTION
CONSTRUCT 24" WHITE THERMOPLASTIC STOP BAR
CONSTRUCT THERMOPLASTIC TRAFFIC ARROW SEE SHEET 15 FOR DETAIL
CONSTRUCT 3' CURB TRANSITION
CONSTRUCT DOUBLE YELLOW 6" THERMOPLASTIC LINES SEE SHEET 15 FOR DETAIL
MATCH EXISTING PAVING
MATCH EXISTING CONCRETE
CONSTRUCT STAMPED ASPHALT SEE SHEET 13 FOR DETAILS
MATCH EXISTING PAVEMENT
CONSTRUCT 3' CURB TRANSITION
MATCH EXISTING CONCRETE/CURB
CONSTRUCT SIDEWALK HANDICAP RAMP
PROPOSED R-TANK UNDERGROUND STORM WATER SYSTEM SEE SHEETS 18-23 FOR DETAILS
INSTALL BUMPER BLOCK (TYP.)
INSTALL TRAFFIC BOLLARDS (TYP.)
MATCH EXISTING PAVEMENT
CONSTRUCT HIGH INTENSITY CROSSWALK
CONSTRUCT 24" THERMOPLASTIC STOP BAR SEE SHEET 15 FOR DETAIL
SEE SHEETS 8-10, 13, 15-17 FOR RIGHT TURN LANE DETAILS
5' R/W SETBACK
CONSTRUCT SIDEWALK HANDICAP RAMP
MATCH EXISTING CONCRETE/CURB
INSTALL BUMPER BLOCK (TYP.)
INSTALL AUTHORIZED VEHICLES ONLY SIGN
CONSTRUCT 5' SIDEWALK
CONSTRUCT RIBBON CURB
INSTALL STOP SIGN
5' LANDSCAPING BUFFER
EXISTING PROPERTY LINE
LEO ONLY
INSTALL SILT FENCE PRIOR TO CONSTRUCTION
CONSTRUCT SPLIT RAIL FENCE GATE
EXISTING PROPERTY LINE
CONSTRUCT HEADER SEE SHEET 11 FOR DETAILS
CONSTRUCT STAMPED ASPHALT SEE SHEET 13 FOR DETAILS
INSTALL SILT FENCE PRIOR TO CONSTRUCTION ACTIVITIES
CONSTRUCT STAMPED ASPHALT SEE SHEET 13 FOR DETAILS
CONSTRUCT HEADER CURB SEE SHEET 11 FOR DETAILS
AT&T DIRECT BURIED COPPER CABLE FEEDING PIER SHOP PLACED APPROXIMATELY 24" DOC TO REMAIN
CONSTRUCT HEADER CURB SEE SHEET 11 FOR DETAILS
CONSTRUCT STAMPED ASPHALT SEE SHEET 13 FOR DETAILS
5' LANDSCAPING BUFFER
CONSTRUCT SPLIT RAIL FENCE
EXISTING PROPERTY LINE
APPROXIMATE LOCATION EXISTING DUNENE
COASTAL CONSTRUCTION CONTROL LINE PLAT BOOK 13, PAGE 23 A-D
N 80°14'53" E 978.36'
24' TYP.
18' TYP.
9' TYP.
285'
23.98'
GRAPHIC SCALE IN FEET
FULL SIZE 1" = 20'
HALF SIZE 1" = 40'
MIKE J WARNKE
LICENSE
No PE64091
STATE OF FLORIDA
PROFESSIONAL ENGINEER

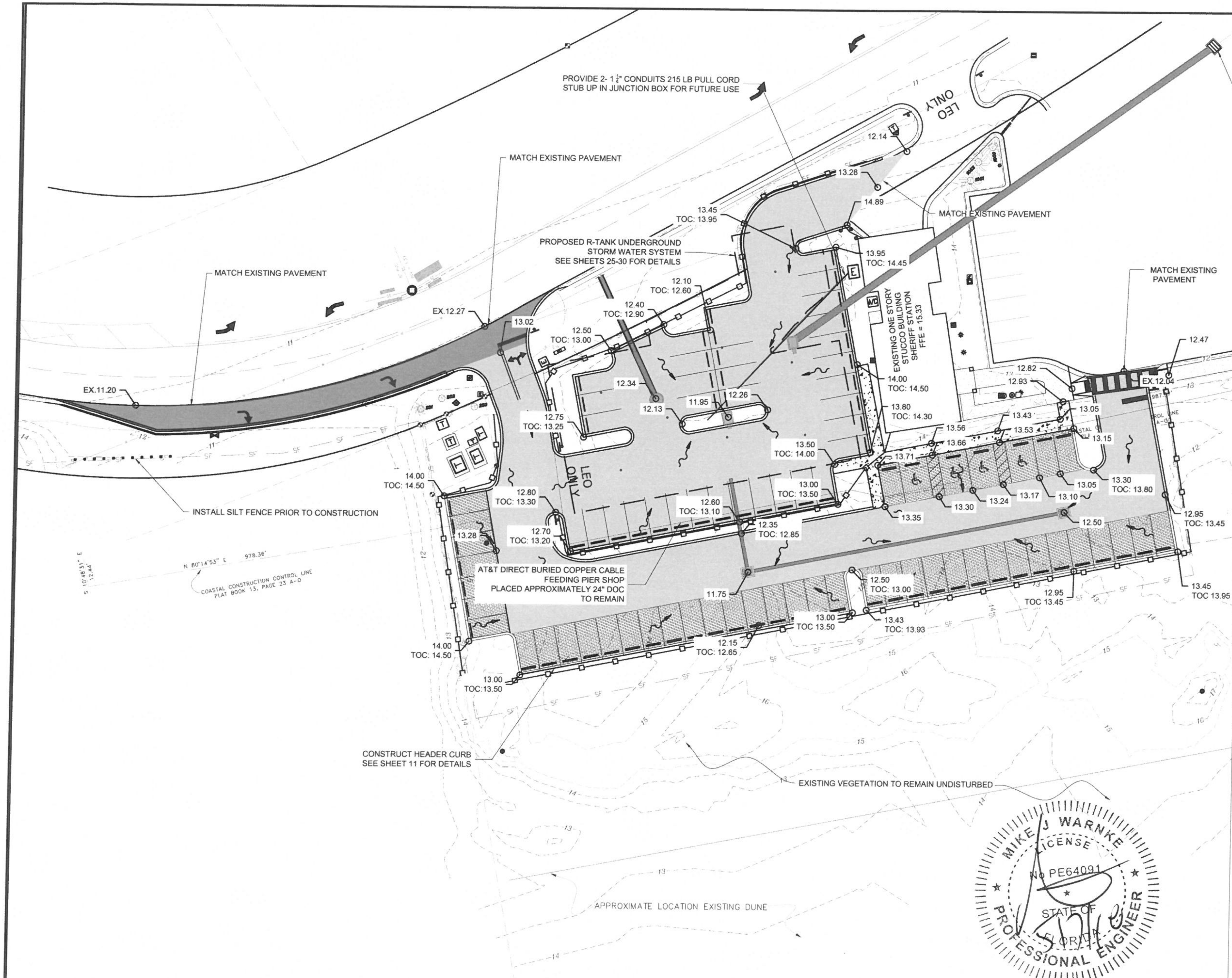
LEGEND:
R/W Right of way
BM Benchmark
ELEV Elevation
INV Invert
P.C.C. Point of compound curvature
P.I. Point of intersection
S.R.I.A. Santa Rosa Island Authority
1/2" Capped iron rod found #1748
1/2" Capped iron rod set #7073
4"x4" Concrete monument found #noted
Nail and flag set
Backflow preventor
Electric equipment
Fire hydrant
Flag pole
Ground light
Light pole with base
Road sign
Soil boring
Sewer clean-out
Sprinkler control valve
Sanitary sewer manhole
Sewer valve marker
Telephone equipment
Gas marker
Telephone marker
Water meter
Water valve
Wood post
Guard post
G Gas line
SS Sanitary sewer line
UE Underground electric line
W Waterline
FM Force main
Palm tree
- CAPPED REBAR FOUND
- SHRUB
- TREE
HDPE - HIGH DENSITY POLYETHYLENE PIPE
PB - PLAT BOOK
RCP - REINFORCED CONCRETE PIPE
PVC - POLYVINAL CHLORIDE
INV - INVERT OF STRUCTURE
TE - THROAT ELEVATION
RE - RIM ELEVATION
INV - INVERT OF STRUCTURE
IE - INVERT ELEVATION OF PIPE
PROPOSED DEMOLITION
RIGHT TURN LANE ASHALT
PROPOSED ASPHALT
EXISTING ASPHALT
PROPOSED STAMPED ASPHALT
PROPOSED CONCRETE
EXISTING CONTOUR
PROPOSED CONTOUR
SPLIT RAIL FENCE
SILT FENCE
FLOW ARROW
XX.XX PROPOSED SPOT ELEVATION
EX. XX.XX EXISTING SPOT ELEVATION

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
PROPOSED CONSTRUCTION PLAN

VOLKERT
Engineers • Surveyors • Planners
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

REG. FLA. ENG. NO. 64091
DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
CHECKED BY:
DATE: MARCH 2018
DESIGN MANAGER: DAVID FORTE
DISTRICT: 4

PROJECT NUMBER 635501



GRAPHIC SCALE IN FEET (20 10 0 20)

FULL SIZE 1" = 20'
HALF SIZE 1" = 40'

LEGEND:

R/W Right of way
BM Benchmark
ELEV Elevation
INV Invert
P.C.C. Point of compound curvature
P.I. Point of intersection
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EXISTING ASPHALT
PROPOSED STAMPED ASPHALT
PROPOSED CONCRETE
10 EXISTING CONTOUR
10 PROPOSED CONTOUR
SPLIT RAIL FENCE
SF SILT FENCE
FLOW ARROW
XX.XX PROPOSED SPOT ELEVATION
EX. XX.XX EXISTING SPOT ELEVATION

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

GRADING PLAN

VOLKERT
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64091

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
DATE: MARCH 2018

PROJECT NUMBER 635501

SHEET 6 of 31

PROVIDE 2- 1 ¼" CONDUITS 215 LB PULL CORD STUB UP IN JUNCTION BOX FOR FUTURE USE

MATCH EXISTING PAVEMENT

INSTALL SILT FENCE PRIOR TO CONSTRUCTION

PROPOSED R-TANK UNDERGROUND STORM WATER SYSTEM SEE SHEETS 25-30 FOR DETAILS

PROPOSED JUNCTION BOX STRUCTURE D1 TOP EL =12.34 INV EL (N) = 3.72 EX. INV EL (S) = 6.14

EXISTING 24" RCP DISCHARGE PIPE TO REMAIN

CONSTRUCT 2 LF 24" RCP @ 3.00% SLOPE CONNECT TO R-TANK INV EL (N) = 6.20 SEE R-TANK DETAILS

CONSTRUCT 2 LF 18" RCP @ 2.50% SLOPE CONNECT TO R-TANK INV EL (N) = 7.70 SEE R-TANK DETAILS

CONSTRUCT 38 LF 18" RCP @ 1.32% SLOPE

CONNECT TO R-TANK INV EL (S) = 7.30 SEE R-TANK DETAILS

PROPOSED TYPE F INLET STRUCTURE B2 TOP EL = 11.90 INV EL (N) = 7.80 INV EL (E) = 8.30

AT&T DIRECT BURIED COPPER CABLE FEEDING PIER SHOP PLACED APPROXIMATELY 24" DOC TO REMAIN

EXISTING ONE STORY STUCCO BUILDING SHERIFF STATION FFE = 15.33

PROPOSED JUNCTION BOX TOP EL = 13.20 INV EL = 0.49 - TIE IN EXISTING 36" RCP INV EL = 4.33 - 12" PVC PIPE SEE SHEET 14 FOR DETAIL STRUCTURE A2

CONSTRUCT 2 LF 12" PVC PIPE TO R-TANK CONNECT TO R-TANK INV EL (N) = 4.33 SEE R-TANK DETAILS

PROPOSED TYPE F INLET STRUCTURE C1 TOP EL = 11.95 INV EL (S) = 7.75

EXISTING INLET

EXISTING 36" PIPE TO REMAIN

MATCH EXISTING PAVEMENT

MATCH EXISTING PAVEMENT

PROPOSED TYPE F INLET STRUCTURE B1 TOP EL = 12.50 INV EL = 9.40

CONSTRUCT 131 LF 18" RCP @ 0.84% SLOPE

CONSTRUCT HEADER CURB SEE SHEET 11 FOR DETAILS

EXISTING VEGETATION TO REMAIN UNDISTURBED

APPROXIMATE LOCATION EXISTING DUNE

INSTALL SILT FENCE PRIOR TO CONSTRUCTION

S 10°48'51" E 12.44'

N 80°14'53" E 978.36'

COASTAL CONSTRUCTION CONTROL LINE PLAT BOOK 13, PAGE 23 A-D

S 10°48'51" E 548.91'

GRAPHIC SCALE IN FEET
20 10 0 20
FULL SIZE 1" = 20'
HALF SIZE 1" = 40'

LEGEND:
R/W Right of way
BM Benchmark
ELEV Elevation
INV Invert
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PROPOSED DEMOLITION
RIGHT TURN LANE ASHALT
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PROPOSED STAMPED ASPHALT
PROPOSED CONCRETE
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PROPOSED CONTOUR
SPLIT RAIL FENCE
SILT FENCE
FLOW ARROW
XX.XX PROPOSED SPOT ELEVATION
EX. XX.XX EXISTING SPOT ELEVATION

MIKE J WARNKE LICENSE No PE64091 STATE OF FLORIDA PROFESSIONAL ENGINEER

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
PROPOSED DRAINAGE PLAN

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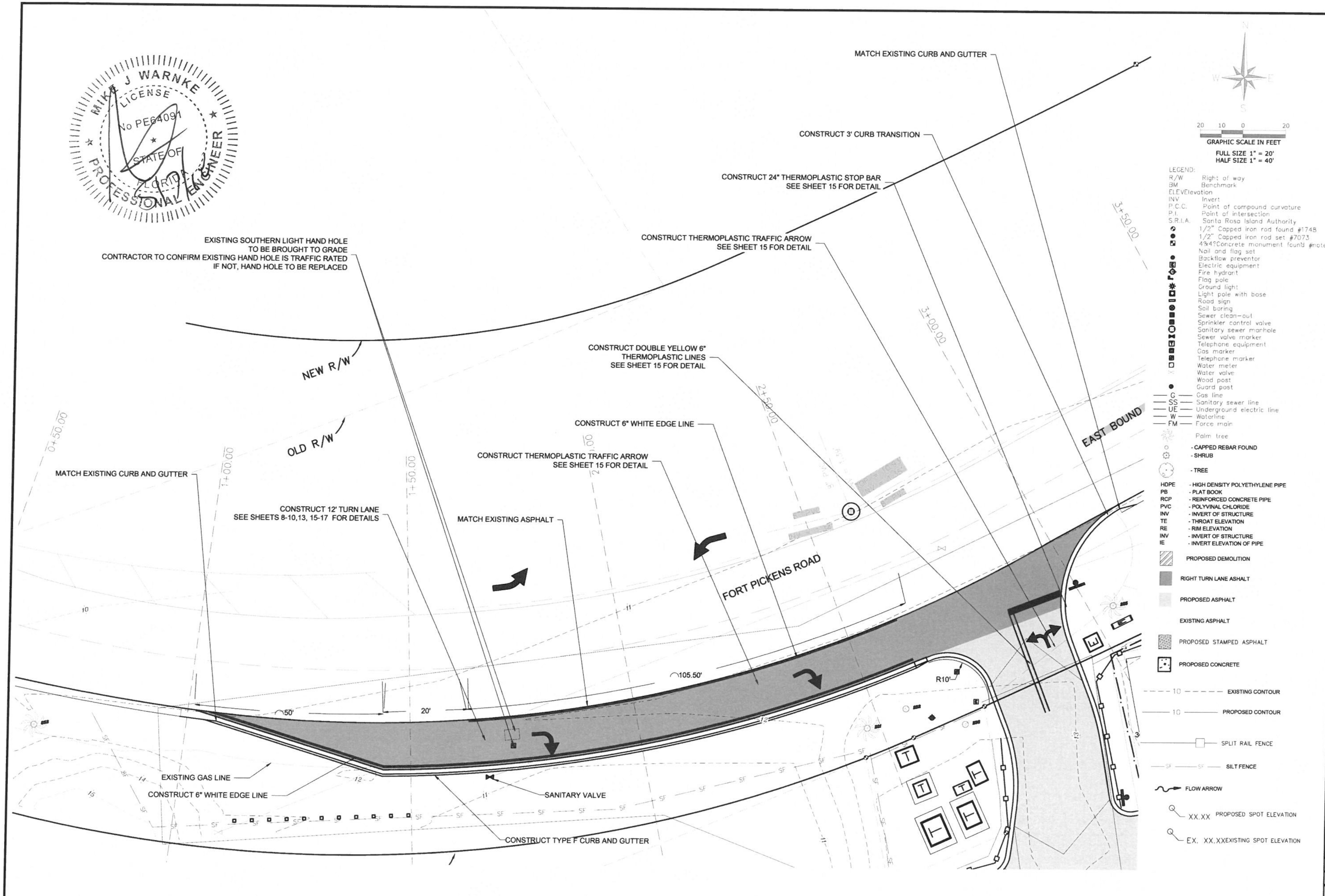
DESIGNED BY	MIKE WARNKE
CHECKED BY	
DATE	MARCH 2018
FIELD BOOK, PAGES	
DISTRICT	4
SECTION, TOWNSHIP, RANGE	

NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 7 OF 31



MIKE J WARNKE
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FLORIDA
PROFESSIONAL ENGINEER
MATCH EXISTING CURB AND GUTTER
CONSTRUCT 3' CURB TRANSITION
CONSTRUCT 24" THERMOPLASTIC STOP BAR
SEE SHEET 15 FOR DETAIL
CONSTRUCT THERMOPLASTIC TRAFFIC ARROW
SEE SHEET 15 FOR DETAIL
EXISTING SOUTHERN LIGHT HAND HOLE
TO BE BROUGHT TO GRADE
CONTRACTOR TO CONFIRM EXISTING HAND HOLE IS TRAFFIC RATED
IF NOT, HAND HOLE TO BE REPLACED
CONSTRUCT DOUBLE YELLOW 6"
THERMOPLASTIC LINES
SEE SHEET 15 FOR DETAIL
NEW R/W
OLD R/W
CONSTRUCT 6" WHITE EDGE LINE
CONSTRUCT THERMOPLASTIC TRAFFIC ARROW
SEE SHEET 15 FOR DETAIL
MATCH EXISTING CURB AND GUTTER
CONSTRUCT 12' TURN LANE
SEE SHEETS 8-10,13, 15-17 FOR DETAILS
MATCH EXISTING ASPHALT
EAST BOUND
FORT PICKENS ROAD
0+50.00
1+00.00
1+50.00
2+00.00
2+50.00
3+00.00
3+50.00
105.50'
50'
20'
R10'
EXISTING GAS LINE
CONSTRUCT 6" WHITE EDGE LINE
SANITARY VALVE
CONSTRUCT TYPE F CURB AND GUTTER
GRAPHIC SCALE IN FEET
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PROPOSED CONTOUR
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SILT FENCE
FLOW ARROW
XX.XX PROPOSED SPOT ELEVATION
EX. XX.XX EXISTING SPOT ELEVATION

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA
PROPOSED RIGHT TURN LANE
CONSTRUCTION PLAN

VOLKERT
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DATE: MARCH 2018	QA/QC MANAGER: DAVID FORTE	DISTRICT: 4	
FIELD BOOK / PAGES:	SECTION / TOWNSHIP / RANGE		

NUMBER	REVISIONS	DATE	APPROVED BY

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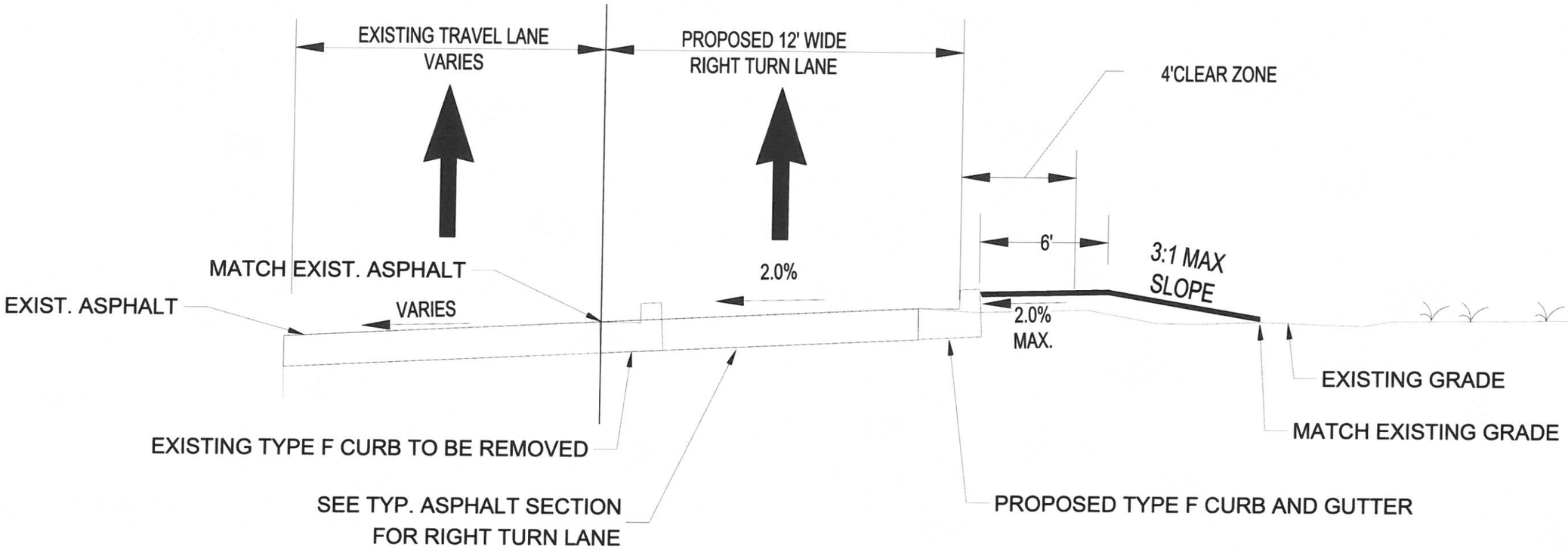
SURVEY NUMBER
SHEET 8 OF 31

*SEE LANDSCAPING PLAN FOR REQUIRED PLANTING



RIGHT TURN LANE TYPICAL CROSS SECTION

N.T.S.

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PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
TYPICAL RIGHT TURN LANE SECTION

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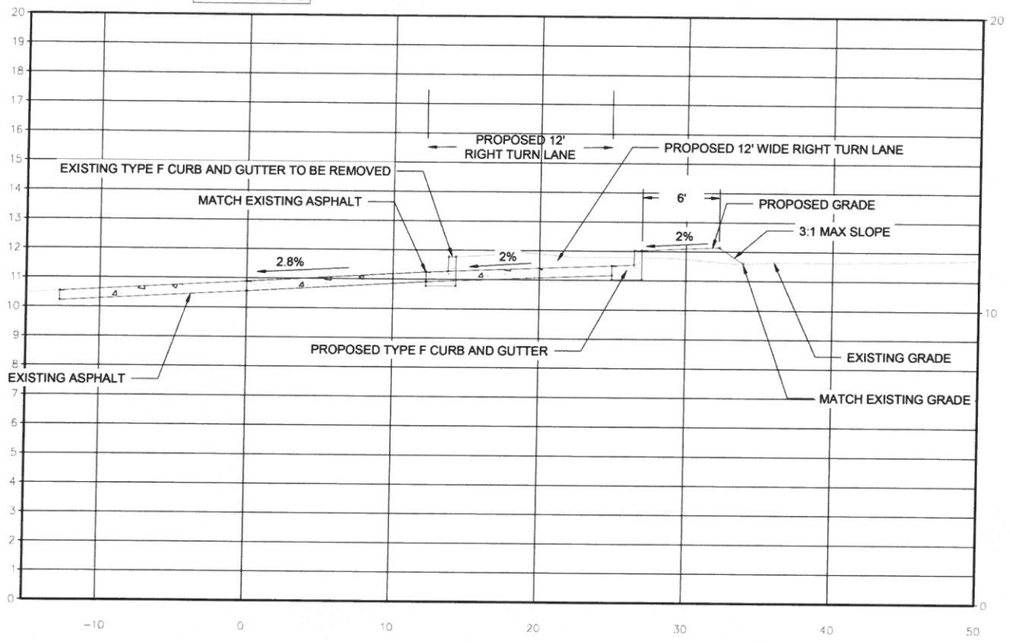
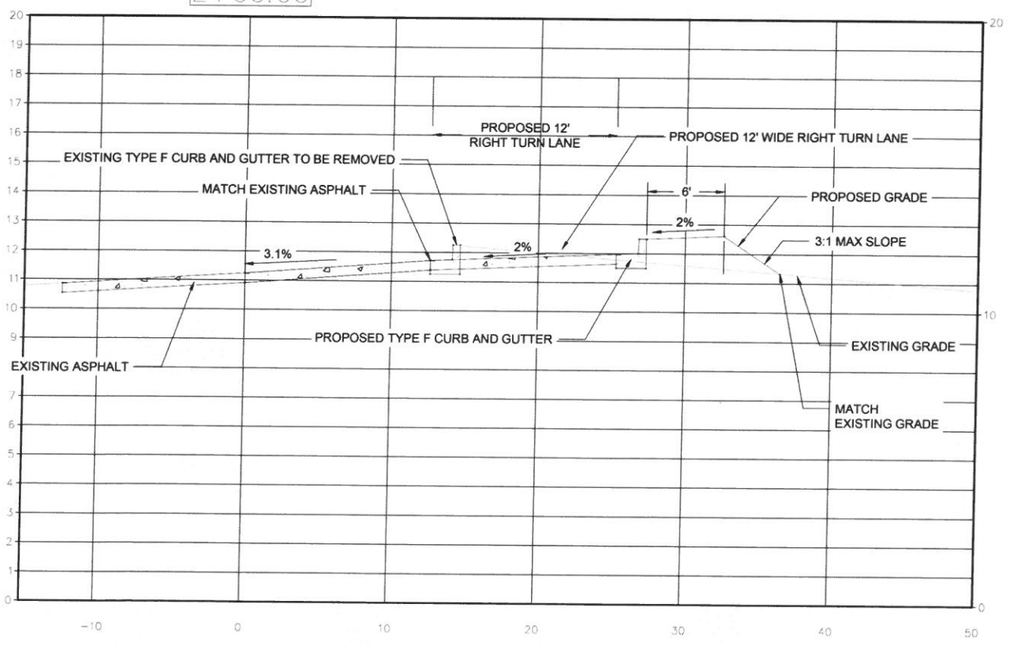
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 9 OF 31

1+50.00



2+00.00



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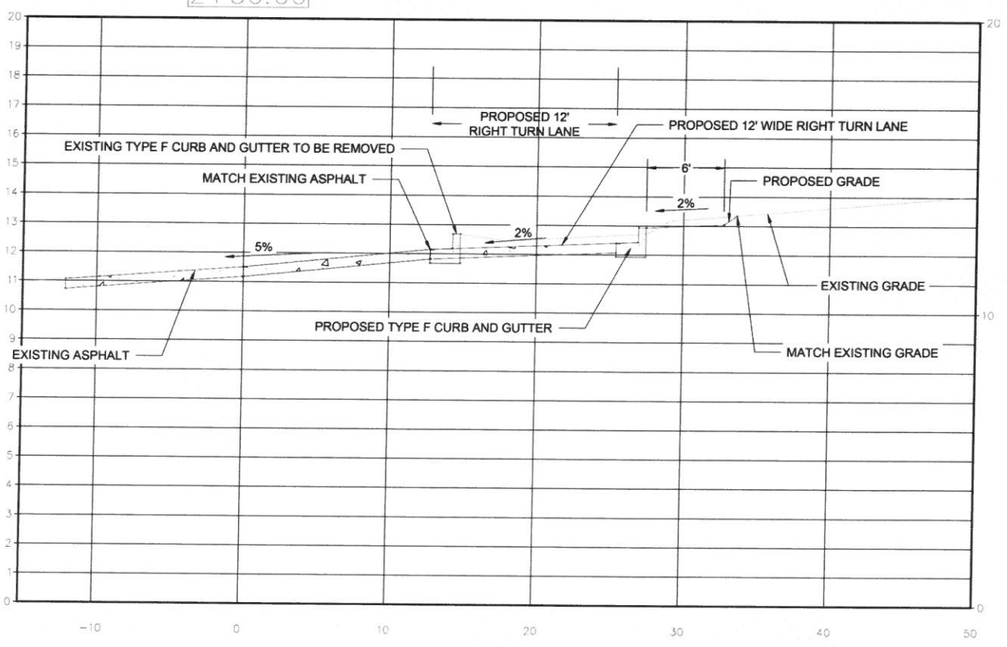

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PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

TURN LANE CROSS SECTIONS

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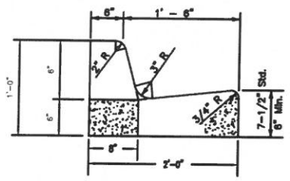
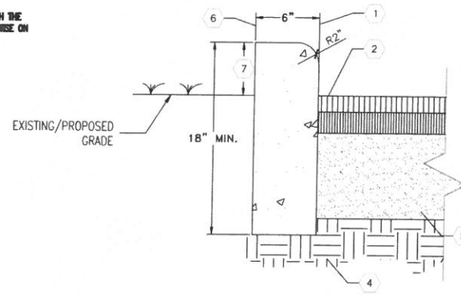
DATE:	MARCH 2018
DISTRICT	4
FED.ROAD.PROJ.NO.	
SECTION/ TOWNSHIP/ RANGE	
DRAWING NUMBER	
PROJECT NUMBER	635501
SURVEY NUMBER	
SHEET	10 OF 31

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



F.D.O.T. TYPE "F"
CURB & GUTTER DETAIL
N.T.S.



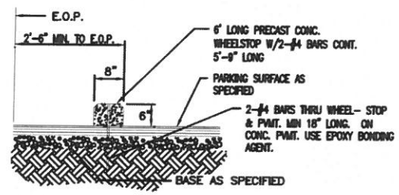
KEYED NOTES

1. LINE OF FACE OF CURB (CURB GRADE SHOWN ON PLAN).
2. PAVEMENT AT GRADE SHOWN ON PLAN.
3. N/A.
4. PREPARED SUB-GRADE.
5. STONE BASE.
6. LINE FOR BACK OF CURB.

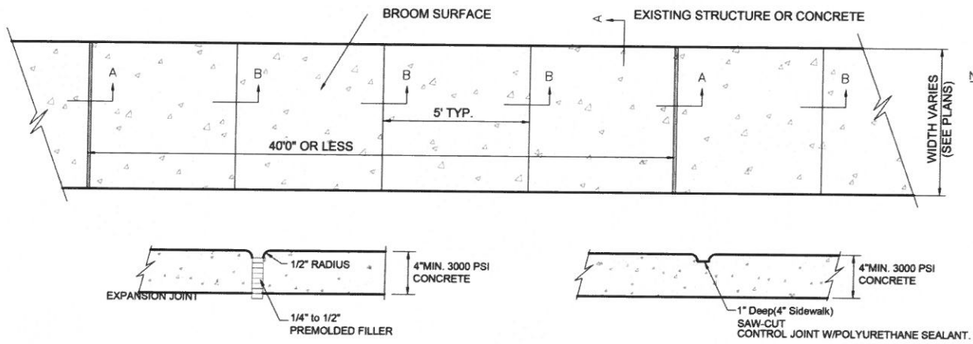
NOTE:
ALL CURBS TO HAVE 3/4" EXPANSION JOINTS AT MAXIMUM 100 FEET WITH DOWELS AND CONTROL JOINTS AT MAX. 20 FEET.

7. CONTRACTOR TO PROVIDE 6" REVEAL ON BACKSIDE OF CURB TO HELP PREVENT SAND INTRUSION INTO PARKING AREA

VERTICAL / HEADER CURB
N.T.S.



CONCRETE WHEELSTOP/
BUMPER BLOCK DETAIL
N.T.S.



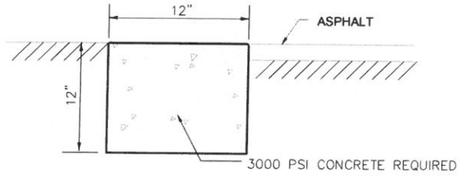
SECTION A

SECTION B
CONSTRUCTION CONTROL JOINT

CONCRETE WALK DETAIL
N.T.S.

NOTES:

1. ALL EXPANSION /CONTROL JOINTS SHALL BE FILLED WITH SIKAFLEX-1C SL (OR APPROVED EQUAL) SEALANT. JOINTS SHALL BE TAPED PRIOR TO SEALING TO ENSURE A CLEAN EDGE.
2. ALL CONCRETE WALKING SURFACES SHALL BE A FINE BROOM FINISH.
3. ALL CONCRETE WALKWAYS SHALL HAVE FIBER MESH REINFORCEMENT.
4. CONSTRUCTION AND EXPANSION JOINTS ARE REQUIRED AS PER ESCAMBIA COUNTY STANDARD SPECIFICATIONS LATEST EDITION.



TYP. 12" CONCRETE
RIBBON CURB DETAIL
N.T.S.

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

STANDARD DETAILS

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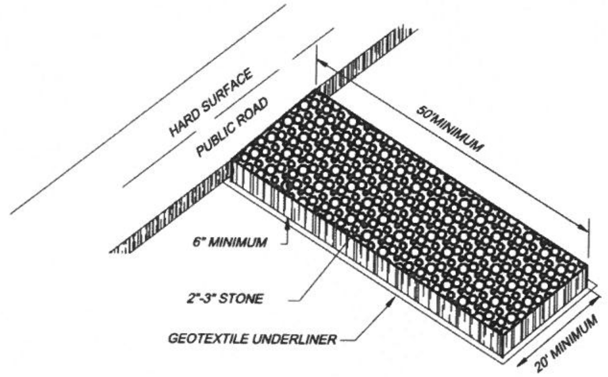
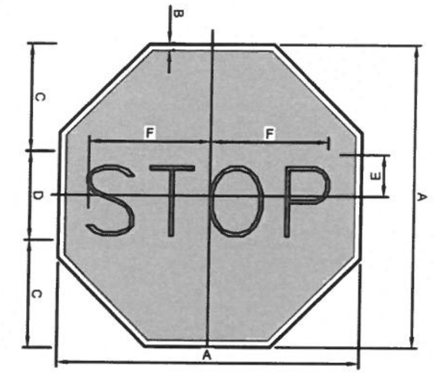
SHEET 11 OF 31

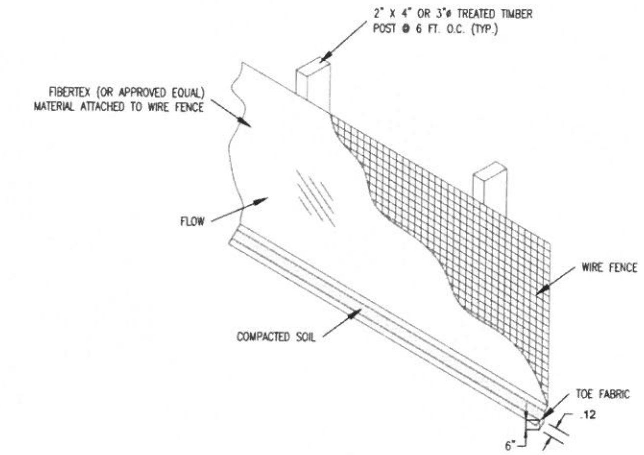


CONSTRUCTION ENTRANCE DETAIL
N.T.S.



A	B	C	D	E	F
30"	0.75"	10"	10C	5"	12.5"

R1-1 STOP SIGN DETAIL
N.T.S.

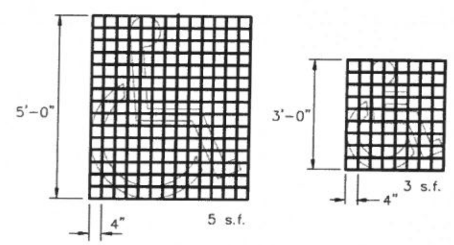


SILT FENCE DETAIL
N.T.S.

NOTES

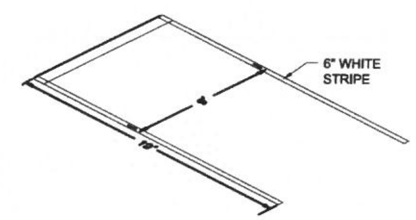
1. TOP PORTION OF R7-8 SHALL HAVE A REFLECTIVE BLUE BACKGROUND WITH WHITE REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. R7-8 MAY BE FABRICATED ON ONE PANEL OR TWO.
4. SIGNS ARE TO BE MOUNTED AT STANDARD HEIGHT. (7' FROM PAVMENT TO BOTTOM OF SIGN).

HANDICAP SIGN
N.T.S.

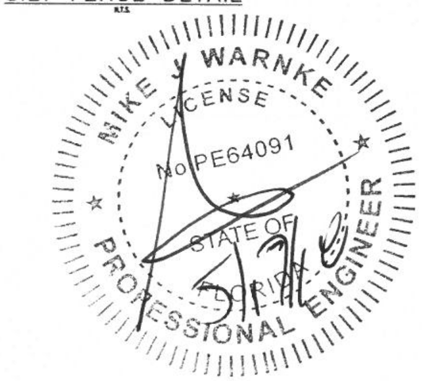


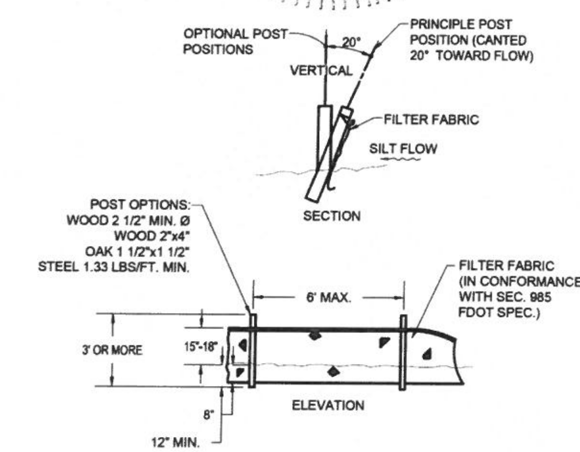
♿ USE OF PAVEMENT SYMBOL IN HANDICAPPED PARKING SPACES IS OPTIONAL, WHEN USED THE SYMBOL SHALL BE 3 OR 5 FT. HIGH AND WHITE IN COLOR.

HANDICAPPED PAVEMENT SYMBOL
N.T.S.

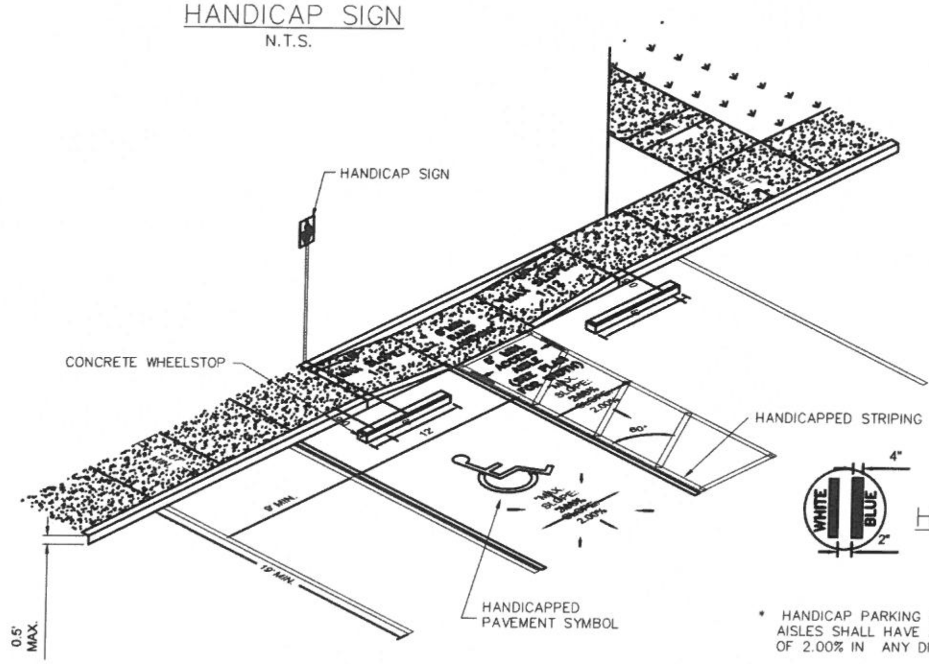


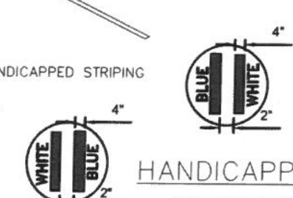
TYPICAL PARKING SPACE
N.T.S.





TYPE III SILT FENCE

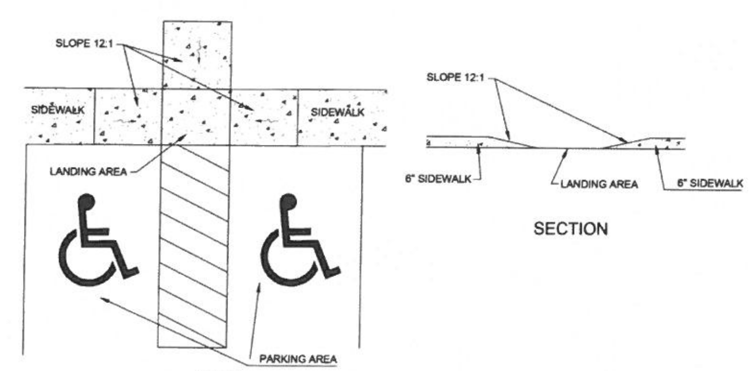




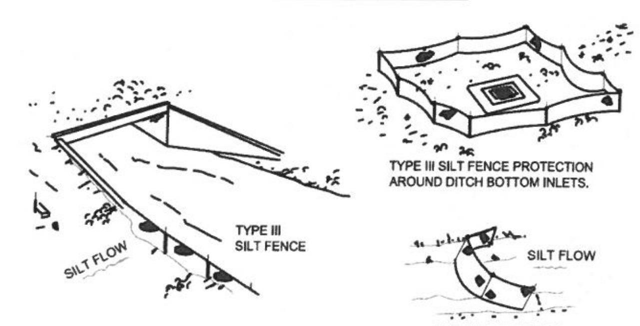
HANDICAPPED STRIPING
N.T.S.

- HANDICAP PARKING SPACES & ACCESS AISLES SHALL HAVE A MAXIMUM GRADIENT OF 2.00% IN ANY DIRECTION
- ACCESS AISLE FOR VAN ACCESSIBLE HANDICAP PARKING SHALL BE 8' WIDE
- SEE PLAN FOR WIDTH

HANDICAP DETAIL
N.T.S.



HANDICAP RAMP DETAIL
N.T.S.



NOTE:
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS DETAIL
N.T.S.

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
STANDARD DETAILS

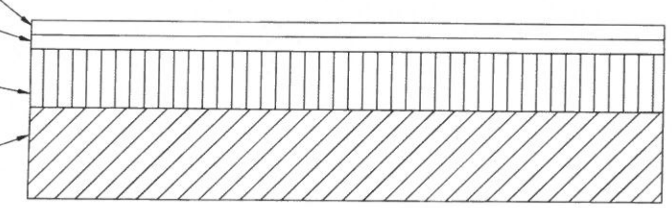
NUMBER	REVISIONS	DATE	APPROVED BY

VOLKERT
Engineers • Surveyors • Planners

215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

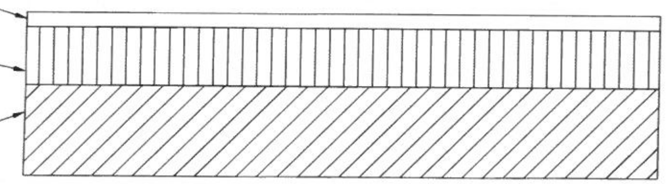
DRAWN BY: AMY O'LAUGHLIN	DESIGNED BY: MIKE WARNKE	CHECKED BY:	REG. FLA. ENG. NO. 64091	DATE:
DATE: MARCH 2018	QA/QC MANAGER: DAVID FORTE	DISTRICT: 4	SIGNATURE:	
FIELD BOOK / PAGES:		SECTION / TOWNSHIP / RANGE		

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 12 OF 31



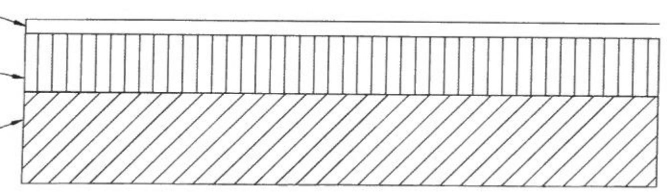
RIGHT TURN LANE TYPICAL ASPHALT SECTION

N.T.S.



TYPICAL ASPHALT SECTION

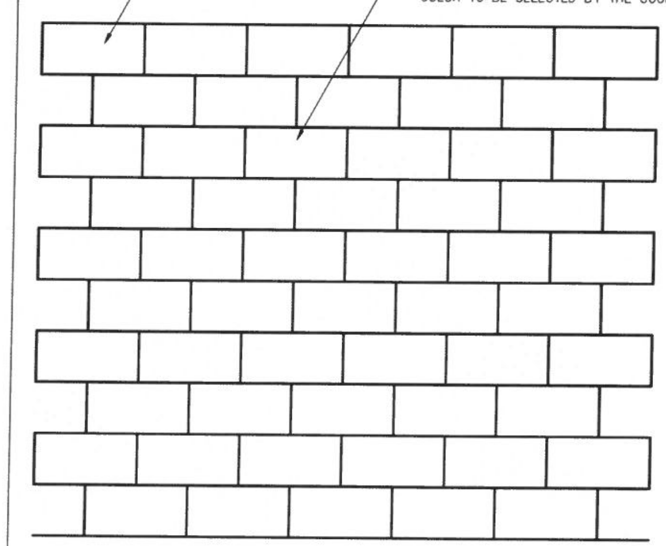
N.T.S.



