MANATEE COUNTY GOVERNMENT
INVITATION FOR BID (IFB) #09-1583-OV
17th Street West (From Business U.S. 41 to U.S. 41)
Road and Utility Improvements, Palmetto, FL
Project No. 6035261

Manatee County, a political subdivision of the State of Florida, (hereinafter "Manatee County" or the "County" or "Owner") will receive sealed bids from individuals, corporations, partnerships, and other legal entities organized under the laws of the State of Florida or authorized to conduct business in the State of Florida.

INFORMATION CONFERENCE

In order to insure that all prospective bidders have sufficient information and understanding of the County's needs, an **Information Conference** will be held **May 6, 2009 at 2:00 PM.** at the **Manatee County Public Works Department, Project Management Division, (Conference Room A) 1022 26th Avenue East, Bradenton, FL 34208,** All interested bidders are encouraged to attend.

Deadline for Clarification Requests: MAY 22, 2009. Reference Article A.03 of this Invitation for Bid.

TIME AND DATE DUE: JUNE 4, 2009 at 2:00 PM

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Important Note: A prohibition of Lobbying has been enacted. Please review paragraph A.24 carefully to avoid violation and possible sanctions.

FOR INFORMATION CONTACT
Olga Valcich (941) 708-7527
Email: olga.valcich@mymanatee.org

Authorized for Release:

SECTION 00010
INFORMATION TO BIDDERS

A.01 OPENING LOCATION

These bids will be **publicly opened** at **Manatee County Purchasing, 1112 Manatee Avenue West, Suite 803, Bradenton, Florida 34205** in the presence of County officials **at the time and date stated, or soon thereafter. All bidders or their representatives** are invited to be present.

A.02 BID INFORMATION AND BID DOCUMENTS

Bids and Proposals on http://www.mymanatee.org Bid or Proposal documents and Notices of Source Selection related to those Bids or Proposals are available for download in a portable document format (.PDF) file on the Manatee County web page on the Purchasing tab under "Bids and Proposals." You may view and print these files using Adobe Acrobat software. A free copy of the Adobe software may be downloaded from the County's web site.

Manatee County collaborates with the Manatee Chamber of Commerce on distributing solicitations using the RFP Tool web page on the Chambers website: http://www.Manateechamber.com to post Bid and Proposal documents in a portable document format (.PDF) file. This step is in addition to the posting on Manatee County Government web pages.

Manatee County may also use an internet service provider to distribute Bids and Proposals. A link to that service http://www.DemandStar.com, is provided on this website under the Tab "DemandStar". Participation in the DemandStar system is not a requirement for doing business with Manatee County.

Note: The County posts the Notice of Source Selection seven calendar days prior to the effective date of the award.

IT IS THE RESPONSIBILITY OF EACH VENDOR, PRIOR TO SUBMITTING THEIR BID OR PROPOSAL, TO CONTACT THE MANATEE COUNTY PURCHASING OFFICE (see contact information on front page of this document) TO DETERMINE IF ADDENDA WERE ISSUED AND TO MAKE SUCH ADDENDA A PART OF THEIR BID OR PROPOSAL.

A public internet connection is available during regular business hours in the lobby of the Purchasing Division. If you have any questions which cannot be answered by these sources, please contact the individual named on the front page of the Bid or Proposal.

A.03 DEADLINE FOR CLARIFICATION REQUESTS

For this Invitation for Bid, **May 22, 2009** shall be the deadline to submit all inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to this Invitation for Bid.

This deadline has been established to maintain fair treatment for all potential bidders, while maintaining the expedited nature of the Economic Stimulus that the contracting of this work may achieve.

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INFORMATION TO BIDDERS

A.04 BID FORM DELIVERY REQUIREMENTS

Any bids received after the stated time and date will not be considered. It shall be the sole responsibility of the bidder to have their bid delivered to Manatee County Purchasing for receipt on or before the stated time and date. If a bid is sent by U.S. Mail, the bidder shall be responsible for its timely delivery to Purchasing. Bids delayed by mail shall not be considered, shall not be opened at the public opening, and arrangements shall be made for their return at the bidder's request and expense. Telegraphic bids and/or facsimile bids will not be considered.

A.05 CLARIFICATION & ADDENDA

Each bidder shall examine all Invitation for Bid documents and shall judge all matters relating to the adequacy and accuracy of such documents. Any inquiries, suggestions or requests concerning interpretation, clarification or additional information pertaining to the Invitation for Bid shall be made through the Manatee County Purchasing Office. The County shall not be responsible for oral interpretations given by any County employee, representative, or others. The issuance of a written addendum is the only official method whereby interpretation, clarification or additional information can be given.

If any addenda are issued to this Invitation for Bid, the County will Broadcast the addenda on the DemandStar distribution system to "Planholders" on this web service, and post the documents on the Purchasing Division's web page at http://www.mymanatee.org which may be accessed by clicking on the "Purchasing" button on the left side of the screen and then clicking on the "Bids and Proposals" button. It shall be the responsibility of each bidder, prior to submitting their bid, to contact Manatee County Purchasing (see contact on page 1) to determine if addenda were issued and to make such addenda a part of their bid. **Bidders must fully comply with the Bid Contract Documents, terms, and conditions.**

A.06 SEALED & MARKED

One original and two copies of your **signed bid** shall be submitted in one sealed package, clearly marked on the outside "**Sealed Bid ##09-1583-OV 17th Street West (From Business U.S. 41 to U.S. 41) Road and Utility Improvements, Palmetto, FL** with your company name and addressed to:

Manatee County Purchasing
1112 Manatee Avenue West, Suite 803
Bradenton, Florida 34205

A.07 LEGAL NAME

Bids shall clearly indicate the legal name, address and telephone number of the bidder. Bids shall be signed above the typed or printed name and title of the signer. The signer must have the authority to bind the bidder to the submitted bid.

A.08 BID EXPENSES

All expenses for making bids to the County are to be borne by the bidder.

SECTION 00010
INFORMATION TO BIDDERS

A.09 IRREVOCABLE OFFER

Any bid may be withdrawn up until the date and time set for opening of the bid. Any bid not so withdrawn shall, upon opening, constitute an irrevocable offer for a period of 90 days to sell to Manatee County the goods and/or services set forth in the attached Contract Documents until one or more of the bids have been duly accepted by the County.

A.10 DISCLOSURE

Upon receipt, responses become "Public Records" and shall be subject to public disclosure consistent with Chapter 119, Florida Statutes. Section 119.071(1)(b)1.a states that sealed bids shall be exempt from inspection or copying until such time as the County provides a notice of a decision or within 10 days after the date the bids are opened, whichever is earlier.

A.11 RESERVED RIGHTS

The County reserves the right to accept or reject any and/or all bids, to waive irregularities and technicalities, and to request resubmission. Also, the County reserves the right to accept all or any part of the bid and to increase or decrease quantities to meet additional or reduced requirements of the County. Any sole response received by the first submission date may or may not be rejected by the County depending on available competition and current needs of the County. For all items combined, the bid of the lowest responsive, responsible bidder will be accepted, unless all bids are rejected. The lowest responsible bidder shall mean that bidder who makes the lowest bid to sell goods and/or services of a quality which conforms closest to or most exceeds the quality of goods and/or services set forth in the attached Contract Documents or otherwise required by the County, and who is fit and capable to perform the bid as made.

To be responsive, a bidder shall submit a bid which conforms in all material respects to the requirements set forth in this Invitation For Bid.

To be a responsible bidder, the bidder shall have the capability in all respects to perform fully the contract requirements, and the tenacity, perseverance, experience, integrity, reliability, capacity, facilities, equipment, and credit which will assure good faith performance. Also, the County reserves the right to make such investigation as it deems necessary to determine the ability of any bidder to deliver the goods or service requested. Information the County deems necessary to make this determination shall be provided by the bidder. Such information may include, but shall not be limited to: current financial statements, verification of availability of equipment and personnel, and past performance records.

A.12 COLLUSION

By offering a submission to this Invitation For Bid, the bidder certifies that the bidder has not divulged, discussed or compared their bid with other bidders, and has not colluded with any other bidder or parties to this bid whatsoever. Also, bidder certifies, and in the case of a joint bid each party thereto certifies as to their own organization, that in connection with this bid:

SECTION 00010
INFORMATION TO BIDDERS

A.12 COLLUSION (Continued)

a. any prices and/or cost data submitted have been arrived at independently, without consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices and or cost data, with any other bidder or with any competitor;
b. any prices and or cost data quoted for this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder, prior to the scheduled opening, directly or indirectly to any other bidder or to any competitor;
c. no attempt has been made or will be made by the bidder to induce any other person or firm to submit or not to submit a bid for the purpose of restricting competition;
d. the only person or persons interested in this bid, principal or principals is/are named therein and that no person other than therein mentioned has any interest in this bid or in the contract to be entered into; and
e. no person or agency has been employed or retained to solicit or secure this contract upon an agreement or understanding or a commission, percentage, brokerage, or contingent fee excepting bona fide employees or established commercial agencies maintained by bidder for purpose of doing business.

A.13 APPLICABLE LAWS

Bidder or Proposer must be authorized to transact business in the State of Florida. All applicable laws and regulations of the State of Florida and ordinances and regulations of Manatee County will apply to any resulting agreement. Any involvement with any Manatee County procurement shall be in accordance with Manatee County Purchasing Code Ordinance 08-43, as amended. An actual or prospective Bidder or Proposer who is aggrieved in connection with the solicitation or award of a contract may protest to the Board of County Commissioners of Manatee County as required in Section 2-26/61 of the Purchasing Code.

A protest with respect to this Invitation For Bid or Request for Proposal shall be submitted in writing prior to the scheduled opening date of this proposal, unless the aggrieved person did not know and could not have been reasonably expected to have knowledge of the facts giving rise to such protest prior to the scheduled opening date of this proposal. The protest shall be submitted within seven calendar days after such aggrieved person knows or could have reasonably been expected to know the facts giving rise thereto.

A.14 CODE OF ETHICS

With respect to this proposal, if any Bidder or Proposer violates or is a party to a violation of the Code of Ethics of Manatee County per Manatee County Purchasing Code Ordinance 08-43, Article 3, Ethics in Public Contracting, and / or the State of Florida per Florida Statutes, Chapter 112, Part III, Code of Ethics for Public Officers and Employees, such Bidder or Proposer may be disqualified from performing the work described in this proposal or from furnishing the goods or services for which the proposal is submitted and shall be further disqualified from submitting any future bids or proposals for work or for goods or services for Manatee County.

SECTION 00010
INFORMATION TO BIDDERS

A.14 CODE OF ETHICS (Continued)
The County anticipates that all statements made and materials submitted in a proposal will be truthful. If a bidder or proposer is determined to be untruthful in its proposal or any related presentation, such bidder or proposer may be disqualified from further consideration regarding this Invitation For Bid or Request for Proposal.

A.15 BID FORMS
Bids must be submitted on attached County forms, although additional pages may be attached. **Bidders must fully comply with all bid Contract Documents, terms, and conditions**. Failure to comply shall result in contract default, whereupon, the defaulting vendor shall be required to pay for any and all re-procurement costs, damages, and attorney fees as incurred by the County.

A.16 DISCOUNTS
Any and all discounts must be incorporated in the prices contained in the bid, and not shown separately. The prices as shown on the bid form shall be the price used in determining award(s).

A.17 TAXES
Manatee County is exempt from Federal Excise and State Sales Taxes (F.E.T. Exempt Cert. No. 59-78-0089K and FL Sales Tax Exempt Cert. No. 85-8012622206C-6); therefore, the bidder is prohibited from delineating a separate line item in his bid for any sales or service taxes. Nothing herein shall affect the bidder's normal tax liability.

A.18 MATHEMATICAL ERRORS
Bids submitted shall be based on the quantities stated on the Bid Form. Quantities shall be used for the comparison of Bids. Payment to the Contractor will be made based on the actual quantity of work completed and accepted at the date of payment request, in accordance with the terms of the contract.

In the event of multiplication/extension error(s), the unit price shall prevail. In the event of addition error(s), the extended totals shall prevail. All bids shall be reviewed mathematically and corrected, if necessary, using these standards prior to additional evaluation. Calculations shall be factored to the second decimal point.

A.19 DESCRIPTIVE INFORMATION
Unless otherwise specifically provided in the Contract Documents, all equipment, materials and articles incorporated in the work covered by this contract shall be new and of the most suitable grade for the purpose intended. Unless otherwise specifically provided in the Contract Documents, reference to any equipment, material, article or patented process, by trade name, brand name, make or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition.

SECTION 00010
INFORMATION TO BIDDERS

A.20 PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

In accordance with Ordinance 08-43, adding Article 5, Manatee County Board of County Commissioners adopted a policy prohibiting the award of County contracts to persons, business entities, or affiliates of business entities who have not submitted written certification to the County that they have not been convicted of bribery, attempted bribery, collusion, restraints of trade, price fixing, and violations of certain environmental laws. A Non-Conviction Certification Form is attached for this purpose.

A.21 DRUG FREE WORK PLACE

The Manatee County Board of County Commissioners adopted a policy regarding Bidders maintaining a Drug Free Work Place, prohibiting the award of bids to any person or entity that has not submitted written certification to the County that it has complied with those requirements [Reference Resolution R-93-22, Manatee County Purchasing Policies, Section 4, E (1) (a)].

A Drug Free Work Place Certification Form is attached to this bid for this purpose.

A.22 PUBLIC ENTITY CRIMES

In accordance with Section 287.133, Florida Statutes, 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, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases or 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 (as of 01/01/2005 is $25,000) for a period of 36 months from the date of being placed on the convicted vendor list.

A.23 AMERICAN DISABILITIES ACT

The Board of County Commissioners of Manatee County, Florida, does not discriminate upon the basis of any individual's disability status. This non-discrimination policy involves every aspect of the County's functions including one's access to, participation, employment, or treatment in its programs or activities. Anyone requiring reasonable accommodation for an **Information Conference** or **Bid Opening** should contact the person named on the first page of this Bid Document at least twenty-four (24) hours in advance of either activity.

A.24 LOBBYING

After the issuance of any Invitation For Bid or Request For Proposal, prospective bidders, proposers or any agent, representative or person acting at the request of such bidder or proposer shall not contact, communicate with or discuss any matter relating in any way to the Invitation for Bids or Request for Proposals with any officer, agent or employee of Manatee County other than the Purchasing Director or as directed in the Invitation for Bids or Request for Proposals.

SECTION 00010
INFORMATION TO BIDDERS

A.24 LOBBYING (Continued)
This prohibition begins with the issuance of any Invitation for Bids, or Request for Proposals, and ends upon execution of the final contract or when the invitation or request has been cancelled. Violators of this prohibition shall be subject to sanctions as provided in the Manatee County Purchasing Code.

The County reserves the right to amend or to add to the names listed as persons to contact. All amendments or additions to the names listed as persons to contact shall be issued by Purchasing, in writing.

A.25 EQUAL EMPLOYMENT OPPORTUNITY CLAUSE
Manatee County, in accordance with the provisions of Title VI of the Civil Rights Act of 1964 and the Regulations of the Department of Commerce (15 CFR, Part 8) issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, minority business enterprises will be afforded full opportunity to submit bids in response to this advertisement and will not be discriminated against on the grounds of race, color or national origin in consideration for an award.

A.26 MBE/WBE
The State of Florida, **Office of Supplier Diversity** provides the certification process and the database for identifying certified MBE/WBE firms. This service may be directly accessed at: http://www.osd.dms.state.fl.us/iframe.htm

If you have any questions regarding this State service, please contact their office at (850) 487-0915.

NOTE: ANY OR ALL STATEMENTS CONTAINED IN THE FOLLOWING SECTIONS SHALL HAVE PRECEDENCE: BASIS OF AWARD, TERMS AND CONDITIONS OF THE CONTRACT, OR CONTRACT DOCUMENTS WHICH VARY FROM THE INFORMATION TO BIDDERS.

END OF SECTION

SECTION 00020
BASIS OF AWARD

B.01 BASIS OF AWARD

Award shall be to the most responsive, responsible bidder meeting specifications and having the lowest Total Bid Price for **Bid "A",** or the lowest Total Bid Price for **Bid "B",** for the requirements listed on the Bid Form for the Work as set forth in this Invitation For Bid. Bid Prices shall include costs for furnishing all labor, equipment and/or materials for the completion of the Work in accordance with and in the manner set forth and described in the Contract Documents to the County's satisfaction within the prescribed time.

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price". The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County. Only one award shall be made.

Section 00300; Bid Form page 00300-5 for Bid "A" and Bid Form page 00300-9 for Bid "B" includes payment for Discretionary Work (Bid Item 142) which may or may not be utilized at the Owner's discretion in order to satisfactorily complete the project in accordance with the Plans and Specifications provided herein.

In evaluating bids, the County shall consider the qualifications of the bidders; and if required, may also consider the qualifications of the subcontractors, suppliers, and other persons and organizations proposed. County may also consider the operating costs, maintenance requirements, performance data and guarantees of major items of materials and equipment proposed for incorporation in the Work.

Whenever two or more bids are equal with respect to price, quality and service, the bid received from a local business shall be given preference in award. Whenever two or more bids which are equal with respect to price, quality and service are received, and both bids and neither of these bids are received from a local business, the award shall be determined by a chance drawing conducted by the Purchasing Office and open to the public.

Local business is defined as a business duly licensed and authorized to engage in the sale of goods and/or services to be procured, which has a place of business in Manatee County with full time employees at that location.

SECTION 00020
BASIS OF AWARD

B.02 QUALIFICATIONS OF BIDDERS

Each bidder must secure all licenses required (in accordance with Chapter 489 Florida Statutes) for the Work which is the subject of this bid; and, upon request, shall submit a true copy of all applicable licenses. The minimum license requirement for this project is a **General Contractors License or an Underground Utility Contractor's license.**

To demonstrate qualifications to perform the Work, each bidder must be prepared to submit within five days of County's request; written evidence such as financial data, previous experience, present commitments and other such data as may be requested. Bidder must be able to provide evidence of Bidder's qualification to do business in the state of Florida. Each bidder shall submit as a portion of their bid, a completed Contractor's Questionnaire included as Section 00430.

A complete list of all subcontractors proposed for any portion of the Work may be requested of any Bidder deemed necessary by the Owner. Subcontracts shall be awarded only to those subcontractors considered satisfactory by the Owner.

B.03 PREPARATION OF CONTRACT

A written notice confirming award or recommendation thereof will be forwarded to the Successful Bidder accompanied by the required number of unsigned counterparts of the Agreement. Within 10 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement with any other required documents to County. (Note: Contract must be approved and executed by Manatee County Board of County Commissioners to be valid.)

END OF SECTION

SECTION 00030

GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.01 CONTRACT FORMS

The agreement resulting from the acceptance of a bid shall be in the form of the agreement stated in this bid.

C.02 ASSIGNMENT OF CONTRACT

Contractor shall not assign, transfer, convey, sublet or otherwise dispose of this Contract or of his right, title, or interest therein, or his power to execute such Contract, or to assign any monies due or to become due there under to any other person, firm or corporation unless first obtaining the written consent of the County. The giving of such consent to a particular subcontractor assignment shall not dispense with the necessity of such consent to any further or other assignment.

C.03 COMPLETION OF WORK

The Work will be completed and ready for final inspection within the specified calendar days from the date the Contract Time commences to run. Two bids shall be considered based on **Bid "A" 460 calendar days** and **Bid "B"** based on **540 calendar days**. The County has the sole authority to select the bid based on the Completion Time which is in the best interest of the County. Only one award shall be made.

C.04 LIQUIDATED DAMAGES

If the Contractor refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will hinder its completion within the time specified, the County may seek damages. The actual damages for delay will be impossible to determine and in lieu thereof, the Contractor shall pay to the Owner the sum of **$3,057.00** as fixed, agreed, and liquidated damages for each calendar day of the delay until the Work is finally accepted by the County and the Contractor and his Surety shall be liable for the amount thereof.

C.05 PAYMENT

Contractor may apply for partial payment on monthly estimates, based on the amount of Work done or completed in compliance with the provisions of the Contract. Contractor shall submit an application, on a form provided or approved by the County, of an approximate estimate of the proportionate value of the Work done, items and locations of the Work performed up to and including the last day of the period then ending. The County will then review said estimate and make any necessary revisions so that the estimate can receive approval for payment. If the Contractor and the County do not agree on the approximate estimate of the proportionate value of the Work done for any pay period, the determination of the County will be binding. The amount of said estimate after deducting any required retainage and all previous payments shall be due and payable to the Contractor within 20 days after the pay estimate has been approved by the County. It is the Contractor's responsibility for the care of the materials. Any damage to or loss of said materials is the full responsibility of the Contractor. Any Periodical Pay Estimate signed by the Contractor shall be final as to the Contractor for any or all work covered by the Periodical Pay Estimate.

SECTION 00030
GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.05 PAYMENT (Continued)

Any requests for payment of materials stored on site must be accompanied with a paid receipt. The Contractor warrants and guarantees that title to all work, materials and equipment covered by any application for payment, whether incorporated in the project or not, will pass to the County at the time of payment free and clear of all liens, claims, security interests and encumbrances (hereafter referred to as "Liens").

The Contractor agrees to furnish an affidavit stating that all laborers, material men, and subcontractors have been paid on the project for Work covered by the application for payment and that a partial or complete release of lien, as may be necessary, be properly executed by the material men, laborers, subcontractors on the project for Work covered by the application for payment, sufficient to secure the County from any claim whatsoever arising out of the aforesaid Work.

When the Contractor has completed the Work in compliance with the terms of the Contract Documents, he shall notify the County in writing that the project is ready for final inspection. The County will then advise the Contractor as to the arrangements for final inspection and what Work, if any, is required to prepare the project or a portion thereof for final inspection. When the County determines the project or portion thereof is ready for final inspection, the County shall perform same. Upon completion of final inspection, the County will notify Contractor of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies. When all such errors have been corrected, a final re-inspection will be made. The process will be repeated until, in the opinion of the County, the project has been completed in compliance with the terms of the Contract Documents.

When final acceptance has been made by the County, the County will make final payment of the Contract amount, plus all approved additions, less approved deductions and previous payments made. The Contract will be considered complete when all work has been finished, the final inspection made, approved as-builts received, and the project finally accepted in writing by the County. The Contractor's responsibility shall then terminate except as otherwise stated.

C.06 RETAINAGE

A **retainage** of 2.5% of the total contract amount shall be withheld from payments after 75% completion of the Work. Upon substantial completion, this retainage shall be reduced to 1% of the total contract amount plus such amount as the Owner may reasonably deem necessary to repair, replace, complete or correct any damaged, defective, incorrect or incomplete work. Upon final acceptance, the remaining retainage shall be included in the final payment.

SECTION 00030

GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.07 WARRANTY AND GUARANTEE PROVISIONS

All work, materials, and equipment furnished as defined herein shall be guaranteed and warranted by the contractor for a minimum period of three (3) years, unless otherwise specified, from final acceptance by the Owner to be free from defects due either to faulty materials or equipment or faulty workmanship.

All materials, equipment, and workmanship furnished and installed by the contractor is warranted and guaranteed by the contractor to be such as to meet the required standards and to accomplish the purposes and functions required standards and to accomplish the purposes and functions of the project as defined, detailed, and specified herein.

The Owner shall, following discovery thereof, promptly give written notice to the contractor of faulty materials, equipment, or workmanship within the period of the guarantee and the contractor shall promptly replace any part of the faulty equipment, material, or workmanship at his own cost. These warranty and guarantee provisions create no limitations on the Owner as to any claims or actions for breach of guaranty or breach of warranty that the Owner might have against parties other than the contractor, and do not constitute exclusive remedies of the Owner against the contractor.

C.8 ROYALTIES AND PATENTS

The contractor shall pay all royalties and license fees for equipment or processes in conjunction with the equipment and/or services being furnished. Contractor shall defend all suits or claims for infringement of any patent, trademark or copyright, and shall save the County harmless from loss on account thereof, including costs and attorney's fees.

C.9 AUTHORIZED PRODUCT REPRESENTATION

The contractor, by virtue of submitting the name and specifications of a manufacturer's product, will be required to furnish the named manufacturer's product. Failure to perform accordingly may, in the County's sole discretion, be deemed a breach of contract, and shall constitute grounds for the County's immediate termination of the contract.

C.10 REGULATIONS

It shall be the responsibility of the bidder to assure compliance with any OSHA, EPA and/or other federal or state of Florida rules, regulations or other requirements, as each may apply.

SECTION 00030
GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.11 CANCELLATION

Any failure of the contractor to furnish or perform the Work (including, but not limited to, commencement of the Work, failure to supply sufficient skilled workers or suitable materials or equipment) in accordance with the contract, the County may order the stop of the Work, or any portion thereof, until the cause for such order has been eliminated. If the contractor persistently fails to perform the Work in accordance with the contract, the County reserves the right to terminate the contract and select the next qualified bidder or re-advertise this procurement in part or in whole. The County reserves the right to cancel all or any undelivered or unexecuted portion of this contract with or without cause.

C.12 INDEMNIFICATION

The contractor covenants and agrees to indemnify and save harmless the County, its agents and employees, from and against all claims, suits, actions, damages, causes of action, or judgments arising out of the terms of the resulting agreement for any personal injury, loss of life, or damage to the property sustained as a result of the performance or non-performance of services or delivery of goods; from and against any orders, judgments, or decrees, which may be entered against the County, its agents or employees; and from and against all costs, attorney's fees, expenses and other liabilities incurred in the defense of any such claim, suit or action, and the investigation thereof. Nothing in the award, resulting agreement, contract or Purchase Order shall be deemed to affect the rights, privileges and immunities of the County as set forth in Florida Statute Section 768.28.

C.13 MANUALS, SCHEMATICS, HANDBOOKS

All manuals, schematics and handbooks shall be provided which are applicable to the equipment delivered. An operators manual, parts manual and technician manual must also be provided. Parts lists (manuals) must include OEM part numbers for items not manufactured by the bidder. Vendor shall furnish two (2) copies of each.

C.14 INSURANCE

The contractor will not commence work under a contract until all insurance under this section and such insurance coverage as might be required by the County has been obtained. The contractor shall obtain, and submit to Purchasing within 10 calendar days of request, at his expense, the following minimum amounts of insurance (inclusive of any amounts provided by an umbrella or excess policy):

a. Workers' Compensation/Employers' Liability

Part One - There shall be no maximum limit (other than as limited by the applicable statute) for liability imposed by Florida Workers' Compensation Act or any other coverage required by the contract documents which are customarily insured under Part One of the standard Workers' Compensation Policy.

SECTION 00030
GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.14 INSURANCE (Continued)

Part Two - The minimum amount of coverage required by the contract documents which are customarily insured under Part Two of the standard Workers' Compensation Policy shall be:

$100,000	(Each Accident)
$500,000	(Disease-Policy Limit)
$100,000	(Disease-Each Employee)

b. Commercial General Liability

The limits are to be applicable only to work performed under this contract and shall be those that would be provided with the attachment of the Amendment of Limits of Insurance (Designated Project or Premises) endorsement (ISO Form CG 25 03) a Commercial General Liability Policy with the following minimum limits.

General Aggregate:	
Products/Completed Operations Aggregate	$1,000,000
Personal and Advertising Injury	$300,000
Each Occurrence	$300,000
Fire Damage (Any One Fire)	$Nil
Medical Expense (Any One Person)	$Nil

c. Business Auto Policy

Each Occurrence Bodily Injury and Property Damage Liability Combined	$300,000
Annual Aggregate (if applicable):	$1,000,000

d. Owners Protective Liability Coverage

The minimum OPC Policy limits per occurrence and, if subject to an aggregate, annual aggregate to be provided by the contractor shall be the same as the amounts shown above as the minimum per occurrence and general policy aggregate limits respectively required for the Commercial General Liability coverage. The limits afforded by the OPC Policy and any excess policies shall apply only to the Owner and the Owner's officials, officers, agents and employees and only to claims arising out of or in connection with the work under this contract.

e. Property Insurance

If this contract includes construction of or additions to above ground buildings or structures, contractor shall provide "**Builder's Risk**" insurance with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).

SECTION 00030
GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.14 INSURANCE (Continued)

f. Installation Floater

If this contract does not include construction of or additions to above ground building or structures, **but does involve** the installation of machinery or equipment, contractor shall provide an "**Installation Floater**" with the minimum amount of insurance to be 100% of the value of such addition(s), building(s), or structure(s).

g. Certificates of Insurance and Copies of Polices

Certificates of Insurance in triplicate evidencing the insurance coverage specified in the six above paragraphs a., b., c., d., e., and f., shall be filed with the Purchasing Director before operations are begun. The required certificates of insurance shall name the types of policy, policy number, date of expiration, amount of coverage, companies affording coverage, and also shall refer specifically to the bid number, project title and location of project. Insurance shall remain in force at least one year after completion and acceptance of the project by the County, in the amounts and types as stated herein, with coverage for all products and services completed under this contract.

ADDITIONAL INSURED: The contractor shall name Manatee County as additional insured in each of the applicable policies.

If the initial insurance expires prior to the completion of operations and/or services by the contractor, renewal certificates of insurance and required copies of policies shall be furnished by the contractor and delivered to the Purchasing Director thirty (30) days prior to the date of their expiration.

Nothing herein shall in any manner create any liability of the County in connection with any claim against the contractor for labor, services, or materials, or of subcontractors; and nothing herein shall limit the liability of the contractor or contractor's sureties to the County or to any workers, suppliers, material men or employees in relation to this contract.

C.15 BID BOND/CERTIFIED CHECK

By offering a submission to this Invitation For Bid, the bidder agrees should the bidder's bid be accepted, to execute the form of contract and present the same to Manatee County for approval within 10 days after being notified of the awarding of the contract. The bidder further agrees that failure to execute and deliver said form of contract **within 10 days** will result in damages to Manatee County and as guarantee of payment of same a bid bond/certified check shall be enclosed within the submitted sealed bid in the amount of five (5%) percent of the total amount of the bid.

SECTION 00030
GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.15 BID BOND/CERTIFIED CHECK

The bidder further agrees that in case the bidder fails to enter into a contract, as prescribed by Manatee County, the bid bond/certified check accompanying the bid shall be forfeited to Manatee County as agreed liquidated damages. If the County enters into a contract with a bidder, or if the County rejects any and/or all bids, accompanying bond will be promptly returned.

C.16 PERFORMANCE AND PAYMENT BONDS

The successful bidder shall furnish surety bonds as security for faithful performance of the contract awarded as a result of this bid, and for the payment of all persons performing labor and/or furnishing material in connection therewith. Surety of such bonds shall be in an amount equal to the bid award (100% each) and from a duly authorized and nationally recognized surety company, authorized to do business in Florida, satisfactory to this County. The attorney-in-fact who signs the bonds must file with the bonds a certificate and effective dated copy of power-of-attorney. (Reference Florida Statute 255.05)

Furnishing the performance and payment bonds shall be requisite to execution of a contract with the County. Said performance and payment bonds will remain in force for the duration of the contract with the premiums paid by the contractor. Failure of successful bidder to execute such contract and to supply the required bonds shall be just cause for annulment of the award.

The County may then contract with another acceptable bidder or re-advertise this Invitation For Bid. If another bidder is accepted, and notice given within 90 days after the opening of bids, this acceptance shall bind the bidder as though they were originally the successful bidder.

Failure of the County at any time, to require performance by the contractor of any provisions set out in the contract will in no way affect the right of the County, thereafter, to enforce the provisions. Bonds to remain in effect for one year after final payment becomes due.

C.17 PROJECT SCHEDULE

The successful bidder will be required to submit a detailed **CPM construction schedule upon notification of award or its intent.**

SECTION 00030

GENERAL TERMS AND CONDITIONS OF THE CONTRACT

C.18 NO DAMAGES FOR DELAY

No claim for damages or any claim other than for an extension of time shall be made or asserted against the County by reason of any delays. The Contractor shall not be entitled to an increase in the Total Contract Price or payment or compensation of any kind from the County or direct, indirect, consequential impact or other costs, expenses for damages, including but not limited to costs of acceleration or inefficiency arising because of delay, disruption, interference or hindrance from any cause whatsoever; provided, however, that this provision shall not preclude recovery or damages by the Contractor for hindrance or delays due solely to fraud, bad faith, or active interference on part of the County or its agents. Otherwise, the Contractor shall only be entitled to extensions of the Contract Time as the sole and exclusive remedy for such resulting delay, in accordance with and to the extend specifically provided above.

C.19 NO INTEREST

Any monies not paid by the County when claimed to be due to the Contractor under this Contract shall not be subject to interest including prejudgment interest. Any monies not paid by the County when claimed to be due to the Contractor for damages awarded in the case of construction delays shall not be subject to prejudgment interest.

C.20 CONSTRUCTION OF CONTRACT

This Contract and the rights and responsibilities hereunder shall not be construed more strongly against either party, regardless of the extent to which such party may have participated in the preparation hereof.

END OF SECTION

SECTION 00100
INSTRUCTIONS TO BIDDERS

D.01 THE WORK

The Work includes a Joint Project Agreement between Manatee County and the City of Palmetto for the relocation of City Utilities within the right of way as part of the County's 17th Street West from Business U.S. 41 to U.S. 41 Utility Relocation and Road Improvement Project.

Scope of Work: Construct the designed two lanes of a Divided Urban Roadway with Sidewalks, Drainage, Traffic Signals, Bike Lanes and Streetlights.

The length of the project will be approximately 4000 feet from U.S. 41 to Business 41. The existing 2 lane urban roadway will be expanded to a 2 lane Divided Urban Roadway with a median ditch, bike lanes, sidewalks on both sides, improved drainage facilities, improved County water and sewer facilities, improved traffic signals at Business 41, along with roadway lighting improvements. A new 6+ acre storm water facility located at the present Bayshore Road area will be added to alleviate flooding in the area. The existing CSX railroad crossing will be improved, with construction being performed by CSX in accordance with the executed contract between CSX and Manatee County.

The Construction Schedule duration is designed to allow the Contractor to initially move into the area to clear and grub the 4000 feet and stop for approximately 2 – 3 months thereby allowing the local utilities to come and relocate their facilities.

The Construction Schedule provides for both Manatee County and the City of Palmetto to perform any and all necessary roadway, water and sewer improvements.

D.02 SECURING OF DOCUMENTS

Complete individual copies of the bidding documents for the project and/or products can be obtained at the Manatee County Public Works Department located at: 1022 26th Avenue East, Bradenton, FL 34208: 941-708-7450, Extension 7349 between the hours of 8:00 AM and 4:00 PM Monday through Friday at no charge. Complete set of the Bidding Documents must be used in preparing bids. Neither Owner nor Engineer assumes any responsibility for errors and misinterpretations resulting from the use of incomplete sets of Bidding Documents.

SECTION 00100
INSTRUCTIONS TO BIDDERS

D.03 SUBCONTRACTORS, SUPPLIERS AND OTHERS

The identity of subcontractors, suppliers, and other persons and organizations (including those who are to furnish the principal items of material and equipment) may be requested by the Owner for each bid item from any of the Bidders; and the Bidder shall respond within five days after the date of such request. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such subcontractor, supplier, persons or organization if requested by Owner. If Owner, after due investigation, has reasonable objection to any proposed subcontractor, supplier, other person or organization, Owner may, before the Notice of Award is given, request the apparent successful Bidder to submit an acceptable substitute without an increase in Contract Price or Contract Time.

If apparent successful Bidder declines to make any such substitution, Owner may award the contract to the next lowest qualified Bidder that proposes to use acceptable subcontractors, suppliers, and other persons who Owner does not make written objection to Contractor shall not be required to employ any subcontractor, supplier, other person or organization who Contractor has reasonable objection to.

Subcontractors shall be bound by the terms and conditions of this contract insofar as it applies to their Work, but this shall not relieve the prime contractor from the full responsibility to the Owner for the proper completion of all Work to be executed under this contract.

NOTE:
Contractor shall supply a list providing a description of the work which shall be performed by the proposed subcontractors along with the names and locations of the subcontractors.

D.04 BIDS

Bids are to be submitted in triplicate, one original and two copies, upon the County supplied forms. All blank spaces must be filled in as noted with amounts extended and totaled and no changes shall be made in the wording of the forms or in the items mentioned therein. In the event a change is made in your submittal, the Bidder shall write its initials by the change. Any bid may be rejected which contains any omissions, alterations, irregularities of any kind, or which shall in any manner fail to conform to bid requirements.

Section 00100
INSTRUCTIONS TO BIDDERS

D.04 BIDS(Continued)

A bid made by an individual, either in his/her own or proper person or under a trade or firm name, shall be executed under the individual's signature. If made by a partnership, the bid shall be executed by two or more of the general partners. If made by a corporation, the bid shall be executed by its President or other legally authorized corporate officer or agent.

D.05 EXAMINATION OF CONTRACT DOCUMENTS AND SITE

It is the responsibility of each Bidder before submitting a Bid, to (a) examine the Bid Documents thoroughly; (b) visit the site to become familiar with local conditions that may affect cost, progress, performance, or furnishing of the Work; (c) consider federal, state, and local codes, laws, and regulations that may affect costs, progress, performance, or furnishing of the Work; (d) study and carefully correlate Bidder's observations with the Bid Documents; and (e) notify Owner of all conflicts, errors, or discrepancies in the Bid Document.

The accuracy of the existing utility locations shown on the plans is approximate and without express or implied warranty. Each Bidder may, at Bidder's own expense, make or obtain any additional examinations, investigations, explorations, tests and studies, and obtain any additional information and data which pertain to the physical conditions at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work and which Bidder deems necessary to determine his Bid for performing and furnishing the Work in accordance with the time, price and other terms and conditions of the Contract Documents.

Owner will provide each Bidder access to the site to conduct such explorations and tests. Bidder shall fill all holes, clean up and restore the site to its former condition upon completion of such explorations. The lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and other lands designated for use by Contractor in performing the Work are identified in the Contract Documents. All additional lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Contractor. Easements for permanent structures or permanent changes in existing structures are to be obtained and paid for by Owner unless otherwise provided in the Contract Documents.

END OF SECTION

SECTION 00200

MANATEE COUNTY LOCAL PREFERENCE LAW AND VENDOR REGISTRATION

E.01 Vendor Registration

All vendors are encouraged to register with Manatee County using the on-line "Vendor Registration" web page on www.mymanatee.org.

Enclosed is a copy of the current Manatee County law that details the County's Local Preference and the County's definition of a Local Business.

If you assert that your firm meets the stated definition of a Local Business, we ask that in addition to registering on the County's Web page, you fill out the attached "**Affidavit As To Local Business Form"** that is included in this section, have the completed document notarized, and mail the original to the following address: Manatee County Administration Center, 1112 Manatee Avenue West, Suite 803, Bradenton, FL 34205.

Your cooperation in registering your business with Manatee County will enhance our opportunities to identify sources for goods and services, plus identify Local Businesses. This information is used for soliciting quotations up to $250,000.00 and for competitive solicitations of larger purchases.

You will note that Manatee County collaborates with the Manatee Chamber of Commerce, posting bids on www.manateechamber.com as well as using the same vendor categories for registration.

Our staff can assist you with your registration as needed. Our office hours are 8:00 A.M. to 5:00 P.M., Monday through Friday on regular business days. Please call (941) 749-3014 if you wish to have a purchasing staff member assist you.

Quick steps to registration: **www.mymanatee.org**

A link to "Purchasing" is listed under "Quick Links" on page one of the County Web Site.

On the left hand side of the Purchasing Web page, click on "Vendor Registration".

This will bring up the Vendor Registration form for on-line input. Please note that the definition of a "Local Business" changed on March 17, 2009. The Web page will be updated to include the current Law which has been provided in this section of the bid.

Thank you for reviewing this information and considering registering your business with Manatee County. Registration is not mandatory, however, by taking the time to register, you are helping the County to provide timely notifications of quotation, bid and proposal opportunities to your business.

SECTION 00200
MANATEE COUNTY LOCAL PREFERENCE LAW AND VENDOR REGISTRATION

E.02 Section 2-26-6. Local preference, tie bids, **local business defined.**

(a) Whenever a responsible local business bidder and a responsible non-local business bidder are found, upon the opening of bids, to have both submitted the lowest responsive bid, the bid of the local bidder shall be awarded the contract. Should more than one responsible local business bidder match the responsible non-local business bidder's lowest responsive bid, or should no responsible local business bidder match the lowest responsive bid but two or more responsible non-local business bidders submit lowest responsive bids for equal amounts, then the award of the contract shall be determined by a chance drawing, coin toss, or similar tie-breaking method conducted by the purchasing office and open to the public. Any bidders seeking to be recognized as local businesses for purposes of this local business preference provision may be required by the terms of the bid announcement to certify they meet the definition of local business set forth in this section, and to register as a local business with the county in the manner prescribed by the county to facilitate the county's ability to track the award of contracts to local businesses and to allow the county to provide future notifications to its local businesses concerning other bidding opportunities.

(b) Nothing herein shall be deemed to prohibit the inclusion of requirements with respect to operating and maintaining a local place of business in any invitation for bids when the bidder's location materially affects the provisions of the services or supplies that are required by the invitation.

(c) Local business is defined as a business legally authorized to engage in the sale of the goods and/or services to be procured, and which certifies within its bid that for at least six (6) months prior to the announcement of the solicitation of bids it has maintained a physical place of business in Manatee, Desoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one full-time employees at that location.

(d) **Each solicitation for bids made by the county shall contain terms expressly describing the local business preference policies of the county, and shall provide that by electing to submit a bid pursuant to a request for bids, all bidders are deemed to understand and agree to those policies**.

(e) For all contracts for architecture, professional engineering, or other professional services governed by Florida Statute § 287.055, the Consultants' Competitive Negotiation Act, the county shall include the local business status of a firm among the factors considered when selecting which firms are "most highly qualified." In determining which firm is the "most qualified" for purposes of negotiating a satisfactory contract, preference shall be given to a local business where all other relevant factors are equal.

(f) Local preference shall not apply to the following categories of contracts:

1. Goods or services provided under a cooperative purchasing agreement or similar "piggyback" contract;

2. Contracts for professional services subject to Florida Statute § 287.055, the Consultants' Competitive Negotiation Act, except as provided for in subsection (e) above;

E.02 Section 2-26-6. Local preference, tie bids, **local business defined.** (Continued)

3. Purchases or contracts which are funded, in whole or in part, by a governmental or other funding entity, where the terms and conditions of receipt of the funds prohibit the preference;

4. Purchases or contracts made pursuant to a non-competitive award process, unless otherwise provided by this section;

5. Any bid announcement which specifically provides that the general local preference policies set forth in this section are suspended due to the unique nature of the goods or services sought, the existence of an emergency as found by either the county commission or county administrator, or where such suspension is, in the opinion of the county attorney, required by law.

(g) To qualify for local preference under this section, **a local business must certify to the County that it:**

1. Has not within the five years prior to the bid announcement admitted guilt or been found guilty by any court or state or federal regulatory enforcement agency of violation of any criminal law, or a law or administrative regulation regarding fraud;

2. Is not currently subject to an unresolved citation or notice of violation of any Manatee County Code provision, except citations or notices which are the subject of a current legal appeal, as of the date of the bid announcement;

3. Is not delinquent in the payment of any fines, liens, assessments, fees or taxes to any governmental unit or taxing authority within Manatee County, except any such sums which are the subject of a current legal appeal.

Ref: Ordinance 09-21 and 09-23 **PASSED AND DULY ADOPTED** in open session, with a quorum present and voting, on the 17th day of March, 2009.

END OF SECTION

MANATEE COUNTY GOVERNMENT
AFFIDAVIT AS TO LOCAL BUSINESS
(Complete and Initial Items B-F)

A. Authorized Representative

I, [name] _____, am the [title] _____

and the duly authorized representative of: [name of business]_____
_____, and that I possess direct personal knowledge to make informed responses to these certifications and the legal authority to make this Affidavit on behalf of myself and the business for which I am acting; and by electing to submit a bid pursuant to this Invitation for Bids, shall be deemed to understand and agree to the local business preference policies of Manatee County; and that I have the direct knowledge to state that this firm complies with all of the following conditions to be considered to be a Local Business as required by the Manatee County Code of Law, Section 2-26-6.

B. Place of Business: I certify that the above business is legally authorized to engage in the sale of goods and/or services and has a physical place of business in Manatee, DeSoto, Hardee, Hillsborough, Pinellas or Sarasota County with at least one (1) fulltime employee at that location. The physical address of the location which meets the above criteria is:_____ [Initial]_____

C. Business History: I certify that business operations began at the above physical address with at least one fulltime employee on [date] _____ [Initial]_____

D. Criminal Violations: I certify that within the past five years of the date of this Bid announcement, this business has not admitted guilt nor been found guilty by any court or local, state or federal regulatory enforcement agency of violation of any criminal law or administrative regulation regarding fraud. [Initial]_____

E. Citations or Code Violations: I certify that this business is not currently subject to any unresolved citation or notice of violation of any Manatee County Code provision, with the exception of citations or notices which are the subject of a legal current appeal within the date of this bid announcement. [Initial]

F. Fees and Taxes: I certify that within this business is not delinquent in the payment of fines, liens, assessments, fees or taxes to any governmental unit or taxing authority within Manatee County, with the exception of those which are the subject of a legal current appeal. [Initial]_____

Each of the above certifications is required to meet the qualification of "Local Business" under Manatee County Code of Law, 2-26-6.

Signature of Affiant_____

STATE OF FLORIDA
COUNTY OF_____

Sworn to (or affirmed) and subscribed before me this _____ day of _____, 20___, by (name of person making statement).

(Notary Seal) Signature of Notary:_____

Name of Notary (Typed or Printed)_____

Personally Known ____ OR Produced Identification ____ Type of Identification Produced _____

Submit executed copy to Manatee County Purchasing, Suite 803, 1112 Manatee Avenue W., Bradenton, FL 34205

SECTION 00300
BID FORM

For: 17th Street West (From Business U.S. 41 to U.S. 41)
Road and Utility Improvement, Palmetto, FL

TOTAL BID PRICE "A": $ _____
Based on a Completion Time of **460** calendar days

TOTAL BID PRICE "B": $ _____
Based on a Completion Time of **540** calendar days

Two schedules for Completion of the Work shall be considered. Each bid for completion by the specified stated time shall be offered as a separate "Total Bid Price". The County has the sole authority to select the bid based on the Completion Time which is the best interest of the County. Only one award shall be made.

We, the undersigned, hereby declare that we have carefully reviewed the bid documents, and with full knowledge and understanding of the aforementioned herewith submit this bid, meeting each and every specification, term, and condition contained in the Invitation for Bids.

We understand that the bid technical specifications, terms, and conditions in their entirety shall be made a part of any agreement or contract between Manatee County and the successful bidder. Failure to comply shall result in contract default, whereupon, the defaulting contractor shall be required to pay for any and all re-procurement costs, damages, and attorney fees as incurred by the County.

Communications concerning this Bid shall be addressed as follows:

Person's Name: _____

Address: _____ Phone: _____

Date: _____ FL Contractor License# _____

Bidder is a WBE/MBE Vendor? _____ Certification # _____

COMPANY'S NAME: _____

AUTHORIZED SIGNATURE(S): _____

Name and Title of Above Signer(s) _____

CO. MAILING ADDRESS: _____

_____

STATE OF INCORPORATION _____ (if applicable)

TELEPHONE: (____) _____ FAX: (_____) _____

Acknowledge Addendum Nos. __ Dated:_____ Acknowledge Addendum Nos. ___ Dated_____
Acknowledge Addendum Nos. __ Dated:_____ Acknowledge Addendum Nos.___ Dated:_____

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID 'A' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
ROADWAY						
1	101-1	Mobilization	LS	1	$	$
2	102-1	Maintenance of Traffic	LS	1	$	$
3	102-3	Commercial Matl for Drwy Maint	CY	800	$	$
4		Utility Coordination	LS	1	$	$
5		Railroad Coordinator	LS	1.0	$	$
6	104-10-2	Synthetic Bales	LF	1,050	$	$
7	104-11	Floating Turbidity Barrier	LF	50	$	$
8	104-12	Staked Turbidity Barrier	LF	100	$	$
9	104-13-1	Staked Silt Fence (Type III)	LF	10,600	$	$
10	104-15	Soil Tracking Prevention Device	EA	2	$	$
11	104-16	Rock Bags	EA	550	$	$
12	110-1-1	Clearing & Grubbing	AC	15.1	$	$
13	110-3	Removal of Exist. Struct. (Bridge Remnants)	LS	1	$	$
14	110-4	Removal of Exist. Conc. Pvmt.	SY	3,500	$	$
15	110-7-1	Mailbox (Furnish & Install)	EA	15	$	$
16	120-1	Regular Excavation	CY	35,659	$	$
17	120-4	Excavation, Subsoil	CY	5,231	$	$
18	120-6	Embankment	CY	13,636	$	$
19	160-6	12" Stabilized Sub-base	SY	24,664	$	$
20	285-701	4" Type ABC-III Base	SY	591	$	$
21	285-709	10" Limerock Base	SY	20,294	$	$
22	334-1-14	2" Type S-1 Asphalt Concrete (Incl Tack Coat)	TN	2,086	$	$
23	334-1-14	1" Type S-III Asphalt Concrete	TN	1,043	$	$
24	400-1-2	Clas I Concrete (Endwalls)	CY	6.00	$	$
25	400-1-15	Class I Concrete (Misc)	CY	10	$	$
26	400-4-1	Class IV Concrete (Culverts)	CY	27	$	$
27	415-1-6	Reinforcing Steel	LB	3,400	$	$
28	425-1-351	Inlets (Curb) (Type P-5) (<10')	EA	23	$	$
29	425-1-361	Inlets (Curb) (Type P-6) (<10')	EA	2	$	$
30	425-1-451	Inlets (Curb) (Type J-5) (<10)	EA	3	$	$
31	425-1-521	Inlet (Dt Bot) (Type C) (<10')	EA	4	$	$
32	425-1-541	Inlet (Dt Bot) Type D) (<10')	EA	6	$	$
33	425-1-581	Inlet (Dt Bot) Type H (<10')	EA	2	$	$
34	425-1-900	Diversion Structure (Attenuation Pond)	EA	1	$	$
35	425-2-41	Manholes (P-7) (<10')	EA	7	$	$
36	425-2-71	Manholes (J-7) (<10')	EA	6	$	$
37	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (15")	LF	127	$	$
38	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (18")	LF	1,788	$	$
39	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (24")	LF	688	$	$
40	430-175-102	Pipe Storm Sewer Culv (Opt. Mtl.) (30")	LF	983	$	$
41	430-175-102	Pipe Storm Sewer Culv (Opt. Mtl.) (36")	LF	195	$	$
42	430-175-103	Pipe Storm Sewer Culv (Opt. Mtl.) (42")	LF	427	$	$
43	430-175-201	Pipe Storm Sewer Culv (Opt. Mtl.) (14" x 23")	LF	88	$	$
44	430-175-204	Pipe Storm Sewer Culv (Opt. Mtl.) (43" x 68")	LF	96	$	$
45	430-175-205	Pipe Storm Sewer Culv (Opt. Mtl.) (58" x 91")	LF	105	$	$
46	430-963-2	Pipe, Polyvinyl Chloride (8")	LF	29	$	$

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID 'A' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
47	430-984-129	MES (Optional Round) (24" SD)	EA	1	$	$
48	430-984-133	MES (Optional Round) (30" SD)	EA	1	$	$
49	430-984-642	MES (Conc Pipe Ellip) (43" x 68") (SD)	EA	3	$	$
50	430-984-645	MES (Conc Pipe Ellip) (58" x91" (SD)	EA	2	$	$
51		ConSpan or Equal Structure (64' x 7' x 16')	LS	1	$	$
52	515-1-2	Pipe Handrail (Aluminum)	LF	60	$	$
53	520-1-10	Type F Curb & Gutter	LF	8,012	$	$
54	522-1	4" Concrete Sidewalk	SY	3,899	$	$
55	522-2	6" Concrete Sidewalk	SY	1,525	$	$
56	530-3-3	Rip-Rap (Rubble) (Bank & Shore)	TN	366.8	$	$
57	547-70-2	Rip-Rap (Fabric Formed Conc) (10")	SY	63	$	$
58	570-1-2	Sodding (Performance Turf) (Includes Mowing)	SY	19,335	$	$
59		Record Drawings (Stormwater)	LS	1	$	$15,000.00
60		Record Drawings (Utilities)	LS	1	$	$20,000.00
61		Record Drawings (Roadway)	LS	1	$	$25,000.00
		ROADWAY SUBTOTAL				$
SIGNALIZATION IMPROVEMENTS						
62	555-1-2	Directional Bore (6" to <12")	LF	90	$	$
63	630-1-12	Conduit (F & I) (Underground)	LF	265	$	$
64	630-1-22	Conduit (Furnish) (Underground)	LF	130	$	$
65	632-7-1	Cable (Signal)(F&I)	PI	1	$	$
66	635-1-11	Pull & Junction Boxes	EA	9	$	$
67	649-31-202	M/Arm F & I (E3-T2)	EA	2	$	$
68	650-51-313	Signal Traffic (F & I) (3 Sct 1 Way) (Special)	AS	2	$	$
69	650-51-513	Signal Traffic (F & I) (5 Sct 2 Way) (Special)	AS	2	$	$
70	653-191	Signal Pedestrian (LED) (Countdown) (1-Way)	AS	4	$	$
71	659-101	Signal Head Auxiliaries (Back Plates 3 Sct)	EA	2	$	$
72	659-118	Signal Head Auxiliaries (Back Plates 5 Sct)	EA	2	$	$
73	660-2-102	Loop Assembly (F & I) (Type B)	AS	4	$	$
74	660-2-106	Loop Assembly (F & I) (Type F)	AS	6	$	$
75	665-13	Detector Pedestal (F & I) (Det w/sign only)	EA	4	$	$
76	670-5-410	Traffic Control Assembly Modify	AS	1	$	$
77	690-10	Remove Traffic Signal Head Assembly	EA	4	$	$
78	690-20	Remove Pedestrian Assembly	EA	4	$	$
79	690-32-1	Pole removal (Shallow) (Direct Burial)	EA	2	$	$
80	690-70	Remove Pedestrian Detector Assembly	EA	4	$	$
81	690-90	Remove Cabling and Conduit	PI	1	$	$
82	690-100	Remove Miscellaneous Signal Equipment	PI	1	$	$
		SIGNALIZATION SUBTOTAL				$

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID 'A' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
SIGNING & MARKING SUBTOTAL						
83	700-20-11	Sign Single Post (Less than 12 SF)	AS	45	$	$
84	700-20-12	Sign Single Post (12 - 20 SF)	AS	13	$	$
85	700-20-41	Sign Single Post (Relocate)	AS	19	$	$
86	706-3	Retro-Reflective Pavement Markers	EA	350	$	$
87	711-11-160	Pavement Messages, Thermoplastic (School)	EA	2	$	$
88	711-11-160	Pavement Messages, Thermoplastic (R.R. Markings)	EA	4	$	$
89	711-11-160	Pavement Messages, Thermoplstic (Bike Lane Markings)	EA	24	$	$
90	711-11-170	Directional Arrows, Thermoplastic	EA	7	$	$
91	711-11-151	Guide Lines, Thermoplastic (White)	LF	1,378	$	$
92	711-11-241	Skip Traffic Stripe, 10' - 30' Yellow, Thermplastic	LF	1,050	$	$
93	711-11-123	Solid Traffic Stripe, 12" White, Thermoplastic (Crosswalk)	LF	2,290	$	$
94	711-11-125	Solid Traffic Stripe, 24" White, Thermoplastic (Stop Bar)	LF	541	$	$
95	711-11-224	Solid Traffic Stripe, 18" Yelllow, Thermoplastic (Chevron)	LF	218	$	$
96	711-11-111	Solid Traffic Stripe, 6" White, Thermoplastic	NM	1.290	$	$
97	711-11-211	Solid Traffic Stripe, 6" Yellow, Thermoplastic	NM	1.742	$	$
		SIGNING & MARKING SUBTOTAL				$
LIGHTING SUBTOTAL						
98	715-1-12	Conductor (F & I) (Insulated) (No. 6)	LF	7,824	$	$
99	715-1-13	Conductor (F & I) (Insulated) (No. 4)	LF	16,212	$	$
100	715-2-11	Conduit (F & I) (Underground) (PVC SCH 40) (2")	LF	7,905	$	$
101	715-7-11	Load Center (F & I) (Secondary Voltage)	EA	2	$	$
102	715-14-11	Pull Box (F & I) (Roadside) (Moulded)	EA	130	$	$
103	715-14-42	Pull Box (Relocate) (Sidewalk)	EA	2	$	$
104	715-500-1	Pole Cable Distribution System (Conventional)	EA	94	$	$
105	715-516-112	Light Pole Comp (F & I) (Ornamental) (MH 12')	EA	93	$	$
106	715-540-000	Light Pole Comp (Relocate)	EA	1	$	$
		LIGHTING SUBTOTAL				$
WATER SUBTOTAL						
107	110-3	Removal of Existing Structure (Vault)	LS	1	$	$
108	1000-6	Utility Work - Water (Master Meter Assembly)	LS	1	$	$
109	1050-11-92	Water Service Conn. (F & I) (HDPE) CI 200 (1")	EA	14	$	$
110	1050-11-423	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (6") (Incl Ftgs)	LF	937	$	$
111	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (8")	LF	1,274	$	$
112	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (12")	LF	178	$	$
113	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (16")	LF	64	$	$
114	1050-16-224	Pipe Removal (Less than 18")	LF	2,089	$	$
115	1055-14-414	Bend (DI) (45 Degree) (12")	EA	3	$	$
116	1055-14-414	Bend (DI) (45 Degree) (12") (Cut-In)	EA	1	$	$
117	1055-14-414	Bend (DI) (45 Degree) (16")	EA	2	$	$
118	1055-14-414	Bend (DI) (45 Degree) (16") (Cut-In)	EA	2	$	$
119	1055-14-424	Tee (DI) (8" x 6")	EA	5	$	$
120	1055-14-424	Tee (DI) (12" x 6")	EA	1	$	$
121	1055-14-424	Tee (DI) (12" x 12")	EA	1	$	$
122	1055-14-424	Tee (DI) (16" x 12")	EA	1	$	$
123	1055-14-434	Reducer (DI) (8" x 6")	EA	1	$	$
124	1055-14-434	Reducer (DI) (12" x 8")	EA	1	$	$

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID 'A' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
125	1055-14-494	Sleeve (DI) (16")	EA	2	$	$
126	1060-14-21	Water Meter Box (Relocate)	EA	11	$	$
127	1080-11-34	Valve Assembly Gate (F & I) (CI) (250 PSI) (6")	EA	11	$	$
128	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (8")	EA	1	$	$
129	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (12")	EA	3	$	$
130	1080-11-44	Valve Assembly Butterfly (F & I) (CI) (250 PSI) (16")	EA	2	$	$
131	1644-13	Fire Hydrant Assembly (Standard) (F & I) (6")	EA	2	$	$
132	1644-53	Fire Hydrant Assembly (Relocate)	EA	1	$	$
		WATER SUBTOTAL				$
SEWER SUBTOTAL						
133	555-12	Directional Bore	LF	200	$	$
134	1050-11-223	San.Sewer (F & I) (PVC) (DR-18) (C-900) (6" (Inc Ftgs)	LF	1,458	$	$
135	1060-15	Manhole Rim & Cover	EA	9	$	$
136	1060-15	Core Bore Exist. MH	EA	1	$	$
137	1060-15	Manhole Rim Adjustment	EA	3	$	$
138	1060-15	Cleaning & Sealing Manhole (Fiberglass)	EA	2	$	$
139	1060-15	Cleaning & Sealing Manhole (Sewpercoat)	EA	7	$	$
140	1080-11-36	Air Release Assembly (F & I) (6")	EA	2	$	$
		SEWER SUBTOTAL				$
CITY OF PALMETTO UTILITY RELOCATIONS						
141		Furnish & Install 4" PVC Pressure Sewer	EA	700	$	$
142		Furnish & Install 8" PVC Pressure Sewer	EA	140	$	$
143		Furnish & Install 4" Diameter SS Manhole	EA	1	$	$
144		Furnish & Install12" PVC Pressure Sewer	LF	900	$	$
145		Furnish & Install 12" PVC Non-Potable Water Main	LF	2,620	$	$
146		Furnish & Install 12" PVC Potable Water Main	LF	2,300	$	$
147		Furnish & Install 12" DIP W/Thurst Collar	LF	160	$	$
148		Furnish & Install 8" PVC Potable Water Main	LF	20	$	$
149		Furnish & Install 8" DIP Potable Water Main	LF	20	$	$
150		Furnish & Install 6" PVC Potable Water Main	LF	60	$	$
151		Furnish & Install 6" DIP Potable Water Main	LF	140	$	$
152		Furnish & Install 12" Gate Valve	EA	4	$	$
153		Furnish & Install 6" Gate Valve	EA	6	$	$
154		Furnish & Install Fire Hydrant - Complete Assembly (Hydrant, Tee,Valve, Blocking, Tie Rods, Stone, and Appurtenances	EA	2	$	$
155		Furnish & Install 6" Fire Hydrant Extension	EA	2	$	$
156		Furnish & Install 12" Fire Hydrant Extension	EA	2	$	$
157		Furnish & Install 18" Fire Hydrant Extension	EA	1	$	$
158		Fittings @ 25% LF	LBS	1,730	$	$
159		Bacteriological Sample Point	EA	2	$	$
160		Miscellaneous Concrete	CU YDS	25	$	$
161		Mobilization, Demobilization, and Sitework	LS	1	$	$
162		Contngency (15%)	LS	1	$	$
		Furnish & Install 4: Diameter SS Manhole	EA	1	$	$
		CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL				$

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17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID 'A' - Based on Completion Time of 460 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE

DESCRIPTION	PRICE
ROADWAY SUBTOTAL	
SIGNALIZATION SUBTOTAL	
SIGNING & MARKING SUBTOTAL	
LIGHTING SUBTOTAL	
WATER SUBTOTAL	
SEWER SUBTOTAL	
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL	
RECORD DRAWINGS ALLOWANCE (for Storm water, Utility, and Roadway)	$60,000.00
DISCRETIONARY WORK	$660,000.00
TOTAL BID PRICE - BID "A" - BASED ON 460 CALENDAR DAYS	$

Bidder:_____

SECTION 00300 BID FORM
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17th STREET WEST (FROM BUSINESS US 41 TO US 41)
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ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B" - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
ROADWAY						
1	101-1	Mobilization	LS	1	$	$
2	102-1	Maintenance of Traffic	LS	1	$	$
3	102-3	Commercial Matl for Drwy Maint	CY	800	$	$
4		Utility Coordination	LS	1	$	$
5		Railroad Coordinator	LS	1.0	$	$
6	104-10-2	Synthetic Bales	LF	1,050	$	$
7	104-11	Floating Turbidity Barrier	LF	50	$	$
8	104-12	Staked Turbidity Barrier	LF	100	$	$
9	104-13-1	Staked Silt Fence (Type III)	LF	10,600	$	$
10	104-15	Soil Tracking Prevention Device	EA	2	$	$
11	104-16	Rock Bags	EA	550	$	$
12	110-1-1	Clearing & Grubbing	AC	15.1	$	$
13	110-3	Removal of Exist. Struct. (Bridge Remnants)	LS	1	$	$
14	110-4	Removal of Exist. Conc. Pvmt.	SY	3,500	$	$
15	110-7-1	Mailbox (Furnish & Install)	EA	15	$	$
16	120-1	Regular Excavation	CY	35,659	$	$
17	120-4	Excavation, Subsoil	CY	5,231	$	$
18	120-6	Embankment	CY	13,636	$	$
19	160-6	12" Stabilized Sub-base	SY	24,664	$	$
20	285-701	4" Type ABC-III Base	SY	591	$	$
21	285-709	10" Limerock Base	SY	20,294	$	$
22	334-1-14	2" Type S-1 Asphalt Concrete (Incl Tack Coat)	TN	2,086	$	$
23	334-1-14	1" Type S-III Asphalt Concrete	TN	1,043	$	$
24	400-1-2	Clas I Concrete (Endwalls)	CY	6.00	$	$
25	400-1-15	Class I Concrete (Misc)	CY	10	$	$
26	400-4-1	Class IV Concrete (Culverts)	CY	27	$	$
27	415-1-6	Reinforcing Steel	LB	3,400	$	$
28	425-1-351	Inlets (Curb) (Type P-5) (<10')	EA	23	$	$
29	425-1-361	Inlets (Curb) (Type P-6) (<10')	EA	2	$	$
30	425-1-451	Inlets (Curb) (Type J-5) (<10)	EA	3	$	$
31	425-1-521	Inlet (Dt Bot) (Type C) (<10')	EA	4	$	$
32	425-1-541	Inlet (Dt Bot) Type D) (<10')	EA	6	$	$
33	425-1-581	Inlet (Dt Bot) Type H (<10')	EA	2	$	$
34	425-1-900	Diversion Structure (Attenuation Pond)	EA	1	$	$
35	425-2-41	Manholes (P-7) (<10')	EA	7	$	$
36	425-2-71	Manholes (J-7) (<10')	EA	6	$	$
37	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (15")	LF	127	$	$
38	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (18")	LF	1,788	$	$
39	430-175-101	Pipe Storm Sewer Culv (Opt. Mtl.) (24")	LF	688	$	$
40	430-175-102	Pipe Storm Sewer Culv (Opt. Mtl.) (30")	LF	983	$	$
41	430-175-102	Pipe Storm Sewer Culv (Opt. Mtl.) (36")	LF	195	$	$
42	430-175-103	Pipe Storm Sewer Culv (Opt. Mtl.) (42")	LF	427	$	$
43	430-175-201	Pipe Storm Sewer Culv (Opt. Mtl.) (14" x 23")	LF	88	$	$
44	430-175-204	Pipe Storm Sewer Culv (Opt. Mtl.) (43" x 68")	LF	96	$	$
45	430-175-205	Pipe Storm Sewer Culv (Opt. Mtl.) (58" x 91")	LF	105	$	$
46	430-963-2	Pipe, Polyvinyl Chloride (8")	LF	29	$	$

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(BID "B" - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
47	430-984-129	MES (Optional Round) (24" SD)	EA	1	$	$
48	430-984-133	MES (Optional Round) (30" SD)	EA	1	$	$
49	430-984-642	MES (Conc Pipe Ellip) (43" x 68") (SD)	EA	3	$	$
50	430-984-645	MES (Conc Pipe Ellip) (58" x91" (SD)	EA	2	$	$
51		ConSpan or Equal Structure (64' x 7' x 16')	LS	1	$	$
52	515-1-2	Pipe Handrail (Aluminum)	LF	60	$	$
53	520-1-10	Type F Curb & Gutter	LF	8,012	$	$
54	522-1	4" Concrete Sidewalk	SY	3,899	$	$
55	522-2	6" Concrete Sidewalk	SY	1,525	$	$
56	530-3-3	Rip-Rap (Rubble) (Bank & Shore)	TN	366.8	$	$
57	547-70-2	Rip-Rap (Fabric Formed Conc) (10")	SY	63	$	$
58	570-1-2	Sodding (Performance Turf) (Includes Mowing)	SY	19,335	$	$
59		Record Drawings (Stormwater)	LS	1	$	$15,000.00
60		Record Drawings (Utilities)	LS	1	$	$20,000.00
61		Record Drawings (Roadway)	LS	1	$	$25,000.00
		ROADWAY SUBTOTAL				$
SIGNALIZATION IMPROVEMENTS						
62	555-1-2	Directional Bore (6" to <12")	LF	90	$	$
63	630-1-12	Conduit (F & I) (Underground)	LF	265	$	$
64	630-1-22	Conduit (Furnish) (Underground)	LF	130	$	$
65	632-7-1	Cable (Signal)(F&I)	PI	1	$	$
66	635-1-11	Pull & Junction Boxes	EA	9	$	$
67	649-31-202	M/Arm F & I (E3-T2)	EA	2	$	$
68	650-51-313	Signal Traffic (F & I) (3 Sct 1 Way) (Special)	AS	2	$	$
69	650-51-513	Signal Traffic (F & I) (5 Sct 2 Way) (Special)	AS	2	$	$
70	653-191	Signal Pedestrian (LED) (Countdown) (1-Way)	AS	4	$	$
71	659-101	Signal Head Auxiliaries (Back Plates 3 Sct)	EA	2	$	$
72	659-118	Signal Head Auxiliaries (Back Plates 5 Sct)	EA	2	$	$
73	660-2-102	Loop Assembly (F & I) (Type B)	AS	4	$	$
74	660-2-106	Loop Assembly (F & I) (Type F)	AS	6	$	$
75	665-13	Detector Pedestal (F & I) (Det w/sign only)	EA	4	$	$
76	670-5-410	Traffic Control Assembly Modify	AS	1	$	$
77	690-10	Remove Traffic Signal Head Assembly	EA	4	$	$
78	690-20	Remove Pedestrian Assembly	EA	4	$	$
79	690-32-1	Pole removal (Shallow) (Direct Burial)	EA	2	$	$
80	690-70	Remove Pedestrian Detector Assembly	EA	4	$	$
81	690-90	Remove Cabling and Conduit	PI	1	$	$
82	690-100	Remove Miscellaneous Signal Equipment	PI	1	$	$
		SIGNALIZATION SUBTOTAL				$

Bidder:_____

SECTION 00300 BID FORM
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17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
SIGNING & MARKING SUBTOTAL						
83	700-20-11	Sign Single Post (Less than 12 SF)	AS	45	$	$
84	700-20-12	Sign Single Post (12 - 20 SF)	AS	13	$	$
85	700-20-41	Sign Single Post (Relocate)	AS	19	$	$
86	706-3	Retro-Reflective Pavement Markers	EA	350	$	$
87	711-11-160	Pavement Messages, Thermoplastic (School)	EA	2	$	$
88	711-11-160	Pavement Messages, Thermoplastic (R.R. Markings)	EA	4	$	$
89	711-11-160	Pavement Messages, Thermoplstic (Bike Lane Markings)	EA	24	$	$
90	711-11-170	Directional Arrows, Thermoplastic	EA	7	$	$
91	711-11-151	Guide Lines, Thermoplastic (White)	LF	1,378	$	$
92	711-11-241	Skip Traffic Stripe, 10' - 30' Yellow, Thermplastic	LF	1,050	$	$
93	711-11-123	Solid Traffic Stripe, 12" White, Thermoplastic (Crosswalk)	LF	2,290	$	$
94	711-11-125	Solid Traffic Stripe, 24" White, Thermoplastic (Stop Bar)	LF	541	$	$
95	711-11-224	Solid Traffic Stripe, 18" Yelllow, Thermoplastic (Chevron)	LF	218	$	$
96	711-11-111	Solid Traffic Stripe, 6" White, Thermoplastic	NM	1.290	$	$
97	711-11-211	Solid Traffic Stripe, 6" Yellow, Thermoplastic	NM	1.742	$	$
		SIGNING & MARKING SUBTOTAL				$
LIGHTING SUBTOTAL						
98	715-1-12	Conductor (F & I) (Insulated) (No. 6)	LF	7,824	$	$
99	715-1-13	Conductor (F & I) (Insulated) (No. 4)	LF	16,212	$	$
100	715-2-11	Conduit (F & I) (Underground) (PVC SCH 40) (2")	LF	7,905	$	$
101	715-7-11	Load Center (F & I) (Secondary Voltage)	EA	2	$	$
102	715-14-11	Pull Box (F & I) (Roadside) (Moulded)	EA	130	$	$
103	715-14-42	Pull Box (Relocate) (Sidewalk)	EA	2	$	$
104	715-500-1	Pole Cable Distribution System (Conventional)	EA	94	$	$
105	715-516-112	Light Pole Comp (F & I) (Ornamental) (MH 12')	EA	93	$	$
106	715-540-000	Light Pole Comp (Relocate)	EA	1	$	$
		LIGHTING SUBTOTAL				$
WATER SUBTOTAL						
107	110-3	Removal of Existing Structure (Vault)	LS	1	$	$
108	1000-6	Utility Work - Water (Master Meter Assembly)	LS	1	$	$
109	1050-11-92	Water Service Conn. (F & I) (HDPE) CI 200 (1")	EA	14	$	$
110	1050-11-423	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (6") (Incl Ftgs)	LF	937	$	$
111	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (8")	LF	1,274	$	$
112	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (12")	LF	178	$	$
113	1050-11-424	Pipe (CI/DI) (Epoxy) (F & I) Class 50 (16")	LF	64	$	$
114	1050-16-224	Pipe Removal (Less than 18")	LF	2,089	$	$
115	1055-14-414	Bend (DI) (45 Degree) (12")	EA	3	$	$
116	1055-14-414	Bend (DI) (45 Degree) (12") (Cut-In)	EA	1	$	$
117	1055-14-414	Bend (DI) (45 Degree) (16")	EA	2	$	$
118	1055-14-414	Bend (DI) (45 Degree) (16") (Cut-In)	EA	2	$	$
119	1055-14-424	Tee (DI) (8" x 6")	EA	5	$	$
120	1055-14-424	Tee (DI) (12" x 6")	EA	1	$	$
121	1055-14-424	Tee (DI) (12" x 12")	EA	1	$	$
122	1055-14-424	Tee (DI) (16" x 12")	EA	1	$	$
123	1055-14-434	Reducer (DI) (8" x 6")	EA	1	$	$
124	1055-14-434	Reducer (DI) (12" x 8")	EA	1	$	$

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B" ' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE
125	1055-14-494	Sleeve (DI) (16")	EA	2	$	$
126	1060-14-21	Water Meter Box (Relocate)	EA	11	$	$
127	1080-11-34	Valve Assembly Gate (F & I) (CI) (250 PSI) (6")	EA	11	$	$
128	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (8")	EA	1	$	$
129	1080-11-44	Valve Assembly Gate (F & I) (CI) (250 PSI) (12")	EA	3	$	$
130	1080-11-44	Valve Assembly Butterfly (F & I) (CI) (250 PSI) (16")	EA	2	$	$
131	1644-13	Fire Hydrant Assembly (Standard) (F & I) (6")	EA	2	$	$
132	1644-53	Fire Hydrant Assembly (Relocate)	EA	1	$	$
		WATER SUBTOTAL				$
SEWER SUBTOTAL						
133	555-12	Directional Bore	LF	200	$	$
134	1050-11-223	San.Sewer (F & I) (PVC) (DR-18) (C-900) (6" (Inc Ftgs)	LF	1,458	$	$
135	1060-15	Manhole Rim & Cover	EA	9	$	$
136	1060-15	Core Bore Exist. MH	EA	1	$	$
137	1060-15	Manhole Rim Adjustment	EA	3	$	$
138	1060-15	Cleaning & Sealing Manhole (Fiberglass)	EA	2	$	$
139	1060-15	Cleaning & Sealing Manhole (Sewpercoat)	EA	7	$	$
140	1080-11-36	Air Release Assembly (F & I) (6")	EA	2	$	$
		SEWER SUBTOTAL				$
CITY OF PALMETTO UTILITY RELOCATIONS						
141		Furnish & Install 4" PVC Pressure Sewer	EA	700	$	$
142		Furnish & Install 8" PVC Pressure Sewer	EA	140	$	$
143		Furnish & Install 4" Diameter SS Manhole	EA	1	$	$
144		Furnish & Install12" PVC Pressure Sewer	LF	900	$	$
145		Furnish & Install 12" PVC Non-Potable Water Main	LF	2,620	$	$
146		Furnish & Install 12" PVC Potable Water Main	LF	2,300	$	$
147		Furnish & Install 12" DIP W/Thurst Collar	LF	160	$	$
148		Furnish & Install 8" PVC Potable Water Main	LF	20	$	$
149		Furnish & Install 8" DIP Potable Water Main	LF	20	$	$
150		Furnish & Install 6" PVC Potable Water Main	LF	60	$	$
151		Furnish & Install 6" DIP Potable Water Main	LF	140	$	$
152		Furnish & Install 12" Gate Valve	EA	4	$	$
153		Furnish & Install 6" Gate Valve	EA	6	$	$
154		Furnish & Install Fire Hydrant - Complete Assembly (Hydrant, Tee,Valve, Blocking, Tie Rods, Stone, and Appurtenances	EA	2	$	$
155		Furnish & Install 6" Fire Hydrant Extension	EA	2	$	$
156		Furnish & Install 12" Fire Hydrant Extension	EA	2	$	$
157		Furnish & Install 18" Fire Hydrant Extension	EA	1	$	$
158		Fittings @ 25% LF	LBS	1,730	$	$
159		Bacteriological Sample Point	EA	2	$	$
160		Miscellaneous Concrete	CU YDS	25	$	$
161		Mobilization, Demobilization, and Sitework	LS	1	$	$
162		Contngency (15%)	LS	1	$	$
		Furnish & Install 4: Diameter SS Manhole	EA	1	$	$
		CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL				$

SECTION 00300 BID FORM
(Submit in Triplicate)
17th STREET WEST (FROM BUSINESS US 41 TO US 41)
and City of Palmetto Utility Relocations
ROAD AND UTILITY IMPROVEMENTS (PROJECT NO. 6035261)
(BID "B"' - Based on Completion Time of 540 Calendar Days)

ITEM	FDOT ITEM	DESCRIPTION	UNIT	EST. QTY.	BID PRICE PER UNIT	EXTENDED BID PRICE

DESCRIPTION SUMMARY	PRICE
ROADWAY SUBTOTAL	$
SIGNALIZATION SUBTOTAL	$
SIGNING & MARKING SUBTOTAL	$
LIGHTING SUBTOTAL	$
WATER SUBTOTAL	$
SEWER SUBTOTAL	$
CITY OF PALMETTO UTILITY RELOCATION SUBTOTAL	$
RECORD DRAWINGS ALLOWANCE (for Storm water, Utility, and Roadway)	$60,000.00
DISCRETIONARY WORK	$660,000.00
TOTAL BID PRICE - BID "B"- Based on 540 Calendar days	$

Bidder:_____

SWORN STATEMENT
THE FLORIDA TRENCH SAFETY ACT

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR BY AN OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. This Sworn Statement is submitted with IFB No. **#09-1583-OV.**

2. This Sworn Statement is submitted by_____ 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 _____.

3. Name of individual signing this Sworn Statement is:_____, Whose relationship to the above entity s_____.

4. The Trench Safety Standards that will be in effect during the construction of this project shall include, but are not limited to: Laws of Florida, Chapters 90-96, TRENCH SAFETY ACT, and OSHA RULES AND REGULATIONS 29 CFR 1926.650 Subpart P, effective October 1, 1990.

5. The undersigned assures that the entity will comply with the applicable Trench Safety Standards and agrees to indemnify and hold harmless the Owner and Engineer, and any of their agents or employees from any claims arising from the failure to comply with said standard.

6. The undersigned has appropriated the following costs for compliance with the applicable standards:

	Trench Safety Measure (Description)	Units of Measure (LF, SY)	Unit Quantity	Unit Cost	Extended Cost
a.	_____	_____	_____	$_____	_____
b.	_____	_____	_____	$_____	_____
c.	_____	_____	_____	$_____	_____
d.	_____	_____	_____	$_____	_____

7. The undersigned intends to comply with these standards by instituting the following procedures:
_____
_____
_____
_____.

THE UNDERSIGNED, in submitting this Bid, represents that they have reviewed and considered all available geotechnical information and made such other investigations and tests as they may deem necessary to adequately design the trench safety system(s) to be utilized on this project.

_____
(AUTHORIZED SIGNATURE / TITLE)

SWORN to and subscribed before me this ___ day of _____, 20___.
(impress official seal)

_____
Notary Public, State of Florida
My commission expires: _____

SECTION 00430

CONTRACTOR'S QUESTIONNAIRE

(Submit in Triplicate)

The Bidder warrants the truth and accuracy of all statements and answers herein contained. (Include additional sheets if necessary.)

THIS QUESTIONNAIRE MUST BE COMPLETED AND SUBMITTED WITH YOUR BID.

1. LICENSE # and COMPANY'S NAME:_____
   CO. PHYSICAL ADDRESS:_____
   TELEPHONE NUMBER: (___)_____ FAX(_____)_____

2. Bidding as an; individual:___;a partnership: ____; a corporation; ___; a joint venture;___

3. If a partnership: list names and addresses of partners; if a corporation: list names of officers, directors, shareholders, and state of incorporation; if joint venture: list names and address of venturers and the same if any venturer is a corporation for each such corporation, partnership, or joint venture:

_____
_____
_____

4. Your organization has been in business (under this firm's name) as a _____ for how many years? _____

5. Describe and give the date and owner of the last three government projects you've completed which are similar in cost, type, size, and nature as the one proposed (for a public entity). Include contact name and phone number:

_____
_____

6. Have you ever been assessed liquidated damages under a contract during the past five (5) years? If so, state when, where (contact name, address, and phone number) and why.

_____
_____

7. Have you ever failed to complete work awarded to you? If so, state when, where (contact name, address, phone number) and why?

_____
_____

8. Have you ever been debarred or prohibited from bidding on a governmental entity's construction project? If yes, name the entity and describe the circumstances:

_____
_____
_____

9. Name three individuals, governmental entities, or corporations for which you have performed similar work and to which you refer. Include contact name and phone number:

1._____
2. _____
3. _____

10. What specific steps have you taken to examine the physical conditions at or contiguous to the site, including but not limited to, the location of existing underground facilities?

_____
_____
_____

11. What specific physical conditions, including, but not limited to, the location of existing underground facilities have you found which will, in any manner, affect cost, progress, performance, or finishing of the work?

_____
_____
_____

12. Will you subcontract any part of this Work? If so, describe which major portion(s):

_____
_____

13. If any, list (with contract amount) WBE/MBE to be utilized:

_____
_____

14. What equipment do you own to accomplish this Work?

_____
_____
_____

15. What equipment will you purchase/rent for the Work? (specify which)

_____
_____
_____

16. List the following in connection with the Surety which is providing the Bond(s):

Surety's Name: _____

Surety's Address: _____

Name, address and phone number of Surety's resident agent for service of process in Florida:

_____

_____

_____

Phone: (_____)_____

SECTION 00491

Drug Free Work Place Certification

SWORN STATEMENT PURSUANT TO RESOLUTION R-93-22

DRUG FREE WORK PLACES

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

This sworn statement is submitted to the Manatee County Board of County Commissioners by_____
[print individual's name and title]
_____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:_____.

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it will provide a drug free work place by:

(1) providing a written statement to each employee notifying such employee that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance as defined by 893.02(4), Florida Statutes, as the same may be amended from time to time, in the person's or entity's work place is prohibited specifying the actions that will be taken against employees for violation of such prohibition. Such written statement shall inform employees about:

(i) the dangers of drug abuse in the work place;

(ii) the person's or entity's policy of maintaining a drug free environment at all its work places, including but not limited to all locations where employees perform any task relating to any portion of such contract, business transaction or grant;

(iii) any available drug counseling, rehabilitation, and employee assistance programs; and

(iv) the penalties that may be imposed upon employees for drug abuse violations.

2) Requiring the employee to sign a copy of such written statement to acknowledge his or her receipt of same and advice as to the specifics of such policy. Such person or entity shall retain the statements signed by its employees. Such person or entity shall also post in a prominent place at all of its work places a written statement of its policy containing the foregoing elements (i) through (iv).

(3) Notifying the employee in the statement required by subsection (1) that as a condition of employment the employee will:

(i) abide by the terms of the statement; and
(ii) notify the employer of any criminal drug statute conviction for a violation occurring in the work place no later than five (5) days after such a conviction.

(4) Notifying the County within ten (10) days after receiving notice under subsection (3) from an employee or otherwise receiving actual notice of such conviction.

(5) Imposing appropriate personnel action against such employee up to and including termination; or requiring such employee to satisfactorily participate in a drug abuse assistance or rehabilitation program approved for such purposes by a federal, state, or local health, law enforcement, or other appropriate agency.

(6) Making a good faith effort to continue to maintain a drug free work place through implementation of sections (1) through (5) stated above.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT:

(1) Such person or entity has made false certification.

(2) Such person or entity violates such certification by failing to carry out the requirements of sections (1), (2), (3), (4), (5), or (6) or Resolution R-01-36 Section 4, E (1) (a) or

(3) Such a number of employees of such person or entity have been convicted of violations occurring in the work place as to indicate that such person or entity has failed to make a good faith effort to provide a drug free work place as required by Resolution R-01-36 Section 4, E (1) (a).

_____
(Signature)

STATE OF FLORIDA
COUNTY OF_____

Sworn to and subscribed before me this _____ day of _____, 2009
by _____.

Personally known _____OR produced identification_____

_____ My commission expires_____
Notary Public Signature

[Print, type or stamp Commissioned name of Notary Public]
"

PUBLIC CONTRACTING AND ENVIRONMENTAL CRIMES CERTIFICATION

SWORN STATEMENT PURSUANT TO ARTICLE 5,
MANATEE COUNTY PURCHASING CODE

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

This sworn statement is submitted to the Manatee County Board of County Commissioners by

_____
[print individual's name and title]

_____ for_____
[print name of entity submitting sworn statement]

Whose business 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: _____

I understand that no person or entity shall be awarded or receive a county contract for public improvements, procurement of goods or services (including professional services) or a county lease, franchise, concession or management agreement, or shall receive a grant of county monies unless such person or entity has submitted a written certification to the County that it has not:

(1) been convicted of bribery or attempting to bribe a public officer or employee of Manatee County, the State of Florida, or any other public entity, including, but not limited to the Government of the United States, any state, or any local government authority in the United States, in that officer's or employee's official capacity; or

(2) been convicted of an agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid a fixed price, or otherwise; or

(3) been convicted of a violation of an environmental law that, in the sole opinion of the County's Purchasing Director, reflects negatively upon the ability of the person or entity to conduct business in a responsible manner; or

(4) made an admission of guilt of such conduct described in items (1), (2) or (3) above, which is a matter of record, but has not been prosecuted for such conduct, or has made an admission of guilt of such conduct, which is a matter of record, pursuant to formal prosecution. An admission of guilt shall be construed to include a plea of nolo contendere; or

(5) where an officer, official, agent or employee of a business entity has been convicted of or has admitted guilt to any of the crimes set forth above on behalf of such and entity and pursuant to the direction or authorization of an official thereof (including the person committing the offense, if he is an official of the

business entity), the business shall be chargeable with the conduct herein above set forth. A business entity shall be chargeable with the conduct of an affiliated entity, whether wholly owned, partially owned, or one which has common ownership or a common Board of Directors. For purposes of this Form, business entities are affiliated if, directly or indirectly, one business entity controls or has the power to control another business entity, or if an individual or group of individuals controls or has the power to control both entities. Indicia of control shall include, without limitation, interlocking management or ownership, identity of interests among family members, shared organization of a business entity following the ineligibility of a business entity under this Article, or using substantially the same management, ownership or principles as the ineligible entity.

Any person or entity who claims that this Article is inapplicable to him/her/it because a conviction or judgement has been reversed by a court of competent jurisdiction, shall prove the same with documentation satisfactory to the County's Purchasing Director. Upon presentation of such satisfactory proof, the person or entity shall be allowed to contract with the County.

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR MANATEE COUNTY IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT ANY CONTRACT OR BUSINESS TRANSACTION SHALL PROVIDE FOR SUSPENSION OF PAYMENTS, OR TERMINATION, OR BOTH, IF THE CONTRACTING OFFICER OR THE COUNTY ADMINISTRATOR DETERMINES THAT **SUCH PERSON OR ENTITY HAS MADE FALSE CERTIFICATION.**

_____
[Signature]

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me this _____ day of _____, 2009 by _____.

Personally known _____ OR produced identification _____
[Type of identification]

_____My commission expires _____
Notary Public Signature

_____
[Print, type or stamp Commissioned name of Notary Public]

Signatory Requirement - In the case of a business entity other than a partnership or a corporation, this affidavit shall be executed by an authorized agent of the entity. In the case of a partnership, this affidavit shall be executed by the general partner(s). In the case of a corporation, this affidavit shall be executed by the corporate president.

SECTION 00500
FORM OF AGREEMENT
BETWEEN THE
COUNTY OF MANATEE, FLORIDA
AND THE CONTRACTOR AS IDENTIFIED BELOW
ON THE BASIS OF A STIPULATED UNIT COST CONTRACT PRICE

THIS AGREEMENT is made and entered into by and between the COUNTY OF MANATEE, a political subdivision of the state of Florida, hereinafter referred to as the "OWNER" and _____, hereinafter referred to as the "CONTRACTOR," duly authorized to transact business in the state of Florida, with offices located at _____.

Article 1. WORK

CONTRACTOR shall furnish all labor, materials, supplies, and other items required to complete the Work for IFB No. **IFB#09-1583-OV 17th Street West (From Business U.S. 41 to U.S. 41) Road and Utility Improvements, Palmetto, FL** in strict accordance with Contract Documents and any duly authorized subsequent addenda thereto, all of which are made a part hereof.

Article 2. ENGINEER

The County of Manatee, Project Management Department, is responsible as the OWNER and **WadeTrim** hereinafter referred to as "ENGINEER," designed this project and is responsible for technical/engineering reviews and decisions. The ENGINEER is a member of the OWNER'S project management team which is collectively responsible in ensuring the Work is completed in accordance with the Contract Documents. All communications involving this project will be addressed to:

County of Manatee
Public Works Department
Project Management Division
Attn: Paul Schamell
Project Manager
IFB #09-1583-OV
1022 26th Avenue West
Bradenton, FL 34208
Phone (941) 708-7450, Ext 7329

Jeffrey D. Trim, P.E.
Engineer of Record
Wade Trim
8745 Henderson Road
Suite 220
Tampa, FL 33634
Phone 1-888-499-9624

Where the terms ENGINEER and/or OWNER are used in the Contract Documents, it shall mean the OWNER'S project management team.

Article 3. CONTRACTOR'S REPRESENTATIONS

In order to induce OWNER to enter into this Agreement, CONTRACTOR makes the following representations:

3.1 CONTRACTOR has familiarized itself with the nature and extent of the Bid Documents, Work, site, locality and all local conditions and laws and regulations that in any manner may affect cost, progress, performance or furnishing of the Work.

3.2 CONTRACTOR has studied carefully all drawings of the physical conditions upon which CONTRACTOR is entitled to rely.

3.3 CONTRACTOR has obtained and carefully studied (or assumes responsibility for obtaining and carefully studying) all such examinations, investigations, explorations, tests, reports and studies which pertain to the physical conditions at or contiguous to the site or which otherwise may affect the cost, progress, performance or furnishing of the Work as CONTRACTOR considers necessary for the performance or furnishing of the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Bid Documents; and no additional examinations, investigations, explorations, tests, reports, studies or similar information or data are or will be required by CONTRACTOR for such purposes.

3.4 CONTRACTOR has reviewed and checked all information and data shown or indicated on the Bid Documents with respect to existing underground facilities at or contiguous to the site and assumes responsibility for the accurate location of said underground facilities. Any additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said underground facilities conducted by the CONTRACTOR will be done at the CONTRACTOR'S expense.

3.5 CONTRACTOR has correlated the results of all such observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Bid.

3.6 CONTRACTOR has given OWNER written notice of all conflicts, errors or discrepancies that have been discovered in the Bid Documents and the written resolution thereof by OWNER is acceptable to CONTRACTOR.

3.7 CONTRACTOR shall schedule and perform the Work subject to OWNER'S approval and shall hold OWNER harmless from all liabilities incurred due to CONTRACTOR'S failure to coordinate with the OWNER.

Article 4. CONTRACT DOCUMENTS

The Contract Documents which comprise the entire Agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

4.1 This Agreement and Bid Document **IFB#09-1583-OV**

4.2 Performance and/or other Bonds and Insurance Certificate(s)

4.3 Drawings (not attached)

4.4 Addenda numbers _____ to _____, inclusive.

4.5 CONTRACTOR'S Bid Form and any other information submitted by Contractor prior to Notice of Award.

4.6 The following which may be delivered or issued after the effective date of the Agreement and are not attached hereto: all written Change Orders and other documents amending, modifying, or supplementing the Contract Documents.

4.7 The documents listed in paragraphs above are attached to this Agreement (except as noted otherwise above). There are no Contract Documents other than those listed above in this Article 4.

Article 5. MISCELLANEOUS

5.1 Terms used in this Agreement are defined in Article 1 of the General Conditions.

5.2 No assignment by a party hereto of any rights under or interest in the Contract Documents will be binding on another party hereto without the written consent of the party sought to be bound; and specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law); and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignee from any duty or responsibility under the Contract Documents.

5.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect of all covenants, agreements and obligations contained in the Contract Documents.

The OWNER will pay, and the CONTRACTOR will accept in full consideration for the performance of the Work (**IFB No. #09-1583-OV, 17th Street West (From Business U.S. 41 to U.S. 41) Road and Utility Improvements, Palmetto, FL** subject to additions and deductions as provided therein, the sum of _____ Dollars and Cents ($_____) for Bid "____" based on Completion Time of ____ calendar days and the sum of **$3,057.00** as liquidated damages for each calendar day of delay.

_____

CONTRACTOR

BY: _____

Signature

_____

Type Name and Title of Signer

The foregoing instrument was acknowledged before me this ____ day of _____,

2009, by _____, who is personally known to me or who has

produced _____ as identification.

(impress official seal)

_____
Notary Public, State of Florida

My commission expires: _____

APPROVED, with a quorum present and voting this _____ day of _____, 2009.

ATTEST: R.B. SHORE
Clerk of the Circuit Court

_____:

COUNTY OF MANATEE, FLORIDA by its
Board of County Commissioners

BY:_____
CHAIRMAN

APPLICATION FOR PAYMENT

Project: _____

From: _____ To: _____

Request No. _____ Project No. _____

Purchase Order Number: _____

County Bid No.: _____

Consultant: _____

CONTRACT PAYMENT SUMMARY

Original contract amount:				$
Change order(s):				
Change order summary:				
Number	Date Approved	Additive	Deductive	
	SAMPLE SHEET ONLY			
	OBTAIN CURRENT VERSION OF FORM			
	FROM PROJECT MANAGER			
SUBTOTALS:				
Net change order subtotal (Additive less Deductive):				$
Current Contract Amount (CCA): (Original Amount + Change Order(s))				$
		Previous Status	Current Status	
Value of the Work in Place		$	$	
Value of Stored Materials		$	$	
Total Earned ($ and % of CCA)		$	$	%
Retainage ($ and % of CCA)		$	$	%
Net Earned (Total earned minus retainage)				$
TOTAL PREVIOUS PAYMENTS				$
AMOUNT DUE THIS PAYMENT (Net Earned minus Previous Payments)				$

CONTRACTOR'S AFFIDAVIT OF NOTICE

CERTIFICATE: The undersigned CONTRACTOR certifies that all items and amounts shown on this application for payment are on account of work performed, materials supplied and/or materials stored on site and paid for by Contractor in accordance with the Contract Documents with due consideration for previous Payment(s), if any, received by the Contractor from the County, and that the current payment shown is now due.

NOTARY:

State of Florida County of _____

Sworn to (or affirmed) and subscribed before me this _____ **day of** _____, _____, **by**

_____

(Name of person giving notice)

_____

(Signature of Notary Public - State of Florida)
Print, Type or Stamp Commissioned Name of Notary Public:

Personally Known _____ **or Produced Identification** _____
Type of Identification Produced: _____

CONTRACTOR:

Signature: _____

Name of person authorized to sign Affidavit of Notice

_____

TITLE

Contractor name, address and telephone No.:

_____
_____
_____
_____
_____

VERIFICATION, RECOMMENDATION, CONCURRENCES AND APPROVALS

	(Signatures)	(Date)
Quantities verified by:	_____	_____
Consultant / Engineer:	_____	_____
Project Manager:	_____	_____
Department Head:	_____	_____
Payment Approved by the Board of County Commissioners:	_____	_____
Attested to by the Clerk of Circuit Court:	_____	_____

PAY APPLICATION SCHEDULE (CONTINUATION SHEET)

KEY: COLS. A THROUGH F ARE FROM ORIGINAL BID COL. G IS THE CHANGE ORDER NUMBER W.I.P. = WORK-IN-PLACE COL. "Q" = 100 x P / (F + J)-------MAY NOT EXCEED 100%

ITEM NO.	DESCRIPTION OF WORK	UNIT	UNIT PRICE	QTY	VALUE	CHANGE ORDERS				PREVIOUS W.I.P.		CURRENT W.I.P.		TOTAL W.I.P.		%
						#	QTY	+/-	+/- VAL.	QTY	VALUE	QTY	VALUE	QTY	VALUE	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q

SAMPLE SHEET ONLY
OBTAIN CURRENT VERSION OF FORM
FROM PROJECT MANAGER

ATTACH STORED-MATERIAL SCHEDULE

TOTALS															

NOTE: CONTRACTOR MAY SUBMIT A COMPUTER SPREADSHEET IN LIEU OF FILLING IN THIS FORM IF THE SAME INFORMATION IS PROVIDED.

PAGE _____ OF _____

PAY APPLICATION SCHEDULE OF STORED MATERIALS

ITEM NO.	DESCRIPTION OF MATERIALS	SUPPLIER	PAID INVOICE	PREVIOUSLY RECEIVED	RECEIVED THIS PERIOD	PREVIOUSLY INSTALLED	INSTALLED THIS PERIOD	BALANCE TO INSTALL	VALUE OF BALANCE
A	B	C	D	E	F	G	H	I	J
		SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER							
	TOTAL								

CONTRACT CHANGE ORDER

PROJECT:

Change Order No.:

Contract Amount:
(Present Value)

Project Number:

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		TOTAL DECREASE:	TOTAL INCREASE:

Contractor:
Address:
City / State:

Contractor
Signature: _____

THE NET CHANG
ADJUSTS THE CURRENT CONTRACT AMOUNT FROM
TO

____ CALENDAR DAYS ARE ADDED TO THE SCHEDULE
WHICH CHANGES FINAL COMPLETION TO _____.

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant (as applicable):	_____	_____
Project Engineer:	_____	_____
Project Manager:	_____	_____
Department Head:	_____	_____
Approved by the Manatee County Board of County Commissioners:	_____ Chairman	_____
Clerk of the Circuit Court:	_____	_____

CONTRACT CHANGE ORDER Page 2 (Continuation)		Change Order No: Project Number:	
NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		DECREASE SUBTOTAL:	INCREASE SUBTOTAL:

CONTRACT CHANGE ORDER Page 3 (Continuation)		Change Order No: Project Number:	
NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER		
		DECREASE SUBTOTAL:	INCREASE SUBTOTAL:

JUSTIFICATION FOR CHANGE	Change Order No : Project Number:

1. NECESSITY FOR CHANGE:

SAMPLE SHEET ONLY
OBTAIN CURRENT VERSION OF FORM
FROM PROJECT MANAGER

2. Is change an alternate bid? (yes / no)

3. Does change substantially alter the physical size of the project? (yes / no)
(If yes, explain)

4 Effect of this change on other "Prime" contractors?

5 Has the Surety and insurance company been notified, if applicable?

DISCRETIONARY WORK - FIELD DIRECTIVE PROJECT:	FIELD DIRECTIVE NO: PROJECT NO.:

ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE
	SAMPLE SHEET ONLY OBTAIN CURRENT VERSION OF FORM FROM PROJECT MANAGER	
		DECREASE

CONTRACTOR: _____
ADDRESS: _____
CITY/STATE: _____

CONTRACTOR SIGNATURE: _____

THE DISCRETIONARY WORK AMOUNT IS DECREASED $ FROM $ TO $ WITH NO CHANGE TO THE TOTAL CONTRACT AMOUNT.

TIME CAN ONLY BE ADDED BY CHANGE ORDER

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
CONSULTANT:		
PROJECT ENGINEER:		
PROJECT MANAGER:		
SENIOR PROJECT MANAGER:		

CERTIFICATE OF SUBSTANTIAL COMPLETION (S.C.)	CHECK ONE: Partial:	Total:
Project Title:	Date Submitted:	
Contractor Data: Name: Address: City/State/zip:	Project No.: S.C. Date (Proposed)	

If the "Partial" completion box above is checked, the following description applies to the work for which substantial completion is being sought. Otherwise, the work described in the Contract including approved changes, if any, is certified to be substantially complete:
(Description of the portion of work substantially completed):

SAMPLE SHEET ONLY
OBTAIN CURRENT VERSION OF FORM
FROM PROJECT MANAGER

(USE CONTINUATION SHEETS IF NECESSARY)

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item does not alter the Contractor's responsibility to complete all of the contract work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by the Contractor within _____ days of substantial completion. The approved substantial completion date is: _____ .

Contractor Signature / Date	Engineer's Approval / Date
Printed Name and Title	Printed Name and Title

The Contractor shall be responsible for security, operation, safety, maintenance, HVAC, insurance and warranties in accordance with the Contract. The County will assume the responsibility for paying the cost of electrical power from midnight of the date of Engineer's approval as indicated above.

ATTACH THE INSPECTOR'S FINAL WALKTHROUGH LIST OF DEFICIENCIES.

FINAL RECONCILIATION, WARRANTY PERIOD DECLARATION AND CONTRACTOR'S AFFIDAVIT

Project Title:	Date Submitted:
Contractor Data: Name: SAMPLE SHEET ONLY Address: OBTAIN CURRENT VERSION OF FORM City/State/zip: FROM PROJECT MANAGER	Project No.: Warranty (months):

This Final Reconciliation is for the work performed for Manatee County by the above named Contractor, hereinafter called CONTRACTOR, pursuant to a contract dated _____, as amended, and acts as an addendum thereto.

It is agreed that all quantities and prices in the attached Final Pay Estimate No. _____ are correct, that the amount of $_____, including retainage, is due to the CONTRACTOR, that no claims are outstanding as between the parties, and that the above stated sum represents the entirety of monies owed the CONTRACTOR.

It is further agreed that the warranty period for CONTRACTOR'S work pursuant to the Contract is from _____ to _____.

As (title) _____ for CONTRACTOR, I have authority to bind said CONTRACTOR, and as such make this final reconciliation, declaration and affidavit for the purpose of inducing Manatee County to make final payment to CONTRACTOR for work done at / upon _____ under said contract:

CONTRACTOR has paid all social security and withholding taxes accrued in connection with this construction project.

CONTRACTOR has paid all workers' compensation and other insurance premiums incurred in connection with this construction project.

CONTRACTOR has paid for all required permits in connection with this construction project.

All laborers, materialmen, suppliers, subcontractors and service professionals who worked for and/or supplied materials, equipment and/or services to the CONTRACTOR under this construction contract have been paid in full.

_____
(Affiant Signature)

NOTARY:
State of Florida County of _____, Sworn to (or affirmed) and subscribed before me this _____ day of _____, _____, by _____(person giving notice).

Signature of Notary Public - State of Florida: _____
Print, Type or Stamp Commissioned Name of Notary Public:

Personally known ____ or produced identification ____
Type of Identification Produced:

ADMINISTRATIVE CONTRACT ADJUSTMENT

PROJECT:

Contract Adj. No.:

Contract Amount:
(Present Value)

Project Number:

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
	BY EXECUTION OF THIS CHANGE ORDER THE CONTRACTOR AGREES THAT ALL CLAIMS FOR ADDITIONAL CONTRACT TIME AND FEES FOR THE ITEMS IN THIS CHANGE ORDER HAVE BEEN SATISFIED.		
		TOTAL DECREASE:	TOTAL INCREASE:

Contractor: _____

Address: _____

City / State: _____

Contractor
Signature: _____ Date _____

THE NET CHANGE OF
ADJUSTS THE CURRENT CONTRACT AMOUNT FROM
TO

RECOMMENDATION, CONCURRENCES AND APPROVALS

	SIGNATURES	DATE
Consultant / Engineer	_____	_____
Project Manager:	_____	_____
Division Manager:	_____	_____
Department Director/ Deputy Director:	_____	_____

ADMINISTRATIVE CONTRACT ADJUSTMENT

Page 2 (Continuation)

Contract Adj. No.:

Project Number:

NO. OF ITEM	DESCRIPTION OF ITEM AND CHANGE	DECREASE	INCREASE
		DECREASE SUBTOTAL:	INCREASE SUBTOTAL:

SECTION 00700
GENERAL CONDITIONS

ARTICLE I - DEFINITIONS

Whenever used in the Bid Documents, the following terms have the meaning indicated which are applicable to both the singular and plural thereof:

Addendum - Written or graphic instruments issued prior to the opening of bids which clarify or change the bidding documents or the contract documents.

Agreement - The written Agreement between Owner and Contractor covering the Work to be performed; other contract documents are attached to the Agreement and made a part thereof as provided therein.

Written Amendment - A written amendment of the contract documents, signed by Owner and Contractor on or after the effective date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly work related aspects of the contract documents.

Application for Payment - The form accepted by Project Representative which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the contract documents.

Award - Acceptance of the bid from the person, firm, or corporation which in the Owner's sole and absolute judgment will under all circumstances best serve the public interest. Award shall be made by a majority vote of a quorum of Manatee County Board of County Commissioners in open session; or by the Purchasing Director in accordance with Ordinance 08-43, Manatee County Purchasing Ordinance.

Bid - The offer of the bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

Bidder - One who submits a bid directly to the Owner, as distinct from a sub-bidder, who submits a bid to a Bidder.

Bidding Documents - Consists of the Invitation For Bid, which includes but is not limited to: the bid form, drawings, Contract Documents, terms and conditions, and the proposed contract documents (including all Addenda issued prior to receipt of bids); and becomes a part of the Agreement.

Bonds - Performance and payment bonds and other instruments of security.

Change Order - A document recommended by Project Representative which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work, or an adjustment in the contract price or the contract time, issued on or after the effective date of the Agreement.

Compensable Delay - Any delay beyond the control and without the fault or negligence of the Contractor resulting from Owner-caused changes in the Work, differing site conditions, suspensions of the Work, or termination for convenience by Owner.

Contract Documents - The Agreement, Addenda (which pertain to the contract documents), Contractor's bid (including documentation accompanying the bid and any post-bid documentation submitted prior to the Notice of Award), the bonds, the specifications and the drawings, together with all amendments, modifications and supplements issued on or after the effective date of the Agreement.

Contract Price - The monies payable by Owner to Contractor under the contract documents as stated in the Agreement.

Contract Time - The number of days or the date stated in the Notice to Proceed for the completion of the Work.

Contractor - The person, firm or corporation with whom Owner has entered into an Agreement.

Days - All references to days are to be considered calendar days except as specified differently.

Defective - An adjective which when modifying the work refers to work that is unsatisfactory, faulty or deficient, or does not conform to the contract documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the contract documents, or has been damaged prior to Project Representative's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner).

Discretionary – Payment for all work that shall be made only at the Owner's discretion in order to satisfactorily complete the project in accordance with the Plans and Specifications.

Drawings - The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by Engineer and are referred to in the bidding and contract documents.

Effective Date of the Agreement - The date indicated in the Agreement on which it becomes effective (date of execution).

Excusable Delay - Any delay beyond the control and without the negligence of the Contractor, the Owner, or any other contractor caused by events or circumstances such as, but not limited to, acts of God or of the public enemy, fires, floods, freight embargoes, acts of government other than Owner, or epidemics. Labor disputes and above average rainfall shall give rise only to excusable delays.

Float or Slack Time - The time available in the progress schedule during which an unexpected activity can be completed without delaying substantial completion of the Work.

Field Order - A written order issued by Project Representative which orders minor changes in the Work, but which does not involve a change in the contract price or the contract time.

Inexcusable Delay - Any delay caused by events or circumstances within the control of the Contractor, such as inadequate crewing, slow submittals, etc., which might have been avoided by the exercise of care, prudence, foresight, or diligence on the part of the Contractor.

Non-prejudicial Delay - Any delay impacting a portion of the Work within the available total float or slack time and not necessarily preventing completion of the Work within the contract time.

Notice of Award - The written notice to the successful bidder stating Award has been approved by the Board of County Commissioners; or by the Purchasing Director in accordance with Ordinance 08-43, Manatee County Purchasing Code.

Notice of Intent to Award - The written notice to the apparent low bidder stating Award has been recommended with final Award to be authorized by the Board of County Commissioners.

Notice to Proceed - Written notice by Owner (after execution of contract) to Contractor fixing the date on which the contract time will commence to run and on which Contractor shall start to perform (ten (10) days from date of such notice) Contractor's obligations under the contract documents.

Owner - Manatee County, Florida, Board of County Commissioners.

Preconstruction Conference - Prior to starting the Work, a meeting scheduled by Owner with Contractor to review the Work schedules, to establish procedures for handling shop drawings and other submissions, for processing periodical pay estimates, and such other matters as may be pertinent to the project.

Prejudicial Delay - Any excusable or compensable delay impacting the Work and exceeding the total float available in the progress schedule, thus preventing completion of the Work within the contract time unless the Work is accelerated.

Pre-operation Testing - All field inspections, installation checks, water tests, performance tests and necessary corrections required of Contractor to demonstrate that individual components of the work have been properly constructed and do operate in accordance with the contract documents for their intended purposes.

Project - The total construction of which the Work to be provided under the contract documents may be the whole or a part as indicated elsewhere in the contract documents.

Project Representative - The authorized representative of Owner who is assigned to the project or any part thereof.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the Work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by a supplier and submitted by Contractor to illustrate material or equipment for some portion of the Work.

Specifications - Those portions of the contract documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual or corporation having a direct contact with Contractor or with any other subcontractor for the performance of a part of the Work at the site. Such person or firm has contractual relations with the Contractor, not with the Owner.

Substantial Completion - The Work (or a specified part thereof) has progressed to the point when, in the opinion of the Engineer as evidenced by Engineer's definitive certificate of Substantial Completion, it is sufficiently complete in accordance with contract documents so that the work can be utilized for the purposes for which it is intended; or if there be no such certificate issued, when final payment is due.

Successful Bidder - The lowest qualified, responsible and responsive bidder to whom an award is made.

Supplier - A manufacturer, fabricator, supplier, distributor, materialman or vendor.

Underground Facilities - All pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels or other such facilities or attachments and any encasement containing such facilities which have been installed underground to furnish any of the following services or materials: electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, sewage and drainage removal, traffic or other control systems or water.

Unit Price Work - Work to be paid for on the basis of unit prices.

Work - The entire completed construction or the various separately identifiable parts thereof required to be furnished under the contract documents. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, all as required by the contract documents.

Work Directive Change - A written directive to contractor, issued on or after the effective date of the Agreement and signed by Owner and recommended by Project Representative ordering an addition, deletion or revision in the Work, or responding to differing or unforeseen physical conditions under which the Work is to be performed or to emergencies. A work directive change may not change the contract price or the contract time; but is evidence that the parties expect that the change directed or documented by a work directive change will be incorporated in a subsequently issued change order following negotiations by the parties as to its effect, if any, on the contract price or contract time.

ARTICLE 2 - PRELIMINARY MATTERS

Computation of Time: When time is referred to in the contract documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or legal holiday, such day will be omitted from the computation.

2.1 The Contractor must submit a proposed schedule of the Work at the preconstruction conference. The purpose of this schedule is to enable the Owner to govern the Work, to protect the functions of the local government and its citizens and to aid in providing appropriate surveillance. The Owner shall have the right to reschedule work provided such rescheduling is in accord with the remainder of terms of the contract. The schedule shall show, as a minimum, the approximate dates on which each segment of the work is expected to be started and finished, the proposed traffic flows during each month, the anticipated earnings by the Contractor for each month and the approximate number of crews and equipment to be used. The Owner, after necessary rescheduling and obtaining additional information for specific purposes, shall review and approve the schedule. The Contractor shall also forward to the Owner, as soon as practicable after the first day of each month, a summary report of the progress of the various parts of the work under the contract, in fabrication and in the field, stating the existing status, estimated time of completion and cause of delay, if any. Together with the summary report, the Contractor shall submit any necessary revisions to the original schedule for the Owner's review and approval. In addition, more detailed schedules may be required by the Owner for daily traffic control.

2.2 A Notice to Proceed may be given at any time within thirty (30) days after the effective date of the Agreement. The contract time will commence at the time specified in such notice. Contractor shall start to perform the Work on the date specified in the notice to proceed, but no work shall be done at the site prior to the date on which the contract time commences to run.

2.3 If at any time the materials and appliances to be used appear to the Owner as insufficient or improper for securing the quality of work required or the required rate of progress, the Owner may order the Contractor to increase his efficiency or to improve the character of his work and the Contractor shall conform to such an order. The failure of the Owner to demand any increase of such efficiency of any improvement shall not release the Contractor from his obligation to secure the quality of work or the rate of progress necessary to complete the Work within the limits imposed by the contract. The Owner may require the Contractor to remove from the Work such employees as the Owner deems incompetent, careless, insubordinate or otherwise objectionable, or whose continued employment on the Work is deemed to be contrary to the Owner's interest.

2.4 The Owner reserves the right to let other Contracts in connection with this Work. The Contractor shall afford other Contractors reasonable opportunity for the introduction and storage of their materials and execution of their Work, and promptly connect and coordinate the Work with theirs.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, RE-USE

3.1 The contract documents comprise the entire Agreement between Owner and Contractor concerning the work. The contract documents are complementary; what is called for by one is as binding as if called for by all. The contract documents will be construed in accordance with the laws and ordinances of the State of Florida and the County of Manatee.

Should a conflict exist within the contract documents, the precedence in ascending order of authority is as follows: 1) Standard Printed Contract Documents, 2) Special Conditions, 3) General Conditions and 4) Drawings. Note: Computed dimensions shall govern over scaled dimensions.

3.2 It is the intent of the contract documents to describe a functionally complete project (or part 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 will be supplied whether or not specifically called for. When words which have a well-known technical or trade meaning are used to describe work, materials, or equipment, such words shall be interpreted in accordance with that meaning. Reference to standard specifications, manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code or laws or regulations in effect at the time of opening of bids, except as may be otherwise specifically stated. However, no provision of any referenced standard specification, manual or code (whether or not specifically incorporated by reference in the contract documents) shall be effective to change the duties and responsibilities of Owner, Contractor or Engineer, or any of their agents or employees from those set forth in the Contract Documents.

3.3 The contract documents may be amended to provide for additions, deletions and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways:

3.3.1 A Formal Written Amendment

3.3.2 A Change Order

3.3.3 A Work Directive Change

3.3.4 Administrative Contract Adjustment (ACA)

3.4 In addition, the requirements of the contract documents may be supplemented and minor variations and deviations in the Work may be authorized in one or more of the following ways:

3.4.1 A Field Order

3.4.2 Engineer's approval of a Shop Drawing or sample.

ARTICLE 4 - CONTRACTOR'S RESPONSIBILITIES

4.1 Contractor shall keep on the Work at all times during its progress a competent resident superintendent; who shall be the Contractor's representative at the site and shall have authority to act on behalf of Contractor. All communications given to the superintendent shall be as binding as if given to Contractor.

4.2 Contractor shall provide competent, suitable qualified personnel to survey and lay out the Work and perform construction as required by the contract documents. Contractor shall at all times maintain good discipline and order at the site. Except in connection with the safety or protection of persons or the Work or property at the site or adjacent thereto and except as otherwise indicated in the contract documents, all Work at the site shall be performed during regular working hours and Contractor will not permit overtime work or the performance of work on Saturday, Sunday or legal holiday without Owner's written consent given after prior notice to Engineer (at least 72 hours in advance).

4.2.1 Contractor shall pay for all additional engineering charges to the Owner for any overtime work which may be authorized. Such additional engineering charges shall be a subsidiary obligation of Contractor and no extra payment shall be made by Owner on account of such overtime work. At Owner's option, overtime costs may be deducted from Contractor's monthly payment request or Contractor's retainage prior to release of final payment.

4.3 Unless otherwise specified, Contractor shall furnish and assume full responsibility for all bonds, insurance, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities and all other facilities and incidentals necessary for the furnishing, performance, testing, start-up and completion of the Work.

4.4 All materials and equipment shall be of good quality and new, except as otherwise provided in the contract documents. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in accordance with the instruction of the applicable supplier except as otherwise provided in the contract documents.

4.5 Contractor shall be fully responsible to Owner for all acts and omissions of the subcontractors, suppliers and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create any contractual relationship between Owner or Engineer and any such subcontractor, supplier or other person or organization, nor shall it create any obligation on the part of Owner to pay or to see to the payment of any monies due any such subcontractor, supplier or other person or organization.

4.6 Permits: Unless otherwise provided, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work.

4.7 During the progress of the Work, Contractor shall keep the premises free from accumulation of waste materials rubbish and other debris resulting from the Work. At the completion of the Work, Contractor shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery and surplus materials and shall leave the site clean and ready for occupancy by Owner. Contractor shall restore to original conditions all property not designated for alteration by the Contract Documents.

4.8 Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

4.9 Safety and Protection: Contractor shall comply with the Florida Department of Commerce Safety Regulations and any local safety regulations. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of and shall provide the necessary protection to prevent damage, injury or loss to:

4.9.1 all employees on the work and other persons and organizations who may be affected thereby;

4.9.2 all the work and materials and equipment to be incorporated therein, whether in storage on or off the site; and

4.9.3 other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.

Contractor shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall provide and maintain all passageways, guard fences, lights and other facilities for the protection required by public authority or local conditions. Contractor shall provide reasonable maintenance of traffic way for the public and preservation of the Owner's business, taking into full consideration all local conditions. Contractor's duties and responsibilities for the safety and protection of the work shall continue until such time as all the work is completed.

4.10 Emergencies: In emergencies affecting the safety or protection of persons or the work or property at the site or adjacent thereto, Contractor, without special instruction or authorization from Engineer or Owner, is obligated to act to prevent threatened damage, injury or loss. Contractor shall give Owner prompt written notice if Contractor believes that any significant changes in the work or variations from the contract documents have been caused thereby. If Owner determines that a change in the contract documents is required because of the action taken in response to an emergency, a Work Directive Change or Change Order will be issued to document the consequences of the changes or variation.

4.11 For substitutes not included with the bid, but submitted after the effective date of the Agreement, Contractor shall make written application to Engineer for acceptance thereof, certifying that the proposed substitute will 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. The application will also contain an itemized estimate of all costs and delays or schedule impacts that will result directly or indirectly from review, acceptance and provisions of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by the Engineer in evaluating the proposed substitute. Engineer may require Contractor to furnish at Contractor's expense, additional data about the proposed substitute. In rendering a decision, Owner/Engineer and Contractor shall have access to any available float time in the construction schedule. In the event that substitute materials or equipment not included as part of the bid, but proposed after the effective date of the agreement, are accepted and are less costly than the originally specified materials or equipment, then the net difference in cost shall be credited to the Owner and an appropriate change order executed.

4.11.1 If a specific means, method, technique, sequence of procedure of construction is indicated in or required by the contract documents, Contractor may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to Engineer if Contractor submits sufficient information to allow Engineer to determine that the substitute proposed is equivalent to that indicated or required by the contract documents.

4.11.2 Engineer will be allowed a reasonable time within which to evaluate each proposed substitute. Engineer will be the sole judge of acceptability and no substitute will be ordered, installed or utilized without Engineer's prior written acceptance which will be evidenced by either a change order or an approved shop drawing. Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

4.11.3 Contractor shall reimburse Owner for the charges 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.

4.12 The Contractor shall furnish, free of charge, all labor, stakes, surveys, batter boards for structures, grade lines and other materials and supplies and shall set construction stakes and batter boards for establishing lines, position of structures, slopes and other controlling points necessary for the proper prosecution of the construction work. Where rights-of-way, easements, property lines or any other conditions which make the lay-out of the project or parts of the project critical are involved, the Contractor will employ a competent surveyor who is registered in the State of Florida for lay-out and staking. These stakes and marks shall constitute the field control by and in accord with which the Contractor shall govern and execute the work. The Contractor will be held responsible for the preservation of all stakes, marks and if for any reason any of the stakes or marks or batter boards become destroyed or disturbed, they will be immediately and accurately replaced by the Contractor.

4.13 The Contractor has, by careful examination, satisfied himself as to the nature and location of the work and all other matters which can in any way affect the work under this contract, including, but not limited to details pertaining to boring, as shown on the drawings, are not guaranteed to be more than a general indication of the materials likely to be found adjacent to holes bored at the site of the work, approximately at the locations indicated. The Contractor shall examine boring data, where available, and make his own interpretation of the subsoil investigations and other preliminary data, and shall base his bid on his own opinion of the conditions likely to be encountered. In no event shall an extension of time be considered for any conditions that existed at the time of bidding, nor shall the Contractor receive extra compensation for completion of the project as intended by the drawings and in keeping with the contact documents. No verbal agreement or conversation with any officer, agent or employee of the Owner, before or after the execution of this contract, shall affect or modify any of the terms or obligations herein contained.

4.14 If the Contractor, in the course of the work, finds that the drawings and/or Contract Documents cannot be followed, he shall immediately inform the Owner in writing, and the Owner shall promptly check the accuracy of the information. Any work done after such discovery, until any necessary changes are authorized, will be done at the Contractor's risk.

ARTICLE 5 - OWNER'S RESPONSIBILITIES

5.1 Owner shall furnish the data required of Owner under the contract documents promptly and shall make payments to the Contractor within a reasonable time (no more than 45 days) after the Work has been accepted by the County. The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the contract documents shall be determined by the Owner/Engineer. Standard County forms shall be utilized.

5.2 The Owner shall provide the lands upon which the Work under this contract is to be done, except that the Contractor shall provide all necessary additional land required for the erection of temporary construction facilities and storage of his materials, together with right of access to same.

5.3 The Owner shall have the right to take possession of and use any completed portions of the work, although the time for completing the entire work or such portions may not have expired, but such taking possession and use shall not be deemed an acceptance of any work not completed in accordance with the Contract Documents.

ARTICLE 6 - CHANGES IN THE WORK

6.1 Without invalidating the Agreement and without notice to any surety, Owner may, at any time, order additions, deletions or revisions in the Work. These will be authorized by a written amendment, a change order, or a work directive change. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the contract documents (except as otherwise specifically provided).

6.2 Contractor shall not be entitled to an increase in the contract price or an extension of the contract time with respect to any Work performed that is not required by the contract documents as amended, modified and supplemented.

6.3 Owner and Contractor shall execute appropriate change orders (or written amendments) covering changes in the Work which are ordered by Owner, or which may be required because of acceptance of defective Work.

6.4 At any time Engineer may request a quotation from Contractor for a proposed change in the Work and within twenty-one (21) calendar days after receipt, Contractor shall submit a written and detailed proposal for an increase or decrease in the contract price or contract time for the proposed change. Engineer shall have 21 calendar days after receipt of the detailed proposal to respond in writing. The proposal shall include an itemized estimate of all costs and time for performance that will result directly or indirectly from the proposed change. Unless otherwise directed, itemized estimates shall be in sufficient detail to reasonably permit an analysis by Engineer of all material, labor, equipment, subcontracts, overhead costs and fees, and shall cover all Work involved in the change, whether such Work was deleted, added, changed or impacted. Notwithstanding the request for quotation, Contractor shall carry on the Work and maintain the progress schedule. Delays in the submittal of the written and detailed proposal will be considered non-prejudicial.

ARTICLE 7 - CHANGE OF CONTRACT PRICE

7.1 The contract price constitutes the total compensation (subject to authorized adjustments) payable to Contractor for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by Contractor shall be at his expense without change in the contract price.

7.2 The contract price may only be changed by change order or by a written amendment. Any claim for an increase or decrease in the contract price shall be based on written notice delivered by the party making the claim to the other party. Notice of the amount of the claim with supporting data shall be delivered within ten (10) days from the beginning of such occurrence and shall be accompanied by claimant's written statement that the amount claimed covers all known amounts (direct, indirect and consequential) to which the claimant is entitled as a result of the occurrence of said event.

7.3 The value of any Work covered by a change order or of any claim for an increase or decrease in the contract price shall be determined in one of the following ways (at Owner's discretion):

7.3.1 Where the Work involved is covered by unit prices contained in the contract documents, cost will be determined by application of such unit prices to the quantities of the items involved.

7.3.2 By mutual acceptance of lump sum.

7.3.3 On the basis of the cost of the Work, plus a 20% Contractor's fee for overhead and profit. (Contractor shall submit an itemized cost breakdown together with supporting data.)

7.4 Either Owner or Contractor may make a claim for an adjustment in the contract price. The unit price of an item of unit price Work shall be subject to re-evaluation and adjustment under the following conditions:

7.4.1 If the total cost of a particular item of unit price Work amounts to 5% or more of the contract price and the variation in the quantity of the particular item of unit price Work performed by Contractor differs by more than 15% from the estimated quantity of such item indicated in the Agreement; and

7.4.2 If there is no corresponding adjustment with respect to any other item of Work; and

7.4.3 If a Contractor believes that it has incurred additional expense as a result thereof; or

7.4.4 If Owner believes that the quantity variation entitles it to an adjustment in the unit price; or

7.4.5 If the parties are unable to agree as to the effect of any such variations in the quantity of unit price Work performed.

ARTICLE 8 - CHANGE OF CONTRACT TIME

8.1 Contract time may only be changed by a change order or a written amendment. Any claim for an extension or shortening of the contract time shall be based on written notice delivered by the party making the claim to the other party. Notice of the extent of the claim with supporting data shall be delivered within fifteen (15) days from detection or beginning of such occurrence and shall be accompanied by the claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant has reason to believe it is entitled as a result of the occurrence of said event.

8.2 The contract time will be extended in an amount equal to time lost due to delays beyond the control of Contractor. Such delays shall include, but not be limited to, acts or neglect by Owner or others performing additional work; or to fires, floods, epidemics, abnormal weather conditions or acts of God.

8.3 All time limits stated in the contract documents are of the essence.

ARTICLE 9 - WARRANTY, TEST/INSPECTION, CORRECTION

9.1 Contractor warrants (for a minimum period of three years or as otherwise stated herein) and guarantees to Owner that all work will be in accordance with the contract documents and will not be defective; that Owner, representatives of Owner, governmental agencies with jurisdictional interests will have access to the work at reasonable time for their observation, inspecting and testing (Contractor shall give Engineer timely notice of readiness of the work for all required approvals and shall assume full responsibility, including costs, in obtaining required tests, inspections, and approval certifications and/or acceptance, unless otherwise stated by Owner).

9.2 If any work (including work of others) that is to be inspected, tested, or approved is covered without written concurrence of Engineer, it must, if requested by Engineer, be uncovered for observation. Such uncovering shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice. Neither observations by Engineer nor inspections, tests, or approvals by others shall relieve Contractor from Contractor's obligations to perform the work in accordance with the contract documents.

9.3 If the work is defective, or Contractor fails to supply sufficient skilled workers, or suitable materials or equipment, or fails to furnish or perform the work in such a way that the completed work will conform to the contract documents, Owner may order Contractor to stop the work, or any portion thereof and terminate payments to the Contractor until the cause for such order has been eliminated. Contractor shall bear all direct, indirect and consequential costs for satisfactory reconstruction or removal and replacement with non-defective work, including, but not limited to fees and charges of engineers, architects, attorneys and other professionals and any additional expenses experienced by Owner due to delays to other Contractors performing additional work and an appropriate deductive change order shall be issued. Contractor shall further bear the responsibility for maintaining schedule and shall not be entitled to an extension of the contract time and the recovery of delay damages due to correcting or removing defective work.

9.3.1 If Contractor fails within seven (7) days after written notice to correct defective work, or fails to perform the work in accordance with the contract documents, or fails to comply with any other provision of the contract documents, Owner may correct and remedy any such deficiency. To the extent necessary to complete corrective and remedial action, Owner may exclude Contractor from all or part of the site, take possession of all or part of the work, Contractor's tools, construction equipment and machinery at the site or for which Owner has paid

Contractor but which are stored elsewhere. All direct, indirect and consequential costs of Owner in exercising such rights and remedies will be charged against Contractor in an amount approved as to reasonableness by Engineer and a change order will be issued incorporating the necessary revisions.

9.3.2 If within three years after the date of completion or such longer period of time as may be prescribed by laws or regulations or by the terms of any applicable special guarantee required by the contract documents, any work is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions, either correct such defective work or if it has been rejected by Owner, remove it from the site and replace it with non-defective work. If Contractor does not promptly comply with the terms of such instruction, Owner may have the defective work corrected/removed and all direct, indirect and consequential costs of such removal and replacement will be paid by Contractor.

ARTICLE 10 - SUSPENSION/TERMINATION OF WORK

10.1 Owner may, at any time and without cause, suspend the work or any portion thereof for a period of not more than ninety (90) days by written notice to Contractor, which will fix the date on which work will be resumed. Contractor shall be allowed an increase in the contract price or an extension of the contract time, or both, directly attributable to any suspension if Contractor makes an approved claim therefore.

10.2 Owner may terminate the contract if Contractor commences a voluntary case under any chapter of the Bankruptcy Code or any similar action by filing a petition under any other federal or state law relating to the bankruptcy or insolvency; if a petition is filed against the Contractor under any chapter of the Bankruptcy Code or similar relief under any other federal or state law; if Contractor persistently fails to perform the work in accordance with the contract documents; if Contractor disregards laws or regulations of any public body having jurisdiction or the Engineer; or otherwise violates in any substantial way any provisions of the contract.

10.2.1 Owner may, after giving Contractor (and the surety, if there is one) seven (7) days written notice and to the extent permitted by laws and regulations, terminate the services of Contractor; exclude Contractor from the site and take possession of the work and of all Contractor's tools, construction equipment and machinery at the site and use the same to the full extent they could be used (without liability to Contractor for trespass or conversion); incorporate in the work all materials and equipment stored at the site or for which owner has paid Contractor but which are stored elsewhere, and finish the work as Owner may deem expedient. In such case, Contractor shall not be entitled to receive any further payment beyond an amount equal to the value of material and equipment not incorporated in the work, but delivered and suitably stored, less the aggregate of payments previously made. If the direct and indirect costs of completing the work exceed the unpaid balance of the contract price, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Owner and incorporated in a

change order; but in finishing the work, Owner shall not be required to obtain the lowest figure for the work performed. Contractor's obligations to pay the difference between such costs and such unpaid balance shall survive termination of the Agreement.

10.3 If, through no act or fault of Contractor, the work is suspended for a period of more than ninety (90) days by Owner or under an order of court or other public authority, or Engineer fails to act on any application or fails to pay Contractor any sum finally determined to be due; then Contractor may, upon seven (7) days written notice to Owner terminate the Agreement and recover from Owner payment for all work executed, any expense sustained plus reasonable termination expenses. In lieu of terminating the Agreement, if Engineer has failed to act on any application of payment or Owner has failed to make any payment as aforesaid, Contractor may upon seven (7) days written notice to Owner stop the work until payment of all amounts then due.

ARTICLE 11 - CONTRACT CLAIMS

11.1 The rendering of a decision by Engineer with respect to any such claim, dispute or other matter (except any which have been waived by the making or acceptance of final payment) will be a condition precedent to any exercise by Owner or Contractor of such right or remedies as either may otherwise have under the contract documents or by laws or regulations in respect of any such claim, dispute or other matter. No action, either at law or at equity, shall be brought in connection with any such claim, dispute or other matter later than thirty (30) days after the date on which Owner/Engineer has rendered such written decision in respect thereof. Failure to bring an action within said thirty (30) day period shall result in Engineer's decision being final and binding on the Contractor. In no event may any such action be brought after the time at which instituting such proceedings would be otherwise barred by the applicable statute of limitations.

11.2 Before bringing any action in court pertaining to any claim, dispute or other matter in question(s) arising out of or relating to the contract documents or the breach thereof, or Engineer's final decision, except for claims which have been waived by the making and acceptance of final payment, the Contractor shall first submit written notice(s) of contract claims to the Purchasing Director for a decision; the Contractor may request a conference with the Purchasing Director. Claims include, without limitation, disputes arising under the contract and those based upon breach of contract, mistake, misrepresentation, or other cause for modification or revision. Contract claims shall use the process detailed in Section 2-26-63, Manatee County Purchase Code, Ordinance 08-43.

ARTICLE 12 - RESIDENT PROJECT REPRESENTATIVE - DUTIES, RESPONSIBILITIES

12.1 Resident Project Representative is Engineer/Owner's Agent, who will act as directed by and under the supervision of the Engineer, and who will confer with Owner/Engineer regarding his actions. Resident Project Representative's dealing in matters pertaining to the on-site work shall, in general, be only with the

Owner/Engineer and Contractor and dealings with subcontractors shall only be through or with the full knowledge of Contractor.

12.2 Resident Project Representative will:

12.2.1 Review the progress schedule, schedule of shop drawing submissions and schedule of values prepared by Contractor and consult with Owner/Engineer concerning their acceptability.

12.2.2 Attend preconstruction conferences. Arrange a schedule of progress meetings and other job conferences as required in consultation with Owner/Engineer and notify those expected to attend in advance. Attend meetings and maintain and circulate copies of minutes thereof.

12.2.3 Serve as Owner/Engineer's liaison with Contractor, working principally through Contractor's superintendent and assist him in understanding the intent of the contract documents. As requested by Owner/Engineer, assist in obtaining additional details or information when required at the job site for proper execution of the Work.

12.2.4 Receive and record date of receipt of shop drawings and samples, receive samples which are furnished at the site by Contractor and notify Owner/Engineer of their availability for examination.

12.2.5 Advise Owner/Engineer and Contractor or his superintendent immediately of the commencement of any work requiring a shop drawing or sample submission if the submission has not been approved by the Owner/Engineer.

12.2.6 Conduct on-site observations of the work in progress to assist Owner/Engineer in determining if the work is proceeding in accordance with the contract documents and that completed work will conform to the contract documents.

12.2.7 Report to Owner/Engineer whenever he believes that any work is unsatisfactory, faulty or defective or does not conform to the contract documents, or does not meet the requirements of any inspections, tests or approvals required or if work has been damaged prior to final payment; and advise Owner/Engineer when he believes work should be corrected or rejected or should be uncovered of observation or requires special testing, inspection or approval.

12.2.8 Verify that tests, equipment and system start-ups and operating and maintenance instructions are conducted as required by the contract documents and in the presence of the required personnel, and that Contractor maintains adequate records thereof; observe, record and report to Engineer appropriate details relative to the test procedures and start-ups.

12.2.9 Accompany visiting inspectors representing public or other agencies having jurisdiction over the project, record the outcome of these inspections and report to Owner/Engineer.

12.2.10 Transmit to Contractor, Owner/Engineer's clarifications and interpretations of the contract documents.

12.2.11 Consider and evaluate Contractor's suggestions or modifications in drawings or Contract Documents and report them with recommendations to Owner/Engineer.

12.2.12 Maintain at the job site orderly files for correspondence, reports of job conferences, shop drawings and sample submissions, reproductions of original contract documents including all addenda, change orders, field orders, additional drawings issued subsequent to the execution of the contract, Owner/Engineer's clarifications and interpretations of the contract documents, progress reports and other project related documents.

12.2.13 Keep a diary or log book, recording hours on the job site, weather conditions, data relative to questions of extras or deductions; list of visiting officials and representatives or manufacturers, fabricators, suppliers and distributors; daily activities, decisions, observations in general and specific observations in more detail as in the case of observing test procedures. Send copies to Owner/Engineer.

12.2.14 Record names, addresses and telephone numbers of all Contractors, subcontractors and major suppliers of materials and equipment.

12.2.15 Furnish Owner/Engineer periodic reports as required of progress of the work and Contractor's compliance with the approved progress schedule and schedule of shop drawing submissions.

12.2.16 Consult with Owner/Engineer in advance of scheduling major tests, inspections or start of important phases of the work.

12.2.17 Report immediately the occurrence of any accident.

12.2.18 Review applications for payment with Contractor for compliance with the established procedure for their submission and forward them with recommendations to Owner/Engineer, noting particularly their relation to the schedule of values, work completed and materials and equipment delivered at the site but not incorporated in the work.

12.2.19 During the course of the work, verify that certificates, maintenance and operations manuals and other data required to be assembled and furnished by Contractor are applicable to the items actually installed, and deliver this material to Owner/Engineer for his review prior to final acceptance of the work.

12.2.20 Before Owner/Engineer issues a Certificate of Substantial Completion, submit to Contractor a list of observed items requiring completion or correction.

12.2.21 Conduct final inspection in the company of Owner/Engineer and Contractor and prepare a final list of items to be completed or corrected.

12.2.22 Verify that all items on final list have been completed or corrected and make recommendations to Owner/Engineer concerning acceptance.

12.3 Except upon written instructions of Owner/Engineer, Resident Project Representative.

12.3.1 Shall not authorize any deviation from the contract documents or approve any substitute materials or equipment;

12.3.2 Shall not exceed limitations on Owner/Engineer's authority as set forth in the contract documents;

12.3.3 Shall not undertake any of the responsibilities of Contractor, Subcontractors or Contractor's Superintendent, or expedite the work;

12.3.4 Shall not advise on or issue directions relative to any aspect of the means, methods, techniques, sequences or procedures of construction unless such is specifically called for in the contract documents;

12.3.5 Shall not advise on or issue directions as to safety precautions and programs in connection with the work;

12.3.6 Shall not authorize Owner to occupy the project in whole or in part; and

12.3.7 Shall not participate in specialized field or laboratory tests.

ARTICLE 13 - APPRENTICES

13.1 In accordance with the requirement of Section 446.011, Florida Statutes, the following requirements to safeguard the welfare of apprentices and trainees shall be a part of this contract, if applicable.

13.1.1 Contractor agrees to hire for the performance of the contract, a number of apprentices or trainees in each occupation which bears to the average number of the journeymen in that occupation to be employed in the performance of the contract, the ratio of at least one apprentice or trainee to every five journeymen.

13.1.2 Contractor agrees, when feasible to assure that 25% of such apprentices or trainees are in their first year of training, except when the number of apprentices or trainees to be hired is fewer than four.

13.1.3 Contractor agrees to submit, at three month intervals, to the Bureau of Apprenticeship of the Division of Labor, records of employment by trade of the number of apprentices or trainees employed; race of all apprentices; the number of apprentices or trainees in their first year of training; and total hours of work of all apprentices, trainees, and journeymen.

13.1.4 Contractor agrees to submit to the Bureau of Apprenticeship of the Division of Labor, at three month intervals, a statement describing steps taken toward making a diligent effort in the hiring of apprentices and trainees and containing a breakdown by craft of hours worked and wages paid for first year apprentices or trainees, other apprentices or trainees and journeymen.

NOTE: The form of all submittals, notices, change orders and other documents permitted or required to be used or transmitted under the Contract shall be determined by the County. Standard County forms shall be utilized.

END OF SECTION

ATTACHMENT "A"
SPECIAL PROVISIONS

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SPECIAL PROVISIONS

GENERAL

This Section amends enhances or otherwise revises the Technical Specifications.

STANDARD SPECIFICATIONS

The standard Specifications to be used for this work shall be Division II and III the Florida Department of Transportation (FDOT) *Standard Specifications for Road and Bridge Construction*, 2007 Edition and all Supplemental Specifications thereto, hereinafter referred to as the *Standard Specifications*, for roadway construction, except as amended under this Contract.

The Contractor's work shall follow the Manatee County Public Works Utility Standards and Specifications (dated November 1999) for the water main, reclaimed water main, sanitary sewer and force main work.

These specifications cover the usual construction requirements for work specified by the County Transportation Department; however, in the event it is determined that the specific work to be done is of such a nature that the method of construction, type and/or kind of material is not defined by the *Standard Specifications*, such work shall be performed in accordance with the Special Provisions.

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. Interpretation of these specifications shall be made upon that basis.

NO SEPARATE PAYMENT FOR SPECIAL PROVISIONS

No separate payment will be made for the Contractor to execute Special Provisions. All expenses borne by the Contractor shall be included in the individual unit prices for the particular pay item.

MATERIALS

a. **Delivery Tickets**: It will be necessary to submit a copy of all delivery tickets for materials used on the project, regardless of the basis of payment.

b. **Job Mix Formula for Asphaltic Concrete**: Attention is directed to the requirement that job mix formulas for asphaltic concrete, of the type specified, be submitted at least 14 days before plant operations begin. The submitted formula should be derived, or approved, by the laboratory approved by the Owner to make test on the Project. Costs for such job mix formulation will be paid by the Contractor directly to the assigned laboratory.

c. **Job Mix Formula for Portland Cement Concrete**: Attention is directed to the requirement that job mix design formulas for all Portland Cement Concrete, of the type specified, be submitted at least 14 days prior to use on the project. The submitted formulas shall be derived or approved by the Owner and/or its agents. All concrete mix designs shall meet FDOT Concrete Class mix guidelines, except as follows: when approved, in writing by the Engineer, an Alternate Class I Concrete mix design formula, for concrete curb and gutter to be placed by automated curb machines, may show, as a substitution for #57 aggregate, an amount of #89 aggregate not to exceed 33 percent, by weight, of the #57 aggregate.

LABORATORY TESTING

Testing for the work shall be performed at no expense to the Contractor. However, any test that fails or is not performed, as a result of the Contractor's action will, in turn, be back-charged to the Contractor, including the cost of all re-testing due to defective materials or construction. The testing laboratory will be retained by the Owner.

The samples and tests used for determining the quality and acceptability of the materials and workmanship, which have been or are to be incorporated in the Work, shall conform to the requirements of the State of Florida Department of Transportation Materials Sampling, Testing and Reporting Guide, latest edition. Testing shall also be in accordance with the applicable portions of Section 6 of the *Standard Specifications* and these specifications.

MEASUREMENT AND PAYMENT

a. All work completed under the terms of this contract shall be measured according to United States Standard Measures.

b. All measurements shall be taken horizontally or vertically unless specifically provided otherwise.

c. No payment will be made for construction over a greater area than authorized, nor for material moved from outside of stakes and data shown on the plans, except when such work is performed upon instructions of the Engineer.

d. The Contractor shall accept compensation provided under the terms of this contract as full payment for furnishing all materials and for performing all work contemplated and embraced under this contract. Such compensation shall also be for any and all loss or damage arising out of the nature of the work or from the action of the elements, or from any unforeseen difficulties or obstructions encountered during the contract period until final acceptance by the Owner.

e. Whenever any change, or combination of changes, on the plans results in an increase or decrease in the original contract quantities, and the work added or decreased/eliminated is of the same general character as that called for on the plans, the Contractor shall accept payment in full at the original contract unit prices for the actual quantity of work performed, with no allowance for any loss of anticipated profits.

f. It is the Contractor's responsibility to perform a detailed quantity take-off from the plans to determine actual quantities for ordering and delivery purposes. The Owner

will not be responsible for quantities ordered in excess of those installed and constructed. The Contractor should be aware that some of the pay items may have contingency quantities. Payment shall be made only for final in-place quantities. No payment shall be made for contingency quantities or additional work unless otherwise directed and approved in writing by the Engineer.

g. Bid Schedule Completion - the blank spaces in the bid schedule shall be filled in correctly where indicated for each and every item for which a description is given, as the bidder must state the unit prices for which he proposes to do each part of the work contemplated, and the total price for all the parts included in any or all of the combinations of the work. In case of a discrepancy, the written words for "unit price", where stated, shall be considered as being the unit price. If the bid schedule does not use the written words for the unit price, then the numerically correct "total price", shall be considered as being the total price.

RESTORATION

Payment for restoration shall be covered under the applicable restoration Pay Items as specified in the proposal. If a specific restoration Pay Item is not listed in the proposal, the cost of such work shall be included in the applicable Pay Item unless otherwise provided under separate restoration section or pay quantity of these Specifications.

COOPERATION WITH OTHERS

The Contractor shall cooperate with the owners of any underground or overhead utility lines in their removal and rearrangement operations, in order that these operations may progress in a reasonable manner and that service rendered by these parties will not be interrupted. The Owner shall not be responsible for costs associated with delays, disruptions and remobilizations attributed to utility agency scheduling.

PRIORITY

In any instance where there is an apparent conflict between these technical specifications special provisions and the corresponding terms of the "Standard Specifications", these special provisions followed by these technical specifications shall be controlling.

SITE INVESTIGATION

The Contractor acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials; availability of labor, water, electric power, roads; and uncertainties of weather, water stages, tides or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during execution of the work.

The Contractor further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered, insofar as this information presented by the drawings and Specifications made a part of this contract.

The Contractor shall carefully review and adhere to conditions and recommendations made in the project geotechnical report. Any failure by the Contractor to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the work.

The Owner assumes no responsibility for any conclusions or interpretations made by the Contractor on the basis of the information made available by the Owner. The Owner also assumes no responsibility for any understanding or representations made by its officers or agents during or prior to the execution of this Contract, unless (1) such understanding or interpretations are made in writing by the Engineer or are expressly stated in the Contract and (2) the Contract expressly provides that the responsibility therefore is assumed by the Owner.

PROJECT IDENTIFICATION SIGNS

The Contractor shall be responsible for furnishing, installing and maintaining four (4) County project identification signs and removal of same upon completion of the construction. Project identification sign shall be constructed and maintained at the project site as directed by the Owner. The Contractor shall erect, maintain and relocate the sign as directed for the duration of the Project.

The Contractor shall mount the sign using 4-inch pressure treated lumber or as approved by the Engineer, and other supports as required, at a location mutually agreed by the Owner. The identification signs shall not be less than 32 square feet in area. The Contractor shall coordinate with the Owner for the sign verbiage before fabrication. The signs shall be painted with graphic content to include:

- Title of Project
- Name of Owner
- Names and Titles of authorities, as directed by Owner
- Prime Contractor
- Construction Cost

The signs shall be erected prior to commencement of work at a lighted location of high public visibility, adjacent to the main entrance at each end of the project, as approved by the Owner. The signs shall be a minimum of 8 feet wide and 4 feet high. The signs shall be constructed of high density ¾-inch exterior plywood without waves or buckles, mounted and braced with pressure treated lumber as necessary and maintained in a presentable condition for the duration of the project. Hardware shall be galvanized. The surface of the sign shall be of exterior softwood plywood with medium density overlay. Painting shall be constructed with materials to resist weathering and fading during the construction period. Experienced professionals shall perform painting. Graphic design and style shall be in accordance with the following:

- The signs will be placed in accordance with Manatee County Development Code, Ordinance 90-01, Section 724, Signs and Section 713, Visibility Triangles.

Payment for installing and maintaining the project identification signs shall be included as part of the lump sum quantity under the Pay Item for Mobilization. The sign will remain the property of the Owner upon completion of the Project unless otherwise directed.

SPECIAL TERMS AND CONDITIONS

a. Soil Erosion and Siltation

The Contractor shall plan and control the Work to minimize all soil erosion and the siltation of drains and canals resulting from such erosion. At the pre-construction meeting, the Contractor shall present a written proposed plan and schedule, which shall specifically indicate the proposed used of temporary erosion control features. The plan shall include:

- **Synthetic Bales** designed, furnished and installed by the Contractor in accordance with the plans, FDOT Section 104-6-4, and FDOT Design Standard Index No. 102.

- **Floating turbidity barriers and staked turbidity barriers** furnished and installed by the Contractor as shown on the plans and/or required by conditions of the permits and as outlined in FDOT Section 104-6.4.11.

b. Shop Drawings

The Contractor shall submit to the Engineer for approval, all working drawings and shop drawings with descriptive specifications and engineering calculations necessary for the successful completion of the Work. The Contractor shall provide a shop drawing log sheet. The working and shop drawings shall be certified by a Florida licensed Professional Engineer and state that the design is sufficient for the successful completion of the Work. The working drawings and shop drawings shall include, but not be limited to:

- Erosion Control Plan
- Shop Drawings as required by FDOT Standard Specifications

c. Temporary Pavement

Temporary pavement shall consist of a minimum of 6" limerock compacted 98% mod. Proctor density or 6" soil cement or approved equal with 1" Type S III structural course over a firm, unyielding, well-compacted subgrade. The Contractor shall immediately repair all potholes that develop within the project limits and shall maintain a supply of cold mix on the project site to expedite these repairs. Payment for the temporary pavement and maintenance of this pavement shall be included under the optional base and Type S III structural course pay item.

DEWATERING, SHEETING AND BRACING

Payment for dewatering, sheeting and bracing shall be included in the applicable pay items unless separate pay items are specified.

a. Approval of Dewatering Plan:

At least 10 days prior to the commencement of any dewatering activity, the Contractor shall submit to the Project Manager for record purposes only, a detailed description of the proposed dewatering system. This plan shall include design

computations, layout, type, and spacing of dewatering devices, number and size of pumps and other equipment, with a description of the installation and operating procedures.

MAINTENANCE OF TRAFFIC

The Contractor shall provide access to businesses and local residents at all times. Business Entrance signs per FDOT Index 17355 (FTP-59) shall be placed at all business entrance points and maintained during all phases of construction. Payment for these items shall be included under the pay item for Maintenance of Traffic.

a. Attachment 1 is a County Traffic Control Plan that can be used by the Contractor.

b. Alternative TRAFFIC CONTROL PLAN

The Contractor may propose an alternative Traffic Control Plan to the plan presented in the Contract Documents and submit it to the Owner for review prior to implementation. It must comply with all FDOT safety criteria, FDOT Design Standards 600 Series Indexes, FHWA and MUTCD standards, and allow for traffic to operate in daytime or nighttime. The Traffic Control Plan will require the seal of a licensed professional engineer in the State of Florida with a current FDOT Advanced Work Zone certification. A copy of the certificate will be provided with the plan submittal.

SIDEWALKS TO REMAIN OPEN

Existing sidewalks and proposed sidewalks completed during construction shall remain open at all times unless approved otherwise by the Owner. Temporary sidewalk shall be constructed as shown in the plans or as required to maintain pedestrian movement. Payment for these items shall be included under the lump sum pay item for Maintenance of Traffic.

EXISTING SIDEWALK

If the Contractor, in the process of performing his contract operations, breaks any of the existing sidewalk that is to remain in place, replacement of this sidewalk will be at the Contractor's expense.

PEDESTRIAN ACCESS

The Contractor shall provide access and make provisions to maintain school zones during construction. The Contractor is to facilitate pedestrian traffic whether for school or public transportation in accordance with Chapter 6D of the MUTCD.

MAINTENANCE OF STORM DRAINAGE SYSTEM

The Contractor shall be responsible at all times to maintain the operation of existing stormwater facilities, or, when existing stormwater facilities are removed, to provide equivalent capacity alternate forms of stormwater removal adequate to prevent upstream flooding in excess of existing conditions. This responsibility shall include the installation of temporary connections, bypass pumping, or other temporary means necessary until the new drainage system is fully operational. Payment for these items shall be included under the applicable pay item.

COORDINATION WITH CSX

A Construction Agreement (the Agreement) between Manatee County and CSX Transportation, Inc. was made on April 29, 2008 and is included in this Bid Package under Permit Information. This section of the Manatee County Special Provisions shall be considered to include the Agreement in its entirety as it pertains to the Contractor.

a. Work by CSX

CSX shall install a new full width concrete surface railroad crossing, relocate and upgrade existing automatic warning devices and provide flagging and inspection services during roadway and crossing surface work as detailed in the Agreement.

b. Work by the Contractor

The Contractor shall perform all related roadway work, maintenance of traffic and detour plans and all sawcut and asphalt paving as shown on the roadway construction plans and further detailed in the agreement.

c. Acceptance by the Contractor

The Contractor and the Contractor's Subcontractors shall be required to sign the "Contractor's Acceptance" form, Schedule I, included in the Agreement, prior to commencing work performed in accordance with the Agreement. By signing the "Contractor's Acceptance", the Contractor agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to the following sections of the Agreement:

Section 3 – Special Provisions

Section 9 – Insurance

Section 11 – Indemnification

Exhibit C – CSXT Special Provisions

Exhibit F – Insurance Requirements

Payment for these items shall be included under the pay item for Railroad Coordination.

DUST CONTROL

The Contractor shall control dust resulting from construction operations at all times. The locations and frequencies of applications shall be as directed by the Engineer. Dust control is required to be in accordance with the FDOT *Standard Specifications* Section 102-5. Payment for Dust Control shall be made under Mobilization unless separate pay item for Dust Control is specified.

UNDERGROUND UTILITY LOCATIONS

The Contractor shall field verify by means of subsurface locating or other approved method all existing utilities to remain and conditions as may be required for the work area. This shall include all areas of potential conflicts with proposed storm, sanitary, force main and water main. The Contractor shall locate all existing utilities to remain at potential conflict locations prior to construction activities and before ordering any proposed structures. The Contractor shall contact and coordinate with Sunshine One Call as well the individual

utilities prior to and during construction for utility locations, relocation and assistance while installing in potential conflict areas. All utility coordination and relocations shall be factored into the Contractor's construction schedule at no additional cost to the Owner. The cost of all labor, materials and incidentals required for the performance of any survey and utility location work shall be included under the pay item for Mobilization. A Florida registered land surveyor shall perform all survey work.

UTILITY COORDINATION

The Contractor shall clear and grub and stake the right-of-way clearly and give the utility owners two weeks notice prior to completion of this work.

The Contractor shall be responsible for coordination of the work with all affected utility owners. The Contractor must take into consideration the required utility adjustments and relocations in development of his schedule for completing the work including construction of temporary work to allow phased construction of the permanent facilities.

The Contractor shall coordinate and schedule utility relocations and/or adjustments with the utility owners along the project in order to avoid delays. The work includes remobilization if required after utility relocation is complete. For the purpose of this bid, 20 demobilizations and 20 remobilizations will be included in the lump sum bid for Mobilization. The intent is to coordinate utility construction activities so the project construction continues and is not stopped or delayed at any time due to utility work being done. Once Notice to Proceed is issued, the Contractor shall contact the affected utilities to discuss the Contractor's anticipated means and methods so temporary and permanent relocation plans can be implemented as needed to meet OSHA safety requirements.

The Contractor shall hold a utility owners meeting every two weeks/ or alternate time schedule agreed to by the Owner at 1022 26th Avenue East. The meeting shall review current and upcoming activities for the project. Written meeting minutes will be prepared by the Contractor and distributed to the meeting participants within 3 calendar days of the meeting.

Payment for Utility Coordination shall be included under the lump sum Bid Item for Mobilization.

UTILITY CONFLICTS

It shall be the Contractor's responsibility to avoid conflicts with other utilities. The Owner will not be responsible for additional costs incurred by the Contractor for incorrect installations, relocations and breaks due to service conflicts.

DAILY CLEAN-UP REQUIREMENTS

The Contractor shall clean up the job site at the end of each workday. Clean up will include the elimination of rubble and waste material on public and private property. Driveways shall remain accessible by residents. Each Friday, the Contractor shall prepare the road surface and barricades in an acceptable manner for weekend traffic use.

MAINTENANCE AND RESTORATION OF JOB SITE

The Contractor shall conduct his operations in such a manner as will result in a minimum of inconvenience to occupants of adjacent homes and business establishments and shall provide temporary access as directed or as may be required by the Project Manager. All final restoration must be performed to an equal or better condition than that which existed prior to construction.

Good housekeeping on this project is extremely important and the Contractor will be responsible for keeping the construction site neat and clean, with debris being removed daily as the work progresses or as otherwise directed by the Project Manager. Good housekeeping at the job site shall include: Removing all tools and temporary structures, dirt, rubbish, etc.; hauling all excess dirt, rock, etc., from excavations to a dump provided by the Contractor; and all clean up shall be accomplished to the satisfaction of the Project Manager. Dust will be controlled daily as may be required. Immediately after construction completion in an area or part thereof (including restoration), barricades, construction equipment and surplus and discarded materials shall be removed by the Contractor.

In the event that the timely clean up and restoration of the job site is not accomplished to the satisfaction of the Project Manager, the Project Manager shall make arrangements to affect the necessary clean up by others. The Contractor shall be charged for these costs through deductions in payment due the contractor. If such action becomes necessary on the part of and in the opinion of the Project Manager, the Owner shall not be responsible for the inadvertent removal from the work site of materials which the Contractor would not normally have disposed of had he affected the required clean up.

NOTICE AND SERVICE THEREOF

All notices, which shall include demands, instructions, requests, approvals, and claims shall be in writing. Any notice to or demand upon the Contractor shall be sufficiently given if delivered to the office of the Contractor specified in the bid (or to such other office as the Contractor may, from time to time, designate to the Owner in writing), or if deposited in the United States mail in a sealed, postage prepaid envelope, or delivered, with charges prepaid, sent via fax transmission, or to any telegraph company for transmission, in each case addressed to such office.

All notices required to be hand delivered to the Owner, unless otherwise specified in writing to the Contractor, shall be delivered to the Project Manager, and any notice to or demand upon the Owner shall be sufficiently given as delivered to the office of the Project Manager, or if deposited in the United States mail in a sealed, postage prepaid envelope, sent via fax transmission, or delivered with charges prepaid to any telegraph company for transmission, in each case addressed to said Project Manager or to such other representative of the Owner or to such other address as the Owner may subsequently specify in writing to the Contractor for such purposes.

Any such notice or demand shall be deemed to have been given or made as of the time of actual delivery or (in the case of mailing) when the same should have been received in due course of post or in the case of a fax transmission or telegram at the time of actual receipt, as the case may be.

REQUIREMENTS FOR CONTROL OF THE WORK

Prior to the start of the Work described in this contract, a pre-construction conference will be held by the Project Manager to be attended by the Contractor and representatives of the various utilities and others as required, for the purpose of establishing a CPM schedule of operations which will coordinate the work to be done under this contract with all related work to be done by others within the limits of the project. The Contractor shall attend monthly construction meetings at 1022 26th Avenue East/ alternate site agreed upon. The Contractor will provide an updated CPM schedule detailing progress and if the contractor is behind in the critical path, he will have 5 working days to recover or provide documentation detailing the reason. Meeting minutes will issued with 24 hours of the meeting.

All items of work in this contract shall be coordinated so that progress of each related item will be continuous from week to week. The progress of the work will be reviewed by the Project Manager at the end of each week, and if the progress of any item of work during that week is found to be unsatisfactory, the Contractor shall be required to adjust the rate of progress on that item or other items as directed by the Project Manager without additional compensation. The Contractor will continuously control the work until completed.

PROJECT SCHEDULE

The Contractor shall submit a preliminary construction schedule with the bid. The preliminary schedule shall show major work items and any phases the Contractor proposes. The schedule will show duration of work items and phases.

The Contractor shall submit a detailed Critical Path Method (CPM) construction schedule within 15 days of the notification of award or its intent for the County to review. The submittal shall meet the following requirements:

- Schedule will be submitted on 11-inch by 17-inch paper.
- The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- Activities shall show most Work activities. The listing from top to bottom shall be in a logical sequence of how the Work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.

A copy of the CPM schedule, clearly showing progress made, shall be submitted on a monthly basis during the progress of the work at the monthly meeting. Review or acceptance will neither impose on the County responsibility for the progress or scheduling of the Work, nor relieve the Contractor from full responsibility therefore.

The Contractor shall provide a revised CPM schedule if, at any time, the County considers the completion date to be in jeopardy because of "activities behind schedule". An activity that cannot be completed by its original or latest completion date shall be deemed to be behind schedule. The revised CPM schedule is designed to show how the Contractor intends to accomplish the Work to meet the contractual completion date. The form and method

employed by the Contractor shall be the same as for the original CPM schedule. The cost to prepare and revise the schedule is considered incidental to the Work.

USE OF PRIVATE PROPERTY

All construction activities required to complete this project in accordance with the Contract Documents shall be confined to public right-of-way, easements of record or temporary construction easements, unless the Contractor makes specific arrangements with private property owners for his use of their property. Written authorization from the granting property owner shall be placed on file with the Project Manager prior to utilization of said private properties. The Owner assumes no responsibility for damage to private property in such instances. The Contractor is responsible for protection of private property abutting all work areas on this project. Adequate equipment storage and material storage shall also be accomplished outside the Owner's right-of-way. Pipe and other materials shall not be strung out along the right-of-way, but will be delivered in quantities adequate for one day's installation. The Owner will coordinate with the Contractor to identify possible storage sites.

CONSTRUCTION PHOTOGRAPHY

a. General

The Contractor shall employ a competent photographer to take construction record photographs and/or perform videotaping; including providing all labor, materials, equipment and incidentals necessary to obtain photographs and/or videotapes of all areas specified in the Contract specifications. The word "Photograph" includes standard photographic methods involving negatives, prints and slides and it also includes digital photographic methods involving computer technology items such as diskettes and CD-ROMs. Construction photos are required with all pay applications.

b. Qualifications

A competent camera operator who is fully experienced and qualified with the specified equipment shall do all photography. For the videotape recording, the audio portion should be done by a person qualified and knowledgeable in the specifics of the Contract, who shall speak with clarify and diction so as to be easily understood.

c. Project Photographs

Provide photographs of the entire work area 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.

Provide three prints of each standard photograph to the Owner. In addition to the CD-ROM media, provide one print of each digital/digitized photograph to the Owner. The Contractor shall pay all costs associated with the required photography and prints. Any parties requiring additional photography or prints will pay the photographer directly.

All project photographs shall be a single weight, color image. All finishes shall be smooth surface and glossy, and all prints shall be 8 inches by 10 inches. 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.

All project photographs shall be taken from locations to adequately illustrate conditions prior to construction, or conditions of construction and state of progress. The Contractor shall consult with the Owner at each period of photography for instructions concerning views required. The Contractor shall deliver prints in conformance with the above requirements to the Owner. No construction shall begin until pre-construction photographs are completed and submitted to the Owner.

d. Negatives

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 at the end of the two-year period. Photographer shall agree to furnish additional prints to Owner at commercial rates applicable at the time of purchase. Photographer shall also agree to participate as required in any litigation requiring the photographer as expert witness.

e. Videotape Recording

Videotaping may be used in lieu of construction photographs. Videotaping shall be accomplished along all routes that are scheduled for construction. The taping shall, when viewed, depict an image with ¼ of the image being the roadway fronting of property and ¾ of the image being of the property. The taping shall be done so as to show the roadway and property in an oblique view (30 degrees). A complete view, in sufficient detail, of all driveways, with audio description of the exact location shall be provided. The Engineering plans shall be used as a reference for stationing in the audio portion of the tapes for easy location identifications. If visible, house numbers shall be mentioned on the audio.

Two complete sets of videotapes shall be delivered to the Owner for the permanent and exclusive use of the Owner prior to the start of any construction on the project. All videotapes shall contain the name of the project, the date and time of the videotaping, the name and address of the photographer and any other identifying information required.

Payment for this item shall be included under the pay item for Mobilization.

POST-CONSTRUCTION STORM PIPE TESTING

The Contractor shall inspect and televise all newly constructed storm pipes on the project. The purpose is to assure the pipes are properly constructed and do not leak at the joints. Payment for this item shall be included under the pay item for storm water pipes.

CONTRACTOR TO EXECUTE NPDES "NOTICE OF INTENT"

Prior to proceeding with construction, the Contractor shall prepare and submit a "Notice of Intent to Use Generic Permit for Stormwater Discharge from Construction Activities that Disturb One or More Acres of Land" to the Florida Department of Environmental Protection

(FDEP). The Contractor shall monitor the site at all times and take appropriate action to prevent erosion including the use of BMPs. No pumping of ground or surface water shall be performed without approval from the Water Management District. Following completion of construction, Contractor shall prepare and submit a "Notice of Termination of Generic Permit Coverage" to FDEP. Payment for this item shall be included under the pay item for Mobilization.

WORKSITE TRAFFIC SUPERVISOR

a. The Contractor shall have a Worksite Traffic Supervisor who will be responsible for initiating, installing and maintaining all traffic control devices as described in Section 102 of the FDOT *Standard Specifications for Road and Bridge Construction* and in the Plans. The Worksite Traffic Supervisor shall have at least one year of experience directly related to work site traffic control in a supervisory or responsible capacity and shall be certified by the American Traffic Safety Services Association Worksite Traffic Supervisor Certification Program or an equal approved by FDOT. Approved alternate Worksite Traffic Supervisors may be used when necessary.

b. The Worksite Traffic Supervisor shall be available on a 24-hour per day basis and shall review the project on a day-to-day basis as well as being involved in all changes to traffic control. The Worksite Traffic Supervisor shall have access to all equipment and materials needed to maintain traffic control and handle traffic related situations. The Worksite Traffic Supervisor shall ensure that routine deficiencies are corrected within a 24-hour period.

c. The Worksite Traffic Supervisor shall be available on the site within 45 minutes after notification of an emergency situation, prepared to positively respond to repair the work zone traffic control or to provide alternate traffic arrangements.

d. Failure of the Worksite Traffic Supervisor to comply with the provisions of the Sub-article may be grounds for decertification or removal from the project or both. Failure to maintain a designated Worksite Traffic Supervisor or failure to comply with these provisions will result in temporary suspension of all activities except traffic and erosion control and such other activities deemed to be necessary for project maintenance.

e. Payment for Worksite Traffic Supervisor shall be included under the pay item for Maintenance of Traffic.

CONTRACTOR'S SUPERVISION

a. Execution of Work: The Contractor shall give the work the constant attention necessary to assure the scheduled progress. He shall cooperate fully with the Engineer and with other Contractors at work in the vicinity.

b. Contractor's Superintendent: The Contractor shall at all times have on the work site as his agent, a competent superintendent capable of thoroughly interpreting the plans and specifications and thoroughly experienced in the type of work being performed, who shall receive the instructions from the Engineer or his authorized representatives. The superintendent shall have full authority to execute the orders or directions of the Engineer and to supply promptly any materials, tools, equipment, labor and incidentals that may be required. Such superintendence shall be furnished regardless of the amount of work sublet.

c. The Contractor's superintendent shall speak and understand English, and at least one responsible person who speaks and understands English shall be on the project during all working hours.

d. Supervision for Emergencies: The Contractor shall have a responsible person available at or reasonably near the work site on a 24-hour basis, 7 days a week, in order that he may be contacted for emergencies and in cases where immediate action must be taken to maintain traffic or to handle any other problem that may arise. The Contractor's responsible person for supervision for emergencies shall speak and understand English. The Contractor shall submit, by certified mail, phone numbers and names of personnel designated to be contacted in cases of emergencies along with a description of the project location to the Florida Highway Patrol and all other local law enforcement agencies.

LIST OF EMERGENCY CONTACT NUMBERS & UTILITY SERVICE MAINTENANCE

The Contractor shall obtain and maintain a list of emergency contact phone numbers for all utilities during the course of the project. The Contractor shall maintain utility service during the project except for interruptions authorized by the utility owner. If interruptions are required, the Contractor shall notify the Owner 48 hours in advance.

RECORD DRAWINGS AND PROJECT CERTIFICATION

This section and number of copies applies to roadway, drainage and utility record drawings.

The Owner and/or Engineer will furnish the Contractor copies of the bid plans to be used for the record drawings. A Florida Registered Surveyor shall perform a field survey and any differences between the plan elevations or dimensions shall be marked through and the as-built elevation or dimension legibly entered. All elevations and dimensions that are correct shall have a check mark placed beside it.

The Contractor shall keep a complete set of surveyed "As-built" records. These records shall show all items of Work and existing features of utilities revealed by excavation work. The records shall be kept in a professional manner, in a form that shall be approved by the County prior to the Work. These results shall be available at all times during construction for reference by the Engineer and shall be delivered to the Engineer upon completion of the Work. All completed "As-builts" must be certified by a Florida Licensed Surveyor or Engineer per Chapter 61 G 17-6, Florida Administrative Code, pursuant to Sec. 47207, Florida Statutes. At a minimum all Utility Record Drawings shall be in accordance with Manatee County Standards.

The following information is required on the "Record Drawings":

A. Roadway centerline profile [100-foot maximum interval].

B. Roadway cross sections [100-foot maximum interval].

C. All underground piping with elevations and dimensions, changes to piping locations, horizontal and vertical locations of underground utilities and appurtenances referenced to permanent surface improvements. Actual installed pipe material,

class, etc. Dimensions at these locations shall indicate distance from the centerline of construction.

D. Elevations on all drainage control structures, verifying all plan dimensions.
E. Stormwater ponds with cross sections [25-foot maximum interval] (sufficient to calculate volumes).
F. Flow line elevations on all ditch breaks (vertical and horizontal).
G. Field changes of dimensions and details.
H. Details not on original contract drawings.
I. Equipment and piping relocations.
J. The locations of all headwalls, pipes and any other structures shall be located by station and offset.
K. Benchmarks and elevation datum shall be indicated.
L. Additional elevations or dimensions as required by the Engineer

Following completion of construction and prior to final payment, the Contractor shall submit a Certification by the Contractor and Manufacturer including test data that the materials (filter fabric, filter media, etc.) installed meet plan specifications and regulatory requirements.

Upon completion of the work, four (4) sets of draft "Record Drawings" shall be submitted to the Owner for review. Such drawings shall accurately show all approved field changes to the original Construction Drawings, including actual locations, dimensions and elevations and shall be subject to a field review in the presence of the Engineer or his designated representative. The drawings are to be prepared by competent personnel, neatly drafted and certified, signed and sealed by a Florida Registered Surveyor.

The Contractor shall incorporate any comments from the Owner and/or Engineer and shall submit two write-only CD-ROMs, one set of 24-inch by 36-inch mylar record drawings and four sets of 24-inch by 36-inch certified prints with the Surveyor's certification.

All Digital Drawings shall be identical to those submitted as hard copy. The Digital Drawing files shall be AutoCAD format (Release 2004 or later) and shall include all external reference drawings, text fonts, shape files and all other files necessary to make use of the drawings.

Three separate as-built drawing submittals will be required. The Storm Water as-built is required immediately upon completion of the storm sewer systems and storm water ponds on the project. The as-built drawing will be forwarded to the Southwest Florida Water Management District for approval after they have been reviewed and accepted by the Project Manager. The Utility as-built is required immediately upon completion of the water main, sanitary sewer and force main work on the project. The as-built drawing will be forwarded to the Florida Department of Environmental Protection for approval after they have been reviewed and accepted by the Project Manager. The Roadway as-built is required upon completion of the entire project.

Separate pay items are provided for the Stormwater, Utility and Roadway as-built drawings. The Owner and/or Engineer will review and approve the "Record Drawings within 30 days unless additional information is required. No final payment shall be made until such time as the "Record Drawings" have been approved and accepted.

COMPLIANCE WITH THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT (SWFWMD) STORMWATER MANAGEMENT AND DISCHARGE PERMIT REQUIREMENTS AND/OR THE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) DREDGE AND FILL PERMIT REQUIREMENTS

Southwest Florida Water Management District Stormwater Management and Discharge permits or exemptions, if any, and/or a Department of Environmental Protection Dredge and Fill permit, if any, required for this project have been obtained by the Owner. The Contractor shall comply with the stipulations of the Permits or Exemptions as stated herein.

The Contractor shall allow periodic inspection of the work by authorized representatives of the Department of Environmental Protection, the Southwest Florida Water Management District, as well as other duly authorized law enforcement officers of the State.

MATERIAL TESTING TABLE

ITEM	TEST	TEST IDENTIFICATION	TEST REQUIREMENTS VERTICAL	TEST FREQUENCY HORIZONTAL
UTILITY TRENCH BACKFILL	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T-180	N/A	PER SOIL CLASSIFICATION/ PER LABORATORY
	FIELD DENSITY	AASHTO T-180	PER PLANS	ONE PER 200 LF
SUBGRADE UNCLEAR NEW CURB	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T-180	N/A	PER SOIL CLASSIFICATION/ PER LABORATORY
	FIELD DENSITY	AASHTO T-180	PER PLANS	ONE PER 200 LF
LIMEROCK/ SHELL BASE	MAXIMUM DENSITY OPTIMUM MOISTURE	AASHTO T-180	N/A	PER SOIL CLASSIFICATION/ PER LABORATORY
	FIELD DENSITY	AASHTO T-180	PER PLANS	ONE PER 200 LF
SOIL CEMENT BASE	SOIL CEMENT PLACEMENT/ MONITORING DENSITIES THICKNESS DETERMINATIONS	AASHTO T-134 AND AASHTO T-135	PER PLANS	ONE PER 200 LF
CONCRETE	COMPRESSIVE STRENGTH (THREE CYLINDERS/TEST)	AASHTO T-23 AND AASHTO T-119	PER SPECS	Per Specs/Min. of One Set/Day FOR POURS BETWEEN 10 & 50 CY
	SLUMP, AIR CONTENT	AASHTO T-22 AND AASHTO T-180	PER SPECS	ADDITIONAL SET FOR EACH 50 CY DAILY OR 1 PER 50 CY MAX
ASPHALT	MATERIAL QUALITY GRADATION, STABILITY BITUMEN CONTENT	FLORIDA D.O.T.	PER SPECS	PER SPECS DAILY OR 1 PER 50 CY MAX
RECYCLED CONCRETE BASE	GRADATION DENSITIES THICKNESS DETERMINATIONS	AASHTO T-180	PER SPECS	PER SOIL CLASSIFICATION/ PER LABORATORY ONE PER 200 LF

DISCRETIONARY WORK (Contingency)

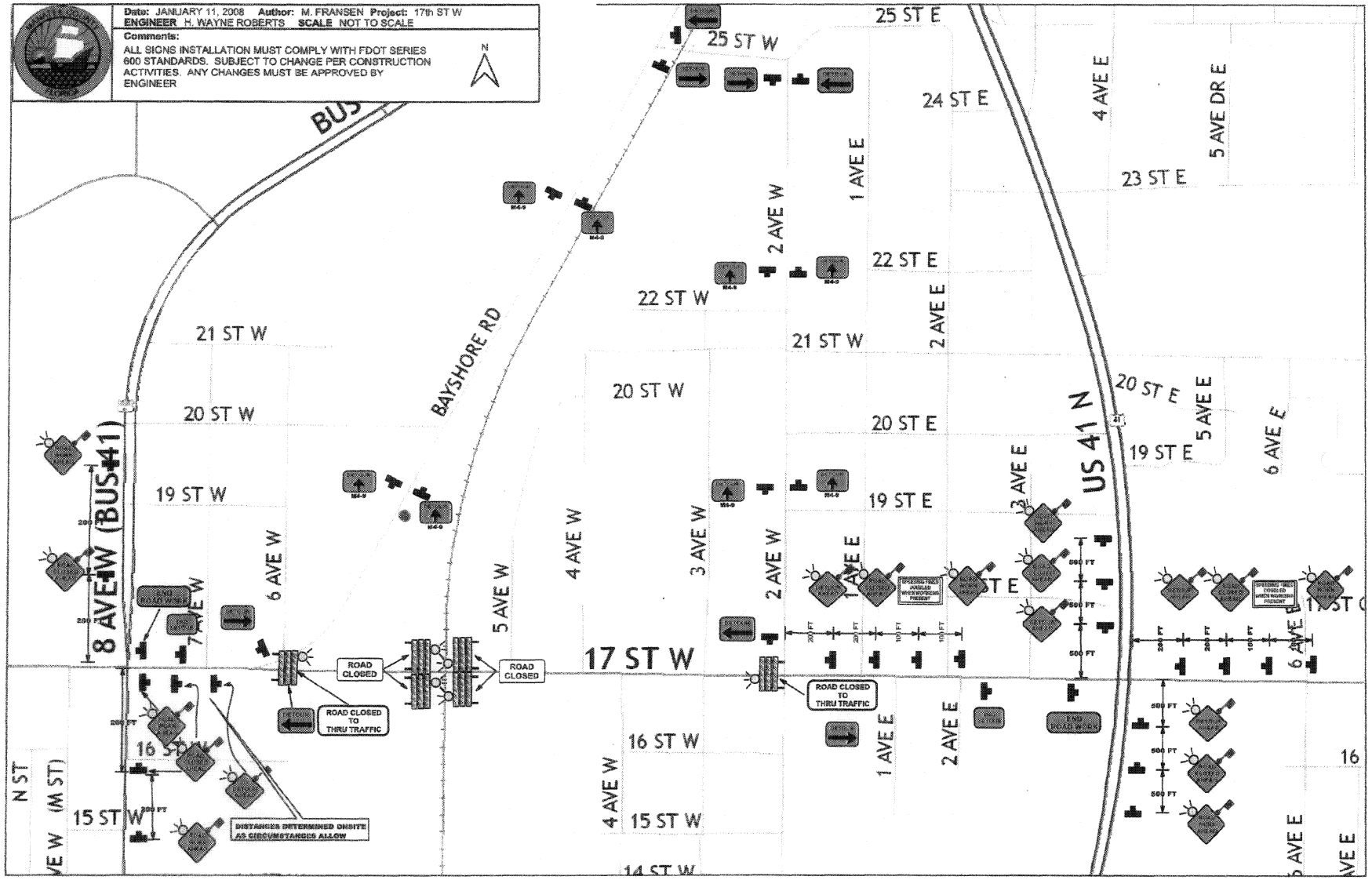
The Discretionary Work (Contingency) pay item shall cover the cost for various contingencies and contract amendments authorized by the Owner. Any amount of extra work and/or alterations to the proposed Work charged to the allowance shall be fully documented and authorized by the Engineer before the start of the work. No payment shall be made for work completed without written authorization from the Owner or Engineer.

Method of Measurement and Basis of Payment

Payment for authorized work shall be on a lump sum basis.

ATTACHMENT "1"
County Traffic Control Plan

ATTACHMENT "1"
County Traffic Control Plan



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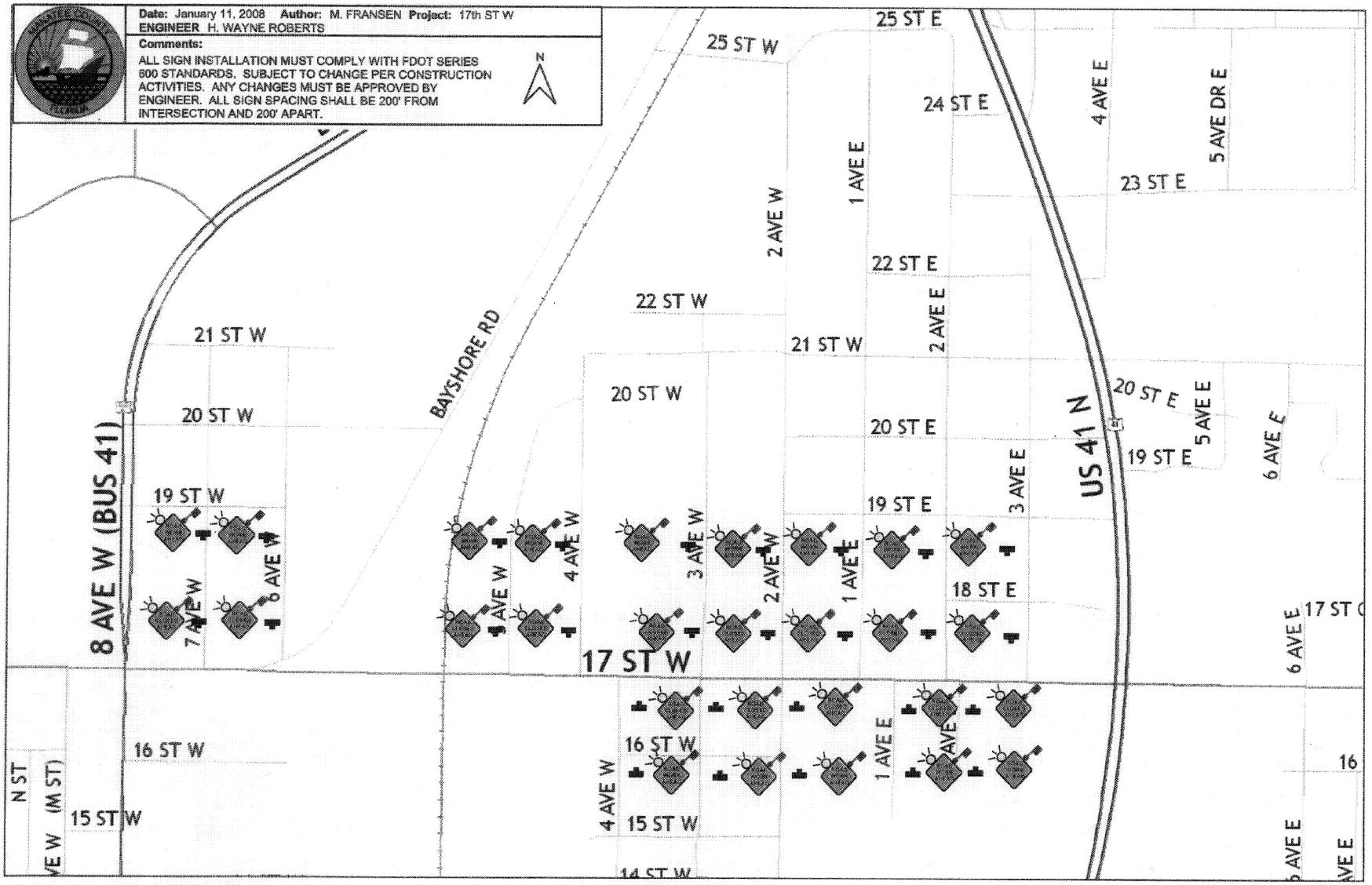


ATTACHMENT "1"
County Traffic Control Plan

ATTACHMENT "1"
County Traffic Control Plan

ATTACHMENT "B"

SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
ENVIRONMENTAL RESOURCE
GENERAL CONSTRUCTION
PERMIT NO. 44024790.001

Expiration Date: September 30, 2009 PERMIT ISSUE DATE: September 30, 2004

This permit is issued under the provisions of Chapter 373, Florida Statutes (F.S.), and the Rules contained in Chapters 40D-4 and 40, Florida Administrative Code (F.A.C.). The permit authorizes the Permittee to proceed with the construction of a surface water management system in accordance with the information outlined herein and shown by the application, approved drawings, plans, specifications, and other documents, attached hereto and kept on file at the Southwest Florida Water Management District (District). Unless otherwise stated by permit specific condition, permit issuance constitutes certification of compliance with state water quality standards under Section 401 of the Clean Water Act, 33 U.S.C. 1341. All construction, operation and maintenance of the surface water management system authorized by this permit shall occur in compliance with Florida Statutes and Administrative Code and the conditions of this permit.

PROJECT NAME: 17th Street West

GRANTED TO: Board of County Commissioners, Manatee County
Post Office Box 1000
Bradenton, FL 34206

ABSTRACT: This permit authorizes the construction of a surface water management system to serve the reconstruction of 17th Street West between Business U.S. 41 (State Road 45) and State Road 55 in Manatee County. The existing road is two-lane and the proposed improvements will include widening of the roadway to include turn lanes, bicycle lanes and addition of sidewalks. In conjunction with the roadway improvements, additional storage capacity will be provided in an off-line attenuation pond along Carr Drain to help reduce some of the flooding in the areas along the Carr Drain. The project area is 24 acres and includes 3.56 acres of existing and proposed impervious area along the western portion of the project, 0.78 acres of existing and proposed impervious area along Bayshore Road and 5.66 acres of impervious area from the eastern portion of the project. The proposed stormwater system will consist of two ponds and one swale. Pond F-12B will treat and attenuate the western portion of the roadway improvements. Swale F-12C will provide treatment for the realigned portion of Bayshore Drive. Pond F-12D will provide additional attenuation for the western portion of the project, which will directly discharged into Carr Drain. In addition Pond F-12D will provide approximately 10 acre-ft of attenuation volume to help relieve flooding in the area via a diversionary structure along Carr drain that will divert stormwater from Carr Drain into the Pond F-12D where it would be attenuated and discharged back into the drain via an outfall structure. Pond F-12B is a wet detention pond and the total available treatment volume in the pond is 0.316 acre-feet and meets the required 0.297 acre-feet of treatment volume based on one-inch of run-off from a 3.56-acre drainage area. The control device is sized so that one half inch of runoff volume is discharged in no less than 60 hours using the Alternate 1 Wet Detention Design Method. Swale F-12C is an on-line retention pond and the total available treatment volume in the pond is 0.047 acre-feet and meets the required 0.033 acre-feet based on 0.5 inch of runoff over the 0.78-acre drainage area. The required treatment volume is recovered in less than 72 hours. The two ponds and one swale provide attenuation for a 25-year storm event, from 15.81 cfs in the pre-development phase to 13.47 cfs in the post-development phase. There are no wetlands within the project area.

OP. & MAINT. ENTITY: Board of County Commissioners, Manatee County

COUNTY: Manatee

SEC/TWP/RGE: 11,12,13,14/34S/17E

TOTAL ACRES OWNED OR UNDER CONTROL: 24.00 Acres

PROJECT SIZE: 24.00 Acres

LAND USE: Government

DATE APPLICATION FILED: February 26, 2004

AMENDED DATE: N/A

I. Water Quantity/Quality:

POND NO.	AREA ACRES @ TOP OF BANK	TREATMENT TYPE
Pond F-12B	0.652	Wet Detention
Swale F-12C	0.257	On-line Retention
Pond F-12D	2.477	No Treatment, Attenuation only
TOTAL	3.386	

Comments: Ponds F-12B and Swale F-12C provide treatment and attenuation. Pond F-12D provides attenuation only.

A mixing zone is not required.

A variance is not required.

II. 100-Year Floodplain:

There is no FEMA 100-year Floodplain withiln the project area.

III. Environmental Considerations:

No wetlands or other surface waters exist within the project area.

Watershed Name: Manatee River

A regulatory conservation easement is not required.

A proprietary conservation easement is not required.

SPECIFIC CONDITIONS

1. If the ownership of the project area covered by the subject permit is divided, with someone other than the Permittee becoming the owner of part of the project area, this permit shall terminate, pursuant to Section 40D-1.6105, F.A.C. In such situations, each land owner shall obtain a permit (which may be a modification of this permit) for the land owned by that person. This condition shall not apply to the division and sale of lots or units in residential subdivisions or condominiums.

2. Unless specified otherwise herein, two copies of all information and reports required by this permit shall be submitted to:

Sarasota Regulation Department
Southwest Florida Water Management District
6750 Fruitville Road
Sarasota, FL 34240-9711

The permit number, title of report or information and event (for recurring report or information submittal) shall be identified on all information and reports submitted.

3. The Permittee shall retain the design engineer, or other professional engineer registered in Florida, to conduct on-site observations of construction and assist with the as-built certification requirements of this project. The Permittee shall inform the District in writing of the name, address and phone number of the professional engineer so employed. This information shall be submitted prior to construction.

4. Within 30 days after completion of construction of the permitted activity, the Permittee shall submit to the Sarasota Service Office a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1.659, F.A.C., and signed, dated and sealed as-built drawings. The as-built drawings shall identify any deviations from the approved construction drawings.

5. The District reserves the right, upon prior notice to the Permittee, to conduct on-site research to assess the pollutant removal efficiency of the surface water management system. The Permittee may be required to cooperate in this regard by allowing on-site access by District representatives, by allowing the installation and operation of testing and monitoring equipment, and by allowing other assistance measures as needed on site.

6. All construction is prohibited within the permitted project area until the Permittee acquires legal ownership or legal control of the project area as delineated in the permitted construction drawings.

7. For dry bottom retention systems, the retention areas shall become dry within 72 hours after a rainfall event. If a retention area is regularly wet, this situation shall be deemed to be a violation of this permit.

8. The operation and maintenance entity shall submit inspection reports in the form required by the District, in accordance with the following schedule.

   For systems utilizing retention or wet detention, the inspections shall be performed two (2) years after operation is authorized and every two (2) years thereafter.

9. The Permittee is prohibited from implementing any of the construction authorized by this permit until the Permittee acquires fee simple ownership or legal control over all temporary and permanent rights-of-way required for this project. The Permittee shall additionally promptly notify the District, in writing, when such ownership or legal control is achieved, prior to commencing any construction within the project limits.

10. If prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, the permitted project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The permittee, or other designee, should contact the Florida Department of State, Division of Historical Resources, Review and Compliance Section at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Project activities should not resume without verbal and/or written authorization from the Division of

Historical Resources. In the event that unmarked human remains are encountered during the permitted activities, all work shall stop immediately and the proper authorities notified in accordance within Section 872.05, *Florida Statutes*.

11. A minimum of three (3) feet depth of clean fill with a saturated horizontal hydraulic conductivity of at least 12 feet per day shall be used for the construction of Swale F-12C. Prior to the construction of Swale F-12C, the Permittee's contractor shall submit a certified test of the clean fill to the Permittee's Professional Engineer and the District.

GENERAL CONDITIONS

1. The general conditions attached hereto as Exhibit "A" are hereby incorporated into this permit by reference and the Permittee shall comply with them.

Authorized Signature

EXHIBIT "A"

1. All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

2. This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

3. For general permits authorizing incidental site activities, the following limiting general conditions shall also apply:

   a. If the decision to issue the associated individual permit is not final within 90 days of issuance of the incidental site activities permit, the site must be restored by the permittee within 90 days after notification by the District. Restoration must be completed by re-contouring the disturbed site to previous grades and slopes re-establishing and maintaining suitable vegetation and erosion control to provide stabilized hydraulic conditions. The period for completing restoration may be extended if requested by the permittee and determined by the District to be warranted due to adverse weather conditions or other good cause. In addition, the permittee shall institute stabilization measures for erosion and sediment control as soon as practicable, but in no case more than 7 days after notification by the District.

   b. The incidental site activities are commenced at the permittee's own risk. The Governing Board will not consider the monetary costs associated with the incidental site activities or any potential restoration costs in making its decision to approve or deny the individual environmental resource permit application. Issuance of this permit shall not in any way be construed as commitment to issue the associated individual environmental resource permit.

4. Activities approved by this permit shall be conducted in a manner which does not cause violations of state water quality standards. The permittee shall implement best management practices for erosion and a pollution control to prevent violation of state water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

5. Water quality data for the water discharged from the permittee's property or into the surface waters of the state shall be submitted to the District as required by the permit. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by the American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly volume discharged from the property or into surface waters of the state.

6. District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

7. Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

8. Off-site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

9. The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

10. The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

    a. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.
    b. Any existing septic tanks on site shall be abandoned at the beginning of construction.
    c. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

11. All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property and to minimize dewatering of offsite property.

12. At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

13. Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

14. Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

15. This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

16. The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

17. Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

18. This permit does not eliminate the necessity to obtain any required federal, state, local and special District authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

19. This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

20. The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

21. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under section 373.421(2), F.S., provides otherwise.

22. The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

23. Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulations and conditions of the permits.

24. If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

25. The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

ATTACHMENT "C"

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
Southwest District Office
13051 North Telecom Parkway
Temple Terrace, Florida 33637-0926

February 3, 2009

H. Wayne Roberts, P.E.
Manatee County Government
1022 26th Avenue East
Bradenton, FL 34208

Re: General Permit for Construction of a Domestic Wastewater Collection/Transmission System
Project: 17th Street West from Business US 41 to US 41
FDEP Permit No.: CS41-0182186-162
County: Manatee

Dear Mr. Roberts:

The Department has received your Notice of Intent to Use the General Permit to construct a domestic wastewater collection/transmission system to serve future development. This project consists of a 6-inch diameter force main extension along US 41 (STA 100+31.17 thru STA 139+52). No additional flow will be treated at the Manatee County North Regional Wastewater Treatment Facility. The Notice was received by our office on January 6, 2009.

The Department has no objection to your use of a General Permit for the construction of a collection/transmission system that has been designed in accordance with the standards and criteria set forth in Rule 62-604.400, Florida Administrative Code (FAC). In accordance with Rules 62-4.530(1) and 62-604.600(6)(a)1., FAC, construction of this project shall not begin until at least 30 days after the receipt date (referenced above) of Application Form 62-604.300(8)(a). All General Permits are subject to the general conditions of Rule 62-4.540, FAC, (attached), and Rules 62-604.600 and 62-604.700, FAC. The construction activity must conform to the description contained in your Notice of Intent to Use the General Permit. Any deviation will subject the permittee to enforcement action and possible penalties.

If you have any questions, you may contact Patricia León at (813) 632-7600, extension 315.

Sincerely,

Isabel King, P.E.
Permitting Supervisor
Domestic Wastewater Section

IK/pl

Attachments: General Conditions
Location of Public Water System Mains

cc: Jeffrey D. Trim, P.E., Wade Trim, Inc.

62-4.540 General Conditions for All General Permits

(1) The terms, conditions, requirements, limitations, and restrictions set forth in this Part are "general permit conditions" and are binding upon the permittee. The conditions are enforceable under Chapter 403, F.S.

(2) The general permit is valid only for the specific activity indicated. Any deviation from the specified activity and the conditions for undertaking that activity shall constitute a violation of the permit. The permittee is placed on notice that violation of the permit may result in suspension or revocation of the permittee's use of the general permit and may cause the Department to begin legal proceedings.

(3) The general permit does not convey any vested rights or any exclusive privileges. It does not authorize any injury to public or private property nor any invasion of personal rights. It does not authorize any infringement of federal, State or local laws or regulations. It does not eliminate the necessity for obtaining any other federal, State or local permits that may be required, or allow the permittee to violate any more stringent standards established by federal or local law.

(4) The general permit does not relieve the permittee from liability and penalties when the construction or operation of the permitted activity causes harm or injury to human health or welfare; causes harm or injury to animal, plant or aquatic life; or causes harm or injury to property. It does not allow the permittee to cause pollution in contravention of Florida Statutes and Department rules.

(5) The general permit conveys no title to land or water, nor does it constitute State recognition or acknowl- edgement of title. It does not constitute authority for reclamation of submerged lands. Only the Board of Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

(6) No general permit shall authorize the use of state owned land without the prior consent of the Board of Trustees of the Internal Improvement Trust Fund pursuant to Section 253.77, F.S.

(7) The general permit may be modified, suspended or revoked in accordance with Chapter 120, Florida Statutes, if the Secretary determines that there has been a violation of any of the terms or conditions of the permit, there has been a violation of state water quality standards or state air quality standards, or the permittee has submitted false, incomplete or inaccurate data or information.

(8) The general permit shall not be transferred to a third party except pursuant to Florida Administrative Code Rule 62-4.120.

(9) The general permit authorizes construction and where applicable operation of the permitted facility.

(10) The permittee agrees in using the general permit to make every reasonable effort to conduct the specific activity or construction authorized by the general permit in a manner that will minimize any adverse effects on adjacent property or on public use of the adjacent property, where applicable, and on the environment, including fish, wildlife, natural resources of the area, water quality or air quality.

(11) The permittee agrees in using the general permit to allow a duly authorized representative of the Department access to the permitted facility or activity at reasonable times to inspect and test upon presentation of credentials or other documents as may be required by law to determine compliance with the permit and the Department rules.

(12) The permittee agrees to maintain any permitted facility or activity in good condition and in accordance with the plans submitted to the Department under Rule 62-4.530(1).

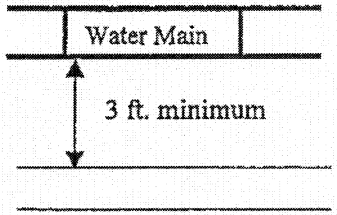
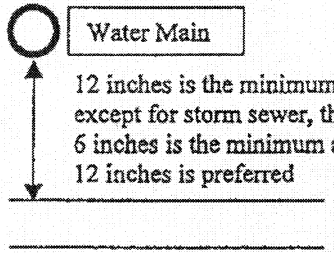
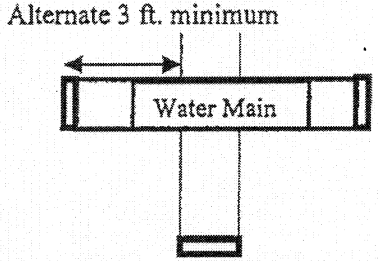
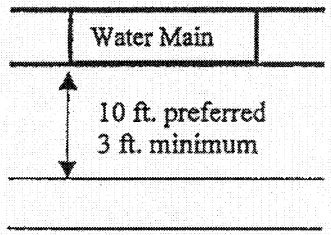
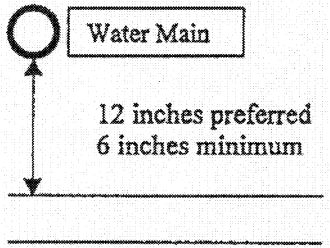
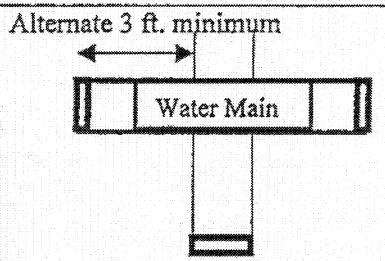
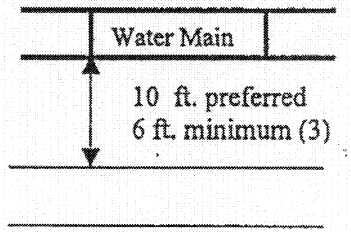
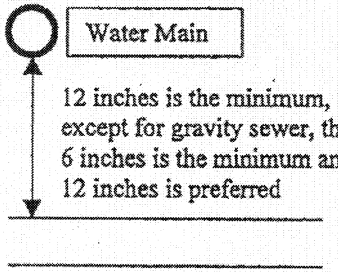
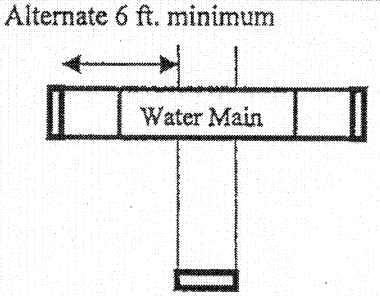
(13) A permittee's use of a general permit is limited to five years. However, the permittee may request continued use of the general permit by notifying the Department pursuant to Rule 62-4.530(1). The permittee shall give notice of continued use of a general permit thirty days before it expires.

Specific Authority: 403.814(1), F.S.

Law Implemented: 253.123, 253.124, 403.061, 403.087, 403.088, 403.702-403.73, 403.814, 403.851-403.864, F.S.

History: New 7-8-82. Amended 8-31-88. Previously Numbered As 17-5.54.

LOCATION OF PUBLIC WATER SYSYEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (Full Joint Centered)
Storm Sewer, Stormwater Force Main, Reclaimed Water (2)			
Vacuum Sanitary Sewer			
Gravity or Pressure Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)			
On-Site Sewage Treatment & Disposal System	10 ft. minimum	---	---

(1) Water main should cross above other pipe. When water main must be below other pipe, the minimum separation is 12 inches.
(2) Reclaimed water regulated under Part III of Chapter 62-610, F.A.C.
(3) 3 ft. for gravity sanitary sewer where the bottom of the water main is laid at least 6 inches above the top of the gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-610, F.A.C.

ATTACHMENT "D"

FLORIDA DEPARTMENT OF HEALTH

Charlie Crist
Governor

Ana M. Viamonte Ros, M.D., M.P.H.
State Surgeon General

January 13, 2009

JAN 16 2009

Permit #: 0133068-887 DSGP

Mr. H. Wayne Roberts, Deputy Director
Manatee County Project Management Department
1022 26th Avenue East
Bradenton, FL 34208

WATER SYSTEM: **Manatee County**
PROJECT NAME: **17th Street West from Business US 41 to US 41**
Manatee Project No. 6035261
EXPIRES: **January 08, 2014**

Dear Mr. Roberts:

Our office received the Notice of Intent to Use a General Permit for construction of the referenced water distribution system on **January 08, 2009.**

Please be advised that the activity must conform to the description contained in your Notice of Intent to Use a General Permit and that any deviation may subject the system to enforcement action.

Upon completion of the project, please provide us with the following:

(1) A "Request for Letter of Release to Place Water Supply System into Service" DEP Form 62-555.900(9).

(2) Copies of satisfactory bacteriological test results taken on two consecutive days at points indicated on approved plans. **Please see sheets 55 through 59 for sample locations (10) at end of line connections (9), temporary sample tap at fire hydrant (Sta 118+90, 26 LT) and any internal phase lines.**

(3) Pressure test results of the water system.

Following the receipt of this information we may then issue a clearance letter releasing the facilities for public use. This project may not be placed into service until a letter of clearance has been issued.

Manatee County Health Department
Environmental Health Services
410 Sixth Avenue East • Bradenton 34208-1928
PHONE (941) 748-0747 • FAX (941) 750-9364

This General Permit does not relieve the permittee of the responsibility for obtaining a Dredge and Fill Permit where it is required.

If you have any questions, please call Harry Messick at (941)748-0747, ext. 1355.

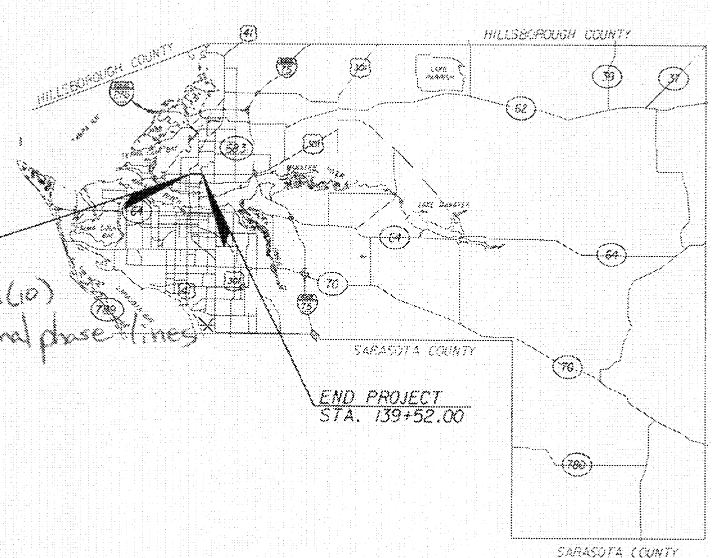
Sincerely,

Brian C. Dietz, PE
Environmental Health Services

BCD/hm/bb

cc: H. Wayne Roberts, PE/MCPMD
Jeffery D. Trim, PE/Wade Trim
Harry Messick

MANATEE COUNTY, FLORIDA
17th STREET WEST
FROM BUSINESS U.S. 41 TO U.S. 41
COUNTY PROJECT NO. 6035261



GOVERNING STANDARDS AND SPECIFICATIONS:

FLORIDA DEPARTMENT OF TRANSPORTATION, DESIGN STANDARDS DATED 2006.

STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2007, AS AMMENDED BY CONTRACT DOCUMENTS.

MANATEE COUNTY TRANSPORTATION HIGHWAY & DRAINAGE STANDARDS DATED 2007.

MANATEE COUNTY UTILITY STANDARDS AND SPECIFICATIONS DATED NOVEMBER, 1999.

AT LEAST 72 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL CONTACT THE LOCAL MAINTENANCE FDOT ENGINEER'S OFFICE TO SECURE GENERAL USE PERMIT AND/OR OTHER PERMITS AS REQUIRED FOR WORKING WITHIN THE DEPARTMENT'S RIGHT-OF-WAY.

LENGTH OF PROJECT	
	FEET
ROADWAY	3920.83
BRIDGES	N/A
NET LENGTH OF PROJ.	3920.83
EXCEPTIONS	N/A
GROSS LENGTH OF PROJ.	3920.83

KEY SHEET REVISIONS		
DATE	#	DESCRIPTION

MANATEE COUNTY PROJECT MANAGER : PAUL SCHAMELL

ACCEPTED UNDER
DATE: 1/13/09
MANATEE COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SERVICES
410 SIXTH AVE. EAST
BRADENTON, FL 34208 BCD
#0133068-887DSGP

Manatee CHD
JAN 08 2009
Env. Health Services

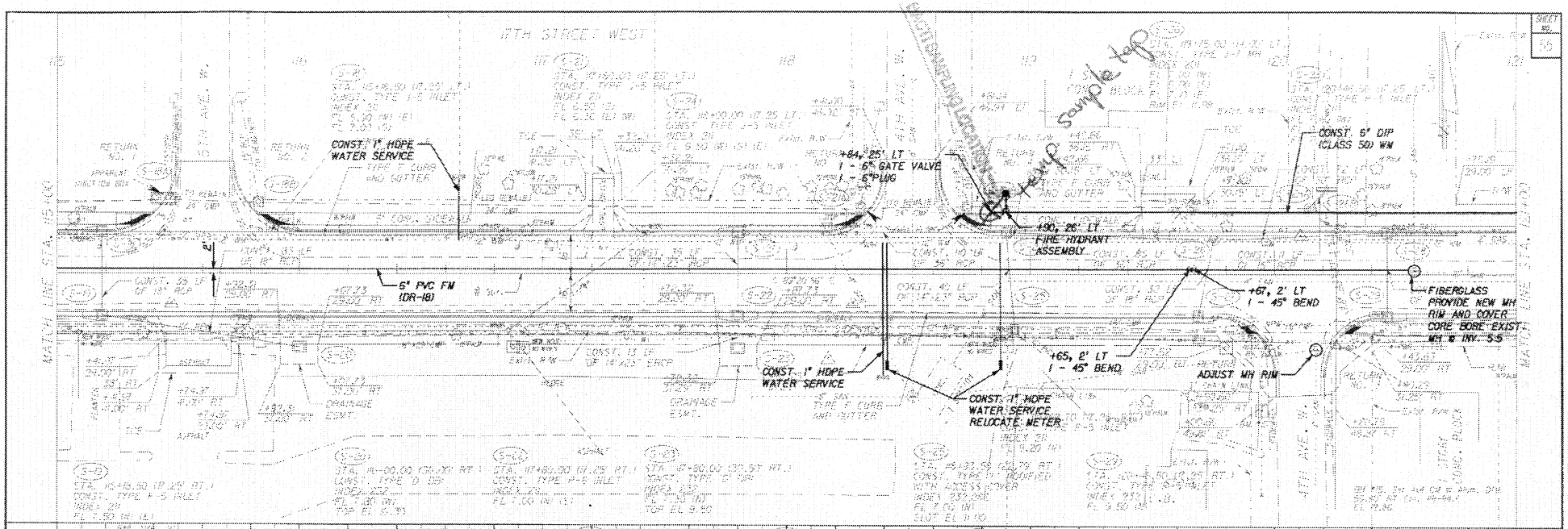
PLANS PREPARED BY:

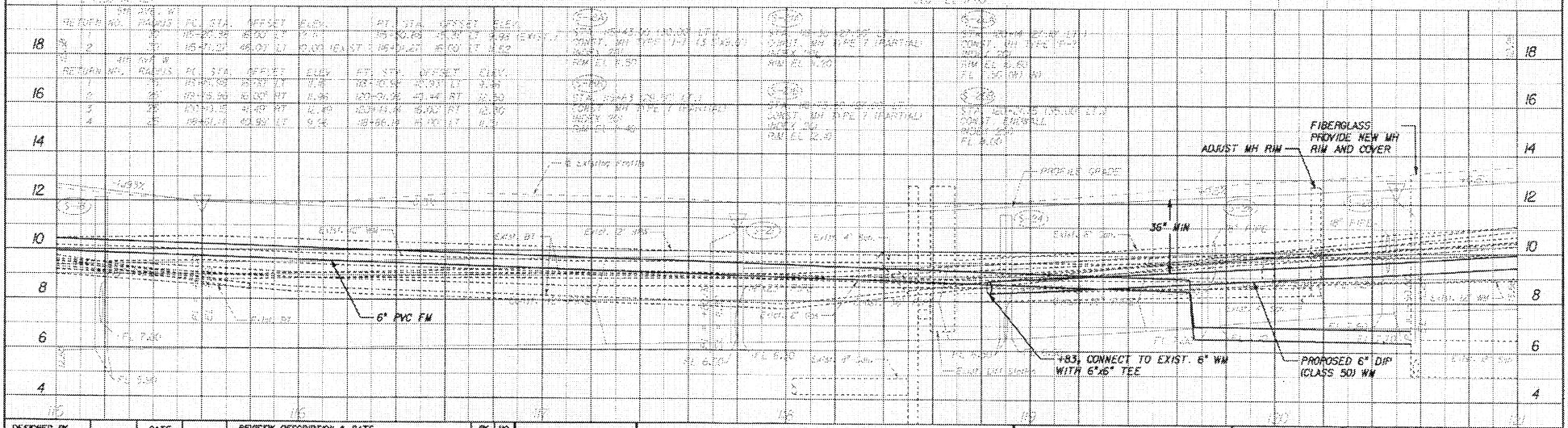
WADETRIM
8745 Henderson Road, Suite 220
Tampa, FL 33634
Engineer of Record: Jeffrey D. Trim , PE No.: 42106
Certificate of Authorization No.: 3962
Vendor No. 59-2417170

[signature] 12/1/08

ROADWAY PLANS
ENGINEER OF RECORD: JEFFREY D. TRIM, P.E.
P.E. NO.: 42106

FDEP DRINKING WATER PERMIT PLANS - 11/24/08





DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

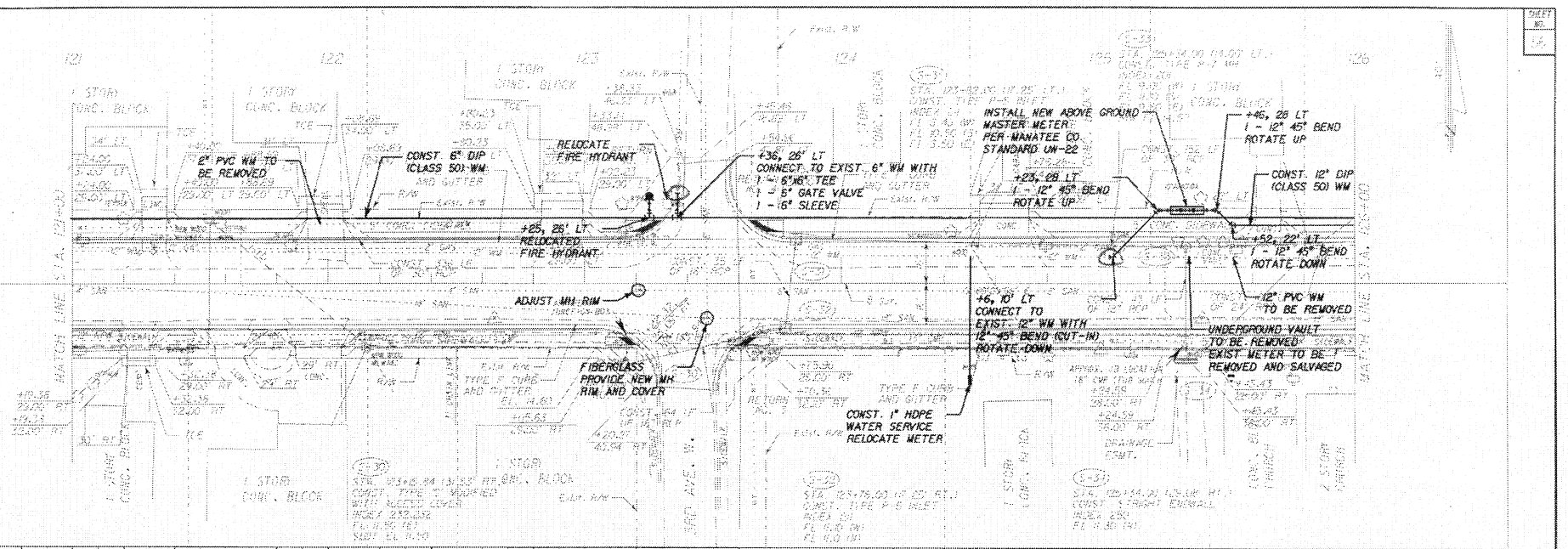
FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

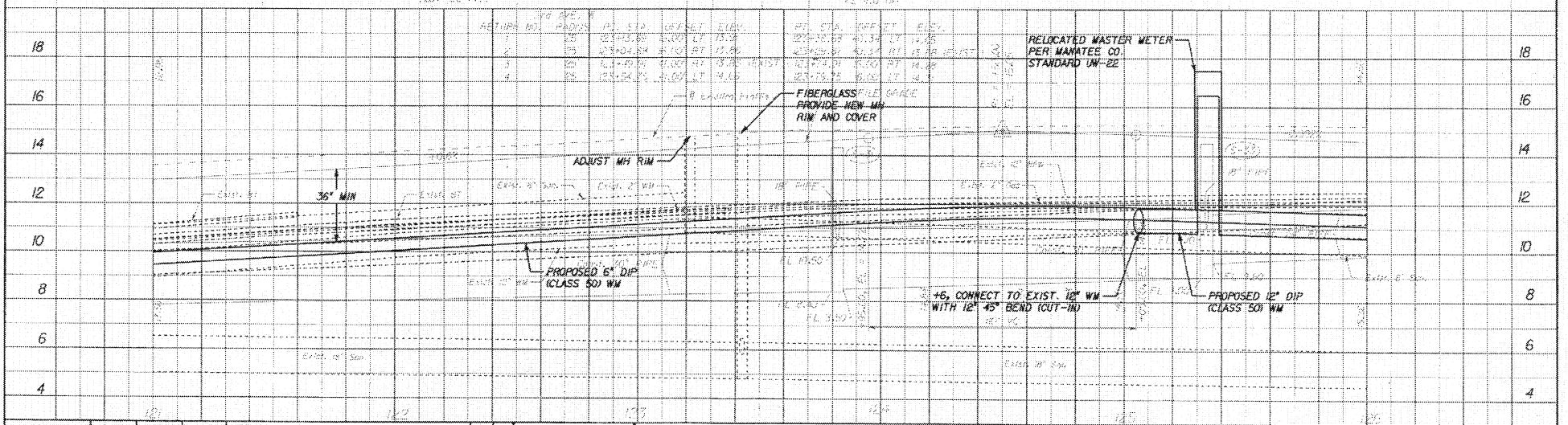
WADE TRIM
8745 Henderson Road, Suite 220, Tampa, FL 33634
Engineer of Record: Jeffrey D. Trim , PE No : 42106
Certificate of Authorization No : 3662

ENGINEER
Jeffrey D. Trim, PE No. 42106
12/1/08

Proj. No. 6035261
Dwg. Date

MANATEE COUNTY UTILITIES





DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

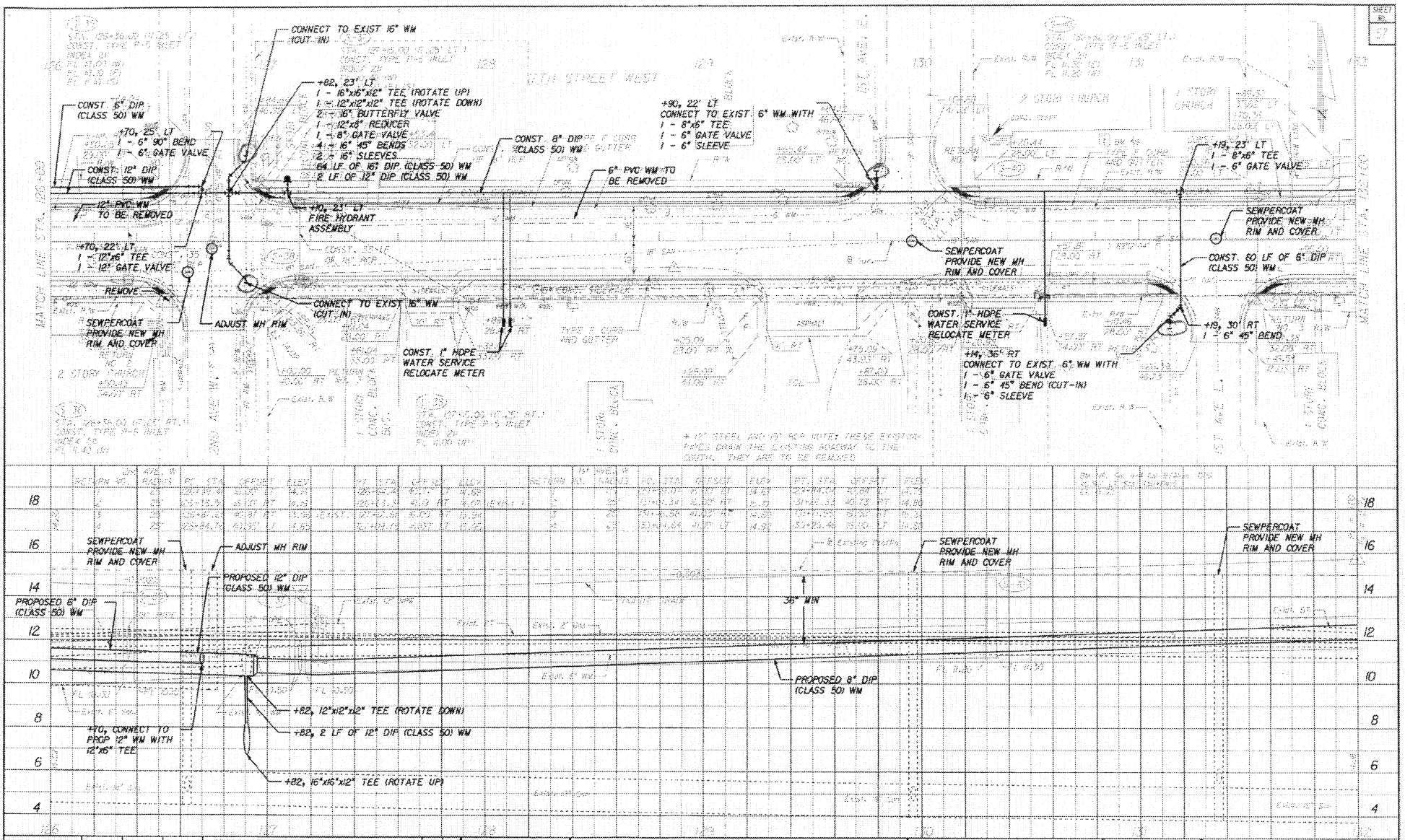
FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADETRIM
8745 Henderson Road, Suite 220 Tampa, FL 33634
Engineer of Record Jeffrey D. Trim PE No. 42106
Certificate of Authorization No. 3852

ENGINEER
Jeffrey D. Trim, PE No. 42106
12/1/08

Proj. No. 603526
Dwg. Date

MANATEE COUNTY UTILITIES



DESIGNED BY	SRR	DATE
CHECKED BY	PJS	DATE
DRAWN BY	PWJ	DATE
CHECKED BY	JDT/PJS	DATE
SUPERVISED BY	JEFFREY D. TRIM, PE 42106	

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

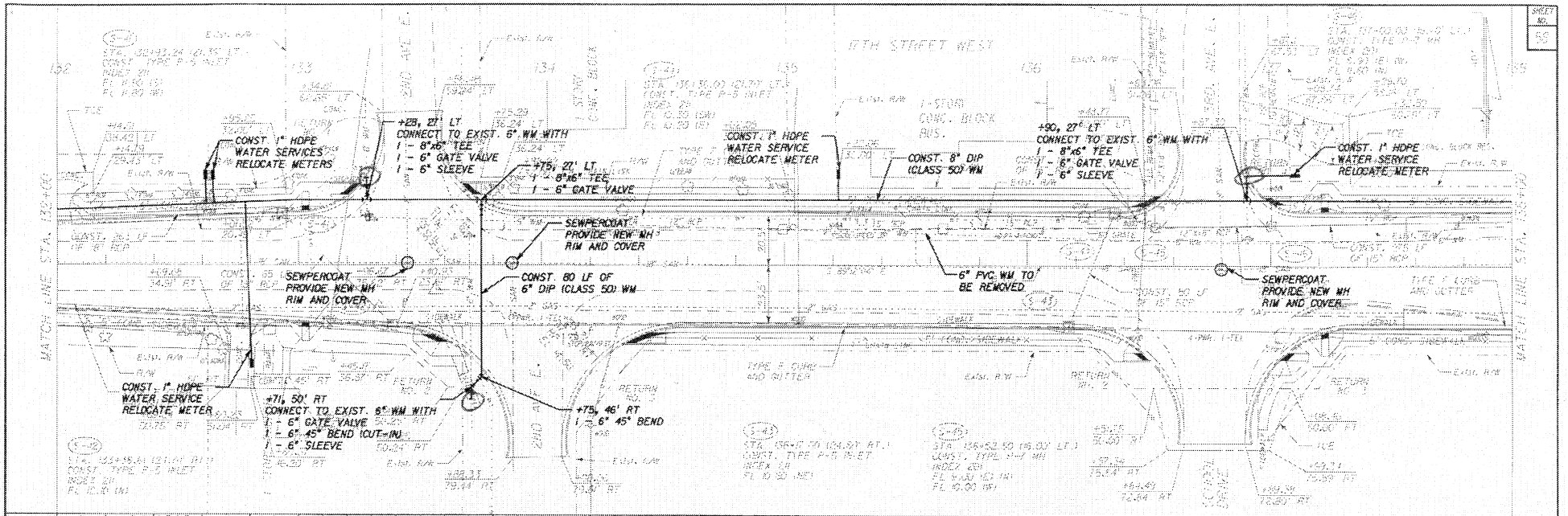
FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

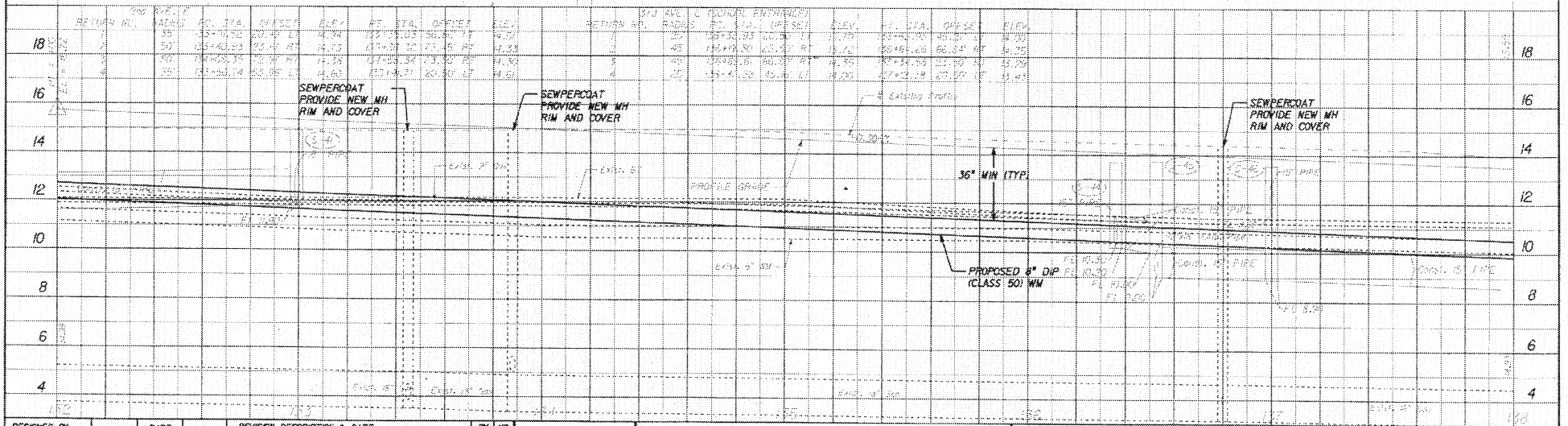
WADE TRIM
8745 Henderson Road, Suite 220, Tampa, FL 33634
Engineer of Record: Jeffrey D. Trim , PE No - 42106
Certificate of Authorization No : 3652

ENGINEER
Jeffrey D. Trim, PE No. 42106
12/1/08

Proj. No. 6035261
Dwg. Date

MANATEE COUNTY UTILITIES





DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

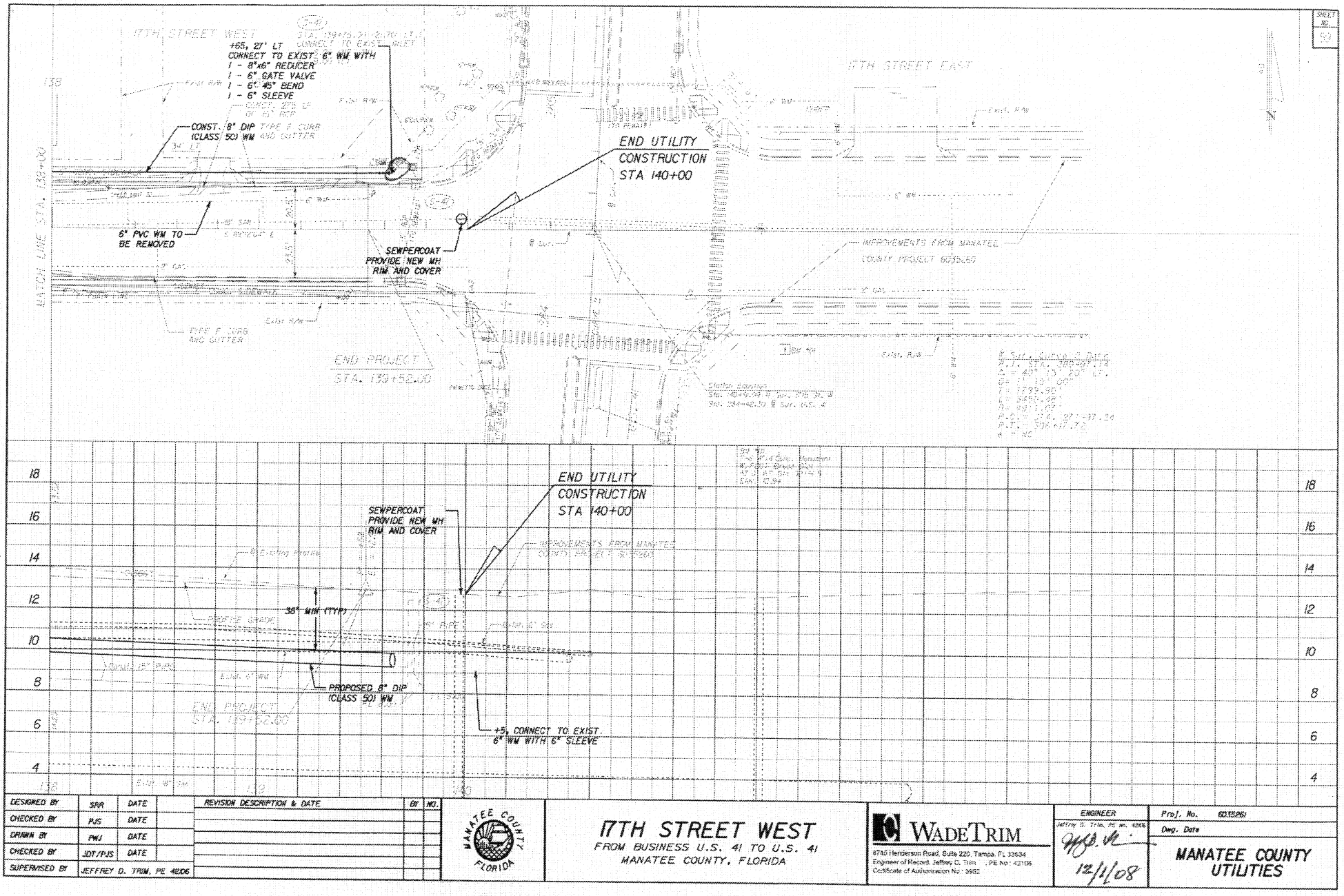
WADETRIM

8745 Henderson Road, Suite 220, Tampa, FL 33634
Engineer of Record: Jeffrey D. Trim PE No.: 42106
Certificate of Authorization No.: 3062

ENGINEER
Jeffrey D. Trim, PE No. 42106
12/1/08

Proj. No. 6035061
Dwg. Date

MANATEE COUNTY UTILITIES



DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADE TRIM
6745 Henderson Road, Suite 220, Tampa, FL 33634
Engineer of Record: Jeffrey D. Trim , PE No.: 42106
Certificate of Authorization No.: 3662

ENGINEER
Jeffrey D. Trim, PE No. 42106
12/1/08

Proj. No. 6035261
Dwg. Date

MANATEE COUNTY UTILITIES

ATTACHMENT "E"

Project: FL, Palmetto, Manatee County
Widening of 17th Street West to include
Installation of new concrete crossing surface
and relocation and upgrade of automatic warning devices
Jacksonville Division / Palmetto Sub-division
624 728 X; AZA-913.96
CSXT OP# FL0944

CONSTRUCTION AGREEMENT

This Construction Agreement ("Agreement") is made as of _____, 200__, by and between CSX TRANSPORTATION, INC., a Virginia corporation with its principal place of business in Jacksonville, Florida ("CSXT"), and Manatee County, a body corporate and political subdivision of the State of Florida ("Agency").

EXPLANATORY STATEMENT

1. Agency has proposed to construct, or to cause to be constructed, widening of 17th Street West, (Jacksonville Division; Palmetto Sub-division); 624 728 X; AZA-913.96, to include installation of new concrete crossing surface, relocation and upgrade of existing automatic warning devices (the "Project").

2. Agency has obtained, or will obtain, all authorizations, permits and approvals from all local, state and federal agencies (including Agency), and their respective governing bodies and regulatory agencies, necessary to proceed with the Project and to appropriate all funds necessary to construct the Project.

3. Agency acknowledges that: (i) by entering into this Agreement, CSXT will provide services and accommodations to promote public interest in this Project, without profit or other economic inducement typical of other Agency contractors; (ii) neither CSXT nor its affiliates (including their respective directors, officers, employees or agents) will incur any costs, expenses, losses or liabilities in excess of payments made to CSXT, by or on behalf of Agency or its contractors, pursuant to this Agreement; and (iii) CSXT retains the paramount right to regulate all activities affecting its property and operations.

4. It is the purpose of this Agreement to provide for the terms and conditions upon which the Project may proceed.

NOW, THEREFORE, in consideration of the foregoing Explanatory Statement and other good and valuable consideration, the receipt and sufficiency of which are acknowledged by the parties, the parties agree as follows:

1. Project Plans and Specifications

1.1 Preparation and Approval. Pursuant to Exhibit A of this Agreement, all plans, specifications, drawings and other documents necessary or appropriate to the design and construction of the Project shall be prepared, at Agency's sole cost and expense, by Agency or CSXT or their respective contractors. Project plans, specifications and drawings prepared by or on behalf of Agency shall be subject, at CSXT's election, to the review and approval of CSXT. Such plans, specifications and drawings, as prepared or approved by CSXT, are referred to as the "Plans", and shall be incorporated and deemed a part of this Agreement. Plans prepared or submitted to

and approved by CSXT as of the date of this Agreement are set forth in Exhibit B to this Agreement.

1.2 Effect of CSXT Approval or Preparation of Plans. By its review, approval or preparation of Plans pursuant to this Agreement, CSXT signifies only that such Plans and improvements constructed in accordance with such Plans and improvements constructed in accordance with such Plans satisfy CSXT's requirements. CSXT expressly disclaims all other representations and warranties in connection with the Plans, including, but not limited to, the integrity, suitability or fitness for the purposes of Agency or any other persons of the Plans or improvements constructed in accordance with the Plans.

1.3 Compliance with Plans. The Project shall be constructed in accordance with the Plans.

2. Allocation and Conduct of Work

Work in connection with the Project shall be allocated and conducted as follows:

2.1 CSXT Work. Subject to timely payment of Reimbursable Expenses as provided by Section 4, CSXT shall provide, or cause to be provided, the services as set forth by Exhibit A to this Agreement. Agency agrees that CSXT shall provide all services that CSXT deems necessary or appropriate (whether or not specified by Exhibit A) to preserve and maintain its property and operations, without impairment or exposure to liability of any kind and in compliance with all applicable federal, state and local regulations and CSXT's contractual obligations, including, but not limited to, CSXT's existing or proposed third party agreements and collective bargaining agreements.

2.2 Agency Work. Agency shall perform, or cause to be performed, all work as set forth by Exhibit A, at Agency's sole cost and expense.

2.3 Conduct of Work. CSXT shall commence its work under this Agreement following: (i) delivery to CSXT of a notice to proceed from Agency; (ii) payment of Reimbursable Expenses (as provided by Section 4.1) as required by CSXT prior to the commencement of work by CSXT; (iii) issuance of all permits, approvals and authorizations necessary or appropriate for such work; and (iv) delivery of proof of insurance acceptable to CSXT, as required by Section 9. The initiation of any services by CSXT pursuant to this Agreement, including, but not limited to, the issuance of purchase orders or bids for materials or services, shall constitute commencement of work for the purposes of this Section. The parties intend that all work by CSXT or on CSXT property shall conclude no later than eighteen months from date of agreement unless the parties mutually agree to extend such date.

3. Special Provisions. Agency shall observe and abide by, and shall require its contractors ("Contractors") to observe and abide by the terms, conditions and provisions set forth in Exhibit C to this Agreement (the "Special Provisions"). To the extent that Agency performs Project work itself, Agency shall be deemed a Contractor for purposes of this Agreement. Agency further agrees that, prior to the commencement of Project work by any third party Contractor, such Contractor shall execute and deliver to CSXT Schedule I to this Agreement to acknowledge Contractor's agreement to observe and abide by the terms and conditions of this Agreement.

4. Cost of Project and Reimbursement Procedures

4.1 Reimbursable Expenses. Agency shall reimburse CSXT for all costs and expenses incurred by CSXT in connection with the Project, including, without limitation: (1) all out of pocket expenses, (2) travel and lodging expenses, (3) telephone, facsimile, and mailing expenses, (4) costs for equipment, tools, materials and supplies, (5) sums paid to CSXT's consultants and subcontractors, and (6) CSXT labor in connection with the Project, together with CSXT labor overhead percentages established by CSXT pursuant to applicable law (collectively, "Reimbursable Expenses"). Reimbursable Expenses shall also include expenses incurred by CSXT prior to the date of this Agreement to the extent identified by the Estimate provided pursuant to Section 4.2.

4.2 Estimate. CSXT has estimated the total Reimbursable Expenses for the Project at $377,620.00 as shown on Exhibit D (the "Estimate", as amended or revised). In the event CSXT anticipates that actual Reimbursable Expenses for the Project may exceed such Estimate, it shall provide Agency with the revised Estimate of the total Reimbursable Expenses, together with a revised Payment Schedule (as defined by Section 4.3.1), for Agency's approval and confirmation that sufficient funds have been appropriated to cover the total Reimbursable Expenses of such revised Estimate. CSXT may elect, by delivery of notice to Agency, to immediately cease all further work on the Project, unless and until Agency provides such approval and confirmation.

4.3 Payment Terms.

4.3.1 Agency shall pay CSXT for Reimbursable Expenses in the amounts and on the dates set forth in the Payment Schedule as shown on Exhibit E (the "Payment Schedule", as revised pursuant to Section 4.2). CSXT agrees to submit invoices to Agency for such amounts and Agency shall remit payment to CSXT at the later of thirty (30) days following delivery of each such invoice to Agency or, the payment date (if any) set forth in the Payment Schedule.

4.3.2 Following completion of the Project, CSXT shall submit to Agency a final invoice that reconciles the total Reimbursable Expenses incurred by CSXT against the total payments received from Agency. Agency shall pay to CSXT the amount by which Reimbursable Expenses exceed total payments as shown by the final invoice, within thirty (30) days following delivery of such invoice to Agency. In the event that the payments received by CSXT from Agency exceed the Reimbursable Expenses, CSXT shall remit such excess to Agency.

4.3.3 In the event that Agency fails to pay CSXT any sums due CSXT under this Agreement: (i) Agency shall pay CSXT interest at the lesser of 1.0% per month or the maximum rate of interest permitted by applicable law on the delinquent amount until paid in full; and (ii) CSXT may elect, by delivery of notice to Agency: (A) to immediately cease all further work on the Project, unless and until Agency pays the entire delinquent sum, together with accrued interest; and/or (B) to terminate this Agreement.

4.3.4 All invoices from CSXT shall be delivered to Agency in accordance with Section 16 of this Agreement. All payments by Agency to CSXT shall be made by certified check and mailed to the following address or such other address as designated by CSXT's notice to Agency:

CSX Transportation, Inc.
P.O. Box 116651
Atlanta, GA 30368-6651

4.4 Effect of Termination. Agency's obligation to pay to CSXT Reimbursable Expenses in accordance with Section 4 shall survive termination of this Agreement for any reason.

5. Appropriations Agency represents to CSXT that: (i) Agency has appropriated funds sufficient to reimburse CSXT for the Reimbursable Expenses encompassed by the Estimate attached as Exhibit D; (ii) Agency shall use its best efforts to obtain appropriations necessary to cover Reimbursable Expenses encompassed by subsequent Estimates approved by Agency; and (iii) Agency shall promptly notify CSXT in the event that Agency is unable to obtain such appropriations.

6. Easements and Licenses

6.1 Agency Obligation. Agency shall acquire all necessary licenses, permits and easements required for the Project.

6.2 Temporary Construction Licenses. Insofar as it has the right to do so, CSXT hereby grants Agency a nonexclusive license to access and cross CSXT's property, to the extent necessary for the construction of the Project (excluding ingress or egress over public grade crossings), along such routes and upon such terms as may be defined and imposed by CSXT and such temporary construction easements as may be designated on the Plans approved by CSXT.

6.3 Permanent Easements. Insofar as it has the right to do so, CSXT shall grant, without warranty to Agency, easements for the use and maintenance of the Project wholly or partly on CSXT property as shown on the Plans approved by CSXT, if any, on terms and conditions and at a price acceptable to the parties. Upon request by CSXT, Agency shall furnish to CSXT descriptions and plat plans for the easements.

7. Permits At its sole cost and expense, Agency shall procure all permits and approvals required by any federal, state, or local governments or governmental agencies for the construction, maintenance and use of the Project, copies of which shall be provided to CSXT.

8. Termination

8.1 By Agency. For any reason, Agency may, as its sole remedy, terminate this Agreement by delivery of notice to CSXT. Agency shall not be entitled to otherwise pursue claims for consequential, direct, indirect or incidental damages or lost profits as a consequence of CSXT's default or termination of this Agreement or Work on the Project by either party.

8.2 By CSXT. In addition to the other rights and remedies available to CSXT under this Agreement, CSXT may terminate this Agreement by delivery of notice to Agency in the event Agency or its Contractors fail to observe the terms or conditions of this Agreement and such failure continues more than ten (10) business days following delivery of notice of such failure by CSXT to Agency.

8.3 Consequences of Termination. If the Agreement is terminated by either party pursuant to this Section or any other provision of this Agreement, the parties understand that it may be impractical for them to immediately stop the Work. Accordingly, they agree that, in such instance a party may continue to perform Work until it has reached a point where it may reasonably and safely suspend the Work. Agency shall reimburse CSXT pursuant to this Agreement for the Work performed, plus all costs reasonably incurred by CSXT to discontinue the Work and protect the Work upon full suspension of the same, the cost of returning CSXT's

property to its former condition, and all other costs of CSXT incurred as a result of the Project up to the time of full suspension of the Work. Termination of this Agreement or Work on the Project, for any reason, shall not diminish or reduce Agency's obligation to pay CSXT for Reimbursable Expenses incurred in accordance with this Agreement. In the event of the termination of this Agreement or the Work for any reason, CSXT's only remaining obligation to Agency shall be to refund to Agency payments made to CSXT in excess of Reimbursable Expenses in accordance with Section 4.

9. Insurance In addition to the insurance that Agency requires of its Contractor, Agency shall acquire or require its Contractor to purchase and maintain insurance in compliance with CSXT's insurance requirements attached to this Agreement as Exhibit F. Neither Agency nor Contractor shall commence work on the Project until such policy or policies have been submitted to and approved by CSXT's Risk Management Department.

10. Ownership and Maintenance

10.1 By Agency. Agency shall maintain and repair, at its sole cost and expense, all parts comprising the permanent aspects of the Project, as shown by the Plans, consisting of roadway pavement up to the outer ends of the railroad cross ties, sidewalks, guardrails, and curbs, in good and safe condition to CSXT's satisfaction. In the event Agency fails to do so after reasonable notice from CSXT (unless an emergency condition exists or is imminent in the opinion of CSXT, that requires immediate action), CSXT may perform such maintenance and repair, at Agency's sole cost and expense.

10.2 By CSXT. CSXT shall maintain and repair the crossing surface between the ends of its cross ties and its signal facilities at the crossing, at Agency's sole cost and expense.

10.3 Alterations. Agency shall not undertake any alteration, modification or expansion of the Project, without the prior written approval of CSXT, which may be withheld for any reason, and the execution of such agreements as CSXT may require. CSXT may undertake alterations of its property, track or facilities and shall be reimbursed by Agency for the expenses incurred by CSXT with respect to the removal and restoration of the crossing in connections with such alteration.

11. Indemnification

11.1 Generally. To the maximum extent permitted by applicable law, Agency and its Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless from and against all claims, demands, payments, suits, actions, judgments, settlements, and damages of every nature, degree, and kind (including direct, indirect, consequential, incidental, and punitive damages), for any injury to or death to any person(s) (including, but not limited to the employees of CSXT, its affiliates, Agency or its Contractors), for the loss of or damage to any property whatsoever (including but not limited to property owned by or in the care, custody, or control of CSXT, its affiliates, Agency or its Contractors, and environmental damages and any related remediation brought or recovered against CSXT and its affiliates), arising directly or indirectly from the negligence, recklessness or intentional wrongful misconduct of the Contractors, Agency, and their respective agents, employees, invitees, contractors, or its contractors' agents, employees or invitees in the performance of work in connection with the Project or activities incidental thereto, or from their presence on or about CSXT's property. The foregoing indemnification obligation shall not be limited to the insurance coverage required by this

Agreement, except to the extent required by law or otherwise expressly provided by this Agreement.

11.2 Compliance with Laws. Agency shall comply, and shall require its Contractors to comply, with any federal, state, or local laws, statutes, codes, ordinances, rules, and regulations applicable to its construction and maintenance of the Project. Agency's Contractors shall indemnify, defend, and hold CSXT and its affiliates harmless with respect to any fines, penalties, liabilities, or other consequences arising from breaches of this Section.

11.3 "CSXT Affiliates". For the purpose of this Section 11, CSXT's affiliates include CSX Corporation and all entities, directly or indirectly, owned or controlled by or under common control of CSXT or CSX Corporation and their respective officers, directors, employees and agents.

11.4 Notice of Incidents. Agency and its Contractor shall notify CSXT promptly of any loss, damage, injury or death arising out of or in connection with the Project work.

11.5 Survival. The provisions of this Section 11 shall survive the termination or expiration of this Agreement.

12. Independent Contractor The parties agree that neither Agency nor its Contractors shall be deemed either agents or independent contractors of CSXT. Except as otherwise provided by this Agreement, CSXT shall exercise no control whatsoever over the employment, discharge, compensation of, or services rendered by Agency or Agency's Contractors, or the construction practices, procedures, and professional judgment employed by Agency or its Contractor to complete the Project. Notwithstanding the foregoing, this Section 12 shall in no way affect the absolute authority of CSXT to prohibit Agency or its Contractors or anyone from entering CSXT's property, or to require the removal of any person from its property, if it determines, in its sole discretion, that such person is not acting in a safe manner or that actual or potential hazards in, on or about the Project exist.

13. "Entire Agreement" This Agreement embodies the entire understanding of the parties, may not be waived or modified except in a writing signed by authorized representatives of both parties, and supersedes all prior or contemporaneous written or oral understandings, agreements or negotiations regarding its subject matter. In the event of any inconsistency between this Agreement and the Exhibits, the more specific terms of the Exhibits shall be deemed controlling.

14. Waiver If either party fails to enforce its respective rights under this Agreement, or fails to insist upon the performance of the other party's obligations hereunder, such failure shall not be construed as a permanent waiver of any rights or obligations in this Agreement.

15. Assignment CSXT may assign this Agreement and all rights and obligations herein to a successor in interest, parent company, affiliate, or future affiliate. Upon assignment of this Agreement by CSXT and the assumption of CSXT's assignee of CSXT's obligations under this Agreement, CSXT shall have no further obligation under this Agreement. Agency shall not assign its rights or obligations under this Agreement without CSXT's prior consent, which consent may be withheld for any reason.

16. Notices All notices, consents and approvals required or permitted by this Agreement shall be in writing and shall be deemed delivered upon personal delivery, upon the expiration of three (3) days following mailing by first class U.S. mail, or upon the next business day following mailing by a nationally recognized overnight carrier, to the parties at the addresses set forth below, or such other addresses as either party may designate by delivery of prior notice to the other party:

If to CSXT: CSX Transportation, Inc.
500 Water Street J-301
Jacksonville, FL 32202
Attention: Leslie L. Scherr

If to Agency: Manatee County Board of County Commissioners
1026 26th Avenue E.
Bradenton, FL 34208
Attention: Bruce Simington

17. Severability The parties agree that if any part, term or provision of this Agreement is held to be illegal, unenforceable or in conflict with any applicable federal, state, or local law or regulation, such part, term or provision shall be severable, with the remainder of the Agreement remaining valid and enforceable.

18. Applicable Law This Agreement shall be governed by the laws of the State of Florida, exclusive of its choice of law rules. The parties further agree that the venue of all legal and equitable proceedings related to disputes under this Agreement shall be situated in Duval County, Florida, and the parties agree to submit to the personal jurisdiction of any State or Federal court situated in Duval County, Florida.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed in duplicate, each by its duly authorized officers, as of the date of this Agreement.

Manatee County Board of County Commissioners

By: _____
Name: Jane W. von Hahmann
Title: Chairman

ATTEST: R. B. SHORE
CLERK OF CIRCUIT COURT
BY: _____
SUSAN G. ROMINE DEPUTY CLERK

BOARD OF COUNTY COMMISSIONERS SEAL MANATEE CO. FLA.

CSX TRANSPORTATION, INC.

By: _____
Eric G. Peterson
Assistant Chief Engineer – Public Projects

EXHIBIT A
ALLOCATION OF WORK

Subject to Section 2.1, work to be performed in connection with the Project is allocated as follows:

A. Agency shall perform or let by contract to its Contractors:

1. All related roadway work
2. Maintenance of traffic and detour plans
3. All sawcut and asphalt paving

B. CSXT shall perform or cause to be performed:

1. Installation of new full width heavy duty concrete crossing surface
2. Relocation and upgrade of existing automatic warning devices
3. Provide flagging and inspection services during roadway and crossing surface work

EXHIBIT B

PLANS AND SPECIFICATIONS

Plans, Specifications and Drawings:

As of the date of this Agreement, the following plans, specifications and drawings have been submitted by Agency to CSXT for its review and approval:

B1 – CSX/HDR Crossing Surface Plan
B2 – CSX/HDR Crossing Profile
B3 – CSX/Safetran Signal Plan AZA91396.H01 dated 4/23/07
B4 – Wade Trim Roadway Plans plotted 3/21/07

EXHIBIT B1

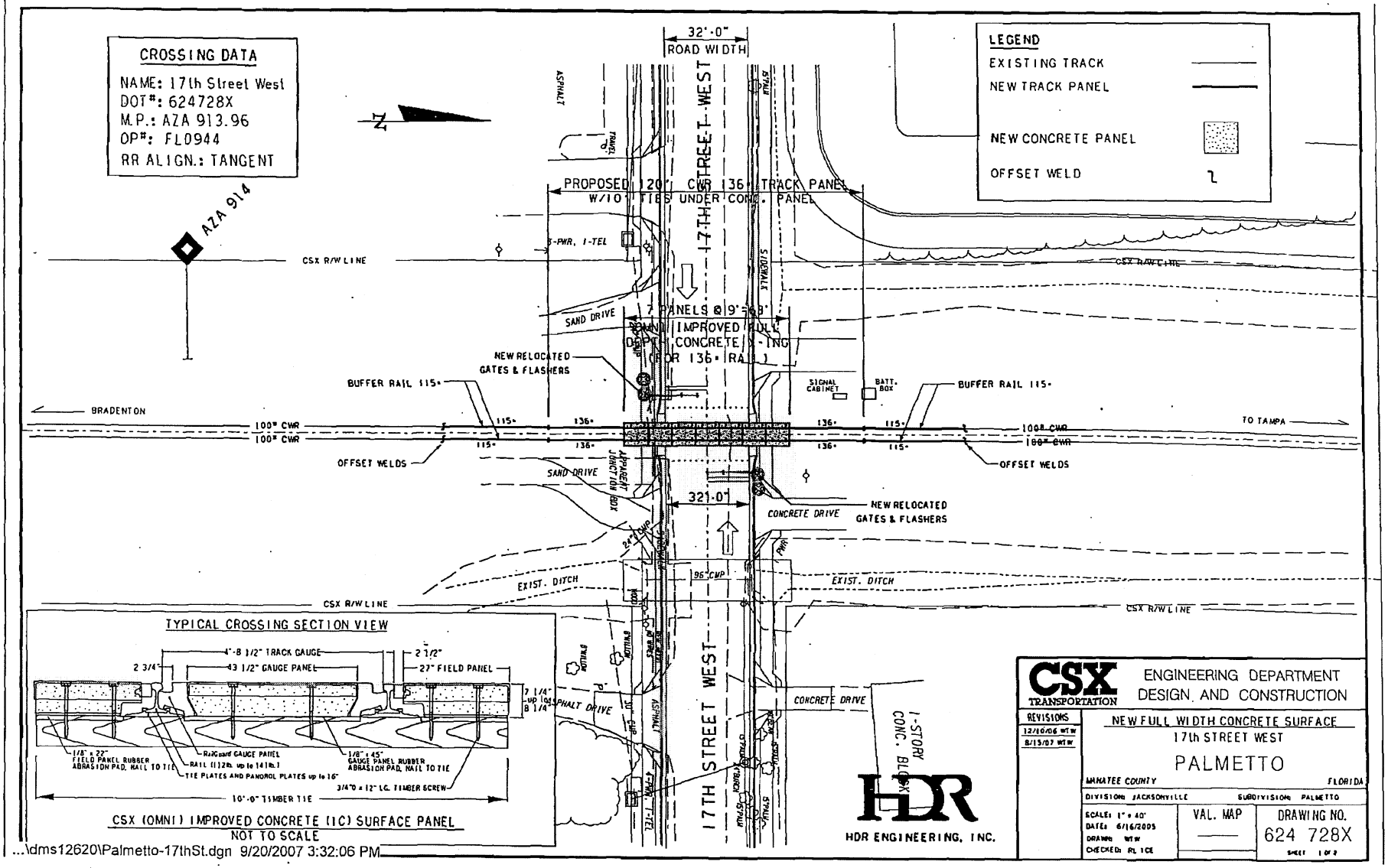


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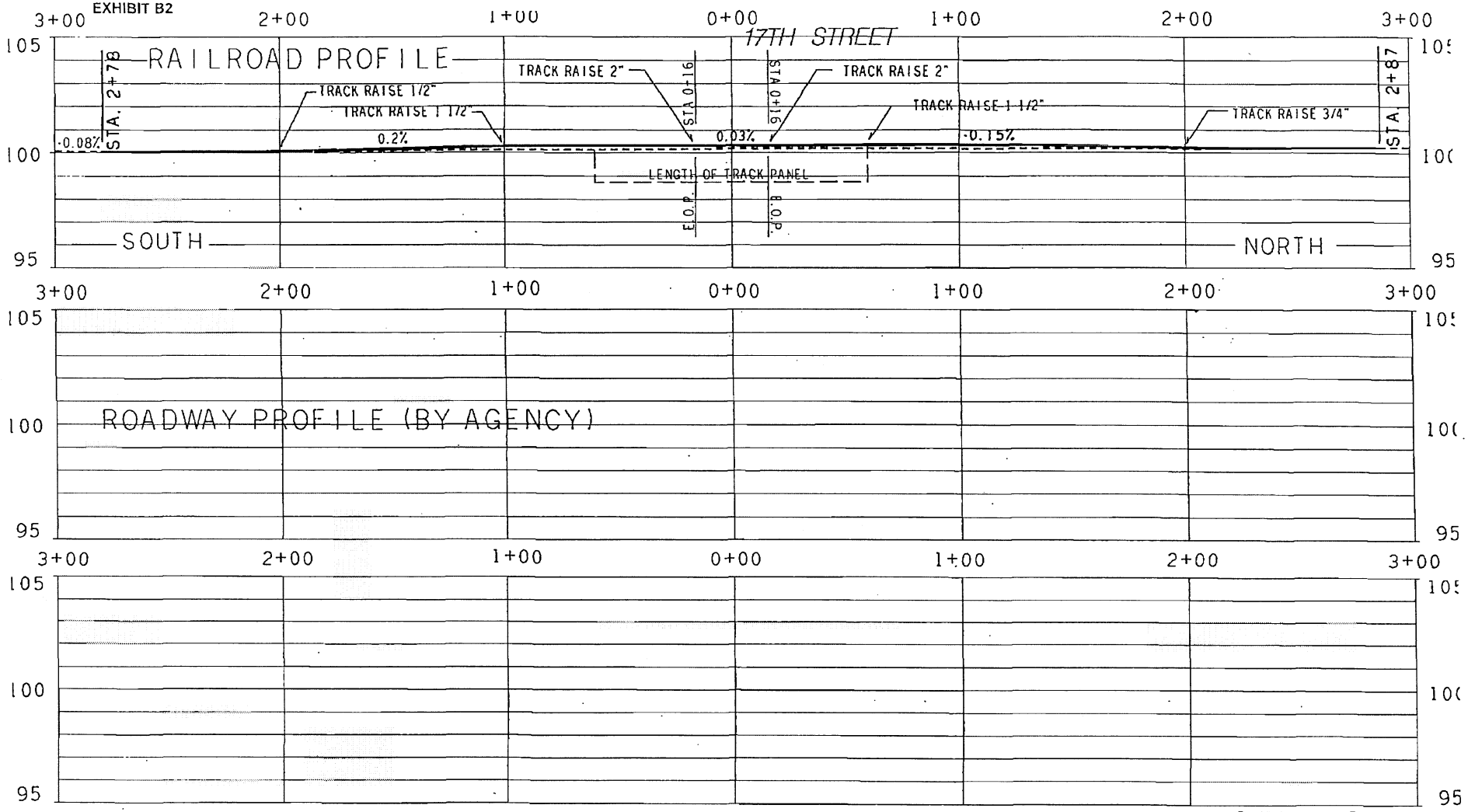
EXHIBIT B2



CSX

PALMETTO, FL

17TH STREET

PROFILE

SCALE: HORZ 1" = 50'

VERT 1" = 5'

DOT 624 728X

2082007 KNK

SHEET 2 OF 2

HDR

...\TPA\dms12620\profile.dgn 8/15/2007 11:28:15 AM

EXHIBIT B3

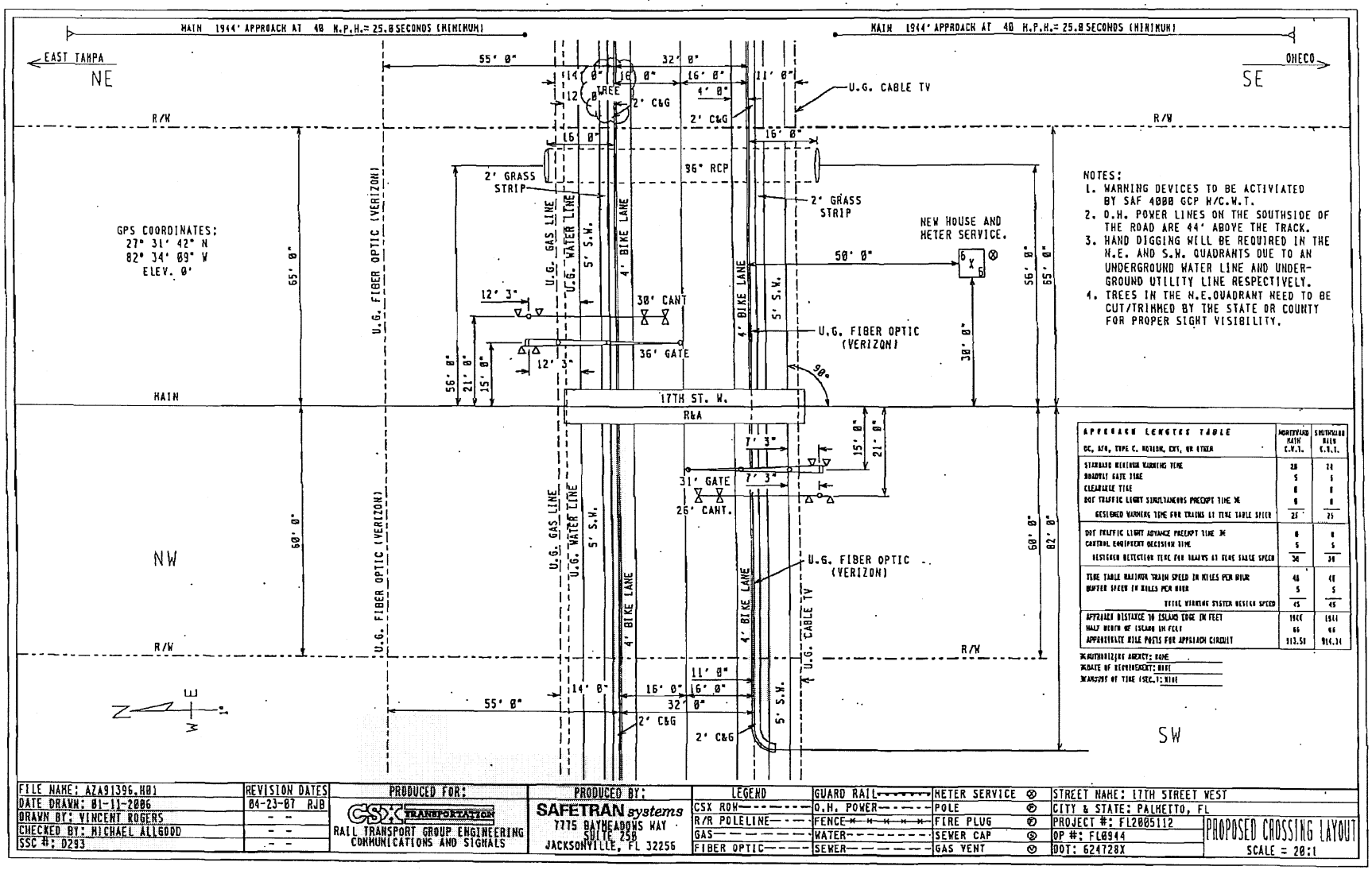
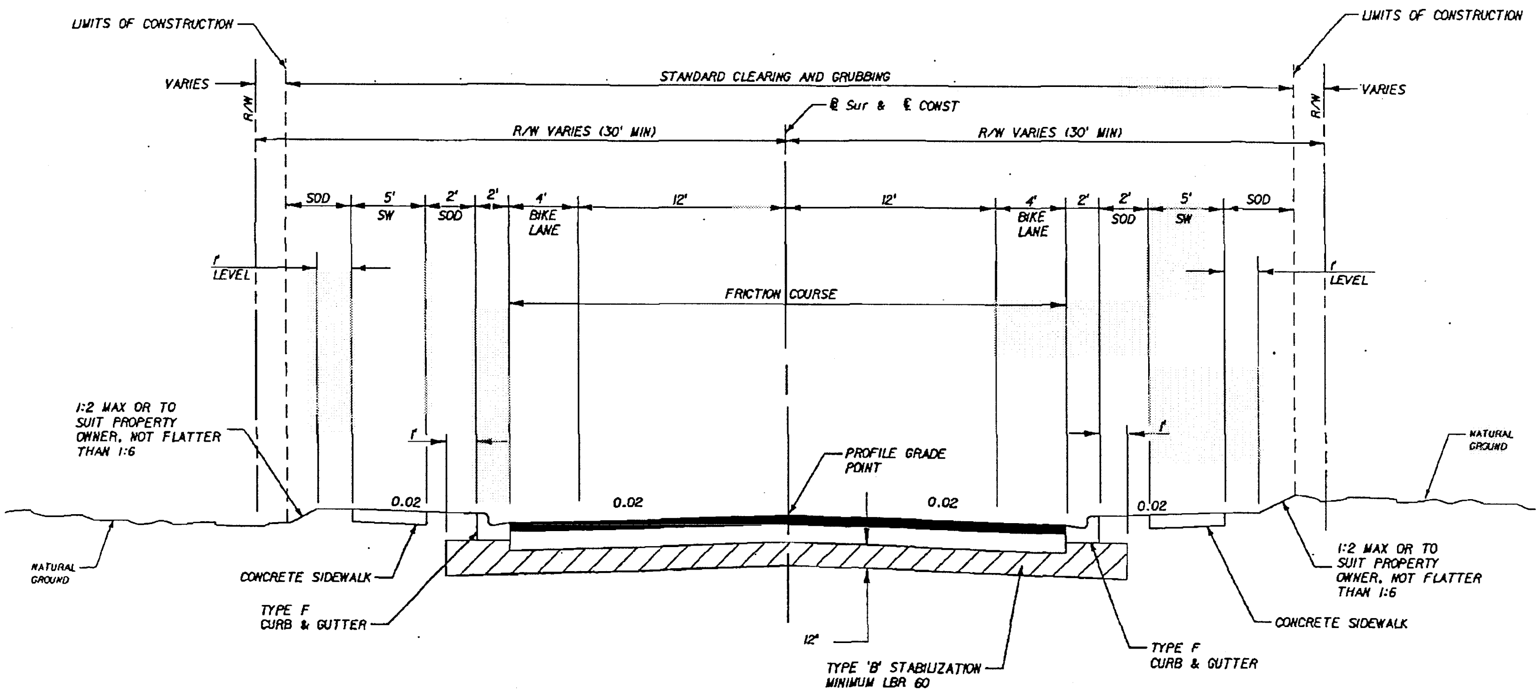

MAIN 1944' APPROACH AT 40 M.P.H.= 25.8 SECONDS (MINIMUM)
MAIN 1944' APPROACH AT 40 M.P.H.= 25.8 SECONDS (MINIMUM)
EAST TAMPA
NE
OHECO
SE
NW
SW
R/W
55' 0"
32' 0"
14' 0"
16' 0"
12' 0"
TREE
2' C&G
4' 0"
11' 0"
U.G. CABLE TV
16' 0"
96" RCP
2' GRASS STRIP
U.G. GAS LINE
U.G. WATER LINE
5' S.W.
4' BIKE LANE
NEW HOUSE AND HETER SERVICE.
50' 0"
5' S.W.
U.G. FIBER OPTIC (VERIZON)
65' 0"
56' 0"
38' 0"
12' 3"
30' CANT
36' GATE
12' 0"
21' 0"
15' 0"
90°
MAIN
17TH ST. W.
R&A
7' 3"
31' GATE
26' CANT.
60' 0"
82' 0"
U.G. CABLE TV
11' 0"
14' 0"
15' 0"
16' 0"
32' 0"
55' 0"
2' C&G
5' S.W.
GPS COORDINATES:
27° 31' 42" N
82° 34' 09" W
ELEV. 0'
NOTES:
1. WARNING DEVICES TO BE ACTIVIATED BY SAF 4000 GCP W/C.W.T.
2. O.H. POWER LINES ON THE SOUTHSIDE OF THE ROAD ARE 44' ABOVE THE TRACK.
3. HAND DIGGING WILL BE REQUIRED IN THE N.E. AND S.W. QUADRANTS DUE TO AN UNDERGROUND WATER LINE AND UNDER-GROUND UTILITY LINE RESPECTIVELY.
4. TREES IN THE N.E.QUADRANT NEED TO BE CUT/TRIMMED BY THE STATE OR COUNTY FOR PROPER SIGHT VISIBILITY.
APPROACH LENGTHS TABLE
DC, AFO, TYPE C, MOTION, CXT, OR OTHER
NORTHYARD RATE C.W.T.
SOUTHYARD RATE C.W.T.
STANDARD WARNING TIME
ROADWAY RATE TIME
CLEARANCE TIME
DOT TRAFFIC LIGHT SIMULTANEOUS PRECEPT TIME
DESIGNED WARNING TIME FOR TRAINS AT TIME TABLE SPEED
DOT TRAFFIC LIGHT ADVANCE PRECEPT TIME
CONTROL EQUIPMENT DECISION TIME
DESIGNED DETECTION TIME FOR TRAINS AT TIME TABLE SPEED
TIME TABLE MAXIMUM TRAIN SPEED IN MILES PER HOUR
BUFFER SPEED IN MILES PER HOUR
TOTAL WARNING SYSTEM DESIGN SPEED
APPROACH DISTANCE TO ISLAND EDGE IN FEET
HALF WIDTH OF ISLAND IN FEET
APPROXIMATE MILE POSTS FOR APPROACH CIRCUIT
AUTHORIZING AGENCY: NONE
DURATION OF REQUIREMENT: NONE
DESCRIPTION OF TIME (SEC.): NONE
FILE NAME: AZA91396.H01
DATE DRAWN: 01-11-2006
DRAWN BY: VINCENT ROGERS
CHECKED BY: MICHAEL ALLGOOD
SSC #: 0293
REVISION DATES
04-23-07 RJB
PRODUCED FOR:
CSX TRANSPORTATION
RAIL TRANSPORT GROUP ENGINEERING COMMUNICATIONS AND SIGNALS
PRODUCED BY:
SAFETRAN systems
7275 BAYMEADOWS WAY
SUITE 258
JACKSONVILLE, FL 32256
LEGEND
CSX ROW
R/R POLELINE
GAS
FIBER OPTIC
GUARD RAIL
O.H. POWER
FENCE
WATER
SEWER
METER SERVICE
POLE
FIRE PLUG
SEWER CAP
GAS VENT
STREET NAME: 17TH STREET WEST
CITY & STATE: PALMETTO, FL
PROJECT #: FL2005112
OP #: FL0944
DOT: 624728X
PROPOSED CROSSING LAYOUT
SCALE = 20:1

EXHIBIT B4



TYPICAL SECTION

17th STREET WEST

STA. 100+31.17 TO STA. 139+52.00

TRAFFIC DATA

DESIGN SPEED = 35 MPH

NEW CONSTRUCTION

OPTIONAL BASE GROUP 6 WITH
TYPE S-III STRUCTURAL COURSE (200 LBS/SY)
AND FRICTION COURSE FC-6 (160 LBS/SY) (RUBBER)

DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE | BY | NO.

MANATEE COUNTY FLORIDA

17th STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADETRIM
4919 Memorial Highway, Suite 200, Tampa FL 33634
Engineer of Record: Jeffrey D. Trim, PE No.: 42106
Certificate of Authorization No.: 3952

ENGINEER: Jeffrey D. Trim, PE No. 42106

Proj. No. 6035061

Dwg. Date

TYPICAL SECTION

SHEET NO.

PLOT DATE: 3/21/2007 DESIGN FILE: P:\Mia2880\Bin\CADD\details\gsrd01.dgn PLOT FILE: PLOTFILE

EXHIBIT B4

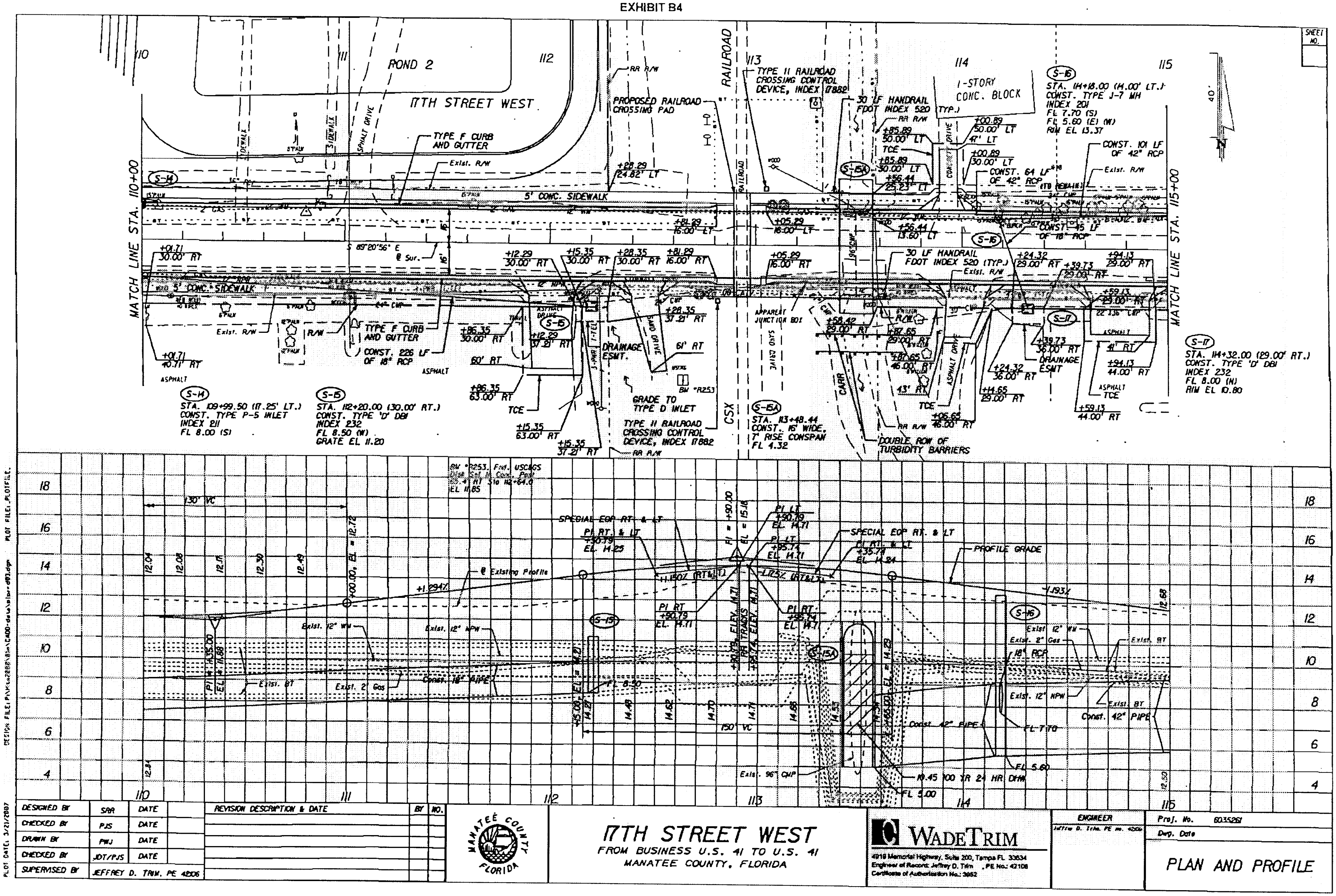
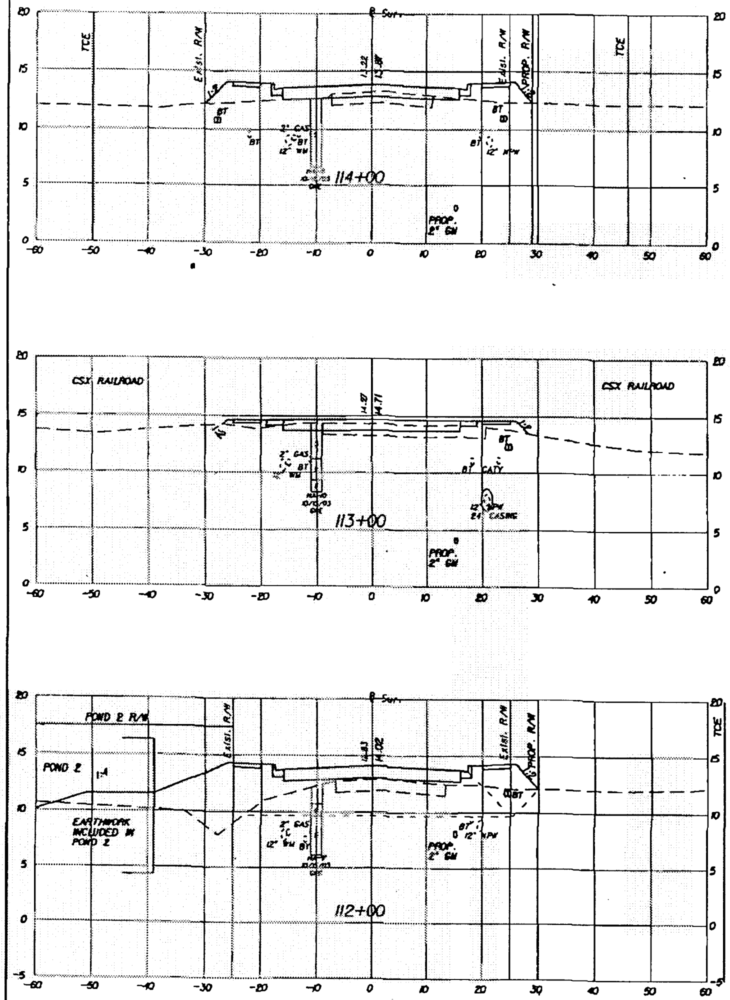
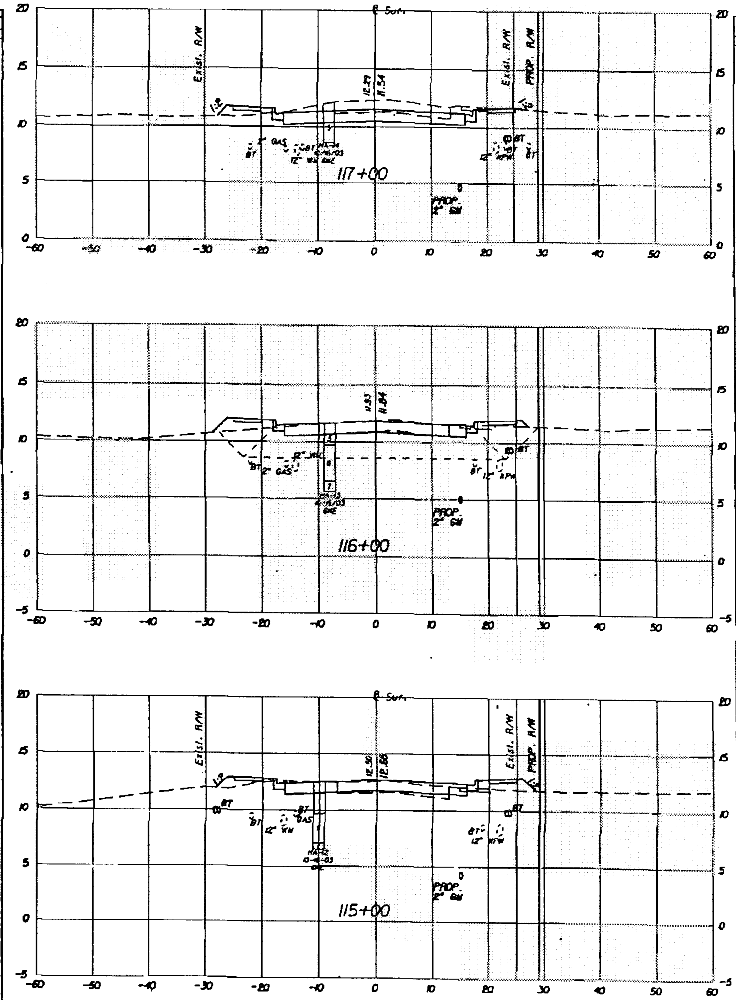

17TH STREET WEST
FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA
PLAN AND PROFILE
WADETRIM
MANATEE COUNTY FLORIDA
MATCH LINE STA. 110+00
MATCH LINE STA. 115+00
POND 2
RAILROAD
CSX
1-STORY CONC. BLOCK
5' CONC. SIDEWALK
TYPE F CURB AND GUTTER
PROPOSED RAILROAD CROSSING PAD
TYPE II RAILROAD CROSSING CONTROL DEVICE, INDEX 17882
30 LF HANDRAIL FDOT INDEX 520 (TYP.)
DOUBLE ROW OF TURBIDITY BARRIERS
STA. 109+99.50 (17.25' LT.) CONST. TYPE P-5 INLET INDEX 211 FL 8.00 (S)
STA. 112+20.00 (30.00' RT.) CONST. TYPE 'D' DBI INDEX 232 FL 8.50 (W) GRATE EL 11.20
STA. 113+48.44 CONST. 16' WIDE, 7' RISE CONSPAN FL 4.32
STA. 114+18.00 (14.00' LT.) CONST. TYPE J-7 MH INDEX 201 FL 7.70 (S) FL 5.60 (E) (W) RIM EL 13.37
STA. 114+32.00 (29.00' RT.) CONST. TYPE 'D' DBI INDEX 232 FL 8.00 (N) RIM EL 10.80
PROFILE GRADE
SPECIAL EOP RT. & LT
150' VC
130' VC
DESIGNED BY SRR
CHECKED BY PJS
DRAWN BY PWJ
CHECKED BY JDT/PJS
SUPERVISED BY JEFFREY D. TRIM, PE 42106
REVISION DESCRIPTION & DATE
Proj. No. 6035261
Dwg. Date

EXHIBIT B4



Station	Subsoil Exc. A	Subsoil Exc. V	Regular Exc. A	Regular Exc. V	Embankment A	Embankment V
114+00	0		20		42	
		0		100		122
113+00	0		34		24	
		206		100		250
112+00	111		20		111	
		206		104		222



Station	Subsoil Exc. A	Subsoil Exc. V	Regular Exc. A	Regular Exc. V	Embankment A	Embankment V
117+00	0		73		1	
		222		226		231
116+00	120		49		124	
		222		152		259
115+00	0		33		16	
		0		98		107

17th STREET WEST

DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17th STREET WEST
FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADETRIM
4919 Memorial Highway, Suite 200, Tampa FL 33634
Engineer of Record: Jeffrey D. Trim, PE No.: 42106
Certificate of Authorization No.: 3962

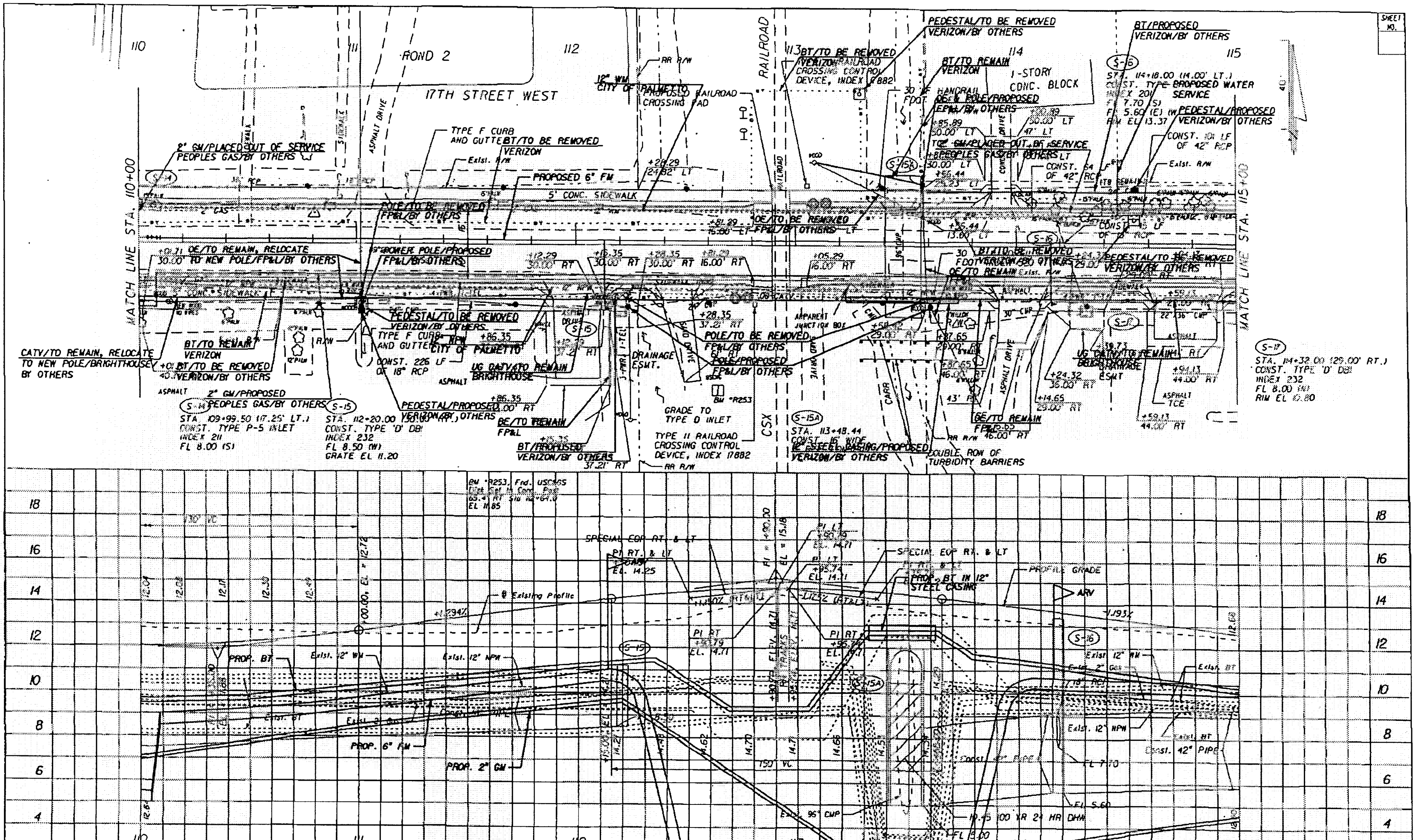
ENGINEER: Jeffrey D. Trim, PE No. 42106
Proj. No. 6035261
Dwg. Date

CROSS SECTIONS

SHEET NO.

PLOT DATE: 3/21/2007 DESIGN FILE: P:\M\a2880\61\m\CADD-data\x-drc-d03.dgn PLOT FILE: PLOTFILE.

EXHIBIT B4



DESIGNED BY	SPR	DATE
CHECKED BY	PJS	DATE
DRAWN BY	PWJ	DATE
CHECKED BY	JDT/PJS	DATE
SUPERVISED BY	JEFFREY D. TRIM, PE 42106	

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADETRIM
4819 Memorial Highway, Suite 200, Tampa FL 33634
Engineer of Record: Jeffrey D. Trim, PE No.: 42106
Certificate of Authorization No.: 3952

ENGINEER
Jeffrey D. Trim, PE no. 42106

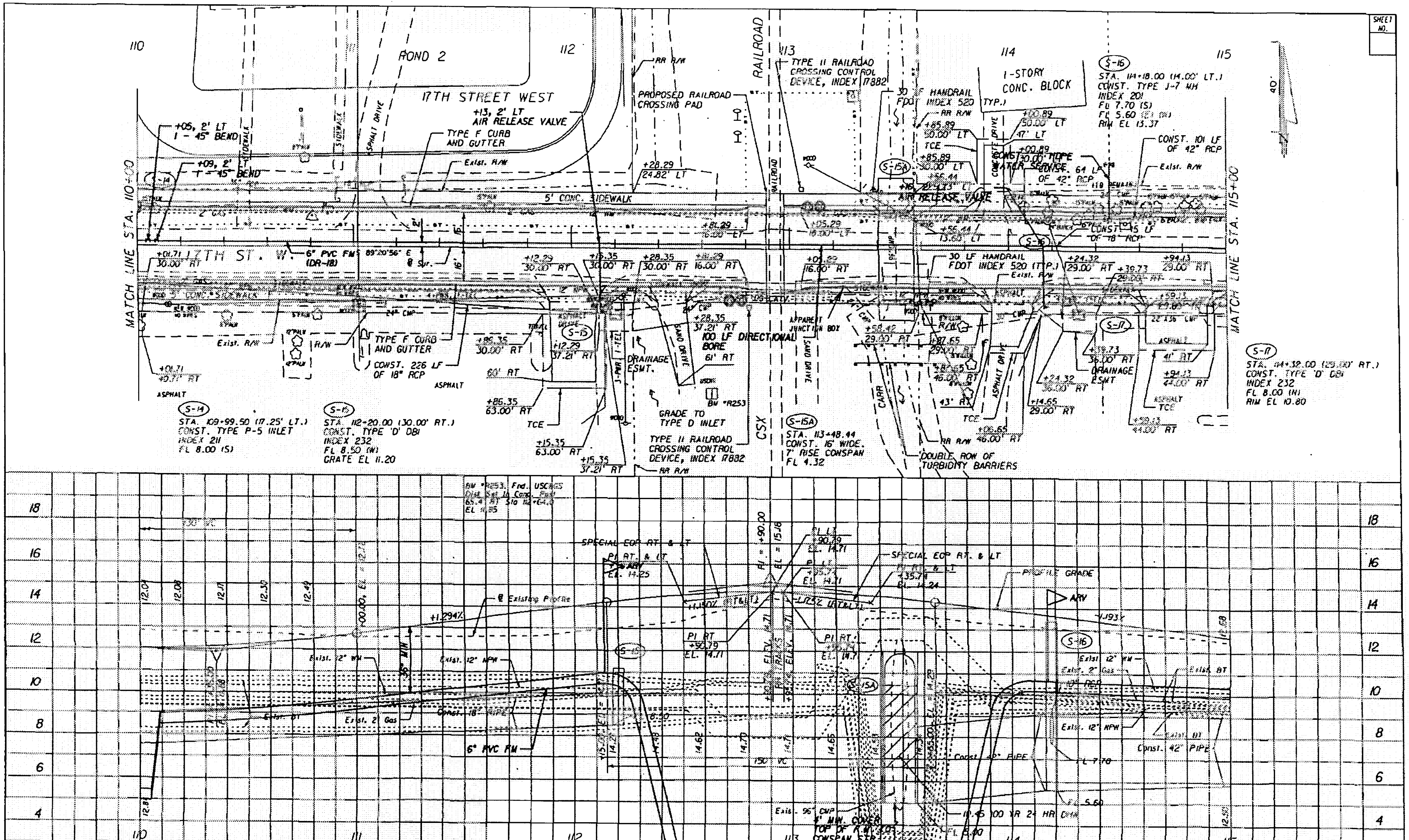
Proj. No. 6035261
Dwg. Date

UTILITY ADJUSTMENTS

SHEET NO.

PLOT DATE: 3/21/2007

EXHIBIT B4



DESIGNED BY	SRR	DATE		
CHECKED BY	PJS	DATE		
DRAWN BY	PWJ	DATE		
CHECKED BY	JDT/PJS	DATE		
SUPERVISED BY	JEFFREY D. TRIM, PE 42106			

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

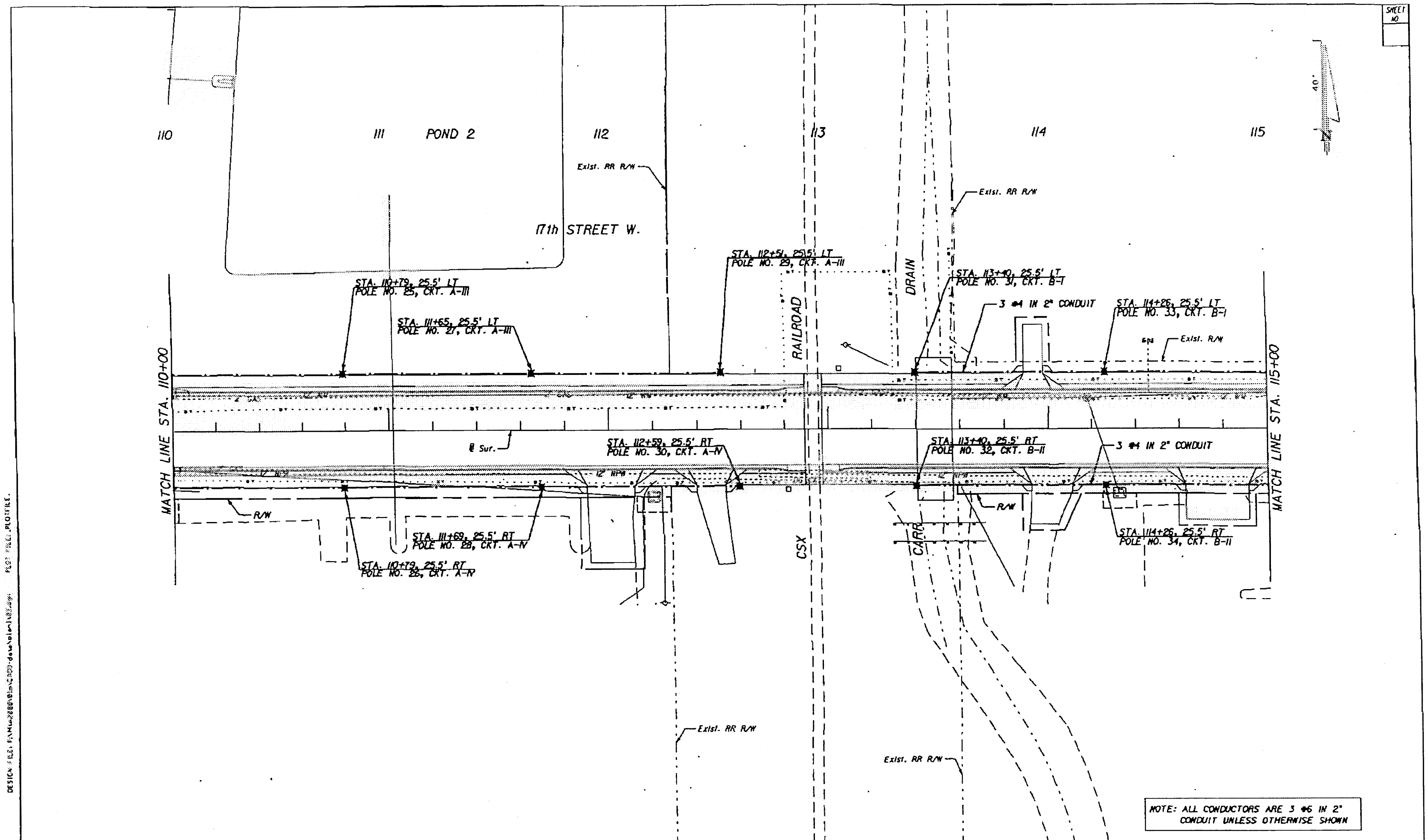
WADETRIM
4919 Memorial Highway, Suite 200, Tampa FL 33634
Engineer of Record: Jeffrey D. Trim , PE No.: 42106
Certificate of Authorization No.: 3352

ENGINEER
Jeffrey D. Trim, PE No. 42106

Proj. No. 6035261
Dwg. Date

MANATEE COUNTY UTILITIES

EXHIBIT B4



NOTE: ALL CONDUCTORS ARE 3 #6 IN 2" CONDUIT UNLESS OTHERWISE SHOWN

DESIGNED BY	SRR	DATE	
CHECKED BY	PJS	DATE	
DRAWN BY	PWJ	DATE	
CHECKED BY	JDT/PJS	DATE	
SUPERVISED BY	JEFFREY D. TRIM, PE 42106		

REVISION DESCRIPTION & DATE	BY	NO.

MANATEE COUNTY FLORIDA

17TH STREET WEST

FROM BUSINESS U.S. 41 TO U.S. 41
MANATEE COUNTY, FLORIDA

WADETRIM
4919 Memorial Highway, Suite 200, Tampa FL 33634
Engineer of Record: Jeffrey D. Trim, PE No.: 42106
Certificate of Authorization No.: 3952

ENGINEER
Jeffrey D. Trim, PE No. 42106

Proj. No. 6035261
Dwg. Date

LIGHTING

SHEET NO.

PLOT DATE: 3/21/2007 DESIGN FILE: [illegible] PLOT FILE: PLOTFILE

EXHIBIT C

CSXT SPECIAL PROVISIONS

DEFINITIONS:

As used in these Special Provisions, all capitalized terms shall have the meanings ascribed to them by the Agreement, and the following terms shall have the meanings ascribed to them below:

"CSXT" shall mean CSX Transportation, Inc., its successors and assigns.

"CSXT Representative" shall mean the authorized representative of CSX Transportation, Inc.

"Agreement" shall mean the Agreement between CSXT and Agency dated as of _____, as amended from time to time.

"Agency" shall mean the Manatee County Board of County Commissioners.

"Agency Representative" shall mean the authorized representative of Manatee County Board of County Commissioners.

"Contractor" shall have the meaning ascribed to such term by the Agreement.

"Work" shall mean the Project as described in the Agreement.

I. AUTHORITY OF CSXT ENGINEER

The CSXT Representative shall have final authority in all matters affecting the safe maintenance of CSXT operations and CSXT property, and his or her approval shall be obtained by the Agency or its Contractor for methods of construction to avoid interference with CSXT operations and CSXT property and all other matters contemplated by the Agreement and these Special Provisions.

II. INTERFERENCE WITH CSXT OPERATIONS

A. Agency or its Contractor shall arrange and conduct its work so that there will be no interference with CSXT operations, including train, signal, telephone and telegraphic services, or damage to CSXT's property, or to poles, wires, and other facilities of tenants on CSXT's Property or right-of-way. Agency or its Contractor shall store materials so as to prevent trespassers from causing damage to trains, or CSXT Property. Whenever Work is likely to affect the operations or safety of trains, the method of doing such Work shall first be submitted to the CSXT Representative for approval, but such approval shall not relieve Agency or its Contractor from liability in connection with such Work.

B. If conditions arising from or in connection with the Project require that immediate and unusual provisions be made to protect train operation or CSXT's property, Agency or its Contractor shall make such provision. If the CSXT Representative determines that such provision is insufficient, CSXT may, at the expense of Agency or its Contractor, require or provide such provision as may be deemed necessary, or cause the Work to cease immediately.

III. NOTICE OF STARTING WORK. Agency or its Contractor shall not commence any work on CSXT Property or rights-of-way until it has complied with the following conditions:

A. Notify CSXT in writing of the date that it intends to commence Work on the Project. Such notice must be received by CSXT at least ten business days in advance of the date Agency or its Contractor proposes to begin Work on CSXT property. The notice must refer to this Agreement by date. If flagging service is required, such notice shall be submitted at least thirty (30) business days in advance of the date scheduled to commence the Work.

B. Obtain authorization from the CSXT Representative to begin Work on CSXT property, such authorization to include an outline of specific conditions with which it must comply.

C. Obtain from CSXT the names, addresses and telephone numbers of CSXT's personnel who must receive notice under provisions in the Agreement. Where more than one individual is designated, the area of responsibility of each shall be specified.

IV. WORK FOR THE BENEFIT OF THE CONTRACTOR

A. No temporary or permanent changes to wire lines or other facilities (other than third party fiber optic cable transmission systems) on CSXT property that are considered necessary to the Work are anticipated or shown on the Plans. If any such changes are, or become, necessary in the opinion of CSXT or Agency, such changes will be covered by appropriate revisions to the Plans and by preparation of a force account estimate. Such force account estimate may be initiated by either CSXT or Agency, but must be approved by both CSXT and Agency. Agency or Contractor shall be responsible for arranging for the relocation of the third party fiber optic cable transmission systems, at no cost or expense to CSXT.

B. Should Agency or Contractor desire any changes in addition to the above, then it shall make separate arrangements with CSXT for such changes to be accomplished at the Agency or Contractor's expense.

V. HAUL ACROSS RAILROAD

A. If Agency or Contractor desires access across CSXT property or tracks at other than an existing and open public road crossing in or incident to construction of the Project, the Agency or Contractor must first obtain the permission of CSXT and shall execute a license agreement or right of entry satisfactory to CSXT, wherein Agency or Contractor agrees to bear all costs and liabilities related to such access.

B. Agency and Contractor shall not cross CSXT's property and tracks with vehicles or equipment of any kind or character, except at such crossing or crossings as may be permitted pursuant to this section.

VI. COOPERATION AND DELAYS

A. Agency or Contractor shall arrange a schedule with CSXT for accomplishing stage construction involving work by CSXT. In arranging its schedule, Agency or Contractor shall ascertain, from CSXT, the lead time required for assembling crews and materials and shall make due allowance therefor

B. Agency or Contractor may not charge any costs or submit any claims against CSXT for hindrance or delay caused by railroad traffic; work done by CSXT or other delay incident to or necessary for safe maintenance of railroad traffic; or for any delays due to compliance with these Special Provisions.

C. Agency and Contractor shall cooperate with others participating in the construction of the Project to the end that all work may be carried on to the best advantage.

D. Agency and Contractor understand and agree that CSXT does not assume any responsibility for work performed by others in connection the Project. Agency and Contractor further understand and agree that they shall have no claim whatsoever against CSXT for any inconvenience, delay or additional cost incurred by Agency or Contractor on account of operations by others.

VII. STORAGE OF MATERIALS AND EQUIPMENT

Agency and Contractor shall not store their materials or equipment on CSXT's property or where they may potentially interfere with CSXT's operations, unless Agency or Contractor has received CSXT Representative's prior written permission. Agency and Contractor understand and agree that CSXT will not be liable for any damage to such materials and equipment from any cause and that CSXT may move, or require Agency or Contractor to move, such material and equipment at Agency's or Contractor's sole expense. To minimize the possibility of damage to the railroad tracks resulting from the unauthorized use of equipment, all grading or other construction equipment that is left parked near the tracks unattended by watchmen shall be immobilized to the extent feasible so that it cannot be moved by unauthorized persons.

VIII. CONSTRUCTION PROCEDURES

A. General

1. Construction work on CSXT property shall be subject to CSXT's inspection and approval.
2. Construction work on CSXT property shall be in accord with CSXT's written outline of specific conditions and with these Special Provisions.
3. Contractor shall observe the terms and rules of the CSXT Safe Way manual, which Agency and Contractor shall be required to obtain from CSXT, and in accord with any other instructions furnished by CSXT or CSXT's Representative.

B. Blasting

1. Agency or Contractor shall obtain CSXT Representative's and Agency Representative's prior written approval for use of explosives on or adjacent to CSXT property. If permission for use of explosives is granted, Agency or Contractor must comply with the following:

   a. Blasting shall be done with light charges under the direct supervision of a responsible officer or employee of Agency or Contractor.

b. Electric detonating fuses shall not be used because of the possibility of premature explosions resulting from operation of two-way train radios.

c. No blasting shall be done without the presence of an authorized representative of CSXT. At least 10 days' advance notice to CSXT Representative is required to arrange for the presence of an authorized CSXT representative and any flagging that CSXT may require.

d. Agency or Contractor must have at the Project site adequate equipment, labor and materials, and allow sufficient time, to (i) clean up (at Agency's expense) debris resulting from the blasting without any delay to trains; and (ii) correct (at Agency's expense) any track misalignment or other damage to CSXT's property resulting from the blasting, as directed by CSXT Representative, without delay to trains. If Agency's or Contractor's actions result in delay of any trains, including Amtrak passenger trains, Agency shall bear the entire cost thereof.

e. Agency and Contractor shall not store explosives on CSXT property.

2. CSXT Representative will:

a. Determine the approximate location of trains and advise Agency or Contractor of the approximate amount of time available for the blasting operation and clean-up.

b. Have the authority to order discontinuance of blasting if, in his or her opinion, blasting is too hazardous or is not in accord with these Special Provisions.

IX. MAINTENANCE OF DITCHES ADJACENT TO CSXT TRACKS

Agency or Contractor shall maintain all ditches and drainage structures free of silt or other obstructions that may result from their operations. Agency or Contractor shall provide erosion control measures during construction and use methods that accord with applicable state standard specifications for road and bridge construction, including either (1) silt fence; (2) hay or straw barrier; (3) berm or temporary ditches; (4) sediment basin; (5) aggregate checks; and (6) channel lining. All such maintenance and repair of damages due to Agency's or Contractor's operations shall be performed at Agency's expense.

X. FLAGGING / INSPECTION SERVICE

A. CSXT has sole authority to determine the need for flagging required to protect its operations and property. In general, flagging protection will be required whenever Agency or Contractor or their equipment are, or are likely to be, working within fifty (50) feet of live track or other track clearances specified by CSXT, or over tracks.

B. Agency shall reimburse CSXT directly for all costs of flagging that is required on account of construction within CSXT property shown in the Plans, or that is covered by an approved plan revision, supplemental agreement or change order.

C. Agency or Contractor shall give a minimum of 10 days' advance notice to CSXT Representative for anticipated need for flagging service. No work shall be undertaken until the flag person(s) is/are at the job site. If it is necessary for CSXT to advertise a flagging job for bid, it may take up to 90-days to obtain this service, and CSXT shall not be liable for the cost of delays attributable to obtaining such service.

D. CSXT shall have the right to assign an individual to the site of the Project to perform inspection service whenever, in the opinion of CSXT Representative, such inspection may be necessary. Agency shall reimburse CSXT for the costs incurred by CSXT for such inspection service. Inspection service shall not relieve Agency or Contractor from liability for its Work.

E. CSXT shall render invoices for, and Agency shall pay for, the actual pay rate of the flagpersons and inspectors used, plus standard additives, whether that amount is above or below the rate provided in the Estimate. If the rate of pay that is to be used for inspector or flagging service is changed before the work is started or during the progress of the work, whether by law or agreement between CSXT and its employees, or if the tax rates on labor are changed, bills will be rendered by CSXT and paid by Agency using the new rates. Agency and Contractor shall perform their operations that require flagging protection or inspection service in such a manner and sequence that the cost of such will be as economical as possible.

XI. UTILITY FACILITIES ON CSXT PROPERTY

Agency shall arrange, upon approval from CSXT, to have any utility facilities on or over CSXT Property changed as may be necessary to provide clearances for the proposed trackage.

XII. CLEAN-UP

Agency or Contractor, upon completion of the Project, shall remove from CSXT's Property any temporary grade crossings, any temporary erosion control measures used to control drainage, all machinery, equipment, surplus materials, falsework, rubbish, or temporary buildings belonging to Agency or Contractor. Agency or Contractor, upon completion of the Project, shall leave CSXT Property in neat condition, satisfactory to CSXT Representative.

XIII. FAILURE TO COMPLY

If Agency or Contractor violate or fail to comply with any of the requirements of these Special Provisions, (a) CSXT may require Agency and/or Contractor to vacate CSXT Property; and (b) CSXT may withhold monies due Agency and/or Contractor; (c) CSXT may require Agency to withhold monies due Contractor; and (d) CSXT may cure such failure and the Agency shall reimburse CSXT for the cost of curing such failure.

EXHIBIT D

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 - FL0944

ESTIMATE SUBJECT TO REVISION AFTER: 4/12/2008 DOT NO.: 624 728X
CITY: Palmetto COUNTY: Manatee STATE: FL
DESCRIPTION: Upgrade RR x-ing surface w/ concrete panels & SIGNALS @ 17th Street West

DIVISION: Jacksonville SUB-DIV: Palmetto MILE POST: AZA913.96
AGENCY PROJECT NUMBER: __

	PRELIMINARY ENGINEERING:						
200	Labor (Non Contract)			Days @	$ 270.00	$	-
200	Additive	42.41%				$	-
230	Expenses					$	-
212	Contracted & Administrative Engineering Services					$	1,500
	Subtotal					$	1,500
	CONSTRUCTION ENGINEERING/INSPECTION:						
200	Labor (Non Contract)		3	Days @	$ 270.00	$	810
200	Additive	42.41%				$	344
230	Expenses					$	141
212	Contracted & Administrative Engineering Services					$	6,877
	Subtotal					$	8,172
	FLAGGING SERVICE: (Contract Labor)						
070	Labor (Conductor-Flagman)			Days @	$ -	$	-
050	Labor (Foreman/Inspector)		10	Days @	$ 252.00	$	2,520
070	Additive	132.61% (Transportation Department)				$	-
050	Additive	133.83% (Engineering Department)				$	3,373
230	Per Diem	(Engineering Department)	10	Days @	$ 75.00	$	750
230	Expenses		10	Days @	$ 45.00	$	450
	Subtotal					$	7,093
	SIGNAL & COMMUNICATIONS WORK:	(Details Attached)				$	194,203
	TRACK WORK: (Details Attached)					$	120,493
	ACCOUNTING & BILLING:						
040	Labor		21	Days @	$ 200.00	$	4,200
040	Additive	181.68%				$	7,631
	Subtotal					$	11,831
	PROJECT SUBTOTAL					$	343,291
900	**CONTINGENCIES:**	10.00%				$	34,329
	GRAND TOTAL **********					$	377,620
	DIVISION OF COST:						
	Agency	100.00%				$	377,620
	Railroad					$	-
	TOTAL **********					$	377,620

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Assistant Chief Engineer Public Projects--Jacksonville, Florida
Estimated prepared by: W.Westerman HDR Engineering, Inc. (904) 598-8974
DATE: 3/13/2007 REVISED: 10/15/2007
Form Last Revised: May 25, 2006 Project Summary Sheet

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 - FL0944
Pub EB - 3 GFP

	TRACK: LABOR						
50	Remove Existing Crossing	88	MAN-HRS	$	31.50	$	2,772
50	Construct track panel (136# rail)	138	MAN-HRS	$	21.00	$	2,898
50	Install track panel (136# rail)	108	MAN-HRS	$	31.50	$	3,402
50	Install OTM	24	MAN-HRS	$	31.50	$	756
50	Install cross-ties (approach)	50	MAN-HRS	$	31.50	$	1,575
50	Install transition rail	48	MAN-HRS	$	31.50	$	1,512
50	Install offset or joint bars	18	MAN-HRS	$	31.50	$	567
50	Install welds (Electric flash butt type)	48	MAN-HRS	$	31.50	$	1,512
50	Install field welds (Thermite type)	50	MAN-HRS	$	31.50	$	1,575
50	Install ballast	26	MAN-HRS	$	31.50	$	819
50	Line & surface	98	MAN-HRS	$	31.50	$	3,087
50	Install CSX Hvy. Duty 9' panels	80	MAN-HRS	$	31.50	$	2,520
50	Clean-Up & disposal	20	MAN-HRS	$	31.50	$	630
50	Additive 133.83%					$	31,617
230	Per Diem	80	MAN-DAY	$	90.00	$	7,200
	Subtotal					$	62,442
	TRACK: MATERIAL						
220	Cross Ties, Main Line (Track panel)	28	EA	$	42.00	$	1,176
220	Cross Ties, Approach	100	EA	$	42.00	$	4,200
220	Cross Ties, 10' length	52	EA	$	50.00	$	2,600
220	Rail, 136#RE, New	240	LF	$	19.00	$	4,560
220	Misc. OTM	1	LT	$	5,000.00	$	5,000
220	Ballast (by truck)	148	NT	$	15.50	$	2,294
220	Field Welds (Thermite) offset 115#/100#	4	EA	$	100.00	$	400
220	Field Welds (Thermite) offset 136#/115#	4	EA	$	100.00	$	400
220	Buffer rail (115#)	4	EA	$	800.00	$	3,200
220	Joint, Std. insulated	0	EA	$	180.00	$	-
220	Joint, offset (115#/100#)	4	PR	$	180.00	$	720
220	Joint, offset (136#/115#)	4	PR	$	180.00	$	720
210	Omni 9' IC hvy duty conc. Crossing panel (for 136# rail)	63	TF	$	225.00	$	14,175
210	End caps (concrete surface panels)	1	SET	$	550.00	$	550
210	Sales Tax on Material 7.00%					$	2,423
210	Material Handling 5.00%					$	1,731
	Subtotal					$	44,149
	CONTRACT:						
215	Asphalt Paving (In Place - by County)	0	NT	$	-	$	-
215	Sawcut pavement (by County)	70	LF	$	8.00	$	560
241	Disposal of Waste Materials	34	TF	$	12.00	$	408
215	Electric flash butt welds	0	DAY	$	800.00	$	-
215	Maintenance of Traffic/Barricades (by County)	0	DAY	$	-	$	-
	Subtotal					$	968
241	**EQUIPMENT RENTAL:**						
	Subtotal					$	13,409

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 - FL0944
Pub EB - 3 GFP

50	WORK TRAIN:	0	DAY	$ 2,100.00	$	-
	Subtotal				$	-
	SALVAGE:					
228	Rail	5	NT	$ 65.00	$	(325)
228	OTM	2	NT	$ 75.00	$	(150)
	Subtotal				$	(475)
	SIGNAL WORK:					
210	Material - Field & Consumables				$	94,771
210	Material - Sales Tax				$	6,634
220	Material - Shop				$	-
60	Construction Labor				$	20,099
65	Shop Labor				$	800
230	Per Diem				$	8,715
200	RR Engineering,Preliminary				$	4,616
200	RR Engineering,Construction				$	3,015
60	Additives to Construction Labor				$	16,332
65	Additives to Shop Labor				$	760
200	Additives to Engineering				$	3,000
241	Equipment Expense				$	11,050
241	Waste Management				$	204
212	Contract Engineering				$	15,638
211	Freight				$	6,068
216	AC Power Service				$	2,500
228	Salvage				$	1
900	Other					
	Subtotal				$	194,203
	ACCOUNTING & BILLING:					
40	Labor	21	Days @	$ 200.00	$	4,200
40	Additive 181.68%				$	7,631
	Subtotal				$	11,831
	PROJECT SUBTOTAL:				$	343,291
900	CONTINGENCIES: 10.00%				$	34,329
	GRAND TOTAL **********				$	377,620

DIVISION OF COST:

Agency	100.00%	$	377,620
Railroad	0.00%	$	-
	TOTAL **********	$	377,620

NOTE: Estimate is based on FULL CROSSING CLOSURE during work by Railroad Forces.

This estimate has been prepared based on site conditions, anticipated work duration periods, material prices, labor rates, manpower and resource availability, and other factors known as of the date prepared. The actual cost for CSXT work may differ based upon the agency's requirements, their contractor's work procedures, and/or other conditions that become apparent once construction commences or during the progress of the work

Office of Assistant Chief Engineer Public Projects--Jacksonville, Florida

Estimated prepared by: W.Westerman HDR Engineering, Inc. (904) 598-8974

DATE: 3/13/2007 REVISED: 10/15/2007

EXHIBIT D

ACCT. CODE : 709 - FL0944
Pub EB - 3 GFP

ESTIMATE SUBJECT TO REVISION AFTER: 4/12/2008 DOT NO.: 624 728X
CITY: Palmetto COUNTY: Manatee STATE: FL
DESCRIPTION: Upgrade RR x-ing surface w/ concrete panels & SIGNALS @ 17th Street West

DIVISION: Jacksonville SUB-DIV: Palmetto MILEPOST: AZA913.96
DRAWING NO.: 624 728X DRAWING DATE: 8/14/2006 Southern
AGENCY PROJECT NUMBER: __

	SIGNAL WORK:		
210	Material - Field & Consumables	$	94,771
210	Material - Sales Tax	$	6,634
220	Material - Shop	$	-
60	Construction Labor	$	20,099
65	Shop Labor	$	800
230	Per Diem	$	8,715
200	RR Engineering,Preliminary	$	4,616
200	RR Engineering,Construction	$	3,015
60	Additives to Construction Labor	$	16,332
65	Additives to Shop Labor	$	760
200	Additives to Engineering	$	3,000
241	Equipment Expense	$	11,050
241	Waste Management	$	204
212	Contract Engineering	$	15,638
211	Freight	$	6,068
216	AC Power Service	$	2,500
228	Salvage	$	1
900	Other	$	-
	Subtotal	$	194,203

EXHIBIT D

CSX TRANSPORTATION, INC.
FORCE ACCOUNT ESTIMATE

ACCT. CODE : 709 -
Pub EB - 3 GFP

ESTIMATE SUBJECT TO REVISION AFTER: 4/12/2008 DOT NO.: 624 728X
CITY: Palmetto COUNTY: Manatee STATE: FL
DESCRIPTION: Upgrade RR x-ing surface w/ concrete panels & SIGNALS @ 17th Street West

DIVISION: Jacksonville SUB-DIV: Palmetto MILEPOST: AZA913.96
DRAWING NO.: 624 728X DRAWING DATE: 8/14/2006
AGENCY PROJECT NUMBER: __

	EQUIPMENT RENTAL:				
241	Gang Truck	7	DAY	$ 180.40	$ 1,263
241	Boom Truck	4	DAY	$ 304.16	$ 1,217
241	Surfacing gang truck	4	DAY	$ 304.16	$ 1,217
241	Dump Truck	7	DAY	$ 283.04	$ 1,981
241	Backhoe	7	DAY	$ 141.84	$ 993
241	Welding truck	4	DAY	$ 180.40	$ 722
241	Compressor	7	DAY	$ 113.52	$ 795
241	Air Drill/Wrench	7	DAY	$ 11.52	$ 81
241	Tie Tamper (CAT)		DAY	$ 1,580.16	$ -
241	Tie Tamper (Production)	4	DAY	$ 785.60	$ 3,142
241	Trackhoe		WK	$ 1,200.00	$ -
241	Ballast Regulator	4	DAY	$ 285.60	$ 1,142
241	Plasser welder	3	DAY	$ 285.60	$ 857
241	Roller		DAY	$ 39.12	$ -
241	Barricades		DAY	$ -	$ -
	Subtotal				$ 13,409

EXHIBIT D

Estimate No. 111852
CSX Transportation

17th St. West - Relocation of existing automatic warning devices (CFLS&G) at 17th Street West due to the widening of the roadway.

Palmetto, FL

DOT: 624728X OP: FL0944 CSX Project: FL2005112

Summary

Material	$ 94,771
Sales Tax	$ 6,634
Labor:	
Construction Labor (83 man-days)	$ 20,099
Shop Labor (5 man-days)	$ 800
Subsistence (83 man-days)	$ 8,715
Railroad Engineering, Preliminary	$ 4,616
Railroad Engineering, Construction	$ 3,015
Additives to Construction Labor	$ 16,332
Additives to Shop Labor	$ 760
Additives to Engineering	$ 3,000
Equipment Expenses (17 work days)	$ 11,050
Waste Management (17 work days)	$ 204
Contract Engineering	$ 15,638
Freight	$ 6,068
Poleline Removal	$ 0
AC Power Service	$ 2,500
Salvage	$ 1
TOTAL ESTIMATE COST	$ 194,203

Date: 04/23/2007
Estimated By: David Knopsnider

NOTE: This estimate should be considered void one year from date of estimate.

EXHIBIT D

Shop Material List for CSX Project: FL2005112 (Effective: 04/23/2007)
Relocation of existing automatic warning devices
Palmetto, FL - AZA 913.96

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-0003386	1	6781.00	1	6781.00	HOUSE 6X6L ALUM INCLUDES 5 SHELFS, FARADAY CLOSET, 240V
020-0017120	1	11.00	6	66.00	BLOCK TERMINAL 12 POST SINGLE STRIP AAR 14.1.6 WITH 1 AAR
020-0017125	1	3.50	6	21.00	BLOCK TERMINAL 2 POST AAR 14.1.8 WITH 1 AAR 14.1.11
020-0018234	1	30.69	1	30.69	CABLE CONVERTER PROTOCOL/MEDIA WAYSIDE ACCESS
020-0021965	1	8.96	1	8.96	EXTRACTOR DWG 59688-4 TERMINAL GRS CAT P3-308 REF
020-0022651	1	47.04	1	47.04	PLUGBOARD KIT TYPE B1 OR ST1 RELAY ASSEMBLY WITH 12 EACH
020-0022701	1	71.18	30	2135.40	ARRESTER LPC 15012-1 0-30V DC OR 0-24V AC RATED AT 15 AMP
020-0025595	1	17.42	1	17.42	WRENCH DWG 55393-3 GR1 "E" TERMINAL POST NUT GRS CAT
020-0053360	1	415.52	3	1246.56	CHARGER BATTERY ELC 12/20 S 20 AMP 10-19.9 VDC ROTARY SW
020-0053510	1	233.11	1	233.11	KIT 240V AC EMERGENCY GENERATOR CABLE AND
020-0055602	1	11.39	1	11.39	RELAY POTTER BRUMFIELD KHAU17D12-12V 160 OHMS
020-0056514	1	9.32	4	37.28	SOCKET RELAY POTTER & BRUMFIELD 27E166 NEWARK
020-0064060	1	68.32	2	136.64	PLATE MOUNTING FOR 2 TYPE KHAU RELAY SOCKETS ON GRS B1
020-0660077	1	568.96	1	568.96	ARRESTER GE 9L10KAC213 FOR 240 VOLT SINGLE PHASE 3 WIRE
020-0770060	1	12.32	8	98.56	ARRESTER US&S N451552-0201 TRACK SERIES RED LABEL USGA
020-0770105	1	21.28	2	42.56	ARRESTER HARMON 202217-000 AGE-1 TRACK AIR GAP EQUALIZER
020-1940055	1	8.50	1	8.50	CONTAINER CIRCUIT PRINT 24" SCHEDULE 20 4" PVC PIPE WITH
020-2503090	1	940.56	1	940.56	CONVERTER PROTOCOL/MEDIA WAYSIDE ACCESS GATEWAY (WAG)
020-2503206	1	4128.99	1	4128.99	PREDICTOR SAFETRAN GCP-4000 SEAR-III AUTO TEST PKG FOR
020-2503210	1	14205.02	1	14205.02	PREDICTOR SAFETRAN GCP-4000 2-TRACK DUAL CASE W/RECORDER
020-2901190	1	11.39	3	34.17	RELAY POTTER BRUMFIELD KHAU17A12-120 3900 OHMS
020-3430130	1	358.40	1	358.40	RELAY SAFETRAN 400023 500 OHMS CONTACTS 6FB HEAVY DUTY
020-3652615	1	31.44	1	31.44	RESISTOR ADJUSTABLE 0.340 TO 3.00 OHMS 2.24A 15W SAFETRAN
020-4200100	1	6.04	3	18.12	CONNECTOR BUS 1" CENTERS 1/2" X 36" 18 GAGE PUNCHED 1/4" X
020-4200340	1	1.28	8	10.24	LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED

EXHIBIT D

Shop Material List for CSX Project: FL2005112 (Effective: 04/23/2007)
Relocation of existing automatic warning devices
Palmetto, FL - AZA 913.96

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-4200350	1	1.68	13	21.84	LINK TEST ASSEMBLY 2-3/8" CENTERS COMPLETE WITH
020-8000067	1	14.49	2	28.98	LOCK AMERICAN H10SIGRA CSX SIGNAL PADLOCK WITH BLACK
022-8005155	1	305.97	1	305.97	KIT SINGLE LOCATION INCLUDES ALL MATERIAL FOR A CSX
		Total Cost: $		**31,574.8**	

EXHIBIT D

Field Material List for CSX Project: FL2005112 (Effective: 04/23/2007)
Relocation of existing automatic warning devices
Palmetto, FL - AZA 913.96

Catalog Num	Cond	Unit Price	Qty	Cost	Description
N/A		13196.21	1	13196.21	26' Aluminum Cantilever
N/A		13965.89	1	13965.89	30' Aluminum Cantilever
020-0013686	1	33.56	1	33.56	BOOTLEG KIT CSX RAIL CONN W/15 FT 3/16 IN BDSTRAND 6/64
020-0013908	1	5.06	350	1771.00	CABLE UG COMPOSITE 19 CONDUCTOR INCLUDES 13
020-0014605	1	2889.00	2	5778.00	FOUNDATION CONCRETE GCWD 5' - 10" SECT PRECAST ASSEMBLY
020-0025145	1	465.70	2	931.40	SHUNT ENCLOSURE INTERRAIL P/N IRS-SE8A WAYSIDE MOUNT
020-0053220	1	1.82	150	273.00	CABLE POWER UG 3 COND NO 6 AWG, SHOW LENGTH ON EACH
020-0054075	1	1001.00	2	2002.00	GATE GARD NORMAL MOVEMENT COMPLETE WITH SHEAR PIN AND
020-0055425	1	60.72	6	364.32	BRACKET SIGN 12" MAST W/SPLIT BOLTS FOR ALL SIGNS REQUIRING
020-0056663	1	4688.93	2	9377.86	SIGNAL 02286-L GCWD GATE ASSY DWG SS222 INCL ADJ 29FT TO
020-0057275	1	0.80	350	280.00	WIRE UG TRACK TWISTED PAIR NO. 6 AWG SOLID CONDUCTOR
020-1040322	1	168.00	30	5040.00	BATTERY SAFT SPL165, 165 AH POCKET PLATE NICKEL CADMIUM
020-1040540	1	26.88	2	53.76	TRAY BATTERY FIBER CO 82687-1-P 12" WIDTH 24" LONG
020-1040550	1	39.20	2	78.40	TRAY BATTERY FIBER CO 82687-3-P 12" WIDTH 38"
020-1360014	1	876.23	1	876.23	PACKAGE FOREMANS CARE FOR ALUMINUM TYPICAL BOM FOR USE
020-1360016	1	17.36	1	17.36	PACKAGE SAFETY & SECURMENT WITH 1 EA CAUTION TAG 1 EA
020-1360103	1	1381.37	1	1381.37	LAYOUT METER SERVICE WITH 25' POLE CSX DWG SS351 SH 2 ITEMS
020-1501690	1	4.81	350	1683.50	CABLE UG 9 COND NO 6 AWG SOLID C CSX SPEC SS796 SHOW
020-2500635	1	325.92	2	651.84	SHUNT SAFETRAN 62775-430 NARROW BAND 430HZ
020-2503077	1	370.94	1	370.94	BELL SAFETRAN ELECTRONIC BELL AND SENSOR UNIT (A80301-2)
020-2503078	1	114.39	2	228.78	MODULE SAFETRAN GATE TIP SENSOR (A80281-2) USE WITH
020-2503092	1	20.33	2	40.66	KIT GATE TIP SENSOR RETAINING BRACKET INSTALLATION KIT,.
020-2503094	1	30.69	2	61.38	KIT MINI TRACKSIDE SENSOR BRACKET KIT SSC 074035-8X FOR
020-3901895	1	84.00	2	168.00	TIP FLEX HWY CROSSING GATE 24 IN LONG RED & WHITE STRIPES
020-3930010	1	3.70	2	7.40	KIT GATE ARM WARNING STICKER KIT INCLUDES 1-EA 5"X3"
020-4200340	1	1.28	34	43.52	LINK TEST ASSEMBLY 1" CENTERS COMPLETE WITH INSULATED

EXHIBIT D

Field Material List for CSX Project: FL2005112 (Effective: 04/23/2007)
Relocation of existing automatic warning devices
Palmetto, FL - AZA 913.96

Catalog Num	Cond	Unit Price	Qty	Cost	Description
020-4200900	1	0.24	10	2.40	CONNECTOR SHEATHING AMP 329860 FOR NO. 14 WIRE
020-4201042	1	0.19	40	7.60	NUT HEX BINDING (RSA NUT) AAR 14.1.11-6 14-24 NS-2 THD CONE
020-4201043	1	0.17	250	42.50	NUT HEX CLAMP (FLAT NUT) AAR 14.1.11-7 14-24 NS-2 THD FLAT
020-4201044	1	0.09	200	18.00	WASHER AAR 14.1.11 ROUND COPPER NICKEL PLATED FOR AAR
020-9999991	1	100.00	1	100.00	BLOCKING AND BRACING FOR PROJECTS BURCO DIST
360-0006100	1	34.32	1	34.32	STOOL STEP WOOD 14"X 20" SIGNAL MAINTAINERS CSXT
360-0800145	1	4.18	1	4.18	BROOM WAREHOUSE CORN HVY DUTY ID300

Total Cost: $ 58,885.38

Estimate ID: 111852

EXHIBIT D

Consumables List for CSX Project: FL2005112 (Effective: 04/23/2007)
Relocation of existing automatic warning devices
Palmetto, FL - AZA 913.96

Catalog Num	Cond	Unit Price	Qty	Cost	Description
N/A		500.00	1	500.00	CELLULAR MODEM, RAVEN AIRLINK COMM.
N/A		50.00	7	350.00	FILL MATERIAL, 1 CUBIC YARD
N/A		800.00	1	800.00	WALKWAY ROCK, 10 CUBIC YARDS
020-0017605	1	0.22	350	77.00	WIRE CASE 10 AWG FLEX CSX SPEC SS796 OKONITE
020-0017607	1	0.54	500	270.00	WIRE CASE TW PR NO 10 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017625	1	0.35	150	52.50	WIRE CASE TW PR NO 14 AWG FLEX CSX SPEC SS796 TWIST 2
020-0017630	1	0.11	200	22.00	WIRE CASE NO 16 AWG FLEX CSX SPEC SS796 FURN 1000 FT SPOOL
020-0017635	1	0.80	130	104.00	WIRE SIGNAL DEL 018 NO 6 COPPER STRANDED SINGLE
020-0028610	1	0.50	100	50.00	TERMINAL RING AMP 35628 YELLOW PLASTI-BOND HVY DUTY
020-1710045	1	2.62	220	576.40	CONDUIT SDR 13.5 4" POLYETHYLENE TRENCHLESS
020-2060072	1	666.40	2	1332.80	FOUNDATION HELICAL SCREW-IN ASSEMBLY 7' X 10" COMPLETE
020-3261970	1	9.41	2	18.82	DECAL ASSY 2" BLACK PRESSURE SENSITIVE VINYL PRE-MASKED
020-4200880	1	0.53	2	1.06	CONNECTOR TERMINAL 2-3/8" CENTERS AAR 14.1.15-4 NICKEL
020-4200892	1	0.44	27	11.88	CONNECTOR TERMINAL 1" CENTERS AAR 14.1.15-3 NICKEL PLATED
020-4251190	1	0.45	120	54.00	TERMINAL RING AMP 35627 BLACK PLASTI-BOND WIRE SIZE 10-12
020-4251290	1	0.56	30	16.80	TERMINAL WIRE AMP 322051 BLUE WIRE SIZE NO 6 AWG 1/4" STUD
020-4251295	1	0.60	6	3.60	TERMINAL WIRE AMP 322007 BLUE WIRE SIZE NO 6 AWG 3/8" STUD
020-9999992	1	50.00	1	50.00	HOUSE, SIGNAL HANDLING CHARGE, BURCO DISTRIBUTION
450-0019212	1	0.20	100	20.00	SCREW 10 X 1" SHT METAL PAN HD TYPE A COARSE THREAD
		Total Cost: $		**4,310.86**	

Estimate ID: 111852

EXHIBIT D

ACCT. CODE : 709 - FL0944
Pub EB - 3 GFP

ESTIMATE SUBJECT TO REVISION AFTER: *4/12/08* DOT NO.: 624 728X
CITY: Palmetto COUNTY: Manatee STATE: FL
DESCRIPTION: Upgrade RR x-ing surface w/ concrete panels & SIGNALS @ 17th Street West

DIVISION: Jacksonville SUB-DIV: Palmetto MILEPOST: AZA913.96
DRAWING NO.: 624 728X DRAWING DATE: ######## REGION: Southern
AGENCY PROJECT NUMBER:

Amount		
Task	Task Desc	Total
40	Labor General Office	$11,831
50	Labor Roadway	$61,135
60	Labor Signal	$36,431
65	Labor Signal1	$1,560
70	Labor Transportation	
200	Labor NonContract	$11,785
210	Invoice Material	$18,329
	Material New	$550
	Material - Field & Consu	$101,405
211	Invoice Freight	$6,068
212	Invoice Contract Eng	$24,015
215	Invoice Misc	$560
216	Invoice Utilities	$2,500
220	Invoice Material	$720
	Material New	$24,550
	Material - Shop	
228	Scrap Credit	-$474
230	ExpenseRpts	$17,256
241	Invoice Rental	$25,071
900	Other	
900	Contingencies	$34,329
Grand Total		$377,620

Oracle Input

EXHIBIT E

PAYMENT SCHEDULE

Advance Payment in Full

Upon execution and delivery of notice to proceed with the Project, Agency will deposit with CSXT the sum $377,620.00 which is equal to the Reimbursable Expenses, as shown by the Estimate. If CSXT anticipates that it may incur Reimbursable Expenses in excess of the deposited amount, CSXT will request an additional deposit equal to the then remaining Reimbursable Expenses which CSXT estimates that it will incur. CSXT shall request such additional deposit by delivery of invoices to Agency. Agency shall make such additional deposit within 30 days following delivery of such invoice to Agency.

EXHIBIT F

INSURANCE REQUIREMENTS

I. Insurance Policies:

Agency and Contractor, if and to the extent that either is performing work on or about CSXT's property, shall procure and maintain the following insurance policies:

1. Commercial General Liability coverage at their sole cost and expense with limits of not less than $5,000,000 in combined single limits for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured.

2. Statutory Worker's Compensation and Employers Liability Insurance with limits of not less than $1,000,000, which insurance must contain a waiver of subrogation against CSXT and its affiliates.

3. Commercial automobile liability insurance with limits of not less than $500,000 combined single limit for bodily injury and/or property damage per occurrence, and such policies shall name CSXT as an additional named insured.

4. Railroad protective liability insurance with limits of not less than $5,000,000 combined single limit for bodily injury and/or property damage per occurrence and an aggregate annual limit of $10,000,000, which insurance shall satisfy the following additional requirements:

   a. The insurer must be financially stable and rated B+ or better in Best's Insurance Reports.

   b. The Railroad Protective Insurance Policy must be on the ISO/RIMA Form of Railroad Protective Insurance - Insurance Services Office (ISO) Form CG 00 35.

   c. CSX Transportation must be named as the named insured on the Railroad Protective Insurance Policy.

   d. Name and Address of Contractor and Agency must be shown on the Declarations page.

   e. Description of operations must appear on the Declarations page and must match the Project description, including project or contract identification numbers.

f. Authorized endorsements must include the Pollution Exclusion Amendment - CG 28 31, unless using form CG 00 35 version 96 and later.

g. Authorized endorsements may include:

(i). Broad Form Nuclear Exclusion - IL 00 21
(ii) 30-day Advance Notice of Non-renewal or cancellation
(iii) Required State Cancellation Endorsement
(iv) Quick Reference or Index - CL/IL 240

h. Authorized endorsements may not include:

(i) A Pollution Exclusion Endorsement except CG 28 31
(ii) A Punitive or Exemplary Damages Exclusion
(iii) A "Common Policy Conditions" Endorsement
(iv) Any endorsement that is not named in Section 4 (f) or (g) above.
(v) Policies that contain any type of deductible

5. Such additional or different insurance as CSXT may require.

II. Additional Terms

1. Contractor must submit its original insurance policies and two copies and all notices and correspondence regarding the insurance policies to:

Donna G. Melton
Risk Manager, Planning & Analysis
CSX Transportation, Inc.
500 Water Street – C907
Jacksonville, FL 32202
904-359-1247 (Phone)
904-245-3506 (Fax)

2. Neither Agency nor Contractor may begin work on the Project until it has received CSXT's written approval of the required insurance policies.

SCHEDULE I

CONTRACTOR'S ACCEPTANCE

To and for the benefit of CSX Transportation, Inc. ("CSXT") and to induce CSXT to permit Contractor on or about CSXT's property for the purposes of performing work in accordance with the Agreement dated _____, 200_, between Manatee County Board of County Commissioners and CSXT, Contractor hereby agrees to abide by and perform all applicable terms of the Agreement, including, but not limited to Exhibits C and F to the Agreement, and Sections 3, 9 and 11 of the Agreement.

Contractor: _____

By: _____
Name: _____
Title: _____
Date: _____

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MANATEE COUNTY GOVERNMENT
AGENDA MEMORANDUM

#34

SUBJECT	17th Street West, US 41 to Business 41, CSX Construction Agreement	TYPE AGENDA ITEM	Consent
DATE REQUESTED	April 8, 2008	DATE SUBMITTED/REVISED	March 25, 2008
BRIEFINGS? Who?	None	CONSEQUENCES IF DEFERRED	N/A
DEPARTMENT/DIVISION	Public Works/Project Mgmt.	AUTHORIZED BY TITLE	Ron Schulhofer, Interim Director, Public Works
CONTACT PERSON TELEPHONE/EXTENSION	Paul Schamell, Project Manager Ext. 7329	PRESENTER/TITLE TELEPHONE/EXTENSION	Sue Sandhoff, Interim Deputy Director, Ext. 7348
ADMINISTRATIVE APPROVAL			

ACTION DESIRED
INDICATE WHETHER 1) REPORT; 2) DISCUSSION; 3) FORM OF MOTION; OR 4) OTHER ACTION REQUIRED

Authorization for the Chairman to approve Construction Agreement with CSX Railroad. This is in accordance with Para. 2.3.1 of approved agreement NO. DOT #624 728 X: RRMP# AZA-913.96; CSXT OP# FL0944

ENABLING/REGULATING AUTHORITY
Federal/State law(s), administrative ruling(s), Manatee County Comp.Plan/Land Development Code, ordinances, resolutions, policy

Chapter 12 – Capital Improvement Element of the Comprehensive Plan

BACKGROUND/DISCUSSION

Agreement NO. DOT #624 728 X: RRMP# AZA-913.96; CSXT OP# FL0944 with CSX was approved on September 13, 2005 for CSX Railroad to review and approve the preliminary and final engineering design plans, specification, drawings, and other documents.

COUNTY ATTORNEY REVIEW

Check appropriate box	
☒	REVIEWED Written Comments: ☒ Attached ☐ Available from Attorney (Attorney's initials: ___)
☐	NOT REVIEWED (No apparent legal issues.)
☐	NOT REVIEWED (Utilizes exact form or procedure previously approved by CAO.)
☐	OTHER

ATTACHMENTS: (List in order as attached)		INSTRUCTIONS TO BOARD RECORDS:	
1. RLS detailing CAO review of Construction Agreement 2. Agreement NO. DOT #624 728 X: RRMP# AZA-913.96		Return two (2) copies to Marlene Marlatt/Project Management for transmittal to CSX.	
COST:	$377,620	SOURCE (ACCT # & NAME):	6035261/Transportation Bond & Gas taxes
COMMENTS:	N/A	AMT./FREQ. OF RECURRING COSTS: (ATTACH FISCAL IMPACT STATEMENT)	N/A

BACKGROUND/DISCUSSION:

- The 17th Street West from Business 41 to US 41 project will include a two lane urban roadway with bike lanes, sidewalks, divided median, drainage improvements, street lighting, utility relocations/upgrades, and railroad crossing upgrade.
- CSX requires that any improvements to their railroad be designed and constructed by CSX Railroad.
- CSX was paid an initial sum of $20,000 for initial review of design per I.A.W., Para. 2.2 of approved agreement.
- CSX was paid an additional sum of $10,000 on May 8, 2007, for engineering review of drainage design plans for the storm water pond outlet located on CSX property.
- CSX was paid an additional sum of $6,500 on January 29, 2008, for revisions and engineering review of drainage drawings, revisions to signal design, and survey.
- The Construction Agreement in the amount of $377,620 represents costs for construction related to the CSX railroad crossing upgrade, required as part of the 17th Street West roadway project.
- The funding source for this construction is 2004 Transportation Bonds.

ATTACHMENT "G"

SECTION 01300
SCHEDULES, REPORTS, RECORDS, AND SUBMITTALS

SECTION 01300
SCHEDULES, REPORTS, RECORDS, AND SUBMITTALS

PART 1 GENERAL

1.01 The Contractor shall submit to the Owner 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.

PART 2 PROGRESS SCHEDULES

2.01 REQUIREMENTS INCLUDED

Procedures for preparation and submittal of construction progress schedules and periodical updating.

2.02 FORMAT

A. Prepare schedules as a time scale logic diagram and bar chart. Each major portion of work or operation, shall be clearly identified and tied by logical sequence to the shop drawing schedule and schedule of values.

B. Scale, spacing, and sheet sizing as approved by the Engineer.

2.03 CONTENT

A. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

B. Provide sub-schedules to define critical portions of entire schedule.

C. Show accumulated percentage of completion of each item, and total percentage of work completed, as of the first day of each month.

2.04 REVISIONS TO SCHEDULES

A. Indicate progress of each activity to date of submittal, and projected completion date of each activity.

B. Identify activities modified since previous submittal, major changes in scope, and other identifiable changes.

C. Provide narrative report to define problem areas, anticipated delays, and impact on schedule. Report corrective action taken, or proposed, and its effect, including effect of changes on schedule of separate contractors.

2.05 SUBMITTALS

A. Submit preliminary outline schedules within 10 days after effective date of the Agreement for coordination with work of separate contracts. After review, submit detailed schedules within ten (10) days, modified to accommodate revisions recommended by Engineer.

B. Submit revised progress schedules with each application for payment.

C. Submit number of opaque reproductions which Owner requires, plus three (3) copies retained by Engineer.

PART 3 SCHEDULE OF VALUES

3.01 TIMING

A. Within ten (10) days after the date of Agreement of the Contract, the Contractor shall submit to the Engineer a breakdown schedule of the various lump sum portions of the work, including quantities, aggregating the total price of each lump sum item, and divided so as to facilitate payments for work under each item. The schedule shall be prepared in such form and in such detail as the Engineer may approve. Each item in the schedule shall include its proper share of overhead and profit.

PART 4 SHOP DRAWINGS

4.01 SUBMITTAL SCHEDULE

A. Within ten (10) days of the effective date of the Agreement the Contractor shall have a Schedule of Shop Drawings and sample submittals which will list each required submittal and the times for submitting, reviewing, and processing.

4.02 REIMBURSEMENT FOR NONCOMPLIANT SUBMITTALS

A. Contractor shall reimburse the Owner for the charges of Engineer and Engineer's Consultants for shop drawing resubmittal evaluations due to rejection for noncompliance of the original submittal or for lack of information required by Contract Documents submitted with the original submittal. Reimbursement for the charges shall be a deduction from the Contractor's Partial Payment.

4.03 SUPPLEMENTAL DRAWINGS

A. The Contractor shall provide such working drawings and supplementary drawings as are required to properly prosecute the work. The contract price shall include the cost of furnishing all such drawings.

4.04 SUBMITTAL REQUIREMENTS

A. The Contractor shall furnish to the Engineer four (4) copies of all required submittals, shop and setting drawings, and schedules required for the work. These drawings shall be submitted so as to allow sufficient time for checking and resubmittal, if required. The Contractor shall not fabricate related work, except at his own risk, until approval is received. Such approval shall not relieve the Contractor of any responsibility for the work or for any errors which may exist in the drawings. The Contractor shall thoroughly review and approve each drawing prior to submittal and shall stamp and sign each copy to indicate Contractor's approval.

B. Shop drawings and submittals shall accurately and completely indicate compliance with every aspect of the drawings and/or specifications relating to the respective items. The Contractor shall enumerate in the submittal and associated transmittal correspondence, each and every feature specifically addressed in the respective drawings and/or specifications, and he shall call out and completely describe any exceptions to the drawings and/or specifications which he wishes to have accepted. Failure to completely identify the submitted item's compliance or exception to specified features will be grounds for automatic rejection of the submittal. Engineer's review or acceptance of any submittal which contains a deviation(s) from the drawings and/or specifications not clearly and specifically called out and described in the submittal and associated transmittal correspondence shall not constitute approval of that portion(s) of the submittal containing the deviation(s). Should the Contractor prepare, and the Engineer accept, any deviation to the drawings and/or specifications, all necessary design, equipment, and installation modifications, and additional cost of same shall be the sole responsibility of the Contractor.

C. Materials and equipment are specified by a single or by multiple manufacturers to indicate quality, material, and type of construction desired. Manufacturer's product as shown on the drawings has been used as basis for design; it shall be the Contractor's responsibility to ascertain that alternate manufacturer's products meet detailed specifications and that size and arrangement of equipment is suitable for installation.

D. The products of other manufacturers will be considered for use as described in Section 01630.

E. Before delivery of materials and equipment, certified copies of all test reports specified in the individual sections of these specifications or referenced standards shall be submitted for approval.

F. The Contractor shall submit certification from the manufacturer attesting that materials and equipment to be furnished for this project comply with the requirements of these specifications and of the referenced standards. Preprinted certifications will not be acceptable; certifications shall be in the original. The certification shall not contain statements that could be interpreted to imply that the product does not meet all requirements specified; such as, "as good as," "achieve the same end use and results as materials formulated in accordance with the referenced publications," or "equal or exceed the service and performance of the specified material." The certification shall simply state that the product conforms to the requirements specified. The Contractor shall allow thirty (30) days for the Engineer's review of submittals and shop drawings.

PART 5 CONSTRUCTION PHOTOGRAPHIC RECORD

5.01 REQUIREMENTS INCLUDED

A. Employ a competent photographer to take construction record photographs during course of work.

5.02 PHOTOGRAPH REQUIRED

A. Provide at least twelve (12) views of photographs taken on cutoff date for each scheduled Application for Payment.

B. Provide photographs of views randomly selected by the Owner's and the Contractor's representative. Provide two (2) prints, 8-inch x 10-inch, color, double-weight paper, smooth glossy finish of each photograph. Include negative in negative envelope for each print.

C. In addition to the photos accompanying Application for Payment, the Contractor's shall provide photographs to be taken for unusual conditions during construction. The photographs will show pertinent physical features of construction. Two (2) 8-inch x 10-inch prints of all pictures shall be furnished to the Owner's representatives.

D. All prints shall be captioned on the face of the print with the Contract number and title, the date, and pertinent information describing the view.

5.03 DELIVERY OF PRINTS

Deliver prints to Engineer to accompany each Application for Payment.

END OF SECTION

SECTION 02110
SITE CLEARING

SECTION 02110
SITE CLEARING

PART 1 GENERAL

1.01 WORK INCLUDED

A. The Contractor is required to provide all materials, equipment, labor, and work to construct the project in accordance with the Contract Documents.

B. This work includes, but is not limited to, the following items specified in this section:

1. Protection of existing trees, shrubs, and manmade improvements.

2. Removal of trees and vegetation.

3. Clearing and grubbing.

4. Topsoil stripping.

1.02 RELATED WORK

A. The General and Supplementary Conditions are made a part of this section as if incorporated herein.

B. Other related specification sections contained herein are as follows:

1. Section 02050, Demolition and Removal

2. Section 02224, Excavating, Backfilling, and Compacting for Structures

3. Section 02225, Excavating, Backfilling and Compacting for Utilities

4. Section 02485, Grassing

5. Section 02900, Seeding and Sodding

1.03 DEFINITIONS

(Not Used)

1.04 REFERENCE STANDARDS

(Not Used)

1.05 QUALITY ASSURANCE

A. Prior to commencing any site work, the Contractor shall satisfy himself as to the accuracy of all survey data and/or other existing conditions indicated on the drawings and in these specifications, and/or as otherwise provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the survey data or other representations, he shall immediately notify the Engineer that proper adjustments can be anticipated or ordered. Commencement by the Contractor of any work on the project site or sites shall be held as full acceptance of the accuracy of the survey data and other site information by him, after which time the Contractor shall have no claim against the Owner resulting from any alleged errors, omissions, or inaccuracies of the survey data or representations of the site conditions.

B. Tolerance for backfill elevation in restoration of cleared and grubbed areas shall be ±0.1 foot to the required grade in the areas of the WRF and DOT right-of-way. At the sprayfield site, the tolerances shall be ±0.2 foot to the required grade.

1.06 SUBMITTALS

A. The Contractor shall obtain and submit the approved NPDES Stormwater Discharge (Construction) Permit, with attached plan for implementation and satisfaction of permit conditions, prior to commencing the work in this section.

B. Contractor shall include clearing, stripping, and grubbing in the Demolition and/or Excavation and Backfill work plans required by Sections 02050 and 02224, respectively.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.01 PROTECTION

A. Existing Improvements

For facilities which are not to be removed, the Contractor will provide adequate means for protecting all structures, buildings, and utilities located underground at grade or above grade from damage resulting from all construction and related activities. The Contractor will protect and hold the Owner and his agents harmless against damage and claims for damage resulting from any and all such activities.

1. The above protection will extend to the Owner's property, all adjoining properties, and any and all areas traversed during or as a consequence of the work.

2. The Contractor, at his sole expense without additional cost to the Owner, will restore any and all damage resulting from the work, regardless of its location, to its original condition to the full satisfaction of the property owner.

B. Existing Trees and Vegetation

The Contractor will protect existing trees and other vegetation which are indicated to remain and/or the removal of which is not strictly necessitated by the work.

1. Trees and Vegetation shall be protected from, at minimum, unnecessary cutting, breaking, or skinning of roots; bruising or skinning of bark; smothering by piles of excavated or stockpiled dirt, supplies, material, or debris located within the drip line of trees or otherwise adjacent or upon vegetation; excess vehicular or foot traffic; or parking of vehicles upon vegetation or within the drip lines of trees.

2. Contractor shall mark trees and demarcate landscaped areas to be protected, including the provision of barricades and/or temporary guards as necessary for protection.

3. Contractor will water trees and other vegetation to remain within the limits of the contract work as required to maintain their health during the course of construction operations.

4. Contractor will provide protection for roots over 11/2 inches in diameter that are cut during construction operation by sealing cut faces with tar or other acceptable coating formulated for use on plants. Roots to be exposed for a minimum length of time shall be wrapped or covered with burlap which is to be kept wet until the roots are again covered with soil.

5. Trees, shrubs, or other vegetation which are damaged or inadvertently removed when not strictly required by the work or approved by the Engineer shall be replaced "in kind" or better to the full satisfaction of the Engineer and the Owner of the damaged area.

3.02 CLEARING AND GRUBBING

A. General

Contractor will remove surface and subsurface vegetation, and all trash and debris necessary to permit construction of the work. "Removal" includes disposal in an approved and legal manner. Contractor will also remove other surface and subsurface material outside the immediate limits of the work as may be specifically indicated on the drawings or described herein.

B. Clearing

Contractor will clear site of trees, shrubs, brush, logs, and rubbish except for those trees and plants indicated to be left standing.

C. Grubbing

Contractor will completely remove stumps, roots, and other debris protruding through the ground surface.

1. Stumps and all roots shall be removed to a depth of at least 18 inches below subgrade elevation.

2. Use only hand methods when grubbing inside the drip line of trees to remain.

3. Fill depressions caused by clearing and grubbing with satisfactory soil, as specified in Section 02225, unless further excavation is indicated. Such fill is to be placed in horizontal layers not more than 6 inches in loose depth, and compacted to a density to match that of the adjacent soil.

D. Reuse Site

At the reuse application site, Contractor will remove all trees and stumps, either living or dead, including those remaining from previous clearing operations. This will include various types of shrubs, vines, thicket, Palmetto plants, etc. Only grasses and similar plants are to remain.

3.03 STRIPPING

A. General

Where required by excavation, embankment, or other work, top soil and uncontaminated subsoil shall be removed to a minimum depth of 6 inches. Additional soil may be stripped at the direction of the Engineer if provided for in the contract, or as elsewhere required in these specifications.

1. Stripped soil may be reused as topsoil provided it is friable, loamy surface soil suitable for the planting of grass. Suitability shall be based upon the presence of a dense growth of grass prior to stripping. In addition,

stripped material to be reused as topsoil shall be reasonably free from subsoil, clay lumps, brush, objectionable weeds, roots, or other objectionable material. Topsoil shall not contain stones, wood, or other objects either organic or inorganic greater than 2 inches in any dimension.

2. Stripped soil which does not satisfy the criteria in Section 3.03-A.1 above, or is otherwise objectionable to the Engineer, shall be waste and become the property of the Contractor for disposal off site.

B. Storage

Stripped soil to be reused as topsoil shall be stored as indicated in Section 02225, Excavating, Backfilling, and Compacting for Utilities.

C. Reuse Site

Those low sections of the site which are to receive fill shall be stripped, and the suitable topsoil replaced after the fill is completed per Section 02485, Grassing. All disturbed areas at the site to be grassed shall have topsoil replaced per Section 02485.

3.04 WASTE MATERIALS

A. Disposal

All material and refuse resulting from clearing and grubbing operations shall be disposed of by removal to an off site landfill or other appropriate site. The Contractor shall be prepared to produce proper documentation of disposal upon request.

B. Burning

If approved by the Owner, the Contractor may burn waste material for clearing and grubbing operations at the land application reuse site under the following conditions:

1. Contractor will obtain and comply with all required permits and satisfy all pertinent regulations.

2. Contractor will burn only as directed by the local authority having jurisdiction, and in a manner to avoid all hazards to existing structures, material, vegetation, and work in progress.

3. Burning shall not impede or create unsafe conditions for vehicular traffic on adjacent roadways.

4. Contractor shall provide constant attendance to fires, and maintain such attendance until fire is completely extinguished. Reignition of disposal fires and any and all resulting damage shall be the sole responsibility of the Contractor.

3.05 SILTATION AND EROSION

A. Contractor shall take all necessary steps and make suitable provisions to minimize siltation and erosion, both wind and/or water borne, which may occur during, or as a result of, his operations during the construction of this project.

B. Contractor shall fully satisfy all rules and regulations of those agencies with jurisdiction which address siltation and/or erosion (including but not limited to) County, Water Management District, Florida Department of Environmental Regulation (DEP), and United States Environmental Protection Agency - Region IV (EPA).

C. Contractor shall abide by the conditions of the DEP Environmental Resource Permit as obtained by the Owner for this project.

D. Contractor shall fulfill the requirements of the National Pollutant Discharge Elimination System (NPDES) Stormwater Permit issued by the EPA for construction of this project.

E. The Contractor shall utilize erosion and siltation prevention devices and methods as necessary to fully satisfy the permit requirements, the site conditions, and provide the necessary protection.

3.06 CLEANUP AND RESTORATION

A. Cleanup

As soon as backfilling is completed, the affected areas shall be cleaned and regraded, all surplus materials removed and left free, clean, and open to traffic. Trenches not properly filled, or if settlement has occurred, shall be refilled, smoothed off, and finally made to conform to the original or indicated grade, line, and surface as applicable. Any settlement that occurs after paving or other surfacing shall be corrected as directed by the Engineer. Debris and waste materials shall be removed from the site as soon as practicable during construction.

B. Restoration of Disturbed Areas

The Contractor shall restore all areas disturbed by construction to existing conditions or better.

END OF SECTION

SECTION 02225
EXCAVATING, BACKFILLING, AND
COMPACTING FOR UTILITIES

SECTION 02225
EXCAVATING, BACKFILLING, AND COMPACTING FOR UTILITIES

PART 1 GENERAL

1.01 WORK INCLUDED

A. This section covers the work necessary to perform all excavating, trenching, filling, backfilling, and testing required to properly construct and install underground pipelines, utilities, and incidentals as shown on the drawings. This work includes, but is not limited to, excavation and removal of unsatisfactory material and replacement with backfill material specified, clearing and grubbing, providing satisfactory material for fill and backfill as required, soil placement and compaction, dewatering, shoring and sheeting, and testing.

B. This section includes work required for final grading of areas damaged during construction and where otherwise indicated on the drawings.

C. The Contractor shall examine the site prior to submitting his bid, taking into consideration all conditions that may affect his work. The Contractor shall be aware that there may be sub-surface soil layers of soft, fibrous organics (muck), and that groundwater may be close to the ground surface. If site soil borings have been performed, this information can be reviewed at the Engineer's office. The Owner and Engineer will not assume responsibility for sub-surface conditions at the site.

1.02 RELATED WORK

A. The General and Supplementary Conditions of these specifications are a part of this section as if incorporated herein.

B. Other related specification sections contained herein are as listed below.

1. Section 01300, Schedules, Reports, Records, and Submittals
2. Section 02110, Site Clearing
3. Section 02310, Dewatering
4. Section 15100, Piping - General

1.03 DEFINITIONS

A. "Relative compaction" is defined as the ratio, in percent, of the as-compacted field dry soil density to the laboratory maximum dry density as determined by the Modified Proctor Method, ASTM D 1557. Corrections for oversize material may be applied to either the as-compacted field dry density or the maximum dry density, as determined by the Engineer.

B. "Optimum moisture content" is defined as the moisture content corresponding to the maximum dry density obtained by ASTM D 1557. Field moisture content shall be determined on the basis of the fraction passing the No. 4 sieve.

C. "Completed course" is defined as a course or layer that is complete and ready for testing and/or the next layer or phase of construction.

1.04 REFERENCE STANDARDS

A. Reference standards and recommended practices referred to herein shall be the latest revision of any such document.

B. Standards referenced herein are listed below:

1.	ASTM D 448	Standard Classification for Size of Aggregate for Road and Bridge Construction
2.	ASTM D 1556	Testing Method for Density of Soil In Place by the Sand-Cone method
3.	ASTM D 1557	Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lb/ft^3).
4.	ASTM D 292	Test Methods for Density of Soil and Soil-Aggregate In Place by Nuclear Methods (Shallow Depth)
5.	ASTM D 2922	Test Methods for Density of Soil and Soil Aggregate In Place by Nuclear Methods (Shallow Depth)
6.	ASTM D 2937	Test Method for Density of Soil In Place By the Drive-Cylinder Method
7.	ASTM D 3282	Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes
8.	ASTM D 3740	Standard Practice for Evaluation of Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction
9.	AWPA C1	All Timber Products-Preservative Treatment by Pressure Processes

10. OSHA Excavation Safety Standards
11. Florida Trench Safety Act (Law of Florida 90-96)

1.05 QUALITY ASSURANCE, ACCEPTANCE, AND TOLERANCES

A. The Contractor shall perform excavating, trenching, and backfilling in compliance with applicable requirements of governing authorities having jurisdiction. Shoring and sheeting for excavations shall be designed by a Florida-registered Professional Engineer in accordance with the Occupational Safety and Health Administration (OSHA) Document 2226, "Safe Working Practices - Excavation and Trenching."

B. Prior to commencing any excavation or grading, the Contractor shall satisfy himself as to the accuracy of all survey data as indicated on the drawings and in the specifications and/or as provided by the Owner. Should the Contractor discover any inaccuracies, errors, or omissions in the survey data, he shall immediately notify the Engineer that proper adjustments can be anticipated or ordered. Commencement by the Contractor of any excavation or grading shall be held as an acceptance of the survey data by him after which time the Contractor has no claim against the Owner resulting from alleged errors, omissions, or inaccuracies of the survey data.

C. Tolerance for excavation of trenches shall be ±0.10 foot to the required line, and shall be to the required grade.

D. Tolerance for compaction of in-place material shall be ±0.10 foot to the required grade.

1.06 SUBMITTALS

Submittals shall be in accordance with Section 01300 and shall be in sufficient detail to show full compliance with these specifications.

A. At least 14 days prior to construction which may interrupt or impact pedestrian or vehicular traffic, Contractor shall, for each occurrence, submit for review and approval a traffic safety and re-routing plan to be implemented by the Contractor during the work. The plan shall describe and define all elements required for conformance with FDOT and all other applicable regulations and requirements.

B. Record Drawings shall be prepared, maintained, and submitted in accordance with the requirements of the Contract Documents.

C. A demolition plan shall be submitted 7 days in advance of work. The plan will be reviewed and approved at least 48 hours in advance of the work. The plan shall include all special environmental considerations and safety precautions along with the coordination procedures for the Protection Plan and Work Plan of this phase of work.

D. A Work Plan shall be submitted including proposed methods of excavation, earth support, structure and utility construction, and backfilling at least 48 hours in advance of the work. The plan shall be coordinated with the demolition and protection plans of this section and applicable plans of other sections.

E. The Contractor shall provide a Protection Plan for existing in place utilities, and coordinate the plan with his work.

F. Test reports shall be submitted in writing by the Contractor for soil test results within 3 working days. Reports shall be in accordance with paragraph 1.07, Sampling and Testing, of this section.

G. Certificates of Compliance for Proposed Soil Materials shall be submitted in accordance with paragraph 107, Sampling and Testing, of this section. Certificates of compliance for soil materials from offsite borrow sources shall clearly reference the borrow source as described below.

H. Certification by a Florida-registered Professional Engineer for design of shoring, sheeting, etc. Include drawings, calculations, and any other information signed and sealed by a Florida-registered Professional Engineer.

I. Record of Existing Conditions shall be submitted by the Contractor prior to the start of this work. The Contractor shall verify the existing conditions are correct as shown on the plans and mentioned in the specifications. Any discrepancies found shall be noted immediately and notification given to the Engineer and Owner.

The records shall include the following:

1. Location of Underground Utilities

2. Location of Tests

3. Location of Inspections

J. A Record of Proposed Borrow Sources to be used by the Contractor to provide borrow from off site as necessary to construct the project.

1.07 SAMPLING AND TESTING

A. All testing agency activities shall be performed under the direction and supervision of a Professional Engineer, licensed in the state of Florida.

B. Testing for source material, for classification, and for prequalification of material (on or off site) shall be performed by an independent testing agency retained by the Contractor and approved by the Engineer. Testing agencies shall conform to the requirements of ASTM D 3740. Testing for in-place compacted fill shall be performed by the same independent testing agency as approved by the Engineer and retained by the Contractor. The number and location of the tests shall be a specified herein and as directed by the Engineer during construction. The Contractor shall coordinate activity with the Engineer and the testing agency to permit testing as directed in the presence of the Engineer. The costs of any and all retests due to failure to achieve specified requirements shall be solely borne by the Contractor and are not reimbursable under this contract. The cost of all testing achieving specified requirements shall be borne by the Contractor via the appropriate contract unit price as indicated in the Contract Documents.

C. Where unsatisfactory compaction is revealed by the tests, the Contractor shall re-excavate, backfill, recompact and/or rework the backfill as required to obtain the required degree of compaction over the entire depth of the trench.

D. The Contractor shall provide certification that proposed soil material is clean and meets gradation and other parameters herein specified.

Item	Required Test	Min. No. Test
Satisfactory Soil Materials	Classification using ASTM D 3282 (including all tests contained therein)	One per source of materials to determine conformance with Part 2 of this section; additional test whenever there is any apparent change.
	Modified Proctor ASTM D 1557	One per source of material or apparent change in material.

E. The soil material used in construction shall be clean and meet gradation and other parameters herein specified.

Item	Required Test	Min. No. Test
Backfilled Trenches Within or Across Roadways	Field Density ASTM D 1556, ASTM D 2922, or ASTM D 2937	Frequency of tests shall be at the Engineer's discretion, with a minimum of two tests per installation per vertical foot of trench depth or one test per 1000 LF, or fraction thereof, per vertical foot of trench depth, whichever is greater. Each vertical foot tested shall be taken at different locations.

F. Copies of required test results shall be transmitted by the testing agency as follows:

1. One copy to the Owner.

2. Two copies to the Engineer.

3. Two copies to the Contractor.

The reports shall include, as a minimum: project title; project location; location of sample, time, and date of testing or sampling; and test results. Test results shall be sealed and signed by the Professional Engineer representing the testing agency as specified herein.

G. No soil material shall be used until test reports have been reviewed and approved by the Engineer.

H. The Engineer shall have sole responsibility for interpretation of all test results.

I. The Contractor shall remove and replace or correct, at no cost to the Owner, all materials and work which tests indicate do not conform to the requirements of these specifications.

J. The results of in-place density tests shall be considered satisfactory if the density in each instance is equal to or greater than the specified density. Soil moisture content at the time of testing shall conform to requirements of these specifications.

K. Copies of all testing agency invoices submitted to the Contractor for payment shall be transmitted by the testing agency to the Engineer. Invoices shall clearly indicate specific services rendered and shall indicate if the invoiced testing cost is a result of retests required due to the Contractor's failure to achieve specified requirements. Payment will not be made for the invoices until they are submitted by the Contractor as a part of the normal pay request.

PART 2 PRODUCTS

2.01 FILL MATERIALS

A. Satisfactory sand (granular) fill material for trench haunching, bedding, and refill, or as otherwise required by the drawings, shall comply with the requirements for Soil Group A-3, as described in ASTM D 3282. The sand shall be free of silt, clay, loam, friable or soluble materials, rocks, foreign material, debris, peat, roots, and organic material.

B. Satisfactory backfill material shall be subsoil which is free from alkali, salt, petroleum products, roots, stones, rocks, and building debris. Excavated material from the site may be used if suitable and if free from deleterious matter, as approved by the Engineer. Gradation shall be suitable for compaction with a maximum of 15% passing the No. 200 sieve, unless otherwise required herein or on the drawings. Maximum particle size shall

not exceed 3/4 inch. Backfill for rough grading from 1 foot above top of pipe may have maximum particle size of 3 inches in diameter.

C. Unsatisfactory soil materials shall mean ASTM D 3282, Soil Classification Groups A-1, A-2, A-4, A-5, A-6, and A-7, peat and highly organic soils. Unsatisfactory soils shall also be soil materials of any classification that have a moisture content at the time of compaction beyond the range of 1 percentage point below and 3 percentage points above the optimum moisture content of the soil material as determined by moisture-density relations test unless otherwise approved by the Engineer.

D. Gravel shall be well-graded crushed stone or crushed gravel meeting the requirements of ASTM D 448, Gradation No. 67 (3/4-inch to No. 4 sieve). Gravel shall be clean, washed, and free from roots or organic material. Material shall be well-rounded and shall not be limerock.

2.02 FINAL GRADING MATERIALS

A. Suitable topsoil, where called for in the drawings and as specified, shall mean friable loamy surface soil suitable for use in grass planting. It occurs as a thin soil layer covering naturally well-drained land covered by a heavy growth of grass or which has been covered with a heavy growth of grass during the latest growing period before start of construction. In addition, the topsoil shall be reasonably free from subsoil, clay lumps, brush, objectionable weeds, and other litter, and shall be free from stones, stumps, and other objects larger than 2 inches in any dimension, roots, and other objectionable material.

B. Grassing shall be as specified in Section 02485, Grassing.

2.03 STRUCTURAL MATERIALS

Materials used for shoring and bracing, such as sheet piling, uprights, stringers, and cross braces shall be in good serviceable condition. Any timber used shall be sound and free from large or loose knots. Timber and treatment shall conform to AWPA C1.

PART 3 EXECUTION

3.01 PROTECTION

A. The Contractor shall notify all utility companies/owners with facilities in the area at least 48 hours prior to beginning excavation. Before starting earthwork, accurately locate and record abandoned and active utility lines, rerouted or extended, on project record documents.

B. Notify the Florida Department of Transportation 24 hours in advance of construction within their right-of-way.

C. Do not interrupt existing utilities serving occupied facilities except when permitted, in writing, by the Owner.

D. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult the Engineer immediately for directions as to procedures. The Contractor is expected to cooperate with the Owner and the utility companies to keep respective services and facilities in operation. All damaged utilities shall be repaired to the satisfaction of the utility owner at the Contractor's expense.

E. Maintain and protect, reroute, or abandon existing utility lines which pass through the work area as indicated on the drawings.

F. Field conditions may necessitate slight alignment and grade elevation of the proposed utilities to avoid obstacles as required. The Contractor shall construct the proposed facilities to the required deviation as approved by the Engineer without increase in the contract price and time.

G. Protect bench marks and existing structures, roads, sidewalks, monitoring wells, piezometers, paving, and curbs against damage from equipment, vehicular or foot traffic, settlement, lateral movement, undermining, and washout. The Contractor shall repair and replace damage to existing facilities to equal or better than its original undamaged condition without cost to the Owner and to the approval of the Engineer.

H. Contractor shall establish requirements for trench shoring and bracing to comply with laws, codes, and authorities having jurisdiction.

I. Provide permanent steel sheet piling or pressure-treated timber sheet piling wherever subsequent removal of sheet piling might permit lateral movement of soil under adjacent pipelines or structures. Cut off tops 2 feet below finished grade but no deeper than 1 foot above the top of the pipe and leave permanently in place.

J. Do not brace sheeting against the pipe being laid. Sheeting shall be braced so that no concentrated load of horizontal thrust is transmitted to the pipe.

K. Shoring and bracing in excavations shall be maintained for the entire length of time excavations will be open. Shoring and bracing shall be carried down with the excavation.

L. Sheeting used to prevent lateral movement of soil shall be removed in accordance with the requirements.

M. Untreated sheeting shall not be left in place beneath structures or pavements.

N. Excavated materials suitable for backfill shall be piled in an orderly manner sufficiently distant from excavations to prevent overloading, slides, and cave-ins, and shall prevent obstruction of accessways and roadways.

O. Underpin adjacent structure(s) which may be damaged by excavation work, including service lines.

P. Notify Engineer of unexpected subsurface conditions and discontinue work in area until subsurface conditions have been ascertained.

Q. Excavations shall be done in ways that will prevent surface and subsurface water from flowing into excavations and will also prevent flooding of the site and surrounding area.

R. Do not operate earth-moving equipment within 5 feet of walls of structures for the purpose of depositing or compacting backfill material. Compact backfill adjacent to the walls with hand-operated tampers or similar equipment that will not damage the structure.

S. Protect bottom of excavations and soil around and beneath foundations and slabs from frost, as required.

T. Excavations shall be barricaded and posted with warning signs for the safety of persons. Warning lights shall be provided during hours of darkness. Contractor shall provide and utilize traffic control, flagmen, warning devices, barriers, signage, etc., in accordance with FDOT and all other applicable regulatory requirements and conforming to the approved traffic safety plan.

U. The Contractor shall at all times have sufficient quantity of shoring and sheeting materials available for the timely completion of the work.

V. Any area that is not authorized for excavation shall be protected by the Contractor from damage. The Contractor shall have no claims for extra compensation for tunneling or boring in the vicinity of trees or other property that must be protected as specified herein or on the drawings.

3.02 TRENCHING AND EXCAVATION

A. Prior to trenching and excavation, surface preparation including clearing and grubbing shall be performed as specified in Section 02110.

B. Trench for piping, mechanical, and electrical service. All obstructions such as tree roots, stumps, debris, or other material shall be removed.

C. Trenches shall be excavated so as to provide a minimum depth of cover of 30 inches, unless otherwise shown on the drawings or approved by the Engineer.

D. Cut trenches sufficiently wide to enable proper installation of services and to allow for inspection. Trim and shape trench bottoms and leave free of irregularities, lumps, and projections. If rock or other unyielding material is encountered in the bottom of the trench, it shall be removed to a depth of 6 inches below bottom of trench grade, refilled with sand or gravel fill, and thoroughly compacted. Unstable or unsuitable material encountered in the bottom of the trench shall be undercut to firm bearing soils, replaced with sand fill, then thoroughly compacted.

E. Side slopes of the trenches shall be as nearly vertical as practicable. Trenches in excess of 5 feet deep shall have the trench sides laid back to conform to OSHA requirements for trench safety. Alternatively, trenches deeper than 5 feet shall be shored and braced.

F. Bottoms of the trenches shall be accurately graded to provide uniform bearing and support for each section of pipe on bedding at every point along its entire length except where it is necessary to excavate for bell holes and for proper sealing of pipe joints. Abrupt changes in grade of the trench bottom shall be avoided.

G. Bell holes and depressions for joints shall be dug after the trench bottom has been graded to ensure that the pipe rests on the prepared bedding for as much of its full length as practicable. Bell holes and depressions shall be only of such length, depth, and width as required to make the joint.

H. The Contractor shall provide all necessary shoring, bracing, or other procedures as required to assure safe working conditions and to protect the excavations. The Contractor shall be required to fully comply with all applicable OSHA Excavation Safety Standards and to abide by them as covered under the Florida Trench Safety Act (Laws of Florida 90-96), effective October 1, 1990. No separate payment will be made for any special procedure used in connection with the excavation.

I. Care shall be taken not to overexcavate except where necessary to remove unstable material, irregularities, lumps, rock, and projections. Unnecessary overexcavation shall be replaced as specified at the Contractor's sole expense.

J. Excavation carried below the grade lines shown or established by the Engineer shall be replaced with sand fill (refill) material as specified herein and compacted to at least 95% of Modified Proctor maximum dry density in accordance with ASTM D 1557, except under pavement and limerock where compaction shall be to at least 98%. Refill shall be installed in lifts not exceeding 6 inches, loose measurement. Cuts below grade shall be corrected by similarly cutting adjoining areas and creating a smooth transition.

K. Trench excavations in surfaced areas shall be by open cut, unless otherwise shown. The pavement shall be cut by concrete saw or other approved method. Cuts shall be in straight lines parallel to the utility line location and shall be to a depth of at least one quarter of the pavement thickness. The remainder of the pavement shall be broken out. Ripping of pavement for trenches with excavation equipment will not be allowed.

L. If work is stopped on an excavation and it is left open for an unreasonable length of time, as determined by the Engineer, pending construction, the Engineer may order the excavation to be backfilled. If this occurs, it shall not be opened again until the Contractor is prepared to place the structure therein. If the Contractor does not backfill such an excavation after being ordered to do so by the Engineer, the Engineer shall perform said backfilling operations at the Contractor's expense.

M. Excavations may be excavated and refilled either by hand or by machinery, except where the Engineer decides that these operations should be performed by hand.

N. Unless otherwise indicated, trenches for water and pressure sewer lines shall be graded to avoid high and low points that necessitate air release valves. Trenches for electrical

conduit shall have vertical walls, unless otherwise approved by the Engineer, and the trench shall be only as wide as necessary for workers to install the conduit.

O. Excavation for valves and similar appurtenances shall be sufficient to leave at least 12 inches in the clear between the outer surfaces and the embankment or timber used to hold and protect the trench walls.

3.03 REMOVAL OF UNSATISFACTORY SOIL MATERIALS

Areas of unsuitable soils, as specified herein and established by the Engineer, shall be undercut to competent soils and replaced with suitable sand fill as specified herein and compacted to a minimum of 95% of Modified Proctor maximum dry density in accordance to ASTM D 1557. Replacement sand fill shall be shaped to conform with the required elevation and grade.

3.04 CONCRETE ENCASEMENT

Concrete encasement shall be provided where indicated or where directed by the Engineer. For water and sewer utilities, the encasement shall be a minimum of 6 inches concrete all around the outside diameter of the utility being encased. Electric conduit shall have a minimum of 3 inches concrete all around the conduit. Concrete shall conform to the requirements of Section 03300, Concrete Construction.

3.05 BORING AND JACKING

Boring and jacking shall be as specified in Section 02445, Boring and Jacking.

3.06 BACKFILLING AND COMPACTION

A. Trenches shall not be backfilled until required tests are performed and until the utilities systems, as installed, conform to the requirements for the installation of the various utilities and have been inspected and approved by the Engineer.

B. Prior to backfilling, the trench bottom shall be compacted to at least 95% of Modified Proctor maximum dry density in accordance with ASTM D 1557, except under pavement and limerock where compaction shall be to at least 98%.

C. Ensure areas to be backfilled, including trenches, are free of building debris, rubbish, and water.

D. Where sheeting is pulled, withdrawal shall be in increments of not more than 1 foot and backfilling and compaction operations shall be carried on simultaneously with trench sheet pulling.

E. Trenches improperly backfilled shall be reopened to the depth required for proper compaction, then refilled and compacted as specified, or the condition shall be otherwise corrected as directed.

F. Pipeline trench bedding shall be sand fill, as specified herein, unless otherwise specified. Bedding shall be installed in lifts not exceeding 6 inches, loose measurement.

G. The Contractor shall use special care in backfilling the area around piping extending from the top of bedding to 1 foot above the top of pipe so as to avoid injuring or moving the pipe. The backfill shall be thoroughly compacted by tamping, supplemented by "walking in" the material on each side of the pipe simultaneously.

H. After each pipe has been brought to grade, aligned, and placed in final position, satisfactory fill material, as specified herein, shall be deposited and compacted under pipe haunches on each side of pipe to hold pipe in proper position during subsequent pipe jointing, bedding, and backfilling operations. Haunching shall be installed in lifts not exceeding 4 inches, loose measurement. Haunching shall be brought up equally on both sides of the pipe to prevent lateral displacement.

I. From the centerline of the pipe to 1 foot above the top of the pipe, the trench shall be backfilled with satisfactory fill material in lifts not exceeding 6 inches, loose measurement. All lifts shall be backfilled and compacted by hand tamping or mechanical tamping methods approved by the Engineer.

J. From 1 foot above the top of pipe to finish grade, satisfactory backfill shall be installed in lifts not exceeding 12 inches, loose measurement, and shall be compacted by hand or mechanical tamping. Backfill shall be mounded slightly to allow for settlement.

K. Each refill, bedding, haunching, and backfill layer, as specified herein, shall be compacted to at least 95% of Modified Proctor maximum dry density in accordance to ASTM D 1557 except under pavement and limerock where compaction shall be to at least 98%. No puddling or flooding of trench shall be used for compaction.

L. Place magnetic identification tape above the top of the pipe as shown on the drawings. Place identification tape over the center of all piping.

M. In unretained areas adjacent to filled and compacted areas, provide gradual slopes away from filled areas to existing grade with subsoil. Backfill systematically and as early as possible to allow maximum time for natural settlement and compaction.

N. Backfill electric utility line trenches with sand for a minimum 30-inch cover over the conduit. Underground conduit installed under a roadway (paved or unpaved) shall be embedded in concrete as specified herein. Fill the remainder of the trenches with backfill and compact as herein specified.

O. Backfill for trenches through roadway areas shall be as specified on the drawings, with all materials provided by the Contractor.

P. All areas within the limits of work shall be uniformly regraded, leveled with topsoil with slight mounding for settlement, and grassed as specified in Section 02900, Seeding and Sodding.

Q. Where the trench is excavated in rock, a combined minimum of 12 inches of sand or gravel refill and bedding material shall be placed on the rock surface as shown before laying conduit or electrical cable.

3.07 COMPACTION - GENERAL

A. Compact all materials by hand or mechanical means. Flooding or jetting will not be permitted. If compaction tests indicate that compaction or moisture content is not as specified, material placement shall be terminated and corrective action shall be taken by the Contractor prior to continued placement.

B. During all compacting operations, maintain optimum practicable moisture content required for compaction purposes in each lift of fill. Uniformly maintain moisture content throughout the lift. Add water to the material at the site of excavation when practicable. Supplement, if required, by sprinkling the fill. At the time of compaction, the water content of the material shall be at optimum moisture content as determined by ASTM D 1557, or within 1 percentage point below or 3 percentage points above the optimum moisture content, unless otherwise approved by the Engineer.

C. Do not attempt to compact fill material that contains excessive moisture. The Contