

CONTRACT DOCUMENTS
&
SPECIFICATIONS

for the

**PCB21-21 ITB
SR 30A (U.S. 98) UTILITY RELOCATION**



BID DOCUMENTS

NOT FOR CONSTRUCTION

Prepared for:
CITY OF PANAMA CITY BEACH, FLORIDA
MARK SHELDON, MAYOR
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GEOFF McCONNELL, COUNCIL MEMBER
MICHAEL JARMAN, COUNCIL MEMBER
DREW WHITMAN, CITY MANAGER

DEWBERRY PROJECT NO. 50134682

JULY 2021

PREPARED BY:



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PANAMA CITY, FL 32405
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SECTION 00010

ADVERTISEMENT FOR BIDS

NOTICE TO RECEIVE SEALED BIDS

PANAMA CITY BEACH – 21-21 ITB SR 30A (U.S. (98) UTILITY RELOCATION

The City of Panama City Beach hereby solicits sealed bids for the relocation of City-owned water lines, force main and reclaim water lines that are in conflict with proposed FDOT improvements along U.S. Highway 98 from Walton Co. to Heather Drive. Contractor shall provide all materials, equipment, and labor to complete the project in its entirety as described in the contract documents.

Bid Documents may be downloaded online at www.demandstar.com or the City's website at <https://www.pcbfl.gov/about-us/rfp-posts-list> or by contacting the Purchasing Manager at purchasing@pcbfl.gov starting on **July 29, 2021**.

Bids must be submitted upon the standard form contained in the bid documents.

The City reserves the right to reject any and all bids and to waive any informality in bids received. All bidders shall comply with all applicable state and local laws concerning licensing, registration, and regulations of businesses in the state of Florida. The bid must conform to Section 287.133(3) Florida Statutes, with respect to Public Entity Crimes.

Bids will be received until **2:00 P.M. Central Time, August 30, 2021 at City of Panama City Beach City Hall, 17007 Panama City Beach Parkway, Panama City Beach, Florida, 32413.**

Electronic Bids will only be accepted when submitted through the DemandStar's Bid portal. Emailed submissions will not be accepted. Alternately, one original and one copy along with an electronic copy (CD or USB flash drive) may be delivered to the City Hall Office at the address below. Any sealed Bid submitted on paper must identify and clearly mark the Bid # **PCB21-21 ITB SR 30A (U.S.(98) UTILITY RELOCATION** on the package. Receipt of a Bid by any Panama City Beach Office, receptionist or personnel other than the City Hall's front desk does not constitute "receipt" as required by this solicitation. The time received at City Hall shall be conclusive as to the timeliness of receipt.

A Bid Bond in the amount of 5% of the total amount of the Bid shall accompany the Bid. The City of Panama City Beach ("City") reserves the right to reject any and all Bids. All Bids shall be firm (including all labor and material prices) for a period of 60 days after opening.

The City shall award the Contract to the lowest responsive and responsible bidder; provided, however, the City reserves the right to award the Contract to a Bidder who is not the lowest responsive and responsible bidder if the City determines in its reasonable discretion that another Bid offers the City a better value based upon the reliability, quality of service, or product of such other Bidder.

All bidders must attend a **mandatory “Pre- Bid Meeting” at 1:00 PM Central Time** on the **August 10, 2021** at the City of Panama City Beach, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413.

Point of Contact for questions will be Tina Kunst, City of Panama City Beach Purchasing Department; 17007 Panama City Beach Parkway, Panama City Beach, Florida, 32413 Email tina.kunst@pcbfl.gov, or Telephone (850)233-5100, extension 2332. Official questions must be submitted in writing no later than 4:00 P.M. on **August 23th**.

Each bidder must comply with all applicable state and local laws concerning licensing, registration, and regulations of contractors doing business in Florida.

Notice to Publisher – Please forward the original “Proof of Publication” and the invoice to:

City of Panama City Beach
17007 Panama City Beach Parkway
Panama City Beach, Florida 32413

[END OF SECTION 00010]

SECTION 00020

INFORMATION FOR BIDDERS

BIDS will be received by the City of Panama City Beach (herein called the "OWNER"), at 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413 until 2:00 PM Central Time, **August 30, 2021** then opened and read publicly promptly thereafter.

Each BID must be submitted in a sealed envelope addressed to City of Panama City Beach, 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413. Each sealed envelope containing a BID must be plainly marked on the outside as "Sealed Bid - **PCB21-21 ITB SR 30A (U.S.(98) UTILITY RELOCATION**" and the envelope should bear on the outside the BIDDER'S name, address and license number if applicable, and the name of the project for which the BID is submitted. If forwarded by mail, the sealed envelope containing the BID must be enclosed in another envelope addressed to the OWNER - City of Panama City Beach, at 17007 Panama City Beach Parkway, Panama City Beach, Florida 32413, and referencing the name of the project for which the Bid is submitted.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be fully completed and executed when submitted. **Two original BID forms are required.**

A complete BID response shall consist of:

1. An executed Bid Proposal Form – Section 00030
2. The required Bid Bond – Section 00040
3. An executed copy of the Anti-Collusion Section
4. An executed copy of the Conflict of interest
5. An executed copy of the Statement Under Section 287.087, Florida Statutes, On Preference to Businesses with Drug-Free Workplace Programs – Section 0095
6. An executed copy of the Trench Safety Act Compliance Document – Section 00096
7. An executed Sales Tax Exemption – Section 00808
8. An executed copy of the Public Entity Crimes Statement – Section 00097
9. Copies of all Addenda signed by Bidder evidencing receipt

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn by the BIDDER prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered, no exceptions. No BIDDER may withdraw a BID within 90 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period the time may be extended by mutual agreement between the OWNER and the apparent successful BIDDER.

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This is a Lump Sum Contract. BIDDERS must satisfy themselves of the accuracy of any estimated quantities in the BID Schedules or Contract Documents by examination of the site and a review of the drawings and specifications including any ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done. **The CONTRACTOR shall visit the entire site before submitting a BID.**

The OWNER shall provide to BIDDERS prior to BIDDING, information which is pertinent to, and delineates and describes, the land upon which the WORK is to be performed, including its ownership and rights-of-way acquired or to be acquired.

If necessary, ADDENDA will be issued to the Contract Documents. The BIDDERS must submit all questions, if any, in writing at least seven (7) days prior to the BID date.

The CONTRACT DOCUMENTS contain the provisions required for construction of the WORK. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the successful BIDDER or relieve the successful BIDDER from fulfilling all of their obligations under the contract. No Bid shall be considered or accepted unless at the time the Bid is submitted to OWNER the same shall be accompanied by a cashiers check, a cash bond posted with the City Clerk, a certified check payable to Owner on some bank or trust company located in the State of Florida insured by the Federal Deposit Insurance Corporation, or Bid Bond, in an amount not less than 5% of **the bidder's maximum possible award (base bid plus all add alternates)** (collectively referred to herein as the "Bid Deposit"). The Bid Deposit shall be retained by Owner as liquidated damages if the successful Bidder fails to execute and deliver to Owner the unaltered Agreement, or fails to deliver the required Performance and Payment Bonds or Certificates of Insurance, all within ten (10) calendar days after receipt of the Notice of Award. Bid Bonds shall be executed by a corporate surety licensed under the laws of the State of Florida to execute such bonds, with conditions that the surety will, upon demand, forthwith make payment to Owner upon said bond.

As soon as the BID prices have been compared, the OWNER will return the BID DEPOSITS (if requested) of all except the three lowest responsive and responsible (or best value as hereafter provided) BIDDERS. When the required Agreement has been executed by the successful BIDDER and delivered to OWNER, together with the required Certificate(s) of Insurance, Performance Bond and Payment Bond, the BID DEPOSITS of the successful BIDDER and two remaining unsuccessful BIDDERS will be returned (if requested).

A PERFORMANCE BOND and a PAYMENT BOND each in the amount of 100 percent of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

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Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dated copy of their power of attorney.

The party to whom the contract is awarded will be required to obtain the required insurance, PAYMENT BOND and PERFORMANCE BOND, execute the AGREEMENT and deliver to OWNER said executed AGREEMENT together with the required Certificate of Insurance and the PERFORMANCE BOND and PAYMENT BOND, within ten (10) calendar days after the date the NOTICE OF AWARD is delivered to the BIDDER; the required forms for such AGREEMENT being set forth in Section 00050, the required form for the PERFORMANCE BOND being set forth in Section 00060, the required form for the PAYMENT BOND being set forth in Section 00070 and the required form for the Certificate of Insurance being set forth in Section 00099. In case of failure of the successful BIDDER to execute and deliver to OWNER, within said ten (10) day period the required AGREEMENT, together with the required Certificates of Insurance, PERFORMANCE BOND and PAYMENT BOND, the OWNER may consider the BIDDER in default, in which case the entire amount of the BID DEPOSIT accompanying the BID shall be paid to the OWNER. The BID DEPOSIT shall be retained by Owner as liquidated damages if the successful Bidder fails to execute and deliver to Owner the unaltered Agreement, or fails to deliver the required Performance and Payment Bonds or Certificate(s) of Insurance, all within ten (10) calendar days after receipt of the Notice of Award.

If the OWNER intends to accept the successful BIDDER'S BID and enter into the contract with them, the OWNER, within thirty (30) days (or such longer period of time the OWNER and successful BIDDER may mutually agree to in writing) of receipt of an acceptable PERFORMANCE BOND, PAYMENT BOND, Certificate(s) of Insurance, and AGREEMENT signed by the successful BIDDER to whom the AGREEMENT was awarded, shall sign the AGREEMENT and return to such party an executed duplicate of the AGREEMENT. BIDDER acknowledges and agrees that unless and until the OWNER executes the AGREEMENT and returns the executed copy to the BIDDER, no contract or agreement between the OWNER and BIDDER shall exist. Should the OWNER not execute the AGREEMENT within such period, the BIDDER shall provide OWNER an additional seven days written notice of BIDDER'S intent to withdraw its signed copy of the AGREEMENT. If OWNER fails to execute the AGREEMENT within such seven days, the AGREEMENT shall be deemed withdrawn and BIDDER shall be released from its BID as of the date of the written notice.

The OWNER or its agents may make such investigations as deemed necessary to determine the ability of each BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER and its agents all such information and data for this purpose as the OWNER or its agents may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the AGREEMENT and to complete the WORK contemplated therein.

A conditional or qualified BID may be rejected by OWNER.

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The OWNER shall award the Contract to the lowest responsive and responsible BIDDER as determined by OWNER; provided, however, OWNER reserves the right to award the Contract to a BIDDER who is not the lowest responsive and responsible BIDDER if OWNER determines in its reasonable discretion that another BID offers OWNER a better value based upon the reliability, quality of service, or product of such other BIDDER. In the event OWNER awards the Contract to a BIDDER other than the lowest responsive and responsible BIDDER, OWNER shall state the basis upon which the award is being made.

Each BIDDER may attach to its BID any information or documentation it believes is relevant to addressing the factors of reliability, quality of service and product, as such factors pertain to the WORK to be provided under the AGREEMENT to be awarded pursuant to this Information for Bidders. Any such information or documentation is to consist of no more than 12 pages, single sided, each page no larger than 8" x 11". OWNER reserves the right, either before or after BID opening, but prior to contract award, to request from any BIDDER such information or documentation addressing the factors of reliability, quality of service or product, as OWNER may determine is reasonably necessary to assist it in deciding which bid offers OWNER the better value. Further, each BIDDER by submitting its BID is deemed to have authorized OWNER to conduct such investigations as OWNER may determine are reasonably necessary to assist it in deciding which BID offers OWNER the better value. OWNER in making any decision as to which BID offers OWNER the better value may rely upon any such information or documentation provided by a BIDDER, and by submitting any such information or documentation, upon request from OWNER, the BIDDER will be deemed to have certified and warranted to OWNER the accuracy and correctness of any such information and documentation. Further, in making any decision as to which BID offers OWNER the better value, OWNER also may rely upon its own investigations or its own records and knowledge concerning the BIDDER, including the BIDDER's personnel, work product and prior work history. All applicable laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the WORK shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the AGREEMENT, PLANS, SPECIFICATIONS, and other CONTRACT DOCUMENTS, prior to submitting their BID. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

Further, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause set forth in the GENERAL CONDITIONS or any Supplemental Conditions.

The successful BIDDER of each contract shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

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Each BIDDER shall provide a separate line item in their BID identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

END OF SECTION 00020

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SECTION 00030
BID PROPOSAL FORM

This proposal of _____ (hereinafter called "BIDDER"), organized and existing under the laws of the State of _____, doing business as _____ (a corporation, a partnership or an individual), whose Florida contractor's license number is _____ is hereby submitted to the CITY OF PANAMA CITY BEACH (hereinafter called "OWNER").

In compliance with the requirements of the Advertisement for Bids, BIDDER hereby proposes to perform all WORK for the **PCB21-21 ITB SR 30A (U.S. 98) UTILITY RELOCATION** in strict accordance with the CONTRACT DOCUMENTS, within the time set forth therein, and at the prices stated below.

By submission of this BID, each BIDDER certifies, and in the case of a joint BID, each party thereto certifies as to its own organization, that this BID has been arrived at independently, without consultation, communication, or agreement as to any matter relating to this BID with any other BIDDER or with any competitor.

BIDDER hereby agrees to commence WORK under the CONTRACT DOCUMENTS within ten (10) calendar days after the NOTICE TO PROCEED to be issued by Owner in writing and achieve Substantial Completion of the WORK within **Seventy Five (75) consecutive calendar days thereafter**. Final Completion of the WORK shall be achieved by BIDDER within the calendar days specified in the General Conditions after the date of Substantial Completion.

BIDDER further agrees to pay as liquidated damages, the sum of \$500.00 for each consecutive calendar day that expires after the Contract Time until Substantial Completion of the WORK is achieved as provided in Section 15 of the General Conditions.

BIDDER acknowledges receipt of the following ADDENDUM:

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Addendum No.1 _____
Addendum No.2 _____
Addendum No.3 _____

Addendum No. _____

BASE BID

BIDDER agrees to perform all the WORK described in the CONTRACT DOCUMENTS for the following lump sum: _____.

The BIDDER proposes and agrees, if this Proposal is accepted, to contract with the OWNER in the required form of the Agreement, Section 00050, to furnish all necessary materials, equipment, machinery, tools, apparatus, means of transportation and labor necessary to complete the WORK in full and in accordance with the shown, noted, described and reasonably intended requirements of the CONTRACT DOCUMENTS according to the following schedule:

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SR30A (U.S. 98) UTILITY RELOCATION

BID SCHEDULE

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | COST |
|---|--|------|----------|------------|----------|
| BASE BID | | | | | |
| GENERAL | | | | | |
| 1 | Mobilization/Demobilization (Not to exceed 3% of the total base bid) | L.S. | 1 | | \$ |
| 2 | Bonds and Insurance (Not to exceed 2% of the total base bid) | L.S. | 1 | | \$ |
| 3 | Hold Harmless | L.S. | 1 | \$10.00 | \$ 10.00 |
| POTABLE WATER UTILITIES IMPROVEMENTS | | | | | |
| 4 | Furnish and Install 16-inch Water Main and Appurtenances, including restrained insertion valves as detailed on the Drawings. | L.S. | 1 | | \$ |
| 5 | Abandon In place Existing 16-inch Water Main | L.S. | 1 | | \$ |
| FORCE MAIN IMPROVEMENTS | | | | | |
| 6 | Furnish and Install 2-inch Force Main and Appurtenances, | L.S. | 1 | | \$ |
| 7 | Furnish and Install 4-inch Force Main and appurtenances | L.S. | 1 | | \$ |
| 8 | Furnish and Install 12-inch Force Main and Appurtenances, including restrained insertion valves as detailed on the Drawings. | L.S. | 1 | | \$ |
| 9 | Abandon in Place Existing 12-inch Force Main | L.S. | 1 | | \$ |
| | | | | | |
| RECLAIM WATER MAIN IMPROVEMENTS | | | | | |
| 10 | Furnish and Install 8-inch Reclaim Main and Appurtenances, | L.S. | 1 | | \$ |
| 11 | Furnish and Install 20-inch Reclaim Main and Appurtenances as detailed on the Drawings. | L.S. | 1 | | \$ |
| 12 | Abandon in Place Existing 20-inch Reclaim Main | L.S. | 1 | | \$ |

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| OTHER WORK | | | | | |
|------------------------------|--|------|---|--|----|
| 13 | Maintenance of Traffic | L.S. | 1 | | \$ |
| 14 | Remove and Replace Existing Pavement | L.S. | 1 | | \$ |
| 15 | Remove and Replace Existing Concrete Sidewalk | L.S. | 1 | | \$ |
| 16 | Construct All Other Improvements Not Included in Other Bid Items | L.S. | 1 | | \$ |
| SUBTOTAL LUMP SUM BID | | | | | \$ |

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY | UNIT PRICE | COST |
|---|--------------------|-------------|-----------------|-------------------|-------------|
| UNIT PRICE & ALLOWANCE WORK ITEMS | | | | | |
| 17 | Testing Allowance | Allowance | 1 | \$ 5,000.00 | \$ 5,000.00 |
| SUBTOTAL UNIT PRICE BID | | | | | \$ |
| TOTAL BASE BID (SUM OF LUMP SUM AND UNIT PRICES) | | | | | \$ |

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NOTE:

1. BIDS shall include sales tax and all other applicable taxes and fees. The OWNER may elect to utilize the Sales Tax Exemption Addendum (Section 00808) for material at its sole discretion.
2. BIDS shall be on the basis of a lump sum price, as noted above, and shall be the total compensation to be paid by OWNER for the complete WORK.
3. Bid unit prices and quantities shall be applicable for any revisions to the WORK (either additions or omissions) including drilled shaft revisions. In addition, these unit prices and quantities shall be reflected in the Schedule of Values as specified in the General Conditions. All unit prices are understood to include all associated charges for layout, insurance, taxes, field office and supervision, overhead and profit, bonds and miscellaneous items.
4. The OWNER reserves the right to reject any and all bids received.
5. **Failure to insert a bid amount for any item in the Bid Schedule will be considered grounds for the OWNER to determine the BID is non-responsive.**
6. By submitting this BID, the BIDDER and the BID BOND surety, are deemed to have stipulated and agreed that any and all claims, demands, actions or suits whatsoever, arising under this BID and/or BID BONDS, shall be subjected to the sole and exclusive jurisdiction and venue of the Circuit Court of Bay County, Florida. The BIDDER and BID BOND surety do agree, by submittal of this BID, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract to be awarded is to be accomplished within Bay County, Florida.

Bidder's Certification

BIDDER certifies that it has thoroughly familiarized itself with and inspected the site and has read and is thoroughly familiar with the CONTRACT DOCUMENTS. Additional site investigation, if deemed necessary by the BIDDER, shall be performed prior to BID submittal at the BIDDER's sole expense. Bidder certifies that the BID submitted is complete and is sufficient for the Bidder to provide a fully operational and working system in accordance with the CONTRACT DOCUMENTS. Furthermore, BIDDER certifies its understanding that neither the OWNER, PROJECT REPRESENTATIVE, nor ENGINEER shall provide any labor, equipment or materials of any kind, which may be required for the performance of the WORK, unless otherwise specifically directed by OWNER. Likewise, BIDDER certifies that it shall provide all equipment, materials, labor and services necessary to complete the WORK in accordance with the CONTRACT

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DOCUMENTS whether or not such equipment, material, labor, or service is expressly identified. Such occurrences are deemed subsidiary obligations of the contract for which complete compensation is made under the Lump Sum. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to its BID.

As required, the following documents are submitted with this Bid Proposal:

1. Bid Bond – Section 00040
2. An executed copy of the Anti-Collusion Section
3. An executed copy of the Conflict of interest
4. An executed copy of the Statement Under Section 287.087, Florida Statutes, On Preference to Businesses with Drug-Free Workplace Programs – Section 0095
5. An executed copy of the Trench Safety Act Compliance Document – Section 00096
6. An executed Sales Tax Exemption – Section 00808
7. An executed copy of the Public Entity Crimes Statement – Section 00097
8. Copies of all Addenda signed by Bidder evidencing receipt

CONTRACTOR:

Address

Phone Number

Date

END OF SECTION 00030

SECTION 00040
BID BOND

KNOW ALL PERSONS BY THESE PRESENTS, that we, the undersigned,
_____, as Principal, and _____,
as Surety, are hereby held and firmly bound unto the City of Panama City Beach, as
OWNER, in the penal sum of **(Five Percent of Amount Bid)**
for the payment of which, will and truly be made, we hereby jointly and severally bind
ourselves, successors and assigns. Signed this ____ day of _____, 20__.

The Condition of the above obligation is such that whereas the principal has submitted
to the OWNER a certain BID, attached hereto and hereby made a part hereof to enter
into a contract in writing, for the construction of the **PCB21-21 ITB SR 30A (U.S. 98)**
UTILITY RELOCATION.

NOW THEREFORE,

- (a) If said BID shall be rejected, or
- (b) If said BID shall be accepted and the Principal shall execute and deliver the Agreement in the form of contract as set forth in Section 00050 (properly completed in accordance with said BID) and shall furnish a BOND for faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform its obligations created by OWNER's acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

- (c) NOW, THEREFORE, if the OWNER shall accept the BID of the Principal and the Principal shall execute and deliver to OWNER the required Agreement and within ten days after the date of a written Notice of Award in accordance with the terms of such BID, and within said ten days deliver to OWNER the required Certificate(s) of Insurance, together with the required Performance and Payment Bonds in an amount of 100% the total Contract Amount as specified in the Bidding Documents or Contract Documents with good and sufficient surety for the faithful performance of the Agreement and for the prompt payment of labor, materials and supplies furnished in the prosecution thereof or, in the event of the failure of the Principal to execute and deliver to OWNER such Agreement or to give such bond or bonds, and deliver to OWNER the required certificates of insurance, if the Principal shall pay to OWNER the fixed penal sum of (_____) noted above as liquidated damages, and not as a penalty, as provided in the Instructions for Bidders, then this obligation shall be null and void, otherwise to remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may have to accept said BID; and Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Surety

By:

IMPORTANT - Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.

END OF SECTION 00040

SECTION 00050
AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 2021 by and between THE CITY OF PANAMA CITY BEACH, FLORIDA, (hereinafter called "OWNER") and _____, doing business as a _____ (an individual), or (a partnership), or (a corporation), having a business address of _____ (hereinafter called "CONTRACTOR") , for the performance of the Work (as that term is defined below) in connection with the construction of **PCB21-21 ITB SR 30A (U.S. 98) UTILITY RELOCATION** ("Project"), to be located at Panama City Beach, Florida in accordance with the Drawings and Specifications prepared by Dewberry, the Engineer of Record (hereinafter called "Engineer") and all other Contract Documents hereafter specified.

OWNER and CONTRACTOR, for the consideration herein set forth, agree as follows:

1. The CONTRACTOR shall furnish, at its sole expense, all supervision, labor, equipment, tools, material, and supplies to properly and efficiently perform all of the work required under the Contract Documents and shall be solely responsible for the payment of all taxes, permits and license fees, labor fringe benefits, insurance and bond premiums, and all other expenses and costs required to complete such work in accordance with this Agreement (collectively the "Work"). CONTRACTOR'S employees and personnel shall be qualified and experienced to perform the portions of the Work to which they have been assigned. In performing the Work hereunder, CONTRACTOR shall be an independent contractor, maintaining control over and having sole responsibility for CONTRACTOR'S employees and other

5. The term "Contract Documents" means and includes the following documents, all of which are incorporated into this Agreement by this reference:

| | |
|---------------|--|
| Section 00010 | ADVERTISEMENT FOR BIDS |
| Section 00020 | INFORMATION FOR BIDDERS |
| Section 00030 | BID PROPOSAL FORM |
| Section 00040 | BID BOND |
| Section 00050 | AGREEMENT |
| Section 00060 | PERFORMANCE BOND |
| Section 00070 | PAYMENT BOND |
| Section 00080 | NOTICE OF AWARD |
| Section 00090 | NOTICE TO PROCEED |
| Section 00095 | STATEMENT UNDER SECTION 287.087, FLORIDA STATUTES, ON PREFERENCE TO BUSINESSES WITH DRUG-FREE WORKPLACE PROGRAMS |
| Section 00096 | TRENCH SAFETY ACT CERTIFICATE OF COMPLIANCE |
| Section 00097 | PUBLIC ENTITY CRIMES STATEMENT |
| Section 00099 | CERTIFICATE OF INSURANCE |
| Section 00100 | GENERAL CONDITIONS |
| Section 00800 | SUPPLEMENTAL CONDITIONS |
| Section 00808 | SALES TAX EXEMPTION |

dated JULY 2021

SPECIFICATIONS prepared or issued by Dewberry dated
JULY 2021.

ADDENDA

No. 1, dated _____, 2021

No. 2, dated _____, 2021

No. 3, dated _____, 2021

No. 4, dated _____, 2021

The Contract Documents also includes any written amendments to any of the above signed by the party to be bound by such amendment. The Contract Documents are sometimes referred to herein as the "Agreement".

6. The OWNER will pay the Contract Price to the CONTRACTOR in the manner and at such times as set forth in Contract Documents.
7. This Agreement shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.
8. This Agreement shall be governed by the laws of the State of Florida.
9. All notices required or made pursuant to this Agreement shall be in writing and, unless otherwise required by the express terms of this Agreement, may be given either (i) by mailing same by United States mail with proper postage affixed thereto, certified, return receipt requested, or (ii) by sending same by Federal Express, Express Mail, Airborne, Emery, Purolator or other expedited mail or package delivery, or (iii) by hand delivery to the appropriate address as herein provided. Notices to OWNER required hereunder shall be

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DEWBERRY PROJECT NO. 50134682

directed to the following address:

If to Owner:

City of Panama City Beach

17007 Panama City Beach parkway

Panama City Beach, FL 32413
ATTENTION: _____ Drew Whitman, City Manager
Fax No.: _____ (850) 233-5108

If to Contractor:

ATTENTION: _____
Fax No.: _____

Either party may change its above noted address by giving written notice to the other party in accordance with the requirements of this Section.

10. CONTRACTOR recognizes that OWNER is exempt from sales tax and may wish to generate sales tax savings for the Project. Accordingly, to the extent directed by and without additional charge to OWNER, CONTRACTOR shall comply with and fully implement the sales tax savings program as more fully described in the Sales Tax Exemption Addendum. If required by OWNER, the Sales Tax Exemption Addendum shall be made a part of the Contract Documents, the form of which is set forth in Section 00808.

11. The failure of OWNER to enforce at any time or for any period of time any one or more of the provisions of the Agreement shall not be construed to be and shall not be a continuing waiver of any such provision or provisions or of its right thereafter to enforce each and every such provision.

12. Each of the parties hereto agrees and represents that the Agreement comprises the full and entire agreement between the parties affecting the Work contemplated, and no other agreement or understanding of any nature concerning the same has been entered into or will be recognized, and that all negotiations, acts, work performed, or payments made prior to the execution hereof shall be deemed merged in, integrated and superseded by this Agreement.
13. Should any provision of the Agreement be determined by a court with jurisdiction to be unenforceable, such a determination shall not affect the validity or enforceability of any other section or part thereof.
14. Unless the context of this Agreement otherwise clearly requires, references to the plural include the singular, references to the singular include the plural. The term "including" is not limiting, and the terms "hereof", "herein", "hereunder", and similar terms in this Agreement refer to this Agreement as a whole and not to any particular provision of this Agreement, unless stated otherwise. Additionally, the parties hereto acknowledge that they have carefully reviewed this Agreement and have been advised by counsel of their choosing with respect thereto, and that they understand its contents and agree that this Agreement shall not be construed more strongly against any party hereto, regardless of who is responsible for its preparation.
15. For this Project, OWNER has designated a Project Representative to assist OWNER with respect to the administration of this Agreement. The Project Representative to be utilized by OWNER for this Project, shall be Jose A. Pereira P.E., Sr. Associate, Dewberry.

16. CONTRACTOR acknowledges and agrees that no interruption, interference, inefficiency, suspension or delay in the commencement or progress of the Work from any cause whatever, including those for which the OWNER, PROJECT REPRESENTATIVE, or ENGINEER may be responsible, in whole or in part, shall relieve CONTRACTOR of its duty to perform or give rise to any right to damages or additional compensation from OWNER. CONTRACTOR expressly acknowledges and agrees that it shall receive no damages for delay. CONTRACTOR's sole remedy, if any, against OWNER will be the right to seek an extension to the Contract Time; provided, however, the granting of any such time extension shall not be a condition precedent to the aforementioned "No Damage For Delay" provision. This section shall expressly apply to claims for early completion, as well as to claims based on late completion. Notwithstanding the foregoing, if the Work is delayed due to the fault or neglect of OWNER or anyone for whom OWNER is liable, and such delays have a cumulative total of more than 90 calendar days, CONTRACTOR may make a claim for its actual and direct delay damages accruing after said 90 calendar days as provided in Section 00805 Supplemental Conditions, Contract Claims and Changes. Except as expressly set forth in this section, in no event shall OWNER be liable to CONTRACTOR whether in contract, warranty, tort (including negligence or strict liability) or otherwise for any acceleration, soft costs, lost profits, special, indirect, incidental, or consequential damages of any kind or nature whatsoever.
17. **INSURANCE - BASIC COVERAGES REQUIRED**
- The CONTRACTOR shall procure and maintain the following described insurance on policies and with insurers acceptable to OWNER. Current Insurance Service Office (ISO) policies, forms, and endorsements or equivalents, or broader, shall be used where applicable.
- These insurance requirements shall not limit the liability of the CONTRACTOR.

The insurance coverages and limits required of CONTRACTOR under this Agreement are designed to meet the minimum requirements of OWNER and the OWNER does not represent these types or amounts of insurance to be sufficient or adequate to protect the CONTRACTOR'S interests or liabilities. CONTRACTOR alone shall be responsible to the sufficiency of its own insurance program.

The CONTRACTOR and the CONTRACTOR'S subcontractors and sub-subcontractors shall be solely responsible for all of their property, including but not limited to any materials, temporary facilities, equipment and vehicles, and for obtaining adequate and appropriate insurance covering any damage or loss to such property. The CONTRACTOR and the CONTRACTOR'S sub-contractors and sub-subcontractors expressly waive any claim against OWNER arising out of or relating to any damage or loss of such property, even if such damage or loss is due to the fault or neglect of the OWNER or anyone for whom the OWNER is responsible. The CONTRACTOR is obligated to include, or cause to be included, provisions similar to this paragraph in all of the CONTRACTOR'S subcontracts and its subcontractors' contracts with their sub-subcontractors.

The CONTRACTOR'S deductibles/self-insured retention's shall be disclosed to OWNER and are subject to OWNER'S approval. They may be reduced or eliminated at the option of OWNER. The CONTRACTOR is responsible for the amount of any deductible or self-insured retention. Any deductible or retention applicable to any claim or loss shall be the responsibility of CONTRACTOR and shall not be greater than \$25,000, unless otherwise agreed to, in writing, by OWNER.

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Insurance required of the CONTRACTOR or any other insurance of the CONTRACTOR shall be considered primary, and insurance of OWNER shall be considered excess, as may be applicable to claims or losses which arise out of the Hold Harmless, Payment on Behalf of OWNER, Insurance, Certificates of Insurance and any Additional Insurance provisions of this agreement, contract or lease.

WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY INSURANCE
COVERAGE

The CONTRACTOR shall purchase and maintain workers' compensation and employers' liability insurance for all employees engaged in the Work, in accordance with the laws of the State of Florida, and, if applicable to the Work, shall purchase and maintain Federal Longshoremen's and Harbor Workers' Compensation Act Coverage. Limits of coverage shall not be less than:

| | |
|-------------|-----------------------------|
| \$1,000,000 | Limit Each Accident |
| \$1,000,000 | Limit Disease Aggregate |
| \$1,000,000 | Limit Disease Each Employee |

The CONTRACTOR shall also purchase any other coverage required by law for the benefit of employees.

The CONTRACTOR shall provide to OWNER an Affidavit stating that it meets all the requirements of Florida Statute 440.02 (15) (d).

COMMERCIAL GENERAL LIABILITY COVERAGE

CONTRACTOR shall purchase and maintain Commercial General Liability

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Insurance on a full occurrence form. Coverage shall include, but not be limited to, Premises and Operations, Personal Injury, Contractual for this Agreement, Independent Contractors, Broad Form Property Damage, Products and Completed Operation Liability Coverages and shall not exclude coverage for the "X" (Explosion), "C" (Collapse) and "U" (Underground) Property Damage Liability exposures. Limits of coverage shall not be less than:

| | |
|---|---|
| Bodily Injury, Property Damage & Personal Injury Liability | \$1,000,000 Combined Single Limit Each Occurrence, and |
| | \$2,000,000 Aggregate Limit |

The General Aggregate Limit shall be specifically applicable to this Project. The Completed Operations Liability Coverages must be maintained for a period of not less than three (3) years following OWNER'S final acceptance of the project.

The CONTRACTOR shall add OWNER as an additional insured through the use of Insurance Service Office Endorsements No. CG 20.10.10.01 and No. CG 20.37.10.01 wording or equivalent, or broader, an executed copy of which shall be attached to or incorporated by reference on the Certificate of Insurance to be provided by CONTRACTOR pursuant to the requirements of the Contract Documents.

BUSINESS AUTOMOBILE LIABILITY COVERAGE

The CONTRACTOR shall purchase and maintain Business Automobile Liability Insurance as to ownership, maintenance, use, loading and unloading of all of CONTRACTOR'S owned, non-owned, leased, rented or hired vehicles with limits

not less than:

| | |
|------------------------------------|--|
| Bodily Injury & Property Damage | \$1,000,000 Combined Single Limit Each Accident |
|------------------------------------|--|

EXCESS OR UMBRELLA LIABILITY COVERAGE

CONTRACTOR shall purchase and maintain Excess Umbrella Liability Insurance or Excess Liability Insurance on a full occurrence form providing the same continuous coverages as required for the underlying Commercial General, Business Automobile and Employers' Liability Coverages with no gaps in continuity of coverages or limits with OWNER added by endorsement to the policy as an additional insured in the same manner as is required under the primary policies, and shall not be less than \$4,000,000,each occurrence and aggregate as required by OWNER.

ADDITIONAL INSURANCE

None is required at this time

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DEWBERRY PROJECT NO. 50134682

IN WITNESS WHEREOF, the parties hereto have executed or caused to be executed by their duly authorized officials, this Agreement in two (2) copies each of which shall be deemed an original on the date first written above.

(SEAL)

OWNER:

CITY OF PANAMA CITY BEACH,
FLORIDA

ATTEST:

BY: _____

City Clerk

NAME: _____
(Please type)

TITLE: _____

City Attorney (as to form only)

CONTRACTOR:

ATTEST:

BY: _____

NAME: _____
(Please Type)

NAME _____
(Please Type)

ADDRESS: _____

END OF SECTION 00050

SECTION 00060

PERFORMANCE BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

City of Panama City Beach

(Name of Owner)

17007 Panama City Beach parkway, Panama City Beach, Florida 32413

(Address of Owner)

hereinafter called OWNER in the total aggregate penal sum of _____
_____ Dollars (\$ _____) in
lawful money of the United States, for payment of which, we bind ourselves, our heirs,
personal representatives, executors, administrators, successors, and assigns, jointly
and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the Principal performs its
duties, all the undertakings, covenants, terms, and conditions of that certain Contract
between the Principal and the OWNER, dated the _____ day of _____,
20____, a copy of which is hereto attached and made a part hereof for the construction
of:

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“PROJECT NAME(s)”

during the original term thereof, and any extensions thereof which may be granted by the OWNER, with or without notice to the SURETY and during the guaranty period and if the PRINCIPAL shall satisfy all claims and demands incurred under such Contract, and shall fully indemnify and save harmless the OWNER from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the OWNER all outlay and expense which the OWNER may incur in making good any default, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said SURETY, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or the SPECIFICATIONS accompanying same shall in any way affect its obligation on this BOND, and does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, that it is expressly agreed that the BOND shall be amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the CONTRACT as so amended. The term "Amendment", wherever used in this BOND, and whether referring to this BOND, or the CONTRACT DOCUMENTS, shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the PRINCIPAL shall abridge the rights of OWNER hereunder. The OWNER is the only beneficiary hereunder.

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DEWBERRY PROJECT NO. 50134682

IN WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

Principal

(Principal) Secretary

(SEAL)

BY _____

(Address)

Witness as to Principal

(Address)

(Surety)

ATTEST:

Witness to Surety

BY _____
Attorney-In-Fact

(Address)

(Address)

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NOTE: Date of BOND must not be prior to date of Contract.
Contractor's Surety shall use this form along with their personal documentation.

If CONTRACTOR is partnership, all partners should execute BOND.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

END OF SECTION 00060

PERFORMANCE BOND

00060-4

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DEWBERRY PROJECT NO. 50134682

SECTION 00070

PAYMENT BOND

KNOW ALL PERSONS BY THESE PRESENTS: that

(Name of Contractor)

(Address of Contractor)

a _____, hereinafter called Principal and
(Corporation, Partnership, or Individual)

(Name of Surety)

(Address of Surety)

hereinafter called Surety, are held and firmly bound unto:

City of Panama City Beach
(Name of Owner)

17007 Panama City Beach Parkway, Panama City Beach, Florida 32413
(Address of Owner)

hereinafter called OWNER, and unto all persons, firms and corporations who or which may furnish labor, or who furnish materials to perform as described under the Contract and to their successors and assigns in the total aggregate penal sum of _____

_____ Dollars
(\$_____) in lawful money of the United States, for the payment of which, we bind ourselves, our heirs, personal representatives, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the PRINCIPAL properly makes payment to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying

PAYMENT BOND

00070-1

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DEWBERRY PROJECT NO. 50134682

Principal with labor, materials or supplies, used directly or indirectly by the Principal in the prosecution of the WORK provided for under that certain contract between the Principal and the OWNER, dated the ____ day of _____, 20____, a copy of which is hereto attached and made a part hereof for the construction of:

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“PROJECT NAME(s)”

and any authorized extensions or modification thereof, including all amounts due for materials, lubricants, fuel, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such WORK, and for all labor cost incurred in such WORK including that by a SUBCONTRACTOR or SUPPLIER of any tier, and to any construction lien holder whether it acquires its lien by operation of State or Federal law; then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED, that said Surety for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to WORK to be performed thereunder or SPECIFICATIONS accompanying the same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the WORK or to the SPECIFICATIONS.

PROVIDED, FURTHER, every suit instituted upon the BOND shall be brought in a court of competent jurisdiction for the county or circuit in which the Contract was to be performed. Owner shall not be joined as a party in any such suit. The notice and time limits of Section 255.05, Florida Statutes, are incorporated herein.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the Contract Price more than twenty percent so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, or the CONTRACT DOCUMENTS shall include any change, alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the rights of the OWNER hereunder.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

PCB21-21 ITB SR 30A (U.S.(98) UTILITY RELOCATION
DEWBERRY PROJECT NO. 50134682

WITNESS WHEREOF, this instrument is executed in three (3) counterparts, each one of which shall be deemed an original, this the _____ day of _____, 20____.

Principal

(Principal) Secretary

(SEAL)

BY _____

(Address)

Witness as to Principal

(Address)

(Surety)

ATTEST:

Witness as to Surety

BY _____
Attorney-In-Fact

(Address)

(Address)

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NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is partnership, all partners should execute BOND. Contractor's Surety shall use this form along with their personal documentation.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State where the Project is located.

END OF SECTION 00070

PAYMENT BOND

00070-4

SECTION 00080

NOTICE OF AWARD

TO: _____

PROJECT DESCRIPTION:

PCB21-21 ITB SR 30A (U.S. 98) UTILITY RELOCATION

The City of Panama City Beach ("City") has considered the BID submitted by you for the above described Project in response to its Advertisement for Bids dated _____, and associated Information for Bidders.

You are hereby notified that your Bid in the amount of \$ _____ has been accepted by the City. Provided, however, nothing in this Notice or your delivery to the City of the Agreement executed by you (with the required Bonds and Certificates of Insurance) shall in any manner or way be deemed to create any contract between you and the City. No such contract shall be created unless and until the City signs the Agreement.

You are required by the Information for Bidders to execute the Agreement and furnish the required CONTRACTOR'S Performance Bond, Payment Bond, and Certificates of Insurance within ten (10) calendar days from the date of this Notice.

If you fail to execute said Agreement, together with the required Certificates of Insurance and Bonds, within ten (10) calendar days from the date of this Notice, City will be entitled to consider all your rights arising out of City's acceptance of your BID as abandoned and as a forfeiture of your Bid Deposit. The City will be entitled to all other rights and remedies as may be available to it at law.

You must return an acknowledged copy of this Notice of Award to the City, with the executed Agreement and required Certificates of Insurance and Bonds, within the above noted ten (10) calendar day period.

Dated this _____ day of _____, 2021.

[REMIANDER OF THIS PAGE INTENTIONALLY LEFT BLANK.]

CITY OF PANAMA CITY BEACH
Owner

By _____

Name: Drew Whitman

Title City Manager

ACCEPTANCE OF NOTICE

Receipt of the above Notice of Award is hereby acknowledged

By _____

This the _____ day of _____, 20____.

Name _____

Title _____

END OF SECTION 00080

SECTION 00090

NOTICE TO PROCEED

TO: _____

PROJECT DESCRIPTION:

PCB 21-21 ITB SR 30A (U.S. 98) UTILITY RELOCATION

You are hereby notified to commence WORK in accordance with the Agreement dated _____, 2021 on or before _____, **2021**, and you are to substantially complete the WORK within **Seventy Five (75) consecutive calendar days from the commencement date. Thereafter, you are to achieve Final Completion within _____ days of achieving Substantial Completion.**

You must return and acknowledge a copy of this Notice to Proceed to the City within five (5) calendar days of your receipt of this Notice.

CITY OF PANAMA CITY BEACH

By: _____

Name: Drew Whitman

Title City Manager

ACCEPTANCE OF NOTICE

Receipt of the above Notice to Proceed is hereby acknowledged

By _____
(Company Name)

This the _____ day of _____, 20____

(Signature)

(Type or Print Name)

(Title)

END OF SECTION 00090

NOTICE TO PROCEED

00090-1

SECTION 00095

STATEMENT UNDER SECTION 287.087
FLORIDA STATUTES, ON PREFERENCE TO BUSINESSES WITH
DRUG-FREE WORKPLACE PROGRAMS

IDENTICAL TIE BIDS: Preference shall be given to businesses with drug-free workplace programs. Whenever two or more BIDS which are equal with respect to price, quality and service are received by the OWNER for this PROJECT, a bid received from a BIDDER that certifies that it has implemented a drug-free workplace program shall be given preference in the award process. In order to have a drug-free workplace program, a business shall:

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, and 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 (1).
4. In the statement specified in paragraph (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 plea 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 not later than five (5) days after such conviction.
5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program is such is available in the employee's community, by an employee who is so convicted.
6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this Section.

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

BIDDER SIGNATURE

END OF SECTION 00095

SECTION 00096

CERTIFICATE OF COMPLIANCE WITH THE
 FLORIDA TRENCH SAFETY ACT

Bidder acknowledges sole responsibility for complying with the Florida Trench Safety Act (Act). Section 553.60, Florida Statutes. Bidder further acknowledges that included in the various items of its BID and in its Total Lump Sum Bid are costs for complying with the Florida Trench Safety Act. The Bidder further identifies the costs to be summarized below:

| Trench Safety Method (Description) | Units of Measure (LF, SY) | Quantity | Unit Cost | Extended Cost | Unit Extended |
|------------------------------------|---------------------------|----------|-----------|---------------|---------------|
| A. _____ | _____ | _____ | _____ | _____ | _____ |
| B. _____ | _____ | _____ | _____ | _____ | _____ |
| C. _____ | _____ | _____ | _____ | _____ | _____ |
| D. _____ | _____ | _____ | _____ | _____ | _____ |
| | | | | Total | \$ _____ |

Failure to complete the above may result in your BID being declared non-responsive. The costs indicated above are provided to comply with the Act and shall not constitute grounds for any additional compensation to that listed for the separate line items of the Bid Form.

Bidder _____

By: _____

Its _____

Date _____

 Authorized Signature

END OF SECTION 00096

SECTION 00097

SWORN STATEMENT UNDER SECTION 287.133(3)(a),
FLORIDA STATUTES, ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED AND SWORN TO IN THE PRESENCE OF A NOTARY
PUBLIC OR OTHER OFFICIAL AUTHORIZED TO ADMINISTER OATHS AND
SUBMITTED WITH THE BID

1. This sworn statement is submitted to _____
by _____
For _____
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 Section 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 with the United States, including, but not limited to, any bid, proposal, reply, or contract for goods or services, any lease for real property, or any contract for the construction or repair of a public building or public work, involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

I understand that "convicted" or "conviction" as defined in Section 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 a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

3. I understand that "affiliate" as defined in Section 2871.33 (1)(a) , Florida Statutes, means:
(a.) A predecessor or successor of a person convicted of a public entity crime, or

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DEWBERRY PROJECT NO. 50134682

- (b.) An entity under the control of 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 36 months shall be considered an affiliate.
4. I understand that a "person" as defined in Section 287.133 (1)(e), Florida Statute, means any natural person or any entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract and which bids or applies to bid on contracts 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.
5. Based on information and belief, the statement which I have marked below is true in relation to the person submitting this sworn statement. [indicate which statement applies.]

_____Neither the person submitting this sworn statement nor any affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months.

_____The person submitting this sworn statement or an affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months.

_____The person submitting this sworn statement or an affiliate of the person has been charged with and convicted of a public entity crime causing such person or affiliate to be placed on the convicted vendor list within the last thirty-six (36) months. However, it has been determined, pursuant to Section 287.133, Florida Statutes, that it was not in the public interest to place the person submitting this sworn statement or its affiliate on the convicted vendor list. [Attach a copy of the final order].

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DEWBERRY PROJECT NO. 50134682

6. I understand by my execution of this document, I acknowledge that the person submitting this sworn statement has been informed by the City of Panama City Beach, of the terms of Section 287.133(2)(a) of the Florida Statutes which read as follows:

"A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid, proposal, or reply on a contract to provide any goods or services to a public entity; may not submit a bid, proposal, or reply on a contract with a public entity for the construction or repair of a public building or public work; may not submit bids, proposals, or replies on leases of real property to a public entity; may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity; and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017 for CATEGORY TWO for a period of 36 months following the date of being placed on the convicted vendor list."

7. I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THE PUBLIC ENTITY ONLY AND THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY IMMEDIATELY OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

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PCB21-21 ITB SR 30A (U.S.(98) UTILITY RELOCATION
DEWBERRY PROJECT NO. 50134682

By: _____

Print name: _____

Its: _____

Sworn to and subscribed before me this _____ day of _____, 20__.

Personally known _____ OR Produced identification _____

Notary Public- State of _____

My commission expires _____

[printed, typed or stamped
Commissioned Name of Notary Public]

END OF SECTION 00097

SECTION 00098
E-VERIFY AFFIDAVIT

PER FLORIDA STATUTE 448.095, CONTRACTORS AND SUBCONTRACTORS MUST REGISTER WITH AND USE THE E-VERIFY SYSTEM TO VERIFY THE WORK AUTHORIZATION STATUS OF ALL EMPLOYEES HIRED AFTER 1-01-2021.

THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID/PROPOSAL. FAILURE TO SUBMIT THIS FORM AS REQUIRED MAY DEEM YOUR SUBMITTAL NONRESPONSIVE.

The affiant, by virtue of the signature below, certifies that:

1. The Contractor and its Subcontractors are aware of the requirements of Florida Statute 448.095.
2. The Contractor and its Subcontractors are registered with and using the E-Verify system to verify the work authorization status of newly hired employees.
3. The Contractor will not enter into a contract with any Subcontractor unless each party to the contract registers with and uses the E-Verify system.
4. The Subcontractor will provide the Contractor with an affidavit stating that the Subcontractor does not employ, contract with, or subcontract with unauthorized alien.
5. All employees hired by Contractor on or after January 1, 2021, have had their work authorization status verified through the E-Verify system.
6. The City may terminate this Contract on the good faith belief that the Contractor or its Subcontractors knowingly violated Florida Statutes 448.09(1) or 448.095(2)(c).
7. If this Contract is terminated pursuant to Florida Statute 448.095(2)(c), the Contractor may not be awarded a public contract for at least 1 year after the date on which this Contract was terminated.
8. The Contractor is liable for any additional cost incurred by the City as a result of the termination of this Contract.

Authorized Signature

Printed Name

Title

Name of Entity/Corporation

STATE OF _____

COUNTY OF _____

My Commission Expires: _____

Notary Public

NOTARY SEAL ABOVE

Printed Name

SECTION 00099
CERTIFICATE OF INSURANCE

(Attached)

SECTION 00100

GENERAL CONDITIONS

- | | | | |
|-----|---|-----|---|
| 1. | Definitions | 25. | Engineer's Authority |
| 2. | Additional Instructions and Detail Drawings | 26. | Land and Right-of-Ways |
| 3. | Schedules, Reports and Records | 27. | Guarantee |
| 4. | Intent of the Contract Documents, Drawings and Specifications | 28. | Claims and Disputes |
| 5. | Shop Drawings | 29. | Taxes |
| 6. | Materials, Services, and Facilities | 30. | Contract Time, Schedule of the Work, and Time Extensions |
| 7. | Inspection and Testing | 31. | Use of Site |
| 8. | Substitutions | 32. | Temporary Facilities |
| 9. | Patents | 33. | Clean Up and Disposal of Waste Materials |
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| 11. | Protection of Work, Property, Persons | 35. | Ownership of Hidden Valuable Materials |
| 12. | Supervision by Contractor | 36. | As-Built Plans and Documents to be kept at the Site |
| 13. | Changes in the Work | 37. | Silence of Specifications |
| 14. | Changes in Contract Price | 38. | Gratuities |
| 15. | Time for Completion and Liquidated Damages | 39. | Audit and Access to Records |
| 16. | Correction of Defective Work | 40. | Equal Opportunity Requirements |
| 17. | Suspension of Work, Termination, and Delay | 41. | Changed Conditions |
| 18. | Payments to Contractor | 42. | Compliance with Laws |
| 19. | Acceptance of Final Payment as Release | 43. | Public Entity Crimes |
| 20. | Contract Security | 44. | Insurance Requirements |
| 21. | Assignments | | |
| 22. | Indemnification | | |
| 23. | Separate Contracts | | |
| 24. | Subcontracting | | |

1.0 DEFINITIONS

- 1.1 Unless otherwise expressly noted, wherever used in the Contract Documents the following terms shall have the meanings indicated and shall be applicable to both the singular and plural thereof:
- 1.2 ADDENDA - Written or graphic instruments, issued by Owner or Engineer prior to the execution of the Agreement, which modify or interpret any of the Contract Documents by additions, deletions, clarifications, or corrections.
- 1.3 BID - The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
- 1.4 BIDDER - Any person, firm, or corporation submitting a Bid for the Work.
- 1.5 BONDS - Bid, Performance, and Payment Bonds and other instruments or surety, furnished by the Contractor and the Contractor's surety in accordance with the Contract Documents.
- 1.6 CHANGE ORDER - A written order to the Contractor issued in accordance with the procedures set forth in the Contract Documents, authorizing an addition, deletion, or revision in the Work within the general scope of the Contract Documents, or authorizing an adjustment in the Contract Price or Contract Time.
- 1.7 CONSTRUCTION CHANGE DIRECTIVE – A Construction Change Directive is a written order prepared by the Engineer and signed by the Owner, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Price or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Agreement, order changes in the Work within the general scope of the Agreement consisting of additions, deletions or other revisions, the Contract Price and Contract Time being adjusted accordingly.
- 1.8 CONTRACT DOCUMENTS – Collectively the Agreement, Proposal Form, Payment Bond, Performance Bond, General Conditions, Supplemental Conditions, if any, Notice of Award, Notice to Proceed, Drug Free Workplace Program Statement, Trench Safety Act Certificate of Compliance, Public Entity Crimes Statement, Sales Tax Exemption Addendum, Certificate of Insurance, Release and Affidavit from Contractor, Release and Affidavit from Subcontractor, Application and Certificate for Payment, Certificate of Substantial Completion, Contract Change Order(s), Construction Change Directives, Field Orders, Drawings, Specifications and Addenda. The Contract Documents are sometimes referred to herein as the Agreement.
- 1.9 CONTRACT PRICE - The total compensation payable by Owner to Contractor under the terms and conditions of the Contract Documents.

- 1.10 CONTRACT TIME - The total period of time beginning with the date of commencement of the Work as authorized by the City and ending on the required date for Substantial Completion of the Work. The Contract Time is set forth with more specificity in Section 2 of the Agreement.
- 1.11 CONTRACTOR - The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term "Contractor" means the Contractor or the Contractor's authorized representative.
- 1.12 CITY or OWNER – The City of Panama City Beach, Florida, acting through its City Council and Charter Officers.
- 1.13 DRAWINGS - The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules and diagrams.
- 1.14 ENGINEER - The person, firm or corporation named as such in the Agreement.
- 1.15 FIELD ORDER - A written order effecting a clarification or change in the Work not involving an adjustment in the Contract Price or an extension of the Contract Time, issued by Engineer or Owner to Contractor during construction.
- 1.16 NOTICE OF AWARD - The written notice of the acceptance of the Bid from the City to the successful Bidder.
- 1.17 NOTICE TO PROCEED - Written communication issued by the City to the Contractor authorizing it to proceed with the Work and establishing the date for commencement of the Work.
- 1.18 OWNER - Same as CITY; same as City of Panama City Beach, Florida.
- 1.19 PROJECT – The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the City or by separate contractors, and is formally known as the **PCB21-21 ITB SR 30A (U.S. 98) UTILITY RELOCATION.**
- 1.20 PROJECT ADMINISTRATION MANUAL (sometimes referred to herein as the "MANUAL") – The City's manual of forms and standard administrative procedures regarding project administration. Contractor acknowledges and agrees it has received a copy of the current Manual and shall incorporate any modifications or updates issued by the City into its copy of the Manual to ensure the Manual is kept up to date.

- 1.21 PROJECT REPRESENTATIVE -The Project Representative shall be the City's representative with respect to the Project and may be a City employee or an outside consultant. The Project Representative shall have authority to transmit instructions, receive information, and interpret and define the City's policies and decisions with respect to the Work. However, except as may be otherwise expressly authorized in writing by the City, the Project Representative is not authorized on behalf of the City to issue any verbal or written orders or instructions to Contractor that would have the affect, or be interpreted to have the affect, of amending or modifying the terms or conditions of the Contract Documents or modifying or amending in any way whatever the: (1) scope or quality of Work to be performed and provided by Contractor as set forth in the Contract Document; (2) the time within which Contractor is obligated to complete the Work; or (3) the amount of compensation the City is obligated or committed to pay Contractor as set forth in the Contract Documents.
- 1.22 SHOP DRAWINGS - All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the Contractor, a Subcontractor, manufacturer, supplier or distributor, which illustrate how specific portions of the Work shall be fabricated or installed.
- 1.23 SPECIFICATIONS - The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.
- 1.24 SUBCONTRACTOR - An individual, firm, or corporation having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the site.
- 1.25 SUBSTANTIAL COMPLETION - That date certified by the Engineer when the Work or an Owner specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Work or the Owner specified part thereof can be utilized by Owner for the purposes for which it is intended.
- 1.26 SUPPLEMENTAL CONDITIONS - Modifications to the General Conditions required by Owner, set forth in the Section 00800 series of documents.
- 1.27 SUPPLIER - Any person or organization who supplies materials or equipment for the Work for or on behalf of Contractor, including those fabricated to a special design, but who does not perform labor at the site.
- 1.28 WORK - The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute

the whole or a part of the Project.

2.0 ADDITIONAL INSTRUCTION AND DETAIL DRAWINGS

2.1 From time to time, Contractor may be furnished additional instructions and detail drawings by the Engineer as necessary to permit Contractor to carry out the Work required by the Contract Documents.

2.2 Any such additional drawings and instructions supplied to Contractor shall be issued as a Field Order. The Contractor shall carry out the Work in accordance with the additional detail drawings and instructions.

3.0 SCHEDULES, REPORTS AND RECORDS

3.1 The Contractor shall submit to the City such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, records and other data where applicable as are required by the Contract Documents for the Work to be performed.

3.2 Contractor shall prepare and provide its construction progress schedule ("Construction Schedule") prior to submitting its first Application for Payment, showing the order in which the Contractor proposes to carry on the Work, including dates at which the various parts of the Work will be started, estimated date of completion of each part and, as applicable, the dates at which special drawings will be required and dates for submission of Shop Drawings, the beginning of manufacture, the testing and the installation of materials, supplies and equipment. Further, the Construction Schedule shall not only include the overall progress schedule for the Work to be provided by Contractor hereunder, but also shall include reasonable time periods for Engineer's performance, as accepted by Engineer. The Construction Schedule and any other schedules required by the City hereunder shall be updated monthly. The Construction Schedule and all updates to it shall not exceed the time periods established in the Contract Documents and shall be subject to the City's and Engineer's review and comment. Contractor's submittal of a satisfactory Construction Schedule and updates thereto and the City's acceptance of same shall be a condition precedent to the City's obligation to pay Contractor; provided, however, the acceptance of any such schedule or update by Owner shall not be deemed an admission by Owner that such schedule or update is reasonable, accurate or correct.

3.3 The Contractor shall also submit a schedule of payments, for Owner's review and approval that the Contractor anticipates will be earned during the course of the Work.

4.0 INTENT OF THE CONTRACT DOCUMENTS, DRAWINGS AND SPECIFICATIONS

- 4.1 It is the intent of the Contract Documents to describe a functionally complete Project (or portion thereof) to be constructed in accordance with the Contract Documents. Any work, materials or equipment that may reasonably be inferred from the Contract Documents as being required to produce the intended result shall be supplied whether or not specifically called for in the Contract Documents. If the Contract Documents include words or terms that have a generally accepted technical or industry meaning, then such words or terms shall be interpreted to have such standard meaning unless otherwise expressly noted in the Contract Documents. Reference to standard specifications, manuals or codes of any technical society, organization or association or to the laws or regulations of any governmental authority having jurisdiction over the Project, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, law or regulation in affect at the time the Work is performed, except as may be otherwise specifically stated herein. Provided, however, in the event the standard specification, manual, code, law or regulation is changed after the Agreement has been executed by the parties, a Change Order shall be issued equitably adjusting the Contract Price and/or Contract Time to the extent such change materially impacts the Contract Time and/or Contract Price.
- 4.2 Contractor shall perform the Work consistent with the intent of the Drawings, Specifications, and other Contract Documents, and Contractor shall furnish all labor, materials, tools, equipment, and transportation necessary for the proper execution of the Work in accordance with the Contract Documents and all incidental items necessary to complete the Work in an acceptable manner, ready for use, occupancy or operation by the City.
- 4.3 Drawings are intended to show general arrangements, design and extent of Work and are not intended to serve as shop drawings. Specifications are separated into divisions for convenience of reference only and shall not be interpreted as establishing divisions for the Work, trades, subcontracts or extent of any part of the Work. In the event of a discrepancy between or among the Drawings, Specifications or other Contract Document provisions, Contractor shall be required to comply with the provision which is the more restrictive or stringent requirement upon Contractor, as determined by the City.
- 4.4 If during the performance of the Work Contractor discovers a conflict, error or discrepancy in the Contract Documents, including the Drawings and Specifications, Contractor immediately shall report same to Engineer and Owner in writing, and before proceeding with the Work affected thereby, shall obtain a written interpretation or clarification from Engineer. Work done by the Contractor after discovery of such conflict, error, or discrepancy without such written interpretation or clarification from Engineer, shall be done at the Contractor's risk. Prior to commencing the Work, Contractor shall first take all necessary field measurements and verify the applicable field conditions. After

taking such measurements and verifying such conditions, Contractor shall carefully compare such measurements and conditions with the requirements of the Contract Documents, taking into consideration all other relevant information known to Contractor, for the purpose of identifying and bringing to Engineer's and City's attention all conflicts or discrepancies with the Contract Documents. Contractor is solely responsible for verifying all field measurements and conditions.

4.5 Contractor shall comply with the City's standard forms and procedures as set forth in the City's Project Administration Manual relating to Project administration. To the extent there is no form or procedure for a particular matter, then Contractor shall comply with the form or procedure reasonably required by the City. Once a standard form has been executed by Contractor and Owner as necessary, the executed copy shall become part of the Contract Documents.

5.0 SHOP DRAWINGS

5.1 The Contractor shall provide shop drawings as may be necessary for the prosecution of the Work as required by the Contract Documents. The Engineer shall promptly review all shop drawings. The Engineer's approval of any shop drawing shall not release the Contractor from responsibility for deviations from the Contract Documents. Any shop drawing which deviates from the requirements of the Contract Documents must be first authorized by a Change Order.

5.2 When submitted for the Engineer's review, shop drawings shall bear the Contractor's certification that it has reviewed, checked and approved the shop drawings and that they are in conformance with the requirements of the Contract Documents.

5.3 Portions of the Work requiring a shop drawing or sample submission shall not begin until the shop drawing or submission has been approved by the Engineer. A copy of each approved shop drawing and each approved sample shall be kept in good order by the Contractor at the site and shall be available to the Engineer.

6.0 MATERIALS, SERVICES AND FACILITIES

6.1 It is understood that, except as otherwise specifically stated in the Contract Documents, the Contractor shall provide and pay for all materials, labor, tools, equipment, water, light, power, transportation, supervision, temporary construction of any nature, and all other services and facilities of any nature whatsoever necessary to execute, complete and deliver the Work within the Contract Time.

- 6.2 Materials and equipment shall be stored by Contractor to ensure the preservation of their quality and fitness for the Work. Stored materials and equipment to be incorporated in the Work shall be located so as to facilitate prompt inspection.
- 6.3 Manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used cleaned and conditioned as directed by the manufacturer.
- 6.4 Materials, supplies, and equipment shall be in accordance with samples submitted by the Contractor and approved by the Engineer.
- 6.5 Materials, supplies and equipment to be incorporated into the Work shall not be purchased by the Contractor or the Subcontractor subject to a chattel mortgage or under a conditional sale contract or other agreement by which an interest or lien is retained by the seller.
- 7.0 INSPECTION AND TESTING
- 7.1 All materials and equipment used in the construction of the Project shall be subject to adequate inspection and testing in accordance with generally accepted standards, as required and defined in the Contract Documents or required by applicable governmental law, rule or regulation.
- 7.2 The City, Engineer, their respective representatives, agents and employees and governmental agencies with jurisdiction over the Project shall have access at all times to the Work whether the Work is being performed on or off of the Project site, for their observation, inspection and testing. Contractor shall provide proper and safe conditions for such access, and also for any inspection or testing thereof. Contractor shall provide the City and Engineer with timely prior written notice (at least 48 hours) of the readiness of the Work for all required inspections, tests or approvals. In addition, authorized representatives and agents of any participating Federal or State agency shall be permitted to inspect all Work, materials, payrolls, personnel records, material invoices, and other relevant data and records.
- 7.3 The Contractor shall provide at the Contractor's expense all testing and inspection services required by the Contract Documents or any applicable governmental law, rule or regulation. Re-inspection and re-testing fees and costs of all testing failures shall be at the Contractor's expense.
- 7.4 If the Contract Documents or any applicable governmental law, rule, or regulation requires any portion of the Work to specifically be inspected, tested, or approved, Contractor shall assume full responsibility therefore, pay all costs in connection therewith and furnish the Engineer the required certificates of inspection, testing or approval. All inspections, tests or approvals shall be

performed in a manner and by organizations acceptable to the City and Engineer.

7.5 Neither observations by Engineer or the City, nor inspections, tests or approvals by the Engineer or others shall relieve the Contractor from the obligations to perform the Work in accordance with the requirements of the Contract Documents.

7.6 If any Work is covered contrary to the written instruction of the Engineer, it must, if requested by the Engineer, be uncovered for the Engineer's observation and replaced at the Contractor's expense.

7.7 If any Work that is to be inspected, tested or approved pursuant to the Contract Documents or any applicable governmental law, rule or regulation is covered without such inspection, testing or approval having been satisfactorily obtained by Contractor and without obtaining the written concurrence from Engineer, Contractor shall uncover, expose or otherwise make available the Work for such observation, inspection or testing as directed by Engineer, and Contractor shall be responsible for all such costs of uncovering, exposing, observation, inspection, testing, and reconstruction.

7.8 If the Engineer considers it necessary or advisable that covered Work be inspected or tested by others that was not otherwise required to be tested or inspected by the terms of the Contract Documents or any applicable governmental law, rule or regulation, the Contractor, at the Engineer's request, will uncover, expose or otherwise make available for observation, inspection or testing as the Engineer may require, that portion of the Work in question, furnishing all necessary labor, materials, tools, and equipment. If it is found that such Work is defective, the Contractor will bear all the expenses of such uncovering, exposure, observation, inspection and testing and of satisfactory reconstruction. If, however, such Work is not found to be defective, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing and reconstruction and an appropriate Change Order shall be issued.

8.0 SUBSTITUTIONS

8.1 Whenever a material, article, or piece of equipment is identified on the Drawings or Specifications by reference to brand name or catalogue numbers, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function may be considered. The Contractor may recommend the substitution of a material, article, or piece of equipment of equal substance, quality, and function for those referred to in the Contract Documents by reference to brand name or catalogue number, and if, in the

opinion of the Engineer, such material, article, or piece of equipment is of equal substance, quality and function to that specified, the Engineer may allow its substitution and use by the Contractor. If the Contractor based its bid on "or equal" products and the City and/or Engineer determine that one or more of the Contractor's proposed "or equal" products included in its bid fails to meet the requirements of the Contract Documents, Contractor may be required, at City's sole discretion, to provide products conforming with the requirements of the Contract Documents at no additional cost to the City per the City's direction.

8.2 If Contractor wishes to furnish or use a substitute item of material or equipment, Contractor shall certify that the proposed substitute shall perform adequately the functions and achieve the results called for by the general design, be similar and of equal substance to that specified and be suited to the same use as that specified. Contractor shall also certify that the evaluation and acceptance of the proposed substitute will not prejudice Contractor's achievement of Substantial Completion of the Work within the Contract Time, whether or not acceptance of the substitute for use in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for the Project) to adapt the design to the proposed substitute and whether or not incorporation or use by the substitute in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute from that specified will be identified in the application and available maintenance, repair and replacement service shall be indicated. Contractor shall also provide an itemized estimate of all costs that will result directly or indirectly from acceptance of such substitute, including costs for redesign and claims of other contractors affected by the resulting change, all of which shall be considered by Engineer in evaluating the proposed substitute. Engineer or Owner may require Contractor to furnish at Contractor's expense additional data about the proposed substitute. Further, Contractor shall reimburse Owner for the changes of Engineer and Engineer's consultants for evaluating each proposed substitute submitted after the effective date of the Agreement and all costs resulting from any delays in the Work while the substitute was undergoing review.

9.0 PATENTS

9.1 The Contractor shall pay all applicable royalties and license fees, and shall defend all suits or claims for infringement of any patent rights and save the City harmless from loss on account thereof, except that the City shall be responsible for any such loss when a particular process, design, or product of a particular manufacturer or manufacturers is specified. Provided, however, if the Contractor has reason to believe that the design, process or product specified is an infringement of a patent, the Contractor shall be responsible for such loss or claim unless the Contractor promptly gives such information in writing to the Engineer and City.

10.0 SURVEYS, PERMITS, REGULATIONS, AND PROJECT LAYOUT

- 10.1 The City shall furnish all boundary surveys and establish all base lines for locating the principal component parts of the Work together with a suitable number of bench marks adjacent to the Work as shown in the Contract Documents. From the information provided by the City, unless otherwise specified in the Contract Documents, the Contractor shall develop and make all detail surveys needed for construction such as slope stakes, batten boards, stakes for pipe locations and other working points, lines, elevations and cut sheets.
- 10.2 The Contractor shall carefully preserve benchmarks, reference points and stakes. Contractor is solely responsible for maintaining all benchmarks, reference points, and stakes, and is solely responsible for any mistake that may be caused by their loss or disturbance. The Contractor shall be held responsible for all mistakes that may be caused by the loss or disturbance of any such benchmarks, reference points or stakes.
- 10.3 The Contractor shall engage for the performance of Project layout and control, a Professional Land Surveyor registered in the State of Florida to practice land surveying. Said surveyor must carry Professional Liability Insurance in the amount of at least one million dollars (\$1,000,000) per occurrence. The land surveyor employed for this Project must comply with the Minimum Technical Standards for Surveying and Mapping pursuant to Florida Statute 472.027.
- 10.4 Should the Contractor in the course of its Work find that the points, grades and levels which are shown upon the Drawings are not conformable to the physical conditions of the locality at the proposed work or structure, it shall immediately inform the Engineer of the discrepancy between actual physical conditions of the locality of the proposed work, and the points, grades and levels which are shown on the drawings. No claim shall be made by the Contractor against the City for compensation or damage by reasons of failure of the Engineer to represent upon the Drawings points, grades and levels conformable to the actual physical conditions of the locality of the proposed work.
- 10.5 All permits and licenses necessary for the prosecution of the Work shall be secured and paid for by the Contractor unless otherwise expressly noted in the Contract Documents. These shall include all building permits, burn permits, debris disposal permits, etc. All licenses, easements and variances for permanent structures or permanent changes in existing facilities shall be secured and paid for by the City, unless otherwise specified in the Contract Documents. The Contractor shall give all notices and comply with all laws, ordinances, rules, regulations and governmental permits and approvals bearing on the conduct of the Work as drawn and specified. If the Contractor observes that the Contract Documents are at variance therewith, the Contractor shall promptly notify the Engineer and City in writing, and any necessary changes shall be adjusted as

provided in Section 13 below.

11.0 PROTECTION OF WORK, PROPERTY, AND PERSONS

11.1 The Contractor is responsible for the safety and protection of all persons and property on or about the Project site during the progress of the Work, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

Further, it is Contractor's responsibility to protect from damage or loss all material and equipment to be incorporated into the Work whether in storage on or off the Project site. Contractor shall initiate, maintain and supervise all safety precautions and programs in connection with the Work and shall develop and implement, in accordance with the requirements of the Contract Documents, a safety plan for the Work. Contractor's safety plan shall include a hurricane protection plan. Contractor's duties and responsibilities for the safety and protection of the Work shall continue until such time as the Work is completed and final acceptance of same by the City has occurred.

11.2 The Contractor will comply with all applicable codes, laws, ordinances, rules, regulations and orders of the City and any public body having jurisdiction over the Work, including the Occupational Safety and Health Administration (OSHA) and any State Safety and Health agency requirements and all of their safety codes, laws, ordinances, rules and regulations. The Contractor will erect and maintain, as required by the conditions and progress of the Work, all necessary safeguards for safety and protection. Contractor shall notify owners of adjacent property and of any underground structures or improvements and utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation or replacement of their property. The Contractor will remedy all damage, injury or loss to any property caused by the Contractor, any Subcontractor or anyone directly or indirectly employed by any of them or anyone of whose acts any of them be liable.

11.3 Barricades, Guards and Safety Provisions: To protect persons from injury and to avoid property damage, adequate barricades, construction signs, torches, red lanterns and guards shall be placed and maintained during progress of construction work and until it is safe for both pedestrians and vehicular traffic. Rules and regulations of local authorities regarding safety provisions shall be observed.

11.4 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the Contractor, without special instructions or authorization from the Engineer or City, shall act to prevent threatened damage, injury or loss. The Contractor will give the Engineer prompt written notice of any such emergency and to the extent the emergency was not caused by the fault or neglect of Contractor or anyone for whom Contractor is responsible, a Change Order shall be issued covering the necessary and

reasonable changes and deviations involved.

- 11.5 At all times during the performance of the Work at the Project site, Contractor shall have designated, and located on a full time basis at the Project site, a qualified individual whose responsibility shall be to monitor and enforce Contractor's safety program at the Project site; such individual shall be deemed to be the Contractor's Project Superintendent. However, Contractor may designate by written notice to the City another individual, reasonably acceptable to the City, who shall be Contractor's safety representative at the Project site.
- 11.6 Alcohol, drugs and all illegal substances are strictly prohibited on the Project site and any City property. All employees of Contractor, as well as those of all Subcontractors and those of any other person or entity for whom Contractor is legally liable (collectively referred to herein as "Employees"), shall not possess or be under the influence of any such substances while on the Project site or any City property. Further, employees shall not bring on to the Project site or any City property any gun, rifle or other firearm, or explosives of any kind. Provided, however, to the extent explosives are reasonably required with respect to the performance of the Work, Contractor shall strictly comply with the Contract Documents and any and all rules and regulations of Owner or of any applicable governmental agency as it relates to the storage, handling and use of such explosives.
- 12.0 SUPERVISION BY CONTRACTOR
- 12.1 The Contractor will supervise and direct the Work. Contractor shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. The Contractor will employ and maintain on the Project site on a full time basis a qualified superintendent acceptable to the City. The superintendent and his or her designees shall have full authority to act on behalf of the Contractor and all communications given to the superintendent or his or her designee shall be as binding as if given to the Contractor. The superintendent or his or her designee shall be present on the site at all times when any portion of the Work is being performed to ensure adequate supervision and coordination of the Work.
- 13.0 CHANGES IN THE WORK
- 13.1 The City may at any time during the progress of the Work, as the need arises and in its sole discretion, order changes within the general scope of the Work without invalidating the Agreement. Promptly after being notified of a change, but in no event more than fourteen (14) days after its receipt of such notification (unless the City has agreed in writing to a longer period of time), Contractor shall submit an itemized estimate of any cost or time increases or savings it foresees as a result of the change. Except in an emergency endangering life or

property, no addition or changes to the Work shall be made except upon a properly issued Change Order, Construction Change Directive or Field Order. No officer, employee or agent of the City is authorized to direct any extra or changed work without a properly issued Change Order, Construction Change Directive, or Field Order.

- 13.2 All changes to the Work must be authorized by means of a written Change Order that is mutually agreed to by the City and Contractor or a Construction Change Directive issued by the City or a Field Order issued by the City or Engineer. If the change is to be accomplished through a Change Order, the Change Order, in the form set forth in the City's Project Administration Manual, shall be prepared by Contractor, reviewed by Engineer and the City, and executed promptly by the parties after an agreement is reached between Contractor and the City concerning the requested changes. Contractor shall promptly perform changes authorized by duly executed Change Orders. The Contract Price and Contract Time shall be adjusted in the Change Order in the manner as the City and Contractor shall mutually agree. The Change Order shall identify the changed work. Also, where the Contract Price is based upon unit prices, a Change Order may be used for work for which quantities have been altered from those shown in the bidding schedule, as well as decreases or increases in the quantities of installed units which are different than those shown in the bidding schedule because of final measurements. All changes must be recorded on an executed Change Order before they can be included in a monthly Application for Payment.
- 13.3 To the extent the Contract Price is based on unit prices, the City reserves the right to increase or decrease a unit price quantity as may be deemed reasonable or necessary in order to complete the Work contemplated by this Agreement.
- 13.4 If the City and Contractor are unable to agree on a Change Order for the requested change, Contractor shall, nevertheless, promptly perform the change as directed by the City in a written Construction Change Directive. In that event, the Contract Price and Contract Time shall be adjusted in the Construction Change Directive as determined by the City. If Contractor disagrees with the City's adjustment determination, Contractor must make a claim strictly in accordance with the terms of the Contract Documents or else be deemed to have waived any claim it might otherwise have had on that matter.
- 13.5 The City shall have the right to conduct an audit of Contractor's books and records, as well as those of its Subcontractors and Suppliers, to verify the accuracy of Contractor's estimates or claims with respect to Contractor's cost and time impacts associated with any Change Order or Construction Change Directive.

13.8 The Engineer or City at any time may direct Contractor to make changes to the Work by issuing a Field Order, so long as such changes do not require or result in any adjustment to the Contract Price or Contract Time, and are generally within the scope of the Work. Contractor shall proceed with the performance of any changes in the Work so ordered by the Engineer or City unless the Contractor believes that such Field Order entitles the Contractor to a change in the Contract Price or Contract Time, or both. In the event Contractor believes the Field Order requires a change to the Contract Price or Contract Time, it must provide written notice to the Engineer and City within five (5) business days of receipt of the Field Order and before starting with any changed Work. Failure to provide such notice waives Contractor's right to claim such work requires a change in the Contract Price or Contract Time. Once Contractor has provided timely written notice, it shall proceed as directed by City in writing, and thereafter shall file a claim in accordance with the procedures required herein.

14.0 CHANGES IN CONTRACT PRICE

14.1 The Contract Price may be changed only by a Change Order or Construction Change Directive issued in accordance with the terms of the Contract Documents. If the Change Order or Construction Change Directive provides for an adjustment to the Contract Price, the adjustment shall be based on one of the following methods: mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation; or unit prices stated in the Contract Documents or subsequently agreed upon; or cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or on a time and material basis.

14.2 In the event the Owner elects to proceed with changed work on a time and material basis, the following provisions shall apply:

14.2.1 For all labor, including a foreman in direct charge of the specified operations, the Contractor shall receive a sum equal to the current standard local rate of wages actually paid for every hour that the labor is actually engaged in such changed work, plus the actual cost of social security taxes, unemployment insurance, and workmen's compensation insurance based on the actual wages paid for such labor, to which cost shall be added an amount equal to ten percent (10%) thereof for all overhead and profit (including all general supervision and for furnishing and repairing small tools and ordinary equipment used in doing the changed work).

14.2.2 For all materials used, the Contractor shall receive the actual cost of such materials, including freight charges as shown by original receipted bills, to which cost shall be added an amount equal to ten percent (10%) thereof for all overhead and profit.

- 14.2.3 For any construction equipment or special equipment including fuel and lubricants therefor, required for the economical performance of the changed work, the Engineer shall allow the Contractor a rental price, to be agreed upon in writing before such work is begun, for every hour that such construction equipment or special equipment is actually operated on the work, which rental price shall include all overhead and profit. Such hourly rental price shall not exceed 1/176 part of the monthly rate stated for such equipment in the latest edition of the "Compilation of Rental Rates for Construction Equipment" by Associated Equipment Distributors.
- 14.2.4 Subcontractors are subject to the above and the Contractor mark-up for overhead and profit shall not exceed five percent (5%) of the amount due to the Subcontractor.
- 14.2.5 The Contractor shall keep and present, in such form as the Engineer may prescribe, an itemized accounting of all time and material costs, together with appropriate supporting data.

15.0 TIME FOR COMPLETION AND LIQUIDATED DAMAGES

- 15.1 Time is of the essence in the performance of the Work under this Agreement. The date of beginning and the time for completion of the Work are essential conditions of the Contract Documents. The required date of commencement of the Work shall be established in the Notice to Proceed to be issued by the City. As noted in the Agreement, Contractor shall commence the Work within ten (10) calendar days after the required date of commencement. Any Work performed by Contractor prior to the required date of commencement shall be at the sole risk of Contractor. The Notice to Proceed shall be issued within thirty (30) days of the execution of the Agreement by the City. Should there be reasons why the Notice to Proceed cannot be issued within such period, the time may be extended by mutual agreement of the City and Contractor. If the Notice to Proceed has not been issued within the thirty (30) day period or within the period mutually agreed upon, the Contractor may terminate the Agreement without further liability on the part of either party by providing the City written notice of such termination, in which event such termination shall be deemed a termination for convenience of the City as set forth in Section 17.5 below. Provided, however, notwithstanding anything in the Contract Documents to the contrary, in the event of such termination pursuant to this Section 15.1, Contractor acknowledges and agrees that no payments will be due Contractor nor shall the City make any payments to Contractor for any Work that would have been authorized under the Agreement once executed by both parties.
- 15.2 The Contractor will proceed with the Work at such rate of progress to ensure Substantial Completion within the Contract Time. It is expressly understood

and agreed, by and between the Contractor and the City, that the Contract Time for Substantial Completion of the Work is a reasonable period of time. The Construction Schedule shall include the date the Work must be substantially completed by Contractor and all interim milestones required by the City. Substantial Completion of the Work shall be achieved when the Work has been completed to the point where the City can occupy or utilize the Work for its intended purpose. The Engineer shall certify the date Substantial Completion of the Work is achieved. If the City has designated portions of the Work to be turned over to the City prior to Substantial Completion of the entire Work as provided in Section 15.3 below, the Engineer shall certify the date as to when Substantial Completion of such designated portions of the Work have been achieved. The entire Work shall be fully completed and ready for final acceptance by the City within 30 calendar days after Substantial Completion of the Work or thirty (30) days after Contractor's receipt of the punch list, whichever date occurs last.

15.2.1 Once the Contractor believes it has achieved Substantial Completion of the Work, it shall notify the City and Engineer in writing and request a substantial completion inspection. Concurrent with its delivery of such written notice, Contractor shall submit its initial punch list for the City's and Engineer's review. Any Work remaining to be completed or any defective work to be remedied shall be listed on the punch list. Once the substantial completion inspection has been made, Owner and Engineer shall modify the Contractor's initial punch list to include all items to be completed or repaired by Contractor in order to achieve final acceptance of the Work. Thereafter, the Engineer shall provide Contractor a copy of the final punch list. Such final punch list shall be in compliance with the Contract Documents and all applicable laws, including Section 218.735 of the Florida Statutes. Accordingly, if the Contract Price is less than \$10 million, Engineer shall provide the final punch list to Contractor within 30 calendar days after Contractor has achieved Substantial Completion. If the Contract Price is \$10 million or more, Engineer shall provide the final punch list to Contractor within 60 calendar days after Contractor has achieved Substantial Completion. Contractor acknowledges and agrees that the failure to include any corrective work or pending items not yet completed on the punch list does not alter the responsibility of Contractor to complete all the Work required under this Contract.

15.3 The City may take early occupancy of all or any portions of the Work, at the City's election, by designating in writing to Contractor the specific portions of the Work to be occupied and the date such occupancy shall commence. If any such specific early occupancy was not expressly identified in the bidding documents issued with respect to this Agreement (as they may have been modified by any applicable Addenda) and such early occupancy adversely impacts Contractor's cost or time of performance, Contractor shall be entitled to an equitable adjustment to the Contract Price and the Contract Time, all in accordance with the other terms and conditions of the Contract Documents.

15.4 The City and Contractor recognize that, since time is of the essence for this Agreement, the City will suffer financial loss if the Work is not substantially completed within the Contract Time, as said time may be adjusted as provided for herein. In such event, the total amount of the City's damages, will be difficult, if not impossible, to definitely ascertain and quantify, because this is a public construction project that will, when completed, benefit the public. It is hereby agreed that it is appropriate and fair that the City receive liquidated damages from Contractor, if Contractor fails to achieve Substantial Completion of the Work within the required Contract Time. Should Contractor fail to substantially complete the Work within the Contract Time, the City shall be entitled to assess, as liquidated damages, but not as a penalty, the amount for liquidated damages as specified in the Agreement for each calendar day thereafter until Substantial Completion is achieved. Contractor hereby expressly waives and relinquishes any right which it may have to seek to characterize the above noted liquidated damages as a penalty, which the parties agree represents a fair and reasonable estimate of the City's actual damages at the time of contracting if Contractor fails to achieve Substantial Completion of the Work within the Contract Time.

15.4.1 In the event the Work is not fully completed within 30 days from the date of Substantial Completion, the City reserves the right to assess against Contractor its actual damages incurred as a result of such delay by Contractor.

16.0 CORRECTION OF DEFECTIVE WORK

16.1 Work not conforming to the requirements of the Contract Documents shall be deemed defective Work. If required by the City or Engineer, the Contractor shall as directed, either correct all defective Work, whether or not fabricated, installed or completed, or, if the defective Work has been rejected by the City or Engineer, remove it from the site and replace it with non-defective Work in accordance with the Contract Documents and without additional expense to the City. Further, Contractor shall bear the expense of making good all work of other contractors performing work on the Project destroyed or damaged by such removal or replacement. Contractor shall bear all direct, indirect and consequential costs of such correction or removal (including, but not limited to fees and charges of engineers, architects, attorneys and other professionals) made necessary thereby, and shall hold the City and Engineer harmless for same. Notwithstanding anything herein to the contrary, the City may determine, at its sole discretion, to accept defective Work. If such determination is rendered prior to final payment, a Change Order or Construction Change Directive shall be executed evidencing such acceptance of such defective Work, incorporating the necessary revisions in the Contract Documents and reflecting an appropriate decrease in the Contract Price. If the City accepts such defective Work after final payment, Contractor shall promptly

pay the City an appropriate amount determined by the City to adequately compensate the City for its acceptance of the defective Work.

- 16.2 If the Contractor does not take action to correct defective Work or to remove and replace rejected defective Work or if Contractor fails to comply with any of the provisions of the Contract Documents within ten (10) days after receipt of written notice from the City or Engineer, the City may correct and remedy any such deficiency at the expense of the Contractor. To the extent necessary to complete corrective and remedial action, the City may exclude Contractor from any or all of the Project site, take possession of all or any part of the Work, and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Project site and incorporate in the Work all materials and equipment stored at the Project site or for which the City has paid Contractor but which are stored elsewhere. Contractor shall allow the City, Engineer and their respective representatives, agents, and employees such access to the Project site as may be necessary to enable the City to exercise the rights and remedies under this Section. All direct, indirect and consequential costs of the City in exercising such rights and remedies shall be at Contractor's expense, and a Change Order or a Construction Change Directive shall be issued, incorporating the necessary revisions to the Contract Documents, including an appropriate decrease to the Contract Price. Such direct, indirect and consequential costs shall include, but not be limited to, fees and charges of engineers, architects, attorneys and other professionals, and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of Contractor's defective Work. Contractor shall not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise by the City of the City's rights and remedies hereunder.

17.0 SUSPENSION OF WORK, TERMINATION, AND DELAY

- 17.1 The City shall have the right to suspend the Work or any portion thereof for a period of not more than ninety (90) days or such additional time as agreed upon by the Contractor, upon giving Contractor written notice of such suspension to the Contractor. The City or Engineer shall fix the date on which Work shall be resumed. The Contractor will resume that Work on the date so fixed unless otherwise directed by the City. Provided Contractor strictly complies with the Change Order and Claims procedures set forth in the Contract Documents, Contractor will be entitled to a Change Order adjusting the Contract Price and Contract Time, as provided in the Contract Documents, to the extent attributable to any such suspension, unless said suspension is due to the fault or neglect of Contractor or anyone for whom Contractor is responsible.

- 17.2 If, through no act or fault of the Contractor, the Work is suspended for a period of more than ninety (90) days by the City or under an order of court or other

public authority, or the Engineer fails to act on any request for payment within thirty (30) days after it is submitted, or the City fails to pay the Contractor any undisputed amounts within thirty (30) days of its approval, then the Contractor may after ten (10) days from delivery of a written notice to the City and the Engineer and the City's failure to cure such default (or a maximum of sixty (60) days in the event the default cannot reasonably be cured within ten (10) days provided that the City commences to cure within ten (10) days and thereafter diligently and continuously pursues said cure) terminate the Agreement and recover from the City payment for all Work properly executed and reasonable termination expenses sustained. In addition, and in lieu of terminating the Agreement, if the Engineer has failed to act on a request for payment or if the City has failed to make any payment within the aforesaid thirty (30) day periods, the Contractor may upon ten (10) days written notice to the City and the Engineer stop the Work until paid all amounts then due, in which event and upon resumption of the Work, a Change Order shall be issued adjusting the Contract Price and Contract Time as provided in the Contract Documents.

17.3 Contractor shall be considered in material default of the Agreement and such default shall be considered cause for the City to terminate the Contractor's right to continue to perform under the Agreement, in whole or in part, as further set forth in this Section, if Contractor: (1) fails to begin the Work under the Contract Documents within the time specified herein; or (2) fails to properly and timely perform the Work as directed by the City or Engineer or as provided for in the approved Construction Schedule; or (3) performs the Work unsuitably or neglects or refuses to remove materials or to correct or replace such Work as may be rejected as unacceptable or unsuitable; or (4) discontinues the prosecution of the Work contrary to the requirements of the Agreement; or (5) fails to resume Work which has been suspended within a reasonable time after being notified to do so; or (6) becomes insolvent or is declared bankrupt, or commits any act of bankruptcy; or (7) allows any final judgment to stand against it unsatisfied for more than ten (10) days; or (8) makes an assignment for the benefit of creditors; or (9) fails to comply with any applicable codes, laws, ordinances, rules or regulations with respect to the Work; or (10) fails to supply sufficient skilled workmen or suitable materials or equipment; or (11) fails to promptly pay its Subcontractors and Suppliers; or (12) disregards the authority of the City or Engineer; or (12) materially breaches any other provision of the Contract Documents. In rendering its decision as to whether one of the causes under Section 17.3 exist which would permit the City to terminate the Agreement, the City shall be entitled to rely upon the determination of the Engineer concerning such matter.

17.3.1 In such event, and after giving the Contractor and its surety a minimum of ten (10) days from delivery of a written notice to cure any such default (or a maximum of sixty (60) days in the event the default cannot reasonably be cured within ten (10) days provided that Contractor commences to cure within ten (10) days and thereafter diligently and continuously pursues

said cure), the City may at its option, and without releasing or waiving its rights and remedies against Contractor's sureties and without prejudice to any other right or remedy, terminate Contractor's right to proceed under the Agreement in whole or in part, and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the Contractor, take assignments of any of Contractor's subcontracts and purchase orders that the City may designate, and finish the Work by whatever method the City in its sole discretion may deem expedient.

17.3.2 If Contractor's right to proceed under the Agreement is terminated, Contractor shall not be entitled to receive any further payment until the Work is finished. All monies expended and all of the costs, losses, damages and extra expenses, including all management, administrative and other overhead and other direct and indirect expenses (including Engineer and attorneys' fees) or damages incurred by the City incident to such completion (collectively "Completion Costs"), shall be deducted from the unpaid balance of the Contract Price. Upon the City's completion, if the unpaid balance of the Contract Price exceeds the Completion Costs, such excess shall be paid to the Contractor. If the Completion Costs exceed the unpaid balance of the Contract Price, Contractor shall pay promptly to the City on demand the full amount of such excess and interest thereon at a rate of 6% per annum until paid.

17.3.3 The liability of Contractor hereunder for Completion Costs shall extend to and include the full amount of any and all sums paid, expenses and losses incurred, damages sustained, and obligations assumed by the City in good faith under the belief that such payments or assumptions were necessary or required, in completing the Work and providing labor, materials, equipment, supplies, and other items therefor or re-letting the Work, and in settlement, discharge or compromise of any claims, demands, suits, and judgments pertaining to or arising out of the Work hereunder. Further, in the event the City has exercised its right to terminate due to Contractor's default, Contractor shall be prohibited from bidding or otherwise seeking additional work from the City in accordance with the City's then current debarment policy.

17.3.4 The City may deduct from any payment, any sum owed by the City to Contractor, either under this Agreement or any other agreement between the City and the Contractor. Further, a default by Contractor under any other agreement with the City shall be deemed a default under this Agreement and a default under this Agreement shall be deemed a default under any other agreement between the City and Contractor.

17.4 Where the Contractor's services have been so terminated by the City, said termination shall not affect any right of the City against the Contractor then existing or which may thereafter accrue. Any retention or payment of monies by the City due the Contractor will not release the Contractor from compliance with the Contract Documents. Further, if after notice of termination of

Contractor's right to proceed pursuant to Section 17.3, it is determined for any reason that Contractor was not in default, or that its default was excusable, or that the City is not entitled to the remedies against Contractor provided herein, then such termination shall be deemed a termination for the City's convenience and Contractor's remedies against the City shall be the same as and limited to those afforded Contractor under Section 17.5 below.

17.5 The City shall have the right to terminate this Agreement without cause upon ten (10) days from delivery of a written notice to the Contractor. In the event of such termination for convenience, Contractor's sole and exclusive recovery against the City shall be limited to that portion of the Contract Price earned through the date of termination, together with any retainage withheld and reasonable termination expenses incurred, but Contractor shall not be entitled to any other or further recovery against the City, including, but not limited to, damages or any anticipated profit on portions of the Work not performed.

18.0 PAYMENT TO CONTRACTOR

18.1 At least ten (10) days before submitting the first Application for Payment, the Contractor shall submit to the City and Engineer a schedule of values allocated to various portions of the Work, prepared in such form and supported by such data to substantiate its accuracy as the City or Engineer may require. It is anticipated the schedule of values substantially will be based upon the Contractor's completed Bid Proposal Form, attached as Section 00030. This schedule, unless objected to by the City or Engineer, shall be used as a basis for reviewing the Contractor's Applications for Payment. On or before the 25th of each month, the Contractor will submit to the Engineer an Application for Payment filled out and signed by the Contractor covering the Work performed since the previous month's Application for Payment. The Application for Payment may also include the cost of such materials and equipment which are suitably stored either at or off the site to the extent such payment is approved by City as provided in Section 18.1.1 below. Invoices received after the 25th day of each month shall be considered for payment as part of the next month's Application for Payment. Contractor's Application for Payment shall be in such form and contain such detail and backup as the City reasonably may require.

18.1.1 If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or off the site, the Application for Payment shall also be accompanied by such supporting data, satisfactory to the City, as will establish the City's title to the material and equipment free and clear of all liens, charges, security interests and encumbrances, together with evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect City's interest therein, all of which shall be subject to City's satisfaction. City has the discretion whether or not to pay for such unincorporated materials.

- 18.1.2 The Engineer will, within ten (10) days after receipt of each Application for Payment, indicate in writing its recommendation as to that portion of the payment being requested by Contractor in the Application for Payment which Engineer believes is due and payable. The City shall pay Contractor that portion of the Application for Payment approved by Engineer and Owner within fifteen (15) days of the City's receipt of the Engineer's payment recommendation.
- 18.1.3 City shall retain an amount equal to 10% of the approved amount to be paid Contractor under each monthly Application for Payment. The retainage shall be accumulated and not released to Contractor until final payment is due. Provided, however, the City reserves the right, in its sole discretion, to reduce such retainage prior to final payment; but at no time shall the retainage be reduced to less than five percent (5%) prior to Contractor achieving Substantial Completion. Provided, further however, if at any time during this Agreement, and in the City's sole discretion, the City becomes dissatisfied with Contractor's performance or if Contractor is in default, the City shall have the right to reinstate the full amount of retainage at ten percent (10%).
- 18.1.4 Monthly payments to Contractor shall in no way imply approval or acceptance of the Work.
- 18.1.5 Each Application for Payment shall be accompanied by a claim release and waiver in the form set forth in the City's Project Administration Manual from Contractor for all materials, labor, equipment, services and other bills associated with that portion of the Work payment is being requested in that Application for Payment . Further, each Application for Payment shall be accompanied by a claim release and waiver in the form set forth in the City's Project Administration Manual from all Subcontractors and Suppliers evidencing their payment in full through the previous month's Application for Payment. Also, each Application for Payment shall be accompanied by an updated Construction Schedule, a list inventorying all stored materials, a monthly progress status report, and any other document reasonably requested by City. The City shall not be required to make payment until and unless such releases, documents and information are furnished by Contractor. Further, if Contractor is withholding any portion of a payment to any Subcontractor or Supplier for any labor, services, or materials for which the City has paid Contractor, Contractor agrees to refund such money to the City upon demand by the City.
- 18.1.6 Engineer shall review each Application for Payment submitted by Contractor and shall make recommendations to the City as to the proper amounts, if any, which may be owed Contractor thereunder. Both

Engineer and the City shall have the right to refuse to approve payment amounts, or portions thereof, requested by Contractor in an Application for Payment, or rescind any amount previously approved, and the City may withhold any payments otherwise due Contractor under this Agreement or any other agreement between the City and Contractor, to the extent it is reasonably necessary, to protect the City from any expense, cost or loss attributable to: (a) defective or deficient Work not properly remedied in accordance with the terms of the Contract Documents; (b) the filing or reasonable evidence indicating the probable filing of third party claims against the City attributable to the fault or neglect of Contractor; (c) Contractor's failure to make timely and proper payments to all Subcontractors and Suppliers; (d) reasonable evidence that the remaining Work cannot be completed for the unpaid Contract Price balance; (e) reasonable evidence indicating that the remaining Work cannot be completed within the remaining Contract Time; (f) Contractor's failure to satisfactorily prosecute the Work in accordance with the requirements of the Contract Documents; or (g) any other material breach of the requirements of the Contract Documents by Contractor. The City shall have the right, but not the obligation, to take any corrective action the City deems appropriate to cure any of the above noted items, at Contractor's expense, if such items are not cured by Contractor to the City's reasonable satisfaction within three (3) days after Contractor's receipt of written notice from the City.

- 18.1.7 Engineer or City may reject an Application for Payment, in whole or in part, submitted by Contractor if such Application for Payment is not submitted in strict accordance with the requirements of this Article 18. In such event, Engineer or City shall notify Contractor in writing within twenty (20) business days after receipt of such Application for Payment that such Application for Payment, or portion thereof, has been rejected and the reasons for such rejection. If Contractor resubmits a corrected Application for Payment correcting, in Engineer's and Owner's sole determination, the deficiency specified in the rejection notice, then City shall pay Contractor the corrected portion of the Application for Payment within ten business days after the date the corrected Application for Payment is received by City.
- 18.2 Prior to Substantial Completion, the City, with the approval of the Engineer, may use any completed or substantially completed portions of the Work. Such use shall not constitute an acceptance of such portions of the Work.
- 18.3 The City shall have the right to enter the Project site for the purposes of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the Contractor of the sole responsibility for the care and protection of the Work, or the restoration of any damaged Work except such as may be caused by agents or employees of the City.

- 18.4 Upon completion and acceptance of the Work, the Engineer shall issue a certificate attached to the final payment request that states the Work has been fully performed in accordance with the requirements of the Contract Documents and that Engineer recommends final payment in the amount reflected in the attached final payment request. The City shall make final payment to Contractor within thirty (30) days after the Work is finally accepted by the City, provided that Contractor first, and as an explicit condition precedent to the accrual of Contractor's right to final payment, shall have furnished the City with a properly executed and notarized final release in the form set forth in the City's Project Administration Manual, as well as, a duly executed copy of the surety's consent to final payment and such other documentation that may be required by the Contract Documents or the City.
- 18.5 Late payments shall accrue interest from the date payment was due until payment is received at the rate of six percent (6%) per annum.
- 18.6 No error or oversight in the making of payment or completion certificates shall relieve the Contractor from its obligation to do and complete the Work in accordance with the requirements of the Contract Documents.
- 19.0 ACCEPTANCE OF FINAL PAYMENT AS RELEASE
- 19.1 The acceptance by the Contractor of final payment shall be and shall operate as a full release and waiver of any and all claims by Contractor against the City arising out of this Agreement or otherwise relating to the Project, except those identified in writing by Contractor as unsettled in its final Application for Payment. Any payment, however, final or otherwise shall not release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds. Neither the acceptance of the Work nor payment by the City shall be deemed to be a waiver of the City's right to enforce any obligations of Contractor hereunder or to the recovery of damages for defective Work not discovered by the City or Engineer at the time of final inspection.
- 20.0 CONTRACT SECURITY
- 20.1 The Contractor shall within ten (10) days after the receipt of the Notice of Award and prior to the start of any Work furnish the City with a Performance Bond and a Payment Bond in penal sums equal to 100% of the amount of the Contract Price and in the forms attached as Sections 00060 and 00070. Such Bonds shall be executed by the Contractor and a corporate bonding company licensed to transact such business in the State of Florida and named on the current lists of "Surety Companies Acceptable on Federal Bonds" as published in the Treasury Department Circular Number 570 and approved by the City. The expense of these Bonds shall be borne by the Contractor. If at any time a

surety on any such Bond is declared as bankrupt or loses its rights to do business in Florida or is removed from the list of Surety Companies accepted on Federal Bonds, Contractor shall within ten (10) days after notice from the City to do so, substitute an acceptable Bond (or Bonds) in such form and sum and signed by such other surety or sureties as may be satisfactory to the City. The premiums on such replacement Bond shall be paid by the Contractor. No further payment shall be deemed due nor shall be made until the new surety or sureties shall have furnished an acceptable Bond to the City.

20.2 The Contractor and its Surety, for value received, hereby stipulate and agree that any and all claims, demands, actions or suits whatsoever, arising under this Agreement and/or bonds, shall be subject to the sole and exclusive jurisdiction and venue of the appropriate state court in and for Bay County, Florida. The Contractor and its Surety do agree, by execution of these documents, that the sole and exclusive jurisdiction and venue in said forum is proper and appropriate since performance of the underlying contract for which these documents are executed is to be accomplished within Bay County, Florida.

21.0 ASSIGNMENTS

21.1 Contractor shall not assign this Agreement or any part thereof, without the prior consent in writing of the City, which consent shall be at City's sole discretion. If Contractor does, with City's written approval, assign this Agreement or any part thereof, Contractor shall not be released from any of its obligations or responsibilities under this Agreement.

22.0 INDEMNIFICATION AND HOLD HARMLESS

22.1 To the maximum extent permitted by Florida law, Contractor shall indemnify and hold harmless the City and its officers and employees from any and all liabilities, claims, damages, penalties, demands, judgments, actions, proceedings, losses or costs, including, but not limited to, reasonable attorneys' fees and paralegals' fees, whether resulting from any claimed breach of this Agreement by Contractor or from personal injury, property damage, direct or consequential damages, or economic loss, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Contractor or anyone employed or utilized by the Contractor in the performance of this Agreement.

22.2 Contractor's obligation to indemnify and hold harmless under this Article 22 will survive the expiration or earlier termination of this Agreement until it is determined by final judgment that an action against the City or an indemnified party for the matter indemnified hereunder is fully and finally barred by the applicable statute of limitations.

22.3 The obligation of the Contractor under this Article 22 shall not extend to the

liability of the Engineer, its agents or employees arising out of the preparation of approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications.

23.0 SEPARATE CONTRACTS AND COOPERATION

23.1 The City reserves the right to perform other work related to the Project at the site by the City's own forces, have other work performed by utility owners or let other direct contracts for work to be constructed at the same time, and in connection with, the Work included in this Agreement. The Contractor shall cooperate with all other contractors in such a manner, and to such extent, as best to facilitate the completion of the entire Project in the shortest time possible, subject to, at all times, the approval of the Engineer and Owner. It shall be the duty of each contractor to work with the other contractors, render such assistance, and to arrange its work in such a manner that shall allow the entire Project to be delivered complete and in the best possible condition. The Contractor shall afford other contractors and utility owners reasonable opportunity for the introduction and storage of their materials and the execution of their work, and shall properly connect and coordinate the Work with theirs. If the proper execution or results of any part of the Contractor's Work depends upon the work of any other Contractor, the Contractor shall inspect and promptly report to the Engineer any defects in such work that render it unsuitable for such proper execution and results.

23.2 If the performance of additional work by other contractors, utility owners, or the City is not noted in the Contract Documents prior to the execution of the Agreement, written notice thereof shall be given to the Contractor prior to starting any such additional work. If the Contractor believes that the performance of such undisclosed additional work by the City or others involves it in additional expense or entitles it to an extension of the Contract Time, the Contractor shall send written notice of that fact to the City and Engineer within seven (7) calendar days of being notified of the other work and the Contractor may make a claim thereof as provided in Sections 13 and 14. If Contractor fails to send the above required seven (7) calendar days' notice, Contractor will be deemed to have waived any rights it otherwise may have had to seek an extension to the Contract Time or adjustment to the Contract Price.

23.3 Contractor shall afford each utility owner and City's other contractors (or the City, if the City is performing the additional work with the City's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work and shall properly connect and coordinate its Work with theirs. Contractor shall do all cutting, fitting and patching of the Work that may be required to make its several parts come together properly and integrate with such other work. Contractor shall be responsible for all damage to the work of others caused by the performance of its Work. Further, Contractor shall not in any way cut or alter the

work of others without first receiving the written consent of that other person and Engineer. If any part of Contractor's Work depends for proper execution or results upon the work of any other contractor or utility owner (or the City), Contractor shall inspect and promptly report to Engineer in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. Such report must be made within three (3) business days of the time Contractor first became aware of the delay, defect or deficiency. Contractor's failure to report within the allotted time will constitute an acceptance of the other work as fit and proper for integration with Contractor's Work, except for latent defects not discovered by Contractor.

23.4 The Contractor shall keep itself fully informed at all times regarding all details of the work of other contractors working at the site, and it shall be responsible for all delays that may result from its failure to install the Work in the proper manner and at the proper time.

23.5 The Contractor shall be responsible for coordinating the relocation of existing utilities (with the respective utility companies) as needed to construct the Project. Attention is called to the fact that Contractor is responsible for contacting all utility companies to obtain locations of all existing utilities or obstructions which it may encounter during construction. After location of utilities by the appropriate utility company, it is the Contractor's liability to protect all such utility lines, including service lines and appurtenances, and to replace at its own expense any which may be damaged by the Contractor's equipment or forces during construction of the Project. The City will pay fees charged by the utility company for relocating these utilities.

24.0 SUBCONTRACTING

24.1 Contractor shall review the design and shall determine how it desires to divide the sequence of construction activities. Contractor will determine the breakdown and composition of bid packages for award of subcontracts, based on the current Construction Schedule, and shall supply a copy of that breakdown and composition to the City and Engineer for their review and approval. The Contractor may utilize the services of specialty Subcontractors on those parts of the Work which, under normal contracting practices, are performed by specialty Subcontractors. Contractor shall be solely responsible for and have control over the Subcontractors.

24.2 Prior to submitting its first Application for Payment, Contractor shall submit to the City a list of the names, addresses, licensing information and phone numbers of the Subcontractors Contractor intends to use for each portion of the Work, as well as identifying in writing those portions of the Work it intends to perform with its own employees. The Contractor shall not use a Subcontractor or Supplier against whom the Owner has a reasonable objection. The list identifying each Subcontractor cannot be modified, changed, or amended without prior written

approval from the City. Contractor shall continuously update that list, so that it remains current and accurate throughout the entire performance of the Work. Any and all work to be self-performed by Contractor must be approved in writing by the City in its sole discretion prior to commencement of such Work. The Contractor shall not award work to Subcontractor(s) in excess of fifty percent (50%) of the Contract Price, without prior written approval of the City.

- 24.3 The Contractor shall be fully responsible for and have control over the acts and omissions of its Subcontractors, and of persons either directly or indirectly employed by them, as the Contractor is for the acts and omissions of persons directly employed by it.
- 24.4 The Contractor shall cause appropriate provisions to be inserted in all Subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the Contract Documents insofar as applicable to the work of Subcontractors and give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the Contract Documents. Further, each subcontract shall require that any claims by a Subcontractor for delay or additional cost must be submitted to Contractor within the time and in the manner in which Contractor must submit such claims to the City, and that failure to comply with such conditions for giving notice and submitting claims shall result in the waiver of such claims.
- 24.5 All subcontracts between Contractor and its Subcontractors shall be in writing and are subject to the City's approval. Further, all subcontracts shall (1) require each Subcontractor to be bound to Contractor to the same extent Contractor is bound to the City by the terms of the Contract Documents, as those terms may apply to the portion of the Work to be performed by the Subcontractor, (2) provide for the assignment of the subcontracts from Contractor to the City at the election of the City upon termination of Contractor, (3) provide that the City will be an additional indemnified party of the subcontract, (4) provide that the City will be an additional insured on all insurance policies required to be provided by the Subcontractor except workmans' compensation, (5) assign all warranties directly to the City, and (6) identify the City as an intended third-party beneficiary of the subcontract.
- 24.6 Nothing contained in this Agreement shall create any contractual relation between any Subcontractor or Supplier and the City. All subcontracts and purchase orders entered into by Contractor must be in writing, and upon demand from City, Contractor shall deliver to City a full and complete copy of any or all such subcontracts and purchase orders.
- 24.7 Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract, copies of the Contract Documents to which the Subcontractor will be bound. Each Subcontractor shall similarly make copies of such documents available to its sub-subcontractors.

24.8 The Contractor shall not use a Subcontractor or Supplier against whom the City has a reasonable objection and Contractor shall not be required to contract with anyone it reasonably objects to.

24.8 The City and Engineer are under no duty or obligation whatsoever to any Subcontractor, Supplier, laborer or other party to ensure that payments due and owing by the Contractor to any of them will be made. Such parties shall rely only on the Contractor's surety bonds for remedy of nonpayment by the Contractor.

25.0 ENGINEER'S AUTHORITY

25.1 The Engineer shall act as the City's representative during the construction period, shall decide questions which may arise as to quality and acceptability of materials furnished and Work performed, and shall interpret the intent of the Contract Documents in a fair and reasonable manner. The Engineer will make visits to the site and determine if the Work is proceeding in accordance with the Contract Documents.

25.2 The Contractor will be held strictly to the intent of the Contract Documents in regard to the quality of materials, workmanship, and execution of the Work. Inspections may be at the factory or fabrication plant of the source of material supply.

25.3 The Engineer and the City will not be responsible for the construction means, controls, techniques, sequences, procedures, or construction safety.

25.4 The Engineer shall promptly make decisions relative to interpretation of the Contract Documents.

26.0 LAND AND RIGHT-OF-WAYS

26.1 Prior to the issuance of the NOTICE TO PROCEED, the City shall obtain all land and rights-of-way necessary for carrying out and for the completion of the Work to be performed pursuant to the Contract Documents, unless otherwise noted in the Contract Documents.

26.2 The City shall provide to the Contractor information which delineates and describes the lands owned and rights-of-way acquired.

26.3 The Contractor shall provide at its own expense and without liability to the City any additional land and access thereto that the Contractor may desire for temporary construction facilities, or for storage of materials.

27.0 GUARANTEE

- 27.1 The Contractor warrants to the City and Engineer that materials and equipment furnished under the Agreement will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Contractor further warrants to the City that all materials and equipment furnished under the Contract Documents shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturers, fabricators, suppliers or processors except as otherwise provided for in the Contract Documents. Further, any special warranty to be provided will be in such form as is acceptable to the City and shall not include any exclusions, exceptions or modifications except to the extent approved by the City in its sole discretion. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, modifications not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear from normal usage. If required by the Engineer, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.
- 27.2 Contractor expressly warrants to the City that it shall promptly correct, upon receipt of written notice from the City, any portion of the Work which is found to be defective or otherwise not in conformance with the requirements of the Contract Documents. The City will give notice of observed defects with reasonable promptness. Provided, however, in the event that any defective or non-conforming Work is determined by the City in its sole discretion to present an immediate threat to safety or security, the City shall be entitled to correct or replace such defective or non-conforming portions of the Work, and Contractor shall reimburse the City for all costs and expenses incurred by the City in correcting or replacing such Work. In the event that the Contractor should fail to make such repairs, adjustments, or other work that may be made necessary by such defects, the City may do so and charge the Contractor the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period. With respect to the correction or replacement of any defective or nonconforming Work, Contractor shall be liable for all damage to any part of the Work itself and to any adjacent property which is caused by such corrective or replacement work.
- 27.3 If, within one year after the date of final acceptance of the Work by the City, or by terms of an applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of written notice from the City to do so unless the City has previously given the Contractor an express written acceptance of such condition. The City shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable period of time (not to exceed 10

days) after receipt of notice from the City or Engineer, the Owner may correct or replace it in accordance with Section 27.2 above. This one year correction period is in addition to all other rights and does not limit the time period the City can seek to have the defective Work corrected.

27.4 Contractor shall obtain and assign to the City all express warranties given to Contractor by any Subcontractors or by Suppliers.

28.0 CLAIMS AND DISPUTES

28.1 The term "Claim" as used herein shall mean any and all demands made by one party hereunder against the other party, whether such demand be for money, time or the assertion of any right or obligation that arises out of the Contract Documents.

28.2 Initial notice of Claims by Contractor shall be made in writing to the City and Engineer within seven (7) calendar days after the first day of the event giving rise to such Claim or such other time period as may be expressly provided in the Contract Documents. If Contractor fails to give such written notice within the required time period, Contractor shall be deemed to have waived the Claim. Written data supporting Contractor's claim shall be submitted to the City and Engineer within thirty (30) calendar days after the occurrence of the event, or such other time period as may be expressly provided in the Contract Documents, unless the City grants additional time in writing, or else Contractor shall be deemed to have waived the Claim.

28.3 Contractor shall proceed diligently with its performance as directed by the City, regardless of any pending Claim, unless otherwise agreed to by the City in writing. The City shall continue to make payments of all undisputed amounts in accordance with the Contract Documents during the pendency of any Claim.

28.4 Prior to the initiation of any action or proceeding permitted by this Agreement to resolve disputes between the parties, the parties shall make a good faith effort to resolve any such disputes by negotiation between the President or Vice-President for the Contractor and the City Manager. Failing resolution, and prior to the commencement of depositions in any litigation between the parties with respect to the Project, the parties shall attempt to resolve the dispute through mediation before an agreed-upon Circuit Court Mediator certified by the State of Florida. Should either party fail to submit to mediation as required hereunder, the other party may request a court of law to order mediation under Florida Statutes Section 44.102.

28.5 Any litigation between the City and Contractor (which term for the purposes of this Section shall include Contractor's surety), whether arising out of any Claim or arising out of the Agreement or any breach thereof, shall be brought, maintained and pursued solely and exclusively in the appropriate State courts of the State of

Florida as set forth in Section 20.2. The City and Contractor each hereby waive and renounce any and all rights and options which they, or either of them, have or might have to bring or maintain any such litigation or action in the Federal Court system of the United States or in any United States Federal District Court. Venue of any such litigation between the City and Contractor shall lie and be only in the appropriate State courts in and for Bay County, Florida. Contractor consents and submits to the exclusive jurisdiction of any such court and agrees to accept service of process from the State of Florida in any matter to be submitted to any such court.

29.0 TAXES

29.1 The Contractor will pay all applicable sales, consumer, use and other similar taxes required by the laws of the place where the Work is performed.

30.0 CONTRACT TIME, SCHEDULE OF WORK AND TIME EXTENSIONS

30.1 Contractor shall diligently pursue the completion of the Work and coordinate the Work being done on the Project by its Subcontractors and Suppliers, as well as coordinating its Work with all work of others at the Project site, so that its Work or the work of others shall not be delayed or impaired by any act or omission by Contractor or anyone for whom Contractor is liable. All Work under this Agreement shall be arranged and be carried out in such a manner as to complete the Work on or before the required date of Substantial Completion. The Contractor must notify the City at the time of bidding if the chronology of the Work as shown or the subdivision of work will affect warranties or guarantees in any way. No such claims shall be allowed once the Work has begun.

30.2 Should Contractor be obstructed or delayed in the prosecution of or completion of the Work as a result of unforeseeable causes beyond the control of Contractor, and not due to its fault or neglect, including but not restricted to acts of God or of the public enemy, acts of government, fires, floods, epidemics, quarantine regulation, strikes, lockouts, unusually severe weather conditions by comparison with the ten-year Bay County, Florida average not reasonably anticipatable (to the extent Contractor was unable to perform any portion of the Work that was on the critical path of the approved Construction Schedule during those inclement weather days), Contractor shall notify Owner and Engineer in writing within seven (7) calendar days after the commencement of such delay, stating the cause or causes thereof, or be deemed to have waived any right which Contractor may have had to request a time extension.

30.3 The Contractor is required to furnish adequate manpower at the Project to complete the Work within the Contract Time and in accordance with the Construction Schedule. Should payment of premium time, bonuses, or the like be necessary to attract sufficient manpower for the Project, such extra labor

costs shall be borne by the Contractor without additional compensation from the City. Further, should the Contractor's Work, through no fault of the Engineer, the City, or City's other contractors, fail to progress in accordance with the Construction Schedule, and if, in the opinion of the Engineer, the Work cannot be substantially completed within the Contract Time, or if deemed necessary to protect this or adjoining work from damage, the Contractor shall work such additional time over the established hours of work, but excluding Holidays, as required to meet the schedule time without additional expense to the City. In such event, Contractor shall reimburse City for any additional costs incurred by the City associated with such overtime, including any additional costs of the Engineer.

30.4 When so ordered in writing by the Engineer or City, whether to advance the date of Substantial Completion, or for any other reason for the City's benefit, the Contractor shall work overtime and or additional shifts. If the order for such acceleration is not the result of Contractor being behind the approved Construction Schedule, Contractor shall be entitled to a Change Order increasing the Contract Price by its actual net premium costs of such overtime and or shifts so ordered and so worked, including insurance and taxes applicable thereto, (without other overhead or profit). Such costs and expenses shall be subject to audit by the City.

30.5 When any period of time is referenced by days herein, it shall be computed to exclude the first day and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day recognized by the City as a legal holiday, such day shall be omitted from the computation, and the last day shall become the next succeeding day which is not a Saturday, Sunday or legal holiday. The term "business day" as used herein shall mean all days of the week excluding Saturdays, Sundays and all legal holidays observed by the City.

31.0 USE OF SITE

31.1 The Contractor shall confine its use of the site for storage of materials, erection of temporary facilities and parking of vehicles to areas within its Agreement limits as directed by the Engineer. The Contractor shall not unnecessarily encumber the site at any time.

31.2 Contractor acknowledges that areas of the site in which Work under this Agreement may be performed may be used by other contractors for storage of materials, erection of temporary facilities and parking of vehicles. Areas used by other contractors will be vacated, as directed by the Engineer to permit Work under this Agreement, provided reasonable notice is given requesting such, all in accordance with the approved Construction Schedule.

31.3 No signs or advertisements shall be displayed on the site or building except with the written consent of the City.

32.0 TEMPORARY FACILITIES

32.1 The Contractor shall provide electric power and water as it may require for its construction purposes, and shall pay all costs incurred. At completion of the Work, all temporary facilities shall be removed from the site. Upon Substantial Completion of the Work, Contractor shall cause all permanent utilities to be utilized by the City that were in Contractor's name during construction of the Project to be transferred over to the City's name.

32.2 The Contractor shall provide sanitary facilities for its workmen at all times. Sanitary facilities shall be of an approved chemical type with regular servicing and appropriately screened from public view, as approved by the Engineer and all applicable health authorities.

33.0 CLEAN UP AND DISPOSAL OF WASTE MATERIALS AND HAZARDOUS MATERIALS

33.1 No burial of waste materials will be permitted on the site. The Contractor shall at all times keep the site free from accumulations of waste material or debris caused by its operations and shall immediately remove same when necessary or required by the Engineer or the City. If Contractor fails to keep the Project site clean, the City has the right, after providing a twenty-four (24) hour written notice, to perform any required clean up and to backcharge Contractor for the costs of such clean up. At the completion of the Work, and before final inspection and acceptance of the Work, Contractor shall clean ditches, shape shoulders and restore all disturbed areas, including street crossings, grass plots, regrassing if necessary, to as good condition as existed before Work started, and remove all debris, rubbish and waste materials from and about the Project site, as well as all of Contractor's (and its Subcontractors') tools, appliances, construction equipment and machinery and surface materials, and shall leave the Project site clean and ready for occupancy by the City. Any existing surface or subsurface improvements, including, but not limited to, pavements, curbs, sidewalks, pipes, utilities, footings, structures, trees and shrubbery, not indicated in the Contract Documents to be removed or altered, shall be protected by Contractor from damage during the prosecution of the Work. Any such improvements so damaged shall be restored by Contractor to condition at least equal to that existing at the time of Contractor's commencement of the Work

33.2 If Contractor encounters on the Project site any materials reasonably believed by Contractor to be petroleum or petroleum related products or other hazardous or toxic substances which have not been rendered harmless, Contractor immediately shall (i) stop Work in the area affected and (ii) report the condition to the City in writing. If the Work is so stopped and hazardous material is found, the Work in the affected area shall not thereafter be resumed except by Change Order. Any such Change Order shall include, but not be limited to, an equitable

adjustment to the Contract Time and Contract Price as appropriate and in accordance with the terms of the Contract Documents. If no hazardous material is found after the Work is stopped, no Change Order is required to resume the Work in the affected area. Further, if the hazardous material was generated or caused by Contractor or anyone for whom Contractor is responsible, or if Contractor failed to stop Work or give the written notice required above, no Change Order will be required for an adjustment in the Contract Time or Contract Price and Contractor shall indemnify the City and hold the City harmless for any costs incurred by the City with respect to such hazardous material generated or caused by Contractor or anyone for whom it is responsible or any increased costs incurred by City as a result of Contractor's failure to stop Work or give the required written notice.

34.0 WARRANTY OF TITLE

34.1 No material, supplies or equipment for the Work shall be purchased by the Contractor subject to any chattel mortgage or under a conditional sale or other agreement by which a lien or an interest therein or any part thereof is retained by the seller or supplier. The Contractor warrants good title to all materials, supplies and equipment installed or incorporated in the Work and title to all such items shall pass to the City upon its incorporation into the Work or payment, whichever occurs first. Contractor shall, at all times, keep the site, together with all improvements and appurtenances constructed or placed thereon by it, free from any claims, liens or charges and further agrees that neither Contractor nor any person, firm, or corporation furnishing any material or labor for any Work covered by this Agreement shall have any right to a lien upon the Work, site or any improvements or appurtenances thereon. The Contractor shall not at any time suffer or permit any lien, attachment, or other encumbrances under the law of Florida or otherwise by any person or persons whomsoever to remain on file with the City against any money due or to become due for any work done or materials furnished under the Agreement or by reason of any other claim or demand against the Contractor. Such lien, attachment, or other encumbrance, until it is removed, shall preclude any and all claims or demands for any payment to Contractor under virtue of this Agreement.

35.0 OWNERSHIP OF HIDDEN VALUABLE MATERIALS

35.1 All items having any apparent historical or archaeological interest or treasure or valuable materials discovered during any construction activities shall be carefully preserved and reported immediately to the City for determination of appropriate actions to be taken. Any increases to Contractor's time or cost of performance due to historical or archaeological items discovered on the site shall entitle Contractor to a Change Order equitably adjusting the Contract Time and the Contract Price as appropriate and in accordance with the terms of the Contract Documents. Notwithstanding anything in the Contract Documents to the contrary, Contractor shall have no claim or entitlement to any such historical or

archaeological interest or treasure or other valuable materials discovered, and all such items shall remain the property of the City.

36.0 AS-BUILT PLANS and DOCUMENTS TO BE KEPT AT THE SITE

36.1 Before final inspection the Contractor shall turn over to the Engineer a set of drawings showing field changes and actual installed conditions. CONTRACTOR shall provide to the ENGINEER two (2) hard copies and one (1) electronic copy of the as-built plans in AutoCAD 2018. The plans shall be certified by a P.L.S. registered in the State of Florida.

36.2 Contractor shall maintain at the Project site or such other place as may be expressly approved in writing by Owner, originals or copies of, on a current basis, all Project files and records, including, but not limited to, the following administrative records: Subcontracts and Purchase Orders; Subcontractor Licenses; Shop Drawing Submittal/Approval Logs; Equipment Purchase/Delivery Logs; Contract Drawings and Specifications with Addenda; Warranties and Guarantees; Cost Accounting Records; Payment Request Records; Meeting Minutes; Insurance Certificates and Bonds; Contract Changes; Permits; Material Purchase Delivery Logs; Technical Standards; Design Handbooks; "As-Built" Marked Prints; Operating & Maintenance Instruction; Daily Progress Reports; Monthly Progress Reports; Correspondence Files; Transmittal Records; Inspection Reports; Bid/Award Information; Bid Analysis and Negotiations; Punch Lists; and a Construction Schedule (including all updates). The Project files and records shall be available at all times to the City and Engineer or their designees for reference, review or copying.

37.0 SILENCE OF SPECIFICATIONS

37.1 To the extent the Work involves road or bridge construction, the apparent silence of the Contract Documents as to any details or the omission from them of a detailed description concerning any point shall be regarded as meaning that such portion of the Work shall be performed in accordance with the latest edition of the Florida DOT Standard Specifications for Road and Bridge Construction.

38.0 GRATUITIES

38.1 If the City finds after a notice and hearing that the Contractor, or any of the Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts or otherwise) to any official, employee, or agent of the City, the State, or other officials in an attempt to secure this Agreement or favorable treatment in awarding, amending, or making any determinations related to the performance of this Agreement, the City may, by written notice to the Contractor, terminate this Agreement for Contractor default. The City may also pursue other rights and remedies that the law or this Agreement provides.

38.2 In the event this Agreement is terminated as provided in Section 38.1, the City may pursue the same remedies against the Contractor as it could pursue in the event of a breach of the Agreement by the Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, the City may pursue exemplary damages in an amount (as determined by the City) which shall be not less than three nor more than ten times the costs the Contractor incurs in providing any such gratuities to any such official, agent or employee of the City.

39.0 AUDIT AND ACCESS TO RECORDS

39.1 Contractor shall keep all records and supporting documentation which concern or relate to the Work hereunder for a minimum of three (3) years from the date of termination of this Agreement or the date the Project is completed, whichever is later or such longer period of time as may be required by law. Contractor shall require all of its Subcontractors to likewise retain all of their Project records and supporting documentation. The City, and any duly authorized agents or representatives of the City, shall be provided access to all such records and supporting documentation at any and all times during normal business hours upon request by the City. Contractor shall make all such Project records and supporting documentation available in Bay County, Florida. Further, the City, and any duly authorized agents or representatives of the City, shall have the right to audit, inspect and copy all of Contractor's and any Subcontractor's Project records and documentation as often as they deem necessary and Contractor shall cooperate in any audit, inspection, or copying of the documents. These access, inspection, copying and auditing rights shall survive the termination of this Agreement.

40.0 EQUAL OPPORTUNITY REQUIREMENTS

40.1 For all contracts in excess of \$10,000, the Contractor shall comply with Executive Order 11246, entitled "Equal Employment Opportunity", as amended by Executive Order 11375, and as supplemented in Department of Labor regulations (41 CFR Part 60).

40.2 The Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographic area where the Agreement is to be performed.

41.0 CHANGED CONDITIONS

41.1 Notwithstanding anything in the Contract Documents to the contrary, if conditions are encountered at the Project site which are (i) subsurface or otherwise

concealed physical conditions which differ materially from those indicated in the Contract Documents or (ii) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, and which reasonably should not have been discovered by Contractor as part of its scope of site investigative services required pursuant to the terms of the Contract Documents, then Contractor shall provide the City with prompt written notice thereof before conditions are disturbed and in no event later than seven (7) calendar days after first observance of such conditions. The City and Engineer shall promptly investigate such conditions and, if they differ materially and cause an increase or decrease in Contractor's cost of, or time required for, performance of any part of the Work, the City will acknowledge and agree to an equitable adjustment to the Contract Price or Contract Time, or both, for such Work. If the City determines that the conditions at the site are not materially different from those indicated in the Contract Documents or not of an unusual nature or should have been discovered by Contractor as part of its investigative services, and that no change in the terms of the Agreement is justified, the City shall so notify Contractor in writing, stating its reasons. Claims by Contractor in opposition to such determination by the City must be made within seven (7) calendar days after Contractor's receipt of the City's written determination notice. If the City and Contractor cannot agree on an adjustment to the Contract Price or Contract Time, the dispute resolution procedure set forth in the Contract Documents shall be complied with by the parties.

42.0 COMPLIANCE WITH LAWS

42.1 Contractor agrees to comply, at its own expense, with all federal, state and local laws, codes, statutes, ordinances, rules, administrative orders, regulations and requirements applicable to the Project, including but not limited to those dealing with safety (including, but not limited to, the Trench Safety Act, Chapter 553, Florida Statutes). An executed copy of Contractor's Trench Safety Act Certificate of Compliance (the form of which is attached hereto as Section 00096) has been delivered to City with the Contractor's Bid Proposal Form. If Contractor observes that the Contract Documents are at variance therewith, it shall promptly notify the City and Engineer in writing. Contractor has provided a separate line item in its Bid identifying the cost of compliance with the applicable trench safety standards set forth in the Trench Safety Act.

43.0 PUBLIC ENTITY CRIMES

43.1 By its execution of the Agreement and the Contractor's Public Entities Crime Statement, in the form set forth in Section 00097). Contractor acknowledges that it has been informed by the City of and warrants that it is in compliance with the terms of Section 287.133(2)(a) of the Florida Statutes which reads as follows:

"A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity in excess of the threshold amount provided in s. 287.017 for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list."

44.0 INSURANCE

44.1 During the term of this Agreement, Contractor shall provide, pay for, and maintain, with companies satisfactory to the City, the types and limits of insurance required by the Contract Documents. All insurance shall be from responsible companies eligible to do business in the State of Florida. Simultaneously with the execution and delivery of this Agreement by Contractor, Contractor shall deliver to the City the properly completed and executed Certificate of Insurance, in the form set forth in Section 00099 along with any other properly completed and executed Certificates of Insurance that may be necessary, evidencing the fact that Contractor has acquired and put in place the insurance coverages and limits required herein. In addition, certified, true and exact copies of all insurance policies required shall be provided to the City, on a timely basis, if requested by the City. These Certificates and policies shall contain provisions that at least thirty (30) calendar days advanced written notice by registered or certified mail shall be given the City of any cancellation, intent not to renew, or any policy change that would result in a reduction in the policies' coverages, except in the application of the Aggregate Limits Provisions. The renewal of any insurance required to be maintained by Contractor hereunder shall be by a renewal Certificate of Insurance in the same form as was required for the original Certificate of Insurance, which renewal Certificate of Insurance shall be delivered to City at least ten (10) calendar days prior to expiration of current coverages so that there shall be no interruption in the Work due to lack of proof of insurance coverages required of Contractor under this Agreement.

44.2 Contractor shall also notify the City, in the same manner required in Section 44.1 above, within two (2) calendar days after Contractor's receipt, of any notices of expiration, cancellation, non-renewal or material change in coverages or limits received by Contractor from its insurer, and nothing contained herein shall relieve Contractor of this requirement to provide notice. In the event of a reduction in the aggregate limit of any policy to be provided by it hereunder, Contractor shall immediately take steps to have the aggregate limit reinstated to the full extent permitted under such policy. If, at any time, City requests a written statement

from an insurance company as to any impairment to any aggregate limit of any policy to be provided by it hereunder, Contractor shall promptly authorize and cause to be delivered such statement to City. All insurance coverages of Contractor shall be primary to any insurance or self-insurance program carried by the City applicable to this Agreement. Any such self insurance programs or coverages shall not be contributory with any insurance required of the Contractor under the terms of this Agreement. All insurance policies, other than the Workers Compensation policy and the Surveyor's Professional Liability policy, provided by Contractor to meet the requirements of this Agreement shall name the City as an additional insured through the use of ISO Endorsement No. CG 20.10.10.01 and No. CG 20.37.10.01 wording, as to the operations of Contractor under the Contract Documents and shall also provide the Severability of Interest provision (also referred to as the Separation of Insureds provision). Companies issuing the insurance policy or policies shall have no recourse against the City for payment of premiums or assessments for any deductibles which all are at the sole responsibility and risk of Contractor.

- 44.3 All insurance policies to be provided by Contractor pursuant to the terms hereof shall be performable in Bay County, Florida and must expressly state that the insurance company will accept service of process in Bay County, Florida and that the exclusive venue and exclusive jurisdiction for any action concerning any matter under those policies shall be in the appropriate state court situated in Bay County, Florida.
- 44.4 The acceptance by the City of any Certificate of Insurance pursuant to the terms of this Agreement evidencing the insurance coverages and limits required hereunder does not constitute approval or agreement by the City that the insurance requirements have been met or that the insurance policies shown on the Certificates of Insurance are in compliance with the requirements of this Agreement.
- 44.5 Before starting and until completion of all Work required hereunder, Contractor shall procure and maintain insurance of the types and to the limits specified in the Contract Documents. Contractor shall require each of its Subcontractors to procure and maintain, until the completion of that Subcontractor's work or services, insurance of the types and to the limits specified in the Contract Documents, unless such insurance requirement for the Subcontractor is expressly waived or modified in writing by the City. Contractor shall not enter or otherwise occupy the Project site or commence any Work to be performed under this Agreement at the Site or any other property of the City until all insurance required hereunder has been obtained by Contractor and such proof of insurance, as the same is required under this Agreement, has been delivered to City. Contractor shall require all property insurance policies related to the Work and secured and maintained by Contractor and its Subcontractors to include provisions providing that each of their insurance companies shall waive all rights of recovery, under subrogation or otherwise, against the City and any of its

separate contractors and the agents, employees and subcontractors of any of them.

- 44.6 Should at any time Contractor or any of its Subcontractors not maintain the insurance coverages required in this Agreement, the City may terminate this Agreement for Contractor default or at its sole discretion shall be authorized to purchase such coverages and charge Contractor for such coverages purchased, to include a fifteen percent (15%) administrative fee. If Contractor fails to reimburse the City for such costs within thirty (30) calendar days after demand, the City has the right to offset those costs from any amount due Contractor under this Agreement. The City shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company/companies used. The decision of the City to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under this Agreement. If the City exercises its option to purchase such required coverages, the coverages shall not be cancelled by Contractor and shall stay in force until the normal expiration date according to the terms and conditions of the insurance policy.
- 44.7 As may be required by City from time to time, the status of any insurance aggregate limits are to be confirmed in writing by the respective insurance companies. The amounts and types of insurance Contractor shall comply with all of the requirements of this Section 44 unless otherwise agreed to, in writing, by City.

END OF SECTION 00100

**SECTION 000302
ANTI-COLLUSION STATEMENT**

I hereby attest that I am the person responsible within my company for the final decision as to the price(s) and amount of this Bid or, if not, that I have written authorization, enclosed herewith, from that person to make the statements set out below on his or her behalf and on behalf of my company.

I further attest that:

- A. The price(s) and amount of this Bid have been arrived at independently, without consultation, communication or agreement for the purpose or with the effect of restricting competition with any other company or person who is a Bidder or potential Prime Bidder.
- B. Neither the price(s) nor the amount of this Bid have been disclosed to any other company or person who is a Bidder or potential Prime Bidder on this Project, and will not be so disclosed prior to Bid Opening.
- C. Neither the prices nor the amount of the Bid of any other company or person who is a Bidder or potential Prime Bidder on this Project have been disclosed to me or my company.
- D. No attempt has been made to solicit, cause or induce any company or person who is a Bidder or potential Prime Bidder to refrain from Bidding on this project, or to submit a Bid higher than the Bid of this company, or any intentionally high or noncompetitive Bid or other form of complementary Bid.
- E. No agreement has been promised or solicited for any other company or person who is a Bidder or potential Prime Bidder on this Project to submit an intentionally high, noncompetitive or other form of complementary Bid on this project.
- F. The Bid of my company is made in good faith and not pursuant to any consultation, communication, agreement or discussion with, or inducement or solicitation by or from any company or person to submit any intentionally high, noncompetitive or other form of complementary Bid.
- G. My company has not offered or entered into a subcontract or agreement regarding the purchase or sale of materials or services from any company or person, or offered, promised or paid cash or anything of value to any company or person, whether in connection with this or any other project, in consideration for an agreement or promise by any company or person to refrain from bidding or to submit any intentionally high, noncompetitive or other form of complementary bid or agreeing or promising to do so on this project.

- H. My company has not accepted or been promised any subcontract or agreement regarding the sale of materials or services to any company or person, and has not been promised or paid cash or anything of value by any company or person, whether in connection with this or any other Project, in consideration for my company's submitting any intentionally high, noncompetitive or other form of complementary Bid, or agreeing or promising to do so, on this Project.

- I. I have made a diligent inquiry of all members, officers, employees, and agents of my company with responsibilities relating to the preparation, approval, or submission of my company's Bid on this Project and have been advised by each of them that he or she has not participated in any communication, consultation, discussion, agreement, collusion, or other conduct inconsistent with any of the statements and representations made in this affidavit.

- J. I understand and my company understands that any misstatement in this affidavit is and shall be treated as a fraudulent concealment from the **City of Panama City Beach**, of the true facts relating to submission of Bids for this Contract.

I DECLARE UNDER PENALTY OF PERJURY IN THE SECOND DEGREE, AND ANY OTHER APPLICABLE STATE OR FEDERAL LAWS THAT THE STATEMENTS MADE ON THIS DOCUMENT ARE TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.

Signature

Company Name

Title

Address

Date

Phone Number

END OF SECTION

**SECTION 000303
CONFLICT OF INTEREST DISCLOSURE FORM**

Please mark which of the following applies to Bidder's company:

_____ I hereby attest that no **City of Panama City Beach** City Commissioners(s), employee(s), elected officials(s), or if any of its agencies is also an owner, corporate officer, agency, employee, etc., of their corporation/partnership/individual business.

_____ The following are name(s) and position(s) of person(s) with Bidder's company.

| NAME(S) | POSITION(S) |
|---------|-------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

(Signature)

Title/Date: _____

Business Name: _____

END OF SECTION

SECTION 00800

SUPPLEMENTAL CONDITIONS

PHASE 1 – GENERAL

1.1 CLAIM PERIOD

- A. No claim by the Contractor for an equitable adjustment hereunder shall be allowed if asserted after final payment under this Contract.

1.2 REGULAR WORKING HOURS

- A. Regular working hours are defined as up to forty hours per week with a maximum of ten hours per day, Monday through Friday, beginning no earlier than 7:00 A.M. and ending no later than 5:00 P.M., excluding holidays. Any work beyond ten hours per day or forty hours per week shall be considered overtime. The Contractor shall not work on holidays. The Contract Time shall not be extended due to holidays falling within the Contract Time. Whenever the Contractor is performing any part of the Work, with the exception of equipment maintenance and cleanup, inspection by Owner's representative will be required. Requests to perform the Work at times other than during regular working hours must be submitted in writing to the Project Representative, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks, to give the Owner ample time to arrange for representation and/or inspection during those periods. Periodic unscheduled overtime on weekdays will be permitted provided that two hours' notice is provided to and acknowledged in writing by the Project Representative prior to the end of the regular working day. Maintenance of the Contractor's equipment and cleanup may be performed during hours other than regular working hours.
- B. Contractor shall reimburse the Owner for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours. At Owner's option, overtime costs may either be deducted from the Contractor's monthly payment request or deducted from the Contractor's retention prior to release of final payment.
- C. Engineering/Inspection costs shall be calculated at the following rates:
 - 1. Field Representative \$95/hour
 - 2. Engineer \$165/hour
 - 3. Project Manager \$210/hour

1.3 DEFECTIVE WORK

- A. The Contractor shall not be entitled to an extension of the Contract Time or increase in the Contract Price for correcting or removing defective work.

1.4 CORRECTIVE WORK

- A. Where defective or nonconforming Work (including damage to other work resulting therefrom) has been corrected, removed or replaced pursuant to the Contractor's obligations under the Contract Documents including Articles 16.0 and 27.0 of the General Conditions, the correction period set forth in Article 27.0 of the General Conditions with respect to such work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed and accepted by the Owner.

1.5 STORED EQUIPMENT AND MATERIALS

- A. The Contractor shall furnish evidence that payment received on the basis of materials and equipment, not incorporated and suitably stored, has in fact been paid to the respective supplier(s) within sixty (60) days of the Application of Payment on which the material/equipment first appeared. Failure to procure said evidence of payment shall result in the withdrawal of previous approval(s) and removal of the related equipment and materials from the Application of Payment.

1.6 SUBSTANTIAL COMPLETION

- A. In addition to the other terms and conditions set forth in the Contract Documents, the Work will not be considered substantially complete unless and until Contractor has completed each of the following to the satisfaction of the Owner:
1. All components of the Work have been installed, tested and approved.
 2. All repair and coating systems have been properly cured.
 3. All data specified in the Contract Documents have been delivered to the Owner.
 4. All instructions have been provided to the Project Representative in accordance with the Contract Documents.
 5. All training to be provided by Contractor pursuant to the terms of the Contract Documents has been completed.

END OF SECTION 00800

SECTION 00801

SUPPLEMENTAL CONDITIONS

CONSTRUCTION SCHEDULE

PART 1 – GENERAL

- 1.1 Construction Schedule: The Construction Schedule to be submitted by Contractor within the timeframe set forth in the Contract Documents shall be in CPM schedule format.

Contractor shall develop the schedule in Precedence Diagram Method (PDM) format, consistent with Contract milestones, showing activities for each discrete Contract activity to be accomplished within each Maintenance of Traffic phase. It shall include activities for deliverables and reviews in the schedule. Sufficient liaison shall be conducted and information provided to indicate coordination with utility owners having facilities within the project limits. The Construction Schedule must reflect the utility requirements included in the Contract Documents, unless changed by mutual agreement of the utility company, the Contractor, the Owner and the Project Representative. The Construction Schedule shall assign calendar day durations to each activity.

Failure to include any element of work or any activity relating to utility relocation will not relieve the Contractor from completing all work within the Contract Time at no additional contract time or cost, notwithstanding prior acceptance of the schedule.

Contractor shall prepare a CPM Network Diagram in time-scale logic diagram, by week starting on Monday, grouped (banded) by work areas and sorted by early start days. Contractor shall prominently identify the critical path activities, defined as the longest continuous path of work activities and submit the Network Diagram on D size, 22 by 34 inch [559 by 864 mm] or E size, 34 by 44 inch [864 by 1,118 mm] paper.

Contractor shall submit one copy of schedule reports containing, as a minimum, identification, activity description, estimated total duration, estimated remaining duration, computed or specified early start date, computed or specified late finish date, and total float. Submit all reports on 8.5 by 11 inch [216 by 280 mm] paper, sorted as follows:

1. Activity Report: Include activities shown on the Contract Schedule listed in order of ascending activity number.

2. Float Report: Include activities shown on the Contract Schedule listed in order of the ascending total float values.
3. Early Start Report: Include activities shown on the Contract Schedule in chronological order by early start date.
4. Predecessor/Successor Report: Include activities shown on the Contract Schedule listed in order of ascending activity numbers with the associated predecessor and successor activity numbers.
5. Narrative: Explain, in narrative form, how durations were determined and describe the proposed approach for meeting interim and final completion milestone dates specified in the Contract. Include assumptions made, restraints, critical path activities, means and methods, crews planned for each operation, equipment requirements, activities requiring overtime, additional shifts, permits, coordination requirements, long lead delivery items, or other significant requirements which would affect the ability to meet the interim and final milestone dates. Failure to include in the schedule any element of work shall not excuse the Contractor from completing all work required to achieve completion.

All submittals shall have a copy of the schedule files on a Windows compatible 3.5" diskette attached. The files shall be in one of the following formats:

1. Primavera (P3) project files using the Primavera Project Planner (latest version) "Back up" menu selection. Ensure that the option "Remove access list during backup" is checked.
2. Suretrak (latest version) "Back up" menu selection. Ensure that the option "Remove access list during backup" is checked.

The Project Representative will have 45 days to accept the Construction Schedule or to schedule a meeting with the Contractor to resolve any problems that prevent acceptance of the schedule. Contractor shall attend the meeting scheduled by the Project Representative, and submit a corrected Construction Schedule to the Project Representative within seven days after the meeting. The process will be continued until a Construction Schedule is accepted by the Project Representative.

The Construction Schedule may indicate a completion date in advance of the Contract completion date. However, the Owner will not be liable in any way for the Contractor's failure to complete the project prior to the Contract completion date. Any additional costs, including extended overhead incurred between the Contractor's schedule completion date and the completion of Contract Time, shall be the responsibility of the Contractor. The Contractor shall not be entitled to claim or recover any such cost from the Owner.

On each Monday prior to the monthly estimate cutoff date, submit Contract Schedule, updated to reflect actual start dates, actual finish dates, added activities, changes in sequence and days remaining, to the Projective

Representative for acceptance. Include an updated Network Diagram and computer-generated reports and a narrative as herein specified. In the narrative, address changes in duration of any activity and changes to logic of activities which were performed in a sequence different from those shown in the latest accepted Construction Schedule. Also address activities to be added to the schedule, identification of supplemental agreements and change orders, and the incorporation of accepted schedule revisions. Any changes to the sequencing must be coordinated with the utility work shown in the plans. If the schedule provided indicates an actual or potential delay to the completion of the Contract include in the narrative a discussion of problems, causes, activities affected and describe the means and methods to be utilized to complete the project in the authorized time. Attend meetings scheduled by the Project Representative to resolve any problems that prevent acceptance of the updated Construction Schedule, and submit revised schedules as necessary for the Project Representative's acceptance. By acceptance of the Construction Schedule, the Project Representative does not endorse or otherwise certify the validity or accuracy of the activity durations or logic utilized.

The Project Representative will withhold monthly payments due for failure of the Contractor to meet the requirements for submittal and acceptance of the Construction Schedule, including the monthly updates.

1.2 WEEKLY MEETINGS

Attend weekly meetings scheduled by the Project Representative to discuss Contract progress, near term scheduled activities, including utility relocations, problems and their proposed solutions. Submit a Two-Week Planning Schedule at each weekly meeting, showing the items of work planned for the next two weeks. Develop the schedule in Bar Chart format, identifying current and planned activities and related Construction Schedule work activities, including subcontractor work. Designate all activities that are controlling work items as determined by the currently accepted Construction Schedule.

1.3 FLOAT

Float is not for the exclusive use or benefit of either the Owner or the Contractor. The Project Representative will grant time extensions only to the extent that time adjustments to the affected activities exceed the total float along the affected paths of the currently accepted Construction Schedule at the time of delay. Submit a network diagram, total float report a narrative report to support any request for additional Contract time.

1.4 PERFORMANCE OF WORK

By submitting a schedule the Contractor is making a positive assertion that the Project will be constructed in the order indicated on the Construction Schedule.

Contractor shall prosecute the work in accordance with the latest accepted Construction Schedule. Any costs associated with meeting milestones and completing the Project within the authorized Contract Time will be borne solely by the Contractor.

1.5 AS-BUILT SCHEDULE

As a condition for the release of any retainage, submittals of as-built schedules which describes the actual order and start and stop times for all activities by the Contractor is required.

END OF SECTION 00801

SECTION 00802

SUPPLEMENTAL CONDITIONS

PREVENTION, CONTROL AND ABATEMENT
OF EROSION AND WATER POLLUTION

PART 1 – GENERAL

1.1 PRECONSTRUCTION REQUIREMENTS

At the Preconstruction Conference, Contractor shall provide to the Project Representative an Erosion Control Plan meeting the requirements or special conditions of all permits authorizing project construction and the contract requirements.

When a DEP generic permit is issued, the Contractor's Erosion Control Plan shall be prepared to accompany the Stormwater Pollution Prevention Plan (SWPPP). Contractor shall ensure the Erosion Control Plan includes procedures to control off-site tracking of soil by vehicles and construction equipment and a procedure for cleanup and reporting of non-storm water discharges, such as contaminated groundwater or accidental spills. Contractor shall not begin any soil disturbing activities until receipt of Project Representative's written approval of the Contractor's Erosion Control Plan, including required signed certification statements.

Contractor's failure to sign any required documents or certification statements will be considered a default of the Contract. Any soil disturbing activities performed by Contractor or any of its subcontractors without the required signed documents or certification statements may be considered a violation of the DEP Generic Permit.

When the SWPPP is required, Contractor shall prepare the Erosion Control Plan in accordance with the planned sequence of operations and present the Erosion Control Plan in a format acceptable to the Project Representative. The Erosion Control Plan shall include, but not be limited to, descriptions of the following items or activities:

- (1) For each phase of construction operations or activities, supply the following information:
 - (a) Locations of all erosion control devices
 - (b) Types of all erosion control devices
 - (c) Estimated time erosion control devices will be in operation

- (d) Monitoring schedules for maintenance of erosion control devices
 - (e) Methods of maintaining erosion control devices
 - (f) Containment or removal methods for pollutants or hazardous wastes
- (2) The name and telephone number of the person responsible for monitoring and maintaining the erosion control devices.
- (3) The Erosion Control Plan submitted to the Project Representative for Engineer approval.

Contractor shall not begin construction activities until the Erosion Control Plan receives written approval from the Engineer. Contractor shall comply with the approved Erosion Control Plan.

1.2 BALES

Contractor shall provide baled hay or straw having minimum dimensions of 14 by 18 by 36 inches [350 by 450 by 900 mm] at the time of placement. Contractor shall construct baled hay or straw dams according to details shown in the plans or as directed by the Project Representative to protect against downstream accumulations of sediment.

Contractor shall use natural baled hay or straw or synthetic hay bales as an alternative to natural baled hay or straw. Synthetic hay bales should be interlocking, have pre-made stake holes, made of synthetic fibers (polypropylene, nylon, polyester) that meet the Environmental Protection Agency's TCLP standards, and be produced into a filter medium with needle-punches fibers. Contractor shall wash out and remove sediment deposits when the deposits reach ½ the height of the reusable synthetic hay bale or as directed by the Project Representative. Contractor shall dispose of the washout in an area approved by the Project Representative. Synthetic hay bales that have had sediment deposits removed may be reinstalled on the project as approved by the Project Representative.

1.3 ARTIFICIAL COVERINGS

General: Contractor shall install artificial coverings in locations where temporary protection from erosion is needed. Two situations occur that require artificial coverings. The two situations have differing material requirements, which are described below.

- (1) During temporary pauses in construction caused by inclement weather or other circumstances, use artificial coverings composed of natural or synthetic fiber mats, plastic sheeting, or netting as protection against erosion, when directed by the Project Representative. Remove the material when construction resumes.
- (2) While permanent grassing is being established, use artificial coverings as erosion control blankets, at locations shown in the plans, to facilitate plant growth, in accordance with FDOT specification 104-6.4.13.

1.4 MAINTENANCE AND INSPECTION

Contractor shall provide routine maintenance of permanent and temporary erosion control features, at no additional Contract expense, until the project is complete and accepted. If reconstruction of such erosion control features is necessary due to the Contractor's negligence or carelessness or, in the case of temporary erosion control features, failure by the Contractor to install permanent erosion control features as scheduled, the Contractor shall replace such erosion control features at no additional Contract expense.

Contractor shall inspect all erosion control features at least once every seven calendar days and within 24 hours of the end of a storm of 0.50 inches [12 mm] or greater. Contractor shall maintain all erosion control features as required in the SWPPP, Contractor's Erosion Control Plan and as specified in the State of Florida Department of Environmental Protection Generic Permit for Stormwater Discharge from Large and Small Construction Activities.

1.5 MOWING

The Project Representative may require mowing by Contractor of areas within the limits of the project as deemed necessary by the Project Manager. Contractor shall mow these designated areas within seven days of receiving such order from the Project Representative. Contractor shall remove and properly dispose of all litter and debris prior to the mowing operation. Contractor shall use conventional and specialized equipment along with hand labor to mow the entire area including slopes, wet areas, intersections, and around all appurtenances. Contractor shall mow all areas to obtain a uniform height of 6 inches [150 mm], unless directed otherwise by the Project Representative.

END OF SECTION 00802

SECTION 000808

SALES TAX EXEMPTION ADDENDUM

1. Contractor and City entered into a contract dated _____, (the "Contract") for the performance of the WORK described therein, to which an executed copy of this Sales Tax Exemption Addendum ("Addendum") shall be attached thereto and incorporated therein.
2. Contractor and City desire to enter into an arrangement whereby certain purchases under the Contract can be made through the City as a means of taking advantage of the City's status of being exempt from sales and use taxes.
3. The City is exempt from sales and use taxes. As such it is exempt from the payment of sales and use tax on purchases of building materials or equipment necessary for the performance of work under construction contracts, provided the City determines it is to its best interest to do so, and provided the purchase of such building materials and equipment are handled in the manner hereinafter described.
4. The City has determined it is in its best interest to provide the opportunity to eliminate the payments of sales tax for building materials or equipment to be used in the construction of this project, and notifies the Contractor of its intent to do so.

TERMS AND CONDITIONS

1. The parties intend by this Addendum to comply with the procedures and elements described in Florida Department of Revenue Technical Assistance Advisements 01A-003 (January 8, 2001) and 00A-083 (December 21, 2000), and any conflict or ambiguity in this Addendum shall be resolved in favor of meeting the elements necessary to make tax exempt the purchases contemplated by this Addendum.
2. The City shall, at its sole discretion, have the option to purchase directly from the supplier or vendor, any building materials or equipment included in the Contractor's bid for the Contract. Contractor shall, from time to time submit, update and keep current, for consideration by the City, a list of all building materials and equipment to be purchased, organized by supplier or vendor. Such list shall include a brief description of the building materials and equipment and the name and address of the supplier or vendor. Suppliers or vendors

reasonably anticipated to furnish building materials and equipment with an

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aggregate purchase value of less than \$10,000 need not be listed. Contractor's initial list is attached hereto and incorporated herein. Building materials and equipment not required for the performance of the Contract shall not be purchased under this Addendum. The City reserves the right to delete or add items from this Addendum when it is in the City's best interest.

3. The City will be liable for the payment of all purchases properly made hereunder.
4. Contractor shall notify all suppliers or vendors not to make sales to the Contractor under this Addendum.
5. For each purchase approved by the City to be made under this Addendum, the Contractor shall furnish the City in writing information sufficient for the City to issue to the supplier its City purchase order for the requested building materials or equipment which shall include as an attachment the City's Certificate of Exemption. Suppliers and vendors will render statements for materials purchased to the City in care of the Contractor. After receiving and inspecting the materials when they arrive at the job site, verifying that all necessary documentation accompanies the delivery and conforms with the purchase order, Contractor will forward the invoices to the City's duly authorized representative for approval, processing and delivery to the City for payment. The City will process the invoices and issue payment directly to the supplier or vendor. Contractor will keep and furnish to the City all such records, summaries, reports of purchase orders and invoices, and reports of the status and use of goods handled under this Addendum, as the City may reasonably require.
6. The Contract provides that Contractor will perform the work under the Contract for the Contract Price in the amount of \$[REDACTED], as may be amended from time to time as provided in the Contract. Said amount, as amended, due Contractor under the Contract shall be reduced by the sum of all amounts paid by the City for materials and equipment purchased under this Addendum, including any shipping, handling, insurance or other, similar charges paid by the City, and all of the savings of sales and use tax on the purchase of such items.
7. The Contractor shall submit his proposal for base bid and proposals for each Alternate with the inclusion of all required taxes including applicable sales and use tax, the same as if tax were to be paid in the normal manner. Any sales and use tax savings will be effected during the performance of the Contract.

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8. Contractor shall immediately notify all subcontractors and material and equipment suppliers of the City's intent to reduce the construction cost of the Project by the purchase of building materials and equipment in the manner herein described and the Contractor shall not withhold his consent to the arrangement.
9. Administrative costs incurred by the Contractor with this Addendum shall be considered to be included in the Total Lump Sum Bid amount for the Work. No addition shall be added to the Contract Price because of the service provided by the Contractor in the purchase of building materials and equipment by the City.
10. All sales and use tax savings on the purchase of building materials and equipment shall be credited to the City and the amount of the Contract Price shall be reduced by the full amount of savings which result from the omission of payment of sales and use tax.
11. By virtue of its payment of material and equipment invoices, the City further intends to benefit from any discounts offered for timely payment to the extent of one-half of the discount offered, the remaining one-half to accrue to the Contractor as an incentive for the Contractor to process invoices well within the discount period. The Contractor shall pay any late penalties caused by its failure to facilitate the processing of invoices within the allotted time.
12. The Contractor, notwithstanding the terms and conditions of this Addendum, shall select, describe, obtain approvals, submit samples, coordinate, process, prepare shop drawings, pursue, receive, inspect, store, protect and guarantee the same as would have been the case if the tax saving procedures were not implemented.
13. The Contractor as bailee shall have the obligation of receiving, inspecting, storing and safekeeping all goods and materials purchased on behalf of the City pursuant to this Addendum. Further, the Contractor shall be responsible for the cost of replacing or repairing any goods or materials lost, stolen, damaged or destroyed while in the Contractor's possession or control as bailee, as well as processing all warranty claims for defective goods and materials to the same extent as if such goods had been Contractor-supplied or purchased in the name of the Contractor.
14. Contractor shall maintain separate accounting records for all transactions carried out under the authority granted to it under this Addendum. Such records shall be open to the City or its authorized agent during normal business hours of Contractor.

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15. The City will take both legal and equitable title to the building materials and equipment received from the vendor when delivery is made by the vendor at the Project site. Without waiving or releasing Contractor from its obligations under paragraph 13 above, as equitable and legal owner of the materials and equipment purchased under this Addendum, the City shall bear the risk of loss thereto and shall have the insurable interest therein. Therefore, unless already provided for under the terms of the Contract Documents, Contractor shall cause the City to be insured or named as an additional insured as its interest may appear against any loss or damage to such goods to the extent of their full insurable value. All such insurance shall be in such form and through such companies as may be reasonably acceptable to City and Contractor shall provide City certificates thereof requiring each insurer to provide the City ten (10) days written notice in advance of cancellation or modification of coverage. Pursuant to the terms of the Contract Documents, the City will reimburse the Contractor for any additional premium amounts paid solely for such insurances against loss or damage.
16. Contractor shall be fully responsible for all matters relating to the procurement of materials and equipment covered by this Addendum, including but not limited to, overseeing that the correct materials and the correct amounts are received timely with appropriate warranties; for inspecting and receiving the goods; and for unloading, handling and storing the materials until installed. Contractor shall inspect the materials when they arrive at the Project site, verify that all necessary documentation accompanies the delivery and conforms with the City's purchase order, and forward the invoice to the City for payment if the goods are conforming and acceptable. Contractor shall verify that the materials conform to Drawings and Specifications and determine before installation that such materials are not defective. Contractor shall manage and enforce the warranties on all materials and equipment covered by this Addendum. Contractor shall be responsible to the City for its failure to fully and timely perform its obligations under this paragraph, and this Addendum generally.
17. When title to the materials and equipment covered by this Addendum passes to the City prior to being incorporated into the Work, the Contractor's possession of the goods is a bailment until such time as each of such goods is returned to the City by being incorporated into the Work.
18. The City shall not be liable for delays in the Work caused by delays in delivery of or defects in the goods covered by this Addendum, nor shall such delays or defects excuse Contractor in whole or in part from its obligation to timely perform the Contract.
19. In the event Contractor objects to the payment of any invoice for goods covered by this Addendum, Contractor shall at no additional cost to the City, provide all

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assistance, records and testimony necessary or convenient for the City to resolve the supplier's claim for payment.

20. This Addendum and the authority granted to Contractor hereunder may be revoked by the City at any time upon verbal or written notice to Contractor at its offices located at _____, during normal business hours.

END OF SECTION 00808

SECTION 01046

SPECIAL PROVISIONS

PART 1 – GENERAL

1.1 CONSTRUCTION AREAS

CONTRACTOR shall:

- A. Limit use of the construction areas for work and for storage to allow for:
 - 1. Work by other contractors;
 - 2. Utilities Use;
 - 3. Owner use; and
 - 4. Public use.
- B. Coordinate use of work site under direction of PROJECT REPRESENTATIVE.
- C. Assume full responsibility for the protection and safekeeping of materials and products under this Contract, stored on or off the site.
- D. Move any stored products, under CONTRACTOR'S control, which interfere with operations of the OWNER, Utilities, or any separate contractor.
- E. Obtain and pay for the use of additional lay down areas needed for operations.

1.2 SPECIFICATIONS

- A. All work called for in the Specifications applicable to this Contract, but not shown on the plans in their present form, or vice versa, shall be of like effect as if shown or mentioned in both. Work not specified in either the plans or the Specifications, but involved in carrying out their intent or in the complete and proper execution of the work is required and shall be performed by the CONTRACTOR as though it were specifically delineated or described.

The apparent silence of the specifications as to any detail, or the apparent omission from them of a detailed description concerning any work to be done and materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only material and workmanship of the best quality is to be used, and interpretation of these specifications shall be made upon that basis. The inclusion of the General

Requirements (or work specified elsewhere) in the General part of the specifications is only for the convenience of the CONTRACTOR, and shall not be interpreted as a complete list of related Specification Sections.

1.3 WORK PROGRESS

- A. The CONTRACTOR shall construct the work as shown on the drawings and provide equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will insure the completion of the work within the Contract Time. If at any time project execution appears to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the necessary rate of progress, the PROJECT REPRESENTATIVE may request the CONTRACTOR to increase the efficiency, change the character or increase the project equipment and the CONTRACTOR shall Conform to such request. Failure of the PROJECT REPRESENTATIVE to give such request shall in no way relieve the CONTRACTOR of their obligations to secure the quality of the work and rate of progress required.

1.4 PRIVATE LAND

- A. The CONTRACTOR shall not enter or occupy private land outside of the construction site or easements, except by written permission of the land owner.

1.5 WORK LOCATIONS

- A. Structures, pipelines, and equipment shall be located substantially as indicated on the Drawings, but the ENGINEER through the PROJECT REPRESENTATIVE reserves the right to make such modifications in locations as may be found desirable to avoid interference with existing structures or for other reasons.

1.6 OPEN EXCAVATIONS

- A. All open excavations shall be adequately safeguarded by CONTRACTOR by providing temporary barricades, caution signs, lights and other appropriate means to prevent accidents to persons and damage to property. The CONTRACTOR shall, at its own expense, provide suitable and safe bridges and other crossings for accommodating travel by pedestrians and workmen. Bridges provided for access during construction shall be removed when no longer required. The length or size of excavation will be controlled by the particular surrounding conditions. The PROJECT REPRESENTATIVE may require special construction procedures such as limiting the length of the open trench,

Prohibiting stacking excavated material in the street or requiring that the

trench shall not remain open overnight.

- B. The CONTRACTOR shall take precautions to prevent injury to the public due to open trenches. All trenches, excavated material, equipment, or other obstacles which could be dangerous to the public shall be properly signed and appropriately barricaded at all times and well lighted.
- C. The CONTRACTOR shall adhere to the requirements of Chapter 553 Part II of the Florida Statutes entitled Trench Safety Act, and O.S.H.A. Excavation Safety Standards 29 CFRs 1926.650 Subpart P.

1.7 TEST PITS

- A. Test pits for the purpose of locating all known and unknown underground pipelines, utilities, or structures in advance of the construction shall be excavated and backfilled by the CONTRACTOR at the direction of the PROJECT REPRESENTATIVE. Test pits shall be backfilled immediately after their purpose has been satisfied and the surface restored and maintained in a manner satisfactory to the PROJECT REPRESENTATIVE. No separate payment will be made for such test pit obligations.

1.8 CARE AND PROTECTION OF PROPERTY

- A. The CONTRACTOR shall be responsible for the preservation of all public and private property and shall use every precaution necessary to prevent damage thereto. If any direct or indirect damage is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work on the part of the CONTRACTOR, such property shall be restored by the CONTRACTOR, at its expense, to a condition similar or equal to that existing before the damage was done, or make good the damage in other manner acceptable to the OWNER and PROJECT REPRESENTATIVE.
- B. All sidewalks, mailboxes, and driveways which are disturbed by the CONTRACTOR's operations shall be restored to their original construction or better and in accordance with best practice and the requirements of the Contract Documents.
- C. Along the location of this work, all fences, walks, bushes, trees, shrubbery, and other physical features shall be protected and restored in a thoroughly workmanlike manner. Fences and other features removed by the CONTRACTOR shall be replaced in the location and by the date indicated by the PROJECT REPRESENTATIVE. All grass areas beyond

the limits of construction which have been damaged by the CONTRACTOR shall be regraded, seeded, and re-established as before

damage.

- D. Trees close to the work shall be boxed or otherwise protected against injury. The CONTRACTOR shall trim all branches that are liable to be damaged because of construction operations, but in no case shall any tree be cut or removed without prior notification or written approval of the PROJECT REPRESENTATIVE. All injuries to bark, trunk, limbs, and roots of trees shall be repaired by dressing, cutting, and painting according to appropriate methods, using only appropriate tools and materials. All landscaping to be removed shall be documented and replaced with like kind or better and re-established as before removal. All palm trees shown on plans shall be spaded out, protected, temporarily stored, and replaced to their same location(s).
- E. The protection, removal, and replacement of existing physical features along the line of work shall be a part of the work under the Contract, and all costs in connection therewith shall be included in the lump sum prices.

1.9 PROTECTION AND RELOCATION OF EXISTING STRUCTURES AND UTILITIES

- A. The CONTRACTOR shall assume full responsibility for the protection of all buildings, structures, and utilities, public or private, including poles, signs, services to buildings, utilities in the street, gas pipes, water pipes, hydrants, sewers, storm drains and electric and telephone cables, whether or not they are shown on the Drawings. The CONTRACTOR shall carefully support and protect all such structures and utilities from injury of any kind. Any damage resulting from the CONTRACTOR's, or any of its subcontractors, operations shall be repaired at its expense.
- B. The CONTRACTOR shall bear full responsibility for obtaining all locations of underground structures and utilities (including existing water services, drain lines and sewers). Services to buildings shall be maintained, and all costs or charges resulting from damage thereto shall be paid by the CONTRACTOR.
- C. Protection and temporary removal and replacement of existing utilities and structures shall be a part of the work under the Contract and all costs in connection therewith shall be included in the lump sum price.
- D. The CONTRACTOR shall be responsible to maintain water, telephone, power, cable TV, sewer, gas and other related utilities throughout construction at no additional cost to OWNER.
- E. The CONTRACTOR shall fully cooperate with all private and public utilities during the installation of new facilities, or relocation of existing facilities. The CONTRACTOR shall coordinate its work accordingly and shall have

no claim except for time extension for delays associated with the proposed utility improvements.

1.10 WATER FOR CONSTRUCTION PURPOSES

- A. In locations where public water supply is available, the CONTRACTOR may purchase water for construction purposes.
- B. The express approval of the OWNER shall be obtained before water is used. Waste of water by the CONTRACTOR shall be sufficient cause for withdrawing the privilege of unrestricted use. Hydrants shall only be operated under the supervision of the appropriate utility personnel.
- C. All water drawn from a public water supply shall be metered using a meter supplied by the appropriate utility, and CONTRACTOR shall pay Owner based on water usage according to such metering.

1.11 MAINTENANCE OF FLOW

- A. **The CONTRACTOR shall at its own cost, provide for the flow of sewers, drains and water courses interrupted during the progress of the work, and shall immediately cart away and remove all offensive matter. The entire procedure of maintaining existing flow shall be fully coordinated with the PROJECT REPRESENTATIVE well in advance of the interruption of any flow.**

1.12 CLEANUP AND DISPOSAL OF EXCESS MATERIAL

- A. During the course of the work, the CONTRACTOR shall keep the construction site in a reasonably clean and neat condition. The CONTRACTOR shall dispose of all residue resulting from the construction work and, at the conclusion of the work, shall remove and haul away any surplus excavation, broken pavement, lumber, equipment, temporary structures and any other refuse remaining from the construction operations and shall leave the entire site of the work in a neat, orderly, and restored condition.
- B. In order to prevent environmental pollution arising from the construction activities related to the performance of this Contract, the CONTRACTOR and its subcontractors shall comply with all applicable Federal, State and local laws and regulations concerning waste material disposal, as well as

any other specific requirements stated elsewhere in the Specifications or the Contract Documents.

1.13 MAINTENANCE OF ACCESS

- A. Portions of the work are located in developed areas requiring access for fire, police, emergency, and other City, State, or Federal agencies to be provided and at least one free lane must be available at all times for all traffic. The CONTRACTOR shall arrange operations in these areas to meet these requirements and secure approval or operating procedures from City of Panama City Beach, or Florida Department of Transportation as the case may be.

1.14 MAINTENANCE OF TRAFFIC

- A. Open pits, trenches, unpaved streets, debris, or other obstructions due to construction that will prevent the normal flow of traffic during an extended Construction stoppage, for any reason, shall be minimized. In the event an extended construction stoppage is found to be necessary, CONTRACTOR shall, at its own expense, maintain normal traffic flow during extended construction stoppage.
- B. All excavated material shall be placed so that vehicular and pedestrian traffic may be maintained at all times. If construction operations cause traffic hazards, the CONTRACTOR shall repair the road surface, provide temporary roadways, erect wheel guards or fences, or take other satisfactory measures for safety, subject to approval by the PROJECT REPRESENTATIVE.
- C. Detours around construction areas will be subject to the approval of the PROJECT REPRESENTATIVE. Where detours are permitted the CONTRACTOR shall provide all necessary barricades and signs as required by the PROJECT REPRESENTATIVE to divert the flow of traffic. While traffic is detoured, the CONTRACTOR shall expedite construction operations and the PROJECT REPRESENTATIVE will strictly control periods when traffic is being detoured.

1.15 CONNECTION TO WORK BY OTHERS

- A. If construction by others occurs at the same time and in the same areas as work being done under this Contract, the CONTRACTOR shall conduct operations as follows:
 - 1. Force Mains and Water Mains
 - a. If shown on the Drawings, pipelines constructed under this Contract may be connected to pipelines to be built by others.
 - b. Pipelines built under this Contract will be connected to pipelines constructed by others by removing the plugs at both ends of the pipeline segment and making the connection.

- c. If the pipelines have not been constructed by others, the pipeline under this Contract shall be laid to the required line and grade, terminated with a plugged connection, precisely at the location of the connection indicated on the Drawings, and then backfilled and marked with a stake and the connection made later as specified in (b) above.

1.16 PROTECTION OF CONSTRUCTION AND EQUIPMENT

- A. All newly constructed work shall be carefully protected from any injury or damage. CONTRACTOR shall not allow any wheeling or walking or placing of heavy loads on any newly constructed Work and all portions injured or damaged shall be reconstructed by the CONTRACTOR at its own expense.
- B. All structures shall be protected in a manner approved by the PROJECT REPRESENTATIVE. If, in the final inspection of the work, any defects, faults or omissions are found, the CONTRACTOR shall cause the same to be repaired or removed and replaced by proper materials and workmanship without extra compensation by OWNER for the materials and labor required. Further, the CONTRACTOR shall be fully responsible for the satisfactory maintenance and repair of the construction and other work undertaken herein, for at least the guarantee period described in the Contract.
- C. The CONTRACTOR shall take all necessary precautions to prevent damage to any structure due to water pressure during and after construction and until such structure is accepted and taken over by the OWNER.
- D. The CONTRACTOR shall maintain the work during construction and until The project is accepted. Such maintenance shall constitute continuous and effective work prosecuted on a daily basis, with adequate equipment and forces in order that the roads or structures are kept in satisfactory condition at all times. In the case of a contract for the placing of a previously constructed course or subgrade, the CONTRACTOR shall maintain the previous course or subgrade during all construction operations.

All cost of maintenance work during construction and before the project is accepted shall be included in the contract price and the CONTRACTOR

Will not be paid an additional amount for such work.

1.17 WORKING HOURS

- A. Regular working hours are defined as up to ten hours per day, Monday

through Friday, beginning no earlier than 7:00 A.M. and ending no later than 5:00 P.M., excluding holidays. The CONTRACTOR shall not work on holidays. The Contract Time shall not be extended due to holidays falling within the Contract Time. All Work performed by CONTRACTOR is subject to observation at all times by OWNER and its agents, including the PROJECT REPRESENTATIVE. Requests to work outside of the defined regular working hours must be submitted in writing to the PROJECT REPRESENTATIVE, at least 48 hours prior to any proposed weekend work or scheduled extended workweeks. Periodic unscheduled overtime on weekdays will be permitted provided that two hours notice is provided to the PROJECT REPRESENTATIVE. Maintenance of the CONTRACTOR's equipment and cleanup may be performed during hours other than regular working hours.

- B. Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Subarticle 8-6.4 (Page 78-79) regarding "Suspension of Contractor's Operations – Holidays" applies to this Project.
- C. CONTRACTOR shall reimburse the OWNER for additional engineering and/or inspection costs incurred as a result of overtime work in excess of the regular working hours. At OWNER'S option, overtime costs may either be deducted from the CONTRACTOR's monthly payment request or deducted from the CONTRACTOR's retention prior to release of final payment.

Engineering/Inspection costs shall be calculated at the following rates:

| | |
|--------------------------|----------|
| Professional Engineer | \$ _____ |
| Project Engineer | \$ _____ |
| Sr. Field Representative | \$ _____ |
| Field Representative | \$ _____ |

1.18 MEETINGS

- A. Immediately after awarding the Contract but before construction work begins, the CONTRACTOR shall attend a preconstruction conference as scheduled by the PROJECT REPRESENTATIVE to review construction aspects of the project and to provide required preconstruction submittals and other documentation.

- B. In addition, the CONTRACTOR shall attend weekly meetings scheduled by the PROJECT REPRESENTATIVE to discuss Contract progress, near term

scheduled activities, including utility relocations, problems and their proposed solutions. The CONTRACTOR shall submit a two-week planning schedule at each weekly meeting, showing the work planned for the next two weeks in bar chart format, identifying current and planned activities and related contract schedule work activities, including subcontractor work. The planning schedule shall designate all activities that are controlling work items as

determined by the currently accepted contract schedule.

- C. The CONTRACTOR shall also attend other meetings as may be required by OWNER or PROJECT REPRESENTATIVE from time to time to discuss, coordinate and resolve specific issues, problems, change orders or disputes.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01046

PHASE 1 - GENERAL

1.1 GENERAL REQUIREMENTS

The CONTRACTOR shall:

- A. Obtain and pay for any and all permits and licenses as specified in the General Conditions, except as otherwise provided herein, and in effect at the time of bidding.
- B. Schedule all inspections and obtain all written approvals of the agencies required by the permits and licenses.
- C. Comply with all construction related conditions specified in each of the permits and licenses.
- D. copy of the permits obtained by the OWNER will be furnished to CONTRACTOR.

1.2 PERMITS BY OWNER

- A. **The OWNER will acquire the following permits when applicable:**
 - 1. **Florida Department of Transportation.**

1.3 CONSTRUCTION PERMIT

- A. CONTRACTOR shall be responsible for acquiring all construction permits including local building permits and any permits necessary to comply with the Northwest Florida Water Management District ("NFWMD") dewatering plan and the National Pollutant Discharge Elimination System ("NPDES") stormwater discharge from construction site.
- B. The dewatering plan shall include sequence of excavation, discharge locations, sediment sump, turbidity control, erosion control, and turbidity monitoring points.

1.4 NPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION SITE

- A. The CONTRACTOR shall comply with stormwater discharge regulations and Amendments to the Clean Water Act (33 U.S.C. 1251 et seq.).

On September 17, 1992, the State of Florida certified the general permit for stormwater discharges from construction sites for use in Florida. This project is governed by regulations under this general permit and CONTRACTOR shall comply with all such regulations.

- B. Under these regulations, construction projects that disturb more than five acres must have and comply with a stormwater pollution prevention plan. CONTRACTOR shall complete and sign a stormwater pollution prevention plan prior to initiation of any construction activities on the site.
- C. The CONTRACTOR shall ensure that all employees and subcontractors implement the specified erosion control practices to properly manage stormwater.

PART 2 - PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01065

PHASE 1 - GENERAL

1.1 HURRICANE PREPAREDNESS PLAN

- A. Within 20 days of the date of Notice to Proceed, the CONTRACTOR shall submit to the PROJECT REPRESENTATIVE a Hurricane Preparedness Plan. The plan shall outline the necessary measures which the CONTRACTOR proposes to perform at no additional cost to the OWNER in case of a hurricane warning. Such measures shall be in accordance with local and state requirements.
- B. In the event of inclement weather, CONTRACTOR will, and will cause Subcontractors to, protect carefully the Work and materials against damage or injury from the weather. If, in the opinion of PROJECT REPRESENTATIVE, any portion of Work or materials are damaged or injured by reason of failure on the part of the CONTRACTOR or Subcontractors to so protect the Work, such Work and materials shall be removed and replaced at the expense of CONTRACTOR.

1.2 CONSTRUCTION CONDITIONS AND SUBSURFACE INVESTIGATION

- A. The CONTRACTOR shall strictly adhere to the specific requirements of the government unit(s) or agency (ies) having jurisdiction over the Work. Wherever there is a difference in the requirements of a jurisdictional body and these Specifications, the more stringent shall apply.
- B. The CONTRACTOR shall be responsible for having determined, prior to bid submission, the nature and location of the Work, the conformation of the ground, the character and quality of the substrata, the types and quantity of materials to be encountered, the nature of the groundwater conditions, the character of equipment and facilities needed preliminary to and during the prosecution of the Work, the general and local conditions and all other matters which can in any way affect the Work under this Contract. The prices established for the Work to be done will reflect all costs pertaining to the Work. Any claims for extras based on substrata, groundwater table, and other such conditions will not be allowed.

1.3 PUBLIC NUISANCE

- A. The CONTRACTOR shall not create a public nuisance including, but not limited to, encroachment on adjacent lands, flooding of adjacent lands, excessive noise, or odor.

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- B. No extra charge may be made for time lost due to work stoppage resulting from the CONTRACTOR's creation of a public nuisance.

1.4 RELOCATIONS

- A. The CONTRACTOR shall be responsible for the relocation of structures, including, but not limited to, light poles, signs, sign poles, fences, piping, conduits and drains that interfere with the positioning of the work as set out on the Drawings. The cost of all such relocations shall be included in the Contract Price.

1.5 PUMPING

- A. The CONTRACTOR shall accomplish all pumping necessary to prevent flotation of any part of any structures, or pipe/conduit during construction operations.
- B. The CONTRACTOR shall, for the duration of the contract pump out water and wastewater which may seep or leak into the excavations or structures. Galleries and other operating areas shall be kept dry at all times. Discharges shall be in conformance with applicable regulations and permits.

1.6 WORK ON PRIVATE PROPERTY

- A. The CONTRACTOR shall maintain construction operations within the presently existing road right-of-way and established easements throughout the Project. In the event that it becomes necessary or advisable to operate beyond the limits of the existing right-of-way, established easements and Right of Entry Agreements, the CONTRACTOR shall be responsible for securing written agreements with the property owners. Immediately after contract award, the CONTRACTOR shall submit to the PROJECT REPRESENTATIVE a listing of those areas in which it is deemed necessary to work outside of the road right-of-way, easements, or agreements. The listing shall be subject to the approval of the PROJECT REPRESENTATIVE and as construction areas are secured, copies of all written agreements shall be placed on file with the PROJECT REPRESENTATIVE.
- C. The CONTRACTOR shall be responsible for any encroachments on rights-of-way or property of the public or adjoining property owners caused by its operations and shall indemnify, defend and hold the OWNER, ENGINEER and PROJECT REPRESENTATIVE harmless because of any encroachments. In this regard, the CONTRACTOR shall, without extra cost to the OWNER, move any Work or that portion of any Work that encroaches on the property of others, or that is built beyond legal building or setback limits, and the CONTRACTOR shall rebuild the affected Work or

portion of Work at the proper location and in full compliance with the

Contract Documents.

~~C.D.~~ Before final payment will be authorized, the CONTRACTOR will be required to furnish the OWNER with written releases from property owners or public agencies where side agreements or special easements have been made by the CONTRACTOR or when the CONTRACTOR'S operations, for any reason, have not been kept within the construction right-of-way, easements or Right of Entry Agreements by the OWNER.

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~~D.E.~~ In the event written releases required in the above paragraph cannot be secured, the CONTRACTOR shall inform the PROJECT REPRESENTATIVE of the reasons for failure to do so. The PROJECT REPRESENTATIVE in conjunction with the OWNER, will then examine the Site and direct the CONTRACTOR to complete any Work that may be necessary to satisfy the terms of the permit or easement. Should the CONTRACTOR refuse to do the Work, the OWNER reserves the right to have the Work done by separate contract and deduct the cost of same from moneys due the CONTRACTOR, or require the CONTRACTOR to furnish a bond in a sum satisfactory to the OWNER to cover any legal claims for damages. When the PROJECT REPRESENTATIVE is satisfied that the Work has been completed in accordance with the Contract Documents, permits and/or agreements, the OWNER reserves the right to waive the requirement of obtaining the statement if the CONTRACTOR'S failure to obtain such statement is due to the grantor's refusal to sign and this refusal is not based upon any legitimate claims that the CONTRACTOR has failed to fulfill any contract permit or agreement requirements, or if the CONTRACTOR is unable to contact, or has undue hardship in contacting, the grantors.

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1.7 DAILY REPORTS

A. The CONTRACTOR shall submit daily reports of construction activities, including any activities that may occur on non-work days. The report shall include:

1. Weather conditions;
2. Manpower, number of men by craft;
3. Equipment on the project;
4. Major deliveries;
5. Activities work with reference to the CPM schedule activity numbers;
6. New problems; and
7. Other pertinent information

B. A similar report shall be submitted for/by each Subcontractor.

~~C.~~ The reports shall be submitted to the PROJECT REPRESENTATIVE within

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two days of the respective report date. Each report shall be signed by the CONTRACTOR'S Superintendent or Project Manager.

- D. Information provided on the daily report shall not constitute notice of delay or any other notice required by the CONTRACT DOCUMENTS. Notice shall be as required therein.

1.8 EMERGENCIES

- A. The CONTRACTOR shall at all times after regular working hours, including weekend and holidays, maintain a telephone where the CONTRACTOR's representative can be reached on an emergency basis. The CONTRACTOR or CONTRACTOR's representative shall be prepared to act to correct conditions on the Site deemed to constitute an emergency by either the OWNER, the PROJECT REPRESENTATIVE, or local authorities and is obligated to act to prevent threatened damage, injury or loss without special instructions from the OWNER, PROJECT REPRESENTATIVE, or ENGINEER. The CONTRACTOR shall give the PROJECT REPRESENTATIVE prompt written notice of all significant changes in the Work or deviations from the Contract Documents caused thereby. If a condition on the Site requires attention after working hours, either the OWNER, PROJECT REPRESENTATIVE, or local authority shall call the CONTRACTOR or representative at the emergency telephone number, identify themselves and describe the emergency condition. The CONTRACTOR is expected to dispatch personnel and equipment to adequately institute corrective measures within two (2) hours. If for some reason the CONTRACTOR or representative cannot be reached at the emergency number within two hours, the OWNER shall have the right to immediately initiate corrective measures, and the cost shall be borne by the CONTRACTOR.
- B. In the event that the CONTRACTOR fails to maintain safe job conditions and traffic conditions, including, but not limited to, trench settlement and hazardous storage of backfill or construction materials, the OWNER, after failure of the CONTRACTOR to commence substantial steps at the job site to rectify the situation within two (2) hours of the time the CONTRACTOR has been notified of the unsafe condition, may hire guards, take such precautions, make such repairs and take any other steps which the OWNER or the PROJECT REPRESENTATIVE, in their sole discretion, consider necessary to protect the property, persons, or the OWNER. The cost of any of these precautions, guards, or steps shall be deducted from the payments due the CONTRACTOR, and the costs for such services, work and material shall be calculated at prevailing market rates.

1.9 PROPERTY DAMAGES

In the event of any indirect or direct damage to public or private property

caused in whole or in part by an act, omission or negligence on the part of the CONTRACTOR, any of its Subcontractors, any of its Sub-subcontractors or anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable, the CONTRACTOR shall at no additional cost to OWNER promptly remedy and restore such property to a condition equal to or better than that existing before such damage was done. The CONTRACTOR shall perform such restoration by "underpinning", repairing, rebuilding, replanting, or otherwise restoring as may be required by the PROJECT REPRESENTATIVE, or shall correct such damage in a satisfactory and acceptable manner to the OWNER or the PROJECT REPRESENTATIVE. In case of failure on the part of the CONTRACTOR to promptly restore such property or correct such damage, the OWNER may, upon five (5) calendar days written notice, proceed to repair, rebuild or otherwise restore such property as may be necessary and the cost thereof, or a sum sufficient in the judgment of the OWNER to reimburse the owners of the property so damaged, will be deducted from any monies due or to become due the CONTRACTOR under the Contract.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01100

PHASE 1 - GENERAL

1.1 SCOPE OF WORK

- A. The Work covered by this Section consists of furnishing all labor, materials and equipment and performing all Work required for the prevention of environmental pollution in conformance with applicable laws and regulations, during and as the result of construction operations under this Contract. For the purpose of this Specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human life; affect other species of importance to man; or degrade the utility of the environment for aesthetic and/or recreational purposes; or violate any applicable environmental laws, rules, codes or regulations.
- B. The control of environmental pollution requires consideration of air, water and land, and involves management of noise, odor, and solid waste, as well as other pollutants.
- C. These Specifications are intended to ensure that construction is achieved with a minimum of disturbance to the existing ecological balance between a water resource and surroundings. These are general guidelines. It is the CONTRACTOR'S responsibility to determine the specific construction techniques to meet these guidelines.
- D. The CONTRACTOR shall secure, if required, at its own cost, a surface water management permit from the Northwest Florida Water Management District and approvals from Bay County and/or Panama City Beach for any construction dewatering activities associated with this project.

1.2 APPLICABLE REGULATIONS

- A. The CONTRACTOR shall comply with all applicable Federal, State and local laws and regulations concerning environmental pollution control and abatement.

1.3 NOTIFICATIONS

- A. The OWNER through the PROJECT REPRESENTATIVE will notify the CONTRACTOR in writing immediately following identification of any non-

compliance with the foregoing provisions or of any environmentally objectionable acts and any required corrective action to be taken by CONTRACTOR. State or local agencies responsible for verification of certain aspects of the environmental protection requirements may notify the CONTRACTOR of any non-compliance with State or local requirements. The CONTRACTOR shall, after receipt of such notice from the regulatory agency shall immediately notify the PROJECT REPRESENTATIVE in writing and immediately take correction action. If the CONTRACTOR fails or refuses to comply promptly, the OWNER may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess costs or damages by the CONTRACTOR unless it is later determined that the CONTRACTOR was in compliance and subject to the other terms of the Contract Documents.

1.4 IMPLEMENTATION

- A. Prior to commencement of the Work, the CONTRACTOR shall meet with the PROJECT REPRESENTATIVE to develop mutual understandings relative to compliance with this specification and administration of the environmental pollution control program.
- B. The CONTRACTOR shall remove temporary environmental control features, when approved by the PROJECT REPRESENTATIVE, and incorporate permanent control features into the Project at the earliest practicable time, consistent with the approved construction schedule.

1.5 EROSION CONTROL

- A. The CONTRACTOR shall ensure sufficient precautions are taken during construction to minimize the run-off of polluting substances such as silt, clay, fuels, oils, bitumens, calcium chloride, or other polluting materials harmful to humans, fish, or other life, into the supplies and surface waters of the State. Control measures must be adequate to assure that turbidity in the receiving water will not be increased more than 10 nephelometric turbidity units (NTU), or as otherwise required by the State or other controlling body, in water used for public water supply or fish unless limits have been established for the particular water. In surface water used for other purposes, the turbidity must not exceed 25 NTU unless otherwise permitted. Special precautions shall be taken in the use of construction equipment to prevent operations which promote erosion.

Erosion evident within the limits of construction shall be the responsibility of the CONTRACTOR during the full term of the Contract and for the full (1)

year guarantee period. Areas subject to erosion during this time shall be

fully restored to original or design conditions (as applicable) within 10 days of notice to the CONTRACTOR.

- B. The CONTRACTOR shall provide positive means of erosion control such as shallow ditches around construction to carry off surface water. Erosion control measures, such as siltation basins, hay check dams, mulching, jute netting and other equivalent techniques, shall be used as appropriate. Flow of surface water into excavated areas shall be prevented. Ditches around construction area shall be used to carry away water resulting from dewatering of excavated areas. At the completion of the Work, ditches shall be backfilled and the ground surface restored to original condition.
- C. The CONTRACTOR shall schedule and conduct all Work in a manner that will minimize the erosion of soils in the area of the Work. Erosion control measures shall be provided such as diversion channels, sedimentation or filtration systems, berms, staked hay bales, seeding, mulching or other special surface treatments as are required by regulatory authorities to prevent silting and muddying of streams, rivers, canals, impoundments, lakes, etc. All erosion control measures shall be in place prior to any construction activity in any area of the Work.

1.6 PROTECTION OF LAND RESOURCES

- A. Land resources within the Project boundaries and outside the limits of permanent Work shall be restored by CONTRACTOR to a condition, after completion of construction that will appear to be natural and not detract from the appearance of the project.
- B. Outside of areas requiring earthwork for the construction of the new facilities, the CONTRACTOR shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without prior approval. No ropes, cables, or guys shall be fastened to or attached to any existing nearby trees for anchorage unless specifically authorized by the PROJECT REPRESENTATIVE. Where such special emergency use is permitted, first wrap the trunk with a sufficient thickness of burlap or rags over which softwood cleats shall be tied before any rope, cable, or wire is placed. The CONTRACTOR shall in any event be responsible for any damage resulting from such use.
- C. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the CONTRACTOR'S equipment, dumping or other operations, CONTRACTOR shall protect such trees by placing board, planks, or poles around them. Monuments and markers shall be similarly protected by CONTRACTOR before beginning operations near them.
- D. Any trees or other landscape feature scarred or damaged by the CONTRACTOR'S equipment or operations shall be restored as nearly as

possible to its original condition. The PROJECT REPRESENTATIVE will decide what method of restoration shall be used and whether damaged trees shall be treated and healed or removed and disposed of.

All scars made on trees by CONTRACTOR's equipment, construction operations, or by the removal of limbs by CONTRACTOR larger than 1 inch in diameter shall be coated as soon as possible with an approved tree wound dressing. All trimming or pruning by CONTRACTOR shall be performed in an approved manner by experienced workmen with saws or pruning shears. Tree trimming with axes will not be permitted.

Climbing ropes shall be used where necessary for safety. Trees that are to remain, either within or outside established clearing limits, that are subsequently damaged by the CONTRACTOR and are beyond saving in the opinion of a certified nurseryman, shall be immediately removed and replaced in kind and maintained until growth is assured.

- E. The locations of the CONTRACTOR's lay down area, storage and other construction buildings, required temporarily in the performance of the Work, shall require written concurrence of the PROJECT REPRESENTATIVE. The preservation of the landscape and public perception shall be an imperative consideration in the selection of the lay down area and in the provision of any buildings. Drawings showing the lay down area and any buildings shall be submitted by CONTRACTOR for approval of the PROJECT REPRESENTATIVE.
- F. If temporary roads or embankments and excavations for plant and/or work areas are proposed, the CONTRACTOR, shall submit the following for approval by the PROJECT REPRESENTATIVE at least ten days prior to scheduled start of such temporary work.
1. A layout of all temporary roads, excavations and embankments to be constructed within the work area.
 2. Details of temporary road construction.
 3. Drawings and cross sections of proposed embankments and their foundations, including a description of proposed materials.
 4. A landscaping drawing showing the proposed restoration of the area. Removal of any trees and shrubs outside the limits of existing clearing area shall be indicated. The drawing shall also indicate location of required guard posts or barriers required to control vehicular traffic passing close to trees and shrubs to be maintained undamaged. The drawing shall provide for the obliteration of construction scars as such and shall provide for a natural appearing final condition of the area. Modification of the CONTRACTOR'S approved drawings shall be

made only with the written concurrence of the PROJECT REPRESENTATIVE. No unauthorized road construction, excavation or embankment construction including disposal areas will be

permitted.

- G. The CONTRACTOR shall remove all signs of temporary construction facilities such as haul roads, work areas, structures, foundations of temporary structures, stockpiles of excess materials, or any other vestiges of construction as requested by the PROJECT REPRESENTATIVE. Any construction disturbed area shall be restored to near natural conditions.
- H. All debris and excess material will be disposed of by CONTRACTOR outside wetland or floodplain areas in an environmentally sound and lawful manner.

1.7 PROTECTION OF AIR QUALITY

- A. The use of burning for the disposal of refuse and debris will not be permitted.
- B. The CONTRACTOR shall maintain all excavations, embankment, stockpiles, access roads, plant sites, waste areas, borrow areas, and all other work areas within or without the project boundaries free from dust which could cause the standards for air pollution to be exceeded, and which would cause a hazard or nuisance to others.
- C. An approved method of stabilization consisting of sprinkling or other similar methods will be permitted to control dust. The use of petroleum products is prohibited. The use of chlorides may be permitted with concurrence from the appropriate regulatory authority.
- D. Sprinkling must be repeated at such intervals as to keep all parts of the disturbed area at least damp at all times, and the CONTRACTOR must have sufficient competent equipment on the job to accomplish needed sprinkling. Dust control shall be performed as the work proceeds and whenever a dust nuisance or hazard occurs.

1.8 MAINTENANCE OF POLLUTION CONTROL FACILITIES DURING CONSTRUCTION

- A. During the life of this Contract, CONTRACTOR shall maintain all facilities constructed for pollution control as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to the extent that pollution is no longer being created. All pollution control devices shall be inspected regularly to ensure they are operating correctly.

1.9 NOISE CONTROL

- A. The CONTRACTOR shall make every effort to minimize noises caused by operations. Equipment shall be equipped with silencers or mufflers designed

to operate with the least possible noise in compliance with State and Federal Regulations.

- B. Sound levels measured by the PROJECT REPRESENTATIVE shall not exceed 55 dBA from 8:00 PM to 7:00 AM or 65 dBA from 7:00 AM to 8:00 PM. This sound level to be measured at the OWNER'S property line. Sound levels of equipment shall not exceed 95 dBA at any time. Sound levels in excess of these values are sufficient cause to have the Work halted until equipment can be quieted to acceptable levels. Work stoppage for excessive noise shall not relieve the CONTRACTOR of the other portions of this specification including, but not limited to Contract Time and Contract Price.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01110

SECTION 01150 MEASUREMENT AND PAYMENT (Revised by Addendum 3)

PHASE 1 – SCOPE OF WORK

The scope of this section of the Contract Documents is to further define the items included in each Bid Item in the Bid Proposal section of these Specifications. Payment will be made based on the specified items included in the description in this section for each bid item necessary for a complete installation.

1.1 GENERAL

All Contract Prices included in the Bid Proposal section will be full compensation for all labor, materials, tools, equipment and incidentals necessary to complete the construction as shown on the drawings and/or as specified in the Contract Documents to be performed under this contract. Actual quantities of each item bid on a unit price basis will be determined upon completion of the construction in the manner set up for each item in this section of the specifications. Payment for all items listed in the Bid Form will constitute full compensation for all work shown and/or specified to be performed under this project.

1.2 ESTIMATED QUANTITIES

The quantities shown are approximate and are given only as a basis of calculation upon which the award of the Contract is to be made. The Owner/Engineer does not assume any responsibility for estimated quantities, nor shall the Contractor claim misunderstanding because of such estimate of quantities. Final payment will be made only for satisfactory completion of each item of work.

1.3 WORK OUTSIDE AUTHORIZED LIMITS

No payment will be made for work constructed outside the authorized limits of work.

1.4 MEASUREMENT STANDARDS

Unless otherwise specified for the particular items involved, all measurements of distance shall be taken horizontally or vertically.

1.5 AREA MEASUREMENTS

In the measurement of items to be paid for on the basis of area of finished work, the lengths and/or widths to be used in the calculations shall be the final dimensions measured along the surface of the completed work within the neat lines shown or designated.

1.6 LUMP SUM ITEMS

Where payment for items is shown to be paid on a lump sum basis, no separate payment will be made for any item of work required to complete the lump sum item. Lump sum bid items shall be complete, tested and fully functional prior to request for final payment. **Measurement shall be based upon the Engineer's estimate of percent complete per partial payment period.**

The lump sum price bid for various items shall be compensation in full for furnishing all materials, labor, equipment, dewatering and incidentals necessary to install these items complete and functional in every detail and in accordance with these plans and specifications.

1.7 UNIT PRICE ITEM

Although generally contract work will be Lump Sum, separate payment will be made for any items of work specifically described for unit price payment and listed on the Bid Form for unit price payment. Any related work not specifically listed, but required for satisfactory completion of the work shall be considered to be included in the scope of the appropriate listed work items. The price bid for the various items shall be compensation in full for furnishing all materials, labor, equipment, and incidentals for the item in place, complete in every detail. There will be no direct payment for clearing, grubbing, excavation, bracing, dewatering, backfilling, clean-up, sheeting, shoring, restoration of property, testing or other items of work necessary for installation of the item.

1.8 OTHER PROVISIONS

No separate payment will be made for the following items and the cost of such work shall be included in the applicable pay items of work unless indicated otherwise in the individual bid item. Final payment shall not be requested by the Contractor or made by the Owner until record drawings have been submitted to the Engineer.

- Sheeting and shoring.
- Clearing, grubbing and grading.
- Excavation, including necessary pavement removal, rock removal, and muck removal.
- Dewatering and disposal of surplus water.
- Structural fill, backfill and grading.
- Testing and placing system in operation.
- Any material and equipment required to be installed and utilized for tests.
- Maintain the existing quality of service during construction.
- Appurtenant work as required for a complete and operable system.
- Operation and maintenance manuals.

1.9 APPLICATION FOR PAYMENT

The Contractor shall submit an application for payment, no more frequent than monthly, to the Project Representative for review and approval upon partial completion of the project before the Contractor will be compensated for the work performed during that period. The application shall invoice work completed as detailed in the Contractor's proposal. Final payment in full will be made when work is completed to the satisfaction of the Owner, and Project Representative, when it has been shown that the Contractor has discharged all obligations of this Contract (Release of Liens) and when all punch list items have been corrected.

PART 2 - PRODUCTS (Not Applicable)

PART 3 EXECUTION

BASE BID-LUMP SUM PAY ITEMS

3.1 BID ITEM NO. 1 - MOBILIZATION/DEMobilIZATION

Payment for all work included under this bid item will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all those operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, and sanitary and other facilities. Also included as part of this bid item is the cost for photographs, shop drawings, working drawings, schedules, record drawings and documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement for this bid item will be lump sum. **The lump sum price for mobilization/demobilization will be limited to three percent (3%) of the total contract base bid amount.** Seventy percent (70%) of the lump sum price will be payable with the first month's partial payment. The remaining thirty percent (30%) will be payable with the final partial payment.

3.2 BID ITEM NO. 2 – BONDS AND INSURANCE

Payment for this bid item shall be made at the lump sum price bid for all bonds and insurance policies as required by the Contract Documents. Payment will be made only after proper documentation is provide to the Engineer. Measurement of this bid item shall be lump sum. **This Item Bid Shall Not Exceed 2.00% of the Entire Contract Base Bid Amount.**

3.3 BID ITEM NO. 3 – HOLD HARMLESS

Payment for this bid item will be made at the lump sum price bid of ten dollars (\$10.00) for agreeing to Hold Harmless and indemnify the Owner as specified in the Contract Documents.

3.4 BID ITEM NO. 4 – FURNISH AND INSTALL 16-INCH WATER MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed water lines, including all associated, fittings, valves, insertion restrained valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting, shoring, silt fence, restoration of property, horizontal directional drill, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.5 BID ITEM NO. 5 – ABANDON EXISTING 16-INCH WATER MAIN

Payment for all work included under this bid item will be made at the respective lump sum price bid for abandoning in-place an existing 16-inch water main located along U.S. 98 Right-of-Way, Including Pipe dewatering, all caps, plugs with Concrete fill 10 feet long minimum and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.6 BID ITEM NO. 6 – FURNISH AND INSTALL 2-INCH FORCE MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed force main, including all associated, fittings, valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting, shoring, silt fence, restoration of property, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.7 BID ITEM NO. 7 – FURNISH AND INSTALL 4-INCH FORCE MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed force main, including all associated, fittings, valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting, shoring, silt fence, restoration of property, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.8 BID ITEM NO. 8 – FURNISH AND INSTALL 12-INCH FORCE MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed force main, including all associated, fittings, valves, restrained insertion valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting, shoring, silt fence, restoration of property, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.9 BID ITEM NO. 9 – ABANDON EXISTING 12-INCH FORCE MAIN

Payment for all work included under this bid item will be made at the respective lump sum price bid for abandoning in-place an existing 12-inch force main located along U.S. 98 Right-of-Way, Including Pipe dewatering, all caps, plugs with Concrete fill 10 feet long minimum and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.10 BID ITEM NO. 10 – FURNISH AND INSTALL 8-INCH RECLAIM MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed force main, including all associated, fittings, valves, restrained insertion valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting,

shoring, silt fence, restoration of property, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.11 BID ITEM NO. 11 – FURNISH AND INSTALL 20-INCH RECLAIM MAIN AND APPURTENANCES

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and disposal of the existing piping, all other selective demolition and installation of the proposed force main, including all associated, fittings, valves, restrained insertion valves, taps, plugs and caps, restrained joints, excavation and backfill, bracing, dewatering, clean-up, sheeting, shoring, silt fence, restoration of property, and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.12 BID ITEM NO. 12 – ABANDON EXISTING 20-INCH RECLAIM MAIN

Payment for all work included under this bid item will be made at the respective lump sum price bid for abandoning in-place an existing 20-inch reclaim water main located along U.S. 98 Right-of-Way, Including Pipe dewatering, all caps, plugs with Concrete fill 10 feet long minimum and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.13 BID ITEM NO. 13 – MAINTENANCE OF TRAFFIC

Payment for all work included under this bid item will be made at the respective lump sum price bid for executing all maintenance of traffic, including all associated signs and notifications to ensure that traffic is maintained at all times during the construction of the project in accordance with contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.14 BID ITEM NO. 14 – REMOVE AND REPLACE EXISTING PAVEMENT

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and replacement and restoration of all existing pavement and concrete curb associated with the replacement and installation of all utilities in the project and all street intersections as shown on the

plans. Payment shall include, but not be limited to saw cutting, removal and disposal of all resulting materials, compacting, patching and remarking and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.15 BID ITEM NO. 15 – REMOVE AND REPLACE EXISTING SIDEWALK

Payment for all work included under this bid item will be made at the respective lump sum price bid for the removal and replacement of all sidewalk associate with the replacement and installation of all utilities in preparation of Bay County resurfacing project. Payment shall include, but not be limited to saw cutting, removal and disposal of all resulting materials, bedding, forming and placement of new sidewalks and any items of work required to complete the lump sum item in accordance with the contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

3.16 BID ITEM NO. 16 – CONSTRUCT ALL OTHER IMPROVEMENTS NOT INCLUDED IN OTHER BID ITEMS

Payment for all work included under this bid item will be made at the respective lump sum price bid for all those items not identified on each specific bid item, but required for a complete work in accordance with contract documents. Payment shall constitute complete compensation for all labor, materials and equipment necessary to complete this work item. Measurement for the work included under this bid item shall be lump sum.

BASE BID- UNIT PRICE PAY ITEMS

3.17 BID ITEM NO. 17 – TESTING ALLOWANCE

The Owner has allocated the amount indicated as a testing allowance for quality control testing during construction. The Contractor shall employ, coordinate and direct the services of independent testing laboratories required for all testing. The Contractor shall pay all testing laboratory invoices and submit them for reimbursement. Payment for work completed under this item shall be made at the direct invoice amount without markup of any kind.

END OF SECTION 01150

PHASE 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The CONTRACTOR shall submit to the ENGINEER for review such working drawings, shop drawings, test reports and data on materials and equipment (hereinafter in this Section called "Data"), and material samples (hereinafter in this Section called "Samples") as are required for the proper control of work, including but not limited to those working drawings, shop drawings, Data and Samples for materials and equipment specified elsewhere in the Specifications and in the Contract Drawings.
- B. The CONTRACTOR shall note that there are specific submittal requirements in other sections of these Specifications.
- C. The CONTRACTOR is to maintain an accurate updated submittal log and shall bring this log to each scheduled progress meeting with the PROJECT REPRESENTATIVE and the ENGINEER. This log shall be organized using the ten (10) character numbering system in subparagraph 1.6 F. This log should include the following items:
 - 1. Submittal-Description and File Number assigned.
 - 2. Date to ENGINEER.
 - 3. Date returned to CONTRACTOR (from ENGINEER).
 - 4. Status of Submittal
 - a. Approved
 - b. Approved As Noted
 - c. Approved As Noted/Confirm
 - d. Not Approved/Resubmit
 - e. Not Approved
 - 5. Date of Resubmittal and Return (as applicable).
 - 6. Date material released (for fabrication).
 - 7. Projected date of fabrication.
 - 8. Projected date of delivery to site.
 - 9. Status of O&M submittal.

1.2 SHOP DRAWINGS

- A. When used in the Contract Documents, the term "shop drawings" shall be considered to mean CONTRACTOR's plans for material and equipment which become an integral part of the Project. These drawings shall be complete and detailed. Shop drawings shall consist of fabrication,

erection and setting drawings and schedule drawings, manufacturer's scale drawings, bills of material, wiring and control diagrams, and inspection and test reports including performance curves and certifications as applicable to the Work.

- B. All details on shop drawings submitted for approval shall show clearly the elevations of the various parts to the main members and lines of the structure and/or equipment, and where correct fabrication of the Work depends upon field measurements, such measurements shall be made and noted on the shop drawings before being submitted for approval.
- C. See Shop Drawing Schedule requirements in Subparagraph 1.7 CONTRACTOR'S RESPONSIBILITY.

1.3 PRODUCT DATA

- A. Product data as specified in individual sections, include, but are not necessarily limited to, standard prepared data for manufactured products (sometimes referred to as catalog data), such as the manufacturer's product specification and installation instructions, availability of colors and patterns, MANUFACTURER'S printed statements of compliances and applicability, roughing-in diagrams and templates, catalog cuts, product photographs, standard wiring diagrams, printed performance curves and operational-range diagrams, production or quality control inspection and test reports and certifications, mill reports, product operating and maintenance instructions and recommended spare-parts listing storage instructions, and printed product warranties, as applicable to the Work.

1.4 WORKING DRAWINGS

- A. When used in the Contract Documents, the term "working drawings" shall be considered to mean the CONTRACTOR's plans for temporary structures such as temporary bulkheads, support of open cut excavation, support of utilities, ground water control systems, forming and false work; for underpinning; and for such other work as may be required for construction but does not become an integral part of the Project.
- B. Working drawings shall be signed and sealed by a registered Professional Engineer, currently licensed to practice in the State and shall convey, or be accompanied by, calculations or other sufficient information to completely explain the structure, machine, or system described and its intended manner of use. Prior to commencing such Work, working drawings must have been reviewed without specific exceptions by the ENGINEER. Such review will be for general conformance and will not

relieve the CONTRACTOR in any way from his responsibility with regard to the fulfillment of the terms of the Contract. All risks of error are assumed by the CONTRACTOR; the OWNER and ENGINEER shall have no responsibility therefore.

1.5 SAMPLES

- A. The CONTRACTOR shall furnish, for the approval of the ENGINEER, samples required by the Contract Documents or requested by the ENGINEER. Samples shall be delivered to the ENGINEER as specified or requested and in quantities and sizes as specified. A minimum of two samples of each item shall be submitted unless otherwise specified. The CONTRACTOR shall pre-pay all shipping charges on samples. Materials or equipment for which samples are required shall not be used in the Work until approved by the ENGINEER.
- B. Samples specified in individual sections, include, but are not necessarily limited to, physical examples of the Work such as sections of manufactured or fabricated work, small cuts or containers of materials, complete units of repetitively-used products, color/texture/pattern swatches and range sets, specimens for coordination of visual effect, graphic symbols, and units of Work to be used by the ENGINEER or PROJECT REPRESENTATIVE for independent inspection and testing, as applicable to the Work.
- C. The CONTRACTOR shall prepare a transmittal letter in triplicate for each shipment of samples to the ENGINEER. The CONTRACTOR shall enclose a copy of this letter with the shipment and send a copy of this letter to the PROJECT REPRESENTATIVE. Approval of a sample shall be only for the characteristics or use named in such approval and shall not be construed to change or modify any Contract requirements.
- D. Approved samples not destroyed in testing shall be sent to the ENGINEER or stored at the site of the Work. Materials and equipment incorporated in the Work shall match the approved samples. Samples which fail testing or are not approved will be returned to the CONTRACTOR at their expense, if so requested at time of submission.

1.6 SUBMITTAL REQUIREMENTS

- A. The CONTRACTOR shall review, approve, and submit, with reasonable promptness and in such sequence as shown on the Shop Drawing Submittal Schedule so as to cause no delay in the Contract Work or in the Work of the OWNER or any separate contractor, all shop drawings,

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- product data, working drawings and samples required by the Contract Documents.
- B. The CONTRACTOR shall submit Ten (10) copies of all shop drawings for the ENGINEER to review, of which the ENGINEER will retain (8) sets.
- C. All submittals shall be directly transmitted to the ENGINEER's office. Submittals to the PROJECT REPRESENTATIVE will not be accepted.
- D. Shop drawings, product data, working drawings and Samples shall be furnished with the following information:
1. Number and title of the drawing.
 2. Date of drawing or revision.
 3. Name of project building or facility.
 4. Name of contractor, subcontractor, and manufacturer submitting drawing.
 5. Clear identification of contents, location of the work, and the sheet numbers where the product is found in the contract drawings.
 6. CONTRACTOR Certification Statement.
 7. Submittal Identification Number.
 8. Contract Drawing Number Reference.
 9. A certification by the CONTRACTOR that states the following: I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is in compliance with the Contract Drawings and Specifications, can be installed in the allocated space, will be stored in accordance with the manufacturers recommendations and the Specifications, and is submitted for approval.
- E. In accordance with Subparagraph 1.7 A, each shop drawing, working drawing, Sample, and catalog data submitted by the CONTRACTOR shall have affixed to it the following Certification Statement, signed by the CONTRACTOR: "Certification Statement: By this submittal, I hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers, and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all contractor requirements."
- F. The CONTRACTOR shall utilize a 10-character submittal identification numbering system in the following manner:
1. The first character shall be a D, S, P, M, or R, which represents Shop/Working Drawing and other Product Data (D), Sample (S), Preliminary Submittal (P), Operating/Maintenance Manual (M), or Request for Information (R).

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2. The next five digits shall be the applicable Specification Section Number.
3. The next three digits shall be the numbers 001-999 to sequentially number each item or drawing submitted under each specific Section number.
4. The last character shall be a number 1-10, indicating the submission, or resubmission of the same Drawing, i.e., 1=1st submission, 2=2nd submission, 3=3rd submission, etc. A typical submittal number would be as follows:

D-03300-008.2

| | | |
|-------|---|---|
| D | = | Shop Drawing |
| 03300 | = | Specification Section for Concrete |
| 008 | = | The eighth submittal under this specification section |
| 2 | = | The second submission (first resubmission) of that particular shop drawing. |

- G. The CONTRACTOR shall submit a copy of each submittal transmittal sheet (for shop drawings, product data, working drawings and Samples) to the PROJECT REPRESENTATIVE simultaneously with the CONTRACTOR's submission of said drawings, Data, Samples or manual packages to the ENGINEER.
- H. All items specified are not necessarily intended to be a manufacturer's standard product. Variations from specified items will be considered on an "or equal" basis. If submittals show variations from Contract requirements because of standard shop practice or for other reasons, the CONTRACTOR shall describe such variations in the letter of transmittal and on the shop drawings along with notification of intent to seek contract adjustment. If acceptable, proper adjustment in the Contract shall be implemented where appropriate. If the CONTRACTOR fails to describe such variations, responsibility will not be waived for executing the Work in accordance with the Contract, even though such drawings have been reviewed. Variations submitted but not described may be cause for rejection. Any variations initiated by the CONTRACTOR will not be considered as an addition to the scope of work unless specifically noted and then approved as such in writing by the ENGINEER.
- I. Data on materials and equipment shall include materials and equipment lists giving, for each item thereon, the name and location of the supplier or manufacturer, trade name, catalog reference, material, size, finish, and all other pertinent data.

- J. For all mechanical and electrical equipment furnished, the CONTRACTOR shall provide a list including the equipment name, and address and telephone number of the manufacturer's representative and service company so that service and/or spare parts can be readily obtained. In addition, a maintenance and lubrication schedule for each piece of equipment shall be submitted.
- K. The CONTRACTOR shall use the color "green" to make his remarks on the Submittals. Only the ENGINEER will utilize the color "red" in marking submittals.
- L. Facsimiles or copies of facsimiles will not be accepted for review.

1.7 CONTRACTOR'S RESPONSIBILITY

- A. It is the duty of the CONTRACTOR to check, and coordinate with the work of all trades, all drawings, Data, schedules and Samples before submitting them to the ENGINEER for review. Each and every copy of any drawing or data sheet larger than 11"x17" shall bear CONTRACTOR's stamp showing that they have been so checked and approved. Drawings or data sheets 11"x17" and smaller shall be bound together in an orderly fashion and bear the CONTRACTOR's stamp on the cover sheet. The cover sheet shall fully describe the packaged data and include a list of all sheet numbers within the package. Shop drawings submitted to the ENGINEER without the CONTRACTOR's stamp will be returned to the CONTRACTOR, without review at the ENGINEER's option, for conformance with this requirement.
- B. The CONTRACTOR shall review shop drawings, product data, and Samples prior to submission to determine and verify the following:
 - 1. Field measurements.
 - 2. Field construction criteria.
 - 3. Manufacturer's catalog numbers and similar data.
 - 4. Conformance with Specifications.
- C. Shop drawings shall indicate any deviations in the submittal from the requirements of the Contract Documents.
- D. At a time decided upon at the preconstruction meeting the CONTRACTOR shall furnish the PROJECT REPRESENTATIVE and ENGINEER a Shop Drawing schedule fixing the respective dates for the initial submission of shop and working drawings, the beginning of manufacture, testing and

installation of materials, supplies and equipment. This schedule shall be provided as a separate entity and indicate those submittals that are critical to the progress schedule. The CONTRACTOR shall prepare and transmit each submittal sufficiently in advance of performing the related work or other applicable activities, or within the time specified in the individual work sections of the Specifications, so that the installation will not be delayed by processing times including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the CONTRACTOR's failure to transmit complete and acceptable submittals sufficiently in advance of the Work.

- E. The CONTRACTOR shall not begin any Work affected by a submittal returned not approved. Before starting this Work, all revisions must be corrected by the CONTRACTOR. After resubmittal they will be reviewed and returned by the ENGINEER. If approved or approved as noted, then the CONTRACTOR may begin this Work. Any corrections made to the shop drawings are to be followed without exception.
- F. The CONTRACTOR shall submit to the ENGINEER all shop drawings and data sufficiently in advance of construction requirements to provide no less than **twenty-one (21)** calendar days for review from the time the ENGINEER receives them. No less than **thirty (30)** calendar days will be required for major equipment that requires review by more than one (1) engineering discipline.
- G. The CONTRACTOR shall be responsible for and bear all cost of damages which may result from the ordering of any material or from proceeding with any part of Work prior to the review and approval by ENGINEER of the necessary shop drawings.
- H. All shop drawings, product data, working drawings and Samples submitted by subcontractors for approval shall be sent directly to the CONTRACTOR for checking. The CONTRACTOR shall be responsible for their submission according to the approved shop drawing schedule so as to prevent delays in delivery of materials and project completion.
- I. The CONTRACTOR shall check all subcontractor's shop drawings, product data, working drawings and Samples regarding measurements, size of members, materials, and details to satisfy himself that they are in conformance to the Contract Documents. Shop drawings found to be inaccurate or otherwise in error shall be returned to the subcontractors for correction before submission to the ENGINEER.

- J. Requests for Information (RFI) shall be submitted on a standard form through the PROJECT REPRESENTATIVE. RFIs shall indicate their importance to the timely completion of the project. RFIs will be processed as a shop drawing unless there is an urgent need for immediate response.
- 1.8 ENGINEER'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, WORKING DRAWINGS AND SAMPLES
- A. The ENGINEER's review is for general conformance with the design concept and contract drawings. Markings or comments shall not be construed as relieving the CONTRACTOR from compliance with the contract plans and specifications or from departures therefrom. The CONTRACTOR remains responsible for details and accuracy, for coordinating the Work with all other associated work and trades, for selecting fabrication processes, for techniques of assembly, and for performing work in a safe manner.
- B. The review of shop drawings, Data, and Samples will be general. They shall not be construed:
1. as permitting any departure from the Contract requirements;
 2. as relieving the CONTRACTOR of responsibility for any errors, including details, dimensions, and materials;
 3. as approving departures from details furnished by the ENGINEER, except as otherwise provided herein.
- C. If the shop drawings, Data or Samples as submitted describe variations per subparagraph (1.6H), and show a departure from the Contract requirements which ENGINEER finds to be in the interest of the OWNER and to be so minor as not to involve a change in Contract Price or Contract Time for performance, the ENGINEER may return the reviewed drawings without noting an exception.
- D. Submittals will be returned to the CONTRACTOR under one of the following codes:
- Code 1 - "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the CONTRACTOR may release the equipment and/or material for manufacture.
- Code 2 - "APPROVED AS NOTED" is assigned when notations or comments have been made on the submittal pointing out minor discrepancies as compared with the Contract Documents. Resubmittal or confirmation is not necessary

prior to release for manufacturing.

- Code 3 - "APPROVED AS NOTED/CONFIRM." This combination of codes is assigned when a confirmation of the notations and comments is required by the CONTRACTOR. The CONTRACTOR may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation is to address the omissions and/or nonconforming items that were noted. Only the items to be "confirmed" need to be resubmitted.
- Code 4 - "NOT APPROVED/RESUBMIT." This combination of codes is assigned when the submittal is in noncompliance with the Contract Documents and must be corrected and the entire package resubmitted. This code generally means that the equipment or material cannot be released for manufacture unless the CONTRACTOR takes full responsibility for providing the submitted items in accordance with Contract Documents.
- Code 5 - "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents. The CONTRACTOR must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.
- Code 6 - "COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the CONTRACTOR.
- Code 7 - "FOR YOUR INFORMATION" is assigned when the package provides information of a general nature that may or may not require a response.

Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

Code 7 is used as may be necessary.

- E. Resubmittals will be handled in the same manner as first submittals. On resubmittals the CONTRACTOR shall direct specific attention, in writing on the letter of transmittal and on resubmitted shop drawings by use of

revision triangles or other similar methods, to revisions other than the corrections requested by the ENGINEER on previous submissions. Any such revisions which are not clearly identified shall be made at the risk of the CONTRACTOR. The CONTRACTOR shall make corrections to any Work done because of this type revision that is not in accordance to the Contract Documents as may be required by the ENGINEER.

- F. If the CONTRACTOR considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the CONTRACTOR shall give written notice thereof to the PROJECT REPRESENTATIVE at least seven (7) working days prior to release for manufacture.
- G. The ENGINEER will review a submittal a maximum of two (2) times, after which cost of review will be borne by the CONTRACTOR. The cost of engineering shall be equal to the ENGINEER's charges to the OWNER under the terms of the ENGINEER's agreement with the OWNER.
- H. When the shop drawings have been completed to the satisfaction of the ENGINEER, the CONTRACTOR shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the ENGINEER.
- I. Partial submittals may not be reviewed. The ENGINEER will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the CONTRACTOR, and will be considered "Not Approved" until resubmitted. The ENGINEER may, but is not required to, provide a list or mark the submittal directing the CONTRACTOR to the areas that are incomplete.

1.9 PROFESSIONAL ENGINEER (P.E.) CERTIFICATION FORM

- A. If specifically required in other sections of these Specifications, the CONTRACTOR shall submit a P.E. Certification for each item required, in the form attached to this Section, completely filled in and stamped.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

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P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a Professional Engineer registered in the (State) of Florida and that he/she has been employed by (Name of Contractor)

_____ to design
_____ in accordance with Specification Section
_____. The undersigned further certifies that he/she has performed the design
of the _____, that said design is in conformance
with all applicable local, state and federal codes, rules, and regulations, and that his/her
signature and P.E. stamp have been affixed to all calculations and drawings used in,
and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations
available to the OWNER or OWNER's representative within seven (7) days following
written request therefor by the OWNER.

P.E. Name

Signature

Address

Contractor's Name

Signature

Title

Address

END OF SECTION 01300

PHASE 1 - GENERAL

1.1 REQUIREMENTS

The CONTRACTOR shall employ a competent photographer to take construction record photographs or perform video taping, including providing all labor, materials, equipment and incidentals necessary to obtain specified photographs and/or video tapes.

1.2 QUALIFICATIONS

- A. All photography shall be accomplished by a competent camera operator who is fully experienced and qualified with the specified equipment.
- B. For the video tape recording, the audio portion should be accomplished by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarity and diction so as to be easily understood.

1.3 PROJECT PHOTOGRAPHS

- A. Provide photographs of the entire work area including **SR 30A (U.S. 98) UTILITY RELOCATION** prior to any construction for the purpose of records of conditions prior to construction. Photographs should be spaced at approximately 100 foot intervals. In addition, all special features shall be photographed prior to construction.
- B. Photographs shall be submitted each month with Request for Payment. A minimum of 10 photographs will be required each month for processing of Request of Payment.
- C. Provide 3 prints of each photograph to the PROJECT REPRESENTATIVE.
- D. Negatives:
 - 1. All negatives shall remain the property of photographer.
 - 2. The CONTRACTOR shall require that photographer maintain negatives for a period of two years from date of Substantial Completion of the Project. Negatives shall be conveyed to OWNER, free of charge, at the end of the two year period.

3. CONTRACTOR shall require Photographer to agree to furnish additional prints to OWNER and PROJECT REPRESENTATIVE at commercial rates applicable at the time of purchase. CONTRACTOR shall require Photographer to agree to participate in any litigation requiring, in the sole discretion of the OWNER, the photographer to appear as an expert witness.
- E. The CONTRACTOR shall pay all cost associated with the required photography and prints. Any parties requiring additional photography or prints will pay the photographer directly.
- F. All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 5 inches x 7 inches.
- G. Each print shall have clearly marked on the back the name of the project, the orientation of view, the date and time of exposure, name and address of photographer and the photographers numbered identification of exposure.
- H. All project photographs shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress or particular construction activities or problems. The CONTRACTOR shall consult with the PROJECT REPRESENTATIVE for instructions concerning views required.
- I. The CONTRACTOR shall provide photographs of the sites of the proposed ditch crossings and jack and bore crossings prior to the beginning of construction. Views shall be as required by the PROJECT REPRESENTATIVE.
- J. The CONTRACTOR shall deliver prints in conformance with the above requirements to the PROJECT REPRESENTATIVE. No construction shall start until pre-construction photographs are completed and submitted to the PROJECT REPRESENTATIVE.

1.4 VIDEO TAPE RECORDINGS

- A. Video taping shall be accomplished along all routes that are scheduled for construction in addition to required construction photographs. All video taping shall be in full color. Video taping shall include full taping of both sides of all streets on which construction is to be performed.
- B. The taping shall, when viewed, show the image, $\frac{1}{4}$ of the roadway fronting all

property and $\frac{3}{4}$ of the image shall be of the property. The taping shall be accomplished so as to show the roadway and property in an oblique view (30 degrees).

- C. A complete view, in sufficient detail, of all existing facilities with audio description of the exact location shall be provided.
- D. The construction plans shall be used as a reference for stationing in the audio portion of the tapes for easy location identifications. If visible, house or business numbers shall be mentioned on the audio.
- E. Two complete sets of video tapes shall be delivered to the PROJECT REPRESENTATIVE for the permanent and exclusive use of the PROJECT REPRESENTATIVE prior to the start of any construction on the project.
- F. All video tapes shall contain the name of the project, the date and time of the video taping, the name and address of the photographer and any other identifying information required.

1.5 DIGITAL PROJECT PHOTOGRAPHS

- A. Digital cameras and photographs may be used in lieu of conventional photography mentioned in Section 1.3 above. Provide photographs of the entire work area prior to any construction for the purpose of recording conditions prior to construction. Photographs should be spaced at approximately 100 foot intervals along improved areas. In addition, all special features shall be photographed prior to construction.
- B. CONTRACTOR shall provide 5" x 7" hard copies in color to the PROJECT REPRESENTATIVE for approval on clarity and quality of photographs prior to start of construction. Photographs shall be submitted each month with Request for Payment. A minimum of 10 photographs will be required each month for processing of Request of Payment. The CONTRACTOR shall also copy the photographs to a CD-ROM(s) and then submit the CD-ROM(s) to the PROJECT REPRESENTATIVE.
- C. Provide three (3) prints of each photograph to the PROJECT REPRESENTATIVE.
- D. CD-ROM(s) will be used in lieu of negatives.

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1. Photographer shall agree to participate as required in any litigation requiring the photographer as an expert witness.
- E. The CONTRACTOR shall pay all cost associated with the required photography, CD-ROM(s) and prints. Any parties requiring additional photography or prints will pay the photographer directly.
- F. All project hard copy photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 5 inches x 7 inches.
- G. Each hard copy shall have clearly marked on the back or adjacent to, the name of the project, the orientation of view, the date and time of photograph, name and address of photographer and the photographers numbered identification of photograph. Each CD-ROM(s) shall be clearly marked with the name of the project, the date, name and address of the photographer and the number of photographs, along with a brief description of the area(s) taken, i.e. name of road and station locations.
- H. All project photographs shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress or particular construction activities or problems. The CONTRACTOR shall consult with the PROJECT REPRESENTATIVE for instructions concerning views required.
- I. The CONTRACTOR shall deliver hard copies of photographs and CD-ROM(s) in conformance with the above requirements to the PROJECT REPRESENTATIVE. No construction shall start until pre-construction photographs are completed and submitted to the PROJECT REPRESENTATIVE.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01380

PHASE 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. CONTRACTOR shall employ and pay for the services of an Independent Testing Laboratory to perform testing specifically indicated in the Contract Documents and The Florida Department of Transportation "Standard Specifications for Road and Bridge Construction". These tests include soil compaction tests, concrete moisture and cylinder tests and asphalt density and materials tests.
 - 1. CONTRACTOR shall cooperate with the laboratory to facilitate the execution of its required services.
 - 2. Employment of the laboratory shall in no way relieve CONTRACTOR's obligations to perform the Work of the Contract.
 - 3. The Testing Laboratory shall be acceptable to the PROJECT REPRESENTATIVE and approved by the ENGINEER.

1.2 LIMITATIONS OF AUTHORITY OF TESTING LABORATORY

- A. Laboratory is not authorized to:
 - 1. Release, revoke, alter or enlarge on Contract requirements.
 - 2. Approve or accept any portion of the Work.
 - 3. Perform any duties of the CONTRACTOR.

1.3 CONTRACTOR'S RESPONSIBILITIES

- A. Cooperate with laboratory and testing personnel.
- B. Secure and deliver to the laboratory adequate quantities of representational samples of materials proposed to be used and which require testing.
- C. Provide to the laboratory the preliminary design mix proposed to be used for concrete, asphalt and other materials mixes which require control by the testing laboratory.
- D. Materials and equipment used in the performance of work under this Contract are subject to inspection and testing at the point of manufacture or fabrication. Standard specifications for quality and workmanship are

indicated in the Contract Documents. The PROJECT REPRESENTATIVE may require the CONTRACTOR to provide statements or certificates from the manufacturers and fabricators that the materials and equipment provided by them are manufactured or fabricated in full accordance with the standard specifications for quality and workmanship indicated in the Contract Documents. All costs of this testing and providing statements and certificates shall be a subsidiary obligation of the CONTRACTOR, and no extra Contract charge shall be allowed for of such testing and certifications.

- E. Furnish incidental labor and facilities:
 - 1. To provide access to work to be tested.
 - 2. To obtain and handle samples at the Project site or at the source of the product to be tested.
 - 3. To facilitate inspections and tests.
 - 4. For storage and curing of test samples.

- F. Notify laboratory sufficiently in advance of operations to allow for laboratory assignment of personnel and scheduling of tests.
 - 1. When tests or inspections cannot be performed after such notice, reimburse OWNER for laboratory personnel and travel expenses incurred.

- G. Employ and pay for the services of the same or a separate, equally qualified independent testing laboratory to perform additional inspections, sampling and testing required for the CONTRACTOR'S convenience and as approved by the PROJECT REPRESENTATIVE.

- H. Additional testing or retesting shall be undertaken at CONTRACTOR's expense if required by the PROJECT REPRESENTATIVE.

- I. All laboratory and testing expenses including retesting will be at the CONTRACTOR's expense with no separate Contract reimbursement.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01410

SECTION 01505

MOBILIZATION/DEMobilIZATION

PHASE 1 - GENERAL

1.1 DEFINITION AND SCOPE

- A. As required for the proper performance and completion of the Work, mobilization shall include, but not be limited to, the following principal items:
1. Move onto the site all CONTRACTOR'S plant and equipment required for the first month's operation.
 2. Install temporary construction power, wiring, telephone, and lighting facilities.
 3. Establish fire protection plan and safety program.
 4. Secure construction water supply.
 5. Provide on-site sanitary facilities and potable water facilities.
 6. Arrange for and erect CONTRACTOR'S lay down and storage yard and employee's parking facilities.
 7. Submit all required insurance certificates and bonds.
 8. Obtain all required permits.
 9. Post all OSHA, FDEP, Department of Labor, and all other required notices.
 10. Have CONTRACTOR'S project manager and/or superintendent at the job site full time.
 11. Submit a detailed construction schedule acceptable to the PROJECT REPRESENTATIVE.
 12. Submit a Schedule of Values of the Work in an approved format acceptable to the PROJECT REPRESENTATIVE.
 13. Submit a hurricane preparedness plan acceptable to the PROJECT REPRESENTATIVE.
 14. Erect all required Project signs.

1.2 PAYMENT FOR MOBILIZATION

- A. Payment for all mobilization/demobilization work will be made at the lump sum price bid for mobilization and demobilization of all labor, equipment, materials and appurtenances necessary for construction of the project. Mobilization shall include all items listed in the above paragraph. Also included, but not limited to, as part of this bid item is the cost for project performance indemnification's, shop drawings, working drawings, schedules, record drawings and documents, coordination, and phasing and other miscellaneous items associated with the work. Measurement and payment for this bid item will be lump sum. **The lump sum price for mobilization/demobilization will be limited to 3.0 percent of the total contract amount. Seventy percent (70%) of the lump sum amount will be payable upon mobilization. The remaining 30% will be payable**

upon demobilization.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION (Not Applicable)

END OF SECTION 01505

PHASE 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. The CONTRACTOR shall comply with all closeout requirements specified in the General Conditions and this Specification.

1.2 SUBSTANTIAL COMPLETION

- A. When CONTRACTOR considers the Work is substantially complete the following shall be submitted by CONTRACTOR to the PROJECT REPRESENTATIVE:
1. A written notice that the Work, or designated portion thereof, is substantially complete.
 2. A list of items to be completed or corrected.
- B. Within a reasonable time after receipt of such notice, the PROJECT REPRESENTATIVE will make an inspection to determine the status of completion.
- C. Should the PROJECT REPRESENTATIVE determine that the Work is not substantially complete:
1. The PROJECT REPRESENTATIVE will promptly notify the CONTRACTOR in writing, giving the reasons therefore.
 2. CONTRACTOR shall remedy the deficiencies in the Work, and send a second written notice of substantial completion to the PROJECT REPRESENTATIVE.
 3. The PROJECT REPRESENTATIVE will re-inspect the Work.
- D. When the PROJECT REPRESENTATIVE finds that the Work is substantially complete:
1. The PROJECT REPRESENTATIVE will prepare and deliver to OWNER a tentative Certificate of Substantial Completion, with a tentative list of items to be completed or corrected before final payment.
 2. After consideration of any objections made by the OWNER as provided in Conditions of the Contract, and when the PROJECT REPRESENTATIVE considers the Work substantially complete, a definite Certificate of Substantial Completion with a revised tentative list of items to be completed or corrected will be executed and delivered to the OWNER and the CONTRACTOR by the PROJECT REPRESENTATIVE.

1.3 FINAL INSPECTION

- A. When CONTRACTOR considers the Work complete, the CONTRACTOR shall certify in writing to the PROJECT REPRESENTATIVE:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been inspected for compliance with Contract Documents.
 - 3. Work has been completed in accordance with Contract Documents.
 - 4. Equipment and systems have been tested in presence of the OWNER'S representative and are operational.
 - 5. Work is completed and ready for final inspection.
- B. The PROJECT REPRESENTATIVE will make an inspection to verify the status of completion with reasonable promptness after receipt of such certification.
- C. Should the PROJECT REPRESENTATIVE consider that the Work is incomplete or defective:
 - 1. The PROJECT REPRESENTATIVE will promptly notify the CONTRACTOR in writing, listing the incomplete or defective work.
 - 2. CONTRACTOR shall take immediate steps to remedy the stated deficiencies, and send a second written certification to PROJECT REPRESENTATIVE that the Work is complete.
 - 3. The PROJECT REPRESENTATIVE will re-inspect the Work.
- D. When the PROJECT REPRESENTATIVE finds that the Work is acceptable under the Contract Documents, the CONTRACTOR shall be requested to make closeout submittals.

1.4 REINSPECTION FEES

- A. Should the PROJECT REPRESENTATIVE perform re-inspections due to failure of the Work to comply with the claims of status of completion made by the CONTRACTOR, OWNER will deduct the amount of any additional compensation it paid to the ENGINEER or PROJECT REPRESENTATIVE for such re-inspections, from the final payment to the CONTRACTOR.

1.5 CONTRACTOR'S CLOSEOUT SUBMITTALS TO PROJECT REPRESENTATIVE

- A. Evidence of compliance with requirements of governing authorities.
- B. Project "As Built" Drawings and Other Record Documents.
- C. Operating and Maintenance Data.

- D. Warranties and Bonds.
- E. Keys and Keying Schedule.
- F. Spare Parts and Maintenance Materials.
- G. Evidence of Payment and Releases of Liens.

1.6 FINAL ADJUSTMENTS OF ACCOUNTS

- A. The CONTRACTOR shall submit a final statement of accounting to the PROJECT REPRESENTATIVE.
- B. Statement shall reflect all adjustments to the original Contract amount:
 - 1. The original Contract amount.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Unit Prices.
 - c. Deductions for uncorrected Work.
 - d. Penalties and Bonuses.
 - e. Deductions for liquidated damages.
 - f. Deductions for re-inspection payments.
 - g. Other adjustments.
 - h. Inspection overtime.
 - i. Excessive shop drawing review cost by the ENGINEER.
 - 3. Total Contract amount, as adjusted.
 - 4. Previous Payments.
 - 5. Amount remaining due.
- C. PROJECT REPRESENTATIVE will prepare a final Change Order, reflecting approved adjustments to the Contract amount which were not previously made by Change Orders.

1.7 FINAL APPLICATION FOR PAYMENT

- A. CONTRACTOR shall submit the Final Application for Payment in accordance with procedures and requirements stated in the General Conditions.

PART 2 – PRODUCTS (Not Applicable)

PART 3 – EXECUTION

3.1 GENERAL

A. The CONTRACTOR shall furnish all necessary tools and labor required to allow PROJECT REPRESENTATIVE to verify the status of completion. The tools shall include, but not be limited to the following:

1. Manhole Entry Equipment;
2. Locator for Services Irrigation and Sanitary;
3. Fire Hydrant Wrench and Fire Hose;
4. Shovel;
5. Lamps and Mirror(s);
6. Probe Rod;
7. Valve Key; and
8. Manhole Hook.

END OF SECTION 01705

**SECTION 02110
SITE CLEARING**

PHASE 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Extent of site clearing is shown on drawings.
- B. Site clearing work includes, but is not limited to:
 - 1. Protection of existing trees.
 - 2. Removal of trees and other vegetation.
 - 3. Topsoil stripping.
 - 4. Clearing and grubbing.
 - 5. Removing above-grade improvements.
 - 6. Removing below-grade improvements.

1.03 JOB CONDITIONS

- A. Traffic:
 - 1. Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
 - 2. Do not close or obstruct streets, walks or other occupied or used facilities without permission from authorities having jurisdiction.
- B. Protection of Existing Improvements:
 - 1. Provide protection necessary to prevent damage to existing improvements indicated to remain in place.
 - 2. Protection improvements on adjoining properties and on OWNER's property.
 - 3. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.

C. Protection of Existing Trees and Vegetation:

1. Protect existing trees and other vegetation indicated to remain in place, against unnecessary cutting, breaking or skinning of roots, skinning and bruising of bark, smothering of trees by stockpiling construction materials or excavated materials within drip line, excess foot or vehicular traffic, or parking of vehicles within drip line.
2. Provide temporary guards to protect trees and vegetation to be left standing.

D. Salvable Improvements:

1. Carefully remove items indicated to be salvaged, and store on OWNER's premises where indicated or directed.

PART 2 - PRODUCTS

Not applicable to work of this section.

PART 3 - EXECUTION

3.01 SITE CLEARING

A. General:

1. Remove trees, shrubs, grass and other vegetation, improvements, or obstructions interfering with installation of new construction.
2. Remove such items elsewhere on the site or premises as specifically indicated. Removal includes digging out stumps and roots.
3. Carefully and cleanly cut roots and branches of trees indicated to be left standing, where such roots and branches obstruct new construction.

B. Topsoil:

1. Topsoil is defined as friable clay loam surface soil found in a depth of not less than 4 inches.
2. Satisfactory topsoil is reasonably free of topsoil, clay lumps, stones, and other objects over 2 inches in diameter, and without weeds, roots, and other objectionable material.

3. Remove heavy growths of grass from areas before stripping.
4. Stop topsoil stripping a sufficient distance, where trees are indicated to be left standing, to prevent damage to main root system.
5. Stockpile topsoil in storage piles in areas shown, or where directed. Construct storage piles to freely drain surface water. Cover storage piles if required to prevent wind-blown dust.
6. Dispose of unsuitable or excess topsoil same as waste material, herein specified.

C. Clearing and Grubbing:

1. Clear site of trees, shrubs and other vegetation, except for those indicated to be left standing.
2. Completely remove stumps, roots, and other debris protruding through the ground surface.
3. Use only hand methods for grubbing inside drip line of trees indicated to be left standing.
4. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.
5. Place fill material in horizontal layers not exceeding 6-inch loose depth, and thoroughly compact to a density equal to adjacent original ground.

D. Removal of Improvements:

1. Remove existing above-grade and below-grade improvements necessary to permit construction, and other work as indicated.

3.02 DISPOSAL OF WASTE MATERIALS

- A. Burning on OWNER's Property: Burning is not permitted on OWNER's property unless OWNER's approval is obtained and proper authorities are notified.
- B. Removal from OWNER's Property: Remove waste materials and unsuitable materials from OWNER's property and dispose of off site in legal manner.

END OF SECTION 02110

**SECTION 02200
EARTHWORK**

PHASE 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Definition: "Excavation" consists of removal of material encountered to subgrade elevations indicated and subsequent disposal of materials removed.

1.03 QUALITY ASSURANCE

A. Codes and Standards:

- 1. Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service:

- 1. Employ, at CONTRACTOR's expense, a testing laboratory subject to approval by the ENGINEER to perform soil testing and inspection service for quality control during earthwork operations.

1.04 SUBMITTALS

- A. Test Reports-Excavating: Submit following reports directly to ENGINEER from the testing services; with copy to CONTRACTOR:

- 1. Test reports on fill material. (Modified Proctor Tests)
- 2. Field density test reports. (Modified Proctor Tests)
- 3. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.05 JOB CONDITIONS

A. Existing Utilities:

- 1. Locate existing underground utilities in areas of work. If utilities are to

remain in place, provide adequate means of support and protection during earthwork operations.

2. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with OWNER and utility companies in keeping respective services and facilities in operation. CONTRACTOR shall bear all costs of repairing damaged utilities to the satisfaction of utility owner.
3. Do not interrupt existing utilities serving facilities occupied and used by OWNER or others, during occupied hours, except when permitted in writing by ENGINEER and then only after acceptable temporary utility services have been provided.
4. Provide minimum of 48-hour notice to engineer, and receive notice to proceed before interrupting any utility.
5. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

B. Use of explosives:

1. The use of explosives is not permitted.

C. Protection of Persons and Property:

1. Barricade open excavations occurring as part of this work and post with warning lights.
2. Operate warning lights as recommended by authorities having jurisdiction.
3. Protect structures, utilities, sidewalks, pavements, and other facilities from damages caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.
4. Perform excavation within drip-line of large trees to remain by hand, and protect the root system from damage or dryout in the manner prescribed in sections under "Sitework."

PART 2 - PRODUCTS

2.01 SOILS MATERIALS

- A. Subbase Material:
 - 1. Naturally or artificially graded mixture of natural or crushed gravel, crushed lime rock or crushed concrete.

- B. Backfill and Fill Materials:
 - 1. Satisfactory soil materials free of clay, rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter. The fill material should be sand containing little fines.
 - 2. Prior to placing the fill material, the existing material shall be stripped of all soils containing a significant percentage of organics and all loose soils which cannot be readily compacted.
 - 3. If existing materials do not meet these requirements, it may be necessary to backfill with select materials other than those on the job site.

PART 3 - EXECUTION

3.01 EXCAVATION

- A. Excavation:
 - 1. Excavation is Unclassified, and includes excavation to subgrade elevations indicated, regardless of character of materials and obstructions encountered.
 - 2. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of ENGINEER. Unauthorized excavation, as well as remedial work directed by ENGINEER, shall be at CONTRACTOR's expense.
 - 3. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom of elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to ENGINEER.
 - 4. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classifications, unless otherwise directed by engineer

B. Additional Excavation:

1. When excavation has reached required subgrade elevations, notify ENGINEER who will make an inspection of conditions.
2. If unsuitable bearing materials are encountered at required subgrade elevations, notify ENGINEER who will make an inspection of conditions.
3. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by the ENGINEER.
4. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.

C. Stability of Excavations:

1. Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated.
2. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

3.04 SHORING AND BRACING

- A. Provide materials for shoring and bracing, such as sheet piling, uprights, stringers and cross-braces, in good serviceable condition.
- B. Establish requirements for trench shoring and bracing to comply with local codes and authorities having jurisdiction.
- C. Maintain shoring and bracing in excavations regardless of time period excavations will be open. Carry down shoring and bracing as excavation progresses.
- D. Dewatering:
 1. Prevent surface water and subsurface or ground water from flowing into excavations and from flooding project site and surrounding area. The cost of all dewatering operations including well pointing and "sock pipe" shall be the responsibility of the CONTRACTOR. The ENGINEER may direct the CONTRACTOR to provide dewatering if deemed necessary.

2. Do not allow water to accumulate in excavations. Remove water to prevent softening of foundation bottoms, undercutting footings, and soil changes detrimental to stability of subgrades and foundations. Provide and maintain pumps, well points, sumps, suction and discharge lines, and other dewatering system components necessary to convey water away from excavations.
3. Establish and maintain temporary drainage ditches and other diversions outside excavation limits to convey rain water and water removed from excavations to collecting or run-off areas. Do not use trench excavations as temporary drainage ditches.

E. Material Storage:

1. Stockpile satisfactory excavated materials where directed, until required for backfill or fill. Place, grade, and shape stockpiles for proper drainage.
2. Locate and retain soil materials away from edge of excavations. Do not store within drip line of trees indicated to remain.
3. Dispose of excess soil material and waste materials as herein specified.

F. Excavation for Structures:

1. Conform to elevations and dimensions shown within a tolerance of plus or minus 0.10', and extending a sufficient distance from footings and foundations to permit placing and removal of concrete formwork, installation of service, other construction, and for inspection.
2. In excavating for footings and foundations, take care not to disturb bottom of excavation. Excavate by hand to final grade just before concrete reinforcement is placed. Trim bottoms to required lines and grades to leave solid base to receive other work.

G. Excavation for Trenches:

1. Dig trenches to the uniform width required for particular item to be installed, sufficiently wide to provide ample working room. Provide 6" to 9" clearance on both sides of pipe or conduit and a maximum of 30" total width.
2. Excavate trenches to depth indicated or required. Carry depth of trenches for piping to establish indicated flow lines and invert

elevations. Beyond building perimeter, keep bottoms of trenches sufficiently below finish grade to avoid freeze-ups.

3. Where rock is encountered, carry excavation 6" below required elevation and backfill with a 6" layer of crushed stone or gravel prior to installation of pipe.
4. For pipes or conduit 5" or less in nominal size and for flat-bottomed multiple-duct conduit units, do not excavate beyond indicated depths. Hand excavate bottom cuts to accurate elevations and support pipe or conduit on undisturbed soil.
5. For pipes or conduit 6" or larger in nominal size, tanks and other mechanical/electrical work indicated to receive subbase, excavate to subbase depth indicated, or, if not otherwise indicated, to 6" below bottom of work to be supported.
6. Except as otherwise indicated, excavate for waterbearing piping so top of piping is not less than 3'-0" below finished pavement grade, but no less than 2'-6" below finish grade.
7. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
8. Backfill trenches with concrete where trench excavations pass within 18" of column or wall footings and which are carried below bottom of such footings, or which pass under wall footings. Place concrete to level of bottom of adjacent footing.
9. Use care in backfilling to avoid damage or displacement of pipe systems.

3.02 COMPACTION

A. General:

1. Control soil compaction during construction, providing minimum percentage of density specified for each area classification indicated below.
2. All compaction requirements for this section are specified on the construction plans.

B. Moisture Control:

1. Where subgrade of layer of soil material must be moisture conditioned

before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during subsequent to compaction operations.

2. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
3. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by dicing, harrowing or pulverizing, until moisture content is reduced to a satisfactory value.

3.03 BACKFILL AND FILL

- A. General: Place acceptable soil material in layers to required subgrade elevations, for each area classification listed below:
 1. In excavations, use satisfactory excavated or borrow material.
 2. Under grassed areas, use satisfactory excavated or borrow material.
 3. Under walks and pavements, use subbase material, or satisfactory excavated or borrow material, or combination of both.
 4. Under piping and conduit, use subbase material where subbase is indicated under piping or conduit; shape to fit bottom 90 degrees of cylinder.
- B. Backfill excavation as promptly as work permits, but not until completion of the following;
 1. Acceptance of construction below finish grade.
 2. Inspection, testing, approval, and recording locations of underground utilities.
 3. Removal of concrete formwork.
 4. Removal of shoring and bracing, and backfilling of voids with satisfactory materials. Cut off temporary sheet piling driven below bottom of structures and remove in manner to prevent settlement of the structure or utilities, or leave in place if required.
 5. Removal of trash and debris.
 6. Permanent or temporary horizontal bracing is in place on horizontally

supported walls.

C. Ground Surface Preparation:

1. Remove vegetation, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placement of fills. Plow, strip, or break-up sloped surfaces steeper than 1 vertical to 4 horizontal so that fill material will bond with existing surface.
2. When existing ground surface has a density less than that specified under "Compaction" for particular area classification, break-up ground surface, pulverize, moisture-condition to optimum moisture content, and compact to required depth and percentage of maximum density.

D. Placement and Compaction:

1. The lower portion of backfill, to a compacted level of one foot above the top of the pipe, shall be hand placed in layers of lifts not to exceed six inches of compacted depth and each layer compacted individually by means of hand tampers. Above that level, place lifts in layers not to exceed twelve inches of compacted depth and machine filling and tamping may be used.
2. Before compaction, moisten or aerate each layer as necessary to provide optimum moisture content. Compact each lift to required percentage of minimum soil density for each area classification as designated herein. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.
3. Place backfill and fill materials evenly adjacent to structures, piping or conduit to required elevations. Take care to prevent wedging action of backfill against structures or displacement of piping or conduit by carrying material uniformly around structure, piping or conduit to approximately same elevation in each lift.

3.04 GRADING

A. General:

1. Uniformly grade areas within limits of grading under this section, including adjacent transition areas.
2. Smooth finished surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are

indicated, or between such points and existing grades.

- B. Grading Outside Building Lines:
 - 1. Grade areas adjacent to building lines to drain away from structures and to prevent ponding.

- C. Finish surfaces free from irregular surface changes, and as follows:
 - 1. Lawn or Unpaved Areas: Finish areas to receive topsoil to within not more than 0.10' above or below required subgrade elevations.
 - 2. Walks: Shape surface of areas under walks to line, grade and cross-section, with finish surface not more than 0.10' above or below required subgrade elevation.
 - 3. Pavements: Shape surface of areas under pavement to line, grade and cross-section, with finish surface not more than 1/2" above or below required subgrade elevations.

- D. Grading Surface of Fill Under Building Slabs:
 - 1. Grade smooth and even, free from voids, compacted as specified, and to required elevation.
 - 2. Provide final grades within a tolerance of 1/2" when tested with a 10' straightedge.
 - 3. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage for each area classification.

3.05 FIELD QUALITY CONTROL

- A. Quality Control Testing During Construction:
 - 1. Provide testing service by a qualified soil testing firm, subject to ENGINEER's approval, to inspect and approve subgrades and fill layers before further construction work is performed.

- B. Paved Areas:
 - 1. Make at least one field density test of subgrade for every 2000 square feet of paved area but in no case less than 3 tests, nor less than 1 per driveway or crossing. In each compacted fill layer, make one field density test for every 2,000 square feet of paved area but in no case

less than 3 tests, nor less than 1 per driveway or crossing.

- C. Non-Paved Areas:
 - 1. Perform at least 1 field density test per 3,000 square feet of fill per every vertical foot of height, and perform at least 1 field density test per 1,000 feet of pipe installed per every 2 feet of vertical trench depth.
- D. If in opinion of ENGINEER, based on testing service reports and inspection, subgrade or fills which have been placed below are specified density, provide additional compaction and testing at no additional expense.

3.06 MAINTENANCE

- A. Protection of Graded Areas:
 - 1. Protect newly graded areas from traffic and erosion. Keep free of trash and debris.
- B. Repair and re-establish grades in settled, eroded, and rutted areas to specified tolerances.
- C. Reconditioning Compacted Areas:
 - 1. Where completed compacted areas are disturbed by subsequent construction operations or adverse weather, scarify surface, re-shape, and compact to required density prior to further construction.

3.07 DISPOSAL OF EXCESS AND WASTE MATERIALS

- A. Disposal of all spoil material resulting from construction shall be the responsibility of the CONTRACTOR.

END OF SECTION 02200

**SECTION 02210
GRASSING**

PHASE 1 - GENERAL

RELATED DOCUMENTS:

Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section. Grassing is intended to match what was being removed during construction. The intent of the specification is to provide the same level of grassing or better to stabilize soil.

DESCRIPTION OF WORK:

All disturbed areas throughout the project that are not specifically designated as being sodded on the plans shall be seeded.

QUALITY ASSURANCE:

All seed used 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 by Owner. Seed which has become wet, moldy, or otherwise damaged in transit or in storage shall not be used. 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. Seed, fertilizer and other grassing materials shall be stored under cover and protected from damage which would make them unacceptable for use.

SUBMITTALS:

Approvals, except those required for field installations, field applications, and field tests shall be obtained before delivery of materials or equipment to the project. The results of laboratory tests performed on the topsoil material shall be submitted. The reports shall include the pH level, the amount of organic matter, and available phosphoric acid and potash of the soil intended for use in the work. Certificate of conformance will be required for the following:

1. Grass seed shall be certified by registered, certified seed association or a registered testing laboratory not more than ten months prior to seeding.
2. Sprigs
3. Fertilizer
4. Topsoil

- 5. Lime
- 6. Mulching

PART 2 - PRODUCTS

TOPSOIL:

If the quantity of existing stored or excavated topsoil is inadequate for planting, sufficient additional topsoil shall be furnished. Topsoil furnished shall be a natural, fertile, friable soil, possessing characteristics of representative productive soils in the vicinity. It shall be obtained from naturally well-drained areas. Topsoil shall be without admixture of subsoil and free from johnson grass (*Sorghum halepense*), nut grass (*Cyperus rotundus*) and objectionable weeds and toxic substances.

SOIL AMENDMENTS:

Lime: 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.

Fertilizer: 16-16-16 formulation of which 60 percent of the nitrogen is in the urea-formaldehyde form and shall conform to the applicable State Fertilizer laws. It shall be granulated so that 80 percent is held on a 16-mesh screen, uniform in composition, dry and free-flowing.

Mulch: Clean hay, fresh straw mulch or wood chips.

GRASS MATERIALS:

Grass Seed: Federal Specifications JJJ-S-181 and shall satisfy the following requirements:

| Seed | Min. % Pure Seed | Min.% Germination and Hard Seed | Max. % Weed Seed |
|--|---------------------|------------------------------------|---------------------|
| Argentine Bahia (<i>Paspalum notatum</i>) | 80% | 65% 15% | .25% |

Seed failing to meet the purity or germination requirements by no more than twenty-five percent may be used, but the quantity shall be increased to yield the required rate of pure live seed. Seed failing to meet the weed seed requirements shall not be used.

PART 3 - EXECUTION

GRADING:

Areas to be grassed shall be graded to remove depressions, undulations, and irregularities in the surface before grassing.

PLACING TOPSOIL:

Areas to be grassed shall have a minimum topsoil cover of two inches. Topsoil shall not be placed when the subgrade is excessively wet, extremely dry or in a condition otherwise detrimental to the proposed planting or proper grading.

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 1-1/2 inches in diameter.

APPLICATION OF 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.

APPLICATION OF FERTILIZER:

Fertilizer shall be applied at the rate of 6 pounds per 1,000 square feet and shall be thoroughly incorporated into the top three to four inches of soil.

PLANTING SOIL:

All areas disturbed during construction shall be seeded as specified herein. Immediately before seeds are sown and after fertilizer and lime are applied, the ground shall be scarified as necessary and shall be raked until the surface is smooth, friable, and of uniformly fine texture. Areas to be grassed shall be seeded evenly with a mechanical spreader, raked lightly, rolled with a 200-pound roller, and watered with a fine spray.

1. Seed shall be applied at the following rate:

| <u>Seed</u> | <u>Rate of Application</u> |
|---|--------------------------------------|
| Argentine Bahia Grass (Paspalum notatum) | 6lbs./1,000 sq. ft. 260 lbs./acre |

2. Seeded areas shall be mulched at the rate of not less than 1-1/2" loose measurement over all seeded areas. Spread by hand, blower, or other suitable equipment. Mulch shall be cut into the soil with equipment capable of cutting the mulch uniformly into the soil. Mulching shall be done within 24 hours of the time seeding is completed.

ROLLING:

After seeding and mulching, a cultipacker, traffic roller, or other suitable equipment shall be used for rolling the grassed areas. Areas shall then be watered with a fine spray.

WINTER COVER:

All areas to be grassed shall be protected against erosion at all times. For protection during the winter months (November 1st through March 31st) Italian rye grass shall be planted at the rate of four pounds per 1,000 square feet on all areas which are not protected by permanent grass.

CLEAN-UP:

All excess soil, excess grass materials, stones, and other waste shall be removed from the site daily and not allowed to accumulate.

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. Grassing will be considered for final acceptance when the permanent grass is healthy and growing on 97% of the area with no bare areas wider than 12 inches.

ACCEPTANCE:

The Contractor shall submit to the Owner two copies of a written request for final acceptance of the grassing work. The request shall be submitted at least ten days prior to the anticipated date of acceptance. The condition of the grass will be noted, the Contractor will be notified if maintenance is to continue.

END OF SECTION 02210

**SECTION 02211
SODDING**

PHASE 1 - GENERAL

1.01 WORK INCLUDED

- A. Sod Installation (where existing sod is removed to performed work)

1.02 REFERENCES

- A. ASPA - American Sod Producers Association - Guideline Specifications to Sodding.
- B. FS O-F-241 - Fertilizers, Mixed, Commercial.

1.03 DEFINITIONS

- A. Weeds: Dandelion, Jimsonweed, Quackgrass, Horsetail, Morning Glory, Rush Grass, Mustard, Lambsquarter, Chickweed, Cress, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Bermuda Grass, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Hill, Bindweed, Bent Grass, Wild Garlic, Perrenial Sorrel, and Brome Grass.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sod on pallets. Protect exposed roots from dehydration.
- B. Do not deliver more sod that can be laid within 24 hours.

PART 2 - PRODUCTS

2.01 ACCEPTABLE SOD GROWERS

- A. Nurseries and Sod Growers in the surrounding area who have a five year record are acceptable.

2.02 MATERIALS

- A. Sod:
 - 1. ASPA approved, field grown grade; cultivated grass sod; for low maintenance and traffic durability, with strong fibrous root system, free of stone, burned or bare spots; containing no more than 5 weeds per 1000 square feet.

- B. Approved Sods:
 - 1. Bermuda, (Cynodon Dactylon).

2.03 HARVESTING SOD

- A. Machine cut sod and load on pallets in accordance with ASPA guidelines.
- B. Cut sod in area not exceeding one square yard, with minimum 1/2 inch and maximum one inch topsoil base.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that prepared soil base is ready to receive the work of this Section.
- B. Beginning of installation means acceptance of existing site conditions.

3.02 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate uneven areas and low spots. Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- B. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded. Remove contaminated subsoil.

3.03 LAYING SOD

- A. Moisten prepared surface immediately prior to laying sod.
- B. Lay sod immediately on delivery to site and within 24 hours after harvesting to prevent deterioration.
- C. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12-inches overlapping; minimum. Do not stretch or overlap sod pieces.
- D. Lay smooth. Align with adjoining grass areas. Place top elevation of sod 1/2 inch below adjoining paving or curbs.
- E. On slopes 6 inches per foot and steeper, lay sod perpendicular to slope and secure every row with wooden pegs at maximum 2 feet on center. Drive pegs flush with soil portion of sod.

- F. Prior to placing sod, on slopes exceeding 8 inches per foot or where indicated, place wire mesh over topsoil. Securely anchor in place with wood pegs sunk firmly into the ground.
- G. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil. In addition, water sod for an additional 4 weeks to ensure sod is established.
- H. After sod and soil have dried, roll sodded areas to ensure good bond between sod and soil and to remove minor depressions and irregularities.
- I. Sod shall be laid in all ditch areas and slopes that are equal to or steeper than 1 vertical to 3 horizontal or in areas determined by the Engineer to "erosion problem" areas. Sod shall be pinned down for stabilization in these areas.

END OF SECTION 02211

SECTION 02222
TRENCHING, BACKFILLING AND COMPACTING

PHASE 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. The extent of trenching, backfilling and compacting is shown on the drawings.
- B. This section includes furnishing equipment, labor and materials, and performing all operations necessary and incidental to perform the required work.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 CLEARING THE SITE

- A. The site of the work shall be cleared of all trees, shrubs, paving and objectionable material which interfere with the prosecution of the proposed work. Trees and shrubs which will not interfere with construction shall be protected from damage. Clearing shall be considered as an incidental item of excavation.

3.2 EXCAVATION

- A. General: Perform excavation described of whatever substance encountered to the dimensions and depths specified or shown on the drawings. Undercutting will not be permitted, except when ordered by the Engineer. Material suitable for backfill shall be stockpiled near the site. Rock or other material undesirable for backfill shall be spoiled outside the area in a neat manner, as directed by the Engineer. Where it is necessary to cut roots projecting into an excavation or where it is necessary to trim branches for equipment clearance, all severed root ends or cuts to branches over 1/2-inch diameter shall be treated with an asphalt base pruning paint. Backfill over exposed roots as soon as possible.
- B. Rock: Where encountered in the trench bed, rock shall be excavated to a depth of 1/4 of the pipe diameter below the bottom of the pipe but in no case less than 4-inches. All undercut trench excavation shall be backfilled and tamped with materials as specified in the following paragraphs under Unstable Subgrade.
- C. Unstable Subgrade:

1. In the event that unsuitable material is encountered at or below the excavation depth specified or shown on the drawings, the Engineer shall be notified. Such material shall be removed and replaced with suitable material. Methods and materials used for replacement shall be one of the following as directed by the Engineer in writing.
 - a. Suitable earth or sand, compacted in the trench. Materials shall be furnished as a part of the Bid Proposal item covering excavation and backfill.
 - b. Gravel or crushed limerock, compacted in the trench and paid for under the appropriate item.
 - c. Existing materials, stabilized after removal and then replaced and compacted in the trench at no additional cost to the Owner.

2. The Engineer shall determine the methods and materials to be used, based upon the condition of the excavation, the pipe structure to be supported, and the availability and character of stabilizing materials.

D. Trenches:

1. Keep pipe laying operation as close to the excavation operation as possible during the prosecution of the work. The Engineer reserves the right to stop the excavation at any time when, in his opinion, the excavation is opened too far in advance of the pipe laying.

2. Pipe trenches shall be excavated to a depth that will insure a minimum of 36-inches of cover for ductile iron and PVC pipe and 54-inches of cover for polyethylene pipe, except service laterals. Trenches shall be only of sufficient width to provide a free working space on each side of the pipe. To prevent excess pressure on the pipe, the maximum width of trench at the top of the pipe and at the bottom of the trench shall not be greater than 2-feet more than the greatest exterior diameter of the pipe. If this maximum width is exceeded, it shall be the Contractor's responsibility to provide, at no additional cost to the Owner, such additional bedding or select backfill materials as the Engineer may require. The excavation below the spring line shall be made to conform as near as possible to the shape of the lower third of the pipe. To protect the pipe lines from unusual stresses, all work shall be done in open trenches. Excavation shall be made for bells of all pipes and of sufficient depth to permit access to the joint for construction and inspections. In no case will the bells be used to support the body of the pipe.

3. In order to avoid existing utilities, at times it may be necessary for the pipe to be laid deeper than the minimum cover specified in the preceding paragraph. At such time the Contractor will not be

allowed extra compensation for additional excavation involved.

4. In case excavation has been made deeper than necessary, a layer of concrete, fine gravel or other material satisfactory to the Engineer shall be placed, at no extra cost, to secure a firm foundation for the lower third of each pipe. Where possible, excavated material shall be placed so as not to interfere with public travel. Bridging shall be provided to afford necessary access to public or private premises. Bridging shall be considered as part of the excavation operation and shall be supplied at no additional cost to the Owner.

E. Structural: (For inlets, manholes, valve pits and similar structures)

1. Remove sufficient material to allow proper space for erecting and removing forms. The elevations of the bottoms of footings, if shown on the drawings, shall be considered as approximate only, and the Engineer may order, in writing, such changes in dimensions or elevations of footings as may be deemed necessary to secure a satisfactory foundation. Excavation for structures shall be sufficient to leave at least 12-inches in the clear between their outer surfaces and the embankment of timber that may be used to protect them. Backfill of earth under structures will not be permitted. Excess excavation for structures shall be filled with thoroughly compacted sand, gravel, or concrete at the expense of the Contractor.
2. After excavation for a structure is completed, the Contractor shall notify the Engineer to that effect. No concrete or reinforcing steel shall be placed until the Engineer has approved the depth of the excavation and the character of the foundation material.

F. Sheeting and Shoring:

1. The Contractor shall provide all trench and structural bracing, sheeting or shoring necessary to construct and protect the excavation, existing utilities, structures and private property of all types and as required for the safety of the employees. Sheeting shall be removed or cut off by the Contractor during backfilling operations as directed by the Engineer. Sheeting which is left in place by order of the Engineer will be paid for under the item, Lumber left in Place. Removal of shoring for structures shall be done in such a manner as not to disturb or mar finished masonry or concrete surfaces.

3.3 DRAINAGE

- A. Grading shall be controlled in the vicinity of excavations so that the surface of the ground will be properly sloped to prevent water from running

into trenches or other excavated areas. Any water which accumulates in the excavations shall be removed promptly by well point or by other means satisfactory to the Engineer in such a manner as to not create a nuisance to adjacent property or public thoroughfare. Trenches shall be kept dry while pipe is being laid. Bridging of dewatering pipe shall be provided where necessary. Pumps and engines for well point systems shall be operated with mufflers, and at a minimum noise level suitable to a residential area. The Contractor will not be allowed to discharge water into the Owner's storm drainage system without the written approval of the Engineer. Approval will be subject to the condition that the storm sewer be returned to its original condition.

- B. The Contractor is responsible for carrying the water to the nearest ditch or body of water and for obtaining the necessary permission to use same. The Contractor shall be financially responsible for any nuisance created due to carrying off water from his drainage system.

3.4 BACKFILL

A. Trenches:

1. Trenches shall be backfilled immediately after the pipe is laid unless other protection for the pipeline is provided. Clean earth, sand, crushed limrock or other material approved by the Engineer shall be used for backfill. Backfill material shall be selected, deposited and compacted (simultaneously on both sides of the pipe) so as to eliminate the possibility of lateral displacement of the pipe. Backfill material shall solidly tamped around the pipes in layers to a level at least 1-foot above the top of the pipe. Each layer shall be compacted to a maximum thickness of 6-inches.
2. In unpaved areas, the remainder of the backfill shall be deposited and then compacted by puddling, water flooding or mechanical tampers. Mechanical tamping of layers in unpaved areas shall be to a maximum thickness of 12-inches. In areas to be paved or repaved, the entire depth of backfill shall be deposited in layers and compacted by hand or mechanical tampers to a maximum thickness of 6-inches. Compaction shall be carried out to achieve a density of at least 98% of the maximum density as determined by AASHTO, Method T-180. Under areas to be paved, puddling may be used for backfill consolidation after tamping to 1-foot over the pipe, as specified, provided the method is first approved by the Engineer and the density requirements are met.
3. In areas to be paved, density tests for determination of the specified compaction shall be made by a testing laboratory and spaced one in every 300-feet of trench cut. It is the intent of this specification to secure a condition where no further settlement of

trenches will occur. When backfilling is completed, the roadway base for pavement replacement may be placed immediately. It will be the responsibility of the Contractor to restore the surface to the original grade wherever settlement occurs.

B. Wet Trenches (Contractor's Option):

1. Backfill for the pipe bed in wet trenches shall be crushed, graded limerock, and compacted in the trench. After the pipe is laid, a graded limerock backfill shall be placed and worked in around the haunches to a point 6-inches above the pipe. The width of the limerock material around the pipe shall not be less than the outside diameter of the pipe plus 6-inches on each side of the pipe. Material shall be carefully distributed along the pipe so as to provide full and uniform support under and around the pipe. Six inches above the top of the pipe and up to the water level, material from the excavations with no rock or earth exceeding 4-inches in any one dimension shall then be lifted to the trench and released at the water level. Material shall be uniformly distributed for the full width of the trench. Backfill and compaction above the water level in the trench shall be as specified above. All costs for graded limerock placed in wet trenches shall be included in the cost of stage excavation and backfill for the various sizes of pipe.

C. Bedding and Backfill - Flexible Sewer Pipe:

1. For polyvinyl chloride pipe, the bedding and backfill materials shall be such as to limit the vertical ring deflection to 5% of the inside pipe diameter. A deflection greater than 5% of the inside diameter shall be cause for rejection of the pipe.
2. Class IV or Class V materials as defined in ASTM D2321-74 shall not be used for bedding, haunching or initial backfill for flexible pipes.
3. For polyvinyl chloride plastic pipe, bedding shall be in accordance with ASTM D2321-74, using Class I, II or III materials, except under wet conditions. In any area where the pipe will be installed below existing or future groundwater levels or where the trench could be subject to inundation, Class I material shall be placed to the springline of the pipe.
4. A minimum of effort is needed to compact the material. However, in the initial stage of placing this type of material, take care to ensure that sufficient material has been worked under the haunch of the pipe to provide adequate side support. Take precautions to prevent movement of the pipe during placing of the material under the pipe haunch. Except for the protection of the pipe from large

particles of backfill material, little care need be taken and no compaction is necessary in placing backfill material in the balance of the initial backfill area above the pipe. Where unstable trench wall exist because of migratory materials, such as water-bearing silts or fine sand, take care to prevent the loss of side support through the migratory action.

5. All bedding requirements for flexible pipe specified in the preceding paragraphs shall be included in the price bid for the applicable pipe material and no additional compensation for bedding material will be allowed.

D. Structural:

1. After completion of foundation footings and walls and other construction below the elevation of the final grades, and prior to backfilling, forms shall be removed and the excavation shall be cleared of all trash and debris. Material for backfilling shall consist of the excavation, borrow sand or other approved materials, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not in excess of 9-inches in thickness, and have a moisture content such that a density may be obtained to prevent excessive settlement or shrinkage. Each layer shall be compacted by hand or approved machine tampers with extreme care being exerted not to damage pipe or structures. Backfill shall be placed and compacted evenly against the exposed surfaces to prevent undue stress on any surface.

3.5 RESTORATION OF SURFACE IMPROVEMENTS

- A. Roadways, including shoulders, alleys and driveways of shell, limerock, stabilized soil or gravel, grass plots, sod, shrubbery, ornamental trees, signs, fences, or other surface improvements on public or private property which have been damaged or removed in excavation, shall be restored to conditions equal to or better than conditions existing prior to beginning work. Restoration of shoulders shall consist of seeding and mulching or stabilizing with limerock as selected by the Engineer. The cost of doing this work shall be included in the cost of the various applicable items. Photographs as specified in Section 01380 - General Quality Control will be used as an aid in determining conditions prior to construction.
- B. Materials for unpaved roadways, road shoulders, alleys, or driveways, shall be compacted as described in the plans. The cost of this work and furnishing new materials shall be included in the cost of the applicable items of work as no separate payment will be made, unless a separate bid item is provided.

3.6 FINE GRADING

- A. Finished areas around structures shall be graded smooth and hand raked and shall meet the elevations and contours shown on the drawings. Lumber, earth clods, rocks and other undesirable materials shall be removed from the site.

3.7 DISPOSAL OF MATERIALS

- A. Such portions of the excavated materials as needed and as suitable, shall be used for backfilling and grading about the completed work to the elevations as shown of the drawings or as directed. Excavated material in excess of the quantity required for this purpose shall be disposed of by the Contractor in those areas designated by the Owner and as shown on the drawings. The Contractor shall leave the earth over the trenches or other excavations in a neat and uniform condition acceptable to the Owner.

3.8 PAVEMENT REPLACEMENT

- A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible. Materials to replace State Highway paving shall conform to the specifications required by the Florida Department of Transportation Specifications for Type SP-9.5 asphaltic concrete surface course, or as specifically shown in the plans.
- B. Prior to replacing concrete or asphalt pavement replacement, a limerock base shall be laid. The base for concrete pavement shall be 6-inches of compacted thickness, and that for asphalt pavement shall be 8-inches of compacted thickness. The base course for each shall be compacted to a minimum of 98% of the maximum density as determined by AASHTO, Method T-180. The Owner will have tests made by an independent testing laboratory to verify compaction results. One test will be made for each block of continuous trench cut.
- C. Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement shall be replaced with like material or concrete as directed by the Engineer. Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6-inches in thickness and be reinforced with 6 by 6 no. 6 gage welded wire fabric. Concrete for paving shall be 3,000 psi design strength. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.
- D. Unless the base is sealed or other temporary paving applied over areas to be repaved, pavement shall be replaced not later than 3-weeks after

completion of backfill.

3.9 TESTS

- A. The Contractor shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the Contractor and at all open cut roadway/driveway crossings and every 2,500 feet of pipe length. Tests shall be performed at 12" lifts at each location. If the densities as determined by the specified tests fall below the required minimums, the Contractor shall pay for all retests.

3.10 SIDEWALK, CURB AND GUTTER REMOVAL AND REPLACEMENT

- A. Sidewalk, curb and gutter removal and replacement required in the construction of this work shall be done by the Contractor. Reasonable care shall be exercised in removing sidewalk and curb and gutter, and the Contractor shall either stockpile or dispose of this material as directed by the Engineer. Brick, concrete or built-up asphalt sidewalk replacement and curb and gutter replacement shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Department of Transportation specifications.

END OF SECTION 02222

SECTION 02510 - Asphalt Paving

PART 1 - GENERAL

1.01 DESCRIPTION:

- A. This Section specifies the general construction requirements for all plant-mixed hot bituminous pavements.

1.02 LIMITATIONS OF OPERATIONS:

- A. Weather Limitations:

- 1. Plant Operations shall not begin unless all weather conditions are suitable for the laying operations.

1.03 LIMITATIONS OF LAYING OPERATIONS:

- A. General:

- 1. The mixture shall be spread only when the surface, upon which it is to be laid has been previously prepared, is intact, firm and properly cured, and is dry.
- 2. Unless otherwise approved by the Engineer, no mixture shall be spread that cannot be finished and compacted during daylight hours.

- B. Temperature:

- 1. The mixture shall be spread only when the air temperature (the temperature in the shade away from artificial heat) is 40E F and above for layers greater than one inch (100 pounds per square yard) in thickness and 45E F and above for layers one inch (100 pounds per square yard) or less in thickness.
- 2. No mixture shall be placed when there is evidence that the base is frozen.

- C. Wind:

1. The mixture shall not be spread when the wind is blowing to such an extent that proper and adequate compaction cannot be maintained or when sand, dust, etc. are being deposited on the surface being paved, to the extent that the bond between layers will be diminished.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 PREPARATION OF ASPHALT CEMENT:

- A. The asphalt cement shall be delivered to the asphalt plant at a temperature not to exceed 350EF and shall be maintained within a range of 230EF to 350EF in advance of mixing operations.
- B. Heating within these limits shall be constant and wide fluctuations of temperature during a day's production will not be permitted.

3.02 PREPARATION OF AGGREGATES:

- A. Stockpiles:
 1. Each aggregate component shall be placed in an individual stockpile, which shall be separated from the adjacent stockpiles, either by space or by system of bulkheads.
 2. The intermingling of different materials in stockpiles shall be prevented at all times. Each stockpile, including RAP, shall be identified as shown on the Mix Designs.

3.03 PREVENTION OF SEGREGATION:

- A. In the event that the method used for stockpiling coarse aggregate results in segregation of the aggregate, the Engineer will require that the stockpiles be built up in layers not higher than four feet, with each layer completely in place before the next is started.
- B. Stockpiles shall not be formed by depositing material in one place or by coning.

3.04 BLENDING OF AGGREGATES:

- A. Blending or proportioning from railroad cars will not be permitted.
- B. All aggregates shall be stockpiled prior to blending or placing in the cold hoppers.
- C. All aggregates to be blended or proportioned shall be placed in separate bins at the cold hopper and proportioned by means of securely positioned calibrated gates or other approved devices.

3.05 COLD BINS:

- A. Adequacy of Bins:
 - 1. The separate bin compartments of the cold aggregate feeder shall be so constructed as to prevent any spilling or leakage of aggregate from one bin to another.
 - 2. Each bin compartment shall be of such capacity and design as to permit a uniform flow of aggregates.
 - 3. All bin compartments shall be mounted over a feeder of uniform speed, which shall deliver the specified proportions of the separate aggregates to the drier at all times.
 - 4. If necessary, the bins shall be equipped with vibrators to insure a uniform flow of the aggregates at all times.

3.06 GATES:

- A. Each bin compartment shall be provided with a gate that is adjustable in a vertical direction.
- B. The gate shall be so designed that it can be held securely at any specified vertical opening.
- C. The gates shall be equipped with a measuring device for measuring the vertical opening of the gates from a horizontal plane level with the bottom of the feeder.

3.07 MINERAL FILLER:

- A. If mineral filler is required in the mix, it shall be fed or weighed-in separately from the other aggregates.

3.08 HEATING AND DRYING:

- A. The aggregates shall be heated and dried before screening.
- B. The temperature of the aggregates shall be heated and dried before screening.
- C. The temperature of the aggregates shall be controlled that the temperature of the completed mixture at the plant will fall within the permissible range allowed by these specifications.

3.09 SCREENING UNIT:

A. OVERSIZE AGGREGATE:

- 1. Any oversized pieces of aggregate shall be removed by the use of a scalping screen.
- 2. This oversized material shall not be returned to the stockpile for reuse unless it has been crushed and reprocessed into sizes that will pass the scalping screen.

B. SCREENING:

- 1. Unless otherwise permitted by the Engineer, the quantity of aggregates being discharged onto the screens shall not be in excess of the capacity of the screens to actually separate the aggregates into the required sizes.
- 2. A minimum of ten percent plus-ten material will be permitted in the minus-ten bin.
- 3. The maximum amount of minus-ten material allowed in the plus-ten bins will be determined by the Engineer, in accordance with its effect on the uniformity of the mix.

C. MIXING DIFFERENT MATERIALS:

1. Unless written permission is obtained, coarse aggregates of different types shall not be mixed; nor shall coarse aggregates of different types be used alternately in sections less than one mile in length.

3.10 PREPARATION OF THE MIXTURE

A. BATCH MIXING:

1. Aggregates:
 - a) The dried aggregates and mineral filler (if required), prepared in the manner previously described, and combined in batches to meet the job mix formula by weighing each separate bin size, shall be conveyed to the empty mixer.
2. Bitumen:
 - a) The hot asphalt cement, accurately measured, shall be introduced into the mixer simultaneously with, or after, the hot aggregates.
 - b) Mixing shall continue until the mixture is thoroughly uniform, with all particles fully coated.
3. Mixing time:
 - a) The mixing time shall begin when the measuring devices for both the asphalt and the aggregates indicate that all the material is in the mixer, and shall continue until the material begins to leave the mixing unit.
 - b) The mixing time will vary in relation to the nature of the aggregates and the capacity of the mixer shall be as designated by the Engineer but in no case shall it be less than 35 seconds.

B. CONTINUOUS MIXING:

1. The dried aggregates and mineral filler (if required), prepared as specified and proportioned to meet the job mix formula by volumetric measurements, shall be introduced into the mixer in synchronization with the accurate feeding of the hot asphalt cement.

2. The rate of flow of material to the pug mill shall be such that the maintained depth of the mix will not exceed the tips of the paddles when in the upright position.
3. Mixing shall be sufficient to produce a thoroughly and uniformly coated mixture.

C. MIXING TEMPERATURE:

1. The ingredients of the mix shall be heated and combined in such a manner as to produce a mixture, which shall be at a temperature, when discharged from the pug mill or surge bin, within the range of 230EF to 310EF and within the tolerance shown in Table 1.

| Table 1 | |
|--|------|
| <u>Temperature Tolerance From Job Mix Formula</u> | |
| Any Single Measurement | 25°F |
| Average of Any Five Consecutive Measurements..... | 15°F |

2. Any load or portion of a load of asphalt mix at the plant or on the road with mix temperature exceeding 335EF shall be rejected for use on the project.
3. Temperature of the completed mixture shall be determined by a quick-reading thermometer through a hole in the side of the loaded truck immediately after loading. The hole shall be located within the middle third of the length of the body, and at a distance of from six to ten inches above the surface supporting the mixture. If a truck body already has a hole located in the general vicinity of the above-specified location, this will be acceptable. At the Engineer's discretion, the temperature of the load may be taken over the top of the truck in lieu of using the hole in the side of the truck.
4. The mix temperature will be taken at the plant on the first five loads each day and on an average of once every five loads thereafter. If the temperature fails to fall within the specified tolerance range, the Contractor will be required to take corrective action.

3.11 MAXIMUM PERIOD OF STORAGE:

- A. The maximum time that any mix may be kept in a hot storage or surge bin is 72 hours.

3.12 CONTRACTOR'S RESPONSIBILITY FOR MIXTURE REQUIREMENTS:

- A. The responsibility for producing a homogeneous mixture, free from moisture and with no segregated materials, and meeting all requirements of the specifications for the mixture, including compliance with the design limits, shall lie entirely with the Contractor.
- B. These requirements shall apply also to all mixes produced by the drum mixer process and all mixes processed through a hot storage or surge bin, both before and after storage.

3.13 TRANSPORTATION OF THE MIXTURE

- A. The mixture shall be transported in tight vehicles previously cleaned of all foreign material.
- B. The inside surface of the truck bodies after cleaning shall be thinly coated with soapy water or an approved emulsion containing not over five percent oil.
- C. The coating shall be applied prior to the first loading each day and repeated as necessary throughout the day's operations.
- D. After the truck bodies are coated before any mixture is placed therein, they shall be raised to drain out all excess liquids.
- E. Each load shall be covered during cool and cloudy weather and at any time there is a probability of rain.

3.14 PREPARATION OF APPLICATION SURFACES

- A. CLEANING:

1. Prior to the laying of the mixture, the surface of the base or pavement to be covered shall be cleaned of all loose and deleterious material by the use of power brooms or blowers, supplemented by hand brooming where necessary.

B. PATCHING AND LEVELING COURSES:

1. Where a surface course is constructed on an existing pavement of old base which is irregular, and wherever so indicated in the plans, the existing surface shall be brought to proper grade and cross section by the application of patching or leveling courses.

C. APPLICATION OVER SURFACE TREATMENT:

1. Where a surface course is to be placed over a newly constructed surface treatment, all loose material shall be swept from the paving area and disposed of by the contractor.

D. COATING SURFACES OF CONTACTING STRUCTURES:

1. All structures which will be in actual contact with the asphalt mixture, with the exception of the vertical faces of existing pavements and curbs or curb and gutter, shall be painted with a uniform coating of asphalt cement to provide a closely bonded, watertight joint.

3.15 TACK COAT

A. TACK COAT REQUIRED:

1. A tack coat will be required on existing pavements that are to be overlaid with an asphalt mix and between successive layers of all asphalt mixes.

B. TACK COAT AT ENGINEER'S OPTION:

1. A tack coat will be required on the following surfaces only when so directed by the Engineer:
2. Freshly primed bases
3. Surface Treatment

3.16 PLACING MIXTURE

A. Requirements Applicable To All Types:

1. Alignment of Edges:
 - a) All asphaltic concrete mixtures other than adjacent to curb and gutter or other true edges, shall be laid by the string line method, to assure the obtaining of an accurate, uniform alignment of the pavement edge.
2. Temperature of Spreading:
 - a) The temperature of the mix at the time of spreading shall be within "25E F of the established mix temperature selected by the Contractor.
 - b) The minimum frequency for taking mix temperatures on the road will be an average of one per five trucks. If the temperature fails to fall within the specified tolerance range, corrective action by the contractor will be required.
3. Rain and Surface Conditions:
 - a) Transportation of asphalt mixtures shall immediately cease from the plant when rain begins at the roadway.
 - b) Asphalt mixtures shall not be placed while rain is falling, or when there is water on the surface to be covered.
 - c) As an exception, mixture caught in transit may be placed at the Contractor's risk if the only option is to waste this mixture, and provided the surface has been tacked (as required) prior to the rain and the surface broomed in front of the spreading operation.
 - d) Such mixture will be evaluated separately and if it should prove unsatisfactory in any way, in the opinion of the Engineer, it shall be removed and replaced with satisfactory mixture at the Contractor's expense.
4. Speed of Spreading:

- a) The forward speed of the asphalt spreader shall be as established by the Engineer.
- 5. Number of Crews Required:
 - a) For each paving machine being operated, the Contractor will be required to use a separate crew; each crew operating as a full unit.
- 6. Checking Depth of Layer:
 - a) The depth of each layer shall be checked at frequent intervals, not to exceed 25 feet.
 - b) Any deviation from the required thickness, in excess of the allowable tolerance, shall be immediately corrected.
- 7. Hand Spreading:
 - a) In limited areas where the use of the spreader is impossible or impracticable, the mixture may be spread and finished by hand.
- 8. Straight-edging and Back-patching:
 - a) Straight-edging and back-patching shall be done after initial compaction has been obtained and while the material is still hot.

3.17 REQUIREMENTS APPLICABLE TO COURSES OTHER THAN LEVELING:

A. Spreading and Finishing:

- 1. Upon arrival, the mixture shall be dumped in the approved mechanical spreader and immediately spread and struck-off to the full width required and to such loose depth for each course that, when the work is completed, the required weight of mixture per square yard, or the specified thickness, will be secured.
- 2. An excess amount of mixture shall be carried ahead of the screed at all times.

3. Hand raking shall be done behind the machine as required.

B. Thickness of Layers:

1. Unless otherwise noted in the plans each course shall be constructed in layers of the thickness shown on FDOT Standard Index No. 513.
2. Type S-III Asphaltic Concrete shall be constructed in layers of thickness of not less than: inch nor greater than 13 inches.

C. Laying Width:

1. If necessary due to the traffic requirements, the mixture shall be laid in strips in such a manner as to provide for the passage of traffic.
2. Where the road is closed to traffic, the mixture may be laid to the full width, by machines traveling in echelon.

D. Correcting Defects:

1. Before any rolling is started the surface shall be checked, any irregularities adjusted, and all drippings, fat sandy accumulations from the screed, and fat spots from any source shall be removed and replaced with satisfactory material.
2. No skin patching shall be done.
3. When a depression is to be corrected while the mixture is hot, the surface shall be well scarified before the addition of fresh mixture.

3.18 REQUIREMENTS APPLICABLE ONLY TO LEVELING COURSES:

A. Patching Depressions:

1. Before any leveling course is spread, all depressions in the existing surface more than one inch deep shall be filled by spot patching with leveling course mixture and then thoroughly compacted.

B. Spreading Leveling Courses:

1. All courses of leveling shall be placed by the use of two motor graders - one of which is equipped with a spreader box - unless otherwise shown in the plans.
 2. Other types of leveling devices may be used after the Engineer has approved them.
- C. Rate of Application:
1. When the total asphalt mix provided for leveling exceeds 50 pounds per square yard, the mix shall be placed in two or more layers, with the average spread of any layer not to exceed 50 pounds per square yard.
 2. When Type S-III Asphaltic Concrete is used for leveling, the average spread of a layer shall not be less than 50 pounds per square yard nor more than 75 pounds per square yard.

3. The quantity of mix for leveling shown in the plans represents the average for the entire project; however, the rate of application may vary throughout the project as directed by the Engineer.
4. When leveling in connection with base widening, the Engineer may require that all the leveling mix be placed prior to the widening operation.

D. Placing Leveling Course Over Existing Pavement:

1. When a leveling course is specified to be placed over cracked concrete pavement (including existing concrete pavement covered with an asphaltic surface), the first layer of leveling shall be placed as soon as possible but no later than 48 hours after cracking the concrete.
2. The remainder of the leveling course shall be placed in the normal sequence of operations.

E. Removal of Excess Joint Material:

1. Where a leveling course is to be placed over existing concrete pavement or bridge decks, the excess joint filler in the cracks and joints shall be trimmed flush with the surface prior to placing the first layer of the leveling course.

3.19 COMPACTING MIXTURE:

A. Provisions Applicable To All Types:

1. Equipment and Sequence:
 - a) For each paving or leveling train in operation, the Contractor shall furnish a separate set of rollers, with their operators.
 - b) The following equipment, sequence and coverage are suggested for use based on past successful performance; however, when density is required, the Contractor may select his own equipment, sequence and coverage of rolling to meet the minimum density requirement specified. Regardless of the rolling procedure used, the final rolling must be completed

- before the internal pavement temperature has dropped below 175E F.
- c) Seal rolling, using tandem steel rollers (either vibratory or static) weighing 5 to 12 tons, following as close behind the spreader as is possible without pickup, undue displacement or blistering of the material. Vibratory rollers shall be used in the static mode for layers of one inch or less in thickness.
 - d) Rolling with self-propelled pneumatic-tired rollers, following up as close behind the seal rolling as the mix will permit. The roller shall cover every portion of the surface with at least five passes.
 - e) Final rolling with the 8 to 12-ton tandem steel roller, to be done after the seal rolling and pneumatic-tired rolling have been completed, but before the internal pavement temperature has dropped below 175E F.
 - f) Once the Contractor has selected the equipment and established the rolling procedures to achieve required density, then the Contractor must continue to use the same equipment and rolling procedure for the entire project. The Engineer must be notified prior to changing the rolling process.
 - g) Compaction at Crossovers, Intersections, etc: when a separate paving machine is being used to pave the crossovers, one 8- to 10-ton tandem steel roller may do the compaction of the crossovers. If crossovers and intersections are placed with the main run of paving, a traffic roller shall also be used in the compaction of these areas.

2. Rolling Procedures:

- a) The initial rolling shall be longitudinal. Where the lane being placed is adjacent to a previously placed lane, the center joint shall be pinched or rolled, prior to the rolling of the rest of the lane.
- b) Rolling shall proceed across the mat, overlapping the adjacent pass by at least six inches. The motion of the roller shall be

slow enough to avoid displacement of the mixture, and any displacement shall be corrected at once by the use of rakes, and the addition of fresh mixture is required. Final rolling shall be continued until all roller marks are eliminated.

3. Speed of Rolling:
 - a) Rolling with the self-propelled, pneumatic-tired rollers shall proceed at a speed of 6 to 10 miles per hour, and the area covered by each roller shall not be more than 3,000 square yards per hour.
4. Number of Pneumatic-tired Rollers Required:
 - a) A sufficient number of self-propelled pneumatic-tired rollers shall be used to assure that the rolling of the surface for the required number of passes will not delay any other phase of the laying operation nor result in excessive cooling of the mixture before the rolling is complete.
 - b) In the event that the rolling falls behind, the laying operation shall be discontinued until the rolling operations are sufficiently caught up.
5. Compaction of Areas Inaccessible to Roller:
 - a) Areas which are inaccessible to a roller (such as areas adjacent to curbs, headers, gutters, bridges, manholes, etc.) shall be compacted by the use of hand tamps or other satisfactory means.
6. Correcting Defects:
 - a) The rollers shall not be allowed to deposit gasoline, oil or grease onto the pavement, and any areas damaged by such deposits shall be removed and replaced as directed by the Engineer.
 - b) While rolling is in progress, the surface shall be tested continuously and all discrepancies corrected to comply with the surface requirements.

- c) All drippings, fat or lean areas and defective construction of any description shall be removed and replaced.
- d) Depressions that develop before the completion of the rolling shall be remedied by loosening the mixture and adding new mixture to bring the depressions to a true surface.
- e) Should any depression remain after the final compaction has been obtained, the full depth of the mixture shall be removed and replaced with sufficient new mixture to form a true and even surface.
- f) All high spots, high joints and honeycomb shall be corrected as directed by the Engineer.
- g) Any mixture remaining unbonded after rolling shall be removed and replaced.
- h) Any mixture that becomes loose or broken, mixed or coated with dirt or in any way defective, prior to laying the wearing course shall be removed and replaced with fresh mixture that shall be immediately compacted to conform with the surrounding area.

3.20 JOINTS:

A. Transverse Joints:

1. Placing of the mixture shall be as continuous as possible and the roller shall not pass over the unprotected end of the freshly laid mixture except when the laying operation is to be discontinued long enough to permit the mixture to become chilled.
2. When the laying operation is thus interrupted, a transverse joint shall be constructed by cutting back on the previous run to expose the full depth of the mat.

B. Longitudinal Joints:

1. For all layers of pavement except the leveling course, placing of each layer shall be accomplished to cause longitudinal construction joints to be offset 6 to 12 inches laterally between successive layers.

2. The Engineer may waive this requirement where offsetting is not feasible due to the sequence of construction.

3.21 SURFACE REQUIREMENTS:

A. Contractor Responsibility:

1. The Contractor shall be responsible for obtaining a smooth surface on all pavement courses placed and therefore should straightedge all intermediate and final courses with a 15-foot rolling straightedge.
2. A 15-foot manual straightedge shall be furnished by the Contractor and shall be available at the job site at all times during the paving operation for checking joints and surface irregularities.

B. Texture of the Finished Surface of Paving Layers:

1. The finished surface shall be of uniform texture and compaction.
2. The surface shall have no pulled, torn, or loosened portions and shall be free of segregation, sand streaks, sand spots, or ripples.
3. Any area of the surface that does not meet the foregoing requirements shall be corrected.
4. Unless written permission is obtained, asphalt concrete mixtures containing aggregates which will cause a different color appearance shall not be used in the final wearing surface in sections less than one mile in length.

PART 4 – TESTING

Test results for testing asphalt densities, thickness and mix design shall be as specified by the Florida Department of Transportation Handbook for Road and Bridge Construction (latest edition).

GENERAL:

Roads less than 1,000 feet in length will require no testing. Method of construction, however, will remain consistent with FDOT Construction Requirements.

TESTING AND ACCEPTANCE:

ASPHALT PAVING

PCB21-21 ITB SR 30A (U.S.(98) UTILITY RELOCATION
DEWBERRY PROJECT NO. 50134682

All roads over 1,000 feet will require coring for in-place density and asphalt thickness. The cores will be cut at 1,000' intervals. All expenses for these tests are to be paid by the Contractor. All test results are to be turned in to Engineer before final 25% payment for road will be made. Payment will be based on the following table, with target density being 96% of mix design lab density.

| PAYMENT SCHEDULE FOR DENSITY CORES (Based on average density for each road) | |
|--|----------------|
| PERCENT OF TARGET DENSITY | PERCENT OF PAY |
| 98.0 and above | 100 |
| 97.0 to less than 98.0 | 95 |
| 96.0 to less than 97.0 | 90 |
| Less than 96.0* | 75 |

* If Engineer deems asphalt is acceptable to remain in place, otherwise Engineer may require removal and replacement of asphalt.

THICKNESS:

Allowable Deficiencies: The thickness shall be determined from the length of the core borings. The maximum allowable deficiency from the specified thickness shall be as follows:

1. For pavement of a specified thickness of 2½ inches or more: ½ inch.
2. For pavement of a specified thickness of less than 2½ inches: ¼ inch.

Pavement Exceeding Allowable Deficiency in Thickness:

When Deficiency is Seriously in Excess: Where the deficiency in thickness is: (1) in excess of $\frac{1}{2}$ inch, for pavement of less than 2½ inches in specified thickness, or, (2) in excess of $\frac{3}{4}$ inch, for pavement of specified thickness of 2½ inches or more, the Contractor shall correct the deficiency either by replacing the full thickness for a length extending at least 50 feet from each end of the deficient area, or (when permitted by the Engineer) by overlaying as directed by the Engineer.

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The Contractor will receive no compensation for any pavement removed, nor for the work of removing such pavement.

When Deficiency is Not Seriously in Excess: When the deficiency in the thickness of the pavement is over $\frac{1}{4}$ inch but not more than $\frac{1}{2}$ inch, for pavement of specified thickness less than $2\frac{1}{2}$ inches; or when the deficiency in thickness the pavement is over $\frac{1}{2}$ inch but not more than $\frac{3}{4}$ inch, for pavement of specified thickness of $2\frac{1}{2}$ inches or greater; the Contractor will be allowed to leave such pavement in place, but without compensation. The areas of such pavement for which no square yard payment will be made shall be the product of the total distance between acceptable cores, multiplied by the width of the lane which was laid at the particular pass in which deficient thickness was indicated. All costs of the overlaying and compacting shall be borne by the Contractor.

Correcting Deficiency by Adding New Surface Material: For any case of excess deficiency of the pavement, the Contractor will be permitted, if approved by the Engineer for each particular location, to correct the deficient thickness by adding new surface material and compacting to the same density as the adjacent surface. The area to be corrected and the thickness of new material added shall be as specified by Engineer. All costs of the overlaying and compacting shall be borne by the Contractor.

MIX DESIGN:

An FDOT approved mix design will be provided to the Engineer or representative prior to beginning construction, and will not change without written consent of the Engineer prior to any change.

TRUCK TICKETS:

The Contractor will provide truck tickets to the Engineer or representative on a regular basis or as requested by the Engineer.

DAILY ASPHALT PLANT TESTING:

A minimum of one extraction, gradation to be done daily, as well as test performed for stability and flow to be done on each days production of 100 tons or more. The results of these tests are to be provided to the engineer on a weekly basis.

STRICT COMPLIANCE OF THIS SECTION WILL BE ADHERED TO.

END OF SECTION 02510

SECTION 02518 – PAINTED PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The work under this Section consists of painting reflectorized traffic stripes, including edge stripes and traffic guide.

PART 2 – MATERIALS

2.01 MATERIALS

- A. Traffic Paint:

- 1. The paint used shall be reflective, fast dry traffic paint as specified in 971-13 of Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction, latest edition.

- B. Glass Spheres (for Reflective Traffic Paint):

- 1. Glass spheres shall conform with the requirements of 971-14 of FDOT Standard Specifications for Road and Bridge Construction, latest edition.

2.02 EQUIPMENT

- A. General:

- 1. All equipment shall be of a type and design which will readily obtain the required uniformity of application of the stripes, both as to thickness of coating and as to alignment.

- B. Traveling Unit:

- 1. The traveling unit shall be capable of traveling at a uniform, predetermined rate of speed, both uphill and downhill, in order to produce a uniform application of paint.

- C. Paint Sprayer and Tank:

- 1. The paint machine shall be of the spray type and shall be capable of spraying the paint to the required spread without thinning of the paint.
 - 2. The paint tank shall be equipped with a mechanical agitator.

3. The nozzles shall have cut-off valves which will automatically apply broken or skip lines.
4. The nozzles shall be equipped with a mechanical bead dispenser that will simultaneously operate with the spray nozzle and distribute the beads in a uniform pattern at the rate specified.
5. Each nozzle shall also be provided with suitable line guides, either metallic shrouds or air blasts.

D. Corrective Devices:

1. Misalignment, defective surfaces, etc. shall be corrected by sand blasting or by any other type of mechanical device which, in the opinion of the ENGINEER, will effectively remove the paint without damage to the pavement surface.

2.03 ALIGNMENT FOR STRIPES

- A. Tack points will be established at appropriate intervals for use in aligning stripes, and if found to be necessary to achieve accuracy a stringline will be set from such points.

2.04 TOLERANCES IN DIMENSIONS AND IN ALIGNMENT

A. Dimensions:

1. Longitudinal Lines:
 - a. No stripe shall be less than the specified width.
 - b. No stripe shall exceed the specified width by more than 2 inch.
 - c. The length of the ten-foot painted segment for skip stripe, and the 30-foot gap between segments, may each vary plus or minus one foot, except that over-tolerance and under-tolerance lengths shall approximately compensate.
2. Transverse Markings, Gore Markings, Arrows, and Messages:
 - a. When the specified width of the markings cannot be made with a single pass and multiple passes are required, the width of the line may vary by plus or minus 1 inch.
3. Alignment:

- a. On tangents, and on curves up to one degree, the alignment of the painted strip shall not deviate from the stringline by more than 1 inch.
 - b. On curves exceeding one degree the maximum permissible deviation will be 2 inches.
 - c. In addition, the outer edge of the edge stripe shall fall uniformly at not less than 2 or more than 4 inches from the edge of the pavement, and shall have no noticeable breaks or deviations in alignment or width.
- B. Correction Rates:
1. Any corrections of variations in the width or in the alignment of the stripes shall not be made abruptly but the stripes shall be returned to the design width at the rate of at least 10 feet for each 2-inch correction, and returned to the stringline at the rate of at least 25 lineal feet per inch of correction.

PART 3 - EXECUTION

3.01 APPLICATION OF PAINT AND SPHERES

- A. Time of Application:
1. Painting shall be done only during daylight hours and, as far as practicable, shall be terminated in time to permit sufficient drying by sunset.
 2. Placing of permanent pavement markings on all final asphaltic concrete surfaces shall not be accomplished prior to 30 calendar days after placement of the final surfaces.
 3. Temporary pavement striping will be required during the 30 day period if the road is open to traffic.
- B. Weather Limitations:
1. No paint shall be applied when any moisture is present on the surface to be painted or when the air temperature is below 40EF.
 2. Painting shall not be done when winds are sufficient to cause spray dust.
- C. Preparation of Surface to be Painted:

1. The surface which is to be painted shall be cleaned, by compressed air or other effective means, immediately before the start of painting, and shall be clean and dry when the paint is applied.
2. Any vegetation or loose soil shall be removed from the pavement before edge striping is begun.

D. Mixing Paint:

1. The paint shall be thoroughly mixed before it is poured into the painting machine and no thinning of the paint in the machine will be allowed at any time.
2. Before the start of each day's work the paint container, the connections, and the spray nozzles on the machine shall be thoroughly cleaned with paint thinner or other suitable cleaner.

E. Paint Application:

1. The traffic stripe shall be of the specified width, with clean, true edges and without sharp breaks in the alignment.
2. A uniform coating of paint shall be obtained and the finished stripe shall contain no light spots or paint skips.
3. Any stripes which do not have a uniform, satisfactory appearance, both day and night, shall be corrected.

F. Broken Stripes:

1. Broken (skip) stripes shall consist of a succession of solid white stripes, 10 feet in length, separated by unpainted spaces 30 feet in length.

NOTE:

All pavement markings other than standard pavement markings, such as parking stripes, shall be as specified in plans.

- G. Rate of Paint Application: The minimum rate of application for paint shall be as follows:
1. Four-inch solid traffic stripe: 16.5 gallons per mile.
 2. Four-inch skip traffic stripe: 4.12 gallons per gross mile.
 3. Any other width stripe: a direct proportion of the above.

H. Required Film Thickness:

1. The minimum wet film thickness for all painted areas shall be 15 mils.

I. Alignment of Stripes:

1. Where a stripe deviates from the correct alignment, as indicated by the stringline, by more than 1 inch in any 50-foot length, it shall be obliterated and the stripe corrected as specified in 710-3.4 of FDOT Standard Specifications.

J. Application of Spheres:

1. The glass spheres shall be applied uniformly and at not less than six pound nor more than 63 pounds of spheres to each gallon of paint.
2. The spheres shall be applied immediately following the paint application.

3.02 PROTECTION OF NEWLY PAINTED STRIPED AND OF TRAFFIC

A. Protection of Stripes:

1. All newly painted stripes, including edge stripes, shall be protected until the paint is sufficiently dry to permit vehicles to cross the stripe without damage from the tires.
2. While the center line stripes are being painted all traffic shall be routed to the right side of the painting operations and the new painted stripe.
3. When necessary, a pilot car shall be used to protect the painting operations from traffic interference.

B. Protection of Traffic:

1. Warning signs shall be set up before the beginning of each operation and extra signs shall be kept well ahead of the painting equipment.
2. The painting equipment shall be so operated that traffic may pass on the right side safely.
3. Warning signs are to be placed only where operations are in progress and are to be relocated as often as is necessary.

C. Protective Devices:

1. The CONTRACTOR shall erect adequate warning signs, provide a sufficient number of flagmen, and take all necessary precautions for the protection of the wet paint number of flagmen, and take all necessary precautions for the protection of the wet paint and the safety of the public.
2. Cones, rubber "Z" guards or similar protective devices shall be placed along the newly painted stripe to prevent traffic from crossing the wet paint.
3. Any such devices used shall be of a type that will not cause damage to vehicular traffic in the event that these objects are accidentally passed over.
4. All protective devices shall be removed not later than sunset to allow free movement of traffic at night.
5. If the CONTRACTOR elects to use fast dry traffic paint no protective devices will be required provided that the CONTRACTOR utilizes a trailing vehicle (behind striping machine) equipped with warning sign and flashing beacon and that he operates such vehicle in a manner consistent with the paint drying time.

D. Repair of Damaged Areas:

1. Any portions of the stripes damaged by passing traffic or from any other cause shall be repainted at the CONTRACTOR's expense.

3.03 CORRECTIVE MEASURES

- A. All painted stripes which fail to meet the specifications, including the permissible tolerances and the appearance requirements, or are marred or damaged by traffic or from other causes, shall be corrected at the CONTRACTOR's expense.
- B. All drip and spattered paint shall be removed to the satisfaction of the ENGINEER.
- C. Whenever it is necessary to remove paint it shall be done by means, as approved by the ENGINEER, which will not damage the underlying surface of the pavement.

- D. When necessary to correct a deviation which exceeds the permissible tolerance in alignment, that portion of the stripe affected shall be removed and repainted in accordance with these specifications.

3.04 ACCEPTANCE OF THE WORK

- A. When the work under this Section has been completed to the satisfaction of the ENGINEER, including any corrections or repairs ordered by the ENGINEER, acceptance of the work painting will be made, independently of the remaining work under the Contract, and the contractor will be relieved of all maintenance of the painting except for damage due to his operations.

END OF SECTION 02518

**SECTION 02960
RESTORATION**

PHASE 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes the restoration of driveways, lawn areas, trees and plants, roadways, sprinkler systems, walks and any other existing improvement affected by the proposed work.
- B. This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.

PART 2 - PRODUCTS

2.01 SOD

- A. Any slope equal to or steeper than 1 vertical to 3 horizontal shall be sodded and the sod shall be pinned down for stabilization.
- B. The CONTRACTOR shall, at his expense, maintain the sodded areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, re-staking sod, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

2.02 PLANTS AND TREES

- A. Existing damaged plants and trees shall be replaced by plants and trees of equal type, quality and size whenever possible. All new plants and trees shall be sound, healthy, vigorous and free from defects, decay, disfiguring, bark abrasions, plant diseases, insect pests, their eggs or larvae. The new plants shall be approved by the ENGINEER before placing.
- B. Existing plants may be removed, preserved, and replaced at the CONTRACTORs option. Plants shall be handled by an approved nursery.
- C. Plants shall be watered and cared for until new growth appears. Dead and dying plants shall be immediately replaced. Plants used shall be in accordance with the standards for Florida No. 1 or better as given in Grades and Standards for Nursery Plants PHASE 1.
- D. Plants shall conform to the sizes indicated by the OWNER.
- E. Trees shall be guaranteed for one year. If the replaced tree dies within

one year of project completion it shall be replaced by the CONTRACTOR at no expense to the City.

2.03 MULCH

- A. Match existing mulch.

2.04 WATER

- A. The water used in the performance of this Contract shall be of drinking water quality, clean and free from injurious amounts of oil, acid, alkali, or organic matter. The CONTRACTOR shall purchase all testing water from the County.

2.05 PLANTING MIXTURE:

- A. The 18 inch planting mixture, when required, shall consist of a thorough mixture of 40% peat and 60% sand. The peat shall be Florihome peat or equivalent and the sand shall be clean and free from debris of any kind.

2.06 FERTILIZER

- A. Fertilizer shall be pelletized 13-13-13, or approved equal.

PART 3 - EXECUTION

3.01 LANDSCAPING RESTORATION

- A. Lawn Areas: Any lawn area affected by the required work shall be restored to a condition equal or better than the conditions existing before the commencement of work.
- B. Balled Plants: Plants where required shall be adequately balled with firm natural balls of soil, sized as set forth in "Horticultural Standards." Balls shall be firmly wrapped with burlap or equally approved strong cloth. No balled plant will be planted if the ball is cracked or broken before or during the process of planting.
- C. Preparation of Plant Pits: All plant pits shall be circular in outline and have vertical sides. Tree pits shall be two feet wider than the width of the ball and one foot deeper than the depth of the ball. Shrubs that are either B&B or 3 gallons + shall have pits that are two feet wider than the width of the plant ball and 6 inches deeper than the depth of the ball. Smaller shrubs shall have pits that are at least one foot wider than the width of the plant ball and 6 inches deeper than the ball depth.

- D. Setting Plants: All plants except as otherwise specified, shall be centered in pits. Deep planting shall be avoided and unless otherwise specified, plants shall be set at such a level that after settlement they will bear the same relation to the required grade as they have to the natural grade before being transplanted.
- E. Balled and burlapped plants and palm trees shall be placed on 6 inch to 12 inch of tamped planting mixture and adjusted so as to be at the proper level. The rope and burlap shall be cut away and the burlap folded down to the bottom of the pit. Very large B&B plants shall remain wrapped until fully backfilled and then just the upper portion of the burlap shall be removed. Backfill of planting mix shall be placed halfway up the pit and then water tamped. After this water has drained away, backfill around the ball to grade and water tamp again. Finally, form a ridge of soil around the edge of the pit to form a saucer and full area three times with water.
- F. Water: Water to be used initially during plant installation shall be furnished by the CONTRACTOR. The existing irrigation system, where damaged, shall be promptly repaired after the installation of the plants.
- G. Options as to Methods: Any plant may be furnished container grown instead of balled if all other requirements are met.
- H. Immediately before sod is placed, 8-8-8 fertilizer shall be applied at the rate of approximately 500 pounds per acre, by broadcasting and raking into the planting area.
- I. Sod shall be firmly embedded by light tamping. Wherever necessary to prevent an erosion condition caused by vertical edges at the outer limits of the sodded area, the sod shall be tamped so as to produce a featheredge at the outer limits. The sod shall be kept in a moist condition after it is planted. Water shall not be applied between the hours of 8 A.M., and 4 P.M., nor when there is danger of freezing.
- J. The CONTRACTOR shall, at his expense, maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include watering, filling, leveling and repairing of any washed or eroded areas, as may be necessary.

3.02 PAVEMENT REPLACEMENT

- A. Asphalt pavement shall be removed by saw cutting on a straight line with edges as vertical as possible. Concrete pavement or asphalt surfaced concrete shall be removed by cutting with a concrete saw in as straight a line and vertically as possible.

- B. Non-asphalt pavement replacement shall be replaced of like material and thickness. Asphalt or built-up asphalt pavement replacement shall be replaced with like material or concrete as directed by the ENGINEER.

Where asphalt or built-up asphalt pavement is replaced by concrete, the concrete shall have a minimum of 6 inches in thickness and be reinforced with 6 by 6 No. 6 gage welded wire fabric. Where the pavement replacement is of like material, it shall be replaced in thickness equal to or better than that existing at the time of removal.

- C. Road cuts across City or County roads shall not be cut.
- D. Unless the base is sealed or other temporary paving applied over driveway areas to be repaved, pavement shall be replaced not later than three weeks after completion of backfill.

3.03 CURB REMOVAL AND REPLACEMENT

- A. Curb removal and replacement required in the construction of this work shall be done by the CONTRACTOR. Reasonable care shall be exercised in removing the curb, and the CONTRACTOR shall either stockpile or dispose of this material as directed by the ENGINEER. Curb shall be replaced of like material in a manner and condition equal to or better than that existing at the time of removal. Materials and methods of replacing State Highway sidewalks or curbs shall conform to the Department of Transportation specifications.

3.04 TESTS

- A. The CONTRACTOR shall furnish facilities for making all density tests and make such restorations as may be necessary due to test operations. All density tests on backfill or base replacement will be made by a commercial testing laboratory employed by the CONTRACTOR at such locations as may be recommended by the ENGINEER. If the densities as determined by the specified tests fall below the required minimums, the CONTRACTOR shall pay for all retests.

END OF SECTION

**SECTION 03310
CONCRETE WORK**

PHASE 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section.

1.02 DESCRIPTION OF WORK

- A. Extent of concrete work is shown on Drawings.

1.03 SUBMITTALS

A. Product Data:

- 1. Submit data proprietary materials and items, including reinforcement and forming accessories, admixtures, patching compounds, waterstops, joint systems, curing compounds, dry-shake finish materials, and others as requested by ENGINEER.

B. Shop Drawings, Reinforcement:

- 1. Submit original shop drawings for fabrication, bending, and placement of concrete reinforcement.
- 2. Comply with American Concrete Institute (ACI) 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, and arrangement of concrete reinforcement.
- 3. Include special reinforcement required for openings through concrete structures.

- C. The ENGINEER's review is for general engineering applications and features only. Design of formwork for structural stability and efficiency is the CONTRACTOR's responsibility.

D. Laboratory Test Reports:

- 1. Submit laboratory test reports for concrete materials and mix design test.

1.04 QUALITY ASSURANCE

A. Codes and Standards:

1. Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - a) ACI 301 "Specifications for Structural Concrete for Buildings."
 - b) ACI 318 "Building Code Requirements for Reinforced Concrete."
 - c) Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice."

B. Concrete Testing Services:

1. A testing laboratory shall be engaged that is acceptable to the ENGINEER to perform material evaluation tests and to design concrete mixes.
2. Materials and installed work may require testing and retesting at anytime during progress of work.
3. Tests, including retesting of rejected materials for installed work, shall be done at the CONTRACTOR's expense.

1.05 PROJECT CONDITIONS

A. Protect Footings Against Freezing:

1. Cover completed work at footing level with sufficient temporary or permanent cover as required to protect footings and adjacent subgrade against the possibility of freezing.
2. Maintain cover for time period as necessary.

B. Protect adjacent finish materials against spatter during concrete placement.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Forms for Exposed Finish Concrete:

1. Plywood, metal, metal-framed plywood faced, or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces.
 2. Furnish in largest practicable sizes to minimize number of joints.
- B. Use plywood complying with U. S. Product Standard PS-1 "B-B (Concrete Form) Plywood," Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible inspection trademark.
- C. Forms for Unexposed Finish Concrete:
1. Plywood, lumber, metal, or other acceptable material.
 2. Provide lumber dressed on at least two edges and one side for tight fit.
- D. Form Coatings:
1. Provide commercial formulation form-coating compounds that will not bond with, stain, nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces.
- E. Form Ties:
1. Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete upon removal.
 2. Provide units which will leave no metal closer than 1 ½ inches to surface.
 3. Provide ties which, when removed, will leave holes not larger than 1 inch in diameter in concrete surface.

2.02 REINFORCING MATERIALS

- A. Reinforcing Bars:
1. American Society of Testing and Materials (ASTM) A 615
 2. Grade 60.
 3. Deformed.
- B. Steel Wire:
1. ASTM A 82

2. Plain.
 3. Cold-drawn steel.
- C. Welded Wire Fabric:
1. ASTM A 185.
 2. Welded steel wire fabric.
- D. Welded Deformed Steel Wire Fabric:
1. ASTM A 497.
- E. Supports for Reinforcement:
1. Use bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded wire fabric in place.
 2. Use wire bar type supports complying with CRSI specifications.
- F. For slabs-on-grade, use supports with sand plates or horizontal runners where base material will not support chair legs.

2.03 CONCRETE MATERIALS

- A. Portland Concrete:
1. ASTM C 150, Type I.
 2. Use one brand of cement throughout project, unless otherwise acceptable to the ENGINEER.
- B. Normal Weight Aggregates:
1. ASTM C 33, and as herein specified.
 2. Provide aggregates from a single source for exposed concrete.
 3. For exterior exposed surfaces, do not use fine or coarse aggregates containing spalling-causing deleterious substances.
- C. Water:
1. Drinkable.

2.04 RELATED MATERIALS

- A. Polyvinyl Chloride (PVC) Waterstops:
 - 1. Corps of Engineers CRD-C 572.
 - 2. Available Manufacturers:
 - 3. Manufacturer: Subject to compliance with requirements, provide products of one of the following or equal:
 - a. AFCO Products.
 - b. The Burke Co.
 - c. Edoco Technical Products.
 - d. Greenstreet Plastic Products.
 - e. Harbour Town Products.
 - f. W. R. Meadows.
 - g. Progress Unlimited.
 - h. Schleigel Corp.
 - i. Vinylex Corp.
- B. Granular Base:
 - 1. Use evenly graded mixture of fine and coarse aggregates to provide, when compacted, a smooth and even surface below slabs on grade.
- C. Vapor Retarder:
 - 1. Provide vapor retarder cover over prepared base material where indicated below slabs on grade.
 - 2. Use only materials which are resistant to decay when tested in accordance with ASTM E 154, as follows:
 - a. Polyethylene sheet not less than 8 mils thick.
 - b. Non-Shrink Grout: CRD-C 621, factory pre-mixed grout.
 - 3. Products: Subject to compliance with requirements, provide one of the following or equal:
 - a. Metallic:

- 1) "Vibrofoil," A. C. Horn, Inc.
- 2) "Metallic Spec. Grout," The Burke Co.
- 3) "Embeco 636," Master Builders.
- 4) "Ferrolith GDS," Sonneborn-Rexnord.
- 5) "Hi-Mod Grout," Euclid Chemical Co.
- 6) "Kemox G," Sika Chemical Co.
- 7) "Ferrogrout," L & M Const. Chemical Co.
- 8) "Supreme Plus," Gifford-Hill/American Admixtures.

b. Non-Metallic:

- 1) "Set Grout," Master Builders.
- 2) "Sonogrout," Sonneborn-Rexnord.
- 3) "Euco-NS," Euclid Chemical Co.
- 4) "Supreme," Gifford-Hill/American Admixtures.
- 5) "Crystex," L & M Const. Chemical Co.
- 6) "Sure-Grip Grout," Dayton Superior Corp.
- 7) "Horngrout," A. C. Horn, Inc.
- 8) "Five Star Grout," U. S. Grout Corp.

D. Liquid Membrane-Forming Curing Compound:

1. Liquid type membrane-forming curing compound complying with ASTM C 309, Type I, Class A.
2. Moisture loss not more than 0.055 grams per square centimeter (gr./sq. cm.) when applied at 200 square feet per gallon (sq. ft./gal).
3. Products: Subject to compliance with requirements, provide one of the following or equal:
 - a. "Masterseal," Master Builders.
 - b. "A-H 3 Way Sealer," Anti-Hydro Waterproofing Co.

- c. "Ecocure," Euclid Chemical Co.
- d. "Clear Seal," A. C. Horn, Inc.
- e. "Sealco 309," Gifford-Hill/American Admixtures.
- f. "J-20 Acrylic Cure," Dayton Superior.
- g. "Spartan-Cote," The Burke Co.
- h. "Sealkure," Toch Div. – Carboline.
- i. "Kure-N-Seal," Sonneborn-Rexnord.
- j. "Polyclear," Upco Chemical/USM Corp.
- k. "L & M Cure," L & M Construction Chemicals.
- l. "Klearseal," Setcon Industries.
- m. "LR-152," Protex Industries.
- n. "Hardtop," Gifford-Hill.

2.05 PROPORTIONING AND DESIGN OF MIXES

- A. Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If a trial batch method is used, use an independent testing facility acceptable to the ENGINEER for preparing and reporting proposed mix designs. The testing facility shall not be the same as used for field quality control testing.
- B. Submit written reports to Structural Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by the ENGINEER.
- C. Design mixes to provide normal weight concrete with the following properties, as indicated on drawings and schedules:
 - 1. 4,000 pounds per square inch (psi) 28-day compressive strength; W/C ratio, 0.44 maximum (non-air-entrained).
 - 2. 3,000 psi 28-day compressive strength; W/C ratio, 0.58 maximum (non-air-entrained).
 - 3. 2,500 psi 28-day compressive strength; W/C ratio, 0.67 maximum (non-air-entrained).

- D. Lightweight Concrete:
 - 1. Proportion mix as herein specified.
 - 2. Design mix to produce strength and modulus of elasticity as noted on Drawings, with a split-cylinder strength factor (Fct) of not less than 5.5 for 3,000 psi concrete and a dry weight of not less than 95 pounds (lbs) or more than 110 lbs. after 28 days.
 - 3. Limit shrinkage to 0.03 percent at 28 days.
- E. Adjustment to Concrete Mixes:
 - 1. Mix design adjustments may be requested by the CONTRACTOR when characteristics of materials, job conditions, weather, test results, or other circumstances warrant; at no additional cost to the OWNER and as accepted by the ENGINEER.
 - 2. Submit laboratory test data for revised mix design and strength results to the ENGINEER for acceptance before using in work.
- F. Use air-entraining admixture in exterior exposed concrete, unless otherwise indicated. Add air-entraining admixture at Manufacturer's prescribed rate to result in concrete at point of placement having total air content with a tolerance of plus-or-minus 1½ percent within the following limits:
- G. Slump Limits: Proportion and design mixes to result in concrete slump at point of placement as follows:
 - 1. Ramps, slabs, and sloping surfaces: Not more than 3 inches.
 - 2. Reinforced foundation systems: Not less than 1 inch and not more than 3 inches.
 - 3. Concrete containing HRWR admixture (super-plasticizer): Not more than 8 inches after addition of HRWR to site-verified 2 to 3 inches slump concrete.
 - 4. Other concrete: Not less than 1 inch and not more than 4 inches.

2.06 CONCRETE MIXING

- A. Ready-Mix Concrete: Comply with requirements of ASTM C 94, and as herein specified.
- B. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

PART 3 - EXECUTION

3.01 GENERAL

- A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.02 FORM

- A. Design, erect, support, brace, and maintain formwork to support vertical and lateral, static, and dynamic loads that might be applied until such loads can be supported by concrete structure.
- B. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation, and position.
- C. Maintain formwork construction tolerances complying with ACI 347.
- D. Design formwork to be readily removable without impact, shock, or damage to cast-in-place concrete surfaces and adjacent materials.
- E. Construct forms to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level, and plumb work in finished structures.
- F. Provide for openings, offsets, sinkages, keyways, recesses, moldings, rustications, reglets, chamfers, blocking, screeds, bulkheads, anchorages and inserts, and other features required for this Work.
- G. Use selected materials to obtain required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.
- H. Fabricate forms for easy removal without hammering or prying against concrete surfaces.
- I. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces.
- J. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only.
- K. Provide Kerf wood inserts for forming keyways, reglets, recesses, and the like, to prevent swelling and for easy removal.
- L. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement of concrete.

1. Securely brace temporary openings and set tightly to forms to prevent loss of concrete mortar.
 2. Locate temporary openings on forms at inconspicuous locations.
- M. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- N. Provisions for Other Trades:
1. Provide openings in concrete formwork to accommodate work of other trades.
 2. Determine size and location of openings, recesses, and chases from trades providing such items.
 3. Accurately place and securely support items built into forms.
 4. Other trades shall provide location and size of openings. The forms for such openings shall be constructed and set in place under this section.
- O. Cleaning and Tightening:
1. Thoroughly clean forms and adjacent surfaces to receive concrete.
 2. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed.
 3. Retighten forms and bracing after concrete placement is required to eliminate mortar leaks and maintain proper alignment.

3.03 VAPOR RETARDER INSTALLATION

- A. Place vapor retarder sheeting with longest dimension parallel with direction of pour following the completion of leveling and tamping of granular base for slabs on grade.
- B. Lap joints 6 inches and seal with appropriate tape.

3.04 PLACING REINFORCEMENT

- A. Comply with CRSI's recommended practice for "Placing Reinforcing Bars," for details and methods of reinforcement placement and supports, and as herein specified.

- B. Avoid cutting or puncturing vapor retarder during reinforcement placement and concreting operations.
- C. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
- D. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations.
- E. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
- F. Place reinforcement to obtain at least minimum coverages for concrete protection.
 - 1. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations.
 - 2. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
- G. Install welded wire fabric in as long lengths as practicable.
 - 1. Lap adjoining pieces at least one full mesh and lace splices with wire.
 - 2. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.05 JOINTS

- A. Construction Joints:
 - 1. Locate and install construction joints as indicated or, if not indicated, locate so as not to impair strength and appearance of the structure, as acceptable to the ENGINEER.
 - 2. Place construction joints perpendicular to main reinforcement.
 - 3. Continue reinforcement across construction joints, except as otherwise indicated.
- B. Waterstops:
 - 1. Provide waterstops in construction joints as indicated.
 - 2. Install waterstops to form continuous diaphragm in each joint.

3. Make provisions to support and protect exposed waterstops during progress of work.
4. Fabricate field joints in waterstops in accordance with Manufacturer's printed instructions.

C. Isolation Joints in Slabs-on-Ground:

1. Construct isolation joints in slabs-on-ground at points of contact between slabs-on-ground and vertical surfaces, such as column pedestals, foundation walls, grade beams, and elsewhere as indicated.

3.06 INSTALLATION OF EMBEDDED ITEMS

A. General:

1. Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete.
2. Use setting drawings, diagrams, instructions, and directions provided by suppliers of items to be attached thereto.

3.07 PREPARATION OF FORM SURFACES

- A. Clean re-used forms of concrete matrix residue, repair and patch as required returning forms to acceptable surface condition.
- B. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.
- C. Thin form-coating compounds only with thinning agent of type, amount, and under conditions of form-coating compound Manufacturer's directions.
- D. Do not allow excess form-coating material to accumulate in forms or to come into contact with in-place concrete surfaces against which fresh concrete will be placed.
- E. Apply in compliance with Manufacturer's instructions.

3.08 CONCRETE PLACEMENT

A. Pre-Placement Inspection:

1. Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in.

2. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work.
3. Moisten wood forms immediately before placing concrete where form coatings are not used.
4. Apply temporary protective covering to lower 2 feet of finished walls adjacent to poured floor slabs and similar conditions, and guard against spattering during placement.

B. General:

1. Comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete," and as herein specified.
2. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has sufficiently hardened to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.
3. Placing Concrete in Forms:
 - a Deposit concrete in forms in horizontal layers not deeper than 24 inches and in a manner to avoid inclined construction joints.
 - b Where placement consists of several layers, place each layer while the preceding layer is still plastic to avoid cold joints.
 - c Consolidation of Concrete:
 - 1) Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping.
 - 2) Use equipment and procedures for consolidation of concrete in accordance with ACI 309.
 - 3) Do not use vibrators to transport concrete inside forms.
 - 4) Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine.
 - 5) Place vibrators to rapidly penetrate placed layer and at least 6 inches into preceding layer.

- 6) Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing segregation of mix.

4. Placing Concrete Slabs:
 - a Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
 - b Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - c Bring slab surfaces to correct level with straightedge and strike off. Use bull floats or darbies to smooth surface; free of humps or hollows.
 - d Do not disturb slab surfaces prior to commencement of finishing operations.
 - e Maintain reinforcing in proper position during concrete placement operations.

5. Cold Weather Placing:
 - a Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.
 - b When air temperature has fallen to or is expected to fall below 40 degrees Fahrenheit (F)/4 degrees Celcius (C), uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C), and not more than 80 Degrees F (27 degrees C) at point of placement.
 - c Do not use frozen materials or materials containing ice or snow.
 - d Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

- e Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

6. Hot Weather Placing:

- a When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305 and as herein specified.
- b Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 degrees F (32 degrees C).
- c Mixing water may be chilled or chopped ice may be used to control temperature provided water equivalent of ice is calculated to total amount of mixing water.
- d Use of liquid nitrogen to cool concrete is the CONTRACTOR's option.
- e Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that the temperature of the steel does not exceed the ambient air temperature immediately before embedment in concrete.
- f Fog spray forms, reinforcing steel, and subgrade just before concrete is placed.
- g Use water-reducing retarding admixture (Type D) when required by high temperatures, low humidity, or other adverse placing conditions.

3.09 FINISH OF FORMED SURFACES

A. Rough Form Finish:

- 1. For formed concrete surfaces not exposed-to-view in the finish work or by other construction, unless otherwise indicated.
- 2. This is the concrete surface having texture imparted by form facing material used, with tie holes and defective areas repaired and patched, and fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.

B. Smooth Form Finish:

1. For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material directly applied to the concrete, or a covering material directly applied to the concrete, such as waterproofing, dampproofing, veneer plaster, painting, or other similar system.
2. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams.
3. Repair and patch defective areas with fins or other projections completely removed and smoothed.

C. Grout Cleaned Finish:

1. Provide grout cleaned finish to scheduled concrete surfaces which have received smooth form finish treatment.
2. Combine one part Portland cement to 1½ parts fine sand by volume, and mix with water to consistency of thick paint.
3. Use proprietary additives at the CONTRACTOR's option.
4. Blend standard Portland cement and white Portland cement (amounts determined by trial patches) so that final color of dry grout will match adjacent surfaces.
5. Thoroughly wet concrete surfaces and apply grout to coat surfaces and fill small holes.
6. Remove excess grout by scraping and rubbing with clean burlap.
7. Keep damp by fog spray for at least 36 hours after rubbing.

D. Related Unformed Surfaces:

1. Strike-off smooth tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces and finish with a texture matching adjacent formed surfaces.
2. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise indicated.

3.10 MONOLITHIC SLAB FINISHES

A. ASTM E 1155, "Standard Test Method for Determining Floor Flatness and Levelness Using the "F Number System (inch-pound-units)," shall be used for these finishes as follows:

1. Scratch Finish:

- a. Apply scratch finish to monolithic slab surfaces that are to receive concrete floor topping or mortar setting beds for tile, Portland cement terrazzo, and other bonded applied cementitious finish flooring material, and as otherwise indicated.
- b. After placing slabs, plane surface to tolerances for floor flatness (FF) of 15 and floor levelness (FL) of 13.
- c. Slope surfaces uniformly to drain where required.
- d. After leveling, roughen surface before final set, with stiff brushes, brooms, or rakes.

2. Float Finish:

- a. Apply float finish to monolithic slab surface to receive trowel finish and other finishes as hereinafter specified, and slab surfaces which are to be covered with membrane or elastic waterproofing membrane or elastic roofing, or sand-bed terrazzo, and as otherwise indicated.
- b. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating.
- c. Begin floating when surface water has disappeared or when concrete has sufficiently stiffened to permit operation of power-driven floats, or both.
- d. Consolidate surface with power-driven floats or by hand-floating if area is small or inaccessible to power units.
- e. Check and level surface plane to tolerances of FF 18 - FL 15.
- f. Cut down high spots and fill low spots.
- g. Uniformly slope surfaces to drains.
- h. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.

3. Trowel Finish:

- a. Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system.
 - b. After floating, begin first trowel finish operation using a power-driven trowel.
 - c. Begin final troweling when surface produces a ringing sound as trowel is moved over surface.
 - d. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with surface leveled to tolerances of FF 20 - FL 17.
 - e. Grind smooth surface defects which would telegraph through applied floor covering system.
4. Trowel and Fine Broom Finish:
- a. Where ceramic or quarry tile is to be installed with thin-set mortar, apply trowel finish as specified, then immediately follow with slightly scarifying surface by fine brooming.
5. Non-Slip Broom Finish:
- a. Apply non-slip broom finish to exterior concrete platforms, steps, and ramps, and elsewhere as indicated.
 - b. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route.
 - c. Coordinate required final finish with the ENGINEER before application.

3.11 CONCRETE CURING AND PROTECTION

A. General:

1. Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
2. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing.
3. Continuously keep concrete moist for not less than 7 days, weather permitting.

4. Begin final curing procedures immediately following initial curing and before concrete has dried.
 5. Continue final curing for at least 7 days in accordance with ACI 301 procedures.
 6. Avoid rapid drying at end of final curing period.
- B. Curing Methods:
1. Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified.
 2. Provide moisture curing by the following methods:
 - a. Keep concrete surface continuously wet by covering with water.
 - b. Continuous water-fog spray.
 - c. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and continuously keeping wet.
 - d. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4-inch lap over adjacent absorptive covers.
 3. Provide moisture-cover curing as follows:
 - a. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3 inches and sealed by waterproof tape of adhesive.
 - b. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
 4. Provide curing slabs and sealing compounds to exposed interior slabs and to exterior slabs, walks, and curbs, as follows:
 - a. Apply specified curing and sealing compound to concrete slabs as soon as final finishing operations are complete (within 2 hours).
 - b. Uniformly apply in continuous operation by power-spray or roller in accordance with Manufacturer's directions.

- c. Recoat areas subjected to heavy rainfall within 3 hours after initial application.
 - d. Maintain continuity of coating and repair damage during curing period.
5. Do not use membrane curing compounds on surfaces that are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, dampproofing, membrane roofing, flooring (such as ceramic or quarry tile and glue-down carpet), painting, and other coatings and finish materials, unless otherwise acceptable to the ENGINEER.
6. Curing Formed Surfaces:
 - a. Cure formed concrete surfaces, including undersides of beams, supported slabs, and other similar surfaces by moist curing with forms in place for full curing period or until forms are removed.
 - b. If forms are removed, continue curing by methods specified above, as applicable.
7. Curing Unformed Surfaces:
 - a. Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing method.
 - b. Final cure concrete surfaces to receive liquid floor hardener or finish flooring by use of moisture-retaining cover, unless otherwise directed.
8. Sealer and Dustproofer:
 - a. Apply a second coat of specified curing and sealing compound only to surfaces given a first coat.

3.12 SHORES AND SUPPORTS

- A. Remove shoring from ground to roof for structures four stories or less, unless otherwise permitted.
- B. Remove shores and re-shore in a planned sequence to avoid damage to partially cured concrete.
- C. Locate and provide adequate re-shoring to safely support work without excessive stress or deflection.

- D. Keep shores in place a minimum of 15 days after placing upper tier, and longer if required, until concrete has attained its required 28-day strength and heavy loads due to construction operations have been removed.

3.13 REMOVAL OF FORMS

- A. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at no less than 50 degrees F (10 degrees C) for 24 hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.14 RE-USE OF FORMS

- A. Clean and repair surfaces of forms to be re-used in work. Split, frayed, delaminated, or otherwise damaged form facing material will not be acceptable for exposed surfaces.
- B. Apply new form coating compound as specified for new formwork.
- C. Thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints when forms are extended for successive concrete placement.
- D. Align and secure joint to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to the ENGINEER.

3.15 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In:
 - 1. Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place.
 - 2. Mix, place, and cure concrete as herein specified, to blend with in-place construction.
 - 3. Provide other miscellaneous concrete filling shown or required to complete work.
- B. Curbs:

1. Provide monolithic finish to interior curbs by stripping forms while concrete is still green and steel troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

C. Equipment Bases and Foundations:

1. Provide machine and equipment bases and foundations, as shown on Drawings.
2. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of Manufacturer furnishing machines and equipment.
3. Grout base plates and foundations as indicated, using specified non-shrink grout.
4. Use non-metallic grout for exposed conditions, unless otherwise indicated.

D. Reinforced Masonry:

1. Provide concrete grout for reinforced masonry lintels and bond beams where indicated on Drawings and as scheduled, including filling of concrete modular unit cavities where called for on plans.
2. Maintain accurate location of reinforcing steel during concrete placement.

3.16 CONCRETE SURFACE REPAIRS

A. Patching Defective Areas:

1. Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to the ENGINEER.
2. Cut out honeycomb, rock pockets, voids over 1/4 inch in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1 inch.
3. Make edges of cuts perpendicular to the concrete surface.
4. Thoroughly clean, dampen with water, and brush-coat the area to be patched with specified bonding agent.
5. Place patching mortar after bonding compound has dried.

B. Repair of Formed Surfaces:

1. Remove and replace concrete having defective surfaces if defects cannot be repaired to the satisfaction of the ENGINEER. Surface defects, as such, include:
 - a. Color and texture irregularities, cracks, spalls, air bubbles, honeycomb, rock pockets.
 - b. Fins and other projections on surface.
 - c. Stains and other discolorations that cannot be removed by cleaning.
 2. Flush out form tie holes, fill with dry pack mortar, or precast cement cone plugs secured in place with bonding agent.
 3. Repair concealed formed surfaces, where possible, that contain defects that affect the durability of concrete. If defects cannot be repaired, remove and replace concrete.
- C. Repair of Unformed Surfaces:
1. Test unformed surfaces, such as monolithic slabs, for smoothness and verify surface plane to tolerances specified for each surface and finish.
 2. Correct low and high areas as herein specified.
 3. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness using a template having required slope.
- D. Repair finished unformed surfaces that contain defects which affect durability of concrete. Surface defects, as such, include crazing cracks in excess of 0.01 inch wide or which penetrate to reinforcement or completely through non-reinforced sections regardless of width, spalling, pop-outs, honeycomb, rock pockets, and other objectionable conditions.
1. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.
 2. Correct low areas in unformed surfaces during or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete.
 3. Finish repaired areas to blend into adjacent concrete.
 4. Proprietary patching compounds may be used when acceptable to the ENGINEER.

- E. Repair Defective Areas:
 - 1. Cut out and replace with fresh concrete except random cracks and single holes not exceeding 1 inch in diameter.
 - 2. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least ¾-inch clearance all around.
 - 3. Dampen concrete surfaces in contact with patching concrete and apply bonding compound.
 - 4. Mix patching concrete of same materials to provide concrete of same type or class as original concrete.
 - 5. Place, compact, and finish to blend with adjacent finished concrete.
 - 6. Cure in same manner as adjacent concrete.
- F. Perform structural repairs with prior approval of Structural Engineer for method and procedure, using specified epoxy adhesive and mortar.
- G. Use repair methods not specified above, subject to acceptance of the ENGINEER.

3.17 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. The OWNER will employ a testing laboratory to perform tests and to submit test reports.
- B. Sampling and testing for quality control during placement of concrete may include the following, as directed by the ENGINEER.
 - 1. Sampling Fresh Concrete:
 - a. ASTM C 172, except modified for slump to comply with ASTM C 94.
 - 2. Slump:
 - a. ASTM C 143, one test at point of discharge for each day's pour of each type of concrete and additional tests when concrete consistency seems to have changed.
 - 3. Concrete Temperature:
 - a. Test hourly when air temperature is 40 degrees F (4 degrees C) and below, and when 80 degrees F (27 degrees C) and

above, and each time a set of compression test specimens are made.

4. Compression Test Specimen:
 - a. ASTM C 31, one set of four standard cylinders for each compressive strength test, unless otherwise directed.
 - b. Cylinders for laboratory cured test specimens shall be molded and stored except when field-cure test specimens are required.
5. Compressive Strength Tests:
 - a. ASTM C 39, one set for each day's pour exceeding 5 cubic yards plus additional sets for each 50 cubic yards over and above the first 25 cubic yards of each concrete class placed in any 1 day:
 - 1) One specimen tested at 7 days.
 - 2) Two specimens tested at 28 days.
 - 3) One specimen retained in reserve for later testing if required.
 - b. When frequency of testing will provide less than five strength tests for a given class of concrete, conduct testing from at least five randomly selected batches or from each batch if fewer than five are used.
- C. Test results will be reported in writing to Structural Engineer and the CONTRACTOR within 24 hours after tests.
- D. Reports of compressive strength tests shall contain:
 1. The project identification name and number.
 2. Date of concrete placement.
 3. Name of concrete testing service.
 4. Concrete type and class.
 5. Location of concrete batch in structure.
 6. Design compressive strength at 28 days.
 7. Concrete mix proportions and materials.
 8. Compressive breaking strength.
 9. Type of break for both 7- and 28-day tests.

E. Nondestructive Testing:

1. Impact hammer, sonoscope, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.

F. Additional Tests:

1. The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the ENGINEER.
2. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.
3. The CONTRACTOR shall pay for such tests when unacceptable concrete is verified.

END OF SECTION

**SECTION 15062
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS**

PHASE 1 - GENERAL

1.01 SCOPE OF WORK:

- A. The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required and install in the locations as shown on the Drawings.
- B. The CONTRACTOR shall install the plastic piping, fittings and appurtenances (as specified herein) as shown on the Drawings.

1.02 DESCRIPTION OF SYSTEM:

The CONTRACTOR shall install the piping in the locations as shown on the Drawings.

1.03 QUALIFICATIONS:

- A. All plastic pipe, fittings and appurtenances shall be furnished by a single Manufacturer who is fully experienced, reputable, and qualified in the manufacture of the items to be furnished.
- B. The equipment shall be designed, constructed, and installed in accordance with the best practices and methods and shall comply with these Specifications.

1.04 SUBMITTALS:

- A. The CONTRACTOR shall submit Shop Drawings that include dimensions and technical specifications for all piping to the ENGINEER.
- B. The CONTRACTOR shall submit samples of all materials specified herein to the ENGINEER.
- C. The CONTRACTOR shall submit and shall comply with pipe Manufacturer's recommendation for handling, storing, and installing pipe and fittings.
- D. The CONTRACTOR shall submit pipe Manufacturer's certification of compliance with these Specifications.

1.05 TOOLS:

The CONTRACTOR shall furnish special tools, solvents, lubricants, and caulking compounds required for normal installation with the pipe.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Polyvinyl Chloride (PVC) Pipe:

1. Pressure PVC pipe and accessories 3 inches and smaller in diameter, where shown or as specified in the Drawings, shall meet the requirements of American Society for Testing and Materials (ASTM) D2241 "Polyvinyl Chloride (PVC) Pressure Pipe," and shall be SDR 21, rated pressure of 200 pounds per square inch.
2. PVC Pipe **4 to 8** inches in diameter shall meet the requirements of American Water Works Association (AWWA) Specifications C900 "Polyvinyl Chloride (PVC) Pressure Pipe," and shall be **DR18 (Pressure Class 235)**.
3. PVC Pipe **10 and 12** inches shall meet the requirements of AWWA C900 and shall be **DR25 (Pressure Class 165)**.
4. AWWA C900 **DR18 (Pressure Class 235)** pipe shall be required for all PVC fire lines downstream of any check valve.
5. PVC Pipe **greater than 12** inches shall meet the requirements of AWWA C905 and shall be **DR25 (Pressure Class 165)**.
6. Provisions shall be made for expansion and contraction at each joint with an elastomeric ring, and shall have an integral thickened bell as part of each joint.
7. PVC pipe shall be installed as recommended by the Manufacturer.
8. Pipe shall be furnished in nominal lengths of approximately 20 feet, unless otherwise directed by the ENGINEER.
9. Pipe and accessories shall bear the NSF mark indicating pipe size, Manufacturer's name(s), AWWA and/or ASTM Specification Number, working pressure, and production code.
10. Pipe shall be blue for potable water service, green for sewage force main service, and purple for reclaimed water mains (Pantone 522C).
11. All potable water pipe shall be NSF certified and copies of lab certification shall be submitted to the ENGINEER.

B. Joints:

1. The PVC joints for pipe shall be of the push-on type unless otherwise directed by the ENGINEER so that the pipe and fittings may be connected on the job without the use of solvent cement or any special equipment.
2. The push-on joint shall be a single rubber gasket joint designed to be assembled by the positioning of a continuous, molded rubber ring gasket in annular recess in the pipe or fitting socket and the forcing of the plain end of the entering pipe into the socket; thereby, compressing the gasket radially to the pipe to form a positive seal.
3. The gasket and annular recess shall be designed and shaped so that the gasket is locked in place against displacement as the joint is assembled.
4. The rubber ring joint shall be designed for thermal expansion or contraction with a total temperature change of at least 750 degrees Fahrenheit (F) in each joint per length of pipe.
5. The bell shall consist of an integral wall section with a solid cross section elastomeric ring which shall meet requirements of ASTM F-477.
6. The thickened bell section shall be designed to be at least as strong as the pipe wall.
7. Lubricant furnished for lubricating joints shall be nontoxic, shall not support the growth of bacteria, shall not have deteriorating effects on the gasket or pipe material, and shall not impart color, taste, or odor to the water.

C. Fittings and Specials:

1. All fittings for PVC pipe shall be cast iron/ductile iron with mechanical joints and shall conform to the specifications for cast iron/ductile iron fittings, unless otherwise directed by the ENGINEER. PVC C-900 fittings are allowable upon approval by the ENGINEER and required for sewage force main applications. DR ratio shall be the same as the pipe.
2. Fittings for Schedule 80 PVC pipe less than 3 inches in diameter shall be threaded and be PVC as shown on the Drawings, or as directed by the ENGINEER. Threaded PVC fittings shall conform to ASTM Specification D2464-69.
3. The Manufacturer of the pipe shall supply all PVC accessories as

well as any adaptors and/or specials required to perform the Work as shown on the Drawings and specified herein.

4. Standard double bell couplings will not be accepted where the pipe will slip completely through the coupling.

2.02 COPPER LOCATION WIRE:

- A. The CONTRACTOR shall install all piping (including service lines) with underground 12 gauge single conductor thermoplastic high heat-resistant nylon (THHN) insulated traceable copper wire.
- B. The CONTRACTOR shall lay the insulated copper wire in the pipe trench 3 to 6 inches above the sewer force mains and shall be a continuous strand from valve box to valve box, wrapped two times around each valve and extended 24 inches inside each valve box to enable location devices to be attached without digging up the valve box.
- C. The CONTRACTOR shall insulate all wire splices.
- D. The CONTRACTOR shall backfill the trench following placement of the traceable wire with due caution to prevent displacement or damage to wire.
- E. The CONTRACTOR shall perform a detection test after insulation and backfill have been completed in the ENGINEER's presence using a commercially available pipe detector furnished by the CONTRACTOR.
- F. The CONTRACTOR shall replace any undetectable wire to the satisfaction of the ENGINEER at no additional expense to the OWNER.

PART 3 - EXECUTION

3.01 STORAGE/INSTALLATION:

- A. The CONTRACTOR shall be in strict accordance with the Manufacturer's technical data and printed instruction for the storage and installation of plastic pipe.
- B. The CONTRACTOR shall cover all plastic pipe to prevent fading.
- C. The OWNER reserves the right to reject any pipe not properly stored or pipe that has faded.

3.02 INSPECTION AND TESTING:

- A. The CONTRACTOR shall not disturb all pipelines for 24 hours to develop

complete strength at all joints.

B. General:

1. Provide temporary equipment for testing, including pump and gauges.
2. Test piping system before insulation is installed (wherever feasible) and remove control devices before testing.
3. Expel air from the pipe before applying the specified test pressure.
4. Make taps (if necessary) at points of highest elevation, and afterwards tightly plugged.
5. Test each natural section of each piping system independently but do not use piping system valves to isolate sections where test pressure exceeds valve pressure rating.
6. Fill each section with water and subject to a hydrostatic pressure equal to the pressure rating of the pipe being tested.

C. The CONTRACTOR shall test for the required 2-hour period.

D. The CONTRACTOR shall test pipe at 150 pounds per square inch (psi), except where fittings are lower class or pressure rating.

1. Pressure Sewer Permissible leakage (2.2 gallons/1,000 feet/24 hours/inch diameter):

2.

| Inches | gallons/1,000 feet/24 Hours | gallons/1,000 feet/1 Hours |
|--------|-----------------------------|----------------------------|
| 2" | 4.4 gal. | 0.19 gal. |
| 3" | 6.6 gal. | 0.28 gal. |
| 4" | 8.8 gal. | 0.37 gal. |
| 6" | 13.2 gal. | 0.55 gal. |
| 8" | 17.8 gal. | 0.74 gal. |
| 10" | 22.0 gal. | 0.92 gal. |
| 12" | 26.4 gal. | 1.10 gal. |
| 14" | 30.8 gal. | 1.29 gal. |
| 16" | 35.2 gal. | 1.47 gal. |
| 18" | 39.6 gal. | 1.66 gal. |

3. Water System Permissible Leakage:

| Inches | gallons/1,000 feet/24 Hours | gallons/1,000 feet/1 Hours |
|--------|-----------------------------|----------------------------|
| 2" | 3.6 gal. | 0.15 gal. |
| 3" | 5.4 gal. | 0.23 gal. |
| 4" | 7.2 gal. | 0.30 gal. |
| 6" | 10.8 gal. | 0.45 gal. |
| 8" | 14.4 gal. | 0.60 gal. |
| 10" | 18.0 gal. | 0.75 gal. |
| 12" | 21.6 gal. | 1.90 gal. |
| 14" | 25.2 gal. | 1.05 gal. |
| 16" | 28.8 gal. | 1.66 gal. |
| 18" | 32.4 gal. | 1.66 gal. |

- E. The CONTRACTOR shall repair piping systems sections which fail required piping tests by disassembly and re-installation using new materials to the extent required to overcome leakage. Do not use chemicals, stop-leak compounds, mastics, or other temporary repair methods.
- F. The CONTRACTOR shall, at his own expense, locate and repair the defective joints should any test of combined sections of pipe laid disclose leakage greater than the specified limit, until the leakage is within the specified allowance.
- G. The CONTRACTOR shall provide water for testing.
- H. The CONTRACTOR may subject pipe to hydrostatic pressure, inspect and test for leakage at any convenient time after partial completion of backfill.
- I. The CONTRACTOR may test the system with joints exposed or backfilling complete at his/her option. The ENGINEER shall be notified at least 48 hours before beginning testing.
- J. The CONTRACTOR shall drain test water from piping systems after testing and repair work has been completed.

3.03 CLEANING, FLUSHING, AND INSPECTING:

- A. General:
 - 1. Clean installed piping systems' exterior surfaces of superfluous materials and prepare for application of specified coatings (if any).
 - 2. Flush out piping systems with clean water before proceeding with required tests.
 - 3. Inspect each run of each system for completion of joints, supports, and accessory items.
- B. The CONTRACTOR shall thoroughly flush each run of pipe after the mains have been laid and pressure tested so as to remove all debris and foreign matter from the lines.
 - 1. Flushing will ordinarily be done by opening fire hydrants or blowoffs along the pipe line.
 - 2. Where fire hydrants or blowoffs are not available or are of insufficient capacity to permit adequate flushing, the pipe line shall be opened and flumes or piping shall be provided by the CONTRACTOR to waste the water to the nearest approved

disposal point.

3. A minimum volume of water equal to six times the volume of the main shall be used to flush the mains.
 4. The water shall be introduced into the mains to produce a velocity of not less than 3 feet per second, and this rate of flow shall be continued until the discharge is clear and no evidence of silt or foreign matter is visible.
- C. The CONTRACTOR shall inspect pressure piping in accordance with American Society of Mechanical Engineers (ASME) B31 procedures.
 - D. The CONTRACTOR shall disinfect water mains and water service piping in accordance with AWWA C601 and the Florida Department of Environmental Protection (FDEP), Chapter 17-22 requirements.
 - E. The CONTRACTOR is responsible for costs (including sampling and analysis) associated with disinfecting the potable water lines.
 - F. The CONTRACTOR shall submit sample results documenting compliance with disinfection testing requirements to the FDEP with a duplicate copy sent to the ENGINEER.

END OF SECTION 15062

**SECTION 15101
VALVES AND ACCESSORIES**

PART 1 - GENERAL

1.01 SCOPE OF WORK

The CONTRACTOR shall furnish all labor, materials, equipment and incidentals required and install complete and ready for operation and test all buried and non-buried valves as shown on the Drawings and as specified herein.

1.02 SUBMITTALS

- A. Submit materials required to establish compliance with these Specifications in accordance with Section 01300. Submittals shall include the following:
1. Certified drawings showing all important details of construction and dimensions.
 2. Descriptive literature, bulletins and/or catalogs of the equipment.
 3. The total weight of each item.
 4. A complete bill of materials.
 5. Additional submittal data, where noted with individual pieces of equipment.
- B. Test Reports: Provide certified hydrostatic test data, per Manufacturers standard procedure or MSS-SP-61 for all valves.
- C. Certificates: For each valve specified to be manufactured, tested and/or installed in accordance with AWWA and other standards, submit an affidavit of compliance with the appropriate standards, including certified results of required tests and certification of proper installation.
- D. Manufacturer's Installation and Application Data
- E. Operating and Maintenance Data: Operating and maintenance instructions shall be furnished to the ENGINEER. The instructions shall be prepared specifically for this installation and shall include all required cuts, drawings, equipment lists, descriptions and other information required to instruct operating and maintenance personnel unfamiliar with such equipment.

1.03 REFERENCE STANDARDS

- A. American Society for Testing and Materials (ASTM):

1. ASTM A48 - Specification for Gray Iron Castings.
 2. ASTM A126 - Specification for Gray Iron Castings for Valves, Flanges and Pipe Fittings.
 3. ASTM A159 - Specification for Automotive Gray Iron Castings.
 4. ASTM A240 - Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel Plate, Sheet and Strip for Pressure Vessels.
 5. ASTM A276 - Standard Specification for Stainless and Heat-Resisting Steel Bars and Shapes.
 6. ASTM A436 - Specification for Austenitic Gray Iron Castings.
 7. ASTM A536 - Specification for Ductile Iron Castings.
 8. ASTM B30 - Specification for Copper-Base Alloys in Ingot Form.
 9. ASTM B62 - Standard Specification for Composition Bronze or Ounce Metal Castings
- B. American Water Works Association (AWWA):
1. AWWA C111 - Rubber-Gasket Joints for Ductile-Iron and Gray-Iron Pressure Pipe and Fittings.
 2. AWWA C500 - Gate Valves, 3-in Through 48-in NPS, for Water and Sewage Systems
 3. AWWA C504 - Rubber-Seated Butterfly Valves
 4. AWWA C507 - Ball Valves 6-in Through 48-in
 5. AWWA C508 - Swing-Check Valves for Waterworks Service, 2-in Through 24-in NPS
 6. AWWA C509 - Resilient-Seated Gate Valves, 3-in Through 12-in NPS, for Water and Sewage Systems
 7. AWWA C511 - Reduced Pressure Principle Backflow Prevention Assembly
 8. AWWA C540 - Power-Actuating Devices for Valves and Sluice Gates
 9. AWWA C550 - Protective Interior Coatings for Valves and Hydrants

10. AWWA C800 - Underground Service Line Valves and Fittings
 11. AWWA C515 – Resilient Seated Valves for 14” and Larger
- C. American National Standards Institute (ANSI):
1. ANSI B2.1 - Specifications, Dimensions, Gauging for Taper and Straight Pipe Threads (except dry seals).
 2. ANSI B16.1 - Cast Iron Pipe Flange and Flanged Fittings Class 25, 125, 250 and 800
 3. ANSI B16.10 - Face-to-Face and End-to-End Dimensions of Valves
 4. ANSI B16.104 - Butterfly Valves
- D. American Iron and Steel Institute (AISI).
- E. Manufacturer’s Standardization Society of the Valve and Fittings Industry (MSS):
1. MSS-SP-61 - Pressure Testing of Steel Valves.
 2. MSS-SP-67 - Butterfly Valves.
 3. MSS-SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends.
 4. MSS-SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends.
 5. MSS-SP-72 - Ball Valves with Flanged or Butt-Welding Ends for General Services.
 6. MSS-SP-78 - Cast Iron Plug Valves, Flanged and Threaded Ends.
 7. MSS-SP-80 - Bronze Gate, Globe, Angle and Check Valves.
 8. MSS-SP-82 - Valve Pressure Testing Methods
 9. MSS-SP-98 - Protective Epoxy Coatings for Interior of Valves and Hydrants.
- F. National Electrical Manufacturers Association (NEMA).
- G. Underwriters Laboratories (UL).
- H. Factory Mutual Insurance (FM).

- I. Where reference is made to one of the above standards, the revision in effect at the time of bid opening shall apply.

1.04 QUALITY ASSURANCE

A. Qualifications:

1. Valves and appurtenances shall be products of well established firms who are fully experienced, minimum 10 years, reputable and qualified in the manufacture of the particular equipment to be furnished.
2. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications as applicable.
3. All units of the same type shall be the product of one Manufacturer.

B. Certifications:

1. The Manufacturer's shall furnish an affidavit of compliance with Standards referred to herein as specified in paragraph 1.03C.
2. Refer to Part 3 for testing required for certain items in addition to that required by referenced standards.

C. Provide the services of a qualified and factory-trained service representative of the Manufacturer to provide operational and maintenance instruction, for a one-day, eight hour period for:

1. Valve motor operators.
2. Valve hydraulic operators.
3. Valve pneumatic operators.
4. Pressure regulating valves.
5. Air release, air and vacuum valves.

D. Inspection of the units may also be made by the ENGINEER or other representative of the OWNER after delivery. The equipment shall be subject to rejection at any due to failure to meet any of the Specification requirements, even though submittal data may have been accepted previously. Equipment rejected after delivery shall be marked for identification and shall be removed from the job site at once.

1.05 SYSTEM DESCRIPTION

- A. All of the equipment and materials specified herein is intended to be standard for use in controlling the flow of wastewater, sludges, reclaimed water, potable water, air or chemicals, depending on the individual systems, as noted on the Drawings.
- B. Valves, appurtenances and miscellaneous items shall be installed as shown on the Drawings and as specified, so as to form complete workable systems.
- C. Unless otherwise noted all powered valve operators shall have:
 - 1. Valves smaller than 8 inches: electric operators 120V, single phase, 60 Hz.
 - 2. Valves larger than 8 inches: electric operators 480 volt, 3 phase, 60 Hz.
 - 3. Solenoid valves: 120 volt, single phase, 60 hz, NEMA 4 enclosure, continuous duty Class F coils and manual operator.
 - 4. See other paragraphs for additional requirements.
- D. Packing and Shipping:
 - 1. Care shall be taken in loading, transporting and unloading to prevent injury to the valves, appurtenances, or coatings. Equipment shall not be dropped. All valves and appurtenances shall be examined before installation and no piece shall be installed which is found to be defective. Any damage to the coatings shall be repaired as acceptable to the ENGINEER.
 - 2. Prior to shipping, the ends of all valves shall be acceptably covered to prevent entry of foreign material. Covers shall remain in place until after installation and connecting piping is completed.
 - a. All valves 3-in and larger shall be shipped and stored on site until time of use with wood or plywood covers on each valve end.
 - b. Valves smaller than 3-in shall be shipped and stored as above except that heavy cardboard covers may be used on the openings.
 - c. Rising stems and exposed stem valves shall be coated with a protective oil film which shall be maintained until the valve is installed and put into use.

- d. Any corrosion in evidence at the time of acceptance by the OWNER shall be removed, or the valve shall be removed and replaced.

E. Storage and Protection:

Special care shall be taken to prevent plastic and similar brittle items from being directly exposed to the sun, or exposed to extremes in temperature, to prevent deformation. See the individual piping specifications and Manufacturer's information for further requirements.

1.06 MAINTENANCE

- A. Special tools and the Manufacturer's standard spare parts, if required for normal operation and maintenance, shall be supplied with equipment.
- B. Provide all special tools required for normal maintenance.
- C. Tools shall be packaged in a steel case, clearly and indelibly marked on the exterior to indicate equipment for which tools are intended.
- D. Provide to the OWNER a list of all spare and replacement parts with individual prices and location where they are available.
- E. Prices shall remain in effect for a period of not less than one year after start-up and final acceptance.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT - GENERAL

- A. Reference is made to Division 1 for additional requirements, including nameplates, provisions for temporary pressure gages, protection against electrolysis and anchor bolts.
- B. The use of a Manufacturer's name and/or model or catalog number is for the purpose of establishing the standard of quality and general configuration desired.
- C. Valves and appurtenances shall be of the size shown on the Drawings or as noted and as far as possible equipment of the same type shall be identical and from one Manufacturer.
- D. Valves and appurtenances shall have the name of the maker, nominal size, flow directional arrows, working pressure for which they are designed and standard referenced, cast in raised letters or indelibly marked upon some appropriate part of the body.

- E. Unless otherwise noted, items shall have a minimum working pressure of 150 psi or be of the same working pressure as the pipe they connect to, whichever is higher and suitable for the pressures noted where they are installed.
- F. Joints, size and material - unless otherwise noted or required by the ENGINEER:
 - 1. Except where noted, all joints referred to herein shall be of the same type, nominal diameter, material and with a minimum rating equal to the pipe or fittings they are connected to.
 - 2. Valves and appurtenances shall be of the same nominal diameter as the pipe or fittings they are connected to.
 - 3. All valves exposed to view, or in vaults.
 - a. 3-in and smaller - threaded ends
 - b. 4-in and larger flanged ends.
- G. Provide all special adaptors as required to ensure compatibility between valves, appurtenances and adjacent pipe.
- H. Valves and actuators located outdoors but not within a building; within maximum 2-ft above liquid; in vaults; or where otherwise noted shall be especially designed for submerged service where water may completely submerge the valve and operator. All other units shall be as a minimum weather tight.

2.02 VALVE ACTUATORS - GENERAL

- A. The valve Manufacturer shall supply and integrally, rigidly mount all actuators, including any type of manual or powered actuators, on valves at the factory. The valves and their individual actuators shall be shipped as a unit.
- B. Unless otherwise noted, valves shall be manually actuated; nonburied valves shall have an operating wheel, handle or lever mounted on the operator; buried valves and those with operating nuts shall have a non-rising stem with an AWWA 2-in nut. At least two tee handles shall be provided for all operating nuts.
- C. Except as otherwise shown on the Drawings or specified herein, all valves 3-in diameter or larger, with the valve center line located 7-ft or more above the operating floor, shall be provided with chain wheel operators complete with chain guides and hot dipped galvanized steel chain, which

loop within 4-ft of the operating floor.

- D. All actuators shall be capable of moving the valve from the full open to full close position and in reverse and holding the valve at any position part way between full open or closed.
- E. Each operating device shall have cast on it the word "OPEN" and an arrow indicating the direction of operation.
- F. Floor boxes for operating nuts recessed in concrete shall be standard cast iron type, cast-in-place, with fastening top by Clow or equal.
- G. Stem guides shall be of the adjustable wall bracket type, bronze bushed, with maximum spacing of 10-ft as manufactured by Clow; Rodney Hunt or equal. Extended operating nuts and/or stems shall have universal joints and pin couplings, if longer than 10-ft and a rating of at least five times the maximum operating torque. Stem adaptors shall be provided.
- H. Where required by the installation, or as specified, provide the following: extended stem; floor stand and handwheel; position indicator and etched or cast arrow to show direction of rotation to open the valve; resilient seal around stem penetration of slab.

2.03 BUTTERFLY VALVES FOR FLUID SERVICE (METAL BODY)

- A. Butterfly valves and operators up to 72 inches diameter shall conform to AWWA C504, Class 150B, except as hereinafter specified. The Manufacturer shall submit an affidavit of compliance stating that the valves have been manufactured and tested in accordance with AWWA C504 and specifically listing all exceptions. Valves shall have a minimum 150 psi pressure rating or higher as noted on the Drawings or in the Specifications and be manufactured by Val-Matic Pratt, Dezurik or equal.
- B. Butterfly valves for above grade shall be flanged end with face to face dimensions in accordance with Table 2 of AWWA C504 Standard for short-body valve. All valves for dead end shut off service shall be flanged type. Butterfly valves for buried service shall be mechanical joint ends conforming to ANSI/AWWA C111/A21.11 and shall be mechanically restrained with Megalug Series 1100 or ENGINEER approved equal.
- C. Valve seats shall be full resilient seats retained in the body or on the disc edge in accordance with AWWA C504. Valve discs shall be constructed of cast iron, ASTM A48, Class 40; Ni-resist, ASTM A126, Class B; or ductile iron, ASTM A536, Grade 65-45-12.
 - 1. For valves 24-inch in diameter and larger, when the resilient seats are attached to the body, discs shall have Type 316 stainless steel

- seating edges. When the resilient seat is attached to the disc, it shall be fastened with a one piece Type 316 stainless steel retaining ring, Type 316 stainless steel Nylock set screws and a mating Type 316 stainless steel ring shall be installed in the valve body.
2. Resilient seats shall be Hycar or equal. Seats shall be fully adjustable and replaceable with the valves in place for all valves.
- D. The valve body shall be constructed of close grain cast iron per ASTM A126, Class B with integrally cast hubs for shaft bearing housings of the through boss-type. Permanently self-lubricating body bushings shall be provided and shall be sized to withstand bearing loads. Stuffing box of liberal dimensions shall be provided at the operator end of the vane shaft.
1. Packing shall be of the self compensating v-type. A sealing element utilizing O-rings shall also be acceptable for up to and including 24-in valves. Over 24-in, pull down seals using a square braid of graphited asbestos is an acceptable alternate.
 2. Packing shall be held in place by a bolted corrosion resistant retainer plate or gland; retainer clips are not acceptable. For 30-in or larger, use a stuffing box with follower gland.
 3. Replacement of seals, for all size butterfly valves, shall not require removal of the valve from the line. In addition adjustment or replacement of seals on valves of 30-in or larger shall not require disturbing any part of the valve or operator assembly, except any packing follower gland.
- E. The valve shaft shall be of Type 316 stainless steel and designed for both torsional and shearing stresses when the valve is operated under its greatest dynamic or seating torque. No reductions of shaft diameter will be allowed except at the operator connection. Any reduction shall have a full radius fillet.
- F. In general, the butterfly valve actuator shall conform to the requirements of AWWA C504, insofar as applicable and as herein specified.
- G. Gearing for the actuators where required shall be totally enclosed in a gear case in accordance with AWWA C504.
- H. The manual actuators shall conform to AWWA C504, insofar as applicable. Actuators shall have permanent indicators with raised or engraved marks to show position of the valve disc.

2.04 GATE VALVES (2-1/2-IN AND SMALLER)

- A. Gate valves 2-1/2-in diameter and smaller shall have screwed ends, cast iron body and 4" hand wheel, AVK Model No. 03-090-TTN or Engineer approved equal.
- B. All water valves 1-1/2-in unless noted otherwise, shall be brass body gates and shall be Jenkins No. 1240, or Hammond 1B-647.

2.05 GATE VALVES (3-IN AND LARGER)

A. General Requirements:

- 1. Unless otherwise specified below, these requirements shall apply to all gate valves.
- 2. Gate valves shall meet the requirements of AWWA C500 and AWWA C509 as applicable to the type of valve specified.
- 3. Buried and submerged valves shall be furnished with mechanical joints and stainless steel hardware; non-rising stem design.
- 4. Exposed valves shall be furnished with Class 125 flanged ends and hand wheel; provide valves with outside screw and yoke.
- 5. All-metal valves shall be manufactured of ASTM A536, Ductile Iron, with bronze mounting design.
- 6. Rising stem valves shall be sealed with adjustable and replaceable packing; valve design must permit packing replacement under operating system pressures with only moderate leakage.
- 7. Non-rising stem valves shall use a double O-ring stem seal, except that packing shall be used where geared operators are required.
- 8. Except as otherwise specified, valves shall be rated for the following working water pressures:

| <u>Valve Size</u> | <u>Pressure</u> |
|-------------------|-----------------|
| <u>(psig)</u> | |
| 3-in to 12-in | 250 |
| 14-in to 20-in | 250 |
| 24-in and greater | 250 |

All valve bodies shall be hydrostatically tested to at least twice the rated working water pressure. In addition, valves shall be seat-tested, bi-directional at the rated working pressure, with seat leakage not to exceed one fluid ounce per inch of valve diameter per hour. Provide certificates of testing.

9. Flanged valves to have face-to-face dimensions per ANSI B16.1 and flanges per ANAI B16.10.
10. Exposed valves 16-in and larger to have valve by-pass.
11. All bonnet and packing gland bolts shall be zinc or cadmium electroplated steel; packing gland bolts shall have bronze nuts.
12. Exposed valves 16-in and greater indicated for horizontal stem installation shall be furnished with rollers, tracks and scrapers and enclosed bevel gear grease case.
13. Provide geared operator and chain wheel, chain and chain guides for valves with handwheel centerline more than 7-ft above operating level.
14. All valves shall be marked per AWWA Standards, including name of Manufacturer, valve size and working pressure and year of manufacture.
15. Unless otherwise indicated, valves 12-in and smaller shall be capable of installation in the vertical or horizontal position, sealing in both directions at the rated pressure.
16. Valve operation shall be counterclockwise for potable water; clockwise for wastewater and other non-potable waters. Provide permanent label showing "OPEN" and arrows.
17. Metal-seated valves shall be coated internally and externally with an asphaltic varnish, per AWWA C500. Resilient seated valves shall be coated, interior and exterior, with fusion bonded epoxy per AWWA C550.

B. Valve Applications:

1. Valves for Non-Potable Water Service:
 - a. Resilient seat gate valves shall be ductile iron bodied, bronze mounted, with wedge type disk, hand wheel and rubber seat. Valves shall be manufactured in accordance with AWWA C509. Valves shall be suitable for above ground service, be designed for 150 psi working pressure, shall be of O-ring type, with non-rising stem, and opening counterclockwise. Valves shall have flanged ends. Valves shall be coated in accordance with AWWA C550.
 - b. Resilient seated design manufactured by American R-B

Clow, Mueller, M&H Valve Company or equal.

2. Valves for Wastewater Service (NOT USED)
3. At the CONTRACTOR's option and unless otherwise indicated, any of the listed valve styles may be used, at no additional cost to the OWNER.

C. Valve Requirements:

1. Double Disc (NOT USED)
2. Double Revolving Disc (NOT USED)
3. Solid Wedge (NOT USED)
4. Resilient Seated:
 - a. Conform to AWWA C509. Also UL and FM approved.
 - b. Internal and external epoxy coating of valve body, including bonnet, per AWWA C550.
 - c. Gate shall be encapsulated with synthetic rubber. It shall be bonded and vulcanized in accordance with ASTM B429 Method B.
 - d. No recesses in valve body.

D. Buried Valves:

1. Conform to the requirements above, except mechanical joint bell ends per AWWA C111. The valve shall be mechanically restrained with Megalug Series 1100 or ENGINEER approved equal. All exposed valve hardware (nuts, bolts, washers, etc.) including bonnet, bonnet cover, stuffing box, gear adaptor and joints shall be Type 304 stainless steel.
2. Non-rising stem design, double o-ring seals for non-gearred valves and shall incorporate packing for geared valves.
3. Provide valve box, 2-in operating nut and extension stem and stem cover.

E. Tapping Valves and Sleeves:

1. Tapping valves shall comply with the same requirements as resilient seated gate valves or double revolving disc gate valves

except they shall have the flanged end and port opening modified for tapping service. Valves shall be capable of passing a full nominal sized cutter without damage to the valve. The tapping sleeve shall be gray cast iron or ductile iron mechanical joint type with the outlet flange conforming to MSS-SP-60.

2. All water valves, 4-in and larger, shall be iron body gates, bronze trim, flanged ends, O.S. & Y. pattern, solid wedge, rising spindle, Jenkins No. 651, or Hammond 1R-1140.

2.06 PLUG VALVES

A. Plug valves shall be of the offset disc type, $\frac{1}{4}$ turn, non-lubricated, serviceable (able to be repacked) under full line pressure and capable of sealing in both directions at the rated pressure. The disc shall be completely out of the flow path when open. Plug valves specified herein shall be by DeZurik, Clow, M&H, Val-Matic, or equal. All Manufacturers, named or otherwise, must comply completely with the specification.

1. For clean liquid or screened sewage, all size plug valves shall have a minimum port area of 80 percent.
2. On sludge and scum lines, all valves 24-in and larger shall have a minimum 100 percent open port area; for all other valves, a minimum port area shall be 80 percent when measured by the percent cross-sectional area of equivalent size (nominal same diameter) pipe.
3. All plug valves for what ever service, shall be capable of passing "pigging" cleaning equipment (using a Girard or similar cleaning pig of full nominal pipeline diameter) in either direction and Manufacturer shall so certify that this may be done without the use of special equipment.

B. Valves shall be rated at minimum 175 psi W.O.G. (Water, Oil, and Gas) working pressure for sizes 4-in to 12-in inclusive and at minimum 150 psi W.O.G. working pressure for sizes 14-in and larger.

1. All plug valves under this paragraph shall be performance, leakage and hydrostatically tested in accordance with AWW A C504, except as herein modified. '
2. At the above rated minimum working pressures, the valves shall be certified by the Manufacturer as permitting zero leakage for a period of at least one-half hour with pressure applied to the seating face.

3. At the request of the ENGINEER, the valve Manufacturer may have to perform a valve seat leakage test, witnessed by the ENGINEER to prove compliance with these Specifications.
- C. Valve bodies shall be of cast iron, 30,000 psi tensile strength, ASTM A 126, Grade B, or of ductile iron, ASTM A536 and of the top entry, bolted bonnet design, cast with integral flanges conforming to the connecting piping. All exposed bolts, nuts and washers shall be zinc or cadmium-plated, except for buried or submerged valves, which shall have Type 316 stainless steel hardware.
- The valve disc shall:
1. Be cast iron ASTM A 126, Grade B, or ductile iron, ASTM A536, Grade 65-45-12.
 2. Be removable without removing the valve from the line.
 3. Have an integral upper and lower shaft which shall have seals on the upper and lower journals to prevent entrance of solids into the journals.
 4. Be one piece for valves up to 14-in and maximum two piece for larger valves.
- D. Shaft bearings shall be permanently lubricated, rigidly backed TFE, stainless steel or bronze at both upper and lower stem journals. The operator shaft shall have easily replaceable seals, which shall be externally adjustable and repackable without removing the bonnet from the valve, or shall have self adjusting packing.
- E. The valve seating surface shall provide full 360 degree seating by contact of a resilient seating material on the disc mating with welded-in high nickel content overlay seating surface in the body.
1. The seating design shall be resilient and of the continuous interface type having consistent opening and closing torques and shall be non-jamming in the closed position. Screw-in seats shall not be acceptable.
 2. Discs shall have a full resilient facing of neoprene or Buna-N.
- F. The methods of mounting the actuator to the valve shall provide an air gap between the two. Actuator shall clearly indicate valve position and an adjustable stop shall be provided. Construction of actuator housing shall be semi-steel. Hardware on actuators shall be of the same materials as the valves.

- G. Unless otherwise required, due to location or operation, each valve 6-in and smaller shall be provided with its own securely attached lever. Provide adjustable limit stops for both opening and closing and a clearly marked position indicator.
- H. Plug valves shall be installed so that the direction of flow through the valve and the shaft orientation is in accordance with the Manufacturer's recommendations. Unless otherwise noted, shaft shall be horizontal, with plug opening up.

2.07 BALL VALVES

A. Ferrous Ball Valves:

1. Ball valves for mainline or water service shall be either ductile iron or carbon steel body, full bore, fire-safe, rated for a line pressure of 150 psig. Except as noted, ball valves shall comply with AWWA C507.
2. The design of the valve shall be such that it shall provide suitable seating in both directions. In order to determine the position of the ball within the valve (open or closed), there shall be an easily visible, permanent, indicator located conspicuously on the valve. Ball valves shall have Type 316 stainless steel seating surfaces. Seats shall be Type 304 stainless steel. The fully open port area shall be approximately 100 percent of the nominal pipe area.
3. Valve shafts shall be ground and polished and shall be Type 304 stainless steel. Teflon-lined bearings shall be supplied in both trunnions of the valve body.
4. The valves shall be constructed so that the seals, seats and balls are accessible for replacement without dismantling the piping. The valves shall not require lubrication but shall have stuffing boxes which can be packed with the valve in service without undue leakage. Ball valves shall be as manufactured by Henry Pratt Co., Aurora, IL; Williamette, Portland, or equal.
5. Valve actuators shall conform to AWWA C507 and as specified herein.

- B. Ball valves for water piping shall be manual or electric actuated (as shown on the Drawings), bronze, resilient seated, regular port, threaded two piece bolted body type valves. The body and cap shall be of brass, ASTM B30, the ball and stem of Type 316 stainless steel and the seats and seals of TFE. The valves shall have full floating ball and shall be non lubricated. Valve seats shall be easily accessible and replaceable. Valves shall be

rated to 250 psi and shall be as manufactured by Neles-Jamesbury; WKM or equal.

2.08 CHECK VALVES

- A. Swing check valves, sizes 2-1/2 inches through 12 inches shall be spring and lever operated with bronze disc facing and flanged ends with a maximum working pressure of 175 psig and test pressure of 350 psig.
- B. Swing check valves, sizes 14 inches through 24 inches shall be spring and lever operated with bronze disc facing and flanged ends with a maximum working pressure of 150 psig and test pressure of 300 psig.
- C. Swing check valves, sizes 4 inches and smaller shall use bronze disc ASTM B584.
- D. Valves shall meet all applicable parts of ANSI/AWWA C508 Standard.
- E. Valves for above grade shall be flanged end. Flanged end dimensions and drilling shall comply with ANSI B16.1, Class 125. Swing check valves for buried service shall be mechanical joint ends.
- F. The valve body shall be constructed of ductile or cast iron per ASTM A126, Class B, or ASTM A536, bronze mounted (IBBM).
- G. Valves shall be located above grade unless otherwise noted in the Drawings and Specifications.
- H. Valves shall have an O-ring sealed stuffing box.
- I. Valves shall have adjustable spring tension to control opening and closing of the clapper.
- J. Valves shall be installed so that the direction of flow through the valve and the shaft orientation is in accordance with the Manufacturer's recommendations.
- K. Swing check valves specified herein shall be by Mueller Company, Model No. 2600 for above grade installations, or ENGINEER approved equal. All Manufacturers, named or otherwise, must comply completely with the specification.

2.09 AIR RELEASE VALVES

- A. Air release valve assembly shall be furnished and installed on the reuse water transmission main as shown on the drawings.
- B. Air release or valve assembly shall consist of a combination short body, air

release-vacuum breaker valves, installed in a manhole with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the main.

- C. Air release valves shall be installed to release any small accumulations of air, which may collect while pipe is in operation and under pressure.
- D. Air release valves on a HDPE pipe shall utilize an electrofusion corp saddle with stainless steel outlet as manufactured by Central Plastics or equal.
- E. The air release valves shall be Val-Matic Model 42 or engineer approved equal.
- F. The small orifice assembly air release valve shall automatically release air accumulations from the pipe while under positive pressure.
- G. When the valve body fills with air, the float ball shall fall to open the small orifice and exhaust the air to atmosphere.
- H. When the air has been exhausted, the float ball shall be buoyed up and tightly close the small orifice.
- I. The small orifice assembly shall be furnished with cast iron body and cover (ASTM A126-B).
- J. The float ball shall be constructed of stainless steel and attached to a stainless steel lever mechanism.
- K. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure.
- L. Valves shall be corrosion resistant, suitable for reuse water transmission main application, and shall automatically function to release to the atmosphere both large and small amounts of air that accumulate in the pipeline.
- M. Once the air has been exhausted, both valves shall seal tightly to prevent liquid leakage.
- N. The valve shall also function to admit air into a line, tank, or chamber under emergency conditions or when it is being drained.
- O. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover.
- P. The Orifice Size shall be 5/32-inch. A large inlet connection is required for proper air and water exchange.

- Q. The reuse water air release valves inlet size shall be 2-inch NPT for reuse water mains.
- R. The reuse water air release valves outlet size shall be 1/2-inch NPT for reuse water mains.
- S. The Air Release Valves shall be automatic float operated valves designed to release accumulated air from a piping system while the system is in operation and under pressure and installed in a concrete box as shown on the drawings.
- T. Box and like shall be of the necessary size to the valve.
- U. To connect the air valve, a corporation stop shall be tapped into the main using the procedures as recommended by the ductile iron pipe manufacturer.
- V. The corporation stop shall be Mueller H-10045 or approved equal.
- W. The valve body shall be threaded with NPT inlets and outlets.
- X. The body inlet connection shall be hexagonal for a wrench connection.
- Y. The valve shall have two additional NPT connections for the addition of gauges, testing and draining.
- Z. The valve body and cover shall be constructed of ASTM A126 Class B cast iron working pressures of 300 psig, with resilient seats, rubber covered floats and no levers.
- AA. The cover shall be bolted to the valve body and sealed with a flat gasket.
- BB. Resilient seats shall be replaceable and provide drop tight shut off to the full valve pressure rating.
- CC. Floats shall be unconditionally guaranteed against failure including pressure surges.
- DD. Mechanical linkage shall provide sufficient mechanical advantage so that the valve will open under full operating pressure.
- EE. The orifice, float and linkage mechanisms shall be constructed of Type 304 stainless steel.
- FF. Non-metallic floats or linkage mechanisms are not acceptable.
- GG. The manufacturer shall demonstrate a minimum of five (5) years experience in the manufacture of air valves.

- HH. The valves shall be manufactured and tested in accordance with American Water Works Association Standard (AWWA) C512.
- II. The manufacturer shall provide test certificates, dimensional drawings; parts list drawings, and operation and maintenance manuals.
- JJ. The exterior of the valve shall be coated with a universal alkyd primer.
- KK. Air Release Valves shall be as manufactured by Val-Matic Valve & Mfg. Corporation Model No. 38.6, Elmhurst, IL. USA or approved equal.

2.10 AIR/VACUUM VALVES (NORMAL OPERATION)

- A. The large orifice assembly air and vacuum valve shall automatically exhaust air from a pipeline during the initial filling of the pipeline.
- B. The large orifice assembly shall not blow shut while exhausting air, even while venting air at sonic velocity.
- C. When all air has been exhausted from the pipeline, the large orifice float ball shall be buoyed up to seat tightly against a resilient seat ring.
- D. The large orifice float ball shall remain tightly closed while the pipeline is under positive pressure.
- E. Should the pipeline pressure fall below atmospheric pressure (such as during draining or a line break), the large orifice float ball shall automatically fall away from the seat ring and permit air to enter the pipeline.
- F. The large orifice assembly shall be furnished with cast iron body and cover (ASTM A126-B).
- G. A resilient, Buna-N seat ring shall be affixed to the valve cover.
- H. The float ball shall be constructed of stainless steel with a minimum pressure rating of 1,000 psi. [The float ball shall be free floating within the valve body; guide stems, linkages or levers attached to the float are not acceptable.]
- I. Unit shall be manufactured by GA; APCO; Val-Matic or equal. Special type for use with non-clean fluids shall be provided.

2.11 COMBINATION AIR AND AIR/VACUUM OR VACUUM RELIEF VALVES

- A. Valves shall be corrosion resistant, suitable for reuse water application. Combination air valve assembly shall be furnished and installed on the reuse water transmission main as shown on the drawings.

- B. Combination air valve assembly shall consist of a single body, combination air release and air/vacuum valves, installed in a manhole with vented manhole cover, gate valve, fittings, tapping saddle and connecting piping to the reuse water main. Manhole and like shall be of the necessary size to the valve.
- C. Combination air valves shall be automatic float operated valves and installed to release large accumulations of air during the filling of the piping system and close upon liquid entry.
- D. The valve shall open during draining or if a negative pressure occurs.
- E. The valve shall also release accumulated from a piping system while the system is in operation and under pressure.
- F. The capacity and pressure rating of the valve is dependent on the diameter of the precision orifice in the cover.
- G. The large orifice diameter shall be 2-inch and the air release orifice shall be 3/32.”
- H. A large inlet connection is required for proper air and water exchange.
- I. The reuse water combination air valves inlet and outlet size shall be 2-inch NPT.
- J. To connect the air valve, a corporation stop shall be tapped into the main using the procedures as recommended by the ductile iron pipe manufacturer.
- K. The corporation stop shall be Mueller H-10045 or approved equal.
- L. The single body valve shall be threaded with NPT inlets and outlets. The NPT inlets and outlets shall be equal to the nominal valve size.
- M. The body inlet connection shall be hexagonal for a wrench connection.
- N. The valve shall have two additional NPT connections for the addition of gauges, testing and draining.
- O. The combination air valve shall be furnished with cast iron body and cover (ASTM A126-B).
- P. The float ball, guide shafts, and bushings shall be constructed of type 304 stainless steel and attached to a stainless steel lever mechanism.
- Q. A resilient, Buna-N seat shall be attached to the lever mechanism for drop-tight closure. Non-metallic floats or linkage mechanisms are not

acceptable.

- R. Single body combination valves shall have an expanded outlet to provide full are around the guide mechanism.
- S. The valve shall have a double guided plug and an adjustable threaded orifice.
- T. The plug shall be protected against direct water impact by an internal baffle.
- U. The plug shall have a precision orifice drilled through the center stem.
- V. The cover shall be bolted to the valve body and sealed with a flat gasket.
- W. Resilient seats shall be replaceable and provide drop tight shut off to the full valve pressure rating.
- X. Floats shall be unconditionally guaranteed against failure including pressure surges.
- Y. Mechanical linkage shall provide sufficient mechanical advantage so that the valve will open under full operating pressure.
- Z. The exterior of the valve shall be coated with a universal alkyd primer.
- AA. The manufacturer shall demonstrate a minimum of five- (5) years experience in the manufacture of air valves.
- BB. The valves shall be manufactured and tested in accordance with American Water Works Association Standard (AWWA) C512.
- CC. The manufacturer shall provide test certificates, dimensional drawings; parts list drawings, and operation and maintenance manuals.
- DD. Air Valves shall be as manufactured by Val-Matic Valve & Mfg. Corporation engineer approved equal.

2.12 PRESSURE RELIEF VALVES FOR AIR

- A. Pressure relief valves shall be designed for air and built to ASME standards and shall be National Board Certified.
- B. The Valve shall have a one-piece brass body, chrome steel ball on brass seat, silicone rubber seal, and stainless steel spring.
- C. The Preset pressure limit of 100 psi shall be tested and sealed by the manufacturer.

- D. The pressure relief valve shall have a bubble tight seal within 10% of set pressure.
- E. The pressure relief valve shall be manufactured by Control Devices, Inc. or ENGINEER-approved equal.

2.13 INSULATING FITTINGS

Fittings shall be of type to provide control of electrolysis and equal to "Dielectric" as manufactured by Watts Regulator Co., or equal.

2.14 SURFACE PREPARATION AND SHOP COATINGS

- A. Notwithstanding any of these Specifications, all coatings and lubricants in contact with non-potable water shall be certified as acceptable for use with that fluid.
- B. In case of a conflict, the requirements of this Section govern.
- C. If the Manufacturer's requirement is not to require finished coating on any interior surfaces, then Manufacturer shall so state and no interior finish coating will be required, if acceptable to the ENGINEER.
- D. The exterior surface of various parts of valves, operators, floor-stands and miscellaneous piping shall be thoroughly cleaned of all scale, dirt, grease or other foreign matter and thereafter one shop coat of an approved rust-inhibitive primer such as Inertol Primer No. 621 shall be applied in accordance with the instructions of the paint Manufacturer or other primer compatible with the finish coat provided.
- E. Unless otherwise noted, interior ferrous surfaces of all valves shall be given a shop finish of an asphalt varnish conforming to AWWA C509, (except mounting faces/surfaces) or epoxy AWWA C550 with a minimum thickness of 4 mil.
- F. Ferrous surfaces obviously not to be painted shall be given a shop coat of grease or other suitable rust-resistant coating.
- G. Mounting surfaces shall be especially coated with a rust preventative.
- H. Special care shall be taken to protect uncoated items and plastic items, especially from environmental damage.

2.15 FACTORY INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. Factory inspection, testing and correction of deficiencies shall be done in accordance with the referenced Standards and as noted herein.

- B. See Division 1 for additional requirements. Also refer to Part 1 of this Section, especially for required submission of test data to the ENGINEER.
- C. In addition to all tests required by the referenced Standards, the following shall also be factory tested:
 - 1. Pressure regulating valves shall be factory tested at the specified pressures and flows.
 - 2. The non-cavitating butterfly valves, to demonstrate its non-cavitating capabilities.
 - 3. All types of air and vacuum valves.

2.16 VALVE BOXES

- A. Valve boxes shall be provided for all buried valves.
- B. Valve boxes shall consist of cast iron base and adjustable top section with cover, which shall be marked "Water, Sewer, or Reuse."
- C. Cast iron extensions shall be provided as required to meet grade.

PART 3 - EXECUTION

3.01 INSTALLATION - GENERAL

- A. All valves and appurtenances shall be installed per the Manufacturer's instructions in the locations shown, true to alignment and rigidly supported.
- B. Any damage to the above items shall be repaired to the satisfaction of the ENGINEER before they are installed.
- C. Install all brackets, extension rods, guides, the various types of operators and appurtenances as shown on the Drawings, or otherwise required.
- D. Before setting these items, the CONTRACTOR shall check all Drawings and figures which have a direct bearing on their location.
- E. The CONTRACTOR shall be responsible for the proper location of valves and appurtenances during the construction of the Work.
- F. All materials shall be carefully inspected for defects in construction and materials. All debris and foreign material shall be cleaned out of openings, etc.
- G. All valve flange covers shall remain in place until connected piping is in

place.

- H. All operating mechanisms shall be operated to check their proper functioning and all nuts and bolts checked for tightness.
- I. Valves and other equipment which do not operate easily, or are otherwise defective, shall be repaired or replaced at no additional cost to the OWNER.
- J. Where installation is covered by a Referenced Standard, installation shall be in accordance with that Standard, except as herein modified, and the CONTRACTOR shall certify such. Also note additional requirements in other parts of this Specification.
- K. Unless otherwise noted, joints for valves and appurtenances shall be made up utilizing the same procedures as specified under the applicable type connecting pipe joint and all valves and other items shall be installed in the proper position as recommended by the Manufacturer.
- L. CONTRACTOR shall be responsible for verifying Manufacturer's torquing requirements for all valves.

3.02 INSTALLATION OF MANUAL OPERATIONAL DEVICES

- A. Unless otherwise noted, all operational devices shall be installed with the units of the factory, as shown on the Drawings or as acceptable to the ENGINEER to allow accessibility to operate and maintain the item and to prevent interference with other piping, valves and appurtenances.
- B. For manually operated valves 3-inch in diameter and smaller, valve operators and indicators shall be rotated to display toward normal operation locations.
- C. Floor boxes, valve boxes, extension stems and low floor stands shall be installed vertically centered over the operating nut, with couplings as required and the elevation of the box top shall be adjusted to conform with the elevation of the finished floor surface or grade at the completion of the Contract.
- D. Boxes and stem guides shall be adequately supported during concrete pouring to maintain vertical alignment.

3.03 INSPECTION, TESTING AND CORRECTION OF DEFICIENCIES

- A. See also Division 1. Take care not to over pressure valves or appurtenances during pipe testing.

- B. If any unit proves to be defective, it shall be replaced or repaired to the satisfaction of the ENGINEER.
- C. Functional Test:
 - 1. Prior to plant start-up, all items shall be inspected for proper alignment, quiet operation, proper connection and satisfactory performance.
 - 2. All units shall be operated continuously while connected to the attached piping for at least 8 hours, without vibration, jamming, leakage, or overheating and perform the specified function.
- D. The various pipe lines in which the valves and appurtenances are to be installed are specified to be field tested.
- E. During these tests any defective valve or appurtenance shall be adjusted, removed and replaced, or otherwise made acceptable to the ENGINEER.
- F. Various regulating valves, strainers, or other appurtenances shall be tested to demonstrate their conformance with the specified operational capabilities and any deficiencies shall be corrected or the device replaced or otherwise made acceptable to the ENGINEER.

3.04 IDENTIFICATION OF VALVES

- A. All valves shall be designated by distinguishing numbers and/or letters on required chart(s) and/or diagram(s).
- B. The CONTRACTOR shall install approved brass tags for all designated items with numbers and/or letters on the tags corresponding to those on the chart(s) and/or diagram(s).
- C. Each valve identification tag to be minimum 19 gauge polished brass: 2-inch diameter.
- D. Each tag to designate appropriate service (1/4 inch stamped black-filled letters) and appropriate valve number (1/2 inch stamped black-filled number).
- E. Tags shall be securely fastened to valves with approved stainless steel screws or rivets, or brass jack chain, in a manner to permit easy reading.
- F. CONTRACTOR shall prepare piping flow diagrams (or re-use those on the contract plans) indicating valve numbers, service, normal position, etc., of each valve.
- G. Diagrams shall be mounted on an ornamental iron frame with hinged

plexiglass face for wall mounting. Four (4) frames with plexiglass are required.

- H. The requirements for valve identification specified above applies equally to all valves installed under this and under other sections of these specifications.

3.05 CLEANING

All items (including valve interiors) shall be cleaned prior to installation, testing, disinfection and final acceptance.

3.06 DISINFECTION

Disinfection of valves and appurtenances shall be in accordance with AWWA Requirements.

3.07 SETTING VALVES AND BOXES

- A. Valves and valve boxes as specified in the preceding paragraphs shall be installed where shown on the drawings unless otherwise directed.
- B. Valves shall be set plumb with the base of the valve box centered over the valve and resting on compacted backfill.
- C. The top section of the box shall be set to allow equal movement above and below finished grade.
- D. After being correctly positioned, fill shall be carefully tamped around the valve box for a distance of 4-feet on all sides of the box.
- E. In paved areas, top of the cover shall be flush with the finished paving.
- F. In off-street areas, the cover shall be set 1-inch above existing grade unless otherwise directed by the ENGINEER and a concrete pad shall be poured around the top of the box as shown in the standard details.

END OF SECTION 15101

**SECTION 15120
PIPING SPECIALTIES**

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

Drawings and general provisions of Contract, including General and Special Conditions, apply to work of this section.

1.02 QUALITY ASSURANCE

Manufacturer's Qualifications: Firms regularly engaged in manufacture of piping specialties, of types and sizes required, whose products have been in satisfactory use in similar service for not less than 3 years.

PART 2 - PRODUCTS

2.01 FIRE HYDRANTS

- A. All fire hydrants shall be 5-1/4 inch hydrants with two 2-1/2 inch connection and one pumper connection designed for 150 psi working pressure, and shall conform to the requirements of AWWA C-502-73 (Latest Revision).
- B. Hydrants shall have mechanical joint inlets, shall be for a 3-foot bury, and shall have a compression type main valve which opens against pressures.
- C. The hydrant main valve operating parts, including valve seal, valve seal insert, cross arm, and upper valve washer shall be all bronze, meeting either of the following ASTM B-61, or B-150 per C-502.
- D. The inside of hydrants shall be coated in accordance with AWWA standards except for bronze and threaded machine parts.
- E. Hydrant upper barrel shall be provided with an e-coat primer and top coated with a Hydrant Red 2-component polyurethane finish or fusion bonded epoxy coated and Fire Hydrant Red in color.
- F. The barrel section of the hydrant shall be made in two or more sections, with a flange located at least two inches above the finished grade line, and provided with a break flange, flange clips or lugs at ground line.
- G. Undercut bolts for the break connection are not acceptable.
- H. The hydrants shall open left (counterclockwise).
- I. The hydrants shall have pentagon shaped operating nuts and cap nuts measuring 1-1/2 inch from point to flat.

- J. The bonnet shall be of dry type top design, shall be weather proof and utilize a cast or ductile iron weather shield integral with the external wrench operating nut.
- K. The weather shield nut shall be pentagon in shape.
- L. The hydrants stem shall have "O" ring seals, and stem threads and bearing shall be protected with automatic self-oiling or grease case lubricant systems.
- M. The nozzle threads shall be coated with anti-seize compound to facilitate removal of caps.
- N. Hydrants having stem thread (upper or lower) that are constantly exposed or immersed in water are not acceptable.
- O. All exposed or external nuts and bolts (bonnet, break flange, and shoe bolts and nuts) shall be stainless steel, no exceptions.
- P. All fire hydrants shall be American Darling, B-84-B, Clow Medallion, US fire hydrant Model Sentinel 250, AVK Model 2780 nostalgic or approved equal, or approved equal.
- Q. The external color shall be red and the primer color shall not be yellow.
- R. After installation the fire hydrants shall be free of scratches and paint chipping.
- S. All fire hydrants shall be painted after installation if in the opinion of the ENGINEER the coating is not satisfactory.
- T. Two fire hydrant wrench shall be supplied for this project.
- U. All fire hydrants shall be covered with plastic when installed and removed when the line is placed into service.

2.02 CORPORATION STOPS

- A. Corporation stops 1 inch and smaller shall be Ford Model No. F-1000-4 or approved equal.
- B. Inlets shall have iron pipe threads and outlets shall have compression connections.

2.03 CURB STOPS

- A. Curb stops/meter coupling shall be Ford Model B43-342W-G, B43-444W-G, or approved equal.
- B. Inlets shall have compression connection and outlets shall have iron pipe threads.

2.04 SERVICE SADDLES

All service saddles shall be **Ford FC202** double strap saddle or approved equal.

2.05 HOSE BIBBS AND SAMPLE TAPS

Hose bibbs and sample taps shall be Crane No. 58 or approved equal.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 15120

CHANGE ORDER

No. _____

| | |
|---------------------|--|
| PROJECT | SR 30A (U.S. 98) UTILITY RELOCATION |
| DATE OF ISSUANCE | EFFECTIVE DATE |
| OWNER | City of Panama City Beach, Florida |
| OWNER's Contract No | |
| CONTRACTOR | ENGINEER |

You are directed to make the following changes in the Contract Documents

Description:

Reason for Change Order:

Attachments:

| | |
|--|--|
| Original Contract Price | CHANGE IN CONTRACT TIMES: Original Contract Times: Substantial Completion: _____ Final Completion _____ days or dates |
| Net changes from previous Change Orders | Net changes from previous Change Orders 0 days |
| Contract Price prior to this Change Order \$0.00 | Contract Time prior to this Change Order Substantial Completion: _____ Final Completion _____ days or dates |
| Net <u>Decrease</u> of this Change Order | Net <u>Increase</u> of this Change Order days |
| Contract Price with all approved Change Orders \$0.00 | Contract Times with all approved Change Orders Substantial Completion: _____ Final Completion _____ days or dates |

RECOMMENDED:
 By: _____
 Engineer (Authorized Signature)
 Date: _____

APPROVED
 By: _____
 (Authorized Signature)
 Date: _____

ACCEPTED
 By: _____
 Contractor (Authorized Signature)
 Date: _____

**CONSTRUCTION CHANGE DIRECTIVE
NO. _____**

PROJECT &

SR 30A (U.S. 98) UTILITY RELOCATION

DATE OF ISSUANCE _____ EFFECTIVE DATE _____
OWNER _____
OWNER'S Contract No. _____
CONTRACTOR _____

You are directed to make the following changes in the Contract Documents

Description: _____
Reason for Construction
Change Directive: _____
Attachments: _____

Proposed Adjustments

1. The proposed basis of adjustment to the Contract Price Is;

- Lump Sum increase/decrease of \$ _____
- Unit Price of \$ _____ per _____
- Other _____

2. The Contract Time is proposed to (be adjusted). The proposed adjustment, if any, is _____ days.

When signed by the Owner and Owner's
with the
Representative and received by the Contractor,
Price and
this document becomes effective IMMEDIATELY
as a Construction Change Directive (CCD), and
the Contractor shall proceed with the change(s)
described above.

Contractor signature indicates agreement
proposed adjustments in Contract
Contract Time set forth in this CCD.

OWNER'S REPRESENTATIVE

By: _____

Date: _____

CONTRACTOR

By: _____

Date: _____

OWNER

By: _____

Date: _____

APPLICATION AND CERTIFICATE FOR PAYMENT

Date: _____

TO (OWNER):
CITY OF PANAMA CITY BEACH

PROJECT: SR 30A (U.S. 98) UTILITY RELOCATION

APPLICATION NO: _____

DISTRIBUTION TO:

| | |
|-------------------------------------|------------|
| <input checked="" type="checkbox"/> | OWNER |
| <input checked="" type="checkbox"/> | ENGINEER |
| <input checked="" type="checkbox"/> | CONTRACTOR |
| <input type="checkbox"/> | PCS-FO |
| <input type="checkbox"/> | PCS-AP |

PERIOD FROM/TO: _____

FROM (CONTRACTOR): _____

VIA (ENGINEER): _____

APPLICATION DATE: _____

CONTRACT DATE: _____

CONTRACTOR'S APPLICATION FOR PAYMENT

| CHANGE ORDER SUMMARY | | ADDITIONS | DEDUCTIONS |
|---------------------------|--|-----------|------------|
| Change Orders approved in | | | |
| | | | |
| previous months by Owner | | | |
| TOTAL | | | |
| TOTALS | | \$0.00 | \$0.00 |

| | | | |
|----|---|-------|--------|
| 1 | ORIGINAL CONTRACT SUM | _____ | |
| 2 | NET CHANGE BY CHANGE ORDERS | _____ | |
| 3 | CONTRACT SUM TO DATE (line 1 + line 2) | _____ | \$0.00 |
| 4 | TAX SAVINGS AGREEMENT | | |
| | a. Total Purchase Orders Issued by Owner (To Date) | _____ | |
| | b. Anticipated Tax Savings on Owner Issued PO's | _____ | |
| | c. Total Tax Savings Agreement Deduction (4a and 4b) | | \$0.00 |
| 5 | CONTRACT VALUE LESS TAX SAVINGS AGREEMENT (line 3 - line 4c) | _____ | \$0.00 |
| 6 | CONTRACTOR EARNED TO DATE (based on Line 5) | _____ | \$0.00 |
| | (value of work completed excludes county purchased materials) | | |
| 7 | RETAINAGE: (10% of line 5) | | \$0.00 |
| 8 | TOTAL EARNED LESS RETAINAGE (line 6 less line 7) | | \$0.00 |
| 9 | LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 8 from prior Certificate) | | |
| 10 | CURRENT PAYMENT DUE | | \$0.00 |
| 11 | BALANCE TO FINISH INCLUDING RETAINAGE (line 5 - line 9 - line 10) | | \$0.00 |

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information, and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that the current payment shown herein is now due.

CONTRACTOR

By: _____ Date: _____
type name here

State of: Florida County of: _____
Subscribed and sworn to before me this _____ day of _____
Notary Public: _____

ENGINEER'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising the above application, the Engineer certifies to the Owner that to the best of the Engineer's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

ENGINEER: _____
AMOUNT CERTIFIED \$ _____
(Attach explanation if amount certified differs from the amount applied for.)

By: _____ Date: _____

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein.
Issuance, payment, and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

NOTICE OF SUBSTANTIAL COMPLETION

TO: _____

DATE:

PROJECT: **SR 30A (U.S. 98) UTILITY RELOCATION**

The work performed under this Contract has been reviewed and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby established as _____, which is also the date of commencement of applicable warranties required by contract documents, except as stated below.

DEFINITION OF DATE OF SUBSTANTIAL COMPLETION

The Date of Substantial Completion of the Work or designated portion thereof is the Date certified by the Consultant when construction is sufficiently complete, in accordance with the contract Documents, so the Owner can occupy or utilize the Work or designated portion thereof for the use for which it is intended, as expressed in the contract document.

A list of items to be completed or corrected is attached hereto. The failure to include any items on such list does not alter the responsibility of the CONTRACTOR to complete all Work in accordance with the contract documents. The date of commencement of warranties for items on the attached list will be the date of final payment unless otherwise agreed to in writing.

DEWBERRY

CITY OF PANAMA CITY BEACH

BY: _____

BY:

TITLE: _____

TITLE:

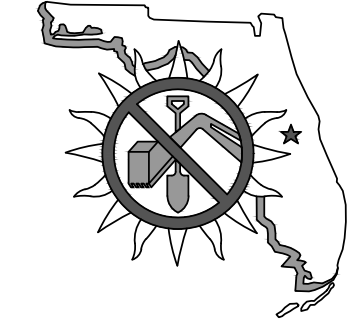
CONTRACTOR

BY: _____

TITLE: _____

CIVIL CONSTRUCTION PLANS FOR:

SR 30A (U.S. 98) UTILITY RELOCATION



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PREPARED FOR:

CITY OF PANAMA CITY BEACH BAY COUNTY FLORIDA



CITY OF PANAMA CITY BEACH

| | |
|-----------------|--------------|
| Mark Sheldon | Mayor |
| Paul Casto | Ward I |
| Phil Chester | Ward II |
| Geoff McConnell | Ward III |
| Michael Jarman | Ward IV |
| Drew R. Whitman | City Manager |

PREPARED BY:



Dewberry Engineering Inc.
203 Aberdeen Pkwy, Panama City, FL 32405
(850) 522-0644

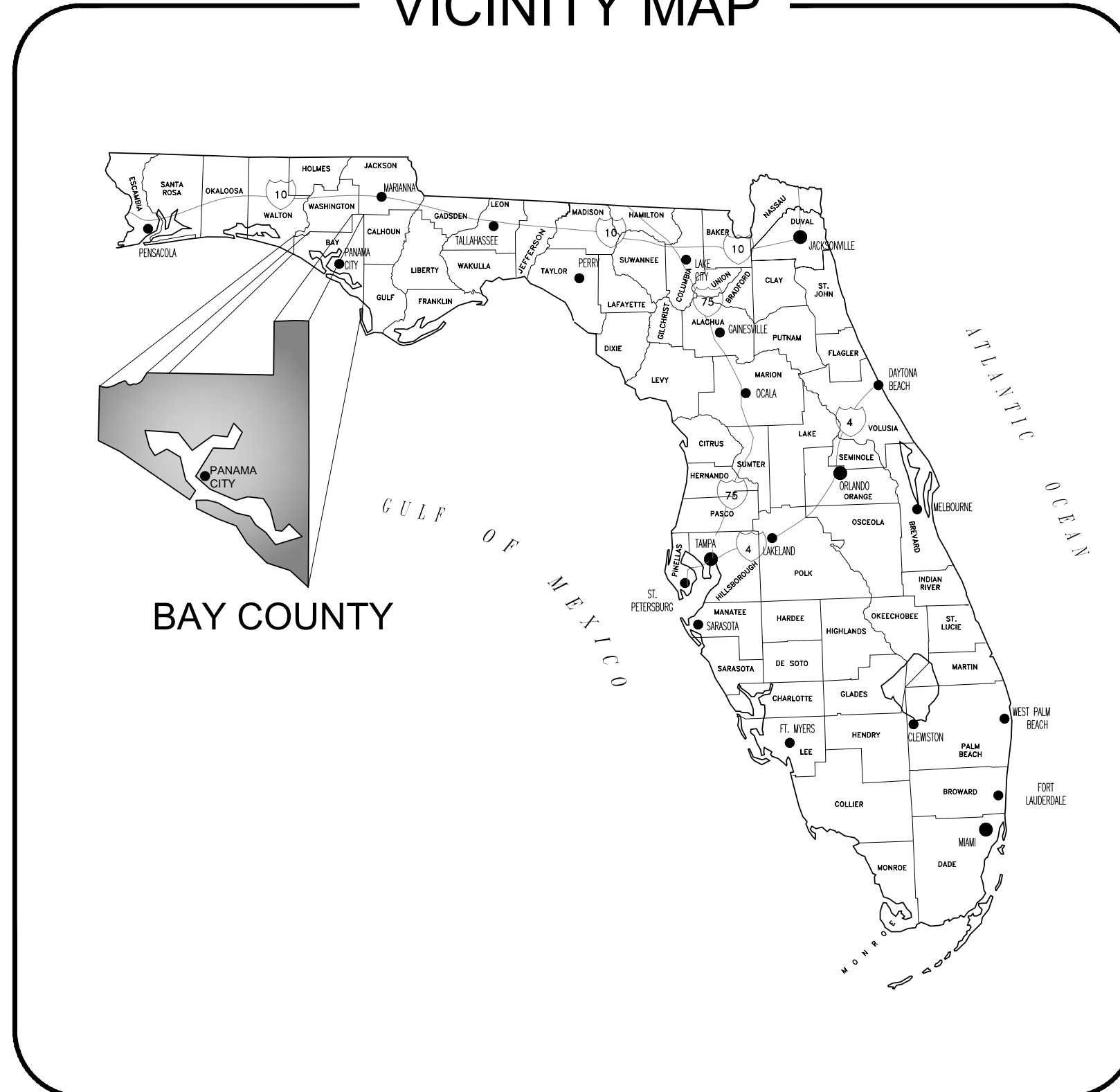
PROJECT NUMBER - 50134682

JULY 26, 2021

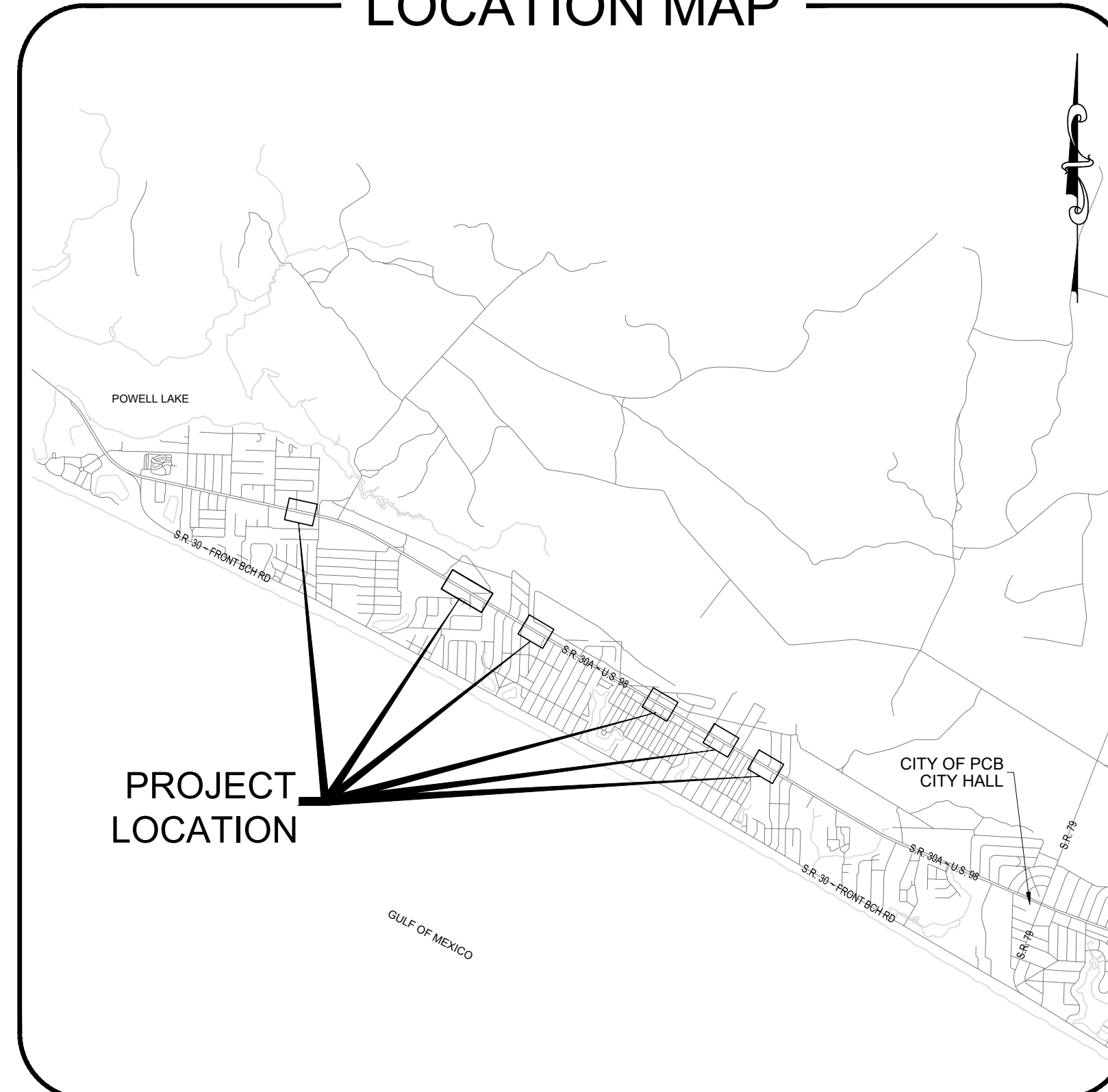
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VICINITY MAP



LOCATION MAP



DRAWING INDEX

| TITLE | NO. |
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MAINTENANCE OF TRAFFIC AND ROADWAY RELATED ITEMS:

- IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO MAINTAIN ADEQUATE TRAFFIC CONTROL AND TO PROVIDE DETOURS AROUND CONSTRUCTION ACTIVITIES. ONLY ONE LANE MAY BE CLOSED DURING DAYLIGHT WORK HOURS. NO STREET SHALL REMAIN CLOSED TO TRAFFIC OVERNIGHT. IN ADDITION, THE CONTRACTOR SHALL COOPERATE WITH LOCAL RESIDENTS IN GAINING ACCESS TO THEIR HOMES AND BUSINESSES DURING WORKING HOURS AND SHALL ASSIST AT ALL TIMES WHEN VEHICLES EXPERIENCE TROUBLE DUE TO CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL INSTALL ALL TRAFFIC CONTROL DEVICES REQUIRED FOR THE PROJECT IN ACCORDANCE WITH THE LATEST EDITION OF THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL.
- ALL DRIVEWAYS SHALL BE COMPACTED AND MAINTAINED DURING CONSTRUCTION TO ALLOW ACCESS TO FACILITIES AT ALL TIMES. ALL TEMPORARY STABILIZATION SHALL BE SMOOTH AND LEVEL.

DENSITY TESTING SCHEDULE:

| ITEM | DENSITY REQUIREMENT | DENSITY TEST FREQUENCY |
|---|---|--|
| UTILITY TRENCH FILL & BACKFILL | 95% MAXIMUM DENSITY (15% PASSING NO. 200) \geq 15% MODIFIED DENSITY | PER SOIL TYPE ONE PER 500 LF HORIZONTAL OR ONE PER 750 SY WITH A MINIMUM OF 3 TESTS, ALTERNATING LIFTS (12") ONE PER SOIL TYPE |
| FILL & BACKFILL UNDER ROADWAYS AND STRUCTURES | 98% MAXIMUM DENSITY (15% PASSING NO. 200) \geq 15% MODIFIED DENSITY | PER SOIL TYPE ONE PER 200 LF HORIZONTAL OR ONE PER 750 SY WITH A MINIMUM OF 3 TESTS (PER SECTION OF WORK), ALTERNATING LIFTS (12") ONE PER SOIL TYPE |
| SUBGRADE UNDER ROADWAYS AND STRUCTURES | 98% OF MAXIMUM DENSITY, MODIFIED PROCTOR | ONE PER SITE OR AT MATERIAL CHANGES PER SOIL TYPE ONE PER 200 LF HORIZONTAL OR ONE PER 750 SY WITH A MINIMUM OF 3 TESTS (PER SECTION OF WORK) |
| LIMEROCK BASE UNDER ROADWAYS AND STRUCTURES | 98% OF MAXIMUM DENSITY, MODIFIED PROCTOR | ONE PER SITE OR AT MATERIAL CHANGES ONE PER 200 LF HORIZONTAL OR ONE PER 1200 SY WITH A MINIMUM OF 3 TESTS (PER SECTION OF WORK) |
| ASPHALT | 98% LAB DENSITY | ONE PER DAY FOR GRADATION, ONE PER 500 LF HORIZONTAL OR ONE PER 750 SY WITH A MINIMUM OF 3 TEST |

CONCRETE TESTING SCHEDULE:

| ITEM | 28 DAY COMPRESSIVE STRENGTH REQUIREMENT | TEST FREQUENCY |
|----------|---|--|
| CONCRETE | 3,000 PSI | ONE SET OF 3 CYLINDERS PER 50 CY PER DAY |

TESTING NOTES AND SCHEDULE:

- COPIES OF TEST REPORTS FOR ASPHALT, SUBGRADE, FILL, AND BACKFILL UNDER ROADWAYS AND STRUCTURES, AND UTILITY TRENCHES SHALL BE PROVIDED DIRECTLY TO THE ENGINEER FOR APPROVAL. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE TESTING AND INSURE THAT ALL APPLICABLE TESTS HAVE BEEN PERFORMED. FAILURE TO OBTAIN TEST RESULTS AT ANY POINT OF CONSTRUCTION WILL REQUIRE THE REMOVAL OF THE IMPROVEMENT AND REPLACEMENT BY THE CONTRACTOR. IT SHOULD BE NOTED THAT THE ENGINEER WILL REQUIRE COMPACTION TESTING IN ACCORDANCE WITH THE TESTING SCHEDULE FOR UTILITY TRENCH FILL AND BACKFILL.
- TESTING REQUIREMENTS SHALL BE IN ACCORDANCE WITH THE TESTING SCHEDULE CONTAINED WITHIN THESE PLANS. SELECTION AND CONTRACTING WITH THE TESTING FIRMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE ALL TESTS.

GENERAL NOTES:

- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT FDOT DESIGN STANDARDS AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, UNLESS OTHERWISE STATED OR SHOWN IN THE PLANS.
- ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF PANAMA CITY BEACH STANDARDS AND SPECIFICATIONS, UNLESS APPROVED BY THE CITY OF PANAMA CITY BEACH.
- WHERE THE FDOT DESIGN STANDARDS DIFFER FROM BAY COUNTY STANDARDS, THE MORE STRINGENT STANDARD SHALL APPLY, UNLESS APPROVED BY THE CITY OF PANAMA CITY BEACH.
- WHERE EXCAVATIONS ARE IN CLOSE PROXIMITY OF TREES NOT SHOWN AS BEING REMOVED, THE CONTRACTOR SHALL USE EXTREME CARE IN NOT DAMAGING THE ROOT SYSTEM. NO EQUIPMENT, SUPPLIES, OR VEHICLES SHALL BE STORED OR PARKED WITHIN THE DRIP LINE OF TREES TO REMAIN AND BE PRESERVED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM ALL EMPLOYEES AND SUBCONTRACTORS OF THIS REQUIREMENT AND TO ENFORCE SAME.
- THE CONTRACTOR SHALL NOTIFY UTILITY OWNERS THROUGH SUNSHINE STATE ONE CALL OF FLORIDA (800-432-4770) AND UTILITY OWNERS LISTED BELOW AT LEAST TWO (2) FULL BUSINESS DAYS IN ADVANCE OF BEGINNING CONSTRUCTION ON THE JOB SITE. THE CONTRACTOR SHALL WAIT THE REQUIRED TIME FOR BURIED UTILITIES TO BE LOCATED AND MARKED. THE CONTRACTOR SHALL PROTECT THE MARKS DURING CONSTRUCTION. IF THE MARKS ARE DESTROYED, THE CONTRACTOR SHALL CALL SUNSHINE STATE ONE CALL FLORIDA AGAIN. THE CONTRACTOR SHALL DIG SAFELY, USING EXTREME CAUTION, WHEN DIGGING WITHIN 36 INCHES ON EITHER SIDE OF THE MARKS TO AVOID HITTING THE BURIED UTILITY LINES.
- ALL INLETS SHALL BE PROTECTED AS PER FDEP BEST MANAGEMENT PRACTICES, AND THE FDEP / FDOT EROSION AND SEDIMENT CONTROL HANDBOOK.
- THE CONTRACTOR SHALL PROTECT ALL GRASSED AREAS FROM DISCARDED CONCRETE AND EXCESS MATERIALS. ALL DISCARDED CONCRETE AND EXCESS MATERIALS SHALL BE REMOVED FROM THE RIGHT-OF-WAY (OR JOB SITE) ON A DAILY BASIS.
- THE CONTRACTOR IS TO MAINTAIN AND KEEP STREET NAME IDENTIFICATION (STREET SIGNS) VISIBLE DURING CONSTRUCTION OPERATIONS, IN ORDER TO FACILITATE EMERGENCY VEHICLE TRAFFIC.
- ANY KNOWN OR SUSPECTED HAZARDOUS MATERIAL FOUND ON THE PROJECT SHALL IMMEDIATELY BE REPORTED TO THE ENGINEER WHO SHALL DIRECT THE CONTRACTOR TO PROTECT THE AREA OF KNOWN OR SUSPECTED CONTAMINATION FROM FURTHER ACCESS. THE ENGINEER IS TO NOTIFY THE PROJECT ADMINISTRATOR OF DISCOVERY. THE PROJECT ADMINISTRATOR WILL ARRANGE AN INVESTIGATION, IDENTIFICATION AND REMEDIATION OF THE HAZARDOUS MATERIAL. THE CONTRACTOR SHALL NOT RETURN TO THE AREA OF CONTAMINATION UNTIL APPROVAL IS PROVIDED BY THE ENGINEER. THE PROJECT ADMINISTRATOR WILL ADVISE THE ENGINEER.
- THE EROSION CONTROL PLAN SHALL BE IN ACCORDANCE WITH THE FDOT / FDEP EROSION & SEDIMENT CONTROL HANDBOOK.
- CONTRACTOR SHALL PROVIDE DE-WATERING AS NECESSARY FOR THE INSTALLATION OF ALL PROPOSED IMPROVEMENTS. ALL DE-WATERING SHALL BE INCLUDED IN THE BID PRICE. DEWATERING: SHOULD LOWERING OF GROUNDWATER BE NECESSARY FOR THE INSTALLATION OF CONCRETE STRUCTURES, OR TO PREVENT LATERAL MOVEMENT OF CONCRETE ALREADY PLACED, SUCH LOWERING SHALL BE ACCOMPLISHED BY MEANS OF A WELL POINT SYSTEM OR OTHER APPROVED MEANS, AT CONTRACTOR'S EXPENSE. COMPREHENSIVE PLANS FOR DEWATERING OPERATIONS, IF USED, SHALL BE SUBMITTED BY THE CONTRACTOR PRIOR TO INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITTING ASSOCIATED WITH DEWATERING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING NPDES PERMIT.
- ALL MAILBOXES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL EXPENSE TO THE OWNER.
- CONTRACTOR SHALL PROVIDE TWO (2) SETS OF AS-BUILT DRAWINGS AND ONE (1) DIGITAL COPY IN AUTOCAD & PDF OF THE COMPLETED PROJECT. THE AS BUILT DRAWINGS SHALL BE SIGNED AND SEALED BY A FLORIDA REGISTERED SURVEYOR.
- ALL DEMOLISHED MATERIALS SHALL BE REMOVED FROM SITE AND DISPOSED OF IN A LEGAL MANNER.
- THE CONTRACTOR SHALL DISPOSE OF ALL DEBRIS UPON COMPLETION OF THE PROJECT.
- ALL ABANDONED UTILITIES SHALL BE REMOVED FROM THE GROUND, NOT ABANDONED IN PLACE.
- TRENCH BACKFILL UNDER ASPHALT PAVEMENT SURFACES TO BE PER PANAMA CITY BEACH STANDARD DETAILS M-23 AS SHOWN ON THE PLANS AND IN ACCORDANCE WITH DENSITY TESTING SCHEDULE TABLE SHOWN ON SHEET 1
- CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES SERVICE CONNECTIONS.
- COMPACTION TESTING SHALL BE PERFORMED AT EACH ROADWAY CUT AND UNDER EACH ROADWAY FOR ALL UTILITIES, INCLUDING SERVICE LATERALS AND PER FDOT SPECIFICATIONS FOR ROAD RECONSTRUCTION AND SHALL BE INCLUDED IN THE BID PRICE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXISTING UTILITIES INCLUDING RECONNECTING ALL WATER AND SEWER SERVICES DAMAGED/BROKEN DURING THE INSTALLATION ON THE NEW UTILITY MAIN EXTENSIONS, WITH NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A MAINTENANCE OF TRAFFIC PLAN PRIOR TO COMMENCEMENT OF CONSTRUCTION. SIGNAGE SHALL BE MAINTAINED AT ALL TIMES AND SHALL BE INCLUDED IN THE BID PRICE.

UTILITY GENERAL NOTES:

- ALL MAINS SHALL BE INSTALLED ACCORDING TO ENGINEERING PLANS AND SPECIFICATIONS.
- ALL VALVES AND MATERIALS SHALL COMPLY WITH AWWA (AMERICAN WATER WORKS ASSOCIATION) STANDARDS, LATEST EDITION.
- THE CONTRACTOR WILL BE REQUIRED TO REMOVE & REPLACE ITEMS ENCOUNTERED IN THE FIELD, ie SIGNS, FENCING, POST, etc..
- ALL MAINS SHALL HAVE A MINIMUM OF 36" COVER FROM FINISHED GRADES, UNLESS APPROVED BY ENGINEER.
- CONTRACTOR IS TO FURNISH "AS BUILT PLANS" THAT COMPLY WITH CURRENT CITY AS-BUILT STANDARDS.
- BASE AND BACKFILL MATERIALS SHALL BE EITHER OF THE SAME TYPE AND COMPOSITION AS THE MATERIALS REMOVED, OR OF EQUAL OR GREATER STRUCTURAL ADEQUACY. MATERIALS CONTAMINATED WITH DELETERIOUS SUBSTANCES DURING EXCAVATION SHALL NOT BE USED FOR FILL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION OF EXISTING UTILITIES, AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK, AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION.
- EXISTING UTILITIES SHOWN ON THE PLANS MAY NOT BE ACCURATE AND ALL UTILITIES MAY NOT BE SHOWN.
- THE CONTRACTOR SHALL NOTIFY ALL UTILITY OWNERS 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND SHALL VERIFY LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION.
- THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING. THE SURVEY MAY NOT SHOW ALL OBJECTS WITHIN THE PATH OF THE NEW UTILITIES. IF OBJECTS ARE NOT SHOWN ON THE SURVEY, THE CONTRACTOR SHALL NOTIFY THE ENGINEER WITHIN 7 DAYS PRIOR TO THE BID DATE. CONTRACTOR WILL BE RESPONSIBLE FOR REPLACEMENT OF ALL OBJECTS NOT SHOWN ON THE SURVEY.
- ALL CONSTRUCTION AREAS NEAR WETLANDS ARE TO BE MONITORED CLOSELY FOR EROSION. SILT FENCE AND SYNTHETIC BALES SHALL BE USED IN THESE AREAS. CONTRACTOR SHALL FOLLOW ALL THE FDEP/COE DREDGE AND FILL PERMIT REQUIREMENTS IF APPLICABLE. SEE SPECIFICATIONS.
- ALL SPOIL MATERIAL SHALL BE PLACED ON THE UPLAND SIDE OF ANY SLOPED CONSTRUCTION AREA.
- THE CONTRACTOR SHALL TAKE WHATEVER STEPS NECESSARY TO PREVENT EROSION INTO NEARBY WETLANDS.
- INSULATED SOLID CORE 12 GA. LOCATING WIRE SHALL BE INSTALLED ON TOP OF ALL NON-METALLIC PIPE, WHICH INCLUDES SERVICE CONNECTIONS. ALL LOCATING WIRE SHALL BE CONNECTED AND SHALL TERMINATE IN VALVE BOXES AND METER BOXES AS SHOWN IN THE DETAILS.
- ALL PIPE SHALL BE INSTALLED IN DRY CONDITIONS. WELL POINTING MAY BE REQUIRED AT THE DIRECTION OF THE ENGINEER. WELL POINTS OR SOCK PIPE MAY BE USED.
- CONTRACTOR SHALL FOLLOW ALL OSHA REQUIREMENTS FOR CONSTRUCTION.
- THE CONTRACTOR SHALL FOLLOW ALL CONDITIONS OF THE PERMIT REQUIREMENTS. SEE SPECIFICATIONS FOR COPY OF PERMITS.
- ALL DISTURBED AREAS SHALL BE SODDED.
- CONTRACTOR SHALL PROVIDE ALL FITTINGS, SLEEVES AND TRANSITION ADAPTERS AS NECESSARY TO COMPLETE THIS PROJECT.
- CONTRACTOR SHALL PROVIDE ALL FITTINGS, SLEEVES, TRANSITION ADAPTERS, AND PIPE MECHANICAL RESTRAINT JOINTS AS NECESSARY TO COMPLETE THIS PROJECT AND IN ACCORDANCE WITH CITY OF PANAMA CITY BEACH LATEST REVISE STANDARD DETAILS.



Dewberry Engineers Inc.
203 Aberdeen Parkway
Panama City, FL 32405
850.522.0644

SR 30A (U.S. 98) UTILITY
RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA

SEAL

JOSE A. PEREIRA, P.E. 82808
EB 0008794

**BID SET
NOT FOR CONSTRUCTION**

SCALE

NO SCALE

REVISIONS

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DRAWN BY _____ S. RAY
 APPROVED BY _____ J. PEREIRA
 CHECKED BY _____ STAFF
 DATE _____ JULY 26, 2021

GENERAL NOTES

PROJECT NO. 50134682

SHEET NO.

SEAL

JOSE A. PEREIRA, P.E. 82808
EB 0008794

BID SET
NOT FOR CONSTRUCTION

SCALE
NO SCALE

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APPROVED BY _____ J. PEREIRA
CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

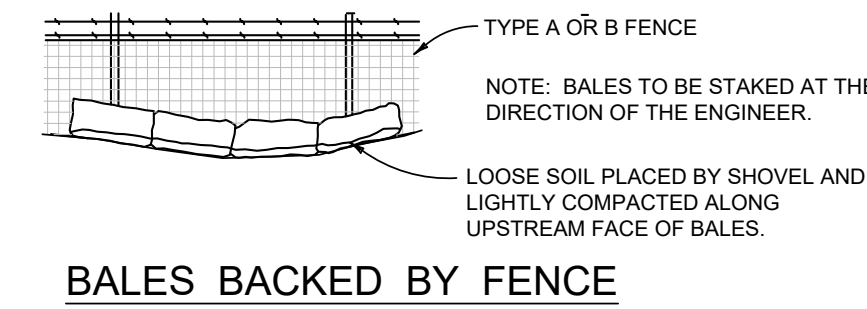
TITLE
SWPPP & EROSION CONTROL

PROJECT NO. 50134682

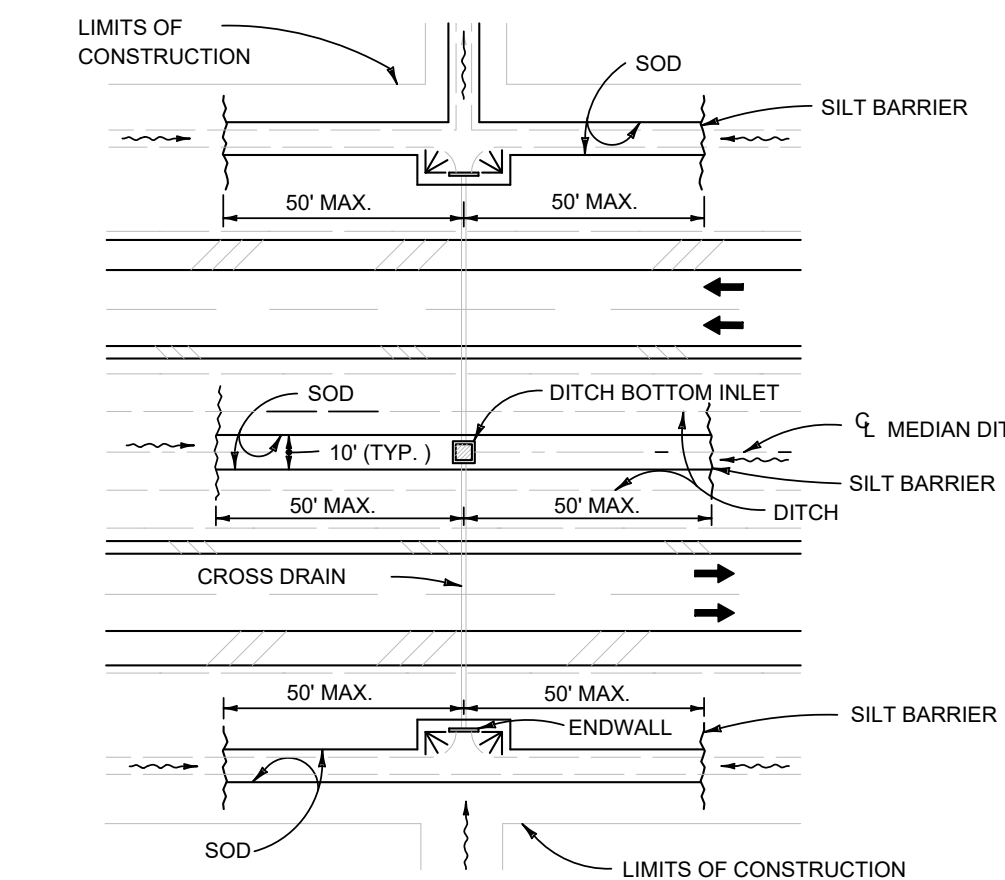
STORMWATER POLLUTION PREVENTION PLAN (SWPPP):

- SITE DESCRIPTION:
 - CONSTRUCTION ACTIVITY: INSTALLATION OF APPROXIMATELY 2,710 LF OF 12" FORCE MAIN, 290 LF OF 16" WATER MAIN, 160 LF OF 20" RECLAIM WATER MAIN. PROJECT LIMITS: SEE SHEETS C1 - C5
 - MAJOR SOIL DISTURBING ACTIVITIES: INSTALLATION OF APPROXIMATELY 2,710 LF OF 12" FORCE MAIN, 290 LF OF 16" WATER MAIN, 160 LF OF 20" RECLAIM WATER MAIN. w/ APPURTENANCES AND FITTINGS.
 - TOTAL PROJECT AREA: APPROXIMATELY 0.83 ACRES
 - TOTAL SOIL AREA TO BE DISTURBED: APPROXIMATELY 0.73 ACRES
 - (1) RUNOFF COEFFICIENTS BEFORE, DURING, AND AFTER CONSTRUCTION: BEFORE: N/A, DURING: N/A, AFTER: N/A
 - (2) DESCRIPTION OF SOIL OR QUALITY OF DISCHARGE: TYPE A/D SOILS IN EXISTING RIGHT OF WAY.
 - (3) ESTIMATES OF SIZE OF DRAINAGE AREA FOR OUTFALL: N/A
- FOR LOCATIONS OF DRAINAGE AREAS AND OUTFALLS: N/A
- (1) NAME OF RECEIVING WATERS: N/A
- (2) WETLAND AREA: N/A
- CONTROLS:
 - NARRATIVE - SEQUENCE OF SOIL DISTURBING ACTIVITIES AND IMPLEMENTATION OF CONTROLS
 - THE SOIL DISTURBING ACTIVITIES FOR THIS PROJECT ARE AS FOLLOWS: ONLY UPON PROPER PLACEMENT OF ALL EROSION CONTROLS CAN SOIL DISTURBING ACTIVITIES TAKE PLACE. HAY BALES AND SILT FENCES WILL BE USED LATERALLY AT SPECIFIED INTERVALS. HAY BALES SHALL BE USED TO PREVENT SEDIMENTATION FROM ESCAPING PROJECT LIMITS. EROSION CONTROLS SHALL REMAIN IN PLACE UNTIL THE SITE IS STABILIZED.
 - A. EROSION AND SEDIMENT CONTROLS:
 - (1) STABILIZATION PRACTICES:

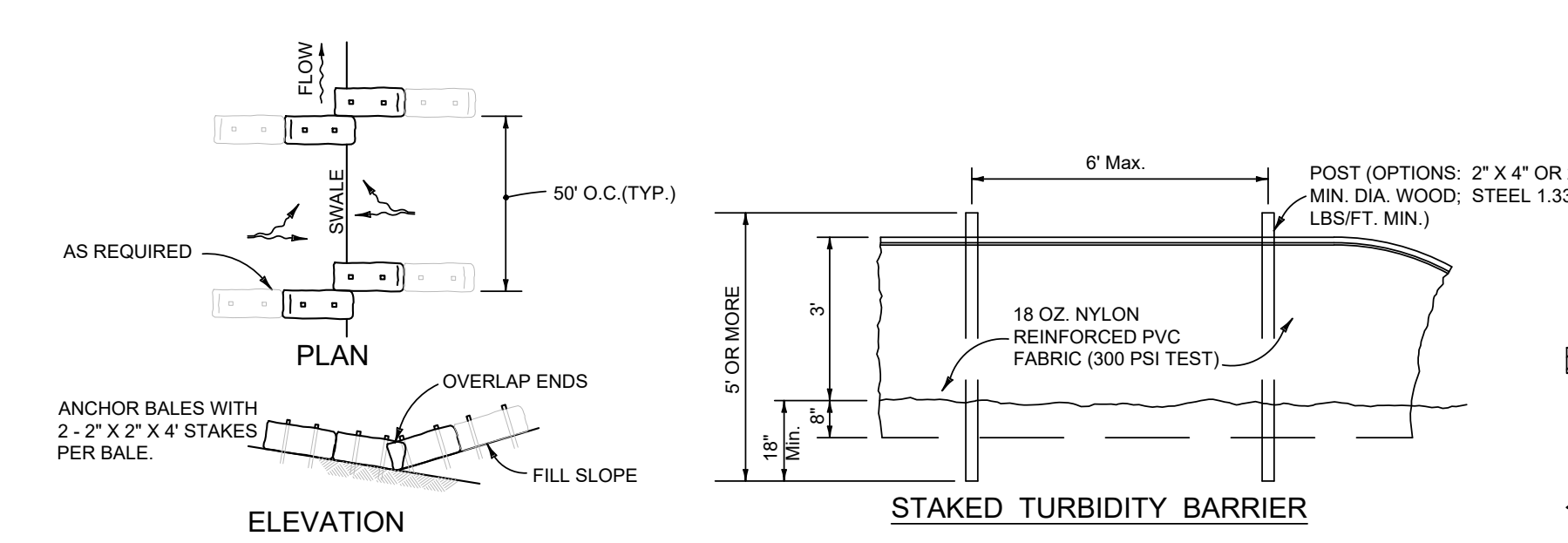
| | |
|---|---------------------------------------|
| X TEMPORARY SODDING | SEDIMENT TRAPS |
| X TEMPORARY GRASSING | SEDIMENT BASINS |
| X PERMANENT PLANTING, SODDING, OR SEEDING | STORM INLET SEDIMENT TRAP (ROCK BAGS) |
| TEMPORARY MULCHING | STONE OUTLET STRUCTURES |
| ARTIFICIAL COVERING | CURBS AND GUTTERS |
| X BUFFER ZONES | STORM SEWERS |
| X PRESERVATION OF NATURAL RESOURCES | X VELOCITY CONTROL DEVICES |
| | X TURBIDITY BARRIER |
| | RIE RAP |
 - (2) STRUCTURAL PRACTICES:
 - SAND BAGGING
 - X SILT FENCES
 - X SYNTHETIC BALES
 - BERMS
 - DIVERSION, INTERCEPTOR, OR PERIMETER DITCHES
 - PIPE SLOPE DRAINS
 - FLUMES
 - ROCK BEDDING AT CONSTRUCTION EXIT
 - TIMBER BEDDING AT CONSTRUCTION EXIT
 - DITCH LINER
 - B. DESCRIPTION OF STORMWATER MANAGEMENT: N/A
 - C. OTHER CONTROLS:
 - (1) WASTE DISPOSAL: NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE
 - (2) OFFSITE VEHICLE TRACKING:
 - HAIL ROADS DAMPENED FOR DUST CONTROL
 - X LOADED HAIL TRUCKS TO BE COVERED WITH TARPAULIN
 - X EXCESS DIRT ON ROAD REMOVED DAILY
 - STABILIZED CONSTRUCTION ENTRANCE
 - (3) SANITARY WASTE: N/A
 - (4) FERTILIZERS AND PESTICIDES: FERTILIZERS AND/OR PESTICIDES SHALL BE APPLIED ACCORDING TO MANUFACTURERS RECOMMENDATIONS BY A LICENSED OR CERTIFIED APPLICATOR AS DIRECTED BY THE PROJECT ENGINEER.
 - (5) NON-STORMWATER DISCHARGE (INCLUDING SPILL REPORTING): TO BE USED DURING DEWATERING PROPER BMPs
 - D. APPROVED STATE, LOCAL PLANS, OR STORMWATER PERMITS: FDEP WASTE WATER PERMIT, FDEP POTABLE WATER PERMIT, NATIONWIDE PERMIT (NWP), AND FDEP/NWFWMD ENVIRONMENTAL RESOURCE PERMIT
- MAINTENANCE:
 - ALL OF THE CONTROLS SHALL BE MAINTAINED AT ALL TIMES. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN (7) CALENDAR DAYS AFTER THE SURROUNDING EXPOSED AREA HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT.
- INSPECTION:
 - ALL CONTROLS SHALL BE INSPECTED WEEKLY BY THE CONTRACTOR AS WELL AS AFTER 0.25" OR MORE OF RAIN. AN INSPECTION AND MAINTENANCE REPORT WILL BE MADE PER EACH INSPECTION. BASED ON INSPECTION RESULTS THE CONTROLS SHALL BE REVISED PER THE INSPECTION REPORTS.
 - A. THE CONTRACTOR SHALL INITIATE REPAIRS WITHIN 24 HOURS OF INSPECTION THAT INDICATE ITEMS ARE NOT IN GOOD WORKING ORDER. TO COMPLY, THE CONTRACTOR SHALL INSTALL AND MAINTAIN RAIN GAGES AND DAILY RAINFALL RECORDS. WHERE SITES HAVE BEEN PERMANENTLY STABILIZED, INSPECTIONS SHALL BE CONDUCTED AT LEAST ONCE EVERY MONTH. THE CONTRACTOR SHALL ALSO INSPECT AND CERTIFY THAT CONTROLS INSTALLED IN THE FIELD AGREE WITH THE LATEST STORMWATER POLLUTION PREVENTION PLAN.
 - B. IF INSPECTIONS INDICATE THAT THE INSTALLED STABILIZATION AND STRUCTURAL PRACTICES ARE NOT SUFFICIENT TO MINIMIZE EROSION, RETAIN SEDIMENT, AND PREVENT DISCHARGING POLLUTANTS, THE CONTRACTOR SHALL PROVIDE ADDITIONAL MEASURES, AS NEEDED.
 - C. RECORDS OF THE INSPECTION AND THE CONSTRUCTION PERMIT MUST BE MAINTAINED AT THE CONSTRUCTION SITE AND BE READILY AVAILABLE FOR INSPECTION.
- THE DEVELOPER AND/OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING COVERAGE UNDER THE GENERAL PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES PRIOR TO START OF CONSTRUCTION OR ANY DISTURBANCE OF LAND GREATER THAN ONE ACRE. THE DEVELOPER/CONTRACTOR WILL FORWARD A COPY OF THE PERMIT AND WILL PROVIDE 24 HOUR NOTIFICATION TO THE CITY AT COUNTY PRIOR TO COMMENCEMENT OF WORK. ALL REQUIRED ELEMENTS OF THE STORMWATER POLLUTION PREVENTION PLAN MUST BE IN PLACE PRIOR TO COMMENCEMENT OF CONSTRUCTION. FAILURE TO COMPLY COULD RESULT IN CODE ENFORCEMENT ACTION AND FINES.
- THE DEVELOPER AND/OR CONTRACTOR IS RESPONSIBLE FOR OBTAINING THE DEWATERING PERMIT AS REQUIRED



BALES BACKED BY FENCE

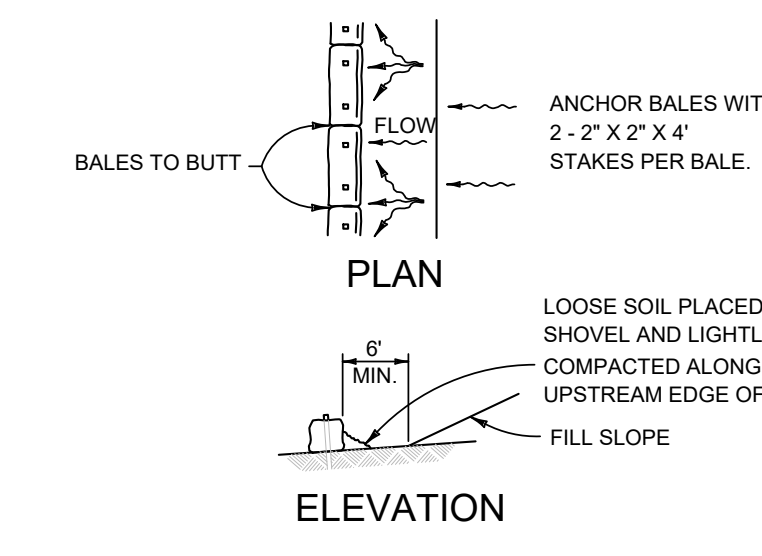


DITCH INSTALLATIONS AT DRAINAGE STRUCTURES

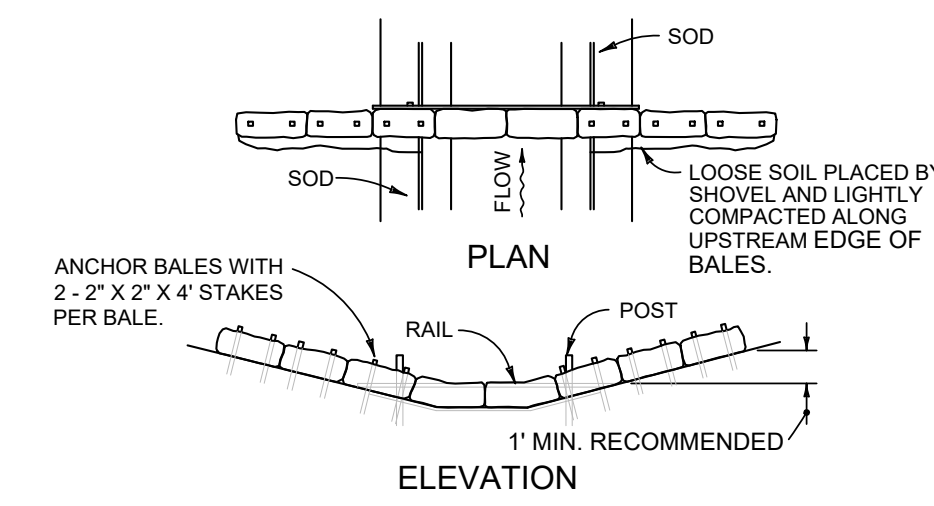


DETAIL TURBIDITY BARRIER APPLICATIONS
SCALE N.T.S.

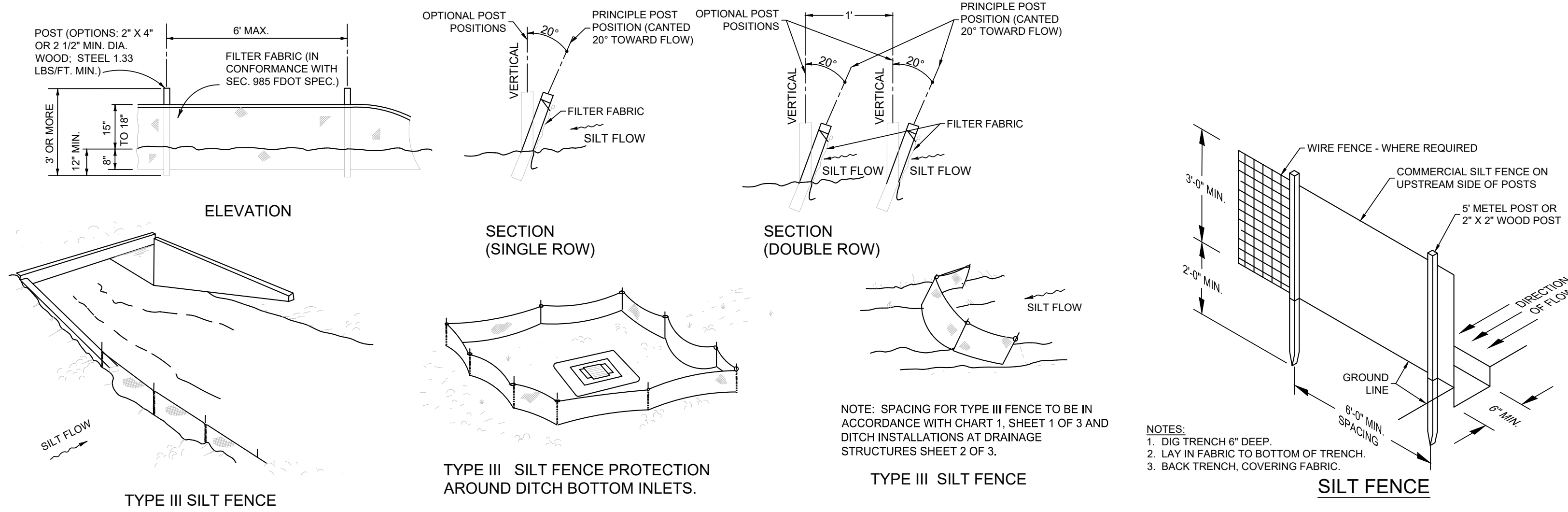
- LEGEND:**
- PILE LOCATIONS
 - ▨ DREDGE OR FILL AREA
 - MOORING BUOY W/ ANCHOR
 - ANCHOR
 - BARRIER MOVEMENT DUE TO CURRENT ACTION



BARRIERS FOR FILL SLOPES



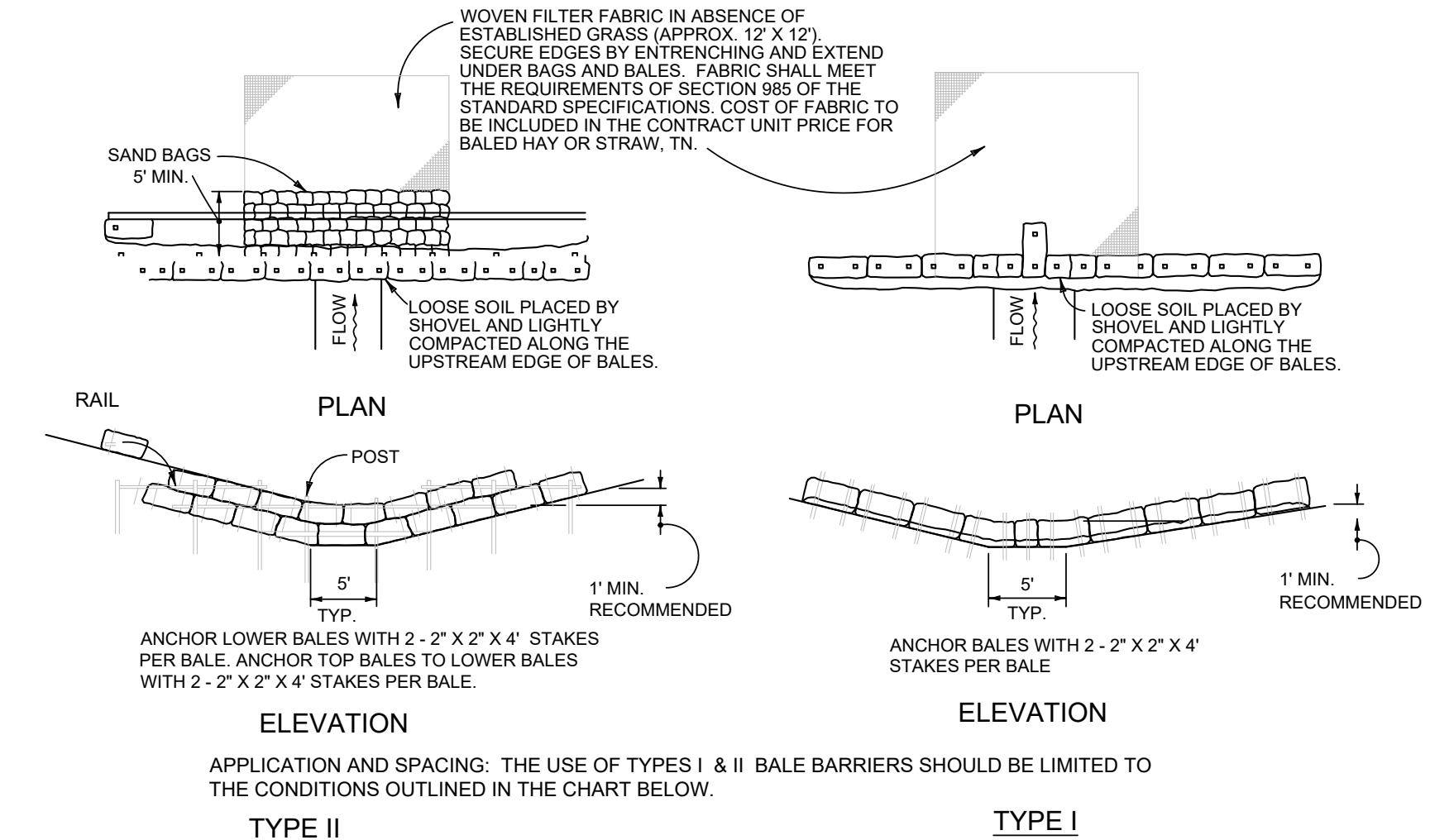
BARRIER FOR PAVED DITCH
SPACING: BALE BARRIERS FOR PAVED DITCHES SHOULD BE SPACED IN ACCORDANCE WITH THE CHART BELOW



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.

NOTE:
1) SILT FENCE SHALL BE USED/PLACED AT THE DIRECTION OF THE ENGINEER AND TO COMPLY WITH THE FDEP/NPDES PERMITTING.

TYPE III SILT FENCE



BARRIER FOR UNPAVED DITCHES

July 13, 2021 (12:50:18 EST)
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April 19, 2021 (11:27:38 EST)
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203 Aberdeen Parkway
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850.522.0644

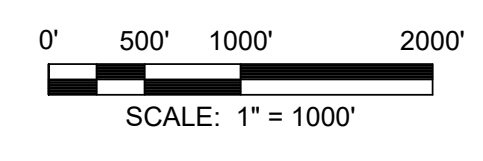
SR 30A (U.S. 98) UTILITY RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA

SEAL

JOSE A. PEREIRA, P.E. 82808
EB 0008794

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DRAWN BY _____ S. RAY
APPROVED BY _____ J. PEREIRA
CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

TITLE

KEY MAP

PROJECT NO. 50134682

3

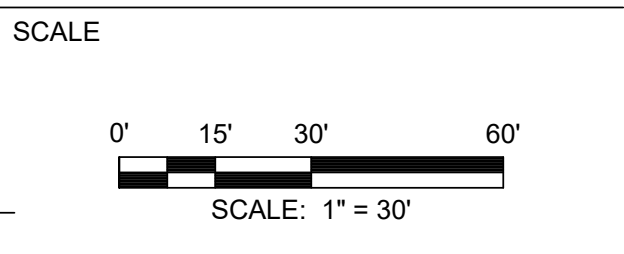
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SR 30A (U.S. 98) UTILITY RELOCATION
CITY OF PANAMA CITY BEACH
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FLORIDA

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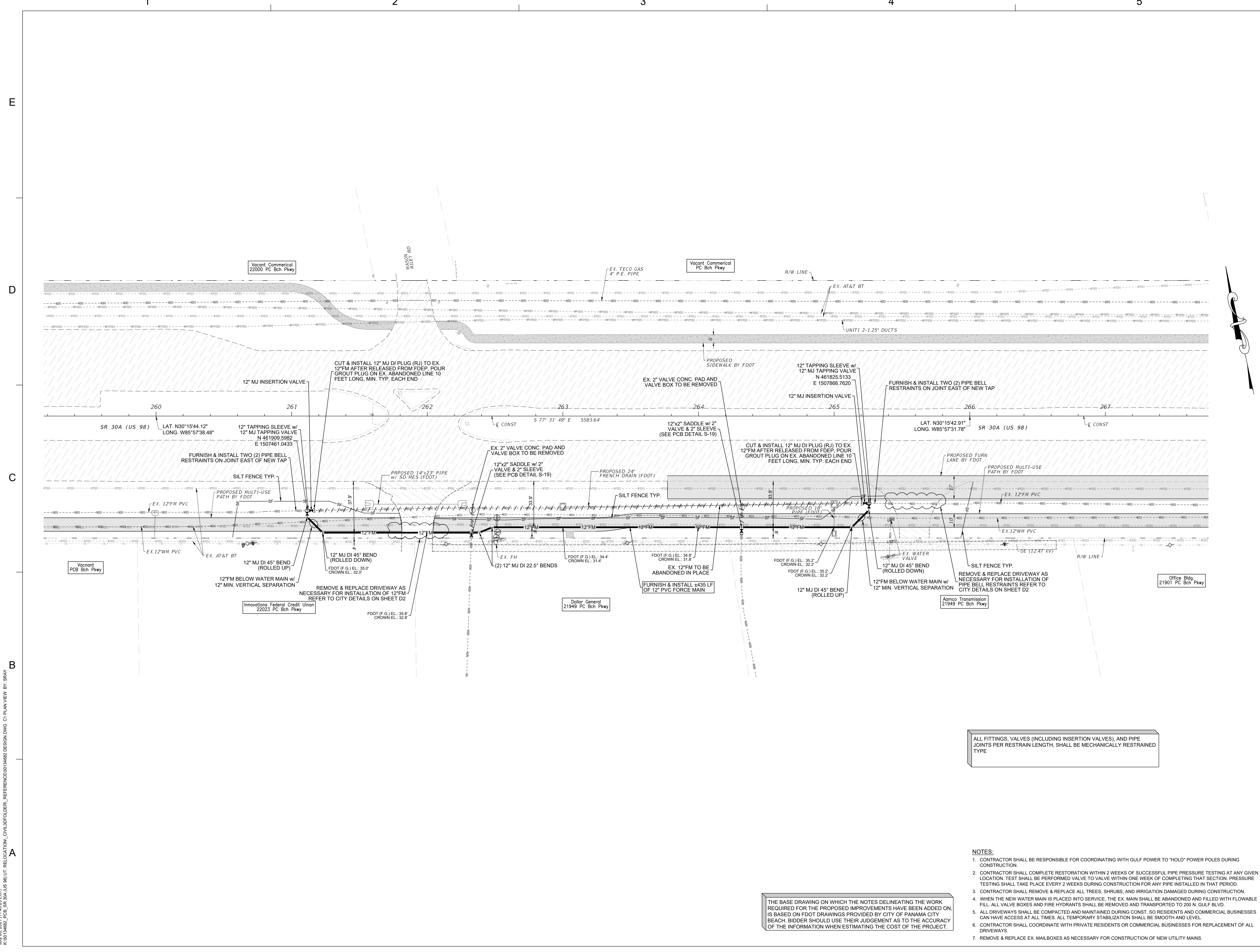
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DRAWN BY _____ S. RAY
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CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

TITLE
PLAN VIEW

PROJECT NO. _____ 50134682

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C1

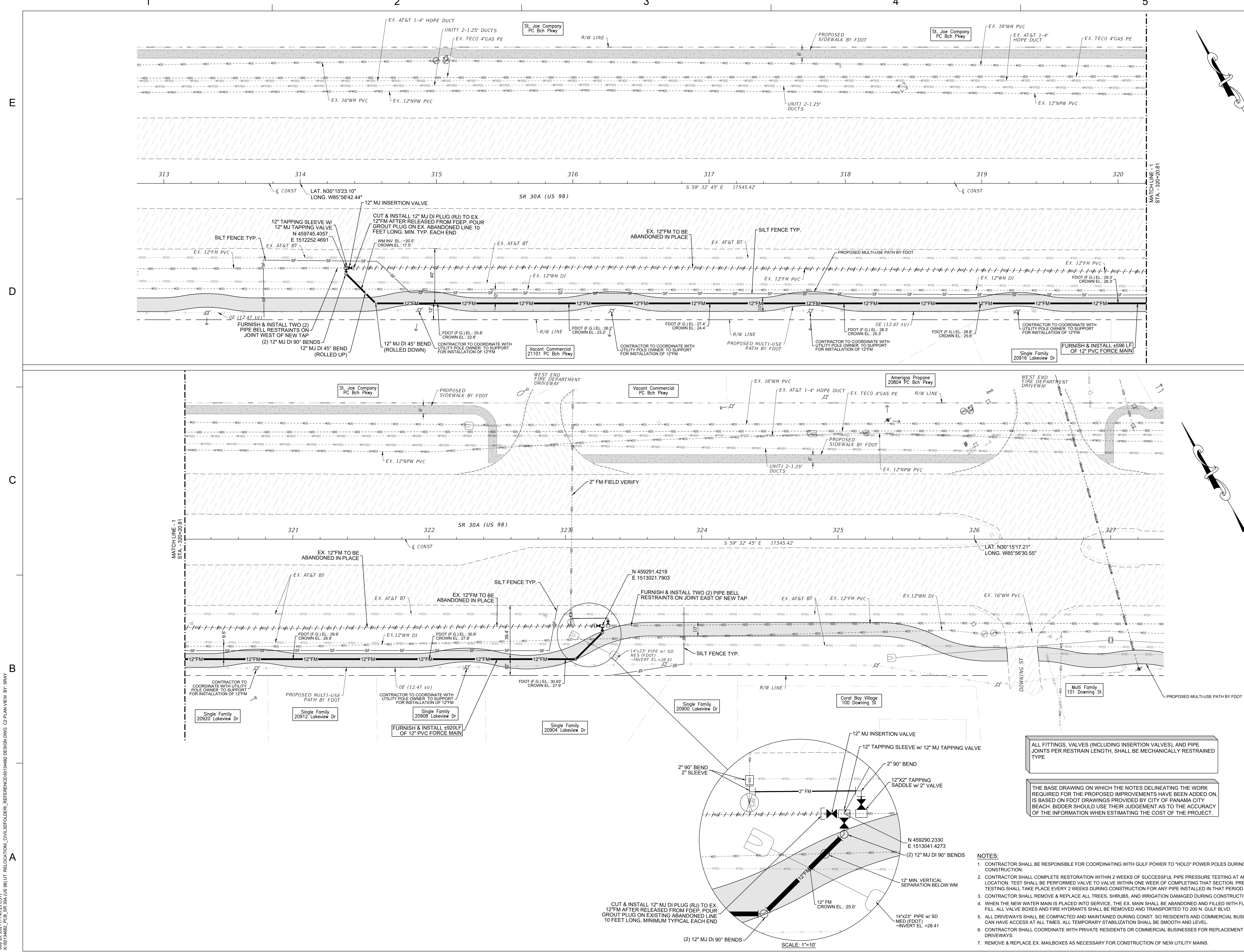


ALL FITTINGS, VALVES (INCLUDING INSERTION VALVES), AND PIPE JOINTS PER RESTRAIN LENGTH, SHALL BE MECHANICALLY RESTRAINED TYPE

THE BASE DRAWING ON WHICH THE NOTES DELINEATING THE WORK REQUIRED FOR THE PROPOSED IMPROVEMENTS HAVE BEEN ADDED ON, IS BASED ON FDOT DRAWINGS PROVIDED BY CITY OF PANAMA CITY BEACH. BIDDER SHOULD USE THEIR JUDGEMENT AS TO THE ACCURACY OF THE INFORMATION WHEN ESTIMATING THE COST OF THE PROJECT.

- NOTES:
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GULF POWER TO "HOLD" POWER POLES DURING CONSTRUCTION.
 - CONTRACTOR SHALL COMPLETE RESTORATION WITHIN 2 WEEKS OF SUCCESSFUL PIPE PRESSURE TESTING AT ANY GIVEN LOCATION. TEST SHALL BE PERFORMED VALVE TO VALVE WITHIN ONE WEEK OF COMPLETING THAT SECTION. PRESSURE TESTING SHALL TAKE PLACE EVERY 2 WEEKS DURING CONSTRUCTION FOR ANY PIPE INSTALLED IN THAT PERIOD.
 - CONTRACTOR SHALL REMOVE & REPLACE ALL TREES, SHRUBS, AND IRRIGATION DAMAGED DURING CONSTRUCTION.
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 - CONTRACTOR SHALL COORDINATE WITH PRIVATE RESIDENTS OR COMMERCIAL BUSINESSES FOR REPLACEMENT OF ALL DRIVEWAYS.
 - REMOVE & REPLACE EX. MAILBOXES AS NECESSARY FOR CONSTRUCTION OF NEW UTILITY MAINS.

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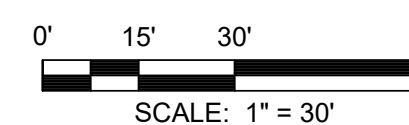


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JOSE A. PEREIRA, P.E. 82808
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DRAWN BY _____ S. RAY
APPROVED BY _____ J. PEREIRA
CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

TITLE

PLAN VIEW

PROJECT NO. 50134682

C2

SHEET NO.

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- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GULF POWER TO "HOLD" POWER POLES DURING CONSTRUCTION.
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203 Aberdeen Parkway
Panama City, FL 32405
850.522.0644

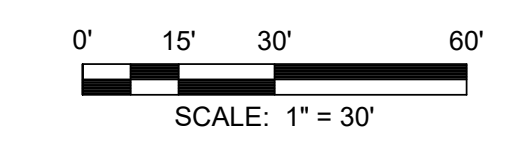
SR 30A (U.S. 98) UTILITY RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA

SEAL

JOSE A. PEREIRA, P.E. 82808
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CHECKED BY _____ STAFF
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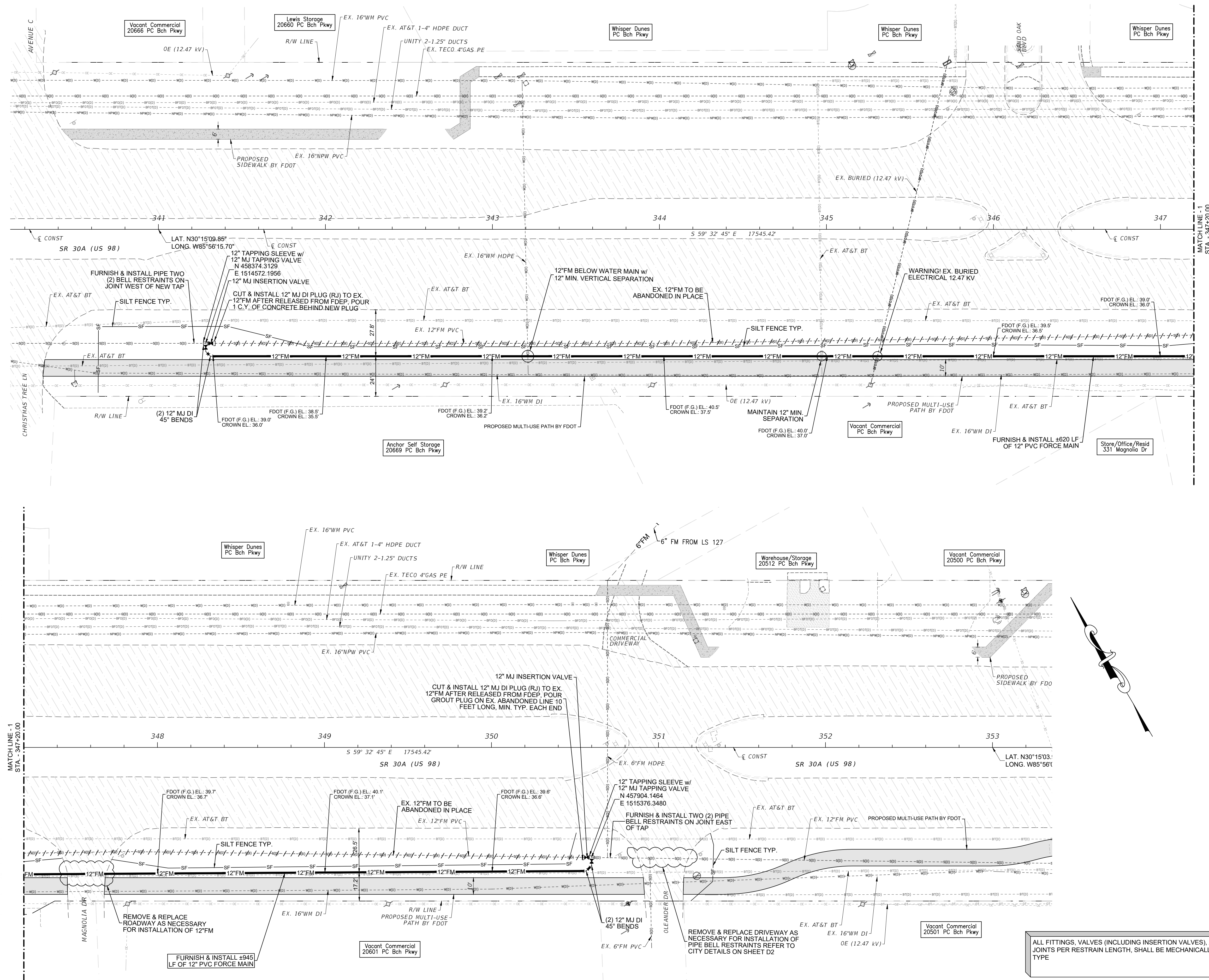
TITLE

PLAN VIEW

PROJECT NO. 50134682

C3

SHEET NO.



ALL FITTINGS, VALVES (INCLUDING INSERTION VALVES), AND PIPE JOINTS PER RESTRAIN LENGTH, SHALL BE MECHANICALLY RESTRAINED TYPE

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NOTES:

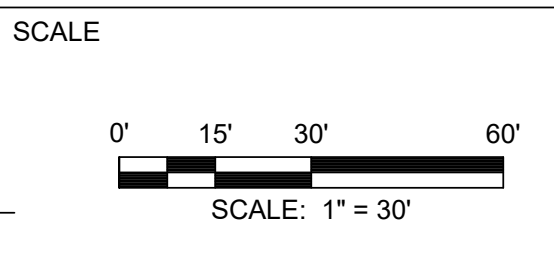
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**SR 30A (U.S. 98) UTILITY RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA**

SEAL

JOSE A. PEREIRA, P.E. 82808
EB 0008794

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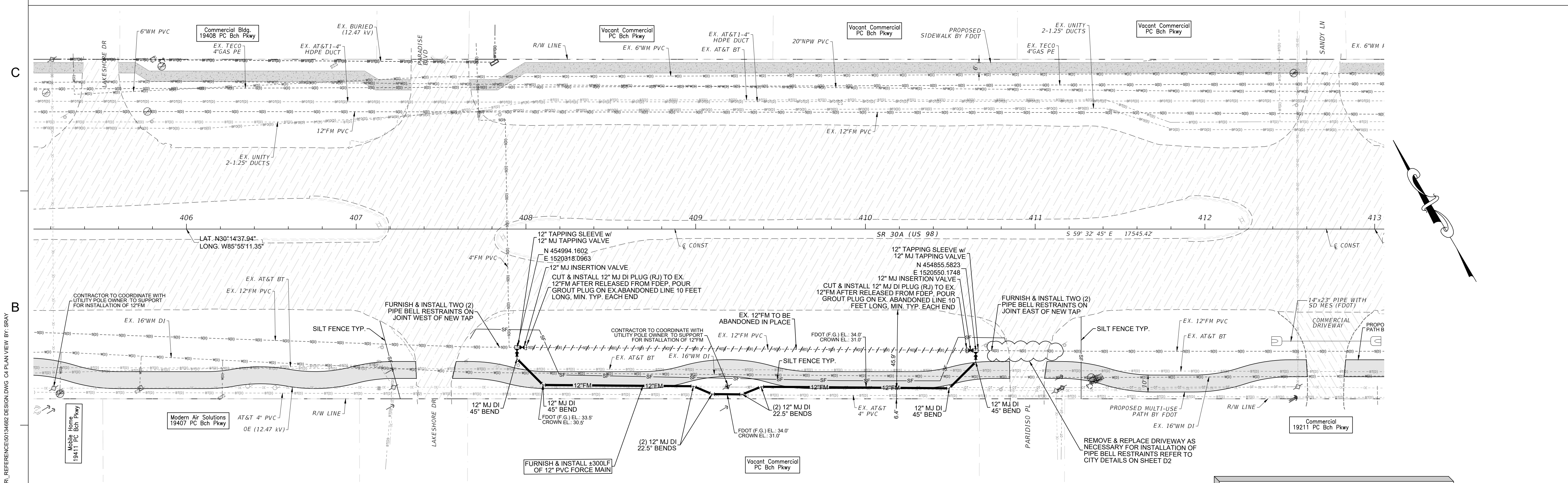
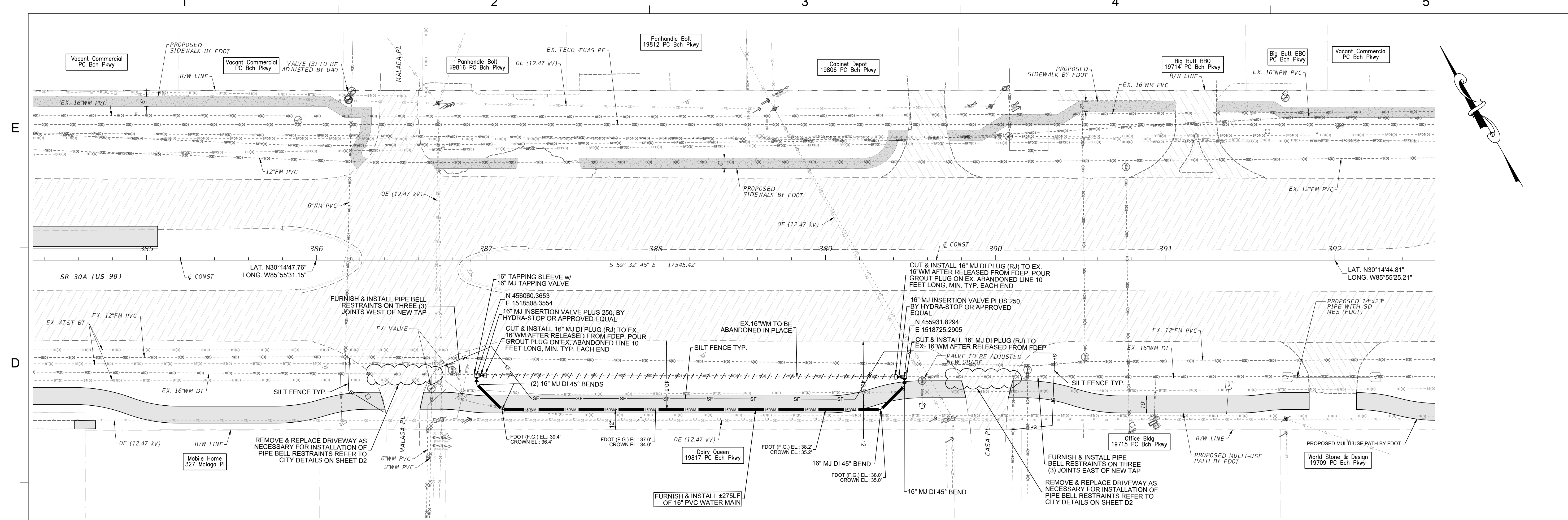
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DRAWN BY: S. RAY
APPROVED BY: J. PEREIRA
CHECKED BY: STAFF
DATE: JULY 26, 2021

TITLE
PLAN VIEW

PROJECT NO. 50134682

SHEET NO.

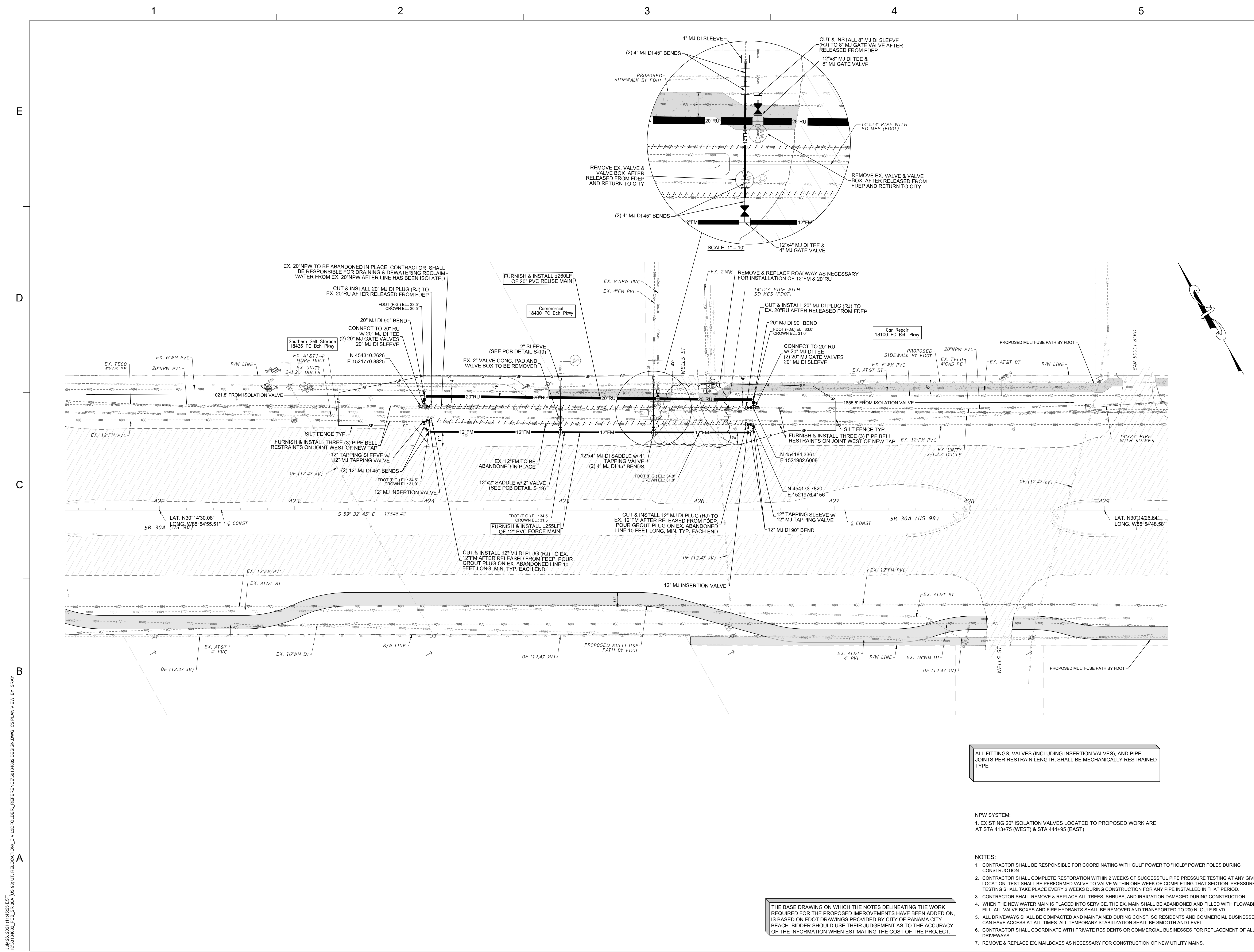


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- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GULF POWER TO "HOLD" POWER POLES DURING CONSTRUCTION.
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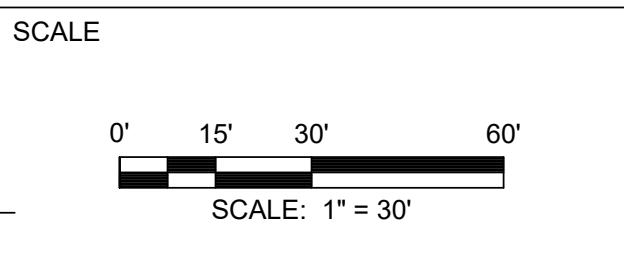


SR 30A (U.S. 98) UTILITY RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
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JOSE A. PEREIRA, P.E. 82808
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DRAWN BY _____ S. RAY
APPROVED BY _____ J. PEREIRA
CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

TITLE

PLAN VIEW

PROJECT NO. 50134682

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ALL FITTINGS, VALVES (INCLUDING INSERTION VALVES), AND PIPE JOINTS PER RESTRAIN LENGTH, SHALL BE MECHANICALLY RESTRAINED TYPE

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NPW SYSTEM:
1. EXISTING 20" ISOLATION VALVES LOCATED TO PROPOSED WORK ARE AT STA 413+75 (WEST) & STA 444+95 (EAST)

- NOTES:
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING WITH GULF POWER TO "HOLD" POWER POLES DURING CONSTRUCTION.
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 - REMOVE & REPLACE EX. MAILBOXES AS NECESSARY FOR CONSTRUCTION OF NEW UTILITY MAINS.

SEAL

JOSE A. PEREIRA, P.E. 82808 EB 0008794

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SCALE

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REVISIONS

Table with 3 columns: NO., DESCRIPTION, DATE

DRAWN BY: S. RAY, APPROVED BY: J. PEREIRA, CHECKED BY: STAFF, DATE: JULY 26, 2021

TITLE

DETAILS

PROJECT NO. 50134682

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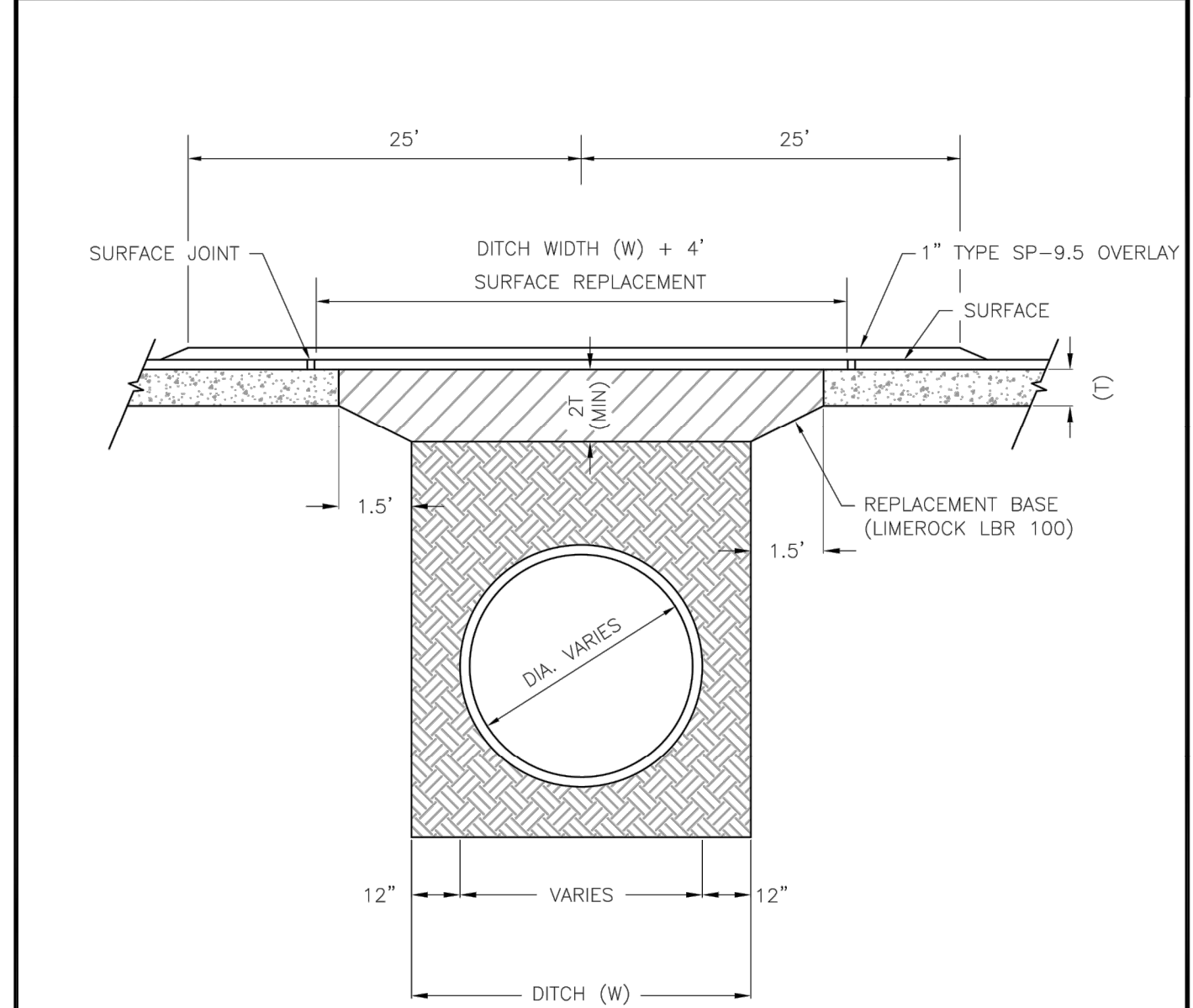
SHEET NO.

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

Table with columns: MAIN PIPE SIZE, HORIZ. BENDS (90°, 45°, 22.5°), *TEES (SIZE, LENGTH), REDUCERS (SIZE, LENGTH), PLUGS

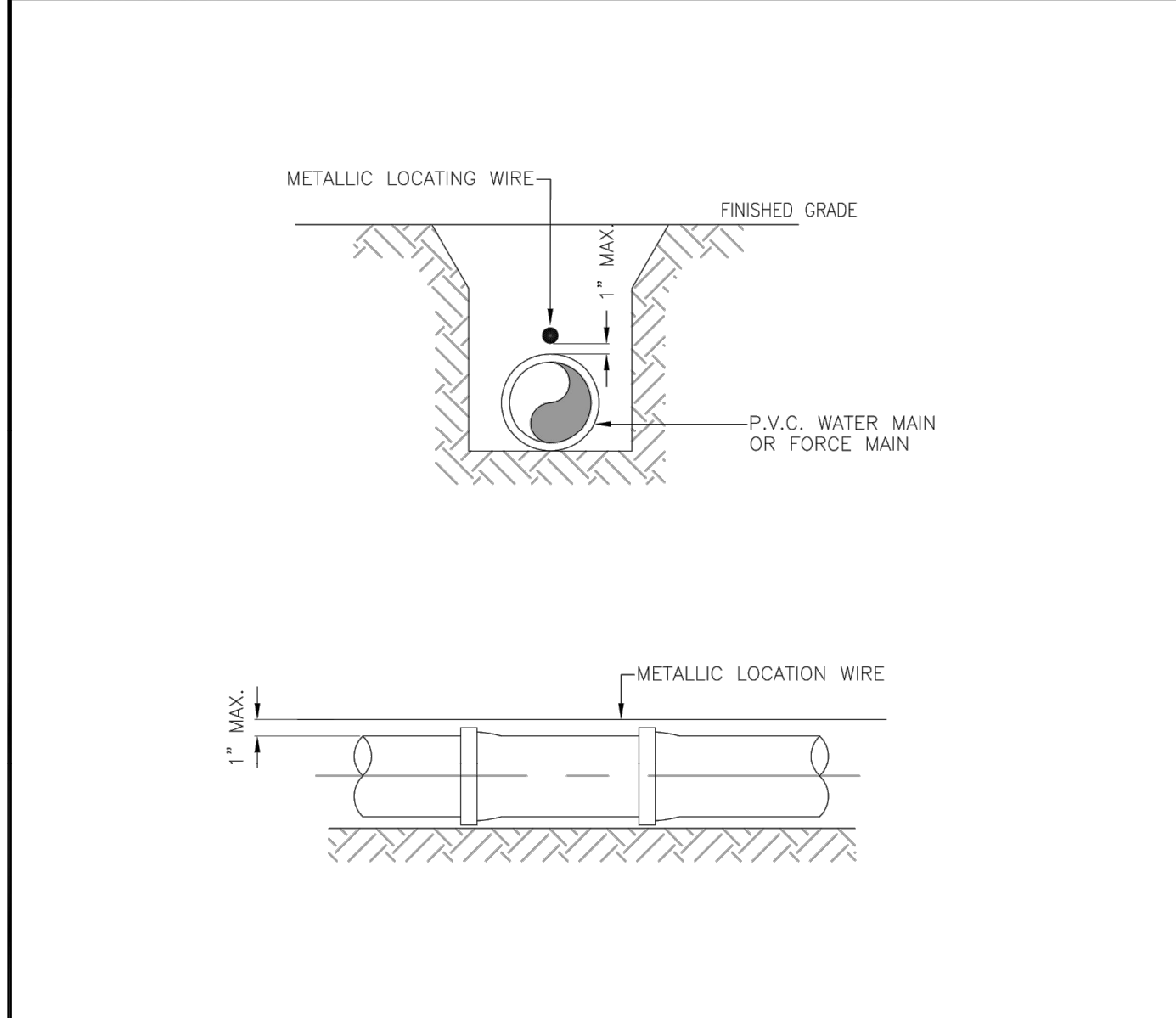
- NOTES: 1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH. 2.) RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5' BENDS. 3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE. 4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. 5.) PIPE SIZES ARE GIVEN IN INCHES. 6.) PIPE LENGTHS ARE GIVEN IN FEET. 7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 150 PSI. 8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER. 9.) RESTRAINED LENGTHS ARE TO BE USED FOR POTABLE WATER. 10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

CITY OF P.C.B UTILITIES STANDARD DETAILS RESTRAINED LENGTHS FOR P.V.C. POTABLE & REUSE WATER DATE: MAR 2012 M-15



- GENERAL NOTES: 1.) REPLACEMENT BASE OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE, BUT NOT LESS THAN 8" THICK. 2.) BASE MATERIAL SHALL BE COMPACTED TO A DENSITY NOT LESS THAN 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. 3.) ASPHALT CONC. PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED. 4.) SURFACE TREATED PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED. 5.) SURFACE PATCH MATERIAL SHALL BE FDOT SP-12.5 AND MATCH EXISTING ASPHALT THICKNESS, BUT NOT LESS THAN 1-1/2" THICK. FOR SMALL PATCHES SP-9.5 MAY BE USED WITH PRIOR WRITTEN APPROVAL BY THE CITY.

CITY OF P.C.B UTILITIES STANDARD DETAILS ASPHALT PAVEMENT PATCH DETAIL DATE: JAN 2017 M-8



- NOTES: 1.) PVC PIPE SHALL REQUIRE INSULATED METALLIC LOCATING WIRE (12 GAUGE COPPER) CAPABLE OF DETECTION BY A CABLE LOCATOR AND SHALL BE BURIED DIRECTLY ABOVE THE CENTERLINE OF THE PIPE. 2.) LOCATING WIRE SHALL TERMINATE AT THE TOP OF EACH VALVE BOX AND BE CAPABLE OF EXTENDING 12" ABOVE TOP OF BOX IN SUCH A MANNER SO AS NOT TO INTERFERE WITH VALVE OPERATION. 3.) USE DUCT TAPE AS NECESSARY TO HOLD WIRE ON THE TOP OF THE PIPE. 4.) ALL SPLICES SHALL BE MADE USING A WATER-TIGHT SEALING METHOD APPROVED BY THE CITY.

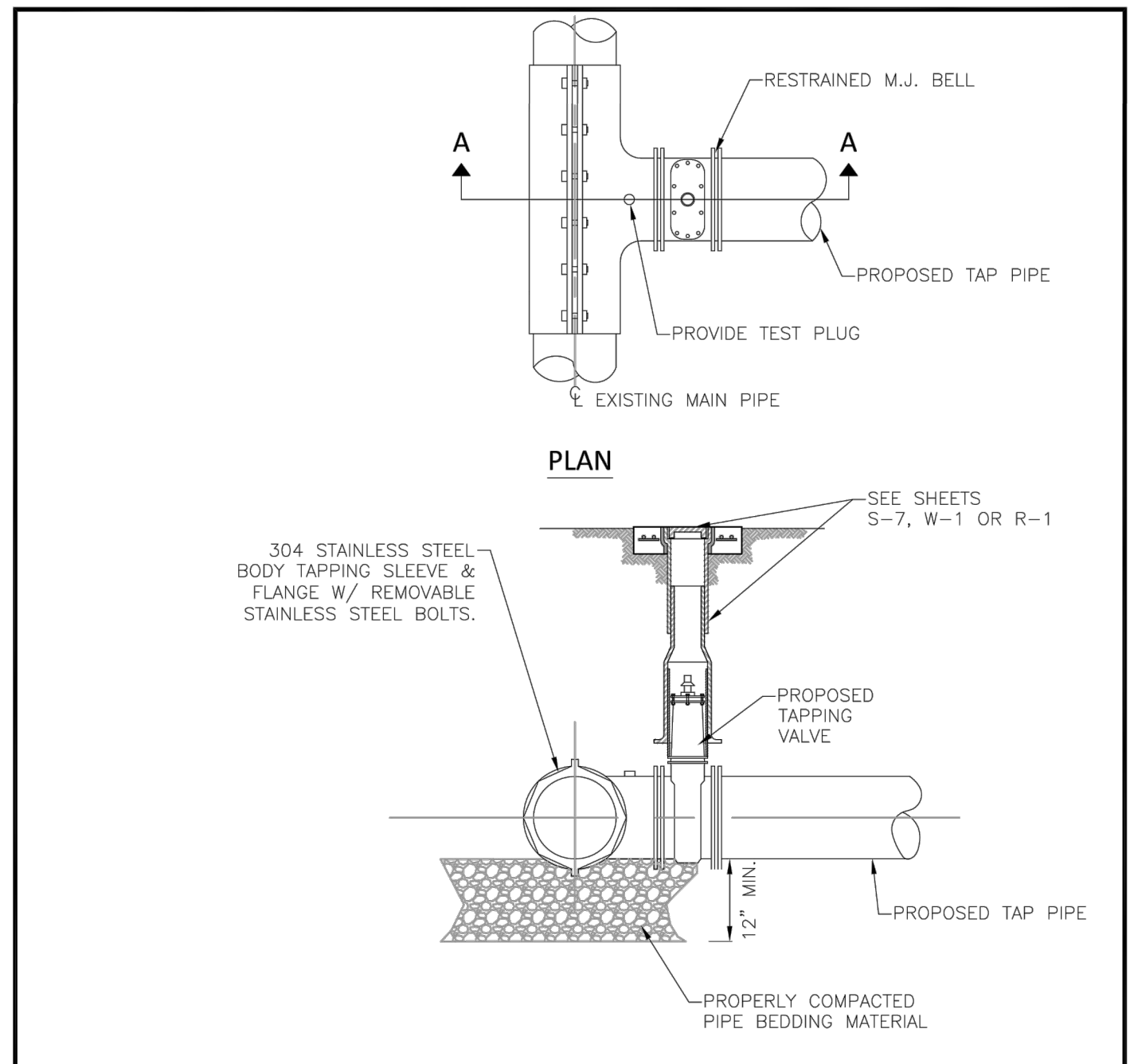
CITY OF P.C.B UTILITIES STANDARD DETAILS PVC PIPE LOCATING WIRE DETAIL DATE: MAR 2012 M-7

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

Table with columns: MAIN PIPE SIZE, HORIZ. BENDS (90°, 45°, 22.5°), *TEES (SIZE, LENGTH), REDUCERS (SIZE, LENGTH), PLUGS

- NOTES: 1.) RESTRAIN TO NEXT FULL JOINT BEYOND GIVEN LENGTH. 2.) RESTRAIN 11.25' BENDS 50% OF LENGTH FOR 22.5' BENDS. 3.) ALL VALVES AND FITTINGS SHALL BE RESTRAINED TO THE CONNECTING SECTIONS OF PIPE. 4.) PIPE ADJACENT TO IN-LINE VALVES 10" AND SMALLER SHALL BE RESTRAINED FOR 20' ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. ALL PIPE ADJACENT TO IN-LINE VALVES 12" AND LARGER SHALL BE RESTRAINED FOR A DISTANCE 1/4 OF REQ'D PLUG (DEAD END) LENGTH ON EACH SIDE, INCLUDING THE VALVE-TO-PIPE CONNECTION. 5.) PIPE SIZES ARE GIVEN IN INCHES. 6.) PIPE LENGTHS ARE GIVEN IN FEET. 7.) LENGTHS SHOWN ARE FOR A TEST PRESSURE OF 100 PSI. 8.) RESTRAINED LENGTHS FOR TEES REPRESENTS LENGTH ON BRANCH. RESTRAINED LENGTHS FOR REDUCERS REPRESENTS LENGTH ON LARGE END OF REDUCER. 9.) RESTRAINED LENGTHS ARE TO BE USED FOR SEWER AND RECLAIM WATER. 10.) THE RESTRAINED LENGTHS SHOWN IN THESE TABLES ARE BASED ON THE USE OF LIGHTLY COMPACTED CLEAN SAND WITH AT LEAST A 95% COARSE PARTICLE CONTENT. ACTUAL SOIL CONDITIONS MUST BE DETERMINED BY THE ENGINEER OF RECORD AND THE RESTRAINED LENGTHS MODIFIED ACCORDINGLY. SAFETY FACTOR OF 1.5:1 TO BE CALCULATED WITH A "SM" SOIL TYPE AND TRENCH TYPE "3".

CITY OF P.C.B UTILITIES STANDARD DETAILS RESTRAINED LENGTHS FOR P.V.C. SEWER DATE: MAR 2012 M-17

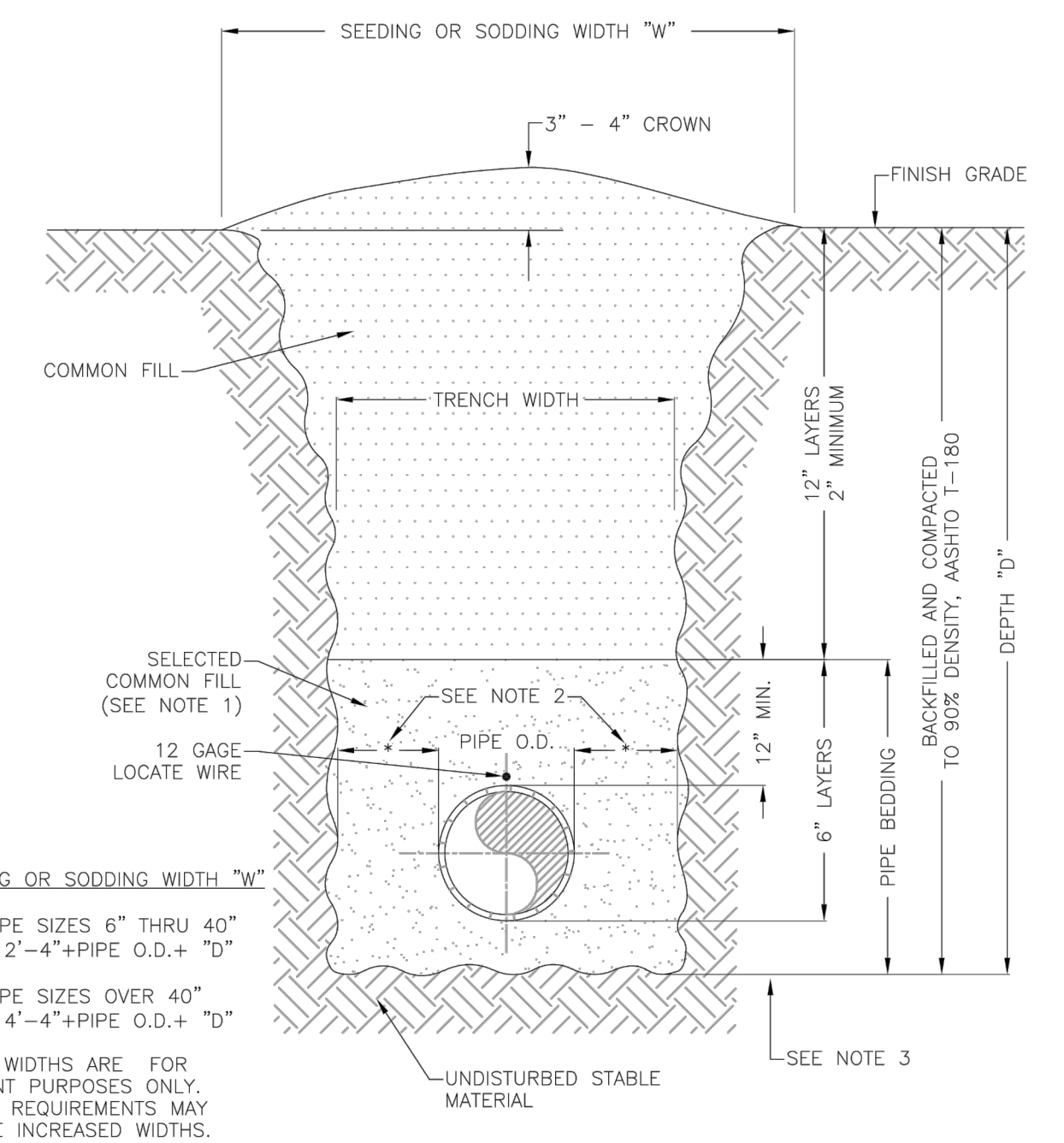


- NOTES: 1.) NO TAPPING CUTS SHALL BE MADE BEFORE: A 60 MINUTE TEST AT 100 P.S.I. FOR FORCE MAINS; OR 150 P.S.I. FOR POTABLE WATER MAINS AND RECLAIM WATER MAINS IS PERFORMED. 2.) ALL TAPS MUST BE PLACED NO CLOSER THAN 30" OR A DISTANCE EQUAL TO (1) MAIN PIPE DIAMETER PLUS (2) TAP PIPE DIAMETERS (WHICHEVER IS LARGER) FROM A JOINT OR FITTING. 3.) CONTRACTOR TO SUPPLY A DRY HOLE, PROPERLY CONFIGURED, FOR TAPPING CREW TO WORK AND A BACK-HOE TO LOWER MACHINE INTO HOLE. TAPPING ASSEMBLY MUST BE BOLTED ON & PRESSURE TESTED BY THE CONTRACTOR & WITNESSED BY THE CITY PRIOR TO TAP.

CITY OF P.C.B UTILITIES STANDARD DETAILS TAPPING SLEEVE & VALVE DETAIL DATE: MAY 2017 M-21

REQUIRED LENGTH OF RESTRAINED JOINT PIPE FOR P.V.C. PIPE

- NOTES: 1.) USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER. 2.) 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE 24" DIAMETER AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER. 3.) 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX FOR PIPE 42" DIAMETER AND LARGER. 4.) INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.



SEEDING OR SODDING WIDTH "W" FOR PIPE SIZES 6" THRU 40" "W" = 2'-4"+PIPE O.D.+ "D" FOR PIPE SIZES OVER 40" "W" = 4'-4"+PIPE O.D.+ "D" THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF P.C.B UTILITIES STANDARD DETAILS TRENCH DETAIL UNIMPROVED SURFACE TYPE A-1 PIPE BEDDING DATE: MAR 2012 M-22

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Dewberry Engineers Inc.
203 Aberdeen Parkway
Panama City, FL 32405
850.522.0644

SR 30A (U.S. 98) UTILITY
RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA

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NOTES:

- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 10" MAX. FOR PIPE DIAMETERS LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
- 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
- INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- WEARING SURFACE TO BE SAME TYPE & THICKNESS (1-1/2" MIN.) AS EXISTING PAVEMENT.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.
- BASE SHALL BE 8" MINIMUM THICKNESS LIMEROCK OR CRUSHED CONCRETE BASE, OR APPROVED EQUAL.
- BACKFILL AASHTO M-145 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6 INCHES. EACH LAYER SHALL BE THOROUGHLY TAMPED AND/OR ROLLED TO 95% AASHTO T-180 DENSITY.
- TEMPORARY PATCHES WILL BE INSTALLED TO PROVIDE A SMOOTH ALL WEATHER SURFACE AT ALL TIMES. PERMANENT REPLACEMENT TO BE MADE AS SOON AS POSSIBLE.
- NOTES 5) THRU 9) ARE MINIMUM REQUIREMENTS. REFER TO F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS FOR ADDITIONAL REQUIREMENTS.

SEEDING OR SODDING WIDTH "W"

FOR PIPE SIZES 6" THRU 22"
"W" = 4'-8"+PIPE O.D.+ "D"

FOR PIPE SIZES 24" THRU 40"
"W" = 5'-0"+PIPE O.D.+ "D"

THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF P.C.B UTILITIES STANDARD DETAILS
TRENCH DETAIL ASPH. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING
DATE: JAN 2017
M-23

NOTES:

- USE OF TYPE A-2 AND A-3 PIPE BEDDING TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
- 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
- 4" MAX. FOR PIPE 16" DIAMETER & LESS; 6" MAX. FOR PIPE 18" TO 36" DIAMETER; AND 9" MAX. FOR PIPE 42" DIAMETER AND LARGER.
- INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- THICKNESS TO MATCH EXISTING OR BE 4" MINIMUM, WHICHEVER IS GREATER.
- THICKNESS TO MATCH EXISTING OR BE 8" MINIMUM, WHICHEVER IS GREATER.
- IF ANY PART OF REQUIRED SAWCUT REMOVAL COMES WITHIN 3 FT. OF EXISTING JOINT ON EITHER SIDE OF TRENCH, REMOVE AND REPLACE TO EXISTING JOINT.
- SHEETING ORDERED LEFT IN PLACE TO BE CUT OFF 24" BELOW FINISHED GRADE OR 12" BELOW SUBGRADE.

SEEDING OR SODDING WIDTH "W"

FOR PIPE SIZES 6" THRU 22"
"W" = 3'-8"+PIPE O.D.+ "D"

FOR PIPE SIZES 24" THRU 40"
"W" = 4'-0"+PIPE O.D.+ "D"

THESE WIDTHS ARE FOR PAYMENT PURPOSES ONLY. SAFETY REQUIREMENTS MAY DICTATE INCREASED WIDTHS.

CITY OF P.C.B UTILITIES STANDARD DETAILS
TRENCH DETAIL CONC. PAVEMENT SURFACE TYPE A-1 PIPE BEDDING
DATE: NOV 2016
M-24

NOTES:

- 10" MAX. FOR PIPE DIAMETER LESS THAN 24"; 12" MAX. FOR PIPE DIAMETER 24" AND LESS THAN 42"; 24" MAX. FOR PIPE DIAMETER 42" AND OVER.
- 4" MAX. FOR PIPE 16" DIAMETER AND LESS; 6" MAX. FOR PIPE DIAMETER 18" TO 36" AND 9" MAX. FOR PIPE DIAMETER 42" AND OVER.
- INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

CITY OF P.C.B UTILITIES STANDARD DETAILS
TRENCH DETAIL TYPE A-2 PIPE BEDDING
DATE: NOV 2016
M-25

MINIMUM TECHNICAL STANDARDS CHECKLIST FOR UTILITY AS-BUILTS
CITY OF PANAMA CITY BEACH
DATED MAY, 2012

SURVEYORS AND MAPPERS MUST MEET THE FOLLOWING MINIMUM STANDARDS OF ACCURACY, COMPLETENESS, AND QUALITY FOR THE CITY OF PANAMA CITY BEACH TO ACCEPT AS-BUILTS.

- MUST IDENTIFY THE RESPONSIBLE SURVEYOR AND MARKER.
- SHALL STATE THE TYPE OF SURVEY IT DEPICTS AND THE PURPOSE OF THE SURVEY.
- MUST BEAR THE NAME, CERTIFICATE OF AUTHORIZATION NUMBER, AND STREET AND MAILING ADDRESS OF THE BUSINESS ENTITY ISSUING THE AS-BUILT SURVEY, ALONG WITH THE NAME AND LICENSE NUMBER OF THE SURVEYOR IN RESPONSIBLE CHARGE.
- MUST REFLECT A SURVEY DATE, WHICH IS THE DATE OF ACQUISITION. WHEN THE GRAPHICS OF THE AS-BUILT SURVEY ARE REVISED, BUT THE SURVEY DATE STAYS THE SAME, THE AS-BUILT SURVEY MUST LIST DATES FOR ALL REVISIONS.
- MUST BE SIGNED AND SEALED BY THE SURVEYOR IN RESPONSIBLE CHARGE.
- A DESIGNATED "NORTH ARROW" AND EITHER A STATED SCALE OR GRAPHIC SCALE SHALL BE SHOWN.
- APPROPRIATE LINE TYPES, LINE WEIGHTS, AND LINE WIDTHS SHALL BE USED ON THE AS-BUILT DRAWING TO DIFFERENTIATE EXISTING FROM PROPOSED AND WATER FROM SEWER, RECLAIM, AND STORM. ALL PHYSICAL ITEMS (I.E. PIPES, VALVES, ETC.), SURVEYED BOUNDARIES, AND EASEMENTS SHOULD BE CLEARLY MARKED, AND DIMENSIONED, AND IDENTIFIED BY SIZE AND MATERIAL.
- ALL UTILITIES IN THE PUBLIC RIGHT OF WAY AND WITHIN EASEMENTS OR TO THE END OF THE PUBLICLY OWNED PORTION OF THE UTILITY (I.E. METER AND BACKFLOW PREVENTER, CLEANOUT, ETC.) SHALL BE SHOWN WITH ASSOCIATED SIZES LABELED. BUT IS NOT LIMITED TO, STUB-OUTS/LATERALS, METERS, BPPS, WATER MAINS, FORCE MAINS, GRAVITY SEWER MAINS, MANHOLES, STORM WATER PIPING AND ASSOCIATED STRUCTURES, VALVES, FIRE HYDRANTS, LIFT STATIONS, ETC. ALL PIPE LINE WORK MUST BE CONNECTED WITHIN THE SITE AS WELL AS THE CONNECTION TO EXISTING UTILITIES ADJACENT TO THE SITE (IT IS THE SURVEYOR'S RESPONSIBILITY TO COORDINATE WITH ALL CONTRACTORS FOR LOCATIONS AND SIZING). ALL UTILITY CONNECTIONS TO THE BUILDINGS MUST BE SHOWN.
- ALL PROPOSED UTILITY INGRESS/EGRESS EASEMENTS MUST BE SHOWN ON THE DRAWING AND MUST HAVE THE ASSOCIATED LEGAL DESCRIPTION WRITTEN.
- EDGE OF PAVEMENT, ROADS (ASPHALT SHADED), CURBS, DRIVEWAY CONNECTIONS, BUILDINGS, PARKING LOTS, RIGHT-OF-WAY, AND STREET NAMES MUST BE SHOWN IN ALL APPLICATIONS. ALL ITEMS MENTIONED ABOVE MUST BE FIELD LOCATED.
- IF A LIFT STATION IS TO BE DEDICATED TO THE CITY THE PLAN MUST SHOW A DETAIL SCALED AT 1"=10' SHOWING ALL IMPROVEMENTS INCLUDING: WATER AND SEWER SERVICES, MANHOLES, INVERTS, RIMS, BPPS, YARD HYDRANTS, CONTROL PANELS, FENCING, PARCEL BOUNDARY, LEGAL DESCRIPTION OF PARCEL BOUNDARY, WET WELL, VALVE BOX, FORCE MAIN, FLOW METER (IF APPLICABLE), DRIVEWAY, GATE.
- PROPERTY BOUNDARY MUST BE CLEARLY LABELED AND DIMENSIONED.
- INVERTS, GRATES, TOPS, RIMS MUST BE SHOWN FOR ALL STORM WATER DRAINAGE STRUCTURES, INVERTS (PIPES AND CLEANOUTS) AND RIMS MUST BE SHOWN FOR ALL GRAVITY SEWER MANHOLES. SLOPES MUST BE SHOWN ON EACH RUN OF PIPE FOR REVIEW AND APPROVAL.
- "AS-BUILT" PROFILE OF ALL DIRECTIONAL BORES AND JACK-AND-BORES INDICATING GRADE AND PIPE ELEVATIONS AT 10 FOOT INTERVALS SHALL BE PROVIDED ON AS-BUILT PLAN SHEETS BASED ON BORE LOGS DEVELOPED BY BORING CONTRACTOR DURING INSTALLATION. PROFILES SHALL USE HORIZONTAL STATIONING WHICH TIES TO STATIONING ON PLANS. PROFILES SHALL ALSO SHOW EXISTING SURFACE ELEVATIONS AS WELL AS ANY PROPOSED SURFACE ELEVATIONS ON THE PROFILE. SURFACE PROFILES MUST SHOW ANY PAVEMENT, SIDEWALKS, DITCHES, SWALES ETC. NOTE THAT PROFILES LOCATING PIPE SOLELY BY "DEPTH BELOW EXISTING GROUND" WILL NOT BE ACCEPTED.
- COASTAL SETBACK LINE OR COASTAL CONSTRUCTION CONTROL LINE SHOULD BE DESIGNATED.
- ELEVATIONS AND LOCATION OF ANY FLOOD ZONES ALONG THE FLOOD HAZARD BOUNDARIES SHALL BE DELINEATED.
- NEARBY WETLANDS AND OTHER ENVIRONMENTALLY SIGNIFICANT RESOURCES CLEARLY LABELED.
- STORM WATER MANAGEMENT SYSTEM FEATURES INCLUDING DIMENSIONS OF: WET AND DRY SWALES, WET AND DRY PONDS, CONVEYANCE SYSTEMS, EASEMENTS, ALONG WITH ALL ASSOCIATED M.E.S. STRUCTURES AND INVERTS, OUTFALL STRUCTURES AND INVERTS, SKIMMERS, DISCHARGE STRUCTURES AND INVERTS AND SLOT ELEVATIONS, TOP OF BANK, SLOPE OF BANK AND BOTTOM OF ALL PONDS, SWALES, CLOSED AND OPEN CONVEYANCES. FOR FEMA LOMR SUBMITTALS ALSO PROVIDE FINISHED FLOOR ELEVATIONS, SPOT ELEVATIONS AND/OR CONTOURS SHOWING LOWEST LOT ELEVATIONS.
- THE ENGINEER OF RECORD SHALL REVIEW AND APPROVE THE AS-BUILT PRIOR TO SUBMISSION TO THE CITY FOR FINAL APPROVAL. WRITTEN APPROVAL BY THE ENGINEER OF RECORD SHALL BE NOTED ON A TRANSMITTAL WITH A STATEMENT OF NO EXCEPTIONS TO MINIMUM STANDARDS PROVIDED HEREIN.

STORM WATER REQUIREMENTS FOR THE AS-BUILT SURVEYS ONLY APPLY TO PARCELS WITHIN CITY LIMITS. PLEASE SUBMIT THREE (3) HARD COPIES AND ONE (1) DIGITAL (AUTOCAD FORMAT & PDF) FOR REVIEW AND APPROVAL.

CITY OF P.C.B UTILITIES STANDARD DETAILS
MINIMUM TECHNICAL STANDARDS FOR AS-BUILTS
DATE: MAY 2012
M-29

MINIMUM PIPE BEND RADIUS TABLE

| NOMINAL DIAMETER | MINIMUM BEND RADIUS IN FEET | | | |
|------------------|-----------------------------|----------------------------|----------------|------------------|
| | IPS (200 x O.D.) | PVC C900/C905 (250 x O.D.) | FPVC C900/C905 | HDPE (25 x O.D.) |
| 2 | 9 | | 40 | 5 |
| 4 | 75 | 100 | 94 | 10 |
| 6 | 110 | 144 | 138 | 14 |
| 8 | 144 | 189 | 180 | 19 |
| 10 | 180 | 232 | 224 | 23 |
| 12 | 213 | 275 | 266 | 28 |
| 14 | - | 319 | - | 32 |
| 16 | - | 363 | - | 36 |
| 18 | - | 406 | - | 41 |
| 20 | - | 450 | - | 45 |
| 24 | - | 538 | - | 54 |
| 30 | - | - | - | 67 |
| 36 | - | - | - | 80 |

- ALL POLYETHYLENE PIPING SHALL MEET CITY OF PANAMA CITY BEACH STANDARDS AND SPECIFICATIONS
- SDR 9, CLASS 250, PE4710 RESIN HDPE FOR 1" SERVICE TUBING.
SDR-11, CLASS 200, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER POTABLE WATER & RECLAIMED WATER.
SDR-11, CLASS 160, PE4710 RESIN HDPE FOR 2" DIAMETER AND LARGER SANITARY FORCE MAINS COLOR CODED BLUE FOR POTABLE WATER COLOR CODED PURPLE FOR RECLAIMED WATER COLOR CODED GREEN FOR SANITARY FORCE MAIN.
- THE COLOR CODING SHALL MEETING REQUIREMENTS IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320 (21)(b) 3 F.A.C. AND SHALL BE CO-EXTRUDED DURING PIPE MANUFACTURING.
- ALL HDPE PIPE 2" DIAMETER AND LARGER MUST BE IPS, NO CTS IS ALLOWED. ALL 1" SERVICE TUBING SHALL BE CTS.
- ALL PVC PIPE MUST BE C900/C905.

CITY OF P.C.B UTILITIES STANDARD DETAILS
MINIMUM PIPE BEND RADIUS TABLE
DATE: JUL 2019
M-32

SEAL

BID SET NOT FOR CONSTRUCTION

SCALE

NO SCALE

REVISIONS

| NO. | DESCRIPTION | DATE |
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DRAWN BY S. RAY
APPROVED BY J. PEREIRA
CHECKED BY STAFF
DATE JULY 26, 2021

TITLE
DETAILS

PROJECT NO. 50134682

D3

SHEET NO.

July 13, 2021 (12:50:18 EST)
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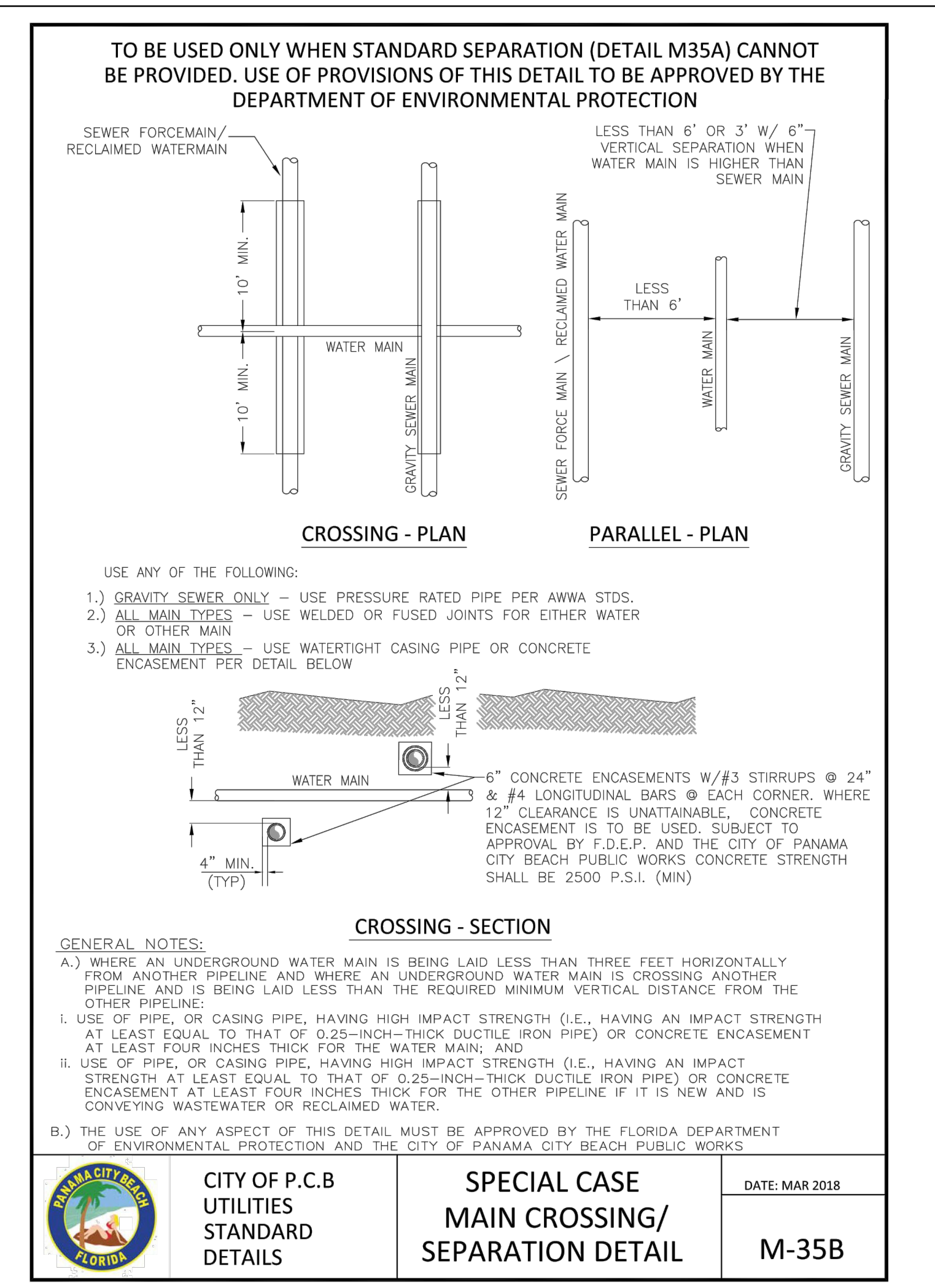
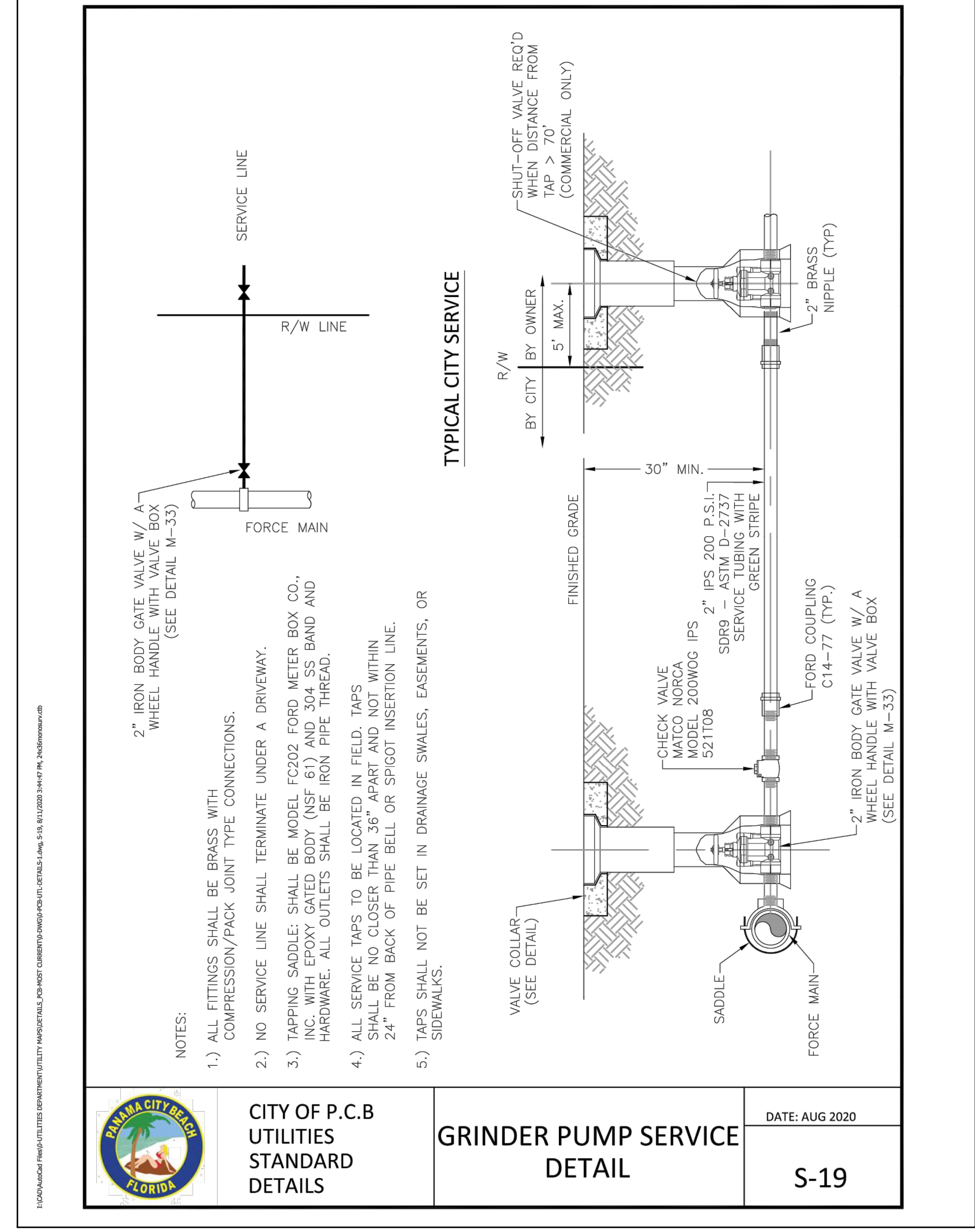
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| OTHER PIPE | HORIZONTAL SEPARATION | CROSSINGS (SEE NOTE 1) | JOINT SPACING @ CROSSINGS (FULL JOINT CENTERED) |
|---|------------------------------------|--|---|
| STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER MAIN | 3" MIN. | 12" MIN. EXCEPT FOR WATER MAIN. 12" IS THE MIN. AND 12" IS PREFERRED. | ALTERNATE 3" MIN. WATER MAIN |
| VACUUM SANITARY SEWER | 10" PREFERRED 3" MIN. | 12" PREFERRED 6" MIN. | ALTERNATE 3" MIN. WATER MAIN |
| GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN | 10" PREFERRED 6" MIN. (SEE NOTE 2) | 10" MIN. EXCEPT FOR GRAVITY SEWER. THEN 6" IS THE MIN. AND 12" IS PREFERRED. | ALTERNATE 6" MIN. WATER MAIN |
| ON - SITE SEWAGE TREATMENT & DISPOSAL SYSTEM | 10" MIN. | ----- | ----- |

(1) WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MIN. SEPARATION IS 12".
(2) 3' FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6" ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.
(3) IF REQUIRED SEPARATION CANNOT BE PROVIDED SEE DETAIL M-35B FOR REQ'D ADDITIONAL PROTECTION.

| | | | |
|--|--|---|----------------|
| | CITY OF P.C.B UTILITIES STANDARD DETAILS | STANDARD MAIN CROSSING/ SEPARATION DETAIL | DATE: MAR 2012 |
| | | | M-35A |



PIPE COVERAGE TABLE

| PIPE DIAMETER | REQUIRED COVER |
|---------------------|----------------|
| UP TO 12" | 36" |
| ABOVE 12" UP TO 24" | 42" |
| 30" AND ABOVE | 48" |

NOTES:
1. COVER SHALL BE MEASURED WHEN FINISH GRADES ARE ESTABLISHED.
2. COVER TOLERANCES ARE +6", -3", PROVIDED THE AVERAGE COVER MEETS TABLE REQUIREMENTS.

| | | | |
|--|--|------------------------------|----------------|
| | CITY OF P.C.B UTILITIES STANDARD DETAILS | REQUIRED PIPE COVERAGE TABLE | DATE: MAR 2012 |
| | | | M-40 |



Dewberry Engineers Inc.
203 Aberdeen Parkway
Panama City, FL 32405
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SR 30A (U.S. 98) UTILITY
RELOCATION
CITY OF PANAMA CITY BEACH
BAY COUNTY
FLORIDA

SEAL

JOSE A. PEREIRA, P.E. 82808
EB 0008794

BID SET
NOT FOR CONSTRUCTION

SCALE
NO SCALE

REVISIONS

| NO. | DESCRIPTION | DATE |
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DRAWN BY _____ S. RAY
APPROVED BY _____ J. PEREIRA
CHECKED BY _____ STAFF
DATE _____ JULY 26, 2021

TITLE
DETAILS

PROJECT NO. 50134682

D4

SHEET NO.