STAMPED COLORED ASPHALT DETAIL

N.T.S.

NOTES:
1) COLOR TO BE SELECTED BY THE COUNTY



STAMPED ASPHALT PLAN VIEW PATTERN

MIKE J WARNKE
LICENSE
No PE64091
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
STANDARD DETAILS

VOLKERT
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215 FAIRPOINT DRIVE
SUITE B
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Telephone (850) 512-8935
REG. FLA. ENG. NO. 64091

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
CHECKED BY:
DATE: MARCH 2018
OASIS MANAGER: DAVID FORTE
DISTRICT: 4
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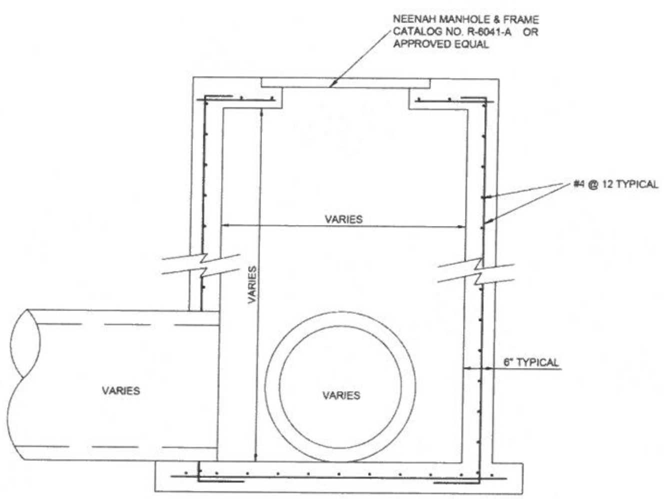
SIGNATURE:
DATE:

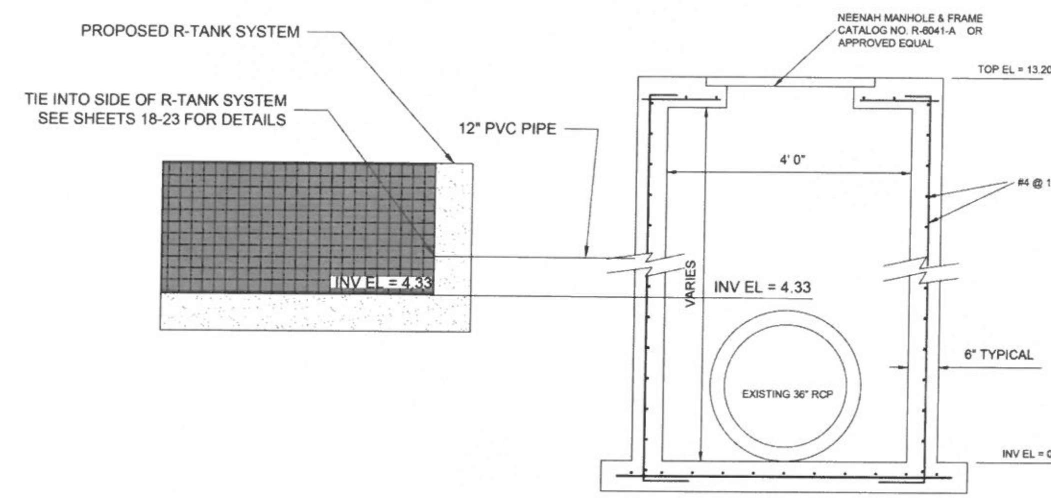
NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 13 OF 31



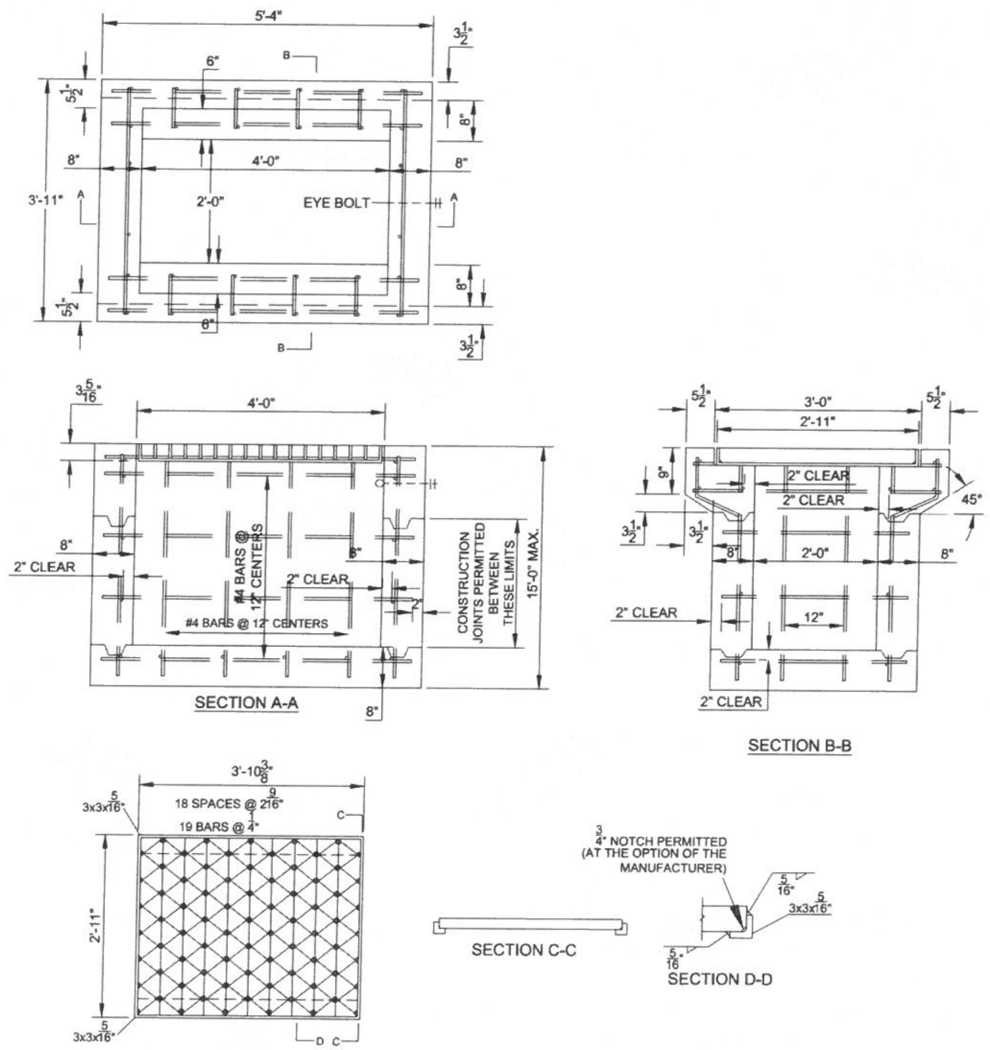
TYPICAL JUNCTION BOX DETAIL

N.T.S.



JUNCTION BOX - STRUCTURE A2

N.T.S.



TYPE "F" INLET

N.T.S.

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

STANDARD DETAILS

VOLKERT

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215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 572-8935

REG. FLA. ENG. NO. 64091

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
CHECKED BY:
DATE: MARCH 2018
TASK MANAGER: DAVID FORTE

MIKE J. WARNKE LICENSE No PE64091 STATE OF FLORIDA PROFESSIONAL ENGINEER

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PROJECT NUMBER 635501

SURVEY NUMBER

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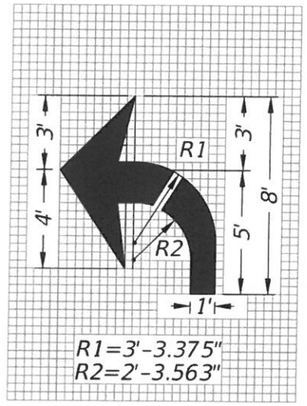


Turn Lane-Use Arrow (Left Turn Shown - Right Turn Similar by Opposite Hand)

17 S.F.

NOTES:

1. *When an arrow and a pavement message are used together, locate the arrow 25' downstream from the pavement message. Measure the distance from the base of the arrow to the base of the pavement message.*
2. *Place stop message 25' back from the stop line.*
3. *Dimensions are within 1" ±.*
4. *All grids are 4" x 4".*

Solid Edge Line or Lane Line — 6"

Solid Channelizing Line — 8", 12" or 18"

Two-Lane Passing Prohibited Lines — 6", 4", 6"

Double Solid Lines — 6", 4", 6"

12" Solid Pedestrian Crosswalk Line
24" Solid Stop Line — 12" or 24"

2'-4' Dotted Guide Line — 6"

2'-2' Dotted Extension Line — 12"

6'-10' Dotted Extension Line — 10' 10' 10' 10' 10' 10' 10' 10' 10' 10' 10' 10' 10'; 6' 6' 6' 6' 6' 6' 6' 6' 6' 6' 6' 6' 6'; 6"

3'-9' Dotted Interchange Line — 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9'; 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3'; 6"

3'-9' Dotted Lane Drop Line — 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9' 9'; 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3' 3'; 12"

10'-30' Skip Line — 10' 30' 10' 30' 10' 30' 10' 30' 10'; 6"

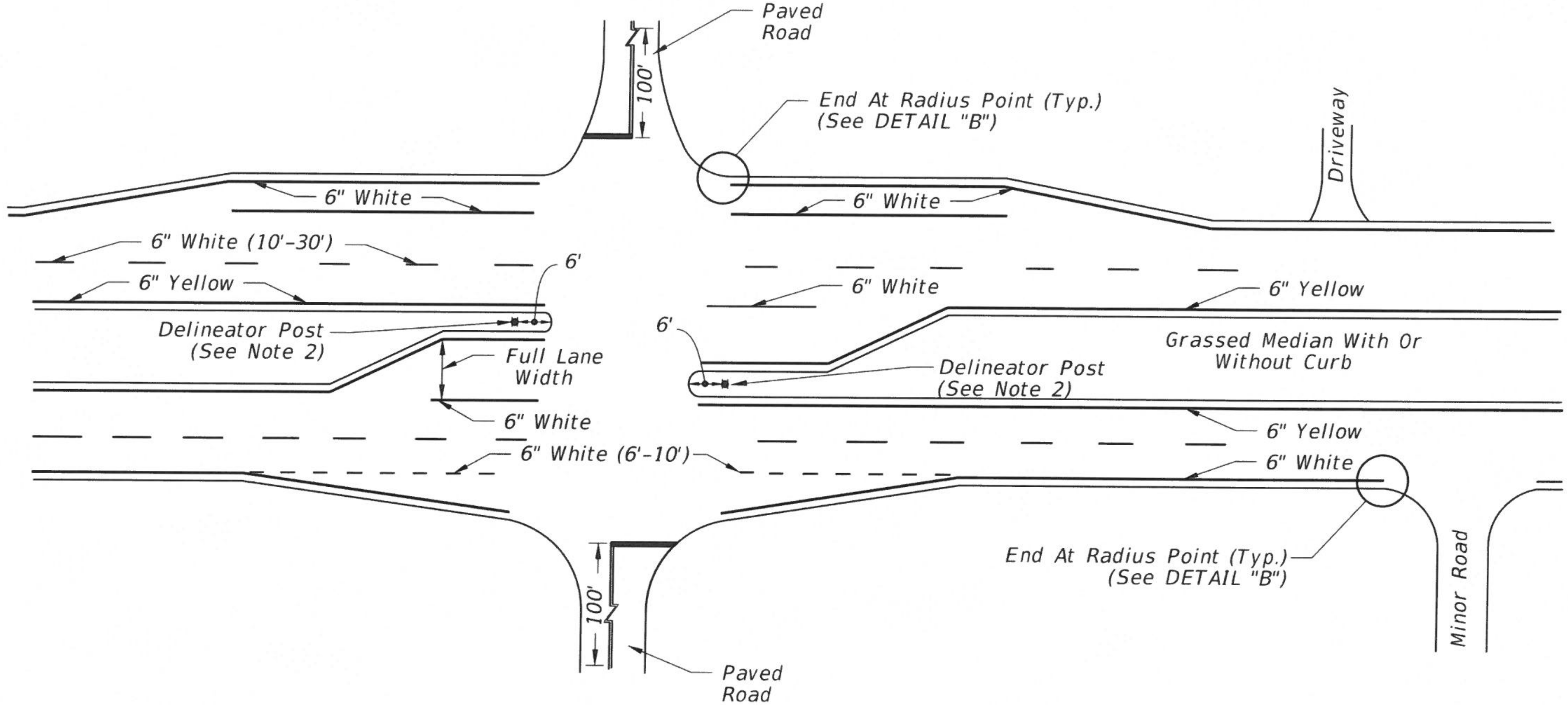
PAVEMENT MARKING LINES

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
STANDARD DETAILS

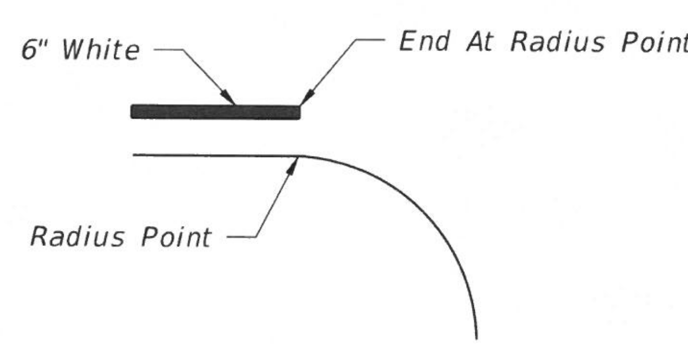
VOLKERT
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone: (850) 932-9935

DESIGNED BY: MIKE WARNKE
DRAWN BY: AMY O'LAUGHLIN
CHECKED BY:
QA/QC MANAGER: DAVID FORTE
DATE: MARCH 2018
FIELD BOOK/PAGES:
DISTRICT: 4
SECTION / TOWNSHIP / RANGE
REGISTRATION NUMBER: 64091
SIGNATURE:
DATE:
APPROVED BY:
DATE:
REVISIONS
NUMBER

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 15 OF 31



PAVEMENT MARKINGS FOR INTERSECTIONS WITH MAJOR AND MINOR ROADS



DETAIL "B"

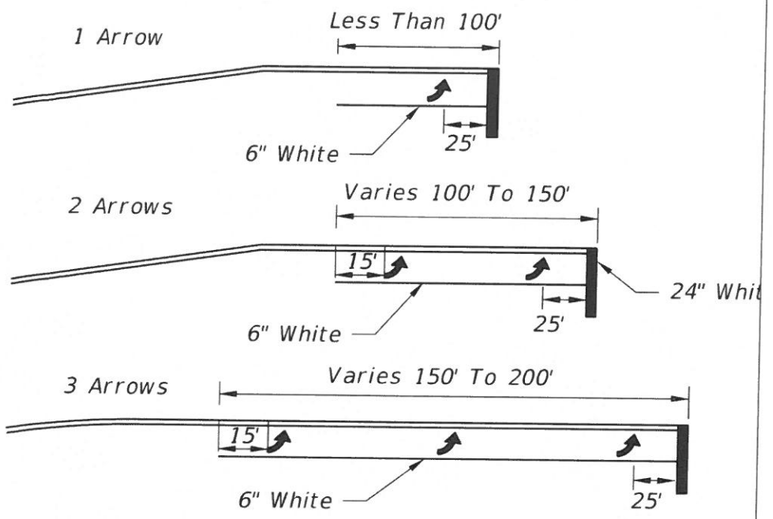
PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
STANDARD DETAILS

VOLKERT
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935
64091
DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: MIKE WARNKE
QA/QC MANAGER: DAVID FORTE
DATE: MARCH 2018
DISTRICT: 4

MIKE J WARNKE LICENSE No PE64091 STATE OF FLORIDA PROFESSIONAL ENGINEER

PROJECT NUMBER 635501

SHEET 16 OF 31



Arrow should be evenly spaced between first and last arrow. Turn lanes longer than 200' add one arrow for each 100' additional length.

ARROW SPACING

NOTES:

1. *This Index also applies to right turn lanes.*
2. *Make pavement marking yellow for left-turn lanes and white for right-turn lanes.*

MIKE J WARNKE LICENSE No PE64091 STATE OF FLORIDA PROFESSIONAL ENGINEER

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

STANDARD DETAILS

VOLKERT Engineers • Surveyors • Planners
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone: (850) 932-8835

DRAWN BY:	AMY O'LAUGHLIN
DESIGNED BY:	MIKE WARNKE
CHECKED BY:	
DISTRICT	4
DATE:	MARCH 2018
QA/QC MANAGER	DAVID FORTE
FIELD BOOK/PAGES	
SECTION/TOWNSHIP/RANGE	
REGISTRATION NO.	64091
DATE:	
SIGNATURE:	

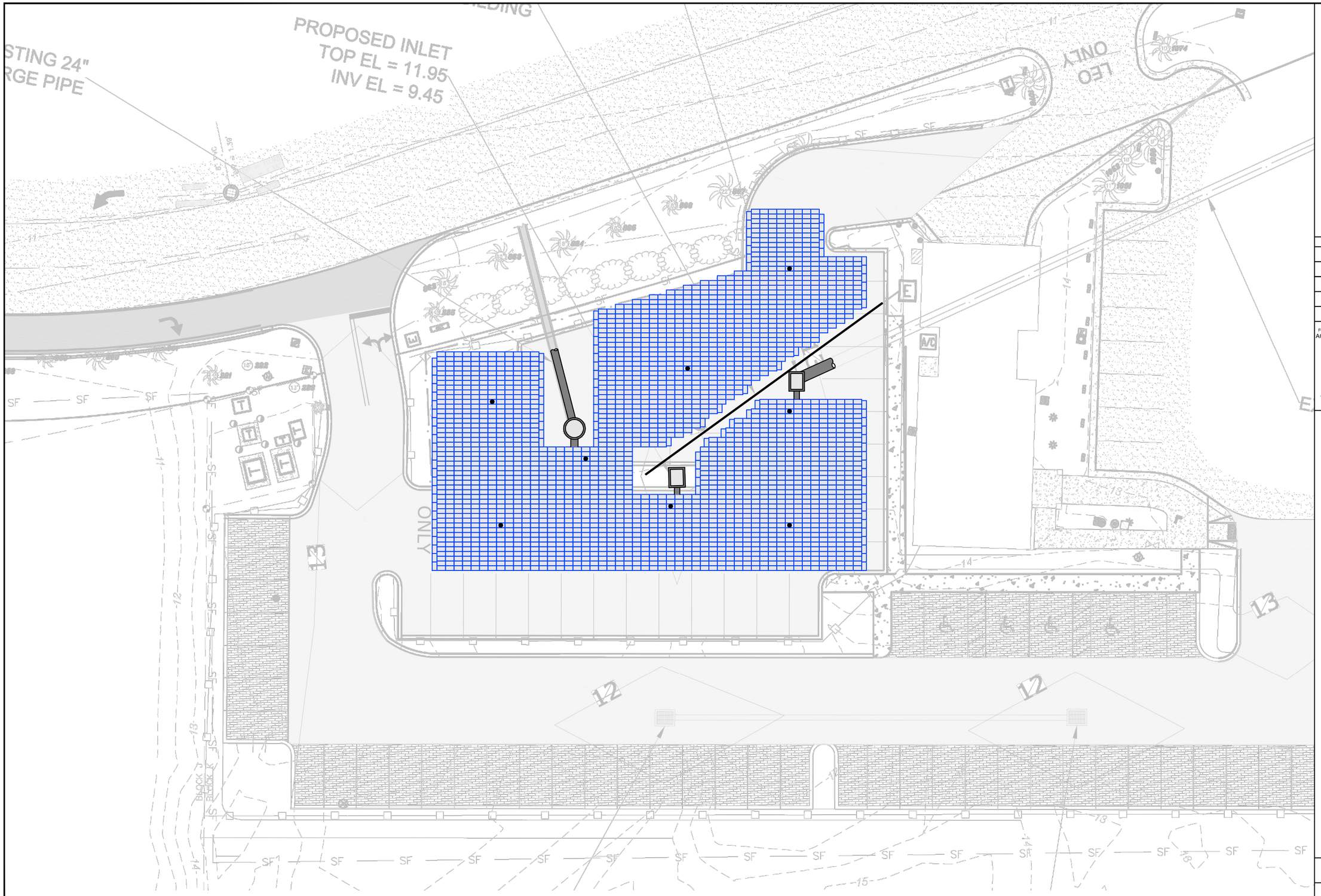
NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER

PROJECT NUMBER 635501

SURVEY NUMBER

SHEET 17 OF 31



R-TANK^{HD} SYSTEM OVERLAY
SCALE: 1" = 25'

NOTE: ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

DATE	REVISION

FOR ADDITIONAL INFORMATION PLEASE CONTACT:
ACF ENVIRONMENTAL 1-800-448-3636
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R-TANK^{HD} SYSTEM LAYOUT
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM
ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

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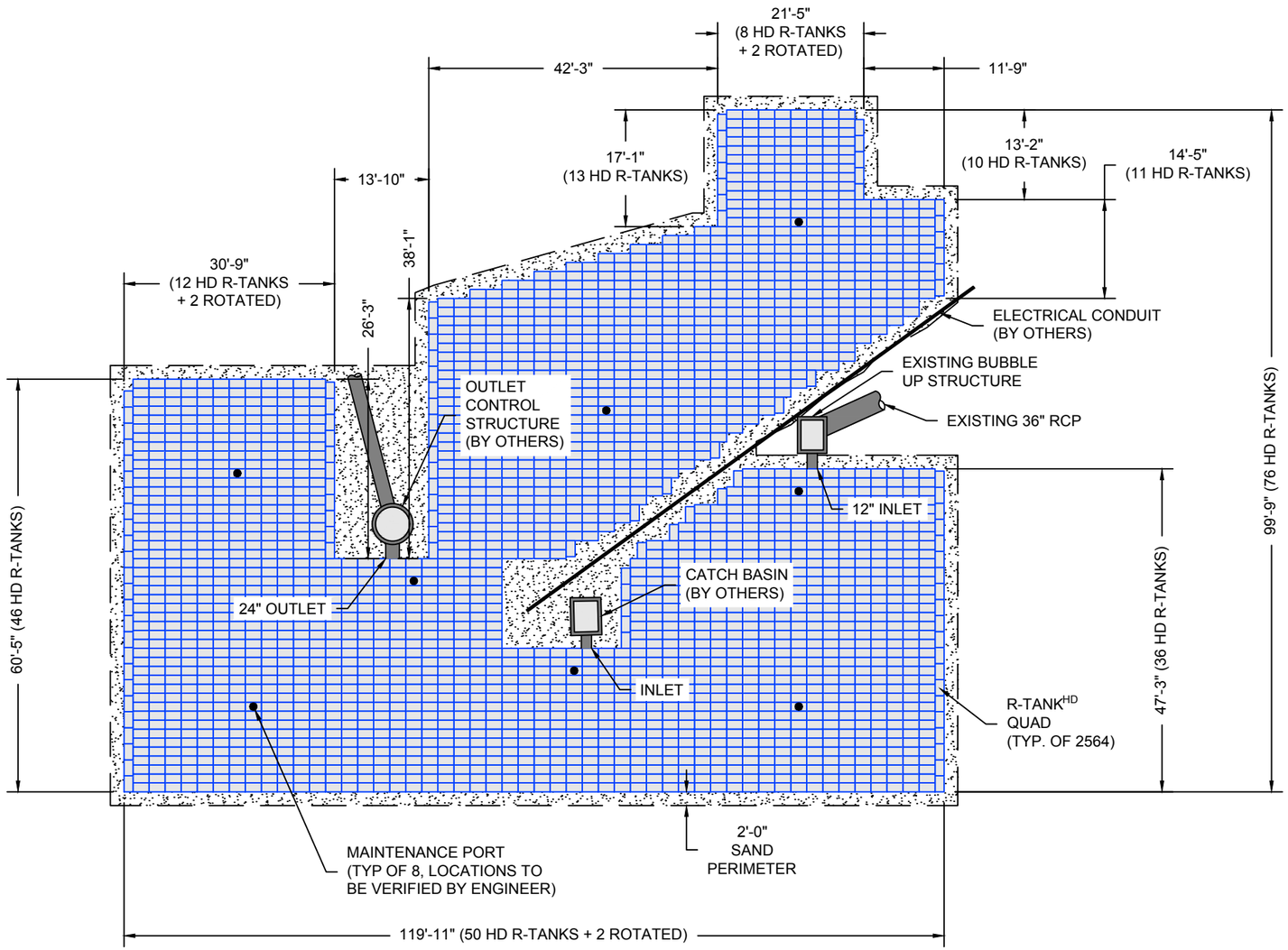
EDQ

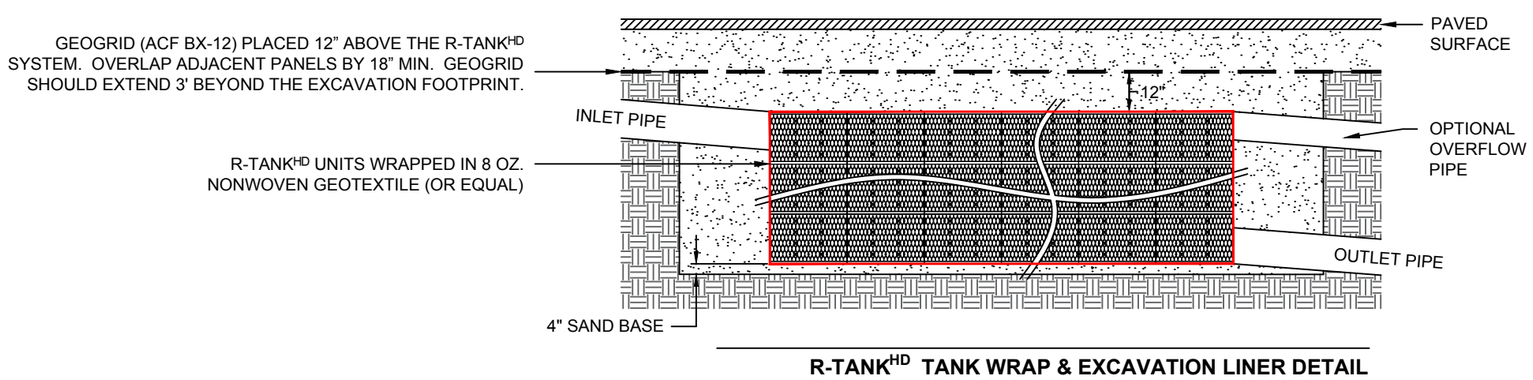
DATE
03/15/18

SHEET NO.
18 OF 31



NOTES:
1. STORAGE VOLUME FROM 4.33 TO 9.40 = 38,014 CF
2. MAXIMUM WATER SURFACE ELEVATION FOR STORAGE VOLUMES = 9.48.

LAYOUT SCALE	1" = 20'
R-TANK^{HD} MODULE TYPE	QUAD
TRAFFIC LOAD	HS-20
# OF QUAD R-TANKS	2,564
R-TANK STORAGE VOLUME	38,614 CF
TANK INVERT	4.33
INVERT OF SAND BASE (4")	4.00
TOP OF R-TANK ELEV.	9.91
TOP OF COVER SAND ELEV. (12")	10.91
ACF BX-12 GEOGRID ELEV.	10.91
MIN. SAND PERIMETER WIDTH	2.0 FT
SEE SHEETS 3 - 6 FOR DETAILS AND ADDITIONAL INFORMATION	



R-TANK^{HD} TANK WRAP & EXCAVATION LINER DETAIL

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DATE	REVISION

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R-TANK^{HD} SYSTEM LAYOUT
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM

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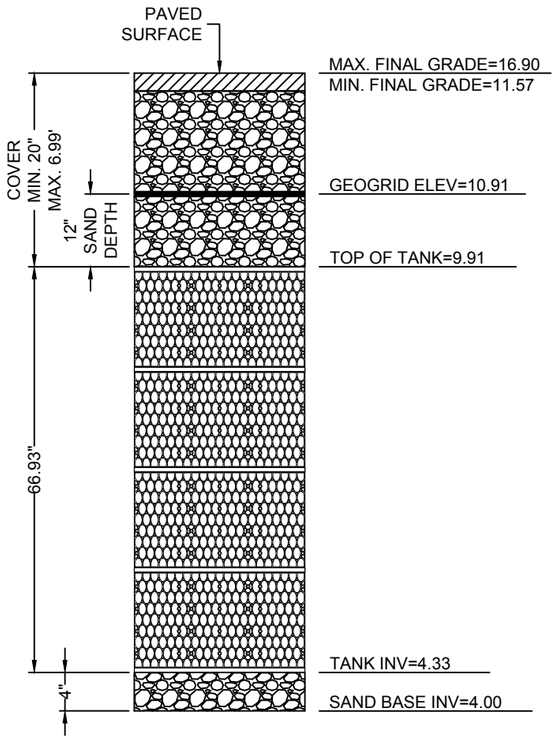
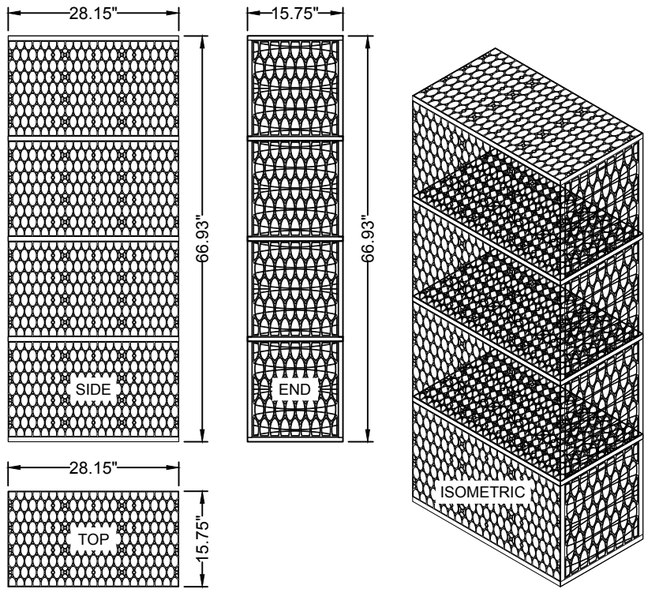
SHEET NO.: 19 OF 31



QUAD R-TANK^{HD} - ELEVATION



MODULE DATA

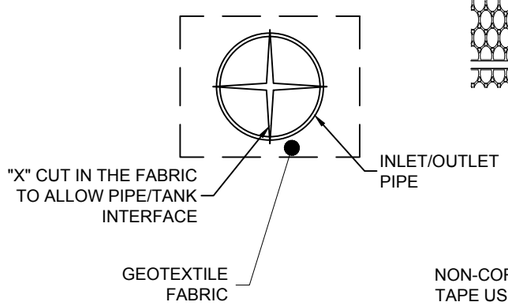
GEOMETRY:
LENGTH = 28.15 IN. (715 MM)
WIDTH = 15.75 IN. (400 MM)
HEIGHT = 66.93 IN. (1700 MM)
TANK VOLUME = 17.17 CF
STORAGE VOLUME = 16.31 CF
VOID INTERNAL VOLUME: 95%
VOID SURFACE AREA: 90%

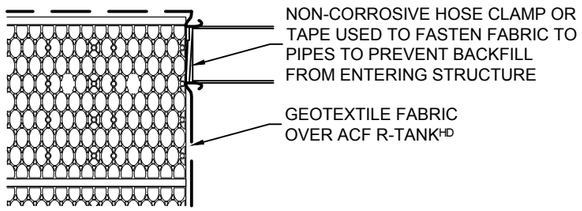
LOAD RATING:
33.4 PSI, (MODULE ONLY)
HS20, (WITH ACF COVER SYSTEM)
MATERIAL:
100% RECYCLED POLYPROPYLENE
SMALL PLATES PER SEGMENT/TOTAL:
5/20

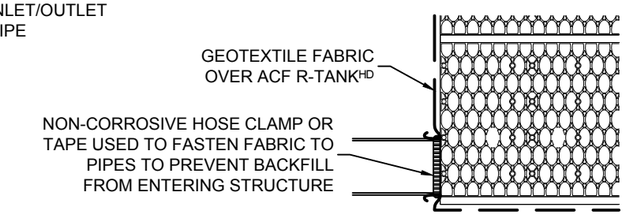
QUAD R-TANK^{HD} - MODULE DETAIL

R-TANK^{HD} QUANTITIES	
R-TANK^{HD} MODULE TYPE	QUAD
# OF QUAD R-TANKS	2,564
R-TANK STORAGE VOLUME	38,614 CF
SAND BED FOOTPRINT	9,649 SF
SAND QUANTITY	809 CY
8 OZ. NON-WOVEN GEOTEXTILE TANK WRAP	22,480 SF (2,498 SY)
ACF BX-12 GEOGRID	12,819 SF (1,424 SY)
12" MAINTENANCE PORTS	8
PIPE BOOTS (UNKNOWN SIZE)	1
12" PIPE BOOTS	1
24" PIPE BOOTS	1
NOTE: SAND QUANTITY INCLUDES 12" OF COVER AND 4" OF BASE.	
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.	

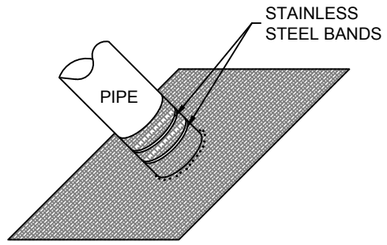
END VIEW OF PIPE/FABRIC CONNECTION.
CUT AN "X" IN THE FABRIC SLIGHTLY LARGER THAN PIPE, PULL THE FABRIC AROUND THE PIPE TO CREATE THE "BOOT" AND THEN SECURE WITH A HOSE-CLAMP.



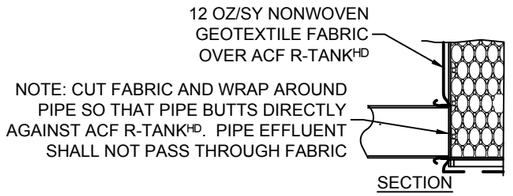


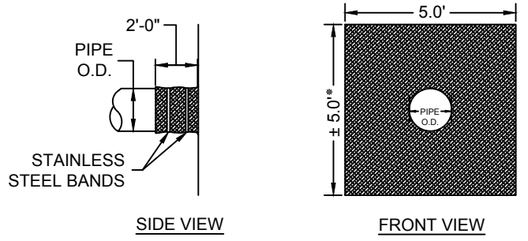


R-TANK^{HD} TYPICAL TANK INLET/OUTLET DETAIL



- 12 OZ/SY NONWOVEN GEOTEXTILE
- FABRIC COLLAR TO FIT OUTSIDE DIAMETER OF INLET/OUTLET PIPE
- * TRIM AS NEEDED





GEOTEXTILE PIPE BOOT FOR R-TANK^{HD}

NOTE: ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

DATE	REVISION

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www.acfenvironmental.com

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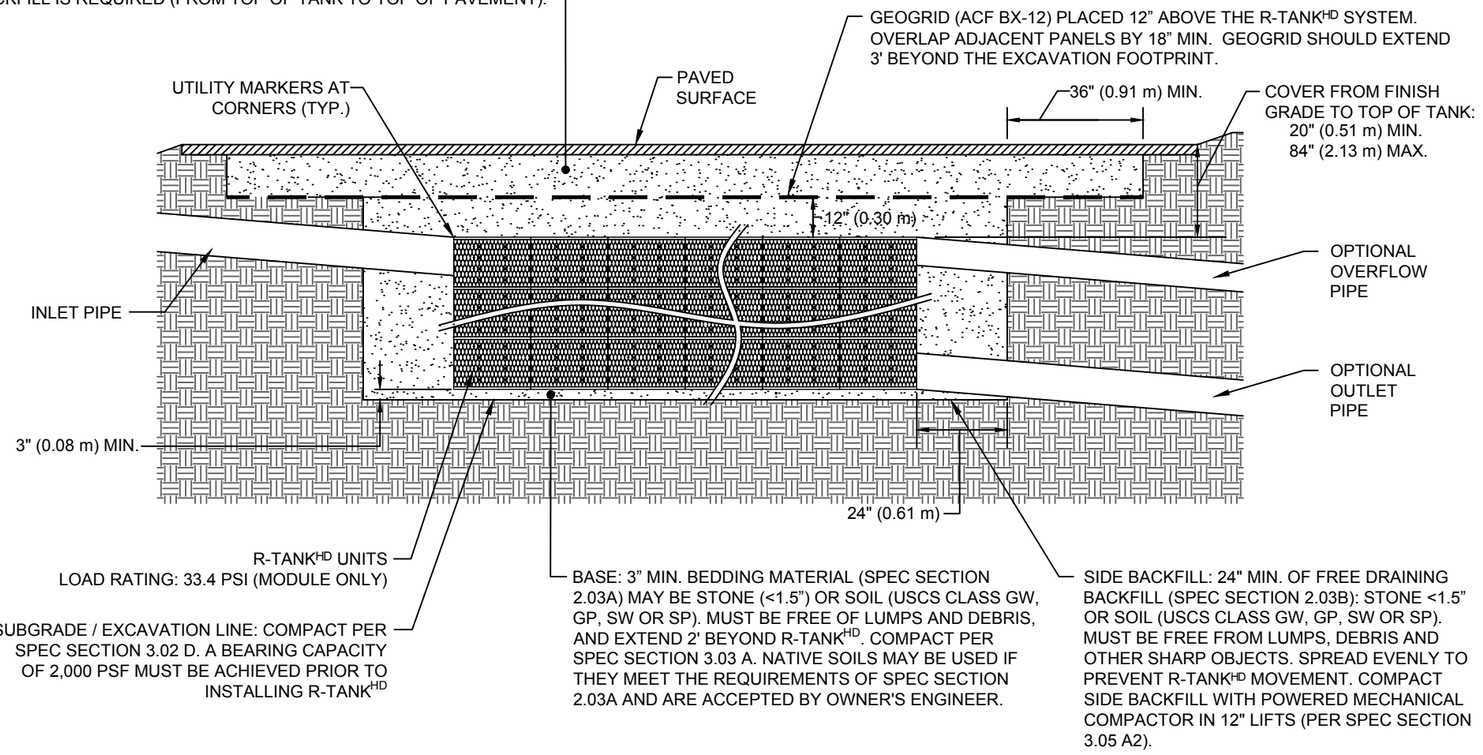
R-TANK^{HD} SYSTEM DETAILS
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM
ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

DRAWN BY: EDQ
DATE: 03/15/18
SHEET NO.: 20 OF 31

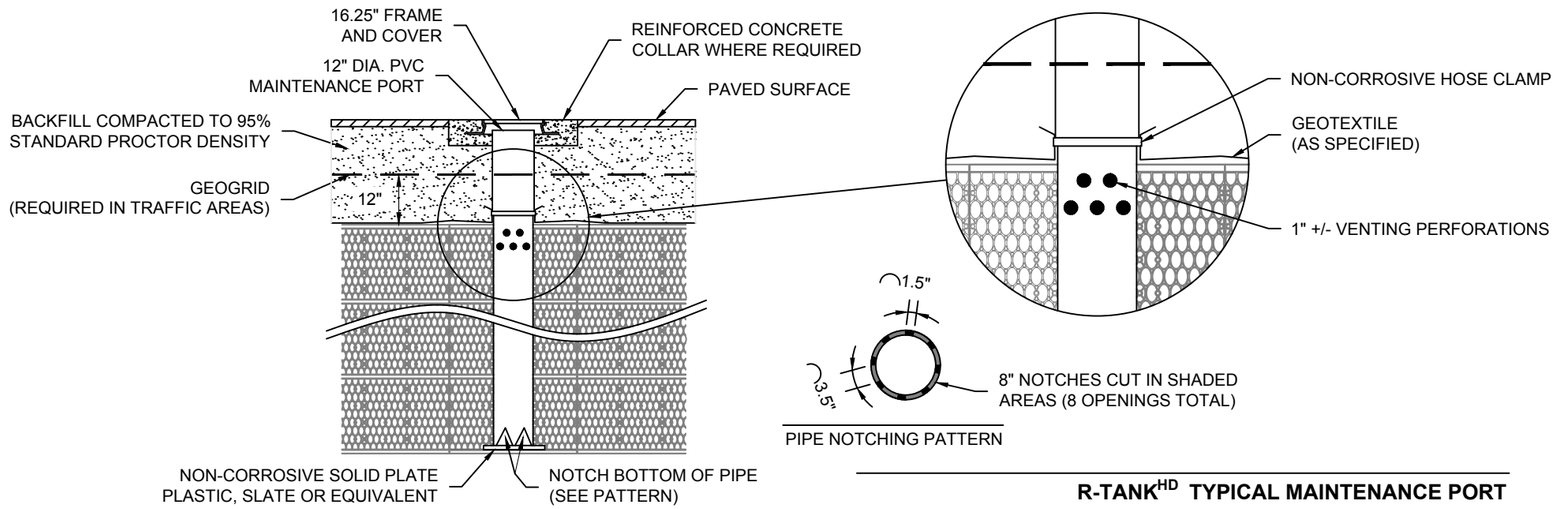
TOTAL COVER: 20” MINIMUM AND 84” MAXIMUM. FIRST 12” MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5” OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12” COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT ACF ENVIRONMENTAL IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^{HD} MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^{HD} FOOTPRINT.



R-TANK^{HD} & H-20 LOADS - SECTION VIEW

NOTES
1. THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. ONLY R-TANK^{HD} AND R-TANK^{SD} MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.



PIPE NOTCHING PATTERN

R-TANK^{HD} TYPICAL MAINTENANCE PORT

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R-TANK^{HD} SYSTEM DETAILS
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM
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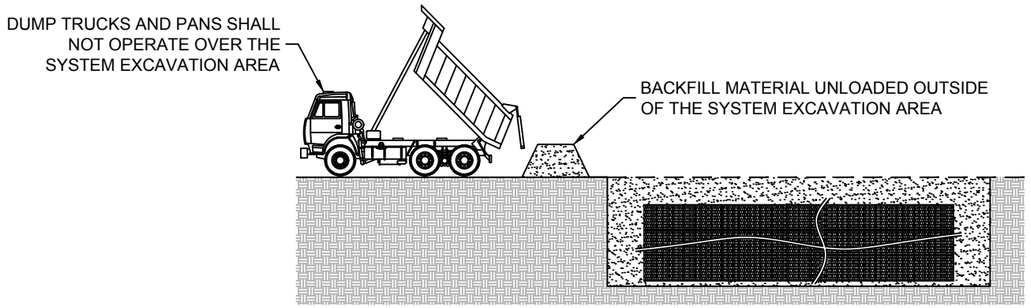
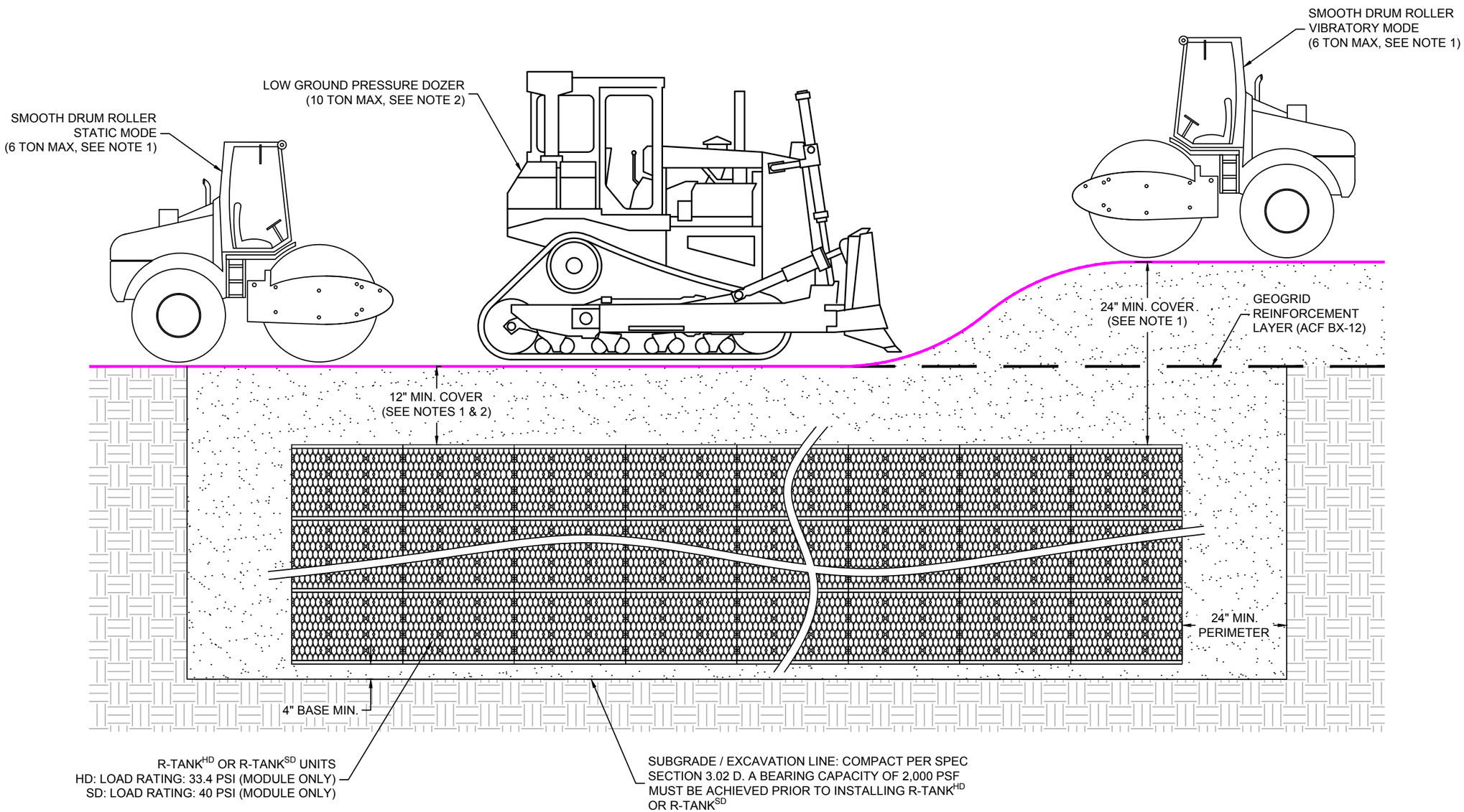


DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:

1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A**
2. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. **SPEC SECTION 3.05 B**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 B**
4. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). **SPEC SECTION 3.05 C**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL ACF REPRESENTATIVE FOR ADDITIONAL INFORMATION.



DATE	REVISION

FOR ADDITIONAL INFORMATION PLEASE CONTACT:
ACF ENVIRONMENTAL 1-800-448-3636
www.acfenvironmental.com

ACF ENVIRONMENTAL
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R-TANK^HD CONSTRUCTION EQUIPMENT COVER DETAIL
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM
ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

DRAWN BY: EDQ
DATE: 03/15/18
SHEET NO.: 22 OF 31

R-TANK SPECIFICATION

PART 1 - GENERAL

1.01 Related Documents
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 Description of Work Included
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Provide and install R-Tank, R-TankHD, or R-TankSD system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 Quality Control
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 Submittals
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 Delivery, Storage, and Handling
A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 Preinstallation Conference.
A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 Project Conditions
A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS

2.01 R-Tank Units
A. R -Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^{LD} VALUE	R-Tank^{HD} VALUE	R-Tank^{SD} VALUE
Void Area	Volume available for water storage	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%
Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	42.9 psi
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	20"	18"
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	19"
Maximum Cover	Maximum allowable cover depth	3 feet	< 7 feet	< 10 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs / cf	3.62 lbs/cf	3.96 lbs / cf
Rib Thickness	Thickness of load-bearing members	0.18 inches	0.18 inches	0.18 inches
Service Temperature	Safe temperature range for use	-14 – 167° F	-14 – 167° F	-14 – 167° F

2.02 Geosynthetics
A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is often not required for non-traffic load applications.

2.03 Backfill & Cover Materials
A. Bedding Materials: Stone (smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
B. Side and Top Backfill: Free draining stone (smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system. Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 Other Materials
A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION

3.01 Assembly of R-Tank Units
A. On-site assembly of tanks shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 Layout and Excavation
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 Preparation of Base
A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ½" (+/- ¼") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 Installation of the R-Tanks
A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer.
B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.
C. Install R-Tank modules by placing side by side, in accordance with the design drawings. No lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The modules are to be oriented as per the design drawing (15.75" x 28.15") with required depth as shown on plans. The large side plate of the tank should be placed on the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details.
D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent soil entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.
F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with 'U" bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 Backfilling of the R-Tank Units
A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
4. No compaction equipment is permissible to operate directly on the R-Tank modules.
5. Following placement of side backfill, a uniform 12" lift of the freely draining material (Section 2.03 B) shall be placed over the R-Tank and lightly compacted using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
6. Install a geogrid (required for traffic applications) over the initial 12" lift of backfill. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.
B. Only low pressure tire or track vehicles shall be operated over the R-Tank system during construction. No machinery should drive on top of the tank until a minimum of 18" of backfill and compaction is achieved. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Where necessary the heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system with tracked equipment.
C. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).
D. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.
E. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

PART 4 - USING THE SYSTEM

4.01 Maintenance Requirements
A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).
B. Inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter. This is done by removing the cap of the port and using a measuring device long enough to reach the bottom of the R-Tank system and stiff enough to push through the loose sediments, allowing a depth measurement.
C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.
D. A flushing event consists of pumping water into the Maintenance Port and/or adjacent structure, allowing the turbulent flows through the R-Tank system to re-suspend the fine sediments. If multiple Maintenance Ports have been installed, water should be pumped into each port to maximize flushing efficiency. Sediment-laden water can be filtered through a Dirtbag or approved equivalent if permitted by the locality.

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www.acfenvironmental.com

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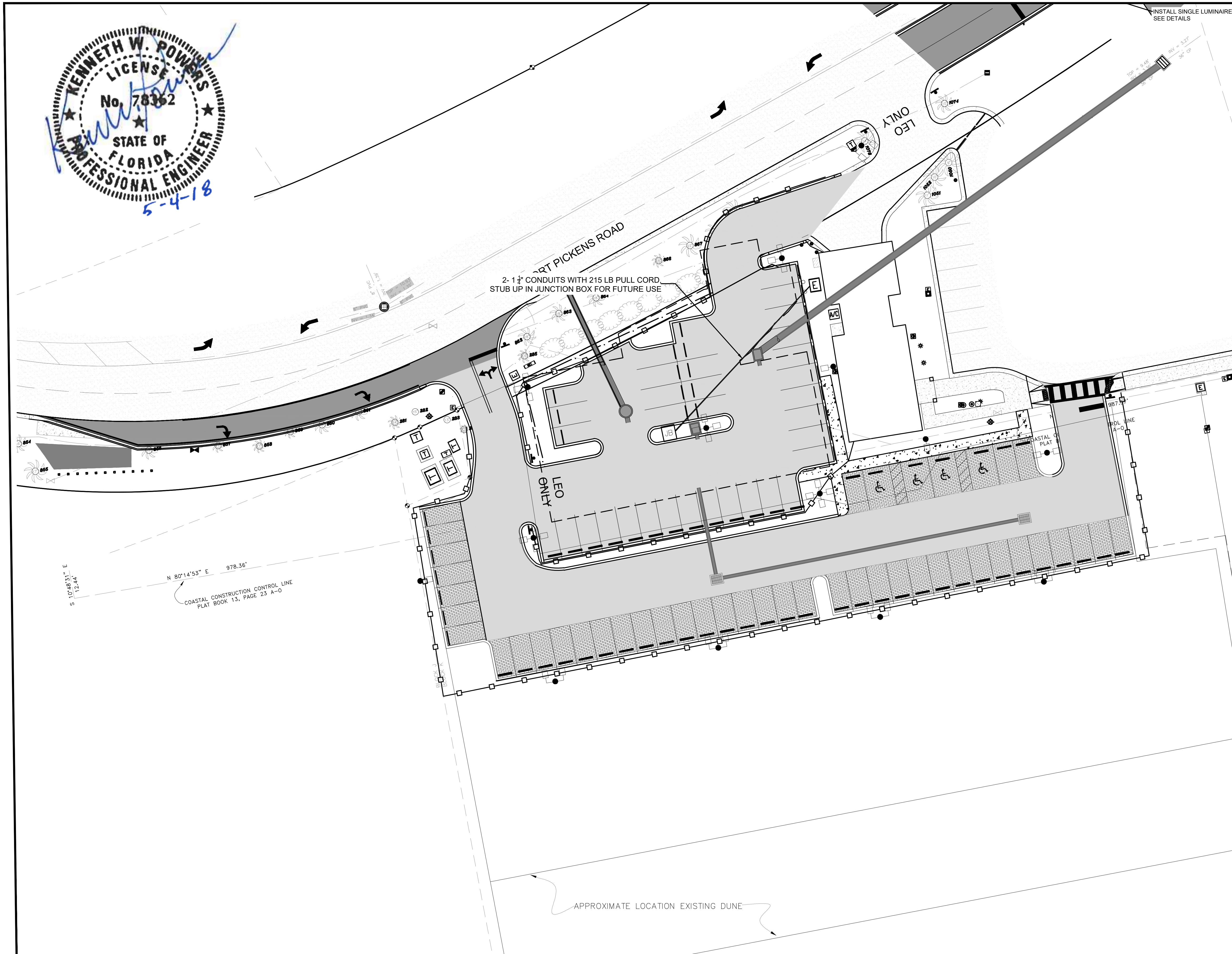
R-TANK SPECIFICATION
CASINO BEACH PARKING AREA
ESCAMBIA, FL
SITE DESIGNATION: INFILTRATION SYSTEM
ACF ENVIRONMENTAL, 1-800-448-3636, www.acfenvironmental.com

DRAWN BY
EDQ

DATE
03/15/18

SHEET NO.



GRAPHIC SCALE IN FEET

FULL SIZE 1" = 20'
HALF SIZE 1" = 40'

LEGEND:

R/W	Right of way
BM	Benchmark
ELEV	Elevation
INV	Invert
P.C.C.	Point of compound curvature
P.I.	Point of intersection
S.R.I.A.	Santa Rosa Island Authority
	1/2" Capped iron rod found #1748
	1/2" Capped iron rod set #7073
	4?x4?Concrete monument found #noted
	Nail and flag set
	Backflow preventor
	Electric equipment
	Fire hydrant
	Flag pole
	Ground light
	Light pole with base
	Road sign
	Soil boring
	Sewer clean-out
	Sprinkler control valve
	Sanitary sewer manhole
	Sewer valve marker
	Telephone equipment
	Gas marker
	Telephone marker
	Water meter
	Water valve
	Wood post
	Guard post
— G —	Gas line
— SS —	Sanitary sewer line
— UE —	Underground electric line
— W —	Waterline
— FM —	Force main
	Palm tree
	- CAPPED REBAR FOUND
	- SHRUB
	- TREE
HDPE	- HIGH DENSITY POLYETHYLENE PIPE
PB	- PLAT BOOK
RCP	- REINFORCED CONCRETE PIPE
PVC	- POLYVINAL CHLORIDE
INV	- INVERT OF STRUCTURE
TE	- THROAT ELEVATION
RE	- RIM ELEVATION
INV	- INVERT OF STRUCTURE
IE	- INVERT ELEVATION OF PIPE
	PROPOSED DEMOLITION
	RIGHT TURN LANE ASHALT
	PROPOSED ASPHALT
	EXISTING ASPHALT
	PROPOSED STAMPED ASPHALT
	PROPOSED CONCRETE
— 10 —	EXISTING CONTOUR
— 10 —	PROPOSED CONTOUR
	SPLIT RAIL FENCE
— SF — SF —	SILT FENCE
	FLOW ARROW
XX.XX	PROPOSED SPOT ELEVATION
EX. XX.XX	EXISTING SPOT ELEVATION
JB	JUNCTION BOX
	PROPOSED LIGHT POLE, NUMBER AND ARRANGEMENT OF LUMINAIRES AS SHOWN

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

PROPOSED LIGHTING PLAN

VOLKERT
Engineers • Surveyors • Planners

215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

DRAWN BY: AMY O'LAUGHLIN	DESIGNED BY: KEN POWERS, PE
DATE: MAY 2018	QA/QC MANAGER: DAVID FORTE
FIELD BOOK / PAGES:	CHECKED BY:
DISTRICT: 4	SECTION / TOWNSHIP / RANGE:
REG. FLA. ENG. NO. 78362	SIGNATURE:
DATE:	

NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER

PROJECT NUMBER 635501

SURVEY NUMBER

SHEET 24 OF 31

KENNETH W. POWERS
LICENSE
No. 78362
STATE OF FLORIDA
PROFESSIONAL ENGINEER
5-4-18

INSTALL SINGLE LUMINAIR
SEE DETAILS

PORT PICKENS ROAD

2- 1 ¼" CONDUITS WITH 215 LB PULL CORD
STUB UP IN JUNCTION BOX FOR FUTURE USE

FLT-SCL2-TYPE3 TWIN
MH: 15

FLT-SCL2-TYPE5 - 3 @ 90
MH: 15

FLT-SCL2-TYPE3 SINGLE
MH: 15

FLT-SCL2-TYPE5 - 3 @ 90
MH: 15

FLT-SCL2-TYPE5 - 4
MH: 15

FLT-SCL2-TYPE3 SINGLE
MH: 15

FLT-SCL2-TYPE5 2@180
MH: 15

FLT-SCL2-TYPE5 - 4
MH: 15

FLT-SCL2-TYPE5 - 4
MH: 15

FLT-SCL2-TYPE3 SINGLE
MH: 15

FLT-SCL2-TYPE3 TWIN
MH: 15

FLT-SCL2-TYPE3 TWIN
MH: 15

FLT-SCL2-TYPE3 TWIN
MH: 15

FLT-SCL2-TYPE3 TWIN
MH: 15

LEO ONLY

LEO ONLY

COASTAL CONSTRUCTION CONTROL LINE
PLAT BOOK 13, PAGE 23 A-O

N 80°14'53" E 978.36'

S 10°48'31" E 12.44'

N
W E
S

20 10 0 20
GRAPHIC SCALE IN FEET

FULL SIZE 1" = 20'
HALF SIZE 1" = 40'

LEGEND:

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	1/2" Capped iron rod set #7073
	4?x4?Concrete monument found #note
	Nail and flag set
	Backflow preventor
E	Electric equipment
	Fire hydrant
	Flag pole
	Ground light
	Light pole with base
	Road sign
	Soil boring
	Sewer clean-out
	Sprinkler control valve
	Sanitary sewer manhole
	Sewer valve marker
T	Telephone equipment
	Gas marker
	Telephone marker
	Water meter
	Water valve
	Wood post
	Guard post
G	Gas line
SS	Sanitary sewer line
UE	Underground electric line
W	Waterline
FM	Force main
	Palm tree
	- CAPPED REBAR FOUND
	- SHRUB
	- TREE
HDPE	- HIGH DENSITY POLYETHYLENE PIPE
PB	- PLAT BOOK
RCP	- REINFORCED CONCRETE PIPE
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	RIGHT TURN LANE ASHALT
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	PROPOSED STAMPED ASPHALT
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XX.XX	PROPOSED SPOT ELEVATION
EX. XX.XX	EXISTING SPOT ELEVATION
JB	JUNCTION BOX
	PROPOSED LIGHT POLE, NUMBER AND ARRANGEMENT OF LUMINAIRES AS SHOWN

Luminaire Schedule

Symbol	Qty	Label	Arrangement	LLF	Description	Filename
	3	FLT-SCL2	4 @ 90 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	5	FLT-SCL2	TWIN	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T3	FLT-SCL2-Type3 3.1.ies
	2	FLT-SCL2	3 @ 90 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	1	FLT-SCL2	2 @ 180 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	3	FLT-SCL2	SINGLE	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T3	FLT-SCL2-Type3 3.1.ies

Calculation Summary

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
PARKING	Illuminance	Fc	0.60	1.8	0.1	6.00	18.00
Driveway	Illuminance	Fc	0.47	1.1	0.1	4.70	11.00
South Parking	Illuminance	Fc	0.77	1.8	0.3	2.57	6.00
West Parking	Illuminance	Fc	0.60	1.1	0.4	1.50	2.75

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

PROPOSED PHOTOMETRIC PLAN

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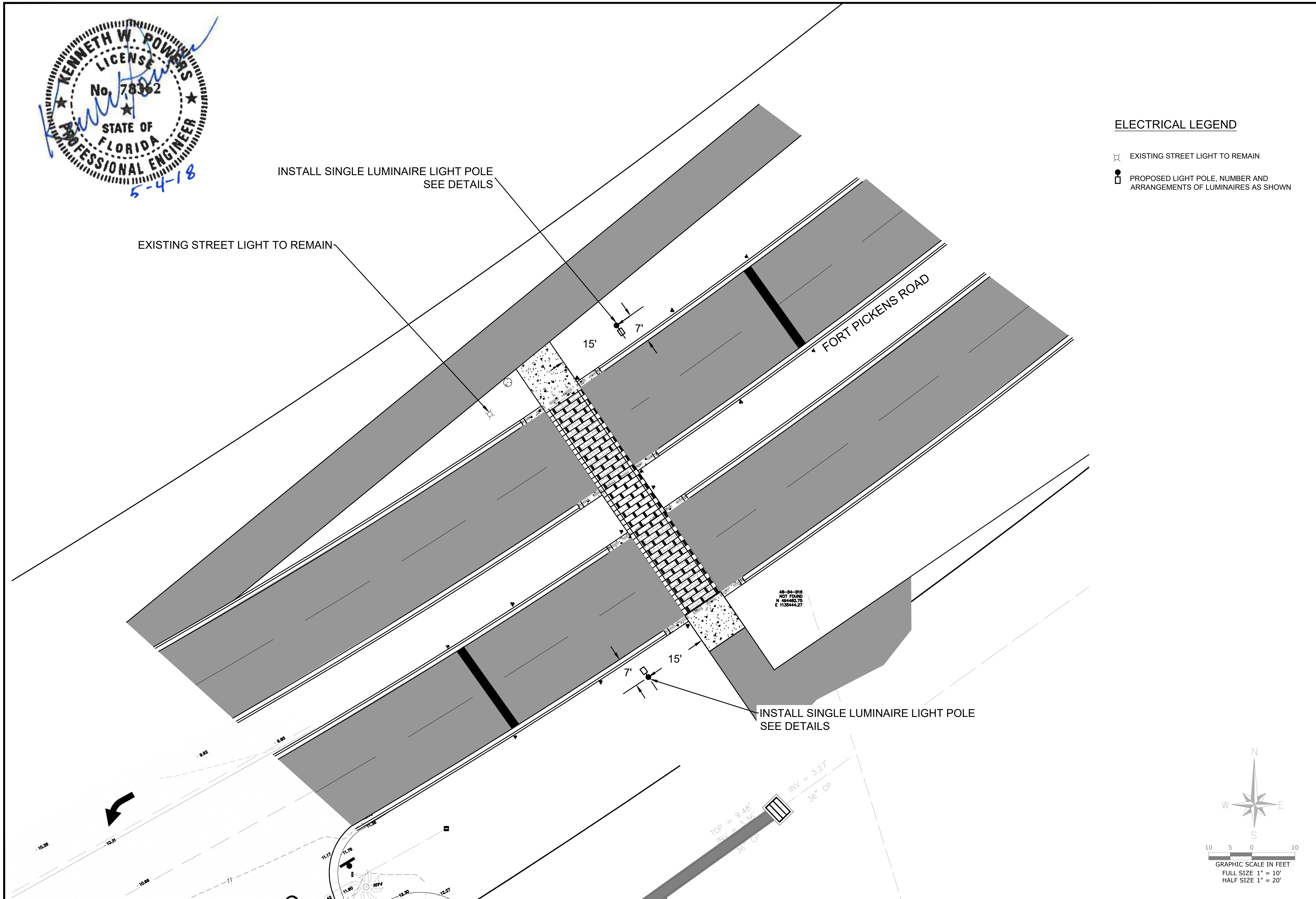
SURVEY NUMBER
SHEET 25 OF 31



PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

PROPOSED FT PICKENS CROSSWALK LIGHTING PLAN

VOLKERT
Engineers • Surveyors • Planners

215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

DRAWN BY: AMY O'LAUGHLIN	DESIGNED BY: KEN POWERS, PE	CHECKED BY:	REG. FLA. ENG. NO. 78362
DATE: MAY 2018	QA/QC MANAGER: DAVID FORTE	DISTRICT: 4	DATE:
FIELD BOOK / PAGES:	SECTION / TOWNSHIP / RANGE		SIGNATURE:

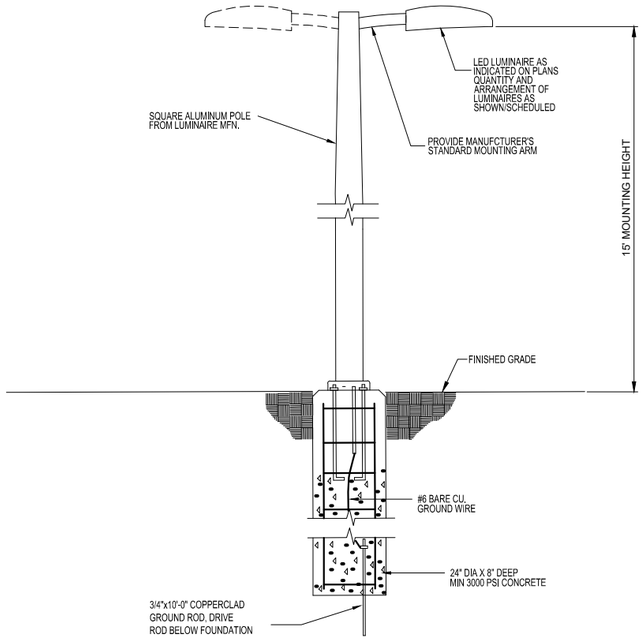
NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER

PROJECT NUMBER 635501

SURVEY NUMBER

SHEET 26 OF 31

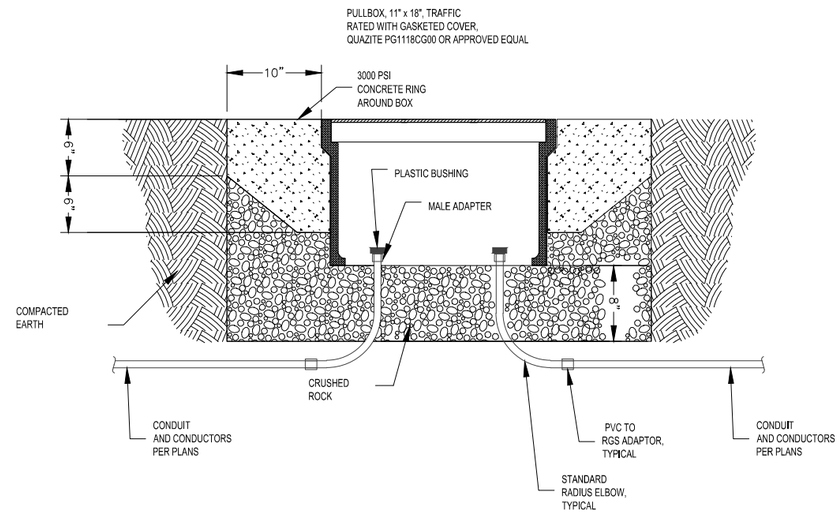


DETAIL NOTES:

1. CONCRETE FOUNDATION SHALL BE IN ACCORDANCE WITH FDOT STANDARD DRAWINGS AND SPECIFICATIONS.
2. POLES SHALL YIELD A LUMINAIRE MOUNTING HEIGHT OF APPROXIMATELY 15' UNLESS OTHERWISE NOTED.
3. ASSEMBLIES SPECIFIED ARE SOLAR TURTLE FRIENDLY LUMINAIRES PROVIDED WITH POLES AND BATTERY SYSTEM.
4. IN AREAS WITH HIGH WATER TABLE, CONTRACTOR MAY SUBSTITUTE PRE CASE FOUNDATION WITH SAME DIMENSIONS AND STRUCTURAL PROPERTIES.

GENERAL ELECTRICAL NOTES:

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LATEST EDITION RECOGNIZED BY THE AUTHORITY HAVING JURISDICTION, AND APPLICABLE LOCAL RULES, REGULATIONS AND ORDINANCES, COORDINATED WITH ALL DISCIPLINES.
2. UNLESS OTHERWISE NOTED, UNDERGROUND CONDUITS SHALL BE 24" BELOW GRADE AND SHALL BE SCHEDULE 40 PVC. TRANSITIONING TO RGS ABOVE GRADE; TRANSITION FROM PVC TO RGS SHALL BE MADE BELOW GRADE. INTERMEDIATE METAL CONDUIT IS NOT ACCEPTABLE.
3. ROUTING AND LOCATIONS OF EQUIPMENT SHOWN ARE APPROXIMATE; CONTRACTOR SHALL DETERMINE BEST MEANS OF ROUTING IN THE FIELD.
4. LOCATIONS OF LIGHT POLES SHALL BE STAKED BY THE CONTRACTOR PRIOR TO INSTALLATION FOR REVIEW BY OWNER AND ENGINEER.
5. POLES AND LUMINAIRES OTHER THAN THOSE SPECIFIED MAY BE SUBMITTED FOR CONSIDERATION IF SUPPORTING PHOTOMETRIC CALCULATIONS ARE ALSO PROVIDED. LUMINAIRES SHALL BE LISTED (OR BE CAPABLE OF BEING LISTED) IN FWC'S APPROVED PRODUCT LIST OF TURTLE FRIENDLY LUMINAIRES.
6. SEE LUMINAIRE SCHEDULE FOR BASIS OF LIGHTING DESIGN.



JUNCTION BOX
N.T.S.

DETAIL NOTES:

1. PROVIDE CONDUITS AND CONDUCTORS AS DENOTED ON PLAN SHEETS.

LUMINAIRE SCHEDULE

SCALE: NTS

Luminaire Schedule						
Symbol	**Qty**	**Label**	**Arrangement**	**LLF**	**Description**	**Filename**
	3	FLT-SCL2	4 @ 90 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	5	FLT-SCL2	TWIN	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T3	FLT-SCL2-Type3 3.1.ies
	2	FLT-SCL2	3 @ 90 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	1	FLT-SCL2	2 @ 180 DEGREES	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T5	FLT-SCL2-Type5 2.1.ies
	3	FLT-SCL2	SINGLE	0.370	SCL2 Series MOD#_ SCL2-SPMS-WH-T3	FLT-SCL2-Type3 3.1.ies

BASIS OF DESIGN IS FIRST LIGHT TECHNOLOGIES SCL2 SERIES

KENNETH W. POWERS LICENSE No. 78362 STATE OF FLORIDA PROFESSIONAL ENGINEER
5-4-18

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

LIGHTING DETAILS

VOLKERT Engineers * Surveyors * Planners
215 FAIRPOINT DRIVE SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-9935

DRAWN BY: AMY O'LAUGHLIN
DESIGNED BY: KEN POWERS, PE
CHECKED BY:
QA/QC BY: DAVID FORTE
DATE: MAY 2018
FIELD BOOK PAGES:
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DATE:
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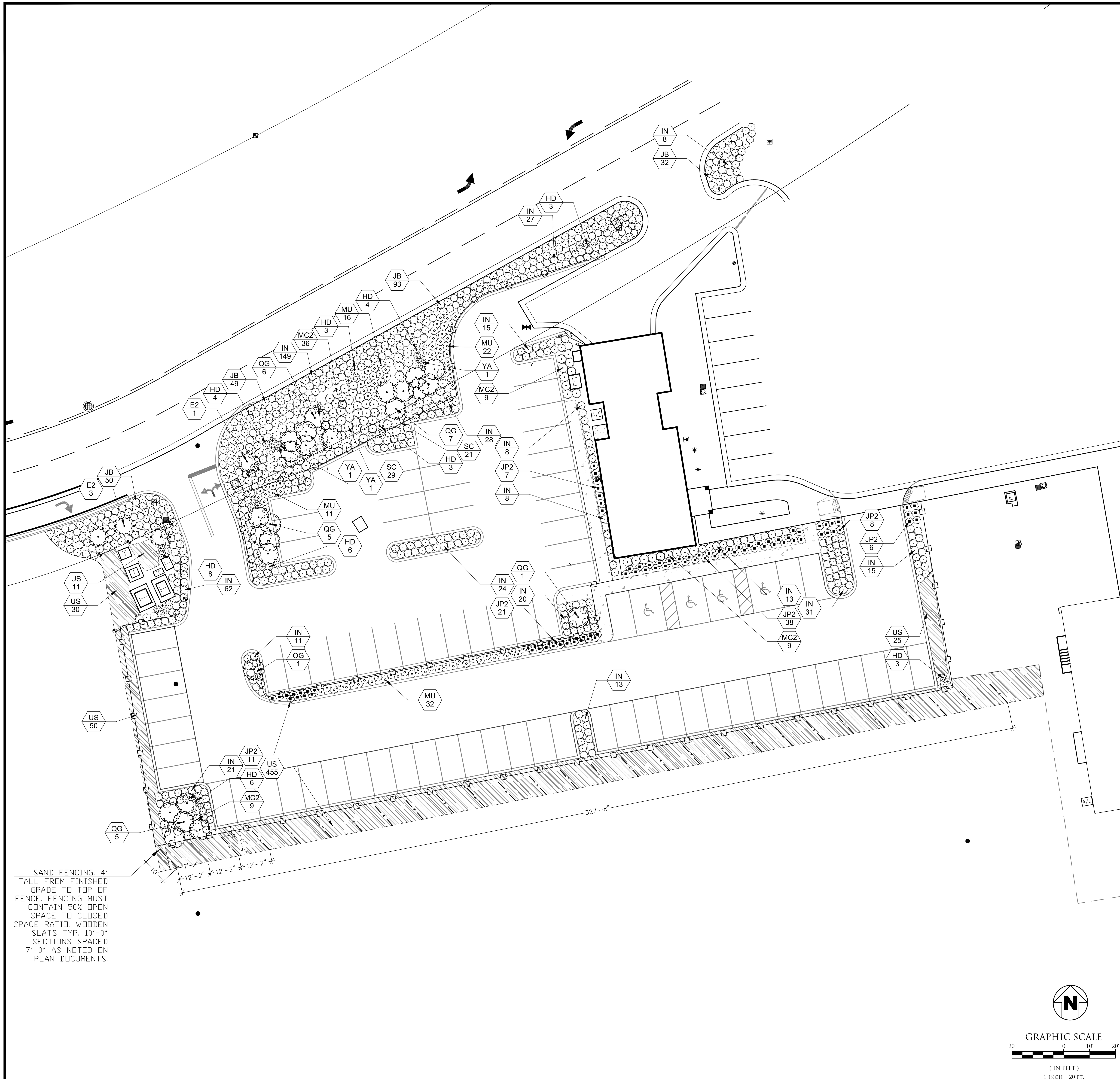
APPROVED BY | DATE | REVISIONS | NUMBER

DRAWING NUMBER
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 27 OF 31



PLANT SCHEDULE

TREES	CODE	QTY	BOTANICAL NAME	CONT	
	QG	25	Quercus geminata Sand Live Oak-Shrub Form	3 gal	
	E2	4	Sabel Palmetto Existing Palmetto to Remain	Existing	
SHRUBS	**CODE**	**QTY**	**BOTANICAL NAME**	**CONT**	**SPACING**
	HD	40	Helianthus debilis Cucumberleaf Sunflower	3 gal	36" o.c.
	IN	453	Ilex vomitoria `Nana` Dwarf Yaupon	3 gal	36" o.c.
	JP2	91	Juniperus chinensis `Parsonii` Parsoni Juniper	3 gal	36" o.c.
	JB	224	Juniperus conferta `Blue Pacific` Blue Pacific Juniper	3 gal	36" o.c.
	MU	81	Muhlenbergia capillaris Pink Muhly	3 gal	36" o.c.
	MC2	63	Myrica cerifera `Pumila` Dwarf Wax Myrtle	3 gal	42" o.c.
	SC	50	Serenoa repens `Cinerea` Silver Saw Palmetto	3 gal	48" o.c.
	YA	3	Yucca aloifolia Spanish Bayonet	3 gal	60" o.c.
SHRUB AREAS	**CODE**	**QTY**	**BOTANICAL NAME**	**CONT**	**SPACING**
	US	571	Uniola paniculata Sea Oats	4" pot	36" o.c.

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
100% LANDSCAPE PLAN

ESCAMBIA COUNTY FLORIDA

VOLKERT
Engineers • Surveyors • Planners
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REG. FLA. ENG. NO. 64091

DRAWN BY: AMY O'LAUGHLIN | DESIGNED BY: MIKE WARNKE | CHECKED BY:
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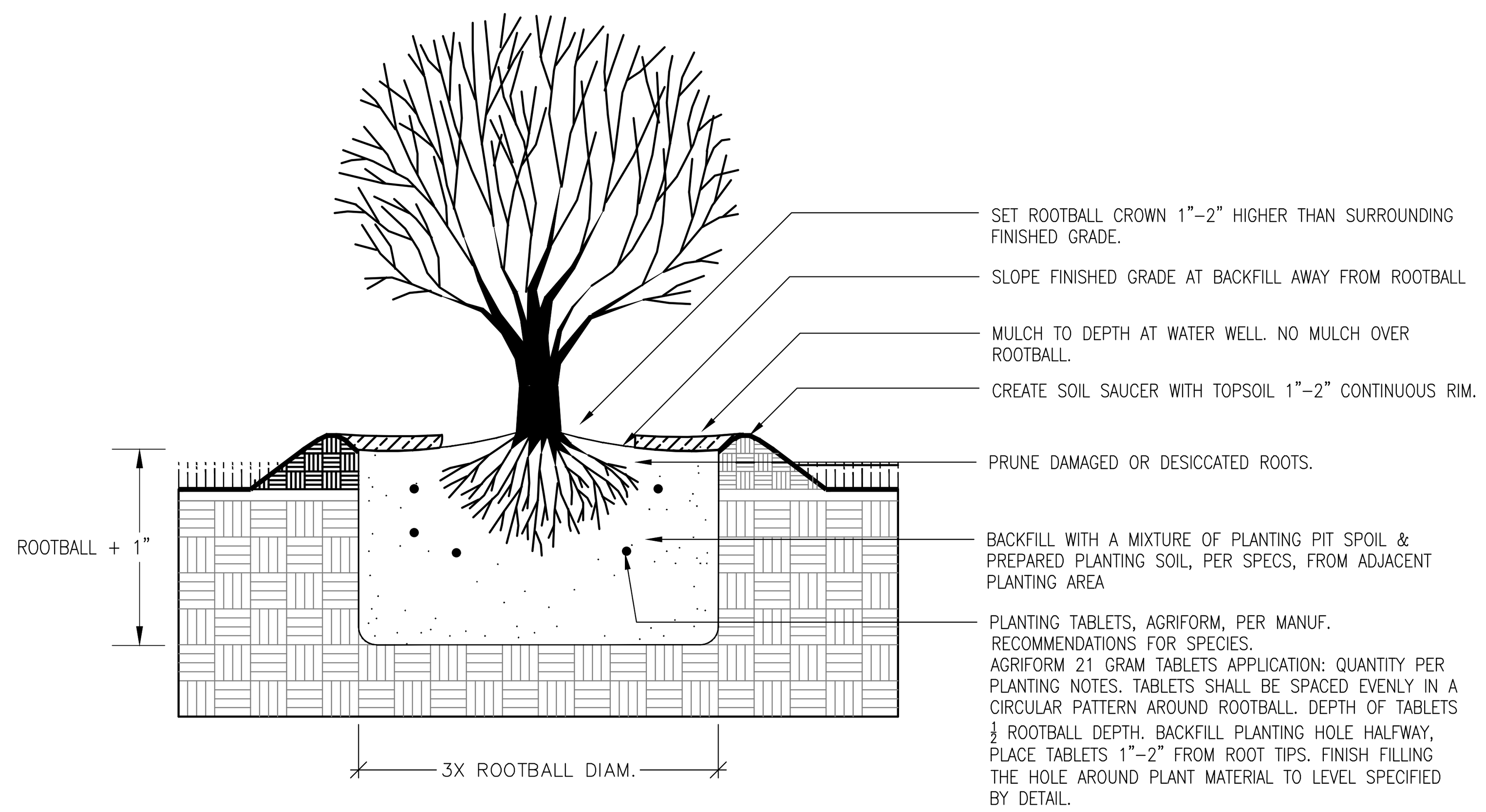
SIGNATURE: | DATE:

NUMBER	REVISIONS	DATE	APPROVED BY

DRAWING NUMBER LS101
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 28 OF 31

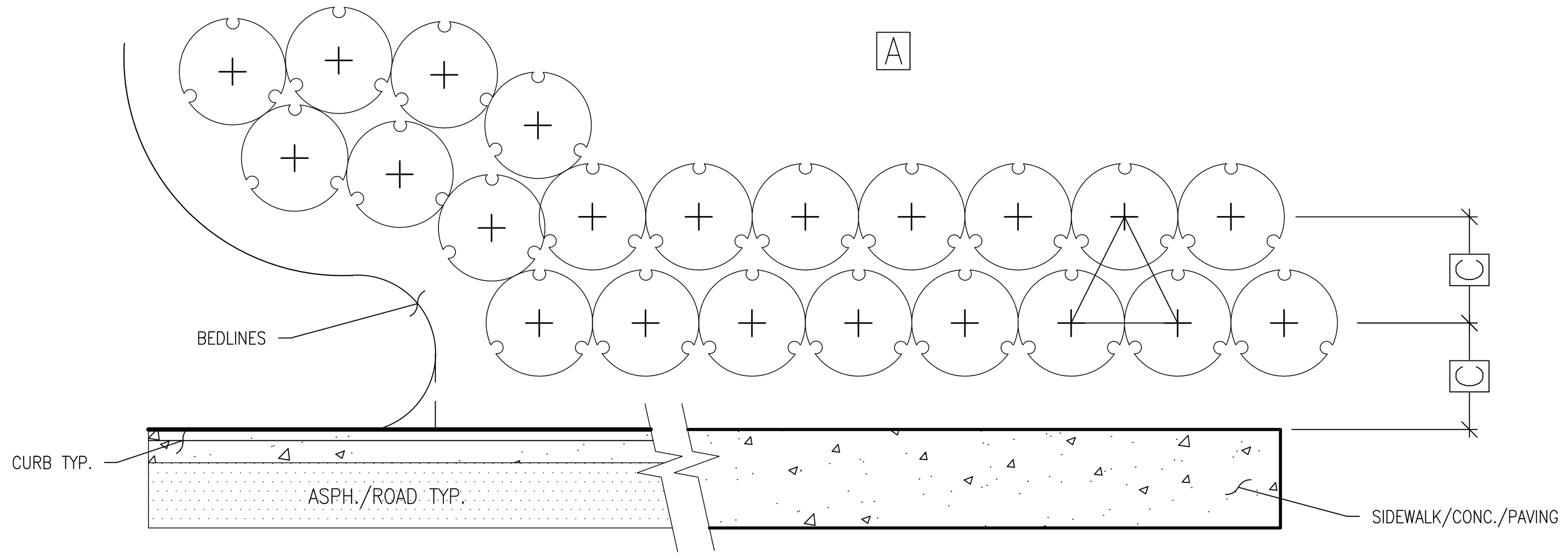
REGISTERED LANDSCAPE ARCHITECT STEVE DAME STATE OF FLORIDA
INVALID WITHOUT SIGNATURE

Jerry Pate Design



01 SHRUB PLANTING - BARE ROOT

N.T.S.



A – SHRUBS AND GROUNDCOVERS ADJACENT TO STRAIGHT EDGES SHALL BE TRIANGULAR SPACED IN ROWS PARALLELED TO THE STRAIGHT EDGE.

B – SHRUBS AND GROUNDCOVERS ADJACENT TO CURVED EDGES SHALL BE PLANTED IN ROWS PARALLEL TO THE CURVED EDGES. CURVED EDGES TO BE VERY SMOOTH RADII.

C – FIRST ROW OF SHRUBS ADJACENT TO CURB, BEDLINES & CONCRETE SHALL BE A SPACED A DISTANCE OF THE ENTIRE SPACING (IN INCHES) SPECIFIED ON THE PLANT SCHEDULE.

02 TYPICAL SPACING DETAIL

N.T.S.

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE PLANS AND WRITTEN NOTES. NO SUBSTITUTIONS SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL BY THE LANDSCAPE ARCHITECT, JERRY PATE DESIGN.
2. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE PLANS.
3. LANDSCAPE MATERIALS SHALL BE ADJUSTED IN THE FIELD TO AVOID CONFLICTS WITH ANY PROPOSED OR REMAINING UTILITY STRUCTURES, DRAINAGE STRUCTURES, DITCHES, UNDER DRAINS, DITCH BLOCKS, STORM WATER FACILITIES AND DRAINAGE DISCHARGE PATHS, EXISTING SIGNAGE, AND EXISTING LIGHTING AND THEIR APPURTENANCES. THE CONTRACTOR SHALL NOT INSTALL THE PROPOSED IMPROVEMENTS IF A CONFLICT EXISTS. ANY COSTS TO REMOVE AND/OR REPAIR WORK ADJUSTED THAT HAS NOT BEEN APPROVED PREVIOUSLY BY THE LANDSCAPE ARCHITECT SHALL BE AT THE CONTRACTOR'S EXPENSE.
4. LANDSCAPE IMPROVEMENTS SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE MOST CURRENT FDOT STANDARD SPECIFICATION 580, AND ANY OTHER PLANTING SPECIFICATIONS INCLUDED IN THE CONSTRUCTION DOCUMENTS.
5. PLANT QUANTITIES SHOWN ON THE LANDSCAPE PLAN ARE MINIMUM ONLY. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTRACTOR'S OWN QUANTITY TAKE-OFF, AND SHALL PROVIDE ALL PLANT MATERIAL REQUIRED TO FILL THE PLANTING BEDS AT THE SPACING INDICATED ON THE PLANTING SCHEDULE.
6. PLANTING FOR ALL PLANT MATERIAL AND THE PROTECTION OF EXISTING TREES TO REMAIN SHALL BE IN ACCORDANCE WITH THE MOST CURRENT FDOT DESIGN STANDARD INDEX 987, AND THE DETAILS IN THE CONSTRUCTION DOCUMENTS.
7. THE CONTRACTOR SHALL INSURE THAT, PRIOR TO MOVING ON SITE, ALL EQUIPMENT WHICH LAST OPERATED IN PLACES KNOW TO BE INFESTED WITH NOXIOUS WEEDS IS FREE OF SOIL, SEEDS, VEGETATIVE MATTER, OR OTHER DEBRIS THAT COULD CONTAIN OR HOLD SEEDS.
8. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE JOB SITE. IF THE CONTRACTOR NEEDS HAZARDOUS MATERIALS TO PERFORM THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, IN WRITING, ADVANCE PERMISSION FROM THE OWNER. IF ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL IS FOUND ON THE PROJECT, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER.
9. ANY PUBLIC LAND SURVEY SYSTEM CORNER OR ANY MONUMENT THAT PERPETUATES THE RIGHT-OF-WAY WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED BY THE CONTRACTOR. IF A MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHOULD NOTIFY THE OWNER.

PLANTING BED PREPARATION

1. ALL TRASH, ASPHALT, CONCRETE SIGNAGE, WEEDS AND OTHER SPOILAGE SHALL BE REMOVED FROM SITE PRIOR TO MOBILIZATION OF PLANTING CONTRACTOR.
2. ALL AREAS TO BE PLANTED OR SODDED SHALL BE GRADED TO SITE SPECIFICATIONS PRIOR TO MOBILIZATION OF PLANTING CONTRACTOR.
3. CONTRACTOR SHALL CONFIRM ALL PLANTING BEDS ARE NOT COMPACTED BEYOND 85 PERCENT TO ENSURE DRAINAGE. SHOULD COMPACTED SOILS EXIST, SOILS SHALL BE EXCAVATED AND REPLACED WITH WELL-DRAINING SOIL PRIOR TO MOBILIZATION OF PLANTING CONTRACTOR. NO PARKING LOT SUB-BASE, ASPHALT MATERIAL OR CONCRETE SPOILS SHALL REMAIN IN PLANTING BEDS.
4. ALL EXISTING VEGETATION SHALL BE REMOVED IN ALL PLANTING BED AREAS UNLESS OTHERWISE NOTED ON THE PLANS. HERBICIDE MANUFACTURER SPECIFICATIONS AND INSTRUCTIONS SHALL BE FOLLOWED AS TO TREATMENT DILUTION, MIX, APPLICATION, AND TIME PERIODS BETWEEN APPLICATIONS AS APPLICABLE TO ASSURE WEEDS ARE ELIMINATED FROM THE PLANTING BEDS PRIOR TO COMMENCING PLANTING. ALL PERSONNEL INVOLVED IN THE CHEMICAL PROGRAM ARE TO RECEIVE THE PROPER TRAINING AND LICENSURE, AND FOLLOW THE OPERATING GUIDELINES PROVIDED BY FDOT FOR CHEMICAL CONTROL. CONTACT THE ESCAMBIA COUNTY EXTENSION SERVICE FOR ADDITIONAL INFORMATION REGARDING HERBICIDES, PESTICIDES, AND REQUIRED LICENSES.
5. REPRESENTATIVE SOIL SAMPLES (3 MINIMUM) FROM VARYING AREAS THROUGHOUT THE PROJECT SHALL BE TAKEN AND PROVIDED TO THE OWNER'S REPRESENTATIVE PRIOR TO THE INSTALLATION OF ANY PLANT MATERIAL. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT OF ANY IMPROPER SOIL CONDITION INCLUDING NUTRITIONAL DEFICIENCIES, WETNESS, MUCK, DEBRIS, ETC. AND SHALL RECOMMEND TO THE LANDSCAPE ARCHITECT, PRIOR TO INSTALLATION, ALL SOIL AMENDMENTS THAT MAY BE NECESSARY TO PROMOTE HEALTHY VIGOROUS PLANT GROWTH. THE SOIL SAMPLE TEST RESULTS SHALL INCLUDE, AT A MINIMUM, PH, PRIMARY MACRONUTRIENTS, MICRONUTRIENTS, PERCENTAGE OF ORGANIC MATTER, AND SOIL TEXTURE. SUBMIT ALL SOIL SAMPLES AND AMENDMENT RECOMMENDATIONS TO THE LANDSCAPE ARCHITECT FOR REVIEW. THE CONTRACTOR IS ULTIMATELY RESPONSIBLE FOR ALL APPROPRIATE SOIL AMENDMENTS AND A PROPERLY PREPARED FINISHED SOIL LAYER IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS 162 AND 967.
6. ALL SOIL AMENDMENTS SHALL BE ADDED TO THE PLANTING BEDS AND INCORPORATED INTO THE SOIL PRIOR TO COMMENCING FINAL GRADING AND PLANTING. ALL BEDS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE WITH NO AREAS WHERE STANDING WATER COULD OCCUR.
7. ALL PLANTING BED AREAS SHALL BE TREATED WITH A PRE-EMERGENT HERBICIDE TO ASSURE THAT WEEDS WILL BE CONTROLLED

UTILITY NOTES

1. THE LOCATIONS OF THE UTILITIES SHOWN ON THE PLANS SHOULD BE CONSIDERED APPROXIMATE ONLY, AND INTERPOLATIONS BETWEEN THESE POINTS HAVE NOT BEEN VERIFIED.
2. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES TWO BUSINESS DAYS PRIOR TO DEMOLITION AND/OR EXCAVATION. CALL 'SUNSHINE STATE ONE CALL SYSTEM'1-800-432-4770 (OR811) SO THAT UNDERGROUND UTILITIES MAY BE FIELD LOCATED.
3. THE CONTRACTOR SHALL COORDINATE WITH THE UTILITY COMPANIES DURING CONSTRUCTION. NO UTILITY IS TO BE RELOCATED. PLANTING SHALL BE ADJUSTED HORIZONTALLY, AT THE DIRECTION OF THE LANDSCAPE ARCHITECT, TO ADDRESS ANY UTILITY CONFLICTS.

PLANTING NOTES

1. THE LANDSCAPE INSTALLATION MUST BE PROPERLY SEQUENCED WITH OTHER CONSTRUCTION SO THAT THE LANDSCAPE IS NOT DAMAGED BY OTHER WORK/TRADES AND VICE VERSA.
2. THE CONTRACTOR SHALL VERIFY THE EXISTENCE OF AND STAKE ALL UTILITIES PRIOR TO CONSTRUCTION. EXCAVATION OF PLANT PITS LOCATED WITHIN 5' OF UTILITIES SHALL BE PERFORMED BY HAND. ANY UTILITY AND PLANT MATERIAL CONFLICTS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION, OR FIELD ADJUSTMENTS.
3. ALL PLANTS SHALL MEET SIZE, CONTAINER, AND SPACING SPECIFICATIONS AS SHOWN IN THE PLANT SCHEDULE. THE CONTRACTOR SHALL GUARANTEE PLANT HEALTH AND SURVIVABILITY FOR ONE YEAR FROM DATE OF PROJECT ACCEPTANCE BY THE LANDSCAPE ARCHITECT. ANY MATERIAL NOT MEETING SPECIFICATIONS OR DISPLAYING POOR HEALTH SHALL BE REPLACED AT CONTRACTOR'S EXPENSE WITHIN TWO WEEKS OF NOTICE.
4. ALL PLANT MATERIAL SHALL BE FLORIDA NO. 1 OR BETTER, UNLESS OTHERWISE NOTED, AS SET FORTH IN THE CURRENT EDITION OF THE 'GRADES AND STANDARDS FOR NURSERY PLANTS,' STATE OF FLORIDA. NOTIFY THE LANDSCAPE ARCHITECT A MINIMUM OF ONE WEEK PRIOR TO PLANT DELIVERY TO SCHEDULE ON-SITE INSPECTION UPON DELIVERY. INSTALLED PLANT MATERIAL NOT MEETING SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE. ALL PLANTS MUST BE BROUGHT TO THE SITE FREE OF WEEDS. ADDITIONALLY, THE CONTRACTOR SHALL PROVIDE THE LANDSCAPE ARCHITECT WITH REPRESENTATIVE PLANT PHOTOS TO APPROVE FOR ALL PLANT MATERIALS PRIOR TO ANY PLANT DELIVERY. MEASURING STICKS SHALL BE SHOWN IN PHOTOS, AS APPROPRIATE.
5. ALL PLANT MATERIALS INDICATED WITH A GALLON SIZE SHALL BE CONTAINER GROWN AND WITHIN A CONTAINER APPROPRIATE FOR THE PLANT SIZE. ROOT BOUND PLANTS SHALL NOT BE ACCEPTED. NO SUBSTITUTIONS SHALL BE PERMITTED WITHOUT PRIOR APPROVAL OF THE LANDSCAPE ARCHITECT.
6. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE PLANTING BED FIELD CHANGES TO ACCOMMODATE SITE CONDITIONS AND TO ACHIEVE THE DESIGN INTENT. THE CONTRACTOR SHALL FLAG ALL TREE AND BEDLINE LOCATIONS FOR APPROVAL OF LANDSCAPE ARCHITECT PRIOR TO ANY INSTALLATION.
7. THE CONTRACTOR SHALL REPAIR OR REPLACE ANY EXISTING VEGETATION INTENDED TO REMAIN THAT IS DISTURBED BY PLANT MATERIAL INSTALLATION ACTIVITIES. THIS REPAIR /REPLACEMENT SHALL BLEND SEAMLESSLY WITH THE EXISTING LANDSCAPE.
8. THE CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES AND PLANS IN PREPARING PLANTING AREAS, INCLUDING FINAL GRADE ELEVATIONS.
9. ALL PLANT MATERIAL MUST BE PLANTED IMMEDIATELY UPON DELIVERY TO THE SITE AND WATERED IN, BY HAND IF THE IRRIGATION SYSTEM IS NOT YET FUNCTIONING PROPERLY. ANY PLANT MATERIAL NOT INSTALLED WITHIN 6 HOURS OF DELIVERY TO THE SITE MUST BE STORED IN AN APPROVED, PROTECTED HOLDING AREA AND SHALL BE WATERED AS NECESSARY TO MAINTAIN PLANT HEALTH AND QUALITY. ALL BLACK PLASTIC PLACED AROUND TREE ROOTBALLS SHALL BE REMOVED IMMEDIATELY UPON DELIVERY TO THE SITE, BURLAP WRAPPING SHALL STAY IN PLACE. FOR TREES NOT PLANTED WITHIN 6 HOURS OF DELIVERY TO THE SITE, WATER SHALL BE IMMEDIATELY APPLIED TO THE ROOTBALL AND FOLIAGE. THE TOPS SHALL BE UNTIED AND THE TREES STORED UPRIGHT WITH MULCH, PINE STRAW OR HAY COVERING THE ROOTBALLS. TREES SHALL NOT BE STORED LYING DOWN. IF TREES HAVE PLASTIC TRUNK PROTECTORS, THE PROTECTORS MAY STAY IN PLACE PRIOR TO PLANTING BUT SHALL NOT BE LEFT ON INDEFINITELY.
10. PLANT SHRUBS IN CIRCULAR PITS WITH A DIAMETER 3X DIAMETER OF ROOTBALL OR CONTAINER.
11. PLANT TREES IN CIRCULAR PITS WITH A DIAMETER 2X DIAMETER OF ROOTBALL OR CONTAINER.
12. FERTILIZE ALL TREES WITH AGRIFORM 21 GRAM TABLETS, SLOW RELEASE 20-10-5 ANALYSIS WITH ONE TABLET PER ½"OF TRUNK DIAMETER.
13. THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT A MINIMUM OF 48 HOURS PRIOR TO COMPLETION TO SCHEDULE A FINAL WALKTHROUGH. A FINAL WALKTHROUGH SHALL NOT BE PERFORMED IF PREVIOUS PUNCH LISTS ARE NOT COMPLETED.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL PLANTING AND GRADES UNTIL FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT. THIS MAINTENANCE INCLUDES KEEPING BEDS FREE OF DEBRIS, WEEDS, DISEASES, AND INFESTATIONS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROVIDING SUFFICIENT WATER TO THE PLANTS DURING THIS TIME, AND REPAIRING EROSION AREAS.
15. THE CONTRACTOR SHALL SUPPLY THE LANDSCAPE ARCHITECT WITH ELECTRONIC AS-BUILT DRAWINGS WITHIN 30 DAYS OF PROJECT ACCEPTANCE.
16. REFER TO CURRENT FDOT STANDARD SPECIFICATIONS AND DESIGN STANDARD INDICES, THE GENERAL NOTES, AND ALL OTHER NOTES WITHIN THE CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
17. ONE YEAR WARRANTY ON ALL PLANTS AND LABOR
18. SAND FENCING SHALL CONFORM TO "SAND FENCING GUIDELINES" AS PUBLISHED BY FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION-DIVISION OF WATER RESOURCE MANAGEMENT.

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN

CASINO BEACH PARKING AREA

100% LANDSCAPE DETAILS

ESCAMBIA COUNTY FLORIDA

VOLKERT
Engineers • Surveyors • Planners
215 FAIRPOINT DRIVE
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Telephone (850) 512-8935

REG. FLA. ENG. NO. 64091

DRAWN BY: AMY O'LAUGHLIN | DESIGNED BY: MIKE WARNKE | CHECKED BY: | DATE: MAY 2018 | QA/QC MANAGER: DAVID FORTE | DISTRICT: 4

REVISIONS | DATE | APPROVED BY | NUMBER

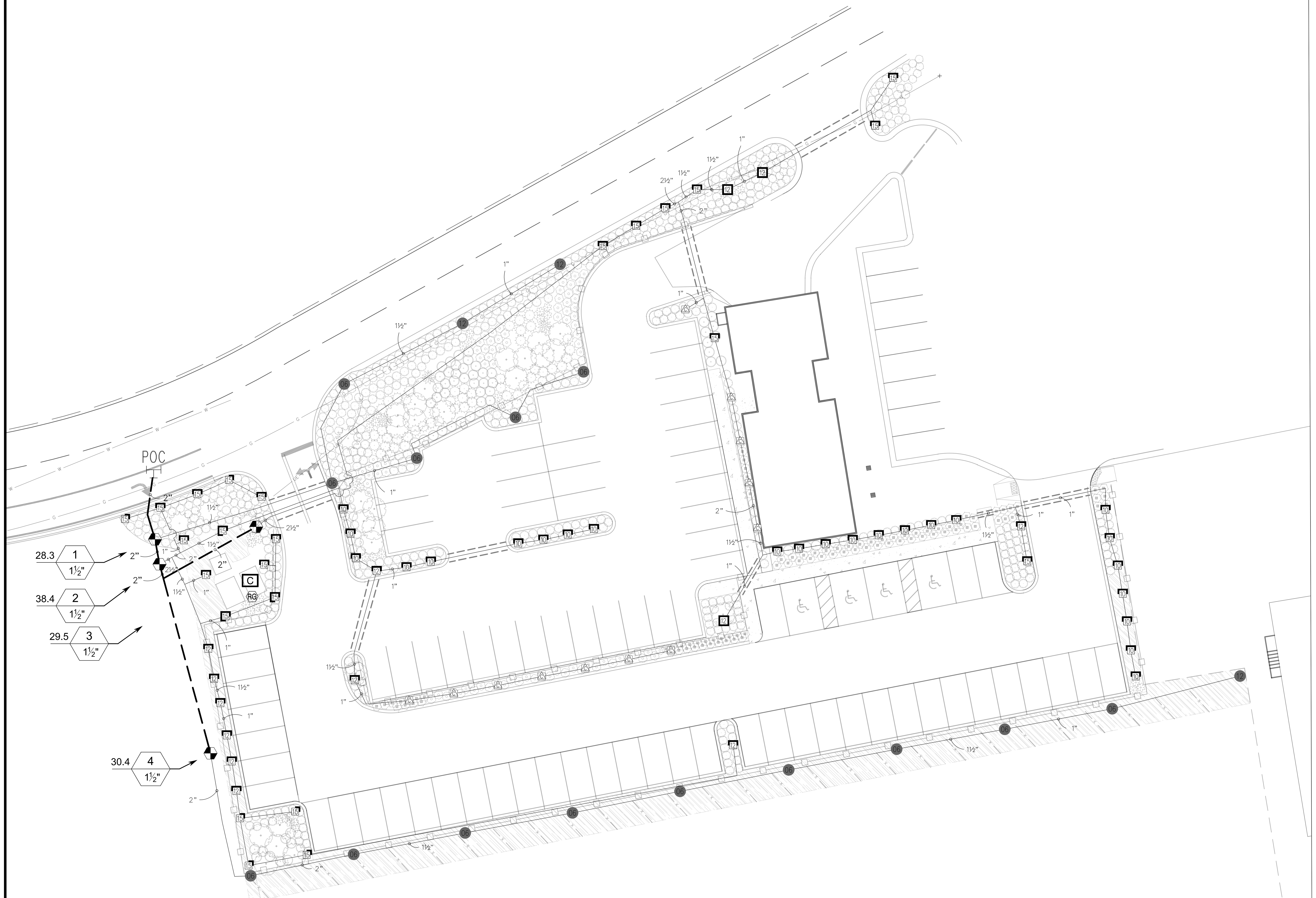
DRAWING NUMBER LS201

PROJECT NUMBER 635501

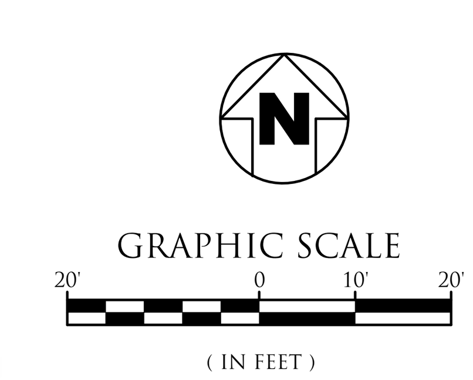
SURVEY NUMBER

REGISTERED LANDSCAPE ARCHITECT STATE OF FLORIDA — INVALID WITHOUT SIGNATURE

Jerry Pate Design



ELEMENT LOCATION ON DRAWINGS ARE SCHEMATIC SHOWING DESIGN INTENT. ENSURE 100% IRRIGATION COVERAGE AND LOCATE PIPE IN BEDS WITHIN PROPERTY BOUNDARIES.



IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	ARC	PSI	GPM	RADIUS
C	Rain Bird 1806-SAM-PRS 15 Strip Series or approved equal	12	CST	15	0.89	4'x30'
10	Rain Bird 1806-SAM-PRS 10 Series MPR or approved equal	24	180	15	0.58	7'
12	Rain Bird 1806-SAM-PRS 12 Series MPR or approved equal	3	360	15	1.67	9'
12	Rain Bird 1806-SAM-PRS 12 Series MPR or approved equal	10	180	15	0.90	9'
15	Rain Bird 1806-SAM-PRS 15 Series MPR or approved equal	15	180	15	1.30	11'
15	Rain Bird 1806-SAM-PRS 15 Series MPR or approved equal	6	90	15	0.65	11'
15	Rain Bird 1806-SAM-PRS 15 Series MPR or approved equal	3	270	15	1.95	11'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS
06	Rain Bird 2045A 06 or approved equal Turf Impact Rotor, Pop-Up Sprinkler, Open Case, Adjustable and Full Circle. With Precision Jet Tube. Nozzles: 06=red; 07=black; 08=blue; 10=yellow; 12=beige.	14	55	2.50	38'
12	Rain Bird 2045A 12 or approved equal Turf Impact Rotor, Pop-Up Sprinkler, Open Case, Adjustable and Full Circle. With Precision Jet Tube. Nozzles: 06=red; 07=black; 08=blue; 10=yellow; 12=beige.	3	55	7.90	45'

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	Rain Bird PESB 1-1/2" or approved equal 1", 1-1/2", 2" Plastic Industrial Valves. Low Flow Operating Capability, Globe Configuration. With Scrubber Technology for Reliable Performance in Dirty Water Irrigation Applications.	4
C	Rain Bird ESP4ME or approved equal 4 Station, Hybrid Modular Outdoor Controller. For Residential or Light Commercial Applications.	1
RG	Rain Bird RSD-CEx or approved equal Rain Sensing Device, conduit mount. With threaded adapter, extension wire.	1
POC	Existing 10" Potable Water Service Line. Connection Per Minimum source data: 50GPM @ 70 PSI. Contractor shall verity prior to installation.	1
	Irrigation Lateral Line: PVC Schedule 40 1"	1,056 l.f.
	Irrigation Lateral Line: PVC Schedule 40 1 1/2"	675.6 l.f.
	Irrigation Lateral Line: PVC Schedule 40 2"	202.6 l.f.
	Irrigation Lateral Line: PVC Schedule 40 2 1/2"	200.0 l.f.
	Irrigation Mainline: PVC Schedule 40 2"	131.4 l.f.
	Pipe Sleeve: PVC Schedule 40	153.4 l.f.

Valve Callout
Valve Number
Valve Flow
Valve Size

VALVE SCHEDULE

NUMBER	MODEL	SIZE	TYPE	GPM	PSI	PSI @ POC	PRECIP
1	Rain Bird PESB or approved equal	1-1/2"	Turf Impact	28.30	61.66	61.81	0.76 in/h
2	Rain Bird PESB or approved equal	1-1/2"	Turf Spray	38.40	19.82	20.19	0.91 in/h
3	Rain Bird PESB or approved equal	1-1/2"	Turf Spray	29.46	20.09	20.61	0.75 in/h
4	Rain Bird PESB or approved equal	1-1/2"	Turf Impact	30.40	63.95	64.72	0.55 in/h

Jerry Pate Design

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
100% TEMPORARY IRRIGATION PLAN

ESCAMBIA COUNTY FLORIDA

VOLKERT
Engineers • Surveyors • Planners
215 FAIRPOINT DRIVE
SUITE B
GULF BREEZE, FL 32561
Telephone (850) 512-8935

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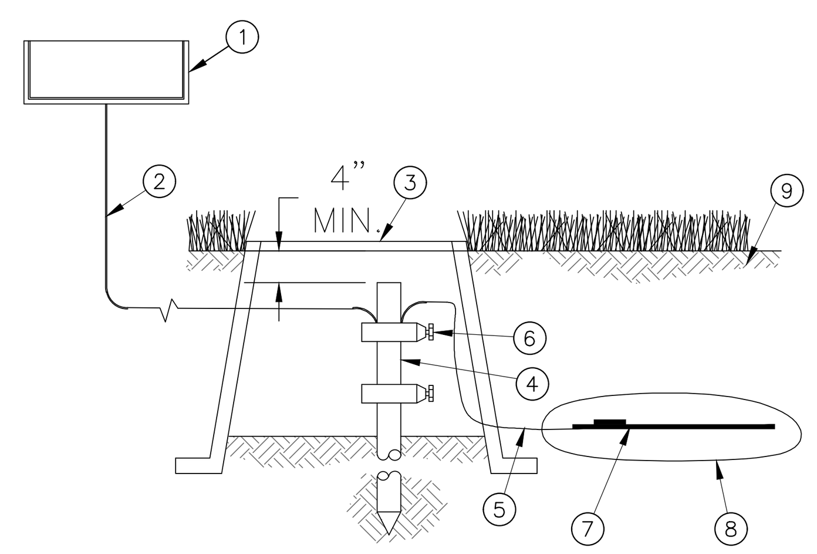
DATE: MAY 2018	QA/QC MANAGER: DAVID FORTE	DISTRICT: 4
FIELD BOOK / PAGES:		SECTION / TOWNSHIP / RANGE
REG. FLA. ENG. NO. 64091	DATE:	SIGNATURE:

NUMBER	REVISIONS	DATE	APPROVED BY

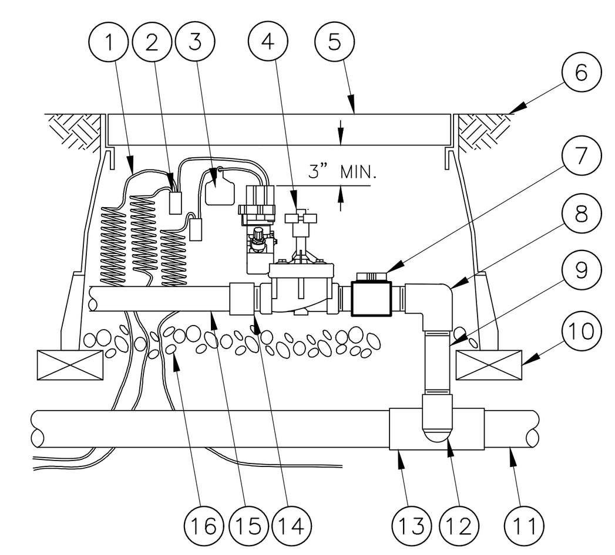
DRAWING NUMBER IR101
PROJECT NUMBER 635501
SURVEY NUMBER

SHEET 30 OF 31



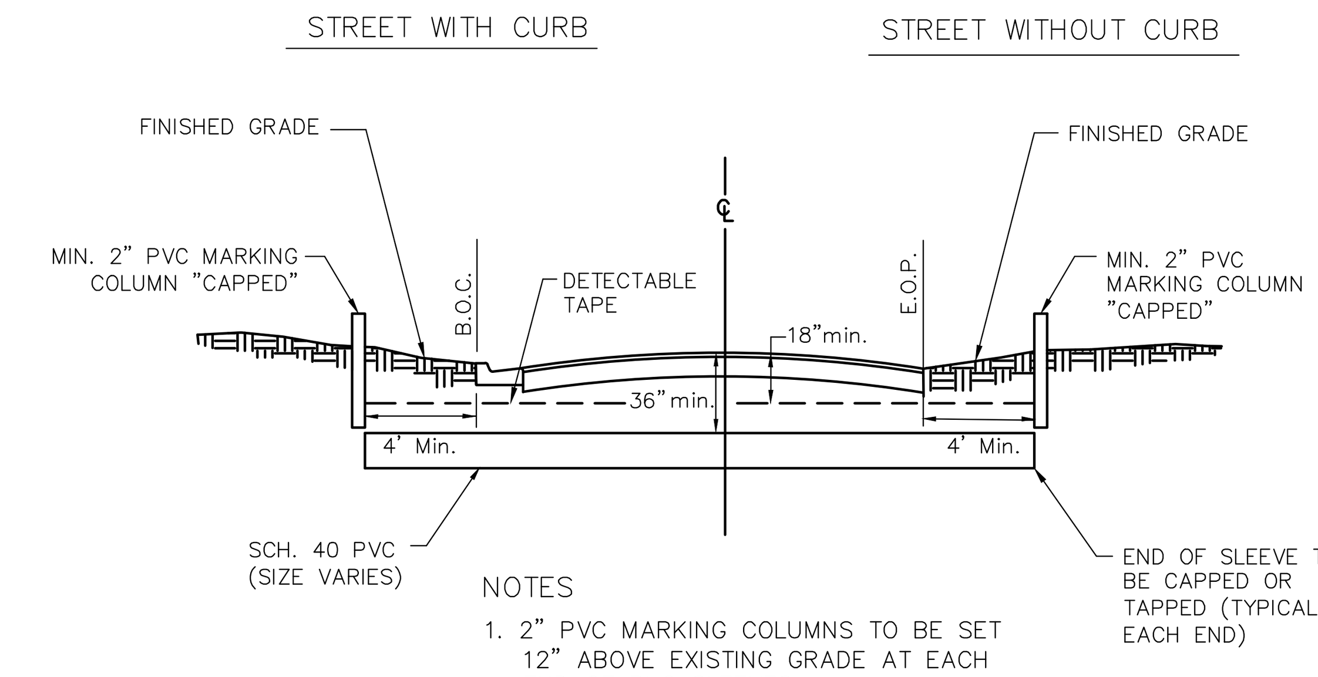
1. RAIN BIRD CONTROLLER
2. SOLID BARE COPPER WIRE (#10 AWG) FROM GROUNDING ROD TO CONTROLLER. MAKE WIRE AS SHORT AND STRAIGHT AS POSSIBLE
3. COVER GROUNDING ROD WITH 10-INCH ROUND VALVE BOX AS SHOWN
4. 5/8-INCH X 10 FT COPPER CLAD GROUNDING ROD. INSTALL RODS IN SOIL IN A TRIAGULAR PATTERN SPACED A MINIMUM OF 16 FT APART FROM EACH OTHER. GROUNDING GRID TO HAVE A RESISTANCE OF TEN (10) OHMS OR LESS
5. BARE COPPER WIRE (#6 AWG MIN.) BETWEEN GROUNDING ROD AND GROUNDING PLATE
6. GROUND ROD CLAMP OR WELDS
7. COPPER GROUNDING PLATE
8. GROUND ENHANCEMENT MATERIAL (IF REQUIRED)
9. FINISH GRADE

01 CONTROLLER GROUNDING GRID
N.T.S.
GROUNDING PLATE DESIGN LAYOUT



1. 30-INCH LINEAR LENGTH OF WIRE, COILED
2. WATERPROOF CONNECTION RAIN BIRD SPLICE-1 (1 OF 2)
3. ID TAG: RAIN BIRD VID SERIES
4. REMOTE CONTROL VALVE: RAIN BIRD PESB
5. VALVE BOX WITH COVER: RAIN BIRD VB-STD
6. FINISH GRADE/TOP OF MULCH
7. PVC SLIP BALL VALVE
8. PVC SCH 40 ELL
9. PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
10. BRICK (1 OF 4)
11. PVC MAINLINE PIPE
12. SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND SCH 40 ELL
13. PVC SCH 40 TEE OR ELL
14. PVC SCH 40 MALE ADAPTER
15. PVC LATERAL PIPE
16. 3.0-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL

02 REMOTE CONTROL VALVE
N.T.S.
RAINBIRD PESB



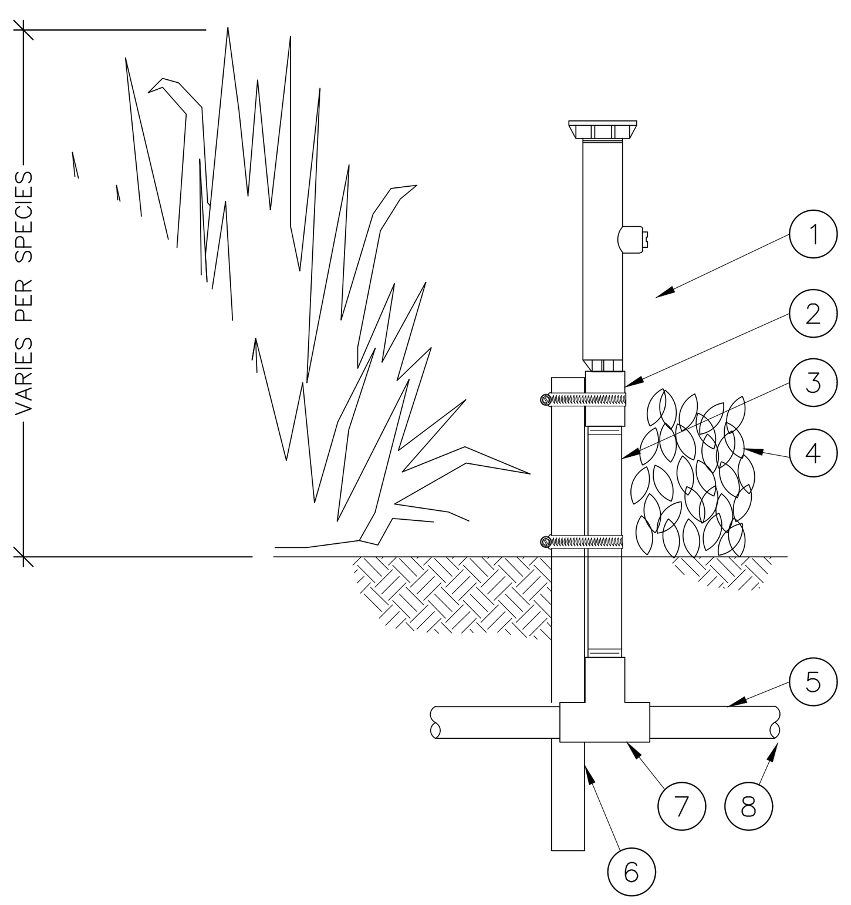
NOTES

1. 2" PVC MARKING COLUMNS TO BE SET 12" ABOVE EXISTING GRADE AT EACH END OF PVC SLEEVES.
2. MARKING COLUMNS TO BE REMOVED AFTER PIPE INSTALLATION
3. SLEEVES UNDER ALL HARDSCAPE ELEMENTS SHALL BE TWO TIMES THE DIAMETER OF THE PIPE WITHIN.

03 IRRIGATION SLEEVE
N.T.S.

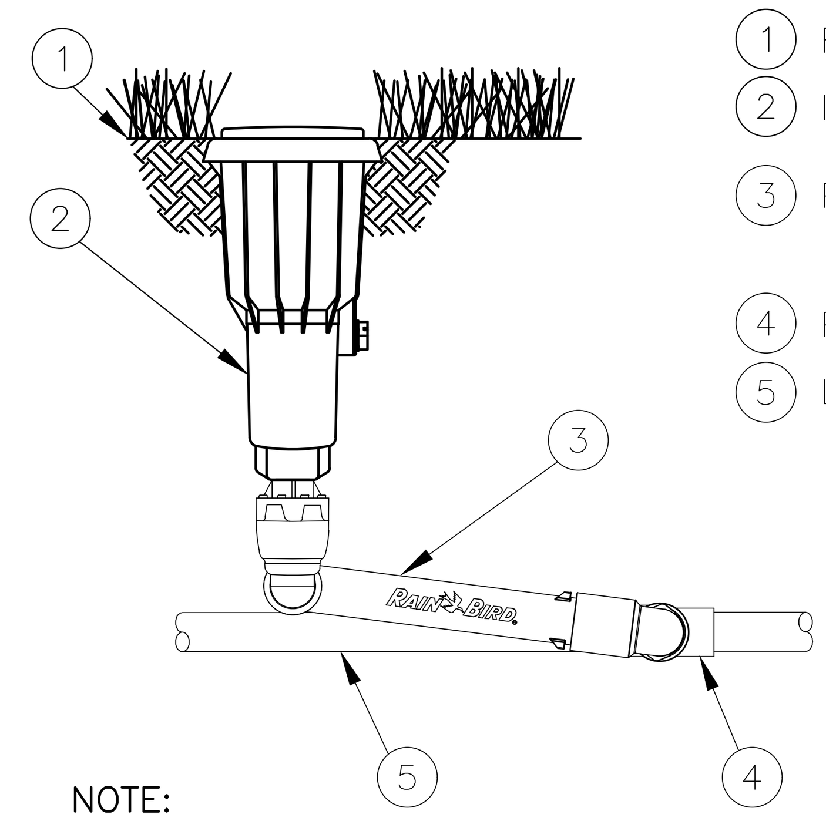
IRRIGATION NOTES:

1. LOCATE ALL UNDERGROUND UTILITIES, ELECTRICAL WIRING, WATER, SEWER, TELEPHONE, CABLE TV, AND OTHER UNDERGROUND LINES BEFORE LANDSCAPE AND IRRIGATION INSTALLATION. SHOULD ANY CONFLICT BECOME KNOWN THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT IN WRITING FOR SUPPLEMENTAL INSTRUCTIONS.
2. ELEMENT LOCATION ON THE DRAWINGS IS SCHEMATIC SHOWING INTENT. CONTRACTOR SHALL NOT MAKE CHANGES TO PIPE SIZING OR ROUTING WITHOUT PRIOR APPROVAL OF OWNER'S REPRESENTATIVE OR LANDSCAPE ARCHITECT.
3. IF DISCREPANCIES OCCUR BETWEEN THE PLANS, NOTES, AND ACTUAL CONDITIONS CONTACT THE LANDSCAPE ARCHITECT IN WRITING FOR CLARIFICATION BEFORE PROCEEDING.
4. INSTALL AN AUTOMATIC IRRIGATION SYSTEM TO ENSURE 100% COVERAGE OF ALL PLANTED AND GRASSED AREAS. THE CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO LANDSCAPE ARCHITECT AND OWNER SHOWING ALL INFORMATION REQUIRED BY LOCAL CODES AND NECESSARY FOR THE EFFICIENT OPERATION AND MAINTENANCE OF THE SYSTEM.
5. ALL ELECTRICAL WIRE ASSOCIATED WITH THE IRRIGATION SYSTEM SHALL CONFORM TO THE ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES.
6. THE CONTROLLER SHALL BE EQUIPPED BY THE CONTRACTOR WITH PROPERLY LOCATED AND INSTALLED RAIN I FREEZE I WIND SHUTOFF SENSORS. THE SENSORS SHALL BE LOCATED IN SUCH A MANNER SO THAT THEY ARE UNOBSTRUCTED, AND DIRECTLY EXPOSED TO NATURAL RAINFALL, WIND, AND SUNLIGHT FROM ALL DIRECTIONS, BUT NOT TO RUNOFF WATER FROM SWALES OR OTHER SURFACES.
7. MAINLINE AND LATERAL PIPING SHALL BE SCH 40 PVC WITH GLUE FITTINGS. SHALL BE GLUED FOLLOWING THE REQUIREMENTS OF THE PIPE AND FITTING MANUFACTURERS, AND COUNTY PLUMBING ORDINANCE.
8. IRRIGATION SLEEVING SHALL BE SCHEDULE 40, 2X TOTAL PIPE DIAMETER UNLESS OTHERWISE NOTED.
9. THE LANDSCAPE BID SHALL BE FOR THE IRRIGATION MATERIALS SPECIFIED. REQUESTS TO USE EQUAL, SUBSTITUTE MATERIALS SHALL BE SUBMITTED TO THE LANDSCAPE ARCHITECT IN WRITING AND OWNER'S APPROVAL GIVEN IN WRITING BEFORE THE SUBSTITUTION IS ALLOWED. REQUESTS TO USE EQUAL, SUBSTITUTE MATERIALS SHALL INCLUDE COMPLETE PRODUCT SPECIFICATIONS AND ANY COST SAVINGS TO THE PROJECT.
10. THE INSTALLER SHALL BE FAMILIAR WITH ALL REQUIREMENTS FOR THE WORK, AND TO CONDUCT HIS WORK IN A CLEAN, SAFE, AND WORKMANLIKE MANNER. THE OWNER RESERVES THE RIGHT TO ACT TO PROTECT HIS PROPERTY AND THE OTHER PERSONNEL AT WORK THERE, AND TO MAKE EMERGENCY REPAIRS OR TAKE CORRECTIVE ACTION IF THE INSTALLER DOES NOT FULFILL HIS OBLIGATIONS IN A TIMELY MANNER. THE OWNER FURTHER RESERVES THE RIGHT TO BACK-CHARGE THE INSTALLER TO COVER SUCH EXPENSES, TO THE EXTENT ALLOWED UNDER APPLICABLE LAW.
11. IRRIGATION MATERIALS AND WORKMANSHIP SHALL BE WARRANTIED FOR ONE YEAR. MANUFACTURER'S WARRANTIES SHALL BE PASSED TO THE OWNER.
12. ALL WORK SHALL BE DONE IN ACCORDANCE WITH PREVAILING CODES AND REGULATIONS, AND SANTA ROSA COUNTY IRRIGATION STANDARDS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY AND CONFORM TO THE PARTICULAR CODES AND REGULATIONS APPLICABLE TO THIS LOCATION, AS WELL AS SANTA ROSA COUNTY IRRIGATION STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INCLUDING THOSE FOR ANY NEW WATER LINE TAPS OR WELLS, LOCATES, AND INSPECTIONS.
13. CONTRACTOR TO PROVIDE SITE SURVEY TO VERIFY RADIO SIGNAL STRENGTH. IF SURVEY SHOWS THAT AN ANTENNA IS NECESSARY, CONTRACTOR SHALL COORDINATE WITH THE PROJECT LANDSCAPE ARCHITECT AND ARCHITECT TO DETERMINE LOCATION FOR ANTENNA INSTALLATION.
14. IRRIGATION SCHEDULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR PERFORMING THEIR OWN TAKE OFF BASED ON PLAN DOCUMENTS.
15. IRRIGATION SYSTEM AND ITS COMPONENTS SHALL BE INSTALLED ACCORDING TO MANUFACTURES' SPECIFICATIONS.
16. ALL WIRE SPLICES SHALL OCCUR IN A VALVE BOX WITH DBR WATERPROOF WIRE SPLICE KITS.
17. IRRIGATION SCHEDULES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR PERFORMING THEIR OWN TAKE OFF BASED ON PLAN DOCUMENTS & SPECIFICATIONS ENSURING UNIFORM COVERAGE OF ALL LANDSCAPED AREAS.



1. POP UP SPRAY IRRIGATION HEAD RAIN BIRD 1806-SAM-PRS
2. UV RADIATION RESISTANT PVC SCH 80 COUPLING
3. UV RADIATION RESISTANT PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
4. PLANT MATERIAL
5. UV RADIATION RESISTANT PVC LATERAL PIPE
6. 1-INCH GALVANIZED STEEL PIPE WITH STAINLESS STEEL GEAR CLAMPS OR EQUIVALENT SUPPORT SYSTEM
7. UV RADIATION RESISTANT PVC SCH 40 TEE OR ELL
8. FINISH GRADE/TOP OF MULCH

04 RAINBIRD 1806-SAM-PRS
N.T.S.
ABOVE GRADE RISER INSTALLATION

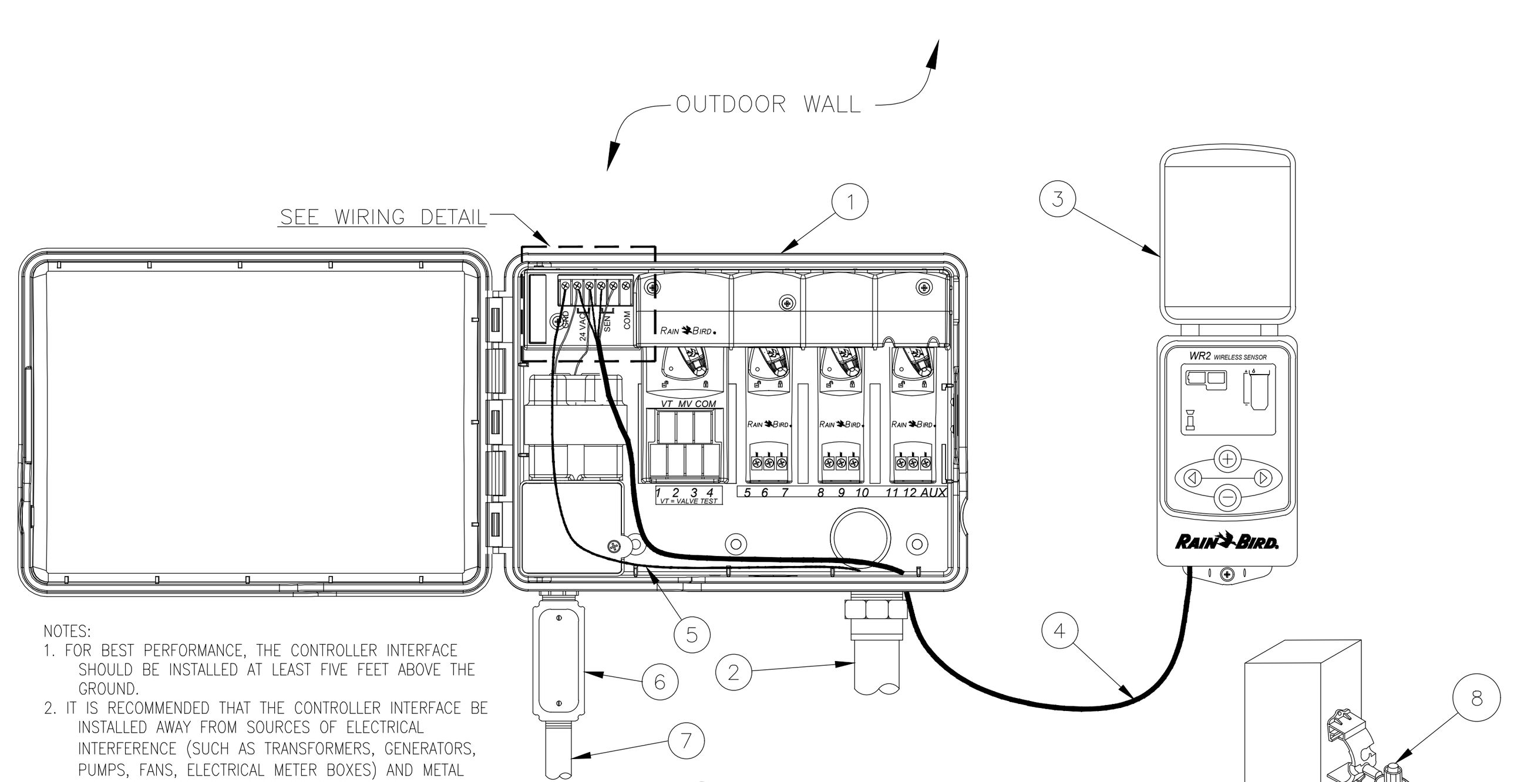


1. FINISH GRADE
2. IMPACT ROTOR POP-UP SPRINKLER: RAIN BIRD 2045A MAXI-PAW-SAM-NP
3. PRE-FABRICATED SWING JOINT: RAIN BIRD TSJ-075-PRS WITH 45 PSI PRESSURE REGULATOR
4. PVC SCH 40 TEE OR ELL
5. LATERAL PIPE

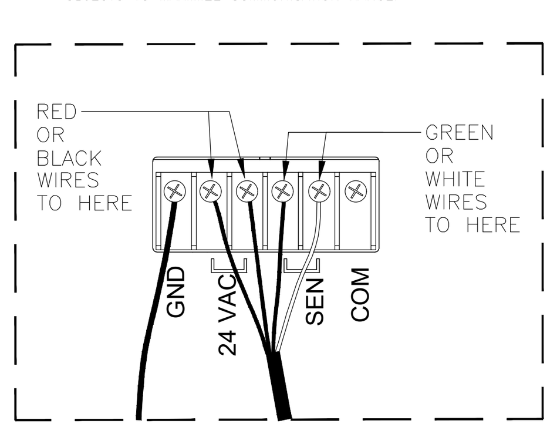
NOTE:

A SWING PIPE ASSEMBLY MAY BE USED WITH FLOWS LESS THAN 4 GPM.

05 RAINBIRD 2045 A MAXI BIRD
N.T.S.
ABOVE GRADE RISER INSTALLATION



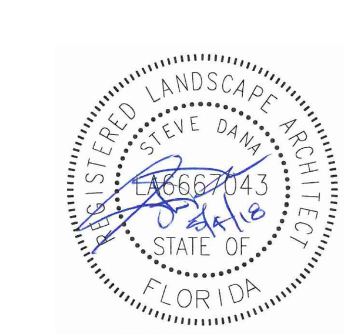
NOTES:
1. FOR BEST PERFORMANCE, THE CONTROLLER INTERFACE SHOULD BE INSTALLED AT LEAST FIVE FEET ABOVE THE GROUND.
2. IT IS RECOMMENDED THAT THE CONTROLLER INTERFACE BE INSTALLED AWAY FROM SOURCES OF ELECTRICAL INTERFERENCE (SUCH AS TRANSFORMERS, GENERATORS, PUMPS, FANS, ELECTRICAL METER BOXES) AND METAL OBJECTS TO MAXIMIZE COMMUNICATION RANGE.



WIRING DETAIL

1. RAIN BIRD CONTROLLER: RAIN BIRD ESP-4M OUTDOOR WALL MOUNT
2. 1-INCH PVC SCH 40 CONDUIT AND FITTINGS FOR VALVE WIRES
3. RAIN BIRD WR2 WIRELESS SENSOR CONTROLLER INTERFACE
4. CABLE HARNESS FOR CONTROLLER INTERFACE (30" MAXIMUM)
5. GROUND WIRE TO GROUNDING GRID
6. JUNCTION BOX
7. 1/2-INCH PVC SCH 40 CONDUIT TO POWER SUPPLY
8. WIRELESS SENSOR MOUNTING

06 WIRELESS RAIN SENSOR (OUTDOOR)
NTS
WR2 SERIES CONTROLLER INTERFACE



Jerry Pate Design

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
CASINO BEACH PARKING AREA
100% TEMPORARY IRRIGATION DETAILS

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DRAWING NUMBER IR201
PROJECT NUMBER 635501
SURVEY NUMBER
SHEET 31 OF 31

PROJECT SPECIFICATIONS, PERMITS AND GEOTECHNICAL REPORT FOR PENSACOLA BEACH CONGESTION MANAGEMENT PLAN PHASE II- CASINO BEACH PARKING AREA

PD 15-16.007 / PO 16017

Volkert Project #635501.WFR

DATE: MAY 2018

PREPARED FOR:

BOARD OF COUNTY COMMISIONERS

ESCAMBIA COUNTY, FL

PREPARED BY:

VOLKERT, INC.

PO Box 11428

PENSACOLA, FL 32524-1428

PENSACOLA BEACH CONGETSION MANAGEMENT PLAN-
PHASE II- CASINO BEACH PARKING PAKRING AREA
TABLE OF CONTENTS

ESCAMBIA COUNTY TECHNICAL SPECIFICATIONS:

PERMITS (FOR INFORMATIONAL PURPOSE ONLY):

To Be Provided

GEOTECHNICAL REPORT (FOR INFORMATIONAL PURPOSE ONLY):

Nova Engineering and Environmental- Pensacola Beach Congestion Management Plan- Project 2g- Parking Lots Geotechnical Report Dated October 6, 2017- Nova Project Number 8217141

PUBLIC WORKS DEPARTMENT
Engineering Division

Escambia County
Technical Specifications

GENERAL EXCEPTIONS*: Any reference to FDOT *Standard Specifications for Road and Bridge Construction, Latest Edition, Division I General Requirements & Covenants* shall be excluded and not applicable to any specification referred herein or otherwise listed in this document.

Work shall comply with requirements of FDOT *Standard Specifications for Road and Bridge Construction*, latest edition, as modified herein.

**Note: The General Exception above does not apply when utilizing Federal Highway Administration (FHWA) funding.*

County Engineer
Joy D. Blackmon, P.E.

Effective Date: February 01, 2015

SECTION 01000 – DEFINITIONS

PART 1 - GENERAL

The following terms, when used in the Contract Documents, have the meaning described

Advertisement
The public announcement, as required by law, inviting bids for work to be performed or materials to be furnished, usually issued as “Notice to Contractors,” or “Notice to Bidders.”

Bidder
An individual, firm, or corporation submitting a proposal for the proposed work.

Bridge
A structure, including supports, erected over a depression or over an obstruction such as water, highway or railway, or for elevated roadway, for carrying traffic or other moving loads, and having a length, measured along the center of the roadway, of more than 20 feet between the inside faces of end supports. A multiple-span box culvert is considered a bridge, where the length between the extreme ends of the openings exceeds 20 feet.

Calendar day
Every day shown on the calendar, ending and beginning at midnight.

Contract
The term “Contract” means the entire and integrated agreement between the parties there under and supersedes all prior negotiations, representations, or agreements, either written or oral. The Contract Documents form the Contract between the County and the Contractor setting forth the obligations of the parties thereunder, including, but not limited to, the performance of the Work and the basis of payment.

Contract Documents
The term “Contract Documents” includes: Advertisement for Proposal, Proposal, Certification as to Publication and Notice of Advertisement for Proposal, Appointment of Agent by Nonresident Contractors, Noncollusion Affidavit, Warranty Concerning Solicitation of the Contract by Others, Resolution of Award of Contract, Executed Form of Contract, Performance Bond and Payment Bond, Specifications, plans (including revisions thereto issued during construction), Addenda, or other information mailed or otherwise transmitted to the prospective bidders prior to the receipt of bids, work orders and supplemental agreements, all of which are to be treated as one instrument whether or not set forth at length in the form of contract.

Contract Bond
The security furnished by the Contractor and the surety as a guaranty that the Contractor shall fulfill the terms of the Contract and pay all legal debts pertaining to the construction of the project.

Contract Letting
The date that the County opened the bid proposals.

Contract Time
The number of calendar days allowed for completion of the Contract work, including authorized time extensions.

Contractor
The individual, firm, joint venture, or company contracting with the County to perform the work.

Contractor's Engineer of Record
A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing of components of the permanent structure as part of a redesign or Cost Savings Initiative Proposal, or for repair designs and details of the permanent work. The Contractor's Engineer of Record may also serve as the Specialty Engineer. The Contractor's Engineer of Record must be an employee of a pre-qualified firm. Any Corporation or Partnership offering engineering services must hold a Certificate of Authorization from the Florida Department of Business and Professional Regulation.

As an alternate to being an employee of a pre-qualified firm, the Contractor's Engineer of Record may be a pre-qualified Specialty Engineer. For items of the permanent work declared by the State Construction Office to be "major" or "structural", the work performed by a prequalified Specialty Engineer must be checked by another pre-qualified Specialty Engineer. An individual Engineer may become pre-qualified in the work groups listed in the Rules of the Department of Transportation, Chapter 14-75, if the requirements for the Professional Engineer are met for the individual work groups. Pre-qualified Specialty Engineers are listed on the State Construction Website. Pre-qualified Specialty Engineers will not be authorized to perform redesigns or Cost Savings Initiative Proposal designs of items fully detailed in the plans.

Controlling Work Items
The activity or work item on the critical path having the least amount of total float. The controlling item of work will also be referred to as a Critical Activity.

County
Escambia County Public Works Department

Culverts
Any structure not classified as a bridge that provides an opening under the roadway.

Delay
Any unanticipated event, action, force or factor which extends the Contractor's time of performance of any controlling work item under the Contract. The term "delay" is intended to cover all such events, actions, forces or factors, whether styled "delay", "disruption", "interference", "impedance", "hindrance", or otherwise, which are beyond

the control of and not caused by the Contractor, or the Contractor's subcontractors, materialmen, suppliers or other agents. This term does not include "extra work".

Department
State of Florida Department of Transportation.

Developmental Specification
See definition for Specifications.

Engineer of Record
The Professional Engineer or Engineering Firm registered in the State of Florida that develops the criteria and concept for the project, performs the analysis, and is responsible for the preparation of the Plans and Specifications. The Engineer of Record may be County in-house staff or a consultant retained by the County.

The Contractor shall not employ the Engineer of Record as the Contractor's Engineer of Record or as a Specialty Engineer.

Equipment
The machinery and equipment, together with the necessary supplies for upkeep and maintenance thereof, and all other tools and apparatus necessary for the construction and acceptable completion of the work.

Extra Work
Any "work" which is required by the Engineer to be performed and which is not otherwise covered or included in the project by the existing Contract Documents, whether it be in the nature of additional work, altered work, deleted work, work due to differing site conditions, or otherwise. This term does not include a "delay".

Highway, Street, or Road
A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Holidays
Days designated by the Board of County Commissioners as holidays, which include, but are not limited to, New Year's Day, Martin Luther King's Birthday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the following Friday, and Christmas Day.

Inspector
An authorized representative of the County, assigned to make official inspections of the materials furnished and of the work performed by the Contractor.

Laboratory
The testing laboratory used by the Contractor.

Major Item of Work
Any item of work having an original Contract value in excess of 5% of the original

Contract amount.

Materials
Any substances to be incorporated in the work under the Contract.

Median
The portion of a divided highway or street separating the traveled ways for traffic moving in opposite directions.

Plans
The approved plans, including reproductions thereof, showing the location, character, dimensions, and details of the work.

Proposal (Bid, Bid Proposal)
The offer of a bidder, on the prescribed form, to perform the work and to furnish the labor and materials at the prices quoted.

Proposal Form
The official form or the expedite program generated bid item sheets on which the County requires formal bids to be prepared and submitted for the work.

Proposal Guaranty
The security furnished by the bidder as guaranty that the bidder will enter into the Contract for the work if the County accepts the proposal.

Right-of-Way
The land that the County has title to, or right of use, for the road and its structures and appurtenances, and for material pits furnished by the County.

Roadbed
The portion of the roadway occupied by the subgrade and shoulders.

Roadway
The portion of a highway within the limits of construction.

Section
A numbered prime division of these Specifications.

Special Provisions
See definition for Specifications.

Specialty Engineer
A Professional Engineer registered in the State of Florida, other than the Engineer of Record or his subcontracted consultant, who undertakes the design and drawing preparation of components, systems, or installation methods and equipment for specific temporary portions of the project work or for special items of the permanent works not fully detailed in the plans and required to be furnished by the Contractor such as but not limited to pot bearing designs, nonstandard expansion joints, MSE wall designs and

other specialty items. The Specialty Engineer may also provide designs and details for items of the permanent work declared by the State Construction Office to be “minor” or “non-structural”. The Specialty Engineer may be an employee or officer of the Contractor or a fabricator, an employee or officer of an entity providing components to a fabricator, or an independent consultant. For items of work not specifically covered by the Rules of the Department of Transportation, a Specialty Engineer is qualified if he has the following qualifications:

(1) Registration as a Professional Engineer in the State of Florida.
(2) The education and experience necessary to perform the submitted design as required by the Florida Department of Business and Professional Regulation.

Specifications
The directions, provisions, and requirements contained herein, together with all stipulations contained in the Contract Documents, setting out or relating to the method and manner of performing the work, or to the quantities and qualities of materials and labor to be furnished under the Contract.

A. Standard Specifications: “Standard Specifications for Road and Bridge Construction” a bound book, applicable to all FDOT Contracts containing adopted requirements, setting out or relating to the method or manner of performing work, or to the quantities and qualities of materials and labor.

B. Supplemental Specifications: Approved additions and revisions to the Standard Specifications, applicable to all Department Contracts.

C. Special Provisions: Specific clauses adopted by the Department that add to or revise the Standard Specifications or supplemental specifications, setting forth conditions varying from or additional to the Standard Specifications applicable to a specific project.

D. Technical Special Provisions: Specifications, of a technical nature, prepared, signed, and sealed by an Engineer registered in the State of Florida other than the State Specifications Engineer or his designee, that are made part of the Contract as an attachment to the Contract Documents.

E. Developmental Specification: A specification developed around a new process, procedure, or material.

Standard Specifications
See definition for Specifications.

State
State of Florida.

Subarticle
A headed and numbered subdivision of an Article of a Section of these Specifications.

Subgrade
The portion of the roadbed immediately below the base course or pavement, including below the curb and gutter, valley gutter, shoulder and driveway pavement. The subgrade limits ordinarily include those portions of the roadbed shown in the plans to be constructed to a design bearing value or to be otherwise specially treated. Where no limits are shown in the plans, the subgrade section extends to a depth of 12 inches below the bottom of the base or pavement and outward to 6 inches beyond the base, pavement, or curb and gutter.

Substructure
All of that part of a bridge structure below the bridge seats, including the parapets, backwalls, and wingwalls of abutments.

Superintendent
The Contractor's authorized representative in responsible charge of the work.

Superstructure
The entire bridge structure above the substructure, including anchorage and anchor bolts, but excluding the parapets, backwalls, and wingwalls of abutments.

Supplemental Agreement
A written agreement between the Contractor and theCounty, and signed by the surety, modifying the Contract within the limitations set forth in these Specifications.

Supplemental Specifications
See definition for Specifications.

Surety
The corporate body that is bound by the Contract Bond with and for the Contractor and responsible for the performance of the Contract and for payment of all legal debts pertaining thereto.

Technical Special Provisions
See definition for Specifications.

Traveled Way
The portion of the roadway providing for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

Unilateral Payment
A payment of money made to the Contractor by the Department pursuant to Section 337.11(12), Florida Statutes (2009), for sums the Department determines to be due to the Contractor for work performed on the project, and whereby the Contractor by acceptance of such payment does not waive any rights the Contractor may otherwise have against the Department for payment of any additional sums the Contractor claims are due for the work.

Work
All labor, materials and incidentals required to execute and complete the requirements of the Contract including superintendence, use of equipment and tools, and all services and responsibilities prescribed or implied.

Work Order
A written agreement between the Contractor and the County modifying the Contract within the limitations set forth in these Specifications. Funds for this agreement are drawn against the Initial Contingency Pay Item or a Contingency Supplemental Agreement.

Working Day
Any calendar day on which the Contractor works or is expected to work in accordance with the approved work progress schedule.

END OF SECTION 01000

SECTION 01300 - SUBMITTALS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and General and Supplemental Provisions of the Contract, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for submittals required for performance of the Work, including, but not limited to the following:

1. Submittal Procedures
2. Contractor's Construction Schedule
3. Daily Construction Reports
4. Shop Drawings
5. Product Data
6. Samples
7. Quality Assurance Submittals
8. Licenses
9. Pictures, Video of Pre-Construction Conditions

B. Administrative Submittals: Refer to other Sections and other Contract Documents for requirements for administrative submittals. Such submittals include, but are not limited to, the following:

1. Permits
2. Applications for Payment
3. Performance and Payment Bonds
4. Insurance Certificates
5. List of Subcontractors
6. Licenses

1.3 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, inspections, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need

to review submittals concurrently for coordination. The County reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.

3. Processing: To avoid the need to delay construction as a result of the time required to process submittals, allow sufficient time for submittal review, including time for re-submittals. Allow 2 weeks for initial review. Allow additional time if the County must delay processing to permit coordination with subsequent submittals.

    a. If an intermediate submittal is necessary, process the same as the initial submittal.
    b. Allow 2 weeks for reprocessing each submittal.
    c. No extension of Contract Time will be authorized because of failure to transmit submittals to the County sufficiently in advance of the Work to permit processing.

B. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4 by 5 inches on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.

2. Include the following information on the label for processing and recording action taken.

    a. Project Name.
    b. Date.
    c. Name and Address of the Engineer.
    d. Name and Address of the Contractor.

C. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Four copies of each submittal (three hard copy and one digital) shall be transmitted. Transmit each submittal from the Contractor to the County, (copy Engineer) using a transmittal form. The County will not accept submittals received from sources other than the Contractor. Submittals must be approved by Contractor prior to review by County. On the transmittal, record relevant information and requests for data. On the form or on a separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that the information complies with Contract Document requirements on each submittal.

1.4 CONSTRUCTION SCHEDULE/DOCUMENTATION

A. Bar-Chart Schedule: Prepare a fully developed, horizontal bar-chart-type, contractor's construction schedule. Submit within 10 days of the issuance of the Notice to Proceed. The contractor shall submit an updated schedule at least once per month, showing any schedule changes. This may be requested up to three times per month by the County. Include dates of shop drawing submittals.

B. Cost Correlation: At the head of the schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of Work performed as of the dates used for preparation of payment requests.

C. Pre-Construction Site Conditions Photos/Video: Contractor shall submit a DVD of photos and video of the site conditions prior to the performance of any work.

D. Licenses: All required licenses to perform work shall be submitted prior to the commencement of construction.

1.5 DAILY CONSTRUCTION REPORTS

Prepare a daily construction report recording the following information concerning events at the site, and submit duplicate copies to the County at weekly intervals including, but not limited to:

1. Work performed.
2. Approximate count of personnel at the site.
3. Count and type of major equipment at the site.
4. High and low temperatures, general weather conditions, including daily rainfall amount from gauge installed on site jointly recorded by contractor and county representative.
5. Accidents and unusual events.
6. Meetings and significant decisions.
7. Stoppages, delays, shortages, and losses.
8. Emergency procedures.
9. Orders and requests of governing authorities.
10. Change Orders received, implemented.
11. Material Expenditures.

1.6 SHOP DRAWINGS

A. Submit shop drawings for structures unless FDOT approved structures are used.

B. Shop Drawings – Including, but not limited to the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.

1.7 PRODUCT DATA

Product Data - Include the following information:

1. Manufacturer's printed recommendations.
2. Compliance with trade association standards.
3. Compliance with recognized testing agency standards.
4. Application of testing agency labels and seals.

1.8 SAMPLES

Submit samples as specified in the technical specifications.

1.9 QUALITY CONTROL (QC) / QUALITY ASSURANCE (QA) SUBMITTALS

A. Submit the QC Plan to the County for approval within 21 calendar days after the Notice to Proceed. The County will review the QC Plan and respond to the Contractor within 21 calendar days of receipt.

If at any time the Contractor is not in compliance with the approved QC Plan, or a part thereof, affected portions of the plan will be disapproved. The contractor shall cease work in the affected operation(s) and submit a revision to the County. If the QC Plan, or a part thereof, must be revised, submit the revision to the County. The County will review the revision and respond within seven calendar days of receipt.

Continue to work on operations that are still in compliance with the approved sections of the QC Plan.

B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit to the County a certification from the manufacturer certifying compliance with specified requirements.

C. Inspection and Test Reports: Requirements for specific testing are included in the technical specifications.

1. Submit to the County: Two (2) copies (one hard copy and one digital) of the inspection and test reports from a qualified, independent, geotechnical engineering testing agency, under the direction of a Professional Engineer, licensed in the State of Florida.

2. All testing required by the specifications or the County shall be at the contractors expense.

3. No additional work within/upon the tested area shall proceed until submitted test results confirm compliance with specification requirements.

4. Areas where submitted test results indicate non-compliance shall be removed, replaced, and retested. Extents of area out of compliance shall be determined by testing at 25’ increments, in each direction within the construction area, until passing results are achieved.

5. Variations from testing requirements and frequency of testing may be authorized by the County and will be documented in writing.

1.10 ENGINEER'S ACTION

Except for submittals for the record or information, where action and return is required, the County will review each submittal, mark to indicate action taken, return to contractor within the timeframe allotted herein. Compliance with specified characteristics is the Contractor's responsibility.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01300

SECTION 02230 - CLEARING & GRUBBING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions shall apply to this Section.

B. Florida Department of Transportation*, Standard Specifications for Road and Bridge Construction, Section 110, Latest Edition.*

C. Emerald Coast Utility Authority (ECUA) *Engineering Manual*, *Latest Edition.*

1.2 SUMMARY

A. This Section includes, but is not limited to, the following:

1. Protection of existing trees indicated to remain.
2. Removal of trees and other vegetation.
3. Clearing and grubbing.
4. Removing above-grade improvements.
5. Removing below-grade improvements.

B. Extent of clearing & grubbing shall remain in County right-of-way, easements (temporary or permanent), or approved written work agreement areas, unless otherwise noted or instructed.

1.3 PROJECT CONDITIONS

Provide protection for all public land corners and monuments within the limits of construction. Any Monuments disturbed while performing the work will be replaced at the contractor's expense.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 SITE CLEARING

A. General: Remove trees, shrubs, grass, and other vegetation, improvements, or obstructions, as required, to permit installation of new construction. Remove similar items elsewhere on site or premises as specifically indicated. Removal includes digging out and off-site disposal of stumps and roots.

Carefully and cleanly cut minor roots and branches of trees indicated to

remain in a manner where such roots and branches obstruct installation of new construction.

B. Clearing and Grubbing: Clear site of trees, shrubs, and other vegetation, except for those indicated to remain.

1. Completely remove all stumps within the roadway. Remove roots and other debris to a depth of 12” below the ground surface or finished grade, whichever is lower.

2. Use only hand methods for grubbing inside drip line of trees Indicated to remain.

3. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated in accordance with Section 2300.

C. Removal of Improvements: Remove existing above grade and below grade improvements as indicated and as necessary to facilitate new construction, and other work as indicated.

3.2 DISPOSAL OF WASTE MATERIALS

A. Burning: Burning is not permitted on County property. Requests to burn will be considered on a case by case basis. If approved, Contractor is to acquire permits and provide copies to the County.

B. Removal from County Property: Remove waste materials and unsuitable or excess topsoil from County property, and dispose of off site in a legal manner.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

A. Lump Sum Payment: When direct payment is provided in the Contract for the quantity to be paid for as the lump sum quantity cleared and grubbed, no additional measurements will be made.

B. Payment By The Acre/Square Yard: For areas of Clearing and Grubbing that are designated to be paid for separately by the acre or square yard, the quantity to be paid for will be determined by measurement of the areas shown on the plans or authorized by the County to be cleared and grubbed, and acceptably completed.

4.2 BASIS OF PAYMENT

A. General: Price and payment will be full compensation for all Clearing and Grubbing required for the roadway right-of-way and for lateral ditches, channel changes, or other outfall areas, and any other Clearing and Grubbing indicated, or required for the construction of the entire project, except for any areas designated to be paid for separately or to be specifically included in the costs of other work under the contract. Price and payment, either lump sum or by the acre/square yard will be full compensation for all the work specified in this Section, including all necessary hauling, furnishing equipment, equipment operation, furnishing any areas required for disposal of debris, leveling of terrain and the landscaping work of trimming, etc., as specified herein.

B. Lump Sum Payment: Payment shall be made at the lump sum contract price for Clearing and Grubbing, lump sum.

C. Payment: Payment shall be made at the per unit contract price for Clearing and Grubbing, per acre or square yard.

END OF SECTION 02230

SECTION 02300 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions, apply to this Section.

B. Florida Department of Transportation*, Standard Specifications for Road and Bridge Construction, Latest Edition*.

1.2 SUMMARY

A. This Section includes preparing and grading for pavement, curb, subgrades, drainage features, and general site work.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Section 2230 "Clearing & Grubbing" for clearing, grubbing, and tree protection.

2. Section 2600 “Stormwater System” for installation of stormwater systems.

1.3 DEFINITIONS

A. Excavation consists of the removal of material encountered to subgrade elevations and the reuse or disposal of materials removed.

B. Subgrade: The uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, base, drainage fill, or topsoil materials.

C. Borrow: Soil material obtained off-site when sufficient approved soil material is not available from on-site excavations.

D. Subbase Course: The layer placed between the subgrade and base course in a paving system.

E. Base Course: The layer placed immediately beneath the surface pavement in a paving system.

F. Unauthorized excavation consists of removing materials beyond indicated subgrade elevations or dimensions without direction by the County. Unauthorized excavation, as well as remedial work directed by the Engineer, shall be at the Contractor's expense.

G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below ground surface.

H. Utilities include on-site above ground utilities, overhead utilities and underground utilities including: pipes, conduits, ducts, and cables, as well as related appurtenances and underground services within building lines.

I. Unsuitable Material: Any material such as muck, wood, rock, peat, garbage, non-compactable soils in dry condition, and any other material that is considered by the County Engineer to be unsuitable.

J. Topsoil: Topsoil is defined as the surface layer of soil found normally to a depth of at least 4 to 8 inches that typically contains organic materials. Satisfactory topsoil is reasonably free of roots, clay lumps, stones, other objects over 2 inches in diameter, and any other objectionable or deleterious material.

1.4 SUBMITTALS

A. General: Submit the following in accordance with Section 1300, "Submittals."

B. Product Data and Samples of the following:

1. 1-lb representative samples of each proposed fill and backfill soil material from borrow sources as selected by the County.

2. 12-by-12-inch sample of filter fabric.

3. Representative samples of the proposed base and sub-base materials.

C. Test Reports: In addition to test reports required under field quality control, submit the original directly to the County from the testing services, with a copy to the Contractor:

1. Laboratory analysis as specified in 1.1 (Related Documents) of each soil material proposed for fill and backfill from borrow sources.

2. One optimum moisture-maximum density curve for each soil material.

3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.5 QUALITY CONTROL / QUALITY ASSURANCE

A. Codes and Standards: Perform earthwork complying with all requirements of authorities having jurisdiction.

B. Testing and Inspection Service: A qualified independent geotechnical engineering testing agency, under the direction of a Professional Engineer, licensed in the State of Florida to classify, perform soil tests, and provide inspection services for quality control. All proposed borrow soils will require the testing agency to verify that soils comply with specified requirements and to perform required field and laboratory testing. Contractor shall replace materials removed for testing purposes. Should any work or materials fail to meet the requirements set forth in the plans and specifications, contractor shall reimburse for additional and re-testing.

1.6 PROJECT CONDITIONS

A. Site Information: Data in the subsurface investigation Report, if available, is used for the basis of the design and is available to the contractor for information only. Conditions are not intended as representations or warranties of accuracy or continuity between soil borings. The County will not be responsible for interpretations or conclusions drawn from this data by the Contractor.

B. Existing Utilities: After location of utilities by the appropriate utility company, it is the Contractor's responsibility to protect all such utility lines, including service lines and appurtenances, and to replace at his own expense any that may be damaged by the Contractor's equipment or forces during construction of the Project.

1. Provide a minimum of 48-hours notice to the County and receive written notice to proceed before interrupting any utility.

2. The contractor is responsible for contacting all utility companies to verify locations of all existing utilities, utility-related obstructions, or utility relocations that he may encounter during construction.

3. Adequate provision shall be made for the flow of existing sewers, drains, and water courses encountered during construction, and structures which may be disturbed shall be satisfactorily restored by the Contractor at his expense.

C. Should uncharted, or incorrectly charted, piping or other utilities be encountered during the course of the work, consult the County immediately for directions. Cooperate with the County and utility companies in keeping respective services and facilities in operation.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. General: Soils used as fill shall be clean sands, similar to existing site soil, with less than 5% passing the number 200 sieve when existing subgrade conditions are considered wet as per the County. Soils as described above with less than 15% passing the number 200 sieve and meeting the requirements of Section 902-6 of the FDOT Specifications may be used when existing subgrade conditions are considered dry as per the County. The sand shall have a maximum dry density of at least 100 pounds per cubic foot, according to the Standard Proctor compaction test, AASHTO T-99, ASTM D698. Provide approved borrow soil materials from off-site when sufficient satisfactory soil materials are not available from on-site excavations

If the Contractor elects to import any materials, then he will do so only with the approval of the County and at his own expense, unless separate payments for such items are called for in these specifications. Provide laboratory certification that soils meet requirements of specifications.

B. Sub-Base Material: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, or sand. The material shall be stabilized in accordance with FDOT Standard Specification Section 160-5.4. ASTM D 2940, with at least 95 percent passing a 1-1/2-inch sieve, and not more than 8 percent passing a No. 200 sieve.

Barrier Island Sand.

(a) **Protection required.** The county recognizes that the white sands of Perdido Key and Pensacola Beach promote tourism and enhance the quality of life of the residents of the county, and that the permanent discoloration, darkening or staining of the sands would harm the public welfare. To maintain, preserve and protect the natural function and color of these fine to medium grained white sands, the importation, use, and relocation of red clay and other materials that tend to discolor, darken or stain the natural white sands of Perdido Key and Santa Rosa Island is prohibited. Additionally, transportation of prohibited materials when exposed to wind or water shall be prevented on the islands by containment and removal. Approved and prohibited material specifications are provided in Chapter 2 - Barrier island sand section of the Design Standards Manual (DSM).

(b) Applicability. There shall be no distinction made regarding the applicability of the provisions of this section between Perdido Key and Santa Rosa Island soil material. However, the county may, upon specific consideration, differentiate between the allowable soil material of the Gulf front beach, Gulf front (primary) dunes, sound side beach, interior (secondary) dunes and forested ecosystems.

(c) Permit Required. All projects involving the placement of sand or other construction or landscaping materials on Santa Rosa Island or Perdido Key shall require county approval of a representative sample of the materials according to the compliance review processes of Chapter 2 prior to transport on the barrier islands.

(d) Prohibited importation, transfer and use. The following prohibitions on the importation, transfer and use of some materials on barrier islands are based on approved and prohibited materials as prescribed in this section:

(1) No person may import or cause to be imported onto Santa Rosa Island or Perdido Key any construction or landscaping material which is not an approved material.

(2) No person may use, or transfer for use, any prohibited material in connection with any paving, road surfacing, filling, landscaping, construction work or any other improvement to real property on Perdido Key or Santa Rosa Island, whether leased or not.

(3) No person may transfer from parcel to parcel any construction material which is not an approved material where such material is to be used in connection with any paving, road surfacing, filling, landscaping, construction work or any other improvement to real property on Perdido Key or Santa Rosa Island, whether leased or not.

(e) Removal of prohibited materials.

(1) General. Any time reconstruction, redevelopment, improvement or use of a site on Santa Rosa Island or Perdido Key uncovers or exposes "prohibited materials" as defined in DSM Chapter 2 - Barrier Island Sand section those materials must be immediately removed from the site and relocated off the barrier island.

(2) Utilities. Any time a utility company, authority, or franchisee, which has acquired use of the county's rights-of-way, easements or other interest by permission, agreement or law to provide services to consumers, shall uncover or expose any prohibited material during the installation, maintenance, repair or removal of its system on Santa Rosa Island or Perdido Key, it shall remove from the barrier island the prohibited material disturbed by the work and replace it with approved materials. The prohibited materials shall be removed in such a manner as to avoid their release by wind, water, or other means onto adjacent lands or waters.

(3) BCC approved exemption. The BCC may exempt the application of these removal provisions for particular projects or parts of projects upon determination by a four-fifths vote of the board that an emergency exists and that an immediate exemption is required to protect the public health, safety or welfare.

(4) Removal time. The requirement for immediate removal of prohibited materials may be relaxed if the materials are confirmed to be contained in such a way as to preclude their transfer by wind, water or other means within the parcel or onto adjacent parcels or waters, and if the

delay is otherwise consistent with the purpose and intent of this section. However, prohibited materials may remain on the site where exposed or on the barrier island for no more than 48 hours. The county shall promulgate approved methods of containing and transporting prohibited materials required to be removed.

Chapter 2 (DSM)
Barrier Island Sand

(a) Approved material. Approved materials are those constructions and landscaping materials whose mineralogical composition is white fine to medium grained quartz sand. However, oyster shell, limestone or white dolomite may be used for road bed or foundation construction if reasonably the same color as approved sand after exposure to the sun and not containing clay or other discoloring, staining or darkening material. For the purposes of this section, white fine to medium grained quartz sand shall have the following characteristics:

(1) Color. A Munsell Color Chart value of 9.25 or whiter and a chroma of 0.5 or less on the 2.5, 5, 7.5 or 10YR scale when checked in an air dry condition.

(2) Grain size. A grain size of 75 percent of the sample by weight between 0.43 millimeters (mm) and 0.08 mm, with the remaining 25 percent being coarser than 0.43mm but not larger than 1.0 mm as described under the Unified Soil Classification System. This corresponds to the number 40-200 sieve sizes for gradation curve analysis.

(a) Prohibited material. Prohibited materials are any darkening, discoloring or staining materials having the ability to permanently (greater than six months) change the color or darken the natural white sands of Santa Rosa Island or Perdido Key, or any approved materials, whenever coming into contact with them. Prohibited materials include any with the following characteristics:

(1) Color. A color darker than the color required for approved materials.

(2) Grain size. A grain size with over ten percent by weight of the sample outside the range required for approved materials.

(3) Composition or character. Any material which, in whole or in part, is composed of or contains clay or any other substance that would darken, stain or discolor the natural barrier island sands or approved material

PART 3 - EXECUTION

3.1 DEWATERING

A. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on sub-grades in work areas, and from flooding project site and surrounding area.

B. Protect subgrades and foundation soils from softening and damage by

rain or water accumulation.

C. The Contractor shall prevent the accumulation of water in excavated areas, and shall remove, by pumping or other means, any water that accumulates in the excavation. The Contractor shall prevent the accumulation of water in both structural and trench excavations and shall remove, by well point system or by other means, water which accumulates. The Contractor shall provide, install and operate a suitable and satisfactory dewatering system, when needed to dry sub-grades or other work areas. The Contractor shall comply with the latest testing requirements as set forth by the applicable regulatory agency. At a minimum, the contractor shall test once prior to dewatering, once within the first week of dewatering, and once every thirty (30) days while dewatering.

D. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rainwater and water removed from excavations to collection or runoff areas. Do not use trench excavations as temporary drainage ditches. Discharged water shall be clean, not silt or sediment laden, prior to discharge to untreated system and/or waters of the State.

3.2 EXCAVATION

A. Explosives: Not permitted.

B. Strip topsoil and significant root systems to whatever depths encountered in a manner to prevent intermingling with underlying subsoil or other objectionable material. Remove heavy growths of grass from areas before stripping. Where existing trees are indicated to remain, leave existing topsoil in place within drip lines to prevent damage to root systems.

3.3 STABILITY OF EXCAVATIONS

A. Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations.

B. All excavation work shall conform to all applicable OSHA Publications, Latest Editions. The Contractor's method of providing protective support to prevent cave-ins shall conform to OSHA requirements. Slope excavations, shoring, and trench box usage in the field must be based on tabulated data and designed by the Contractor. The contractor is solely responsible for job site safety and shall not be compensated for required safety equipment/devices.

C.

3.4 EXCAVATION FOR STRUCTURES

Excavate to indicated elevations and dimensions within a tolerance of plus or minus 0.10 foot. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, maintaining a safe slope, installing services and other construction, and for inspections.

A. Footings and Foundations: Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.

B. Pile Foundations: After piles have been installed, remove loose and displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

C. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Appurtenances: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 0.10 foot.

3.5 EXCAVATION FOR WALKS AND PAVEMENTS

Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades. Consider Dewatering and other sections as applicable.

3.6 EXCAVATION FOR STORMWATER SYSTEMS

Excavate and compact the backfill of trenches to the densities specified for embankment or subgrade, as applicable, and in accordance with the requirements of Section 2600. Consider Dewatering and other sections as applicable.

3.7 STORAGE OF SOIL MATERIALS

Stockpile excavated materials acceptable for backfill, fill soil, and topsoil materials, including acceptable borrow materials. Stockpile soil materials without intermixing. Stockpiles shall be placed, graded, and shaped to drain surface water and prevent erosion. Cover to prevent wind-blown dust and/or erosion. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.8 BACKFILL

A. Backfill excavations promptly, but not before completing the following:

1. Acceptance of construction below finish grade including, where applicable, filter fabric installation and gravel bedding.

2. Surveying locations of underground utilities for record documents.

3. Testing, inspecting, and approval of underground utilities.

4. Removal of trash and debris from excavation.

5. Removal of temporary shoring, bracing, and sheeting unless specified to remain.

B. No backfill material shall be placed, spread or rolled during unfavorable weather conditions. When the work is interrupted by heavy rain, backfill operations shall not be resumed until the moisture content of the fill is as previously specified to achieve proper compaction.

3.9 FILL

A. Preparation: Remove vegetation, topsoil, debris, wet and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills. Plow strip, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing surface. In order to insure proper bond and prevent slipping between the original ground and fill, the surface of the original ground shall be scarified to a depth of at least three inches. Each layer of fill material shall be compacted until the required density is achieved, and the density achieved should be verified in accordance with specifications using in-place density testing.

B. When subgrade or existing ground surface is to receive fill and has a density less than that required for fill, break up ground surface to depth required, pulverize, moisture condition or aerate soil and re-compact to required density.

C. Place fill material in layers to required elevations for each location listed below.

1. Under grass, subbase or base material, use satisfactory excavated or borrow soil material.

2. Under walks and pavements, curbs, steps, ramps, building slabs, footings and foundations use subbase and/or base material.

3.10 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.

B. Do not place backfill or fill material on surfaces that contain excessive moisture.

C. Remove and replace, or scarify and air-dry satisfactory soil material that is too wet to compact to specified density. Stockpile or spread and dry removed wet satisfactory soil material.

3.11 COMPACTION

A. Place backfill and fill materials in layers or lifts not more than 12 inches in loose depth for material compacted by heavy compaction equipment, and not more than 8 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations. Place backfill and fill uniformly along the full length of each structure.

C. Percentage of Maximum Dry Density Requirements: Compact soil to not less than the following percentages of maximum dry density according to ASTM Modified Proctor):

1. Under structures, building slabs, steps, and pavements, compact each layer of backfill or fill material at a minimum of 98% Modified Proctor of the material's maximum dry density.

2. Under lawn or unpaved areas, compact each layer of backfill or fill material at 95% Modified Proctor maximum dry density.

3.12 GRADING

A. General: Uniformly grade areas to a smooth surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between existing adjacent grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Lawn or Unpaved Areas: Plus or minus 0.10 foot.

2. Walks: Plus or minus 0.10 foot.

3. Pavements: Plus or minus ½ inch.

3.13 STABILIZED SUBGRADE

A. For stabilized subgrade the type of materials, commercial or local, is at the Contractor's option and no separate payment for stabilizing materials will be made (other than as may be paid for as borrow).

B. When stabilizing is designated as Type B, compliance with the bearing value requirements will be determined by the Limerock Bearing Ratio Method. Minimum LBR shall be 40.

C. It is the Contractor's responsibility that the finished roadbed section meets the bearing value requirements, regardless of the quantity of stabilizing materials necessary to be added. Also, full payment will be made for any areas where the existing subgrade materials meet the design bearing value requirements without the addition of stabilizing additives, as well as areas where the Contractor may elect to place select high-bearing materials from other sources, within the limits of the stabilizing.

D. After the roadbed grading operations have been substantially completed, the Contractor shall make his own determination as to the quantity (if any) of stabilizing material, of the type selected by him, necessary for compliance with the bearing value requirements. The contractor shall notify the Engineer of the approximate quantity to be added, and the spreading and mixing-in of such quantity of materials shall meet the approval of the County as to uniformity and effectiveness.

3.14 FIELD QUALITY CONTROL

A. Testing Agency Services: Allow testing agency to inspect and test each subgrade and each fill or backfill layer. Do not proceed until test results for previously completed work verify compliance with requirements.

1. Perform field in-place density tests according to ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), ASTM D 293 (drive cylinder method), or ASTM D 2922 (nuclear method), as applicable.

a. Field in-place density tests may also be performed by the nuclear method according to ASTM D 2922, provided that calibration curves are periodically checked and adjusted to correlate to tests performed using ASTM D 1556. With each density calibration check, check the calibration curves furnished with the speedy moisture meter according to ASTM D 3017.

b. When field in-place density tests are performed using

nuclear methods, make calibration checks of both density and speedy moisture meter at beginning of work, on each different type of material encountered, and at intervals as directed by the Engineer.

2. Paved Areas: Make at least one field density test of subgrade, base, and each compacted fill layer for every 300 linear feet of roadway or equivalent area, but in no case less than two tests. Tests shall be staggered to ensure representative sampling.

3. Unpaved Areas: Make at least one field density test of each compacted fill layer or subgrade for every 1000 square yards of area, but in no case less than two tests.

4. Other tests may be required at County's discretion.

B. If, in the opinion of the County, based on testing service reports and inspection or the Engineer's observations, subgrades, fills, or backfills are below specified density, scarify and moisten or aerate as needed, or remove and replace soil to the depth required, re-compact, and re-test until required density is obtained at no additional expense.

3.15 REPAIR & CORRECTIONS

A. Protecting Graded Areas: Protect newly graded areas from traffic and erosion. Keep free of trash and debris. Repair and re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions. Scarify or remove and replace material to depth directed by the Engineer; reshape and re-compact at optimum moisture content to the required density.

B. Settling: Where settling occurs, remove finished surfacing, backfill with additional approved material, compact, and reconstruct surfacing. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.

C. When traffic must cross open trenches, the contractor shall provide suitable bridge of graded aggregate base or temporary asphalt paving as directed by County at no additional expense. (See Section 4060 for additional requirements.)

D. Erosion Control: The Contractor shall be responsible for the prevention of erosion from the site and for maintaining filled and graded surfaces for the duration of the project. This includes, but is not limited to, the erection of a silt fence and hay bale barricade as per Florida Stormwater Erosion and Sedimentation Control Inspector's Manual and/or as shown in the

construction plans. The Contractor shall take whatever steps necessary to prevent erosion and sedimentation, and will be responsible for any damages which might occur to down-land properties as a result of run-off from the site during sitework construction at no additional cost. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.16 DISPOSAL OF SURPLUS AND WASTE MATERIALS

Surplus excavated material becomes the property of the Contractor unless otherwise noted. Waste materials, including unsatisfactory soils, trash and debris shall be removed and legally disposed of, off the Owner's property.

3.17 CLEAN-UP AND FINAL INSPECTION

Before final inspection and acceptance the Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, re-grassing if necessary, to as good a condition as existed before work started.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

A. Excavation: When payment for excavation is on a volumetric basis, the quantity to be paid for will be the volume, in cubic yards, calculated by the method of average end areas according to the survey and plans. If actual quantities vary in field, contractor shall communicate with Engineer and/or County to request additional payment. The measurement will include the net volume of material between the original ground surface and the surface of completed earthwork according to the survey and plans. If actual quantities vary in field, contractor shall communicate with the County to request additional payment. Excavation for swales and channels will be included in the total quantity for Excavation. Subsoil Excavation will be measured to the lines and grades indicated on the plans or as approved by the County. Backfill material shall either include normal excavation material from within project limits or borrow material supplied by the Contractor.

B. Embankment: Quantities for Embankment will be calculated by the method of average end or square yard areas, and will include material placed above the original ground line, within the lines and grades indicated on the plans or as directed by the County.

C. Calcium Chloride for Dust Control: The quantity to be paid for will be the weight, in tons, of calcium chloride authorized and acceptably spread on the road, within the limits specified by the County. The quantity will be determined from scales, certified freight bills, or other sources, the

accuracy of which can be authenticated.

4.2 BASIS OF PAYMENT

A. General: Prices and payments for the various work items included in this section will be full compensation for all work described herein, including excavating, dewatering, dredging, hauling, placing, and compacting. Separate pay items will be provided for all devices required to maintain control of erosion according to plans and NPDES permit. Additional devices shall be no additional cost.

B. Excavation: Unit prices will be established for required cubic yard volumes of Regular Excavation, Subsoil Excavation, and Borrow Excavation as necessary. When subsoil excavation is required to a depth greater than plans and specifications require, and additional excavation is not due to unsuitable, a change order will be required to establish a new quantity utilizing the current unit price.

C. Embankment: Payment shall be made at the unit contract price for Embankment, cubic yard or square yard, in place, according to plans.

D. Calcium Chloride for Dust Control: Price and payment will be full compensation for all work and materials specified for this item, including specifically all required shaping and maintenance of the treated area and all water furnished and applied to the area.

E. Dewatering: The contractor shall include the cost of dewatering in the unit price bid for the stormwater pipe if there is not a specific line item used in the contract.

END OF SECTION 02300

SECTION 02340 - RIPRAP

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, apply to work of this Section.

B. Florida Department of Transportation, *Standard Specifications for Road and Bridge Construction*, *Section 530*, and *Design Standard Index 281*, *Latest Edition*.

1.2 DESCRIPTION OF WORK

This section shall cover the work of furnishing and constructing the Riprap which shall consist of a protective course of stone or other approved materials on embankment slopes, in channels, or other work as shown on the plans or directed, with or without a Filter Blanket, all in accordance with these Specifications and in conformity with the lines and grades noted in the plan details.

PART 2 - PRODUCTS

2.1 MATERIALS

Rubble\Stone Riprap shall comply with Florida Department of Transportation *Standard Specification 530-2.2*

A. Banks and shore protection shall comply with Florida Department of Transportation *Standard Specification 530-2.2.1*.

B. Ditch lining shall comply with Florida Department of Transportation *Standard Specification 530-2.2.2*.

C. Broken stone and broken concrete shall comply with Florida Department of Transportation *Standard Specification 530-2.2.3*.

D. Geotextile fabric shall comply with Florida Department of Transportation *Standard Specification 514* and Florida Department of Transportation *Design Standards, Index No. 199* according to its application.

E. Bedding stone shall comply with Florida Department of Transportation *Standard Specification 530-2.3*.

F. Sand/Cement Riprap: Materials and placement shall comply with Florida Department of Transportation *Standard Specification 530-2.1*.

PART 3 - EXECUTION

3.1 EXECUTION

A. Construction Requirements:

General: All slopes to be treated with riprap shall be trimmed to the lines and grades indicated by the plans or directed, such that the plan grades are the top of the placed riprap, unless otherwise noted. Loose material shall be compacted by methods approved by the Engineer or removed.

Slopes which require a filter blanket under the riprap shall, in addition to the above, be prepared as noted below.

1. Placement of any riprap on a filter blanket shall be by such means that will not damage or destroy the blanket. Any damage to the blanket shall be repaired without additional compensation.

2. Unless directed otherwise by the Engineer or shown by plan details, all outer edges and the top of riprap where the riprap terminates shall be formed so that the surface of the riprap will be embedded and even with the surface of the ground and/or slope.

3. All riprap construction shall begin at the bottom of the slope and progress upward.

4. Filter Blanket: Unless otherwise specified by the plans or ordered in writing, a fabric blanket will not be allowed for soils with 85% by weight passing the No. 200 sieve (U.S. Std.)

5. The bedding stone shall be constructed in accordance with Florida Department of Transportation Specification 530-3.3.

6. Foundation Preparation: Areas on which filter fabrics are to be placed shall be uniformly trimmed and dressed to conform to cross-sections shown by the plans.

B. Plastic Filter Fabric (Geotextile):

Plastic filter fabric shall be placed in the manner and at the locations shown in the plans or as directed by the Engineer. At the time of installation, fabric shall be rejected if it has defects, rips, holes, flaws, deterioration or damage incurred during manufacturer, transportation or storage. The fabric shall be placed with the long dimension parallel to the centerline of the channel or shoreline unless otherwise directed by the Engineer, and shall be laid smooth and free of tension, stress, folds, wrinkles or creases. The strips shall be placed to provide a minimum

width of 24 inches of overlap for each joint with the upstream strip of fabric overlapping the downstream strip. Overlap joints and seams shall be measured as a single layer of cloth. Securing pins with washers shall be inserted through both strips of overlapped cloth as recommended by the manufacturer, but no greater than the following intervals along a line through the midpoint of the overlap.

Pin Spacing	Slope
2 ft.	Steeper than 3:1
3 ft.	3:1 to 4:1
5 ft.	Flatter than 4:1

The fabric shall be turned down and buried two feet at all exterior limits except where a stone-filled key is provided below natural ground.

Additional pins regardless of location shall be installed as necessary to prevent any slippage of the filter fabric. Overlaps in the fabric shall be placed so that any upstream strip of fabric will overlap the downstream strip. Should the Engineer direct that the fabric be placed with the long dimension perpendicular to the centerline of the channel or shoreline, the lower strip of fabric shall underlap the next higher strip. Each securing pin shall be pushed through the fabric until the washer bears against the fabric and secures it firmly to the foundation. The fabric shall be protected at all times during construction from contamination by surface runoff and any fabric so contaminated shall be removed and replaced with uncontaminated fabric. Any damage to the fabric during its installation or during placement of riprap shall be replaced by the Contractor. The work shall be scheduled so that the manufacturer's recommendation for UV exposure is not exceeded or 5 days does not expire between placement of the fabric and the covering of the fabric with riprap, whichever is less.

3.2 STONE AND CONCRETE RUBBLE RIPRAP

General: Unless otherwise shown by plan details or directed, stone or concrete shall not be placed on slopes steeper than the natural angle of repose of the riprap material.

Placement of stone or concrete may, unless otherwise noted hereinafter, be placed by methods and equipment suitable for the purpose of placing the riprap in accordance with the requirements for the class riprap involved without damaging any existing facility or construction material.

The stone or concrete shall be placed in such a manner as to produce a reasonably well graded mass of rock with the minimum practical percentage of voids. Stone or concrete shall be laid with close broken joints and resting on the embankment slope. The top of the riprap shall be constructed to the lines, grades and thickness shown by the plans or as directed. Riprap shall be placed

to its full course thickness in one operation and in such a manner as to avoid displacing or damaging the filter blanket material. The larger stone or concrete shall be well distributed and the entire mass of stone or concrete, in their final position, shall conform to a reasonable uniform gradation. The finished riprap shall be free from objectionable pockets of small stone or concrete and clusters of larger stone or concrete. Open joints shall be filled with spalls, or small stone or concrete in such manner that all stone or concrete are tightly wedged or keyed. Placing riprap by dumping into chutes or by other methods likely to cause segregation of sizes will not be permitted. The desired distribution of the various sizes of stone or concrete throughout the mass shall be obtained by selective loading of the material at the source, by controlled dumping of successive loads during final placing, or by other methods of placement which will produce the specified results. The individual pieces of stone or concrete in each horizontal course shall be laid so that they will not break away from embankment. Rearranging of individual stone or concrete by mechanical equipment, or by hand, will be required to the extent necessary to obtain a reasonably well graded distribution of stone or concrete as specified above.

3.3 SAND/CEMENT RIPRAP

A. Placing: Immediately following mixing, the mixture shall be placed in the bags, tied (so that when laid in position, they will flatten out and give a thickness of not less than six inches) and placed flat on the area designed. Use only one type of bag per structure. Bags shall be layered and wedged against each other to form closed joints, with tied ends of sacks all laid in the same direction. Sacks ripped or torn in placing shall be removed and replaced with sound, unbroken sacks. When required to be placed under water, special care shall be taken to see that bags are closely jointed to give the same tight joints as required on dry slopes. After the riprap is placed, it shall be sprinkled with water as directed and kept damp for not less than three days. No sand/cement riprap shall be mixed in freezing weather.

B. Grouting: Immediately after watering, all openings between sacks shall be filled with dry grout composed of one part Portland cement and five parts sand.

C. Pinned/Staked Bags: Bags shall be pinned/staked when called for on drawings.

3.4 CLEAN UP

Before final inspection and acceptance, the Contractor shall remove all excess material from site and restore all disturbed areas to as good a condition as existed before work started.

3.5 MAINTENANCE

The Contractor shall maintain all riprap until the contract work is accepted, and shall replace, without additional compensation, any damaged or missing riprap.

PART 4 – MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

A. Sand-Cement: The quantity to be paid for will be the volume, in cubic yards, of sand actually used in the sand cement mixture and grout, satisfactorily placed and accepted. If sand is proportioned by volume, the sand will be measured loose in an approved measure prior to mixing with cement. If sand cement is proportioned by weight, approved scales will be used for this purpose and the volume will be calculated using a standard conversion factor for sand of 85lbs. /cubic feet. No adjustment of batch weights to allow for varying moisture content of the sand will be made.

B. Stone/Concrete Rubble and Bedding Stone: The quantities to be paid for will be, as per plans/bid schedule, and either by the weight in tons in surface dry natural state; by railroad scales, truck scales, or barge displacement, or by square yards (according to plan thickness.) The Contractor shall determine the weights as follows:

1. Railroad Weights: The Contractor shall weight railroad cars on railroad scales, before and after loading or before and after unloading. If weighed by other than the Engineer, a certified statement of weights will be required. Certificates of weight, furnished by the railroad company, will be accepted without further certification.

2. Truck Weights: The Contractor shall weigh trucks on certified scales, loaded and empty, as prescribed above for railroad weights. The Contractor shall weigh trucks in presence of the Engineer, or furnish certificates of weights.

3. Barge Displacement: The Engineer will measure each barge. The Contractor shall fit each barge with gauges graduated in tenths of a foot increment. The Contractor shall locate a gauge at each corner of the barge near the lower end of the rake. The Contractor shall furnish additional gauges amidships, if the Engineer deems necessary. The Engineer will review and check all computed weights. Weight certificates may be submitted.

4. In Place Measurement: The Contractor shall measure surface area (in square yards) of area riprap has been placed.

4.2 BASIS OF PAYMENT

A. Sand-Cement: Price and payment will be full compensation for all work specified in this Section, including all materials, labor, hauling, excavation, and backfill. The Contractor shall include the cost of dressing and shaping the existing fills (or subgrade) for placing riprap in the Contract unit price for Riprap (Sand-Cement.)

B. Stone/Rubble: Price and payment will be full compensation for all work specified in this Section, including all materials, hauling, excavation, and backfill. The Contractor shall include the cost of dressing and shaping the existing fill (or subgrade) for placing riprap in the Contract unit price for Riprap (Stone/Rubble). As an exception to the above, concrete that is shown to be removed from the project site and subsequently disposed of by being crushed and used in the embankment as riprap will not be paid for under this section. Include the cost of such work order under Removal of Existing Structures.

C. Bedding Stone: Price and payment will be full compensation for all work specified in this Section, including all materials and hauling. The Contractor shall include the cost of dressing and shaping the existing fills (or subgrade) for placing bedding stone in the Contract unit price for Riprap (Stone/Rubble).

END OF SECTION 02340

SECTION 02500 – SUPERPAVE ASPHALT CONCRETE

PART 1 - GENERAL

1.1 GENERAL

A. Construct a Type SP Asphalt pavement for local agencies using the type of mixture specified in the Contract, or when offered as alternates, as approved.

B. For this Section only, all references to the Department shall mean the County. All references to the Engineer shall mean the Engineer of Record, designated Engineer of Escambia County and/or CEI.

C. The County will accept the work based on one of the following methods as described in Part 5: 1) Certification, 2) Certification and process control testing by the Contractor, 3) acceptance testing by the County, or 4) other method(s) as determined by the Contract.

1.2 LAYER THICKNESSES

A. Use only fine graded Type SP asphalt mixes. Fine graded mixes are defined as having a gradation that passes above the restricted zone when plotted on an FHWA 0.45 Power Gradation Chart.

B. FINE MIXES: The allowable structural layer thicknesses for fine Type SP Asphalt Concrete mixtures are as follows:

Type SP 9.5	1-1 ½ inches
Type SP 12.5	1 ½ - 2 ½ inches
Type SP 19.0	2-3 inches

In addition to the minimum and maximum thickness requirements, the following restrictions are placed on fine mixes when used as a structural course:

Type SP 9.5 - Limited to the final (top) structural layer, one layer only

Type SP 12.5 - May not be used in the first layer of courses over 3 1/2 inches thick, nor in the first layer of courses over 2 3/4 inches thick on limited access facilities.

The thickness of the new pavement may be checked by core samples, as determined by the Engineer. The Contractor shall be required to correct any deficiency either by replacing the full thickness; or overlaying the area as directed by the Engineer. County inspection shall be performed and all base failures shall be corrected prior to asphalt installation.

Type SP 19.0 - May not be used in the final (top) structural layer.

C. ADDITIONAL REQUIREMENTS: The following requirements also apply to fine Type SP Asphalt Concrete mixtures:

1. A minimum 1 1/2 inch initial lift is required over an Asphalt Rubber Membrane Interlayer (ARMI).

2. When construction includes the paving of adjacent shoulders (5 feet wide or less), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless shown differently in the plans.

3. Use the minimum and maximum layer thicknesses as specified in 1.2 B above unless shown differently in the plans. On variable thickness overbuild layers, the minimum allowable thickness may be reduced by 1/2 inch, and the maximum allowable thickness may be increased 1/2 inch, unless shown differently in the plans.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

Meet the material requirements specified in FDOT Standard Specifications Division III. Specific references are as follows:

Superpave PG Asphalt Binder or Recycling Agent – Sections 916-1, 916-2
Coarse Aggregate, Stone, Slag or Crushed Gravel – Section 901
Fine Aggregate – Section 902

Aggregates utilized on Escambia County projects must be in accordance with FDOT Qualified Products List

2.2 GRADATION REQUIREMENTS

Combine the coarse and fine aggregate in proportions that will produce an asphalt mixture meeting all of the requirements defined in this Specification and conform to the gradation requirements at design as defined in Table 1 below. Aggregates from various sources may be combined.

Table 1
Aggregate Gradation Control Points
(Gradation Design Ranges)

	Type SP Asphalt Mixture (Percent Passing)					
	SP 9.5		SP 12.5		SP 19.0	
Sieve Size	Min.	Max.	Min.	Max.	Min.	Max
1 inch	-	-	-	-	100	-

3/4 inch	-	-	100	-	90	100
1/2 inch	100	-	90	100	-	90
3/8 inch	90	100	-	90	-	-
No. 4	-	90	-	-	-	-
No. 8	32	67	28	58	23	49
No. 200	2	10	2	10	2	8
For additional information, refer to AASHTO M-323-04, Table 3						

2.3 RESTRICTED ZONE

The gradation identified in 2.2 shall pass above the restricted zone specified in Table 2 below.

Table 2
Aggregate Gradation Restricted Zone
(Design Only)

Sieve Size within Restricted Zone	Boundaries of Restricted Zone Type SP Asphalt Mixture (Percent Passing)					
	SP 9.5		SP 12.5		SP 19.0	
	Min.	Max.	Min.	Max.	Min.	Max
No. 4	-	-	-	-	-	-
No. 8	47.2	47.2	39.1	39.1	34.6	34.6
No. 16	31.6	37.6	25.6	31.6	22.3	28.3
No. 30	23.5	27.5	19.1	23.1	16.7	20.7
For additional information, refer to AASHTO M-323-04, Table 4						

2.4 AGGREGATE CONSENSUS PROPERTIES

A. Meet the following consensus properties at design for the aggregate blend:

1. Coarse Aggregate Angularity: When tested in accordance with ASTM D 5821, meet the coarse aggregate angularity requirement defined in Table 3 below.

Table 3
Coarse Aggregate Angularity Criteria
(Minimum Percent Fractured Faces)

	Depth of Top of Pavement Layer From Surface			
	≤4 inches		>4 inches	
	1 or More Fractured Faces (%)	2 or More Fractured Faces (%)	1 or More Fractured Faces (%)	2 or More Fractured Faces (%)
	85	80	60	-
For additional information, refer to AASHTO M-323-04, Table 5				

2. Fine Aggregate Angularity: When tested in accordance with AASHTO T-304, meet the fine aggregate angularity requirement defined in Table 4 below.

Table 4 Fine Aggregate Angularity Criteria		
	Depth of Top of Pavement Layer From Surface	
	≤4 inches	>4 inches
	Minimum Uncompacted Void Content (%)	Minimum Uncompacted Void Content (%)
	45	40
For additional information, refer to AASHTO M-323-04, Table 5		

3. Flat and Elongated Particles: When tested in accordance with ASTM D 4791, use a ratio of maximum to minimum dimensions of 5:1 and do not exceed 10% as the maximum amount of flat and elongated particles.

2.5 USE OF RECLAIMED (MILLED) ASPHALT PAVEMENT

A. General Requirements: Reclaimed Asphalt Pavement (RAP) may be used as a component material of the asphalt mixture subject to the following:

1. The Contractor assumes responsibility for the design of asphalt mixes which incorporate RAP as a component material.

2. For design purposes, the Contractor assumes responsibility for establishing accurate specific gravity values for the RAP material. This may be accomplished by one of the following methods:

a. Calculation of the bulk specific gravity value based upon the effective specific gravity of the RAP, determined on the basis of the asphalt binder content and maximum specific gravity. The Engineer and/or Engineer of Record will approve the estimated asphalt binder absorption value used in the calculation.

b. Testing of the extracted aggregate obtained through a vacuum extraction or ignition oven extraction.

3. The amount of RAP material used in the mix is not to exceed 50% by weight of total aggregate.

4. Use a grizzly or grid over the RAP cold bin, in-line roller crusher, screen, or other suitable means to prevent oversized RAP material from showing up in the completed recycled mixture.

If oversized RAP material appears in the completed recycled mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not taken immediately, plant operations should be stopped.

5. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles that are soft or conglomerates of fines.

6. Provide RAP, having minimum average asphalt content of 4.0% by weight of total mix. The Engineer may sample the stockpile to verify that this requirement is met.

B. Binder for Mixes with RAP: Select the appropriate binder based on the table below. The Engineer and/or Engineer of Record reserves the right to change binder type and grade at design based on the characteristics of the RAP binder, and reserves the right to make changes during production. Maintain the viscosity of the recycled mixture within the range of 4,000 to 12,000 poises. Obtain a sample of the mixture for the Engineer within the first 1,000 tons and at a frequency of approximately one per 4,000 tons of mix.

Binder Grade for Mixes Containing RAP	
% RAP	Asphalt Binder Grade
<20	PG 67-22
20-29	PG 64-22
≥ 30	Recycling Agent
Note: When a PG 76-22 Asphalt Binder is called for in the Contract, limit the amount of RAP material used in the mix to a maximum of 15%.	

PART 3 - GENERAL COMPOSITION OF MIXTURE

3.1 GENERAL

Compose the asphalt mixture using a combination of aggregate (coarse, fine or mixtures thereof), mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the approved mix design. Aggregates from various sources may be combined.

3.2 MIX DESIGN

A. Design the Type SP asphalt mixture in accordance with AASHTO PP-28, except as noted herein, to meet the requirements of this Specification. Use only previously approved designs. Prior to the production of any Type SP asphalt mixture, submit the proposed mix design with supporting

test data indicating compliance with all Type SP asphalt mix design criteria.

The Engineer and/or Engineer of Record will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and the Engineer and/or Engineer of Record will no longer allow the use of the mix design.

1. Grading Requirements: Meet Gradation Design Ranges in PART 2.

2. Gyratory Compaction: Compact the design mixture in accordance with AASHTO TP-4. Use the number of gyrations as defined in the table below.

Type SP Design Gyratory Compactive Effort			
	$N_{initial}$	N_{design}	$N_{maximum}$
SP Mixes	7	75	115

3. Volumetric Criteria: Use an air void content of the mixture at design of 4.0% at the design number of gyrations (N_{design}). Meet the requirements of the table below.

Mixture Densification Criteria			
	% G_{mm}		
	$N_{initial}$	N_{design}	$N_{maximum}$
SP Mixes	$\geq$ 89.0	96.0	$\leq$ 98.0

4. VMA Criteria: Meet the requirements of the table below for Voids in the Mineral Aggregate (VMA) of the mixture at the design number of gyrations.

VMA Criteria	
Type Mix	Minimum VMA (%)
SP 9.5	15.0
SP 12.5	14.0
SP 19.0	13.0

5. VFA Criteria: Meet the requirements of the table below for voids filled with asphalt (VFA) of the mixture at the design number of gyrations.

VFA Criteria	
	Design VFA (%)
SP Mixes	65 - 75

6. Dust Proportion: Use an effective dust-to-binder ratio as defined in FDOT Section 334-3.2.5.

7. Moisture Susceptibility: Provide a mixture (4 inch specimens) having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (dry and unconditioned) of 100 psi.

8. Additional Information: In addition to the requirements listed above, provide the following information with each proposed mix design submitted for use:

   a. The design number of gyrations (N_{design}).

   b. The source and description of the materials to be used.

   c. The FDOT source number product code of the aggregate components furnished from an FDOT approved source.

   d. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation in handling and processing as necessary.

   e. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly -No. 200 [-75 µm]) should be accounted for and identified for the applicable sieves.

   f. The bulk specific gravity value for each individual aggregate (and RAP) component as identified in the FDOT aggregate control program.

   g. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.

   h. A target temperature at which the mixture is to be discharged from the plant and a target roadway temperature (per 30-6.3). Do not exceed a target temperature of 340°F for modified asphalts and 315°F for unmodified asphalts.

   i. Evidence that the completed mixture conforms to all specified physical requirements.

   j. The name, seal, and/or certification of the Mix Designer.

3.3 REVISION OF MIX DESIGN

During production, the Contractor may request a target value revision to a mix design, subject to: (1) the target change falls within the limits defined in the table below, (2) appropriate data exists demonstrating that the mix complies with production air voids specification criteria, and (3) the mixture gradation meets the basic gradation requirements defined in 2.2 and 2.3.

Limits for Potential Adjustments to Mix Design Target Values	
Characteristic	Limit from Original Mix Design
No. 8 sieve and Coarser	± 5.0%
No. 16 sieve	± 4.0%
No. 30 sieve	± 4.0%
No. 50 sieve	± 3.0%
No. 100 sieve	± 3.0%
No. 200 sieve	± 1.0%
Asphalt Binder Content (1)	± 0.3%
(1) Reductions to the asphalt binder content will not be permitted if the VMA during production is lower than 1.0% below the design criteria.	

Submit all requests for revisions to mix designs, along with supporting documentation, to the Engineer. In order to expedite the revision process, the request for revision or discussions on the possibility of a revision may be made verbally, but must be followed up by a written request. The initial mix design will remain in effect until a change is authorized by the Engineer and/or Engineer of Record. In no case may the effective date of the revision be established earlier than the date of the first communication between the Contractor and the Engineer regarding the revision.

A new design mix will be required for any substitution of an aggregate product with a different aggregate code, unless approved by the Engineer and/or Engineer of Record.

3.4 PAVING EQUIPMENT

A. Mechanical Spreading and Screeding Equipment:

1. General: Provide mechanical spreading and screeding equipment of an approved type that is self-propelled and can be steered. Equip it with a receiving and distribution hopper and a mechanical screed. Use a mechanical screed capable of adjustment to regulate the depth of material spread and to produce the desired cross-section.

2. Automatic Screed Control: For all asphalt courses, placed with mechanical spreading and finishing equipment, equip the paving

machine with automatic longitudinal screed controls of either the skid type, traveling stringline type, or non-contact averaging ski type. Ensure that the length of the skid, traveling stringline, or non-contact averaging ski is at least 25 feet. On the final layer of base, overbuild, structural, and friction courses, use the joint matcher in lieu of the skid, traveling stringline, or non-contact averaging ski on all passes after the initial pass. Furnish a paving machine equipped with electronic transverse screed controls when required by the Contract Documents.

3. Inflation of Tires: When using paving machines equipped with pneumatic tires, the Engineer may require that the tires be ballasted.

4. Screed Width: Provide paving machines on full width lanes that have a screed width greater than 8 feet. Does not use extendable screed strike-off devices that do not provide preliminary compaction of the mat in place of fixed screed extensions. The Contractor may use a strike-off device on irregular areas that would normally be done by hand and on shoulders 4 feet or less in width. When using the strike-off device on shoulders in lieu of an adjustable screed extension, the Contractor must demonstrate the ability to obtain an acceptable texture, density, and thickness. When using an extendable screed device to extend the screed's width on the full width lane or shoulder by 24 inches or greater, an auger extension, paddle, or kicker device is required unless the Contractor provides written documentation from the manufacturer that these are not necessary.

5. Motor Graders: Provide two motor graders for spreading widening courses with prior approval from the Engineer only. Use motor graders that are rated at not less than 6 tons and are self-propelled and power-controlled. Mount them on smooth tread or rib-type tires (no lug types allowed) with a wheel base of at least 15 feet. Equip the front motor grader with a spreader box capable of spreading the mix at the required rate.

6. Rollers:

   a. Steel-Wheeled Rollers: Provide compaction equipment capable of meeting the density requirements described in these Specifications. Provide a tandem steel-wheeled roller weighing a minimum of 8 tons for seal rolling, and for the final rolling, use a separate roller with a minimum weight of 8 tons. Variations from these requirements shall be approved by the Engineer.

b. Traffic Rollers: Provide compaction equipment capable of meeting the density requirements described in these specifications. Provide a self-propelled, pneumatic-tired traffic roller equipped with at least seven smooth-tread, low pressure tires, equipped with pads or scrapers on each tire. Maintain the tire pressure between 50 and 55 psi or as specified by the manufacturer. Use rollers with a minimum weight of 6 tons. Do not use wobble-wheeled rollers. Variations from these requirements shall be approved by the Engineer.

c. Prevention of Adhesion: Do not allow the mixture to adhere to the wheels of any rollers. Do not use fuel oil or other petroleum distillates to prevent adhesion. Do not use any method which results in water being sprinkled directly onto the mixture.

7. Trucks: Transport the mix in trucks of tight construction, which prevents the loss of material and the excessive loss of heat. Provide each truck with a tarpaulin or other waterproof cover mounted in such a manner that it can cover the entire load when required. When in place, overlap the waterproof cover on all sides so that it can be tied down.

8. Coring Equipment: Furnish a suitable saw or drill for obtaining the required density cores.

9. Hand Tools: Provide the necessary hand tools such as rakes, shovels, etc., and a suitable means for keeping them clean.

PART 4 - CONTRACTOR'S PROCESS CONTROL

4.1 GENERAL

A. Personnel: Provide qualified personnel (certified technician) for sampling, testing (by certified lab), and/or sign-off by P.E., and inspection of materials and construction activities. Ensure that qualifications are maintained during the course of sampling, testing and inspection.

Construction operations that require a qualified technician must not begin until the Department verifies that the technician is on the CTQP (Construction Training Qualification Program) list of qualified technicians. The CTQP lists are subject to satisfactory results from periodic Independent Assurance evaluations.

B. Calibration of the Gyratory Compactor: Calibrate the Gyratory Compactor in accordance with the manufacturer's recommendations prior to

producing the mixture for any project. Check the height calibration, the speed of rotation; ram pressure and angle of gyration.

C. Plant Testing Requirements: During the initial production of a mix design, test mix to ensure proper performance and provide results to the department.

D. Roadway Testing Requirements: Areas that demonstrate concerns of the mix design quality or poor/improper compaction efforts may be subject to additional coring and testing as seen fit by the Engineer.

E. Extraction Gradation Analysis: Sample the asphalt mixture at the plant and perform extraction test prior to asphalt being delivered to project. The percent asphalt binder content of the mixture will be determined in accordance with FM 5-563 (ignition oven). The gradation of the extracted mixture will be determined in accordance with FM 1-T 030. All test results will be shown to the nearest 0.01. All calculations will be carried to the nearest 0.001 and rounded to the nearest 0.01. All results shall be provided to the department prior to placement of asphalt on any project.

Run an extraction gradation analysis on the mixture at a minimum frequency of once per 1,000 tons or a maximum of four consecutive days of paving, which ever comes first.

The target gradation and asphalt content will be as shown on the mix design. Any changes in target will require a change in the mix design.

If the percentage of asphalt binder deviates from the optimum asphalt binder content by more than 0.55%, or the percentage passing any sieve falls outside the limits in the table below, immediately resample the mix and test to validate the previous test result, and if needed, make the necessary correction. If the results for two consecutive tests deviate from the optimum asphalt binder content by more than 0.55%, or exceed the limits in the table for any sieve, notify the Engineer and take immediate steps to identify and correct the problem, then resample the mix. If the results from this test deviate from the optimum asphalt binder content by more than 0.55%, or exceed the limits in the table for any sieve, stop plant operations until the problem has been corrected.

Tolerances for Quality Control Tests (Extraction Gradation Analysis)	
Size	Percent Passing
1 inch	7.0
3/4 inch	7.0
1/2 inch	7.0
3/8 inch	7.0
No. 4	7.0
No. 8	5.5
No. 16	5.0
No. 30	4.5
No. 50	4.5
No. 100	3.0
No. 200	2.0

F. Volumetric Control: During production of the mix, monitor the volumetric properties of the Type SP asphalt mix with a Type SP Gyratory Compactor to determine the air voids, VMA, VFA, and dust-to-effective asphalt binder ratio (dust proportion) at N_{design}.

Take appropriate corrective actions in order to maintain an air void content at N_{design} between 3.0 and 5.0% during production. When the air void content at N_{design} drops below 2.5 or exceeds 5.5%, stop plant operations until the appropriate corrective actions are made and the problem is resolved to the satisfaction of the Engineer and/or Engineer of Record. Evaluate any failing material in accordance with Part 6.

Determine the volumetric properties of the mixture at a minimum frequency of once per production day when the daily production is less than 1,000 tons. If the daily production exceeds 1,000 tons, monitor the volumetric properties two times per production day.

During normal production, volumetric properties of the mixture will not be required on days when mix production is less than 100 tons. However, when mix production is less than 100 tons per day on successive days, run the test when the accumulative tonnage on such days exceeds 100 tons.

Testing required for volumetric property determination includes AASHTO TP-4, FM 1-T 209, FM 5-563 and FM 1-T 030. Prior to testing samples in accordance with AASHTO TP-4 and FM 1-T 209, condition the test-sized sample for one hour at the compaction temperature in a covered container.

G. Plant Calibration: At or before the start of mix production, perform an extraction gradation analysis of the mix to verify calibration of the plant.

The sample tested at the start of any project may be utilized for this requirement.

H. Process Control of In-Place Compaction: Develop and implement a method to control the compaction of the pavement and ensure its compliance with the minimum specified density requirements. The department may require the use of a nuclear gauge to test areas suspected of not having proper compaction. Other density measuring devices may be used in lieu of the nuclear density gauge, provided that it is demonstrated to the satisfaction of the Engineer and/or Engineer of Record that the device can accurately measure the relative level of density in the pavement on a consistent basis.

PART 5 - ACCEPTANCE OF THE MIXTURE

5.1 GENERAL

The asphalt mixture will be accepted based on one of the following methods as determined by the Engineer and/or Contract Documents:

1. Certification by the Contractor
2. Certification and Process Control Testing by the Contractor
3. Acceptance testing by the Engineer
4. Other method(s) as determined by the Contract

5.2 CERTIFICATION BY THE CONTRACTOR

Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer that all material produced and placed on the project was in substantial compliance with these specifications.

5.3 CERTIFICATION AND PROCESS CONTROL TESTING BY THE CONTRACTOR

Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer that all material produced and placed on the project was in substantial compliance with these specifications, along with supporting test data documenting all process control testing. Utilize an Independent Laboratory as approved by the Engineer for the Process Control testing.

5.4 ACCEPTANCE TESTING BY THE ENGINEER

A. Acceptance at the Plant:

1. The asphalt mixture will be accepted, with respect to gradation and asphalt binder content, based on the results from the start up test. However, any load or loads of mixture which, in the opinion of the Engineer and/or Engineer of Record, are unacceptable for reasons of excessive segregation, aggregates improperly coated, or of excessively high or low temperature will be rejected for use in the work.

2. Acceptance Procedures: Control all operations in the handling, preparation, and production of the asphalt mix so that the percent asphalt binder content and the percents passing the No. 8 and No. 200 sieves will meet the targets from the mix design within the tolerances shown in the table below.

Tolerances for Acceptance Tests	
Characteristic	Tolerance*
Asphalt Binder Content	±0.55%
Passing No. 8 Sieve	±5.50%
Passing No. 200 Sieve	±2.00%
*Tolerances for sample size of n=1.	

Calculations for the acceptance test results for asphalt binder content and gradation (percentages passing the No. 8 and No. 200 sieves) will be shown to the nearest 0.01. Calculations for arithmetic averages will be carried to the 0.001 and rounded to the nearest 0.01.

Payment will be based on the acceptance of the project by the Engineer.

B. Acceptance of the Roadway:

1. Density Control: The in-place density of any questionable section of a course of asphalt mix will be evaluated by the use of a nuclear gauge and/or by the testing of 6 inch diameter roadway cores.

The Engineer will not perform density testing on leveling courses, open-graded friction courses, or any course which does not show signs of poor /improper compaction efforts. In addition, density testing will not be performed on the following areas when they are less than 1,000 feet in length: crossovers, intersections, turning lanes, acceleration lanes or deceleration lanes. Compact these courses (with the exception of open-graded friction courses) in accordance with the appropriate rolling procedure as specified in these specifications or as approved by the Engineer.

2. Acceptance**:** The completed pavement will be accepted with respect to overall ride, overall appearance, and overall yield as determined by the Engineer or Engineer of Record.

   Areas of question may be tested with a nuclear gauge or by the testing of the density of the cores, as determined by the engineer.

3. Additional Density Requirement: On shoulders with a width of 5 feet or less, Compact the pavement in accordance with the rolling procedure (equipment and pattern) as specified herein or as approved by the Engineer. Stop the production of the mix if the rolling procedure deviates from the approved procedure.

4. Surface Tolerance: The asphalt mixture will be accepted on the roadway with respect to surface tolerance by the use of a 15 ft rolling straight edge. The department will determine if the use of a straight edge test is warranted. Unevenness of the course shall not vary more than plus or minus 3/16 inch in 15 feet.

5.5 ADDITIONAL TESTS

The Department reserves the right to run any test at any time for informational purposes and for determining the effectiveness of the Contractor's quality control.

PART 6 - DISPOSITION OF FAILING MATERIAL

Any material that is represented by failing test results will be evaluated to determine if removal and replacement is necessary. Remove and replace any material, if required, at no cost to the Department. The evaluation will be conducted by the Engineer and/or Engineer of Record. If so directed, obtain an engineering analysis, as directed by the Engineer, by the independent laboratory (as approved by the Engineer) to determine if the material can (a) remain in place, for this case the appropriate pay factor will be applied, or (b) be removed and replaced at no cost to the Department. The analysis will be a signed and sealed report by a Professional Engineer licensed in the State of Florida.

PART 7 – MEASUREMENT/PAYMENT

7.1 METHOD OF MEASUREMENT

For the work specified under this Section the quantity to be paid for will be the in-place measurement of the area in square yards unless otherwise stated in the project plan details.

The bid price for the asphalt mix will include the cost of the liquid asphalt or the asphalt recycling agent. There will be no separate payment or unit price adjustment for the asphalt binder material in the asphalt mix.

7.2 BASIS OF PAYMENT

Price and payment will be full compensation for all the work specified under this section.

END OF SECTION 02500

SECTION 02600 - STORMWATER SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specification Sections, specifically 2300, 3300, and *Design Standard Indexes*, apply to this Section.

B. Florida Department of Transportation, *Standard Specifications for Road and Bridge Construction, Sections 425, 430 and 530*, *Latest Edition*.

1.2 SUMMARY

This Section includes stormwater system piping and appurtenances. All labor, material, equipment, appurtenances, services, and other work or costs necessary to construct the facilities and place them into operation shall be furnished by the Contractor.

1.3 SUBMITTALS

A. General: Submit the following in accordance with Conditions of Contract.

B. Shop drawings for drainage pipe, pre-cast concrete storm drainage manholes and catch basins, including frames, covers, and grates.

C. Shop drawings for cast-in-place concrete or field-erected masonry storm drainage manholes and catch basins, including frames and covers.

1.4 QUALITY ASSURANCE

A. Environmental Compliance: Comply with applicable portions of local, state, and federal environmental agency regulations pertaining to stormwater systems impacts.

B. Utility Compliance: Comply with local utility regulations and standards pertaining to relocation, clearances, etc related to installation of stormwater systems.

C. Quality control to adhere to QA/QL Plan.

1.5 PROJECT CONDITIONS

Site Information: Perform site inspection, research public utility records, and verify existing utility locations. Verify that stormwater system piping may be installed in compliance with design plans and referenced standards. Locate existing stormwater system piping and structures that are out of service and

closed as per 3.8 this section.

1.6 SEQUENCING AND SCHEDULING

A. Notify the County Inspector assigned to the subdivision or project coordinator assigned to project prior to pouring backfilling or form work.

B. Coordinate connection to existing private and public drainage system with Owner and/or County.

C. Coordinate with adjacent utilities work.

PART 2 - PRODUCTS

2.1 MATERIALS

2.1.1 PIPE

Meet the following requirements of *FDOT Specifications*, *Latest Edition*:

Reinforced Concrete Pipe	Section 449
Round Rubber Gaskets	Section 942
Corrugated Steel Pipe & Pipe Arch	Section 943
Corrugated Aluminum Pipe & Pipe Arch	Section 945
Corrugated Polyethylene Pipe	Section 948
Polyvinyl Chloride (PVC)	Section 948

2.1.2 MANHOLES

A. Precast Concrete Manholes: Per FDOT Standard Specification 425-5 and ASTM C 478, precast reinforced concrete, of depth indicated with provision for rubber gasket joints.

B. Cast-in-Place Manholes: Per FDOT Standard Specification 425 Cast reinforced concrete of dimensions and with appurtenances indicated.

C. Manhole Frames and Covers: Construct Per FDOT Standard Specification 425-3.2 and Standard Indexes. All units shall bear the lettering "STORM SEWER" cast into cover. All proposed substitutes must have equal or greater opening sizes and weights.

2.1.3 INLETS

A. Precast Concrete Catch Basins Inlets: Construct per FDOT Standard Specification 425-5.

B. Cast-in-Place Inlets: Construct per FDOT Standard Specification 425 to dimensions and with appurtenances indicated.

1. Bottom, Walls, and Top: Reinforced concrete.
2. Channel and Bench: Concrete.

C. Inlet Frames and Grates: Per FDOT Standard Specification 425-3.2 & Standard Indexes. All units shall bear the lettering "STORM SEWER" cast into cover.

2.1.4 END TREATMENT

General: Head wall, apron, and mitered ends, per FDOT Standard Specification 430-4.6.

2.2 CONCRETE AND REINFORCEMENT

A. Concrete: Portland cement mix, 3,000 psi; shall be in accordance with Section 03300.

1. Cement: ASTM C 150, Type II.
2. Fine Aggregate: ASTM C 33, sand.
3. Coarse Aggregate: ASTM C 33, crushed gravel.
4. Water: Potable.

B. Reinforcement: Steel conforming to the following:

1. Fabric: ASTM A 185, welded wire fabric, plain.
2. Reinforcement Bars: ASTM A 615, Grade 60, deformed.

C. Forms:

1. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces without distortion or defects. Material shall be of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal.

2. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 mg/l volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces. Release agent to be within allowable volatile limits according to applicable local, state and federal codes.

2.3 MASONRY

Materials for accessories shall be per FDOT Standard Specification 949. Mortar shall be one part Portland cement and three parts masonry sand to which shall

be added lime putty in the amount of 50% of the volume of cement. Special commercial mortar mixes may be used if approved by the Engineer. All masonry materials shall conform to the latest applicable ASTM specifications. Set all masonry units in full beds of mortar, with full joints and strike all joints flush. Masonry reinforcements shall be galvanized Dur-O-Wal, or approved equal, and shall be installed at every other bed joint. Hollow block shall be poured solid with re-bar as designed.

2.4 CURING MATERIALS

Conform to FDOT Standard Specification 520-8.

2.5 BEDDING STONE

Subbase or base materials meeting requirements of FDOT Standard Specification 530-2.3.

PART 3 - EXECUTION

3.1 EXCAVATIONS FOR MANHOLES, INLETS, AND PIPE

Excavation shall be sufficient enough to leave at least 12 inches in the clear between their outer surfaces and the embankment. Excavation for all structures shall be made to the dimensions and elevations indicated on the drawings. Where the excavation is made below the indicated elevations, the excavation shall be restored to the proper elevation with compacted suitable material without extra compensation.

3.2 PREPARATION OF FOUNDATION FOR BURIED STORMWATER SYSTEMS

A. Grade trench bottom to provide a smooth, firm, stable, and rock-free foundation, throughout the length of the pipe.

B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with bedding stone per FDOT Standard Specification 530-2.3 to indicated level.

C. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.3 PIPE INSTALLATION

A. Drawings (plans and details) indicate the general location and arrangement of the underground stormwater system piping. Location and arrangement of piping layout takes into account many design considerations. Install the piping as indicated, to the extent practical.

Deviations shall be approved by the County.

B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. When installing gaskets, seals, sleeves, and couplings, follow manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

The pipe shall be carefully examined for defects and the inside cleaned. After placing pipe in the ditch, the ends shall be wiped free from all dirt, sand and foreign material. All pipe and joints shall be made, handled, and installed in strict accordance with the manufacturer's recommendations and instructions. Install pipe in accordance with FDOT Standard Specification 430.

C. Install piping pitched down in direction of flow, at minimum slope per plans and in accordance with manufacturer's recommendations, specifications, and design plans.

D. Boring: Install pipe under streets or other obstructions that cannot be disturbed, by boring, jacking, or a combination of both. These methods of installation are not allowed for newly paved roadways. Utility conduit should be installed prior to paving.

E. All RCP joints shall be sock/filter wrapped prior to backfilling unless a manufacturer recommended coupling is used.

F. Field repairs of pipeline shall be in strict accordance with manufacturer's recommendations and specifications.

G. Only conventional concrete pipe shall be allowed under dedicated County roads.

H. Pipe Cover: Cover shall be a minimum of 12", unless approved by the County.

I. Pipe Size: Minimum Pipe size shall be 18" diameter or equivalent, unless approved by the County.

3.4 MANHOLES

A. General: Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channel and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes occur in pavements. Elsewhere, set tops 3 inches above finished grade, unless otherwise indicated.

B. Place precast concrete manhole sections as indicated, and install in accordance with ASTM C 891.

C. Construct cast-in-place manholes as indicated.

D. Provide rubber joint gasket complying with ASTM C 443 at joints of sections; or apply bituminous mastic coating at joints of sections.

3.5 INLETS

A. Construct inlets to sizes and shapes indicated per FDOT Standard Specification 425-6, or as modified in the plans.

B. Set frames and grates to elevations indicated.

3.6 OUTFALL STRUCTURES

A. Pipe systems shall be utilized for primary outfall of retention/detention areas.

B. Weirs and flumes will not be acceptable for use as primary pond outfall structures or to primarily route stormwater to retention/detention areas at the end of down-gradient roadways.

3.7 END TREATMENT

Construct End Treatment per FDOT Standard Specification 430-4.6.

3.8 STORMWATER SYSTEM BACKFILL

Place and compact backfill material in accordance with Section 02300 and FDOT specification 125-8.

3.9 CLOSING OUT-OF-SERVICE STORMWATER SYSTEMS

A. Out-of-Service Piping: Close open ends of out of service underground piping that is indicated to remain in place. Provide sufficiently strong closures to withstand hydrostatic or earth pressure that may result after pipe ends have been closed and grout filled with non-shrink grout.

1. Close open ends of concrete pipe or structures with not less than 8-inch-thick brick masonry bulkheads and grout fill.

2. Close open ends of other piping with plastic plugs, or other acceptable methods suitable for size and type of material being closed. Wood plugs are not acceptable.

B. Out-of-Service Structures: Remove structure and close open ends of the

remaining piping or remove top of structure down to not less than 3 feet below final grade; fill structure with stone, rubble, gravel, compacted dirt, or flowable fill to within 1 foot of top of structure remaining, and fill with concrete.

3.10 FIELD QUALITY CONTROL

A. Refer to Section 03300 for Concrete Testing and 02300 for Earthwork Testing.

B. Cleaning: Interior of piping and structures shall be cleared of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.

2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.

3. Flush piping between manholes, to remove collected debris.

C. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

1. Make inspections after pipe between manholes has been installed, cleaned and approximately 2 feet of backfill is in place, and again at completion of project. Each section of pipe between structures is to show from either end on examination, a full circle of light. Each appurtenance to the system shall be of the specified size and form, to be neatly and substantially constructed, with the top set permanently to exact position and grade.

2. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and re-inspect. All repairs shown necessary by the inspections are to be made, broken, cracked, or punctured pipe replaced, all deposits removed and the pipe left true to line and grade as herein specified, or shown on the plans, entirely clean and free from abnormalities and ready for use at no additional expense to the County.

3. All storm pipes will be subject to video camera inspection by County staff.

D. Trench Backfill Around and Above Pipe:

1. In each compacted backfill layer, perform density test as specified in Section 02300.

2. Other tests may be required at County's discretion.

E. Clean Up: Before final inspection and acceptance, the Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, to as good as condition as existed before work started. All trenches shall be leveled and loose material removed from pavement gutters, sidewalks, pipelines, and inlet sediment traps, employing hand labor, if necessary.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

The quantities to be paid for will be (1) the number of inlets, manholes, end walls, mitered end sections, flared end sections, junction boxes, and yard drains, including fittings and appurtenances, completed and accepted; (2) length of pipe to the nearest foot of type specified; and (3) the number of structures of these types (including also valve boxes and monument boxes) satisfactorily adjusted.

4.2 BASIS OF PAYMENT

Price and payment will be full compensation for finishing all materials and completing all work described herein or shown in the plans, including all clearing and grubbing outside the limits of clearing and grubbing as shown in the plans, all excavation except the volume included in the measurement designated to be paid for under the items for the grading work on the project, all backfilling around the structures, the disposal of surplus material, and the furnishing and placing of all the gratings, frames, covers, and any other necessary fittings.

END OF SECTION 02600

SECTION 02900 - GRASSING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Specifications Sections apply to this Section.

B. Florida Department of Transportation, *Standard Specifications for Road and Bridge Construction,* Section 570 and Section 981, *Latest Edition*

1.2 SUMMARY

Extent of grassing work is as specified or shown on the construction plans. Sodded areas disturbed during construction shall be re-sodded to match existing. Areas disturbed beyond specified construction area shall be sodded, at no additional expense, either to match existing or as per County direction.

1.3 SUBMITTALS

See paragraph 1.9 A *Quality Control/Quality Assurance Submittals*, Section 1300.

1.4 DELIVERY AND STORAGE

A. General: Seed, fertilizer, sod and other grassing materials shall be stored under cover and protected from damaged which would make them unacceptable for use.

B. Seed: All seed shall be labeled in accordance with U.S. Department of Agriculture Rules and Regulations under the Federal Seed Act in effect on the date of invitation for bids. All seed shall be furnished in sealed standard containers, unless exception is granted in writing. Seed, which has become wet, moldy, or otherwise damaged in transit or in storage, shall not be used.

C. Fertilizer: Fertilizer shall be delivered to the site in the original, unopened containers, each bearing the manufacturer's guaranteed analysis. Any fertilizer, which becomes caked or otherwise damaged, making it unsuitable for use, shall not be used.

D. Sod: Do not use sod which has been cut (stripped) for more than 48 hours. Stack all sod that is not planted 24 hours after cutting and maintain proper moist condition.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Lime: Lime shall be ground limestone (Dolomite) containing not less than 85 percent of total carbonates, and shall be ground to such a fineness that 50-percent will pass a 100 -mesh sieve and 90 -percent will pass a 20 -mesh sieve.

B. Fertilizer: Apply fertilizer at the following rates:
10-10-10 1000 lbs/acre=0.2 lbs/sq yd
13-13-13 770 lbs/acre=0.16 lbs/sq yd

C. Seed: Apply seed at the rate as specified:

GRASS SEEDING RATES (Lbs/Ac)

TYPE OF SEED	**ZONE I**				**ZONE II**			
	COASTAL*		**INLAND**		**COASTAL***		**INLAND**	
	Mar.-Nov.	Nov.-Mar.	Mar.-Nov.	Nov.-Mar.	Mar.-Nov.	Nov.-Mar	Mar.-Nov.	Nov.-Mar.
PERMANENT GRASSES								
Unhulled Bermuda**		90		20		90		20
Hulled Bermuda**	60		15		60		15	
Bahia (Argentine or Pensacola)			180	180			180	180
QUICK GROWING GRASS								
Annual Rye Grass		90		90		90		90
TOTAL POUNDS PER ACRE	60	180	195	290	60	180	195	290

* Locations where salt sensitive plants may be adversely affected by high concentrations of salt in soils, water, or air. This may include seaside locations, low-lying areas subjected to periodic saltwater inundation from storms or high tides, or where salt intrusion into groundwater supply has occurred.

** Bermuda shall not be used in areas adjacent to existing or proposed landscaping.

NOTE: All seeding shall be performed meeting the requirements of Section 570 of the Standard Specifications

Activities such as clearing, grading, and excavating that will disturb one or more acres of land require coverage under the Generic Permit for Stormwater Discharge from Large and Small Construction Activities from the Florida Department of Environmental Protection, and implementation

of appropriate pollution prevention measures to minimize erosion and sedimentation. Please refer to the National Pollutant Discharge Elimination System (NPDES) Permit.

E. Mulch: The mulch material shall be dry straw or hay, consisting of oat, rye, or wheat straw, or of pangola, peanut, coastal Bermuda or Bahia grass, hay or compost; and shall be free from noxious weeds and plants. Any plant officially listed, as being noxious or undesirable by any Federal Agency, any agency of the State of Florida or any local jurisdiction in which the project is being constructed shall not be used. Furnish to the engineer, prior to incorporation onto the project, a certification from the Florida Department of Agriculture and Consumer Services, Division of Plant Industry, stating that the Mulch materials are free of noxious weeds. Any such noxious plant or plant part found to be delivered shall be removed by the Contractor at his expense. Only undeteriorated mulch, which can readily be cut into the soil, shall be used. The "air-dry" weight (as defined by the Technical Association of the Pulp and Paper Industry, for wood cellulose) shall be marked on each package by the producer. Apply mulch at a rate of 2 ton/acre or 1 lb/sq yd.

E. Sod: All sod shall be healthy Centipede Sod unless otherwise required. Sod shall be strongly rooted, free of weeds and undesirable grasses and capable of providing vigorous growth and development when planted. Sod shall match existing species where restoration is required as a result of the Contractor's work.

PART 3 - EXECUTION

3.1 REQUIREMENTS

All areas disturbed by the Contractor's operations, shall be grassed, unless otherwise noted.

3.2 PLANTING SEED

A. Grading: Areas to be grassed shall be graded to remove depressions, undulations, and irregularities in the surface before grassing. Adhere to grades as shown on plans.

B. Tillage: The area to be grassed shall be thoroughly tilled to a depth of four inches using a plow and disc harrow or rotary tilling machinery until a suitable bed has been prepared and no clods or clumps remain larger than 1½ inches in diameter. Remove sticks, roots, and rubbish.

C. Applying Lime: The pH of the soil shall be determined. If the pH is below 5.0, sufficient lime shall be added to provide a pH between 5.5 and 6.5. The lime shall be thoroughly incorporated into the top three to four inches

of the soil. Lime and fertilizer may be applied in one operation.

D. Applying Fertilizer: Fertilizer shall be applied in accordance with the rates specified in Part 2, and shall be thoroughly incorporated into the top three to four inches of soil before sod is installed. FDOT Section 982.

E. Seed and Mulch: Apply in accordance with the rates specified in Part 2.

F. Maintenance: Maintenance shall begin immediately following the last operation of grassing and continue until final acceptance. Maintenance shall include watering, mowing, replanting, and all other work necessary to produce a uniform stand of grass, all at the contractor's expense.

3.3 PLACING SOD

A. Use Centipede sod (Eremochloa ophiuroides) unless otherwise required. The sod shall have a thick mat of roots (minimum 2 ") with enough adhering soil to assure growth. Apply sod within 48 hours of stripping. Protect sod against drying and breaking of rolled strips.

B. Placement: Prepare the ground by loosening the soil. Place sod perpendicular to the slope. Place sod on the prepared soil to form a solid mass with tightly fitted joints. Ensure the butt ends and sides of sod strips do not overlap. The seam should have a flush tight transition from new to existing sod with no overlap. Stagger strips to avoid a continuous downhill seam. Tamp or roll lightly to ensure contact with subgrade. Tamp the outer edges of the sodded area to produce a smooth contour. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass. Water sod thoroughly with a fine spray immediately after planting.

C. Pinning: All sod placed on a slope steeper than 3:1 shall be pinned, at the top of the sod, at a rate listed in the table below:

Sod Size	Pins Required
Square Sod	2 pins per sod square
Mini Roll	3 pins per roll
Standard Rolls	1 pin per linear foot

C. Watering: Keep sod continuously moist to a depth below the root zone for three weeks after placement. If there is no water available to the site, the Contractor shall provide the water. Do not water in excess of 1" (one inch) per square yard per week for establishment.

D. Clean-Up: All excess soil, excess grass materials, stones, pallets and other waste shall be removed from the site daily and not allowed to accumulate. All paved areas shall be kept clean at all times.

E. Maintenance: Maintain sod by watering, fertilizing, weeding, mowing, trimming and other operations such as rolling, re-grading, and re-planting as required to establish a lawn free of eroded or bare areas and acceptable to the County. Where inspected work and materials do not comply with requirements, replace rejected work and continue maintenance until re-inspected by County and found to be acceptable. Remove rejected materials promptly from the project site. FDOT Section 570-4.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

The quantities to be paid for will be for the following items, completed and accepted: square yards of seeding, square yards of seeding and mulching, and square yards of sodding.

4.2 BASIS OF PAYMENT

Prices and payments will be full compensation for all work and materials specified in this Section.

END OF SECTION 02900

SECTION 03300 – PORTLAND CEMENT CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Specification Sections, apply to this Section.

B. Florida Department of Transportation (FDOT), *FDOT Material's Manual, Chapter 9.2, Volume II, FDOT Standard Specifications for Road and Bridge Construction, Section 346, 347, 350, 400, 522, & 925, Latest Edition.*

1.2 SUMMARY

This Section includes concrete work for the following:

1. Roadways
2. Parking lots
3. Curbs and gutters
4. Walkways
5. Pads
6. Flumes
7. Curb Ramps
8. Cast in Place Structures

1.3 SUBMITTALS

A. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, joint systems, curing compounds, dry-shake finish materials, and others if requested by the County.

B. Design mixes for each class of concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

C. Material certificates in lieu of material laboratory test reports when permitted by the County. Material certificates shall be signed by manufacturer and Contractor certifying that each material item complies with or exceeds requirements. Provide certification from admixture manufacturers that chloride content complies with requirements.

1.4 PROJECT CONDITIONS

A. Traffic Control: Comply with requirements of Escambia County Specification, Section 04060, "Maintenance of Traffic."

B. Utilize flagmen, barricades, warning signs and warning lights as required, as shown on plans, or as directed by the County.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Concrete shall conform to requirements of FDOT Standard Specification, Sections 346, 347, & 522 for curbs, gutters, sidewalks, structures and miscellaneous concrete.

B. Concrete for pavement shall conform to requirements of FDOT Standard Specification, Section 350.

C. Curb Ramps shall conform to FDOT Standard Index 304.

2.2 REINFORCING MATERIALS

A. Reinforcing Bars and Tie Bars: ASTM A 615, Grade 60, deformed.

B. Welded Steel Wire Fabric: ASTM A 185.

1. Furnish in flat sheets, not rolls.

C. Deformed-Steel Welded Wire Fabric: ASTM A 497.

D. Fabricated Bar Mats: Welded or clip-assembled steel bar mats, ASTM A 184. Use ASTM A 615, Grade 60 steel bars, unless otherwise indicated.

E. Joint Dowel Bars: Plain steel bars, ASTM A 615, Grade 60. Cut bars true to length with ends square and free of burrs.

F. Hook Bolts: ASTM A 307, Grade A bolts, internally and externally threaded. Design hook bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

G. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Use wire bar-type supports complying with CRSI specifications. Use supports with sand plates or horizontal runners where base material will not support chair legs.

2.3 CONCRETE MATERIALS

A. Portland Cement: Type I, Type IP, Type IS, Type IP (MS), Type II, or Type III.

1. Use one brand of cement throughout Project.

2. All concrete shall develop a 28-day compressive strength of 3000 psi for non-structural (NS). If any concrete should fail to meet the strength requirement the structure shall be removed as necessary to remove the defective concrete and shall then be rebuilt at the Contractor's expense.

B. Fly Ash: ASTM C 618, Class C or Class F.

C. Normal-Weight Aggregates: ASTM C 33, Class 4, and as follows. Provide aggregates from a single source.

1. Maximum Aggregate Size: 1-1/2 inches.

2. Do not use fine or coarse aggregates that contain substances that cause spalling.

3. Local aggregates not complying with ASTM C 33 that have been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Engineer.

D. Water: Potable.

E. Fiber Reinforcement: Synthetic fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 1116, Type III.

2.4 ADMIXTURES

A. Provide concrete admixtures that contain not more than 0.01 per cent chloride ions.

B. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.

C. Water-Reducing Admixture: ASTM C 494, Type A.

D. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.

E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

2.5 CONCRETE MIX

A. Prepare design mixes for each type and strength of normal-weight concrete

per FDOT Standard Specification, Section 346-6.2 and FDOT Material's Manual, Chapter 9.2, Volume II. Use a qualified independent testing laboratory for preparing and reporting proposed mix designs. Do not use the Owner's field quality-control testing laboratory as the independent testing laboratory.

B. Fiber Reinforcement: Add to mix at rate of 1.5 lb per cu. yd., unless manufacturer recommends otherwise.

C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.

2.6 CONCRETE MIXING

Ready-Mixed Concrete: Comply with requirements of FDOT Standard Specification, Section 346-7 and FDOT Material's Manual, Chapter 9.2, Volume II.

PART 3 - EXECUTION

3.1 SURFACE PREPARATION FOR CONCRETE PAVEMENT

A. Proof-roll prepared base or subgrade surface to check for unstable areas and verify need for additional compaction. Do not begin concrete work until such conditions have been corrected and are ready to receive paving.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install sufficient forms to allow continuous progress of work and so that forms can remain in place at least 24 hours after concrete placement.

B. Check completed formwork and screeds for grade and alignment to following tolerances:

1. Top of Forms: Not more than 1/8 inch in 10 feet.

2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.

C. Clean forms after each use and coat with form release agent as required ensuring separation from concrete without damage.

3.3 PLACING REINFORCEMENT

A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars" for placing and supporting reinforcement. Comply with FDOT Standard Specification, Section 350-7.

B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.

C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers and hangers, as required. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces. Maintain minimum cover to reinforcement.

D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction. Use of chairs is required. Welded wire fabric shall not be “pulled” to center of slab.

E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities or replace units as required before placement. Set mats for a minimum 2-inch overlap to adjacent mats.

3.4 JOINTS

A. General: Construct control (contraction) joints, construction, and isolation joints true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to the centerline, unless indicated otherwise. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.

B. Control (Contraction) Joints: Control joints are grooved, formed, or sawed into sidewalks, driveways and concrete pavements so that cracking will occur in these joints randomly. If not specified on drawings, intervals shall be not greater than 10 feet or less than 5 feet. Construct control joints for a depth equal to at least 1/4 of the concrete thickness, as follows:

1. Tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.

2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into hardened concrete when cutting action will not tear, abrade, spawl or otherwise damage surface and before development of

random contraction cracks.

3. Inserts: Form contraction joints by inserting premolded plastic, hardboard, or fiberboard strips into fresh concrete until top surface of strip is flush with paving surface. Radius each joint edge with a jointer tool. Carefully remove strips or caps of two-piece assemblies after concrete has hardened. Clean groove of loose debris.

C. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than ½ hour, unless paving terminates at isolation joints.

1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless indicated otherwise. Embed keys at least 1-1/2 inches into concrete.

2. Continue reinforcement across construction joints unless indicated otherwise.

D. Expansion Joints: Form expansion joints of preformed joint filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.

1. Locate expansion joints at intervals of 30 feet, unless indicated otherwise or directed by County.

2. Extend joint fillers full width and depth of joint, not less than ½ inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.

3. Furnish joint fillers in one-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.

4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

E. Filler and Sealants: Submit specifications to Engineer for approval.

F. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one half of dowel length to prevent concrete bonding to one side of joint.

3.5 CONCRETE PLACEMENT

A. Comply with requirements of FDOT Standard Specification, Sections 350-8

and 400-7 for placing concrete.

B. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place. No concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. Deposit concrete as nearly as practical to its final location to avoid segregation. When concrete placing is interrupted for more than ½ hour, place a construction joint.

C. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

D. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, floating, or tamping. Use equipment and procedures to consolidate concrete complying with FDOT Standard Specification, Section 350-9.

E. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.

F. Place concrete in two operations; strike off initial pour for entire width of placement and to the required depth below finish surface. Lay welded wire fabric or fabricated bar mats immediately in final position. Place top layer of concrete, strike off, and screed. Remove and replace portions of bottom layer of concrete that have been placed more than 15 minutes without being covered by top layer or use bonding agent if acceptable to County.

G. Curbs and Gutters: Shall be constructed in accordance with FDOT Specs. When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test results that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete.

H. Slip-Form Pavers: When automatic machine placement is used for paving, submit revised mix design and laboratory test results that meet or exceed requirements. Produce paving to required thickness, lines, grades, finish, and jointing as required for formed paving. Compact subgrade of sufficient width to prevent displacement of paver machine during operations.

I. When adjoining pavement lanes are placed in separate pours, do not operate equipment on concrete until pavement has attained 85 percent of its 28-day compressive strength, or sufficient strength to carry loads without damage or injury. Maturity Method Testing, as outlined in FDOT Standard Specification, Section 353-10.2, should be used to determine concrete

strength.

J. Cold-Weather Placement: Comply with provisions of FDOT Standard Specification, Sections 346-7.4 and 400-7.1.1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

K. Hot-Weather Placement: Place concrete complying with FDOT Standard Specification, Sections 346-7.5 and 400-7.1.2, and as specified when hot weather conditions exist.

3.6 CONCRETE FINISHING

A. Float Finish: Begin floating when bleed-water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/8 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.

1. Medium-to-Fine-Textured Broom Finish: Draw a soft bristle broom across concrete surface perpendicular to line of traffic to provide a uniform fine line texture finish.

2. Tine Finishes: Apply to curb cut ramps and other areas as noted on the drawings. Finish shall be applied by an approved hand method and shall consist of transverse grooves which are 0.03 to 0.12 inch in width and 0.10 to 0.15 inch in depth, spaced at approximately ½ inch center to center.

B. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to the following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces. Radius: ½ inch.

3.7 CONCRETE PROTECTION AND CURING

General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendations of FDOT Standard Specification, Sections 350-11 and 925.

3.8 QUALITY CONTROL TESTING

A. A qualified, accredited testing and inspection laboratory, under the direction of a Professional Engineer, licensed in the State of Florida, shall sample materials, perform tests, and submit test reports during concrete placement as follows:

1. Sampling Fresh Concrete: ASTM C 172, except modified for slump to comply with ASTM C 94. All concrete should be sampled by ACI certified technicians.

   a. Slump: ASTM C 143; one test at point of placement for each compressive-strength test but no less than one test for each day's pour of each type of concrete. Additional tests will be required when concrete consistency changes.

   b. Air Content: ASTM C 231, pressure method; one test for each compressive-strength test but no less than one test for each day's pour of each type of air-entrained concrete.

   c. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F (4 deg C) and below and when 80 deg F (27 deg C) and above, and one test for each set of compressive-strength specimens.

   d. Compression Test Specimens: ASTM C 31; one set of four standard cylinders for each compressive- strength test, unless directed otherwise. Mold and store cylinders for laboratory-cured test specimens except when field-cured test specimens are required.

   e. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class, plus one set for each additional 50 cu. yd. Test one specimen at 7 days, two specimens at 28 days, and retain one specimen in reserve for earlier or later testing if required. Class I Concrete NS compression test specimens cylinders are not required, except as directed by County.

   f. Contractor shall repair the area to the satisfaction of the Engineer where material was removed for testing purposes. Should any work or materials fail to meet the requirements set forth in the plans and specifications, contractor shall pay for retesting of same.

2. Basis for acceptance of concrete will be per FDOT Standard Specification, Sections 346-8 through 346-11.

B. Test results will be reported in writing to the County, within 24 hours of testing. Reports of compressive strength tests shall contain the Project identification name and number, date and location of concrete placement, name of concrete testing laboratory, concrete type and class, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day and 28-day tests.

C. Nondestructive Testing: Non-destructive test methods may be used with approval of the Engineer, but shall not be used as the sole basis for acceptance or rejection.

D. Additional Tests: The testing laboratory will make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met, as directed by Engineer. Testing laboratory may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.9 REPAIRS AND PROTECTION

A. Remove and replace concrete work that is broken, damaged, or defective, or does not meet the requirements of this Section.

B. Drill test cores where directed by the County when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory concrete areas with Portland cement concrete bonded to paving with epoxy adhesive.

C. Protect concrete from damage. Exclude traffic from concrete pavement for at least 14 days after placement. When construction traffic is permitted, maintain concrete as clean as possible by removing surface stains and spillage of materials as they occur.

D. Maintain concrete work free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than 2 days prior to date scheduled for Substantial Completion inspections.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

The quantities to be paid for will be the plan quantity, in square yards, of Plain Cement Concrete Pavement, Reinforced Cement Concrete Pavement, square yards of sidewalk, and linear feet of curb and/or gutter.

4.2 JOINTS AND CRACKS

The Contractor shall include the cost for Cleaning and Sealing Joints in the cost of the newly constructed pavement for: (1) transverse and longitudinal joint construction for new pavement; and (2) abutting joints between existing pavement and new pavement.

For replacing joint seals and sealing random cracks in existing Portland cement concrete pavement, the quantity to be paid for will be as specified below:

A. The length of pavement joint that has been satisfactorily cleaned and sealed in existing Portland cement concrete pavement, as determined by field measurement along the joints, will be paid for at the Contract unit price per foot for Cleaning and Resealing Joints.

B. The length of random cracks in existing Portland cement concrete pavement that have been satisfactorily cut, cleaned, and sealed, as determined by field measurement along the joints, will be paid for at the Contract unit price per foot for Cleaning and Sealing Random Cracks.

4.3 BASIS OF PAYMENT

Prices and payment will be full compensation for all work specified in this Section, including any preparation of the subgrade not included in the work to be paid for under another Contract item; all transverse and longitudinal joint construction, including tie-bars and dowel bars; the furnishing of test specimens; repair of core holes; and all incidentals necessary to complete the work.

END OF SECTION 03300

SECTION 04040 – PAVEMENT MARKINGS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and other Specifications Sections, apply to work of this section.

B. Unless otherwise specified on the plan sheets or in other sections of this contract, all materials and work shall conform to the applicable requirements in the following documents:

1. Florida Department of Transportation *Roadway and Traffic Design Standards*, Indices 17344 through 17359, *Latest Edition*.

2. Florida Department of Transportation *Standard Specifications for Road and Bridge Construction*, Sections 701, 705, 706, 710, 711, 970, 971, and 993, *Latest Edition*.

3. USDOT, Federal Highway Administration *Manual on Uniform Traffic Control Devices for Streets and Highways*, *Latest Edition*.

1.2 DESCRIPTION OF WORK

The work under this section includes the installation and removal of temporary and permanent pavement markings, textured pavement, reflective markers, galvanized posts, flex posts, delineators, wheel stops, and audible and vibratory pavement markings. The Contractor shall furnish all labor, materials, tools, supplies, equipment, and machinery necessary to fully complete the work shown in the plans and in these specifications. Pavement marking notes on plan sheets shall take precedence over and modify conflicting Technical Specifications.

PART 2 – PRODUCTS

2.1 MATERIALS

All materials shall be new and of good quality unless otherwise specified. The Contractor, at his own expense and if requested by the County, shall furnish samples of material and/or shall certify that the material meets all FDOT requirements. All material or work that has been rejected shall be remedied by the Contractor at his own expense and without delay. If the Contractor fails to promptly remove and/or dispose of rejected material and replace the same, the County may remove and replace the same and deduct the cost of the work from the contract amount.

2.2 TEMPORARY PAVEMENT MARKINGS

Materials for temporary pavement marking shall meet all requirements of FDOT Specs, Section 710, *Latest Edition.*

2.3 PERMANENT PAVEMENT MARKINGS

Materials for permanent pavement markings shall meet all requirements of FDOT Specs, Section 711, *Latest Edition*.

2.4 REFLECTIVE PAVEMENT MARKERS

Materials for reflective pavement markers shall meet all requirements of FDOT Specifications, Sections 706, *Latest Edition*.

2.5 OBJECT MARKERS AND DELINEATORS

Materials for object markers shall meet all requirements of FDOT Specifications, Sections 705, *Latest Edition*.

2.6 AUDIBLE AND VIBRATORY PAVEMENT MARKINGS

Materials for audible and vibratory pavement markings shall meet all requirements of FDOT Specifications, Sections 701, *Latest Edition*.

PART 3 – EXECUTION

3.1 GENERAL

All pavement markings shall be applied in accordance with FDOT requirements.

3.2 TEMPORARY PAVEMENT MARKINGS

Temporary pavement markings shall be installed at the end of each day on new pavement surfaces and shall be maintained until permanent markings are installed.

3.3 PERMANENT PAVEMENT MARKINGS

Permanent pavement markings, including painted stripes, thermoplastic stripes, and reflective pavement markers, shall be installed as shown in the plans. Materials and installation shall conform to applicable standards in the documents referenced in Section 1.1. Installation of permanent markings on all final asphaltic concrete surfaces shall not be accomplished prior to 14 calendar days, nor later than 30 calendar days, after placement of the final surfaces.

3.4 RETROREFLECTIVITY

The Contractor shall, within thirty days of completion, furnish retroreflectivity

readings certifying the materials meet all FDOT requirements as per Part I, 1.1.B.2, Sections 710 and 711.

PART 4 – MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

The engineer or project manager may specify a lump sum or measurement of quantities.

The quantities to be paid for under this Section will be the length in feet or gross mile of Skip Traffic Stripes, the length in feet or gross mile of Solid Traffic Stripes, the number of directional arrows and pavement messages, painted, the area in square feet or of Reflective Paint (Island Nose), and the area in square feet or the length in feet to Remove Existing Markings. Measurement will be taken as the distance from the beginning of the first painted stripe to the end of the last painted stripe with proper deductions made for unpainted intervals will not be included in pay quantity.

4.2 BASIS OF PAYMENT

Prices and payment will be full compensation for all work specified in this Section, including, all cleaning and preparing of surfaces, furnishing all materials, application, curing and protection of all items, protection of traffic, furnishing of all tools, machines and equipment, and all incidentals necessary to complete the work. Final payment will be withheld until all deficiencies are corrected.

END OF SECTION - 04040

SECTION 04060 - MAINTENANCE OF TRAFFIC

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Specifications Sections, apply to work of this section.

B. Unless otherwise specified on the plan sheets or in other sections of the specifications, all materials and work shall conform to the applicable requirements in the following documents:

1. *Florida Department of Transportation Design Standards*, *Latest Edition*.

2. *Florida Department of Transportation Standard Specifications for Road and Bridge Construction*, Section 102, *Latest Edition*.

3. USDOT, Federal Highway Administration *Manual on Uniform Traffic Control Devices for Streets and Highways*, *Latest Edition*, Part 6 Temporary Traffic Controls.

4. *FDOT Minimum Specifications for Traffic control and Devices*, *Latest Edition*.

1.2 SUMMARY OF WORK

The work under this section includes the maintenance of traffic within the limits of the project for the duration of construction.

PART 2 – PRODUCTS - Not Used.

PART 3 - EXECUTION

3.1 RESPONSIBILITIES OF CONTRACTOR

A. Control and maintain traffic and provide for the safety of the work area in accordance with Maintenance of Traffic (MOT) Plan included in the contract documents. Contractor shall comply with all aspects of said plan. Conduct operations in a manner that will not interrupt pedestrian and vehicle traffic except as approved by the County Engineer/Traffic Division. Confine the work area to the smallest area practical to allow the maximum use of the street and sidewalk and to reduce any hazard to vehicles and pedestrians to a minimum.

B. Maintain access to properties that adjoin the work. Contact property owners

and assure that access is coordinated prior to commencing work that may block access.

C. Furnish all labor, materials, tools, supplies, equipment, and machinery needed to fully comply with the specifications described on the plan sheets and in this Section. At all times, the Contractor shall use workers and traffic control devices necessary to comply with all applicable provisions contained in the reference documents listed in Section 1.1.

D. The Contractor shall notify the agencies and media listed below in writing, 48 hours in advance, of any work within the road right-of-way that may interfere with vehicle and/or pedestrian traffic.

1. WCOA Radio – Tel: 478-6011; Fax: 478-3971

2. Pensacola News Journal Tel: 435-8500; Fax: 435-8633; Email: news@pensacolanewsjournal.com

3. Escambia County Emergency Management Tel: 471-6315; Fax: 471-6322; Email: bob_boschen@co.escambia.fl.us

4. Escambia County Engineering Tel: 595-3440

5. Escambia County Sheriff Tel: 436-9630; Fax: 436-9128; Email: traffic@escambiaso.com

6. Florida Highway Patrol Tel: 484-5000; Fax: 393-3405; Email: stevepreston@flhsmv.gov

7. Escambia County School District Tel: 469-5591; Fax: 469-5661; Email: transportation@escambia.k12.fl.us and rdoss@escambia.k12.fl.us

8. Escambia County Administration Tel: 595-4900; Fax: 595-4908; Email: Cheryl_Lively@co.escambia.fl.us

9. Escambia County Area Transit Tel: 595-3228; Fax: 595-3222; Email: Ted_Woolcock@co.escambia.fl.us

3.2 PENALTIES AND SUSPENSION OF WORK

The County may verbally direct the Contractor to immediately suspend work if appearance of violation of safety regulations is found. In such an event, Contractor shall immediately stop work and secure any potential hazards from the public until the potential violation is confirmed and/or corrected to satisfaction of the County. Law enforcement officers may be called to assist the County in suspending work if the Contractor is not responsive. Suspension of work for violation of safety

regulations shall not be grounds for a contract time extension or additional payment.

PART 4 - MEASUREMENT/PAYMENT

4.1 METHOD OF MEASUREMENT

A. Maintenance of Traffic: Where the plans require the use of trucks and truck mounted impact attenuators, these items will not be paid for separately but shall be included in the cost of Maintenance of Traffic. Only use those attenuators that have been tested by a facility approved by the Engineer and certified as meeting the requirements as specified in NCHRP 350 and that have been properly maintained.

B. Law Enforcement Services: The quantity to be paid for will be at the Contract unit price per hour for the actual number of officers on the project site. Payment will be made only for those off-duty law enforcement officers specified in the MOT and authorized by the CountyI.

C. When the plans show more than one detour facility is included in the proposal, payment will be made under Maintenance of Traffic.

D. Materials for Driveway Maintenance: The quantity to be paid for will be, in square yards, of all materials authorized by the County, acceptably placed and maintained for driveway maintenance. The quantity will be determined by in place measurement.

4.2 BASIS OF PAYMENT

A. MAINTENANCE OF TRAFFIC (GENERAL WORK): Price and payment will be full compensation for all work and costs specified under this Section except as may be specifically covered for payment under other items.

B. LAW ENFORECEMENT: Prices and payment will be considered full compensation for the services of the off-duty law enforcement officer, including a marked law enforcement vehicle and all other direct and indirect costs.

C. SPECIAL DETOURS: Price and payment will be full compensation for providing all detour facilities shown on the plans and all costs incurred in carrying our all requirements of this Section for general maintenance of traffic within the limits of the detour, as shown on the plans.

END OF SECTION 04060

GEOTECHNICAL ENGINEERING REPORT

Pensacola Beach Congestion Management Plan
Project 2g – Parking Lots

Pensacola Beach, Escambia County, Florida

PREPARED FOR:

Volkert, Inc.
651 East Burgess Road, Suite 52
Pensacola, Florida 32504

NOVA Project Number: 8217141

October 6, 2017

NOVA
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October 6, 2017

Volkert, Inc.
651 East Burgess Road, Suite 52
Pensacola, Florida 32504

Attention: Mr. Mike Warnke, P.E.

Subject: Geotechnical Engineering Report
PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
PROJECT 2G PARKING LOTS
Pensacola Beach, Escambia County, Florida
NOVA Project Number 8217141

Dear Mr. Warnke:

NOVA Engineering and Environmental LLC (NOVA) has completed the authorized Geotechnical Engineering Report for the additional parking lots to be constructed at three (3) separate locations in Pensacola Beach, Escambia County, Florida. The work was performed in general accordance with NOVA Proposal Number 016-20170214r1, dated June 6, 2016. This report briefly discusses our understanding of the project at the time of the subsurface exploration, describes the geotechnical consulting services provided by NOVA, and presents our findings, conclusions, and recommendations.

We appreciate your selection of NOVA and the opportunity to be of service on this project. If you have any questions, or if we may be of further assistance, please do not hesitate to contact us.

Sincerely,
NOVA Engineering and Environmental LLC

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Florida Certificate No. 1100019359

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TABLE OF CONTENTS

APPENDICES

1.0 SUMMARY

A brief summary of pertinent findings, conclusions, and recommendations are presented below. This information should not be utilized in design or construction without reading the report in its entirety and paying particular attention to the recommendations presented in the text and Appendix.

1.1 GENERAL

We understand that a portion of the Pensacola Beach Congestion Management Plan includes adding new parking lots at three (3) locations along Via De Luna Drive and Fort Pickens Road.

Our field exploration at the subject sites included performing eight (8) auger borings within the proposed parking lot and one (1) auger boring within the stormwater management system (SMS) area at the site along Via De Luna Drive near Avenida 17; ten (10) auger borings within the proposed parking lot footprint and one (1) auger boring within the SMS area at the site along Fort Pickens Road near the Sheriff Substation; and two (2) auger borings within the proposed parking lot footprint at the site proposed along Via De Luna Drive at the Old Visitor Center. Drilling, testing and sampling operations were performed in general accordance with ASTM designations and other industry standards.

The Test Borings generally encountered fine-grained sands (USCS classification of SP) from the existing ground surface elevation to the maximum depth explored of about 5 feet below existing grade (BEG).

1.2 SITE PREPARATION

We recommend stripping the proposed construction areas to remove all trees and associated root systems, surficial vegetation and topsoil, and any other deleterious non-soil materials that are found to be present. The soils exposed at the stripped grade elevation should be compacted to a minimum soil density of at least 95 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D-1557). Resulting or additional excavations should be backfilled with structural fill also compacted to a minimum soil density of at least 95 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D-1557).

1.3 GROUNDWATER CONTROL

A stabilized groundwater table was encountered in the test borings at depths ranging between about 2 feet to greater than 5 feet BEG at the time of our field exploration, which occurred during a period of above normal seasonal rainfall and within a pattern of frequent rain events.

Groundwater could therefore potentially impact the planned development of these properties, most especially with respect to the installation of subsurface utilities in lower lying areas of each site.

1.4 PAVEMENTS

We understand that a flexible (asphalt) pavement section is desired for the pavements planned for this development. Based on the results of our test borings, the subsurface conditions encountered are generally adaptable for providing adequate support of both light duty and heavy duty flexible pavement sections.

1.5 STORMWATER MANAGEMENT SYSTEM

Based on the results of the test borings and the limited laboratory testing, the subsurface conditions encountered on the project sites appear to be adaptable for the treatment and disposal of stormwater runoff via either conventional dry retention ponds or shallow swale systems.

1.6 GPR SURVEY

Our geophysical survey included Ground Penetrating Radar (GPR) testing to locate anomalies consistent with subsurface utilities. For this evaluation, a GSSI SIR-4000 data collection unit with an external 400 MHz antenna was used at client specified areas. Maps of the approximate locations of the targets are included in Appendix D of this report.

2.0 INTRODUCTION

2.1 PROJECT INFORMATION

Our understanding of this project is based on discussions with the client, review of the provided site plan, a site reconnaissance performed during boring layout, review of aerial photography of the site via internet-based GIS software, and our experience with similar geotechnical conditions in the near vicinity to this project site.

2.1.1 Site Plans and Documents

We were furnished with the following plans and documents:

- Document: Pensacola Beach Congestion Management Plan Project 2G
  Prepared by: Volkert, Inc.
  Dated: June 2017

2.1.2 Proposed Construction

We understand that a portion of the Pensacola Beach Congestion Management Plan includes adding new parking lots at three (3) locations along Via De Luna Drive and Fort Pickens Road, as well as stormwater management system (SMS) improvements at each of these locations.

2.1.3 Site Grading

Site grading details were not available from the design team at the time of the issuance of this report; we have therefore assumed that less than 2 feet of fill, and no cut, will be required to achieve the desired subgrade elevations within the proposed parking lot footprints, and that the proposed SMS areas will reportedly be 2 feet or less in depth, relative to current grade elevations.

2.2 SCOPE OF WORK

Volkert, Inc., engaged NOVA to provide geotechnical engineering consulting services for the Congestion Management Plan for Pensacola Beach in Escambia County, Florida. This report briefly discusses our understanding of the project, describes our exploratory procedures, and presents our findings, conclusions, and recommendations.

The primary objective of this study was to perform a geotechnical exploration within the areas of the proposed parking lot additions and SMS areas. The authorized geotechnical engineering services included a site reconnaissance, a soil test boring and sampling program, laboratory testing, engineering evaluation of the field and laboratory data, and the preparation of this report.

The services were performed substantially as outlined in our proposal number 016-20170214, dated June 6, 2017, and in general accordance with industry standards.

As authorized per the above referenced proposal, the completed geotechnical report was to include:

- A description of the site, fieldwork, laboratory testing and general soil conditions encountered, including a Boring Location Plan and individual Test Boring Records.
- Site preparation considerations that include geotechnical discussions regarding site stripping and subgrade preparation, and engineered fill/backfill placement.
- Recommendations for controlling groundwater during construction and the need for permanent de-watering systems based on the expected post construction ground water levels.
- Recommendations for subgrade preparation in the proposed parking lot areas.
- A recommended flexible pavement section based on provided or assumed traffic loadings.
- SMS design parameters per NWFWMD ERP requirements.
- Suitability of on-site soils for re-use as structural fill and backfill. Additionally, the criteria for suitable fill materials will be provided.
- Recommended quality control measures (i.e. sampling, testing, and inspection requirements) for site grading and construction.

The assessment of site environmental conditions, including the presence of wetlands or detection of pollutants in the soil, rock or groundwater, laboratory testing of samples, or a site-specific seismic study was beyond the scope of this geotechnical study. If requested, NOVA can provide these services.

3.0 SITE DESCRIPTION

3.1 LOCATION AND LEGAL DESCRIPTION

The subject properties are located along Via De Luna Drive and Fort Pickens Road in Pensacola Beach, Escambia County, Florida. A Site Location Map is included in Appendix A.

3.2 SUBJECT PROPERTY AND VICINITY GENERAL CHARACTERISTICS

At the time of our field exploration, the vicinity of the Subject Properties were generally developed with a mix of light commercial, municipal, and residential land uses.

3.3 CURRENT USE OF THE PROPERTIES

At the time of our field exploration, the property along Via De Luna Drive near Avenida 17 was vacant and sparsely vegetated. The southern border of the property along Via De Luna Drive had an asphalt paved sidewalk and several palm trees that aligned parallel to the roadway, along with several drainage structures and utilities.

The property along Fort Pickens Road near the Sherriff's Substation was mostly vacant and was sparsely vegetated. The northern portion of the property had a chain-link-fenced SMS area with associated drainage structures, and the area along Fort Pickens Road had several utility structures.

The property along Via De Luna Drive near the Old Visitor's Center was the location of an above-grade, single-story structure near the southern boundary of the property, as well as several utility structures. The area was vegetated with short grasses, landscape shrubberies, and several isolated mature palm trees.

4.0 GEOPHYSICAL SURVEY

Our geophysical survey included Ground Penetrating Radar (GPR) testing to locate potential areas of subsurface anomalies consistent with subsurface utility conduits. For this evaluation, a GSSI SIR-4000 data collection unit with an external 400 MHz antenna was used to locate areas of potential subsurface anomalies.

GPR testing was performed in a grid pattern across accessible portions of the client specified areas of concern to determine the presence and general location of the subject targets. GPR output data was recorded for several of the test locations. Select GPR data files for typical observations were processed for reporting purposes, and are included in the Appendix of this report. Captions for each image include commentary to describe the findings. Maps of the approximate locations of the targets are included in Appendix D of this report.

Ground Penetrating Radar: The ground penetrating radar (GPR) method uses electromagnetic pulses, emitted at regular intervals by an antenna to map subsurface features and discrete objects. The electromagnetic pulses are reflected where changes in electrical properties (dielectric constant) occur. In the case of collecting GPR data on soil and pavement surfaces, this may occur due to the presence of utility conduits, groundwater, or changes in the soil strata. The reflected electromagnetic energy is received by an antenna, converted into an electrical signal, and recorded by the GPR unit. The data is processed, viewed, and printed in real time. The result is a cross-section of the subsurface directly beneath the path of the antenna.

The depth of penetration of the GPR signal varies according to antenna frequency and the conductivity of the subsurface materials present. As the frequency of the GPR antenna increases, the resolution increases but the depth of penetration decreases. As the conductivity of subsurface material increases the depth of penetration decreases due to increased attenuation of the GPR signal. Soils consisting primarily of sand typically have a lower conductivity than silts and clays. Therefore, sandy soils will allow for better depth visibility than silts and clays.

The GPR method is a remote sensing method that may not detect all targets and interfaces of interest. It is also possible that the interpreted GPR data may reveal subsurface targets or interfaces that without intrusive sampling prior to data interpretation may have been misinterpreted. When drilling or excavating, all conventional safety measures should be taken to avoid damaging embedded utilities, and construction components.

For more information regarding the GPR method and the equipment used, please refer to the manufacturer website: www.geophysical.com.

5.0 FIELD EXPLORATION

Boring locations were staked in the field by the NOVA personnel using the approved Boring Location Plan, and ground surface elevations at each staked boring location were provided to NOVA by Volkert and have been included in the Test Boring Records provided in Appendix B of this report.

Our field exploration was conducted on September 1, 2017 and included:

- Eight (8), 5-foot deep auger borings within the proposed parking lot and one (1) auger boring within the stormwater management system (SMS) area at the site along Via De Luna Drive near Avenida 17,
- Ten (10), 5-foot deep auger borings within the proposed parking lot footprint and one (1) auger boring within the SMS area at the site along Fort Pickens Road near the Sheriff Substation, and
- Two (2), 5-foot deep auger borings within the proposed parking lot footprint at the site along Via De Luna Drive at the Old Visitor's Center.

Soil Test Borings: The soil test borings were performed using the guidelines of ASTM Designation D-1452, "Soil Exploration and Sampling by Auger Borings". Auger borings provide the simplest method of soil exploration and sampling and can be used to determine the groundwater levels and changes in strata. For this exploration, a 3-inch OD orchard-barrel type hand-operated auger was used to advance the boring. Representative portions of the disturbed soil samples, obtained from the sampler, were placed in sealed containers and transported to our laboratory for further evaluation and laboratory testing.

Test Boring Records in Appendix B present the soil conditions encountered in the borings. These records represent our interpretation of the subsurface conditions based on the field exploration data, visual examination of the recovered samples, laboratory test data, and generally accepted geotechnical engineering practices. The stratification lines and depth designations represent approximate boundaries between various subsurface strata. Actual transitions between materials may be gradual.

6.0 LABORATORY TESTING

A laboratory testing program was conducted to characterize materials which exist at the site using the recovered samples. Selected test data are presented on the Test Boring Records attached in the Appendix. The specific tests are briefly described below.

It should be noted that all soil samples will be properly disposed of 30 days following the submittal of this NOVA subsurface exploration report unless you request otherwise.

6.1 SOIL CLASSIFICATION

Soil classification provides a general guide to the engineering properties of various soil types and enable the engineer to apply past experience to current problems. In our explorations, samples obtained during drilling operations are observed in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our Test Boring Records. The classification system discussed above is primarily qualitative; laboratory testing is generally performed for detailed soil classification. Using the test results, the soils were classified using the Unified Soil Classification System. This classification system and the in-place physical soil properties provide an index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in this report.

6.2 MOISTURE CONTENT

The moisture content is the ratio expressed as a percentage of the weight of water in a given mass of soil to the weight of the solid particles. These tests were conducted in general accordance with ASTM D-2216.

6.3 SIEVE ANALYSIS

The sieve analysis consists of passing a soil sample through a series of standard sieve openings. The percentage of soil, by weight, passing the individual sieves is then recorded and generally presented in a graphical format. The percentage of fines passing through the No. 200 sieve is generally considered to represent the amount of silt and clay of the tested soil sample. The sieve analysis test was conducted in general accordance with ASTM Designation D-1140.

6.4 FALLING-HEAD LABORATORY PERMEABILITY

A remolded falling head permeability test (ASTM D-5084) is a common laboratory test used to determine the hydraulic conductivity of fine-grained soils. The test involves the flow of water through a re-molded, fully saturated soil sample inside a rigid- wall permeameter connected to a standpipe of constant diameter. Before beginning the flow measurements, the soil sample is saturated and the standpipe is filled with de-aired water to a given level. The test then starts by allowing the water to flow through the sample until the water in the standpipe reaches a lower limit. The time required for the water to flow from the upper to lower limit is recorded.

6.5 LIMEROCK BEARING RATIO

Limerock Bearing Ratio (LBR) tests were performed in accordance with FM-515-5 – Standard Test Method for LBR (Limerock Bearing Ratio) to determine strength and deflection characteristics of soil correlated with pavement performance to establish design curves for pavement thickness.

7.0 SUBSURFACE CONDITIONS

7.1 GEOLOGY

The site is located in the Escambia County, Florida area and according to the United States Geological Survey (USGS), is situated within the greater Gulf Coastal Plain region. The site is generally covered with Alluvium sediments of the Pleistocene/Holocene periods underlain by the Citronelle formation of the Pliocene/Pleistocene periods. The alluvial sediments typically consist of siliciclastics that are fine to coarse quartz sand containing clay lenses and gravel in places. Sands consists primarily of very fine to very coarse poorly sorted quartz grains; gravel is composed of quartz, quartzite, and chert pebbles. In areas of the Valley and Ridge province gravels are generally composed of angular to sub-rounded chert, quartz, and quartzite pebbles. Coastal deposits in the Pensacola Beach area include fine to medium quartz sand with shell fragments and accessory heavy minerals along Gulf beaches and fine to medium quartz sand, silt, clay, peat, mud and ooze in the Mississippi Sound, Little Lagoon, bays, lakes, streams, and estuaries. The Citronelle formation consists primarily of varicolored/mottled lenticular beds of poorly sorted sand, clayey sand, clay, and clayey gravel. Limonite pebbles and lenses of limonite cemented sand occur locally in weathered Miocene exposures.

Surficial soils in the region are primarily siliciclastic sediments deposited in response to the renewed uplift and erosion in the Appalachian highlands to the north and sea-level fluctuations. The extent and type of deposit is influenced by numerous factors, including mineral composition of the parent rock and meteorological events.

7.2 SOIL CONDITIONS

The following paragraph provides a generalized description of the subsurface profiles and soil conditions encountered in the borings conducted during this study. The Test Boring Records in the Appendix should be reviewed to provide detailed descriptions of the conditions encountered at each boring location. Conditions may vary at other locations and times.

The Test Borings generally encountered fine-grained sands (USCS classification of SP) from the existing ground surface elevation to the maximum depth explored of about 5 feet below existing grade (BEG).

7.3 GROUNDWATER CONDITIONS

7.3.1 General

Groundwater in the Gulf Coastal Plain typically occurs as an unconfined aquifer condition. Recharge is provided by the infiltration of rainfall and surface water through the soil overburden. More permeable zones in the soil matrix can affect groundwater conditions. The groundwater table is expected to be a subdued replica of the original surface topography. Based on a review of topographic maps and our visual site observations, we anticipate the groundwater flow to be dependent on tidal influences.

Groundwater levels vary with changes in season and rainfall, construction activity, surface water runoff, tides, and other site-specific factors. Groundwater levels in the Escambia County area are typically lowest in the late fall to winter and highest in the early spring to mid-summer with annual groundwater fluctuations by seasonal rainfall; consequently, the water table may vary at times.

7.3.2 Soil Test Boring Groundwater Conditions

Groundwater was encountered in the test borings at depths ranging from about 2 feet to greater than 5 feet BEG at the time of our field exploration, which occurred during a period of above normal seasonal rainfall, and during a period of frequent rain events.

Based on comparisons of current annual monthly rainfall data to historical rainfall data extending back 50+ years in time, we estimate that the normal permanent seasonal high groundwater (SHGW) table for this site will occur approximately at the noted groundwater levels at each boring location, during the wet season. This data generally correlates to the values provided by the USGS Natural Resources Conservation Service.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on our understanding of the proposed construction, site observations, our evaluation and interpretation of the field and laboratory data obtained during this exploration, our experience with similar subsurface conditions, and generally accepted geotechnical engineering principles and practices.

Subsurface conditions in unexplored locations or at other times may vary from those encountered at specific boring locations. If such variations are noted during construction, or if project development plans are changed, we request the opportunity to review the changes and amend our recommendations, if necessary.

8.1 SITE PREPARATION

Site grading details were not available from the design team at the time of the issuance of this report; we have therefore assumed that 2 feet or less of elevating structural fill will be required to achieve the desired finished subgrade elevations within the proposed parking lot footprints.

Prior to proceeding with construction, all topsoil and vegetation, trees and associated root systems, and any other deleterious non-soil materials found to be present should be stripped from the proposed parking lot footprints. Clean topsoil may be stockpiled and subsequently re-used in landscaped areas. Debris-laden materials should be excavated, transported, and disposed of off-site in accordance with appropriate solid waste rules and regulations. All existing utility locations should be reviewed to assess their impact on the proposed construction and relocated/grouted in-place as appropriate.

The soils exposed at the stripped grade elevation should be compacted to a minimum soil density of at least 95 percent of the maximum dry density as determined by the Modified Proctor test method (ASTM D-1557). NOVA should observe the compaction of the subgrade to locate soft, weak, or excessively wet fill or existing soils present at the time of construction. Any unstable materials observed during the evaluation and compaction operations should be undercut and replaced with structural fill or stabilized in-place by scarifying and re-densifying.

8.1.1 Soil Suitability

The on-site near surface soils can be categorized as SP, or relatively clean fine-grained sands based on the Unified Soil Classification System (USCS). This sandy soil type is considered suitable for the use of structural fill along the proposed roadway alignments.

We note, however, that these materials will require blending with aggregate or another suitable stabilizing material to produce a Stabilized Subgrade Course with a minimum Limerock Bearing Ratio (LBR) value of 40.

All imported materials to be used for backfill or compacted fill construction should be evaluated and, if necessary, tested by NOVA prior to their being imported to determine if they are suitable for their intended use (including performing Munsell Color Determinations to confirm they can be imported onto Pensacola Beach per applicable County regulations). In general, based upon the boring results, the near surface sands such as those encountered in the borings can be used as structural fill as well as general subgrade fill and backfill, provided that the fill material is free of rubble, clay, rock, roots and organics. Any off-site materials used as fill should be approved by NOVA prior to acquisition.

Organic and/or debris-laden material is not suitable for re-use as structural fill. Topsoil, mulch, and similar organic materials can be wasted in architectural areas. Debris-laden materials should be excavated, transported, and disposed of off-site in accordance with appropriate solid waste rules and regulations.

8.1.2 Soil Compaction

Fill should be placed in thin, horizontal loose lifts (maximum 12-inch) and compacted to a minimum soil density of at least 95 percent of the Modified Proctor maximum dry density (ASTM D-1557). The top 12 inches of subgrade (i.e., the Stabilized Subgrade Course) beneath all pavement areas should be compacted to at least 98 percent. Fill materials should have a target maximum dry density of at least 95 pounds per cubic foot (pcf). If lighter weight fill materials are used, the NOVA geotechnical engineer should be consulted to assess the impact on design recommendations.

Soil moisture content should be maintained within 3 percent of the optimum moisture content. We recommend that the grading contractor have equipment on site during earthwork for both drying and wetting fill soils. Moisture control may be difficult during dry weather, given the free-draining nature of the very high permeability native sandy soils.

Filling operations should be observed by a NOVA soils technician, who can confirm suitability of material used and uniformity and appropriateness of compaction efforts. He/she can also document compliance with the specifications by performing field density tests using thin-walled tube, nuclear, or sand cone testing methods (ASTM D-2937, D-6938, or D-1556, respectively). One test per 400 cubic yards and every 2 feet of placed fill is recommended, with test locations well distributed throughout the fill mass. When filling in small areas, at least one test per day per area should be performed.

8.2 GROUNDWATER CONTROL

Groundwater was encountered at depths ranging from about 2 feet to greater than 5 feet BEG at the time of our field exploration, which occurred during a period of above normal seasonal rainfall and within a pattern of frequent rain events.

Depending on the areas of the site under consideration, groundwater levels have differing implications for design and construction. The extent and nature of any dewatering required during construction will be dependent on the actual groundwater conditions prevalent at the time of construction and the effectiveness of construction drainage to prevent run-off into open excavations.

Based on our understanding of the proposed construction, groundwater could potentially adversely impact the planned development of this property, most especially with respect to the installation of subsurface utilities in lower-lying areas of each site.

As previously noted, groundwater levels are subject to seasonal, climatic, tidal, and other variations and may be different at other times and locations.

8.3 PAVEMENT SECTIONS

We understand that a flexible (asphalt) pavement section is desired for the proposed parking lots planned as part of this improvements project. Recommended heavy duty and light duty pavement sections have been developed for this project based on our understanding of the existing subsurface conditions, review of applicable FDOT specifications, and the assumed pavement design parameters of a 20-year pavement design life with moderate traffic loadings.

Sufficient fill will be required in the proposed parking lot footprints to provide a minimum separation of at least 24 inches between the bottom of the base course and the normal permanent SHGW level for a crushed Bahama Stone base course. This separation can be reduced to 18 inches with employment of Graded Aggregate Base (GAB). We note that Escambia County may require Bahama Base Rock in lieu of Limerock base due to color ordinances.

Based on the results of our test borings, the subsurface conditions encountered appear to be adaptable for the following pavement sections.

STANDARD-DUTY PAVEMENT SECTION	
Structural Course (FDOT SuperPave – SP fine)	1½ inches
GAB or Crushed Bahama Stone Base Course (from an FDOT approved source, min. LBR of 100)	6 inches
Stabilized Subgrade (minimum LBR of 40)	12 inches
HEAVY-DUTY PAVEMENT SECTION (ENTRANCE DRIVES)	
Structural Course (FDOT SuperPave – SP fine)	2½ inches
GAB or Crushed Bahama Stone Base Course (from an FDOT approved source, min. LBR of 100)	8 inches
Stabilized Subgrade (minimum LBR of 40)	12 inches

We recommend specifying a minimum compaction requirement of at least 98 percent of the maximum dry density for the base course and stabilized subgrade course materials as determined by the Modified Proctor test method (ASTM D-1557). All asphalt material and paving operations should meet applicable specifications of the Asphalt Institute and FDOT requirements. A NOVA technician should observe placement and perform density testing of the stabilized subgrade, base course material and asphalt.

As was noted previously, stabilization of the native sandy materials to produce a Stabilized Subgrade course with a minimum Limerock Bearing Ratio (LBR) value of 40 will most likely be required, as the near-surface in-situ native fine-grained sands (SP) were found to have LBR values ranging between 20 and 25.

8.4 STORMWATER MANAGEMENT SYSTEMS

We understand that a stormwater management system (SMS) consisting of either a conventional shallow dry retention pond or a shallow perimeter swale is planned for each proposed parking lot to treat and dispose of stormwater runoff associated with the planned site improvements. Based on the results of the SMS test borings, the subsurface conditions encountered on the project sites appear to be adaptable for the treatment and disposal of stormwater runoff via the desired SMS. We recommend that the SMS geotechnical parameters provided on the following page in Table 1 and Table 2 be used in the SMS designs.

Table 1 – Via De Luna Drive SMS Soil Design Parameters	
Corresponding Soil Boring Test Locations	R-1
Approximate Depth to Confining Layer, BEG	> 4 feet
Measured Vertical Hydraulic Conductivity (Kv)	108 feet/day
Calculated Horizontal Hydraulic Conductivity (Kh)	162 feet/day
Estimated Infiltration Rate (DRI)	36 inches/hour
Estimated Fillable Porosity of Soil	25%
Estimated Depth to Normal Permanent SHGW table, feet BEG	2 feet

Table 2 – Fort Pickens Road at Sherriff Substation SMS Soil Design Parameters	
Corresponding Soil Boring Test Locations	R-2
Approximate Depth to Confining Layer, BEG	> 5 feet
Measured Vertical Hydraulic Conductivity (Kv)	81 feet/day
Calculated Horizontal Hydraulic Conductivity (Kh)	121 feet/day
Estimated Infiltration Rate (DRI)	27 inches/hour
Estimated Fillable Porosity of Soil	25%
Estimated Depth to Normal Permanent SHGW table, feet BEG	4 feet

The estimated normal permanent SHGW levels provided in Table 1 and Table 2 above are based on our experience with projects in this locale; the soil strata encountered in the test borings; the groundwater levels measured at the sites; and the published information by the "Web Soil Survey" National database, NRCS division of the United States Department of Agriculture (USDA). Please note that the measured hydraulic conductivity rates could be adversely impacted if siltation of the pond bottoms is allowed after construction.

9.0 CONSTRUCTION OBSERVATIONS

9.1 SUBGRADE

Once site grading is completed, the subgrade may be exposed to adverse construction activities and weather conditions. The subgrade should be well-drained to prevent the accumulation of water. If the exposed subgrade becomes saturated or frozen, the NOVA geotechnical engineer should be consulted.

A final subgrade evaluation should be performed by the NOVA geotechnical engineer immediately prior to pavement construction. If practical, proofrolling may be used to re-densify the surface and to detect any soil, which has become excessively wet or otherwise loosened.

9.2 PAVEMENTS

The recommended pavement sections should utilize materials and be constructed in accordance with applicable FDOT specifications. Also, NOVA should be retained during construction to confirm subgrade conditions are as anticipated and that the construction process is as required by the contract documents

APPENDIX A
Figures and Maps

APPENDIX B
Subsurface Data

APPENDIX C
Laboratory Data

APPENDIX D
Qualifications of Recommendations

QUALIFICATIONS OF RECOMMENDATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for NOVA to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings will differ from those encountered at specific boring locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, NOVA should be retained by the owner to observe all earthwork and foundation construction to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations. NOVA is not responsible or liable for the conclusions and recommendations presented in this report if NOVA does not perform these observation and testing services.

This report is intended for the sole use of **Hammond Engineering, Inc.** only. The scope of work performed during this study was developed for purposes specifically intended by **Hammond Engineering, Inc.** and may not satisfy other users' requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. NOVA is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

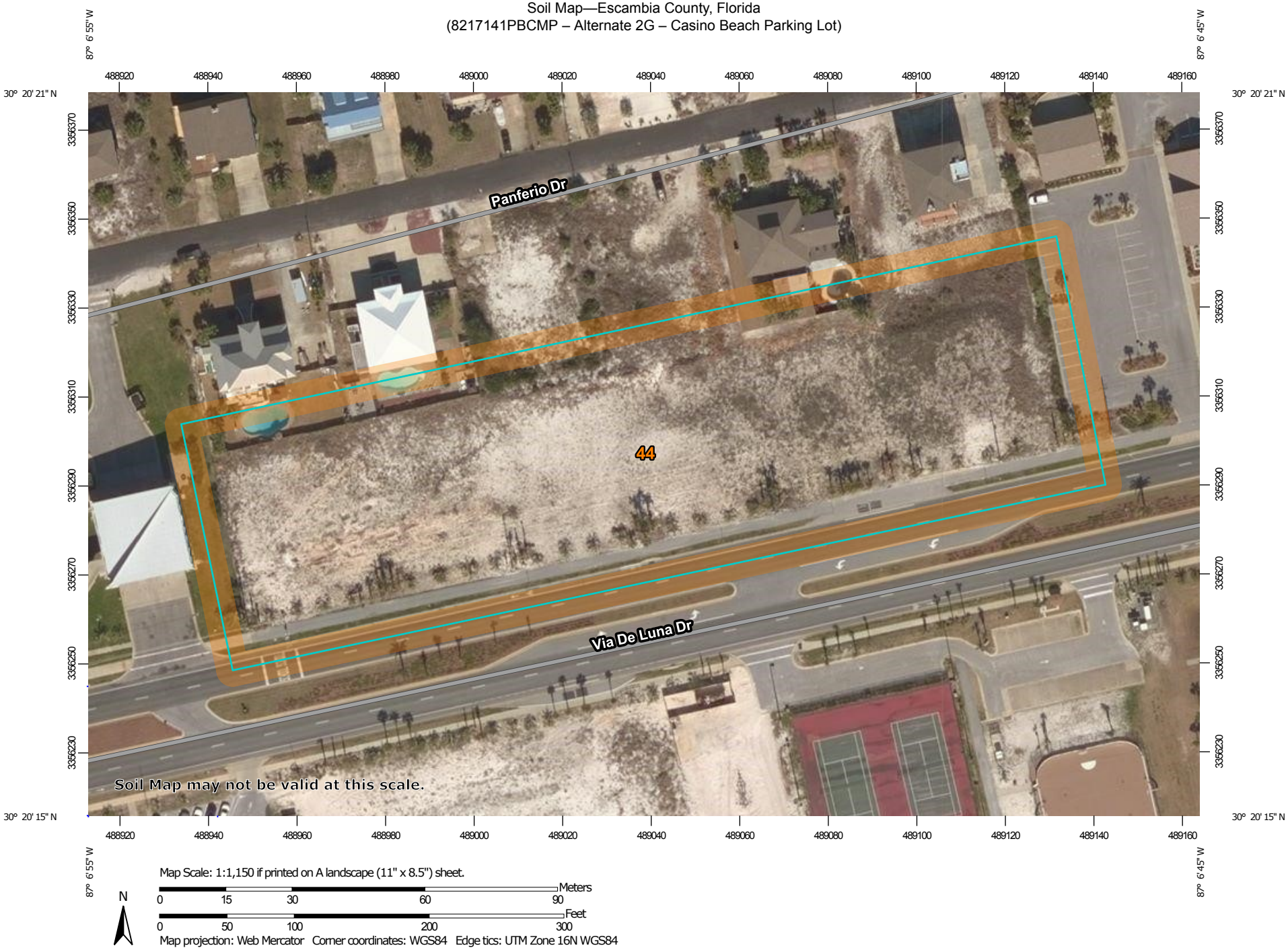
Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Florida. This warranty is in lieu of all other statements or warranties, either expressed or implied.

APPENDIX A
Figures and Maps

Base map provided by ***Google Earth***

Scale: Not To Scale **Date Drawn:** September 20, 2017 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA 140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683	**PROJECT LOCATION MAP** **PBCMP – Project 2G Parking Lots** Gulf Breeze, Santa Rosa County, Florida *NOVA Project Number 8217147*

Soil Map—Escambia County, Florida
(8217141PBCMP – Alternate 2G – Casino Beach Parking Lot)



Map Scale: 1:1,150 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

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

Date(s) aerial images were photographed: Feb 10, 2015—Feb 18, 2015

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

Map Unit Legend

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
44	Corolla-Urban land complex, 0 to 5 percent slopes, rarely flooded	2.8	100.0%
Totals for Area of Interest		**2.8**	**100.0%**

Soil Map—Escambia County, Florida
(8217141 PBCMP – Alternate 2G – Casino Beach Parking Lot)

Map Scale: 1:831 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 10 20 40 60

Feet
0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

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

Date(s) aerial images were photographed: Feb 10, 2015—Feb 18, 2015

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

Map Unit Legend

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
8	Newhan-Corolla complex, rolling, rarely flooded	1.8	100.0%
Totals for Area of Interest		**1.8**	**100.0%**

Soil Map—Escambia County, Florida
(8217141 PBCMP – Alternate 2G – Old Visitor Center Parking Lot)

Map Scale: 1:838 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 40 80 160 240

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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

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

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

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

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

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

Soil Survey Area: Escambia County, Florida
Survey Area Data: Version 14, Sep 23, 2016

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

Date(s) aerial images were photographed: Feb 10, 2015—Feb 18, 2015

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

Map Unit Legend

Escambia County, Florida (FL033)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
16	Arents-Urban land complex	0.1	14.2%
44	Corolla-Urban land complex, 0 to 5 percent slopes, rarely flooded	0.6	85.8%
Totals for Area of Interest		**0.7**	**100.0%**

APPENDIX B
Subsurface Data

TOTAL PARKING PROVIDED:
167 SPACES

ADA ACCESSIBLE PARKING:
6 SPACES
(WITH 60" ACCESS AISLE: 5 SPACES
VAN ACCESSIBLE WITH 96" ACCESS AISLE: 1 SPACES)

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
TASK 2G- PARKING RECOMMENDATIONS
VIA DE LUNA DRIVE
PARKING EXHIBIT

VOLKERT

LEGEND

A-x = 5-ft Auger Boring

R-x = 10-ft SMS Auger Boring

L-X = LBR Sample Location

Scale: Not To Scale	
Date Drawn: September 20, 2017	
Drawn By: J. James	
Checked By: W. Lawrence	

NOVA
140-A Lurton Street
Pensacola, Florida 32505
850.607.7782 ♦ 850.249.6683

PROPOSED BORING LOCATION PLAN

PBCMP – Alternate 2G – Via De Luna Drive Parking Lot

Pensacola Beach, Escambia County, Florida

NOVA Project Number 8217141

PARKING LOT
TOTAL PARKING PROVIDED:
106 SPACES

ADA ACCESSIBLE PARKING:
6 SPACES
(WITH 60" ACCESS AISLE: 4 SPACES
VAN ACCESSIBLE WITH 96" ACCESS AISLE: 2 SPACES)

OPTIONAL SHERIFF/LIFEGUARD PARKING AREA
30 SPACES

GRAPHIC SCALE IN FEET
FULL SIZE 1" = 30'
HALF SIZE 1" = 60'

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
TASK 2G- PARKING RECOMMENDATIONS
CASINO BEACH
PARKING EXHIBIT

VOLKERT

LEGEND

A-x = 5-ft Auger Boring

R-x = 10-ft SMS Auger Boring

L-X = LBR Sample Location

Scale: Not To Scale	
Date Drawn: September 20, 2017	
Drawn By: J. James	
Checked By: W. Lawrence	

NOVA

140-A Lurton Street
Pensacola, Florida 32505
850.607.7782 ♦ 850.249.6683

PROPOSED BORING LOCATION PLAN

PBCMP – Alternate 2G – Casino Beach Parking Lot

Pensacola Beach, Escambia County, Florida

NOVA Project Number 8217141

TOTAL PARKING PROVIDED:
16 SPACES

ADA ACCESSIBLE PARKING:
1 SPACE
(WITH 60" ACCESS AISLE: 0 SPACES
VAN ACCESSIBLE WITH 96" ACCESS AISLE: 1 SPACE)

PENSACOLA BEACH CONGESTION MANAGEMENT PLAN
TASK 2G- PARKING RECOMMENDATIONS
PENSACOLA BEACH OLD VISITOR CENTER
PARKING EXHIBIT

VOLKERT

LEGEND

A-x = 5-ft Auger Boring

L-X = LBR Sample Location

Scale: Not To Scale	
Date Drawn: September 20, 2017	
Drawn By: J. James	
Checked By: W. Lawrence	

NOVA
140-A Lurton Street
Pensacola, Florida 32505
850.607.7782 ♦ 850.249.6683

PROPOSED BORING LOCATION PLAN
PBCMP – Alternate 2G – Old Visitor Center Parking Lot
Pensacola Beach, Escambia County, Florida
NOVA Project Number 8217141

KEY TO BORING LOGS

SYMBOLS AND ABBREVIATIONS

SYMBOL	DESCRIPTION
N-Value	No. of Blows of a 140-lb. Weight Falling 30 Inches Required to Drive a Standard Spoon 1 Foot
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
	Sample from Auger Cuttings
	Standard Penetration Test Sample
	Thin-wall Shelby Tube Sample (Undisturbed Sampler Used)
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
	Stabilized Groundwater Level
	Seasonal High Groundwater Level (also referred to as the W.S.W.T.)
NE	Not Encountered
GNE	Groundwater Not Encountered
BT	Boring Terminated
-200 (%)	Fines Content or % Passing No. 200 Sieve
MC (%)	Moisture Content
LL	Liquid Limit (Atterberg Limits Test)
PI	Plasticity Index (Atterberg Limits Test)
K	Coefficient of Permeability
Org. Cont.	Organic Content
G.S. Elevation	Ground Surface Elevation

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS More than 50% retained on the No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM	Silty gravels and gravel-sand-silt mixtures
			GC	Clayey gravels and gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS 5% or less passing No. 200 sieve	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Poorly graded sands and gravelly sands, little or no fines
		SANDS with 12% or more passing No. 200 sieve	SM**	Silty sands, sand-silt mixtures
			SC**	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes the No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diamicaceous fine sands or silts, elastic silts
			CH	Inorganic clays or clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

*Based on the material passing the 3-inch (75 mm) sieve
** Use dual symbol (such as SP-SM and SP-SC) for soils with more than 5% but less than 12% passing the No. 200 sieve

RELATIVE DENSITY
(Sands and Gravels)
Very loose – Less than 4 Blow/Foot
Loose – 4 to 10 Blows/Foot
Medium Dense – 11 to 30 Blows/Foot
Dense – 31 to 50 Blows/Foot
Very Dense – More than 50 Blows/Foot

CONSISTENCY
(Silts and Clays)
Very Soft – Less than 2 Blows/Foot
Soft – 2 to 4 Blows/Foot
Medium Stiff – 5 to 8 Blows/Foot
Stiff – 9 to 15 Blows/Foot
Very Stiff – 16 to 30 Blows/Foot
Hard – More than 30 Blows/Foot

RELATIVE HARDNESS
(Limestone)
Soft – 100 Blows for more than 2 Inches
Hard – 100 Blows for less than 2 Inches

MODIFIERS

These modifiers Provide Our Estimate of the Amount of Minor Constituents (Silt or Clay Size Particles) in the Soil Sample
Trace – 5% or less
With Silt or With Clay – 6% to 11%
Silty or Clayey – 12% to 30%
Very Silty or Very Clayey – 31% to 50%

These Modifiers Provide Our Estimate of the Amount of Organic Components in the Soil Sample
Trace – Less than 3%
Few – 3% to 4%
Some – 5% to 8%
Many – Greater than 8%

These Modifiers Provide Our Estimate of the Amount of Other Components (Shell, Gravel, Etc.) in the Soil Sample
Trace – 5% or less
Few – 6% to 12%
Some – 13% to 30%
Many – 31% to 50%

NOVA

TEST BORING RECORD A-1

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: 2.3 ft. AFTER 24 HOURS: ____ CAVING> 3.5 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 1-inch)				
		White fine-grained SAND (SP)				
		Off-white/gray fine-grained SAND (SP)				
1						
		White/gray fine-grained SAND (SP)				
2						
3						
		Boring Terminated at 3.5 ft.				
4						
5						
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

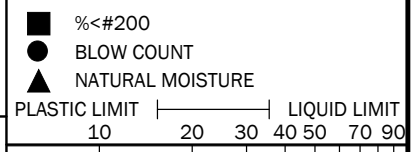
This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-2

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 1-inch)				
		Light brown fine-grained SAND (SP)				
1		Brown fine-grained SAND with Silt (SP-SM)				
		Light brown fine-grained SAND with rock (SP)				
2		Auger Refusal at 2 ft. Boring Terminated at 2 ft.				
3						
4						
5						
6						
7						



This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-3

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 3.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 4 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 3-inch)				
		White/gray fine-grained SAND (SP)				
1						
2						
3				▽		
4		Boring Terminated at 4 ft.		C		
5						
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-4

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 2.7 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 3.5 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 1-inch)				
		White/light-brown fine-grained SAND (SP)				
1						
2		Trace rock				
		White fine-grained SAND (SP)		▽		
3						
		Boring Terminated at 3.5 ft.		C		
4						
5						
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-5

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 2.7 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 4 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Light brown fine-grained SAND (SP)				
1						
		White fine-grained SAND (SP)				
2						
3				▽		
4				C		
		Boring Terminated at 4 ft.				
5						
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-6

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 3 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 4 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Light brown fine-grained SAND (SP)				
1						
		Trace rock				
2						
		Dark gray fine-grained SAND (SP)				
3				▽		
		White fine-grained SAND (SP)				
4				C		
		Boring Terminated at 4 ft.				
5						
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

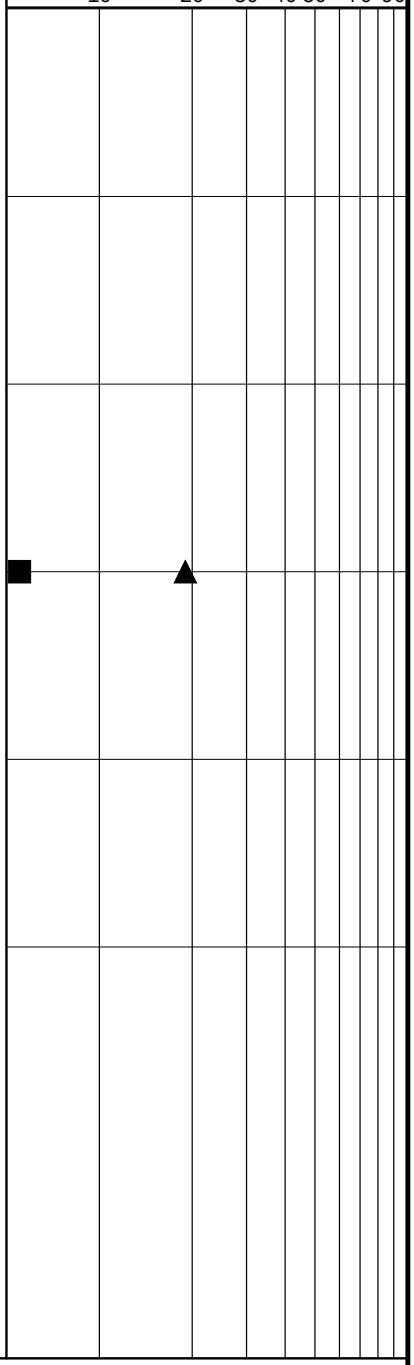
TEST BORING RECORD A-7

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 3.3 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Light brown fine-grained SAND (SP)				
1						
2		Off-white/gray fine-grained SAND (SP)				
3						
		Gray fine-grained SAND (SP)		▽		
4						
5						
		Boring Terminated at 5 ft.				
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90



This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-8

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 3.5 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		Light brown fine-grained SAND (SP)				
1		Off-white/light brown fine-grained SAND (SP)				
2						
3						
4		White fine-grained SAND (SP)		▽		
5		Boring Terminated at 5 ft.				
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE

PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-9

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		Brown fine-grained SAND (SP)				
1		Gravel (GP)				
		Auger Refusal at 1 ft. Boring Terminated at 1 ft.				
2						
3						
4						
5						
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-10

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		Off-white/light brown fine-grained SAND (SP)				
1						
2						
3						
4		White fine-grained SAND (SP)				
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-11

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ GNE AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2		Orange-stained				
3		Light brown fine-grained SAND with shells (SP)				
4		White fine-grained SAND (SP)				
5		Boring Terminated at 5 ft.				
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-12

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2						
3						
4						
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-13

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		Off-white/light brown fine-grained SAND (SP)				
1						
2		White fine-grained SAND (SP)				
3						
4						
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-14

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2						
3						
4		Orange-stained				
		Off-white fine-grained SAND (SP)				
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-15

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0						
		Off-white fine-grained SAND (SP)				
1						
2		White fine-grained SAND (SP)				
3						
4						
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-16

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		Off-white fine-grained SAND (SP)				
1						
2						
3						
4						
		Slight orange stain				
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-17

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2						
3						
4						
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-18

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING> C

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2						
3						
4						
5		Boring Terminated at 5 ft.				
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD A-19

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: GNE AFTER 24 HOURS: CAVING>

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 6-inches)				
1		Orange-brown fine-grained SAND with Silt and shells (SP-SM)				
2		Gravel (GP)				
		Auger Refusal at 2 ft. Boring Terminated at 2 ft.				
3						
4						
5						
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT — LIQUID LIMIT
10 20 30 40 50 70 90

NOVA

TEST BORING RECORD A-20

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 3.3 ft. AFTER 24 HOURS: ▼ _____ CAVING> C _____

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 6-inches)				
1		Off-white fine-grained SAND (SP)				
2		Brown fine-grained SAND (SP)				
3		White/orange-stained fine-grained SAND (SP)		▽		
4						
5		Boring Terminated at 5 ft.				
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

NOVA

TEST BORING RECORD R-1

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 2.2 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 4 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		TOPSOIL (Approx. 1-inch)				
		White fine-grained SAND (SP)		▽		
1						
2						
3						
4		Boring Terminated at 4 ft.		C		
5						
6						
7						

%<#200
BLOW COUNT
NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90

This information pertains only to this boring and should not be interpreted as being indicative of the site.

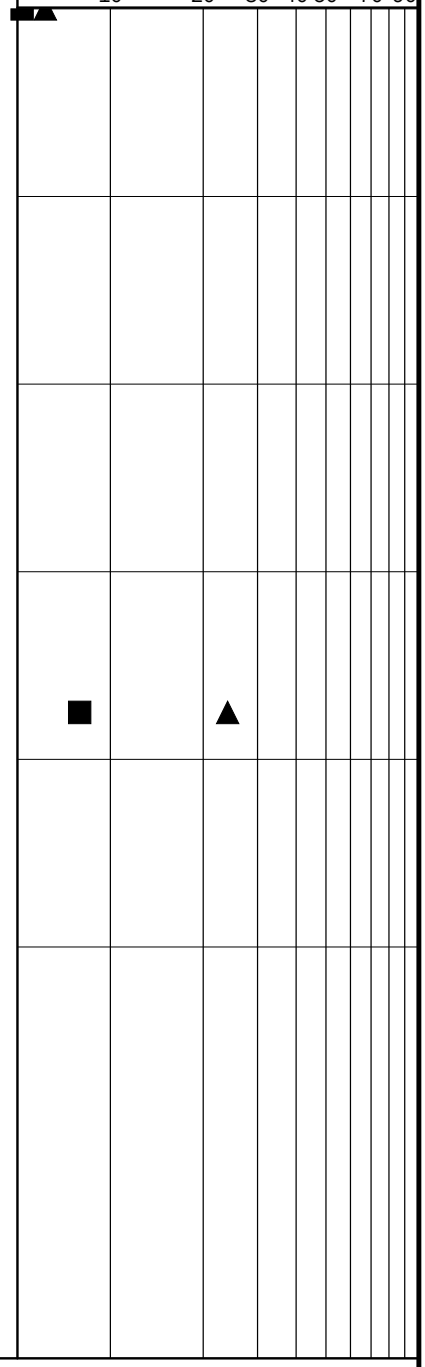
NOVA

TEST BORING RECORD R-2

PROJECT: Congestion Mgmt. Plan-Alternate 2G PROJECT NO.: 8217141
CLIENT: Volkert, Inc.
PROJECT LOCATION: Pensacola Beach, Escambia County, Florida
LOCATION: Per Boring Location Plan ELEVATION: Existing Grade
DRILLER: B. Pement LOGGED BY: B. Pement
DRILLING METHOD: Hand Auger Boring DATE: 9/1/2017
DEPTH TO - WATER> INITIAL: ▽ 4 ft. AFTER 24 HOURS: ▼ _____ CAVING> C 5 ft.

Depth (feet)	Elevation (ft-MSL)	Description	Graphic	Groundwater	Sample Type	N-Value
0		White fine-grained SAND (SP)				
1						
2						
3						
4		Dark brown fine-grained SAND with Silt (SP-SM)		▽		
		Gray/brown fine-grained SAND (SP)				
5				C		
		Boring Terminated at 5 ft.				
6						
7						

■ %<#200
● BLOW COUNT
▲ NATURAL MOISTURE
PLASTIC LIMIT ⊢——⊣ LIQUID LIMIT
10 20 30 40 50 70 90



This information pertains only to this boring and should not be interpreted as being indicative of the site.

APPENDIX C
Laboratory Data

SUMMARY OF CLASSIFICATION & INDEX TESTING

PBCMP Project 2G Parking Lots
Pensacola Beach, Escambia County, Florida
NOVA Project Number 8217141

SUMMARY OF CLASSIFICATION AND INDEX TESTING						
Boring No.	Sample Depth	Natural Moisture (%)	Percent Fines (- #200)	Hydraulic Conductivity		USCS Soil Classification
				K_{vs} (ft/day)	Unit Weight of Sample (pcf)	
A-5	0-1.5’	4	2	---	---	SP
A-7	3’-5’	20	1	---	---	SP
A-10	0-4’	4	1	---	---	SP
A-19	0.5’-1.5’	9	5	---	---	SP
R-1	1’-4’	7	0	108	95	SP
R-2	0-4’	3	0	81	95	SP
LBR-1	0-1’	3	1	---	---	SP
LBR-2	0-1’	2	0	---	---	SP
LBR-3	0-1’	2	0	---	---	SP

REMOLDED LABORATORY PERMEABILITY TEST DATA SHEET

PROJECT: PBCMP Project 2G Parking Lots **NOVA PROJECT #:** 8217141

DATE: 9/7/2017 **ASSIGNED BY:** JAJ **TESTED BY:** BP

Sample LOCATION / BORING NO.	R-1
Sample NUMBER / DEPTH	0-4'

PERMEABILITY TESTING SUMMARY			
PERMEABILITY (K_V)	→	108	ft/day
Corresponding K_h	→	162	ft/day
DRY DENSITY	→	95	lbs/ft^3
MOISTURE CONTENT	→	7	%
-200 FINES CONTENT	→	0	%

FALLING HEAD PERMEABILITY (ASTM D 5084)

No. of LAYERS:	3	Wt. of MOLD (lbs):	4.51
BLOWS/LAYER:	15	Wt. of MOLD/SOIL (lbs):	7.88

HEIGHT (FT)	TRIAL #1 (SEC)	TRIAL #2 (SEC)	PERMEABILITY
7	0.0		3.77E-02
6	0.8		4.06E-02
5	1.2		3.99E-02
4	1.8		3.16E-02
3	2.5		4.08E-02
2	3.5		
1	5.2		
		3.8E-02	cm/sec

MOISTURE CONTENT (ASTM D 2216)

Pan NUMBER	P
Wt. of WET SOIL & PAN (g)	160.5
Wt. of DRY SOIL & PAN (g)	154.4
Wt. of PAN (g)	65.4
Wt. of Water (g)	6.1
Wt. of Dry Soil (g)	89.0
MOISTURE CONTENT (%)	6.9

-200 SIEVE WASH (ASTM D 1140)

Pan NUMBER	B
Wt. of DRY SOIL & PAN (g)	154.4
Wt. of WASH SOIL & PAN (g)	154.2
Wt. of PAN (g)	65.4
Wt. of Original Dry Sample (g)	89.0
Wt. of -200 Material (g)	0.2
Wt. of Washed Dry Sample (g)	88.8
-200 FINES CONTENT (%)	0.2

NUMBER OF INCHES MOLD WAS SHORT? 0.000 INCHES (ZERO INCHES IS DEFAULT)

PERMEABILITY CONSTANT USED WAS → 0.23 (Includes 3/8"ID tubing)

NOVA

REMOLDED LABORATORY PERMEABILITY TEST DATA SHEET

PROJECT: PBCMP Project 2G Parking Lots **NOVA PROJECT #:** 8217141

DATE: 9/7/2017 **ASSIGNED BY:** JAJ **TESTED BY:** BP

Sample LOCATION / BORING NO.	R-2
Sample NUMBER / DEPTH	0-4'

PERMEABILITY TESTING SUMMARY			
PERMEABILITY (K_V)	→	81	ft/day
Corresponding K_h	→	121	ft/day
DRY DENSITY	→	95	lbs/ft^3
MOISTURE CONTENT	→	3	%
-200 FINES CONTENT	→	0	%

FALLING HEAD PERMEABILITY (ASTM D 5084)

No. of LAYERS:	3	Wt. of MOLD (lbs):	4.51
BLOWS/LAYER:	15	Wt. of MOLD/SOIL (lbs):	7.75

HEIGHT (FT)	TRIAL #1 (SEC)	TRIAL #2 (SEC)	PERMEABILITY
7	0.0		2.87E-02
6	0.9		2.93E-02
5	1.5		2.95E-02
4	2.3		2.41E-02
3	3.3		3.11E-02
2	4.6		
1	6.8		
		2.9E-02	cm/sec

MOISTURE CONTENT (ASTM D 2216)

Pan NUMBER	T
Wt. of WET SOIL & PAN (g)	148.8
Wt. of DRY SOIL & PAN (g)	146.5
Wt. of PAN (g)	65.3
Wt. of Water (g)	2.3
Wt. of Dry Soil (g)	81.2
MOISTURE CONTENT (%)	2.8

-200 SIEVE WASH (ASTM D 1140)

Pan NUMBER	B
Wt. of DRY SOIL & PAN (g)	146.5
Wt. of WASH SOIL & PAN (g)	146.1
Wt. of PAN (g)	65.3
Wt. of Original Dry Sample (g)	81.2
Wt. of -200 Material (g)	0.4
Wt. of Washed Dry Sample (g)	80.8
-200 FINES CONTENT (%)	0.5

NUMBER OF INCHES MOLD WAS SHORT? 0.000 INCHES (ZERO INCHES IS DEFAULT)

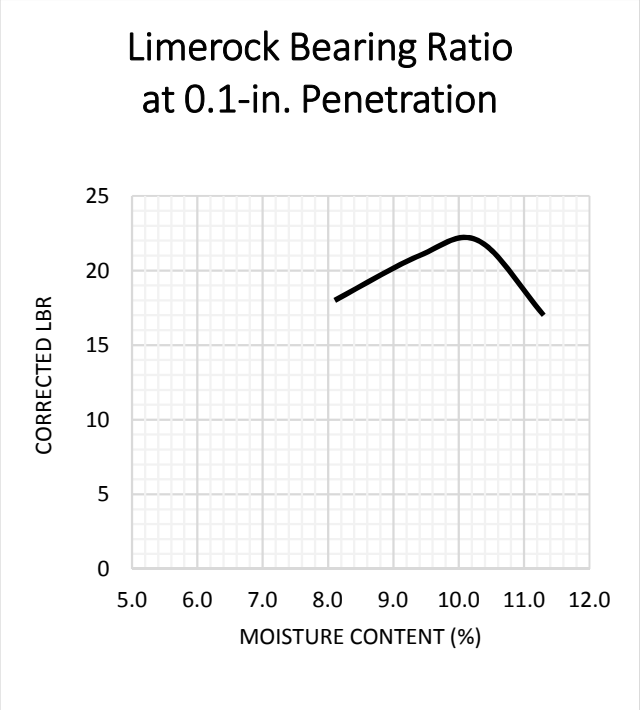
PERMEABILITY CONSTANT USED WAS → 0.23 (Includes 3/8"ID tubing)

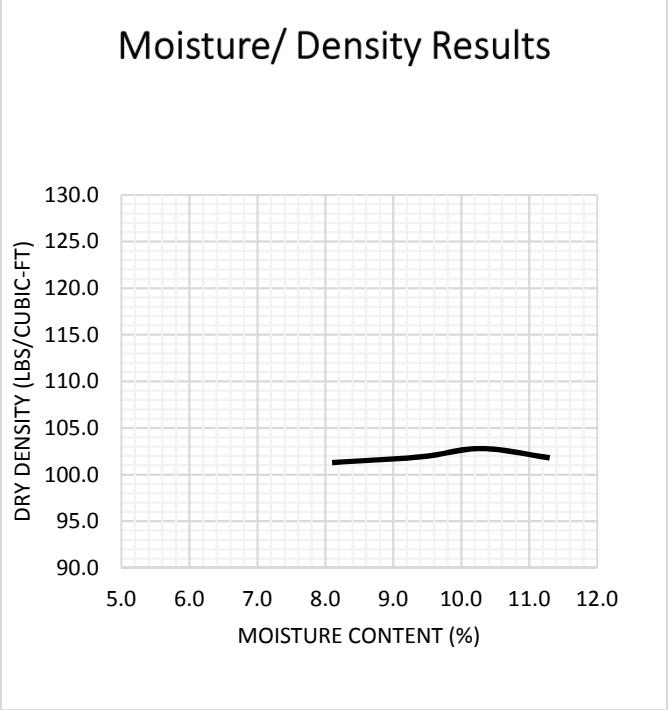
NOVA

Report of Limerock Bearing Ratio

FM 5-515

Project Number	8217141
Project Name	PBCMP Project 2G Parking Lots
Material Description	Light Brown Fine-Grained SAND (SP)
Sample Number	LBR-1
Date Tested	7/12/2017





Mold #	1	2	3	4	
Dry Density (pcf)	101.3	101.9	102.8	101.8	
Moisture Content (%)	8.1	9.4	10.3	11.3	
LBR Value	18	21	22	17	

Percent Passing 3/4" Sieve	100.0%
Percent Passing #4 Sieve	100.0%
Percent Passing #200 Sieve	1.2%
Maximium Density	102.8
Optimium Moisture	10.3%
Estimated LBR	22

Test Remarks:
Compacted using ASTM D1557/T180 (Modified Proctor Method)

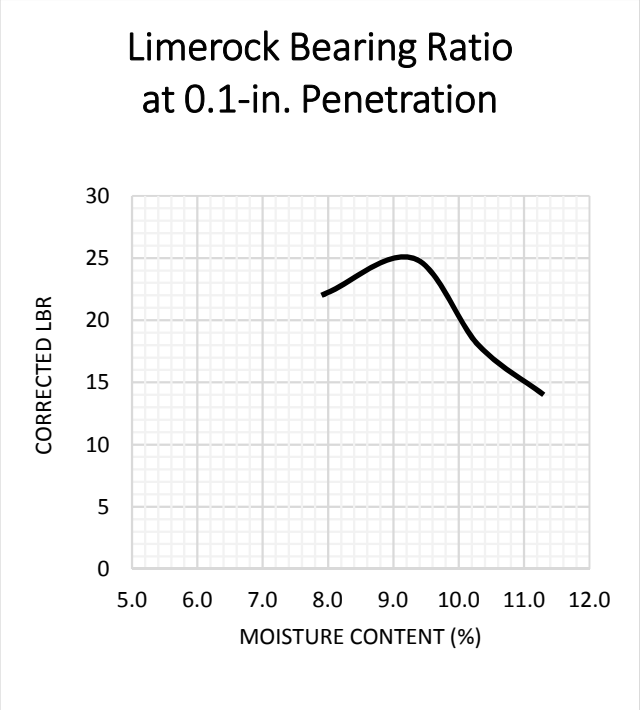
NOVA Technician: J. James

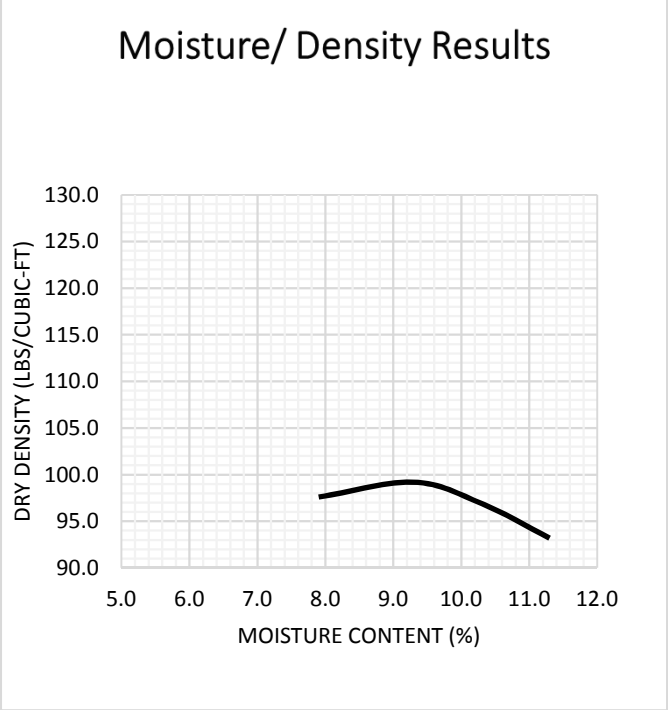
Reviewed By: W. Lawrence

Report of Limerock Bearing Ratio

FM 5-515

Project Number	8217141
Project Name	PBCMP Project 2G Parking Lots
Material Description	White Fine-Grained SAND (SP)
Sample Number	LBR-2
Date Tested	7/12/2017





Mold #	1	2	3	4	
Dry Density (pcf)	97.6	99.2	96.9	93.2	
Moisture Content (%)	7.9	9.3	10.3	11.3	
LBR Value	22	25	18	14	

Percent Passing 3/4" Sieve	100.0%
Percent Passing #4 Sieve	100.0%
Percent Passing #200 Sieve	0.9%
Maximium Density	99.2
Optimium Moisture	9.3%
Estimated LBR	25

Test Remarks:
Compacted using ASTM D1557/T180 (Modified Proctor Method)

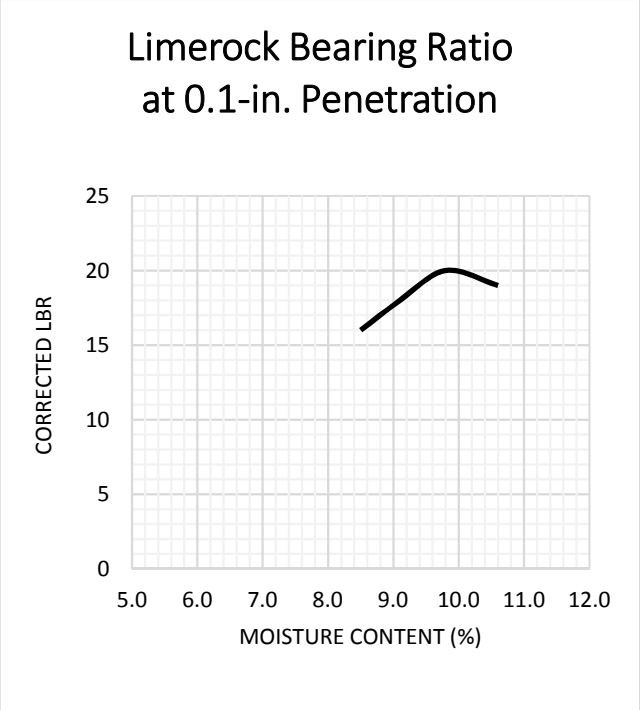
NOVA Technician: J. James

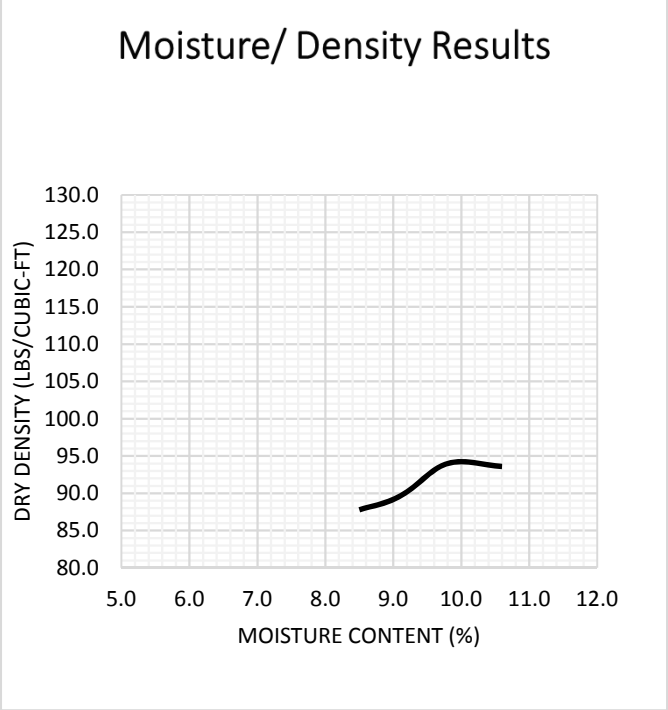
Reviewed By: W. Lawrence

Report of Limerock Bearing Ratio

FM 5-515

Project Number	8217141
Project Name	PBCMP Project 2G Parking Lots
Material Description	Grey Fine-Grained SAND (SP)
Sample Number	LBR-3
Date Tested	7/12/2017





Mold #	1	2	3	4	
Dry Density (pcf)	87.8	89.6	94.0	93.6	
Moisture Content (%)	8.5	9.1	9.8	10.6	
LBR Value	16	18	20	19	

Percent Passing 3/4" Sieve	100.0%
Percent Passing #4 Sieve	100.0%
Percent Passing #200 Sieve	1.5%
Maximium Density	94.0
Optimium Moisture	9.8%
Estimated LBR	20

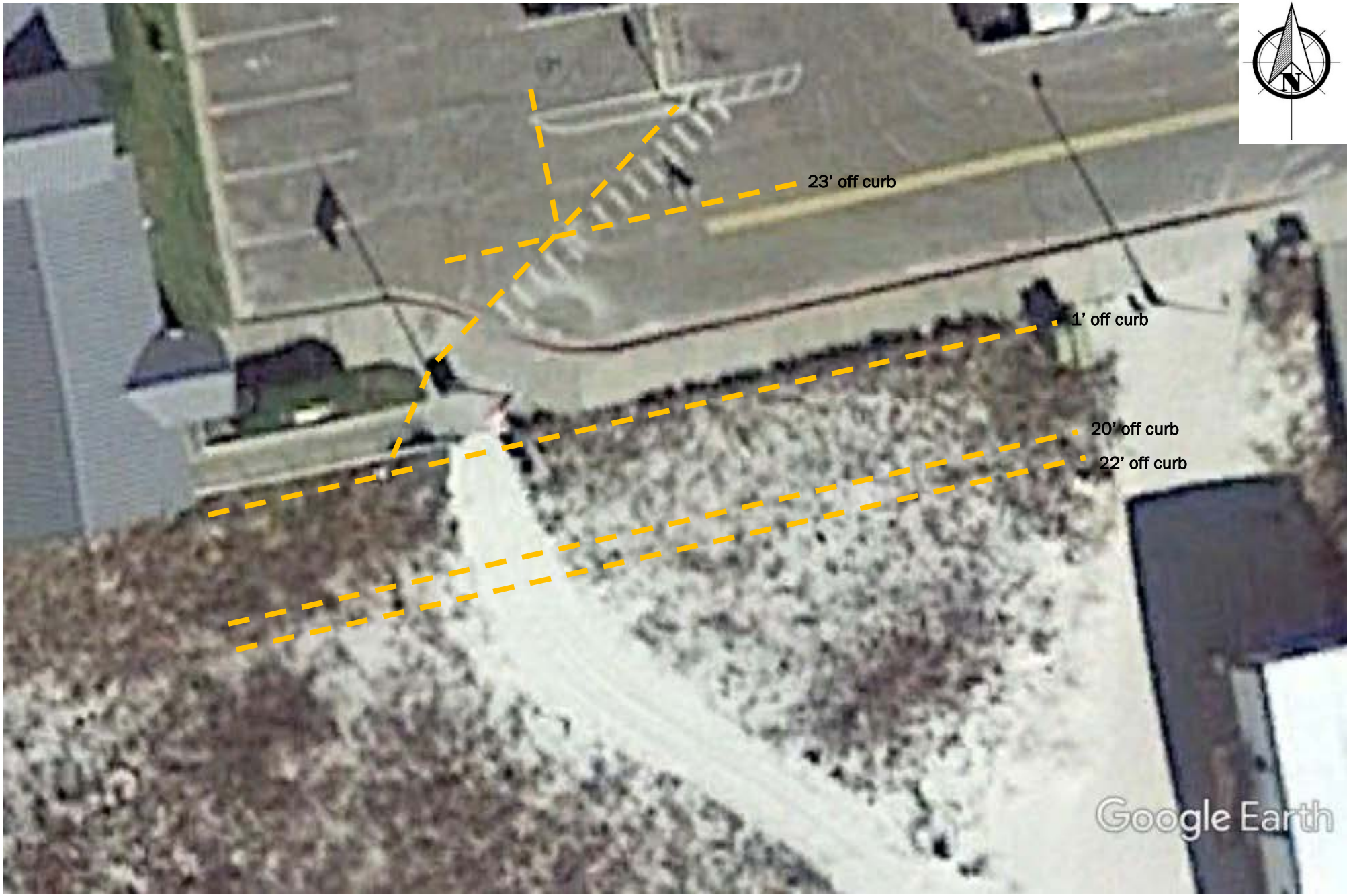
Test Remarks:
Compacted using ASTM D1557/T180 (Modified Proctor Method)

NOVA Technician: J. James

Reviewed By: W. Lawrence

APPENDIX D
Geophysical Exploration

Scale: Not To Scale **Date Drawn:** September 28, 2017 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA 140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683	**GPR APPROXIMATE TARGET LOCATION MAP** **PBCMP – Alternate 2G – Via De Luna Drive Parking Lot** Pensacola Beach, Escambia County, Florida *NOVA Project Number 8217141*



Scale: Not To Scale **Date Drawn:** September 28, 2017 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA 140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683	**GPR APPROXIMATE TARGET LOCATION MAP** **PBCMP – Alternate 2G – Casino Beach Parking Lot** Pensacola Beach, Escambia County, Florida *NOVA Project Number 8217141*

Scale: Not To Scale **Date Drawn:** September 28, 2017 **Drawn By:** J. James **Checked By:** W. Lawrence	NOVA 140-A Lurton Street Pensacola, Florida 32505 850.607.7782 ♦ 850.249.6683	**GPR APPROXIMATE TARGET LOCATION MAP** **PBCMP – Alternate 2G – Casino Beach Parking Lot** Pensacola Beach, Escambia County, Florida *NOVA Project Number 8217141*

APPENDIX E
Qualifications of Recommendations

QUALIFICATIONS OF RECOMMENDATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study, and our previous experience. If additional information becomes available which might impact our geotechnical opinions, it will be necessary for NOVA to review the information, re-assess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings may differ from those encountered at specific boring locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process has altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, NOVA should be retained by the owner to observe all earthwork and foundation construction to confirm that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations. NOVA is not responsible or liable for the conclusions and recommendations presented in this report if NOVA does not perform these observations and testing services.

This report is intended for the sole use of **Volkert, Inc.** only. The scope of work performed during this study was developed for purposes specifically intended by **Volkert, Inc.** only, and may not satisfy other users' requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. NOVA is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Florida. This warranty is in lieu of all other statements or warranties, either expressed or implied.

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GEOTECHNICAL BUSINESS COUNCIL
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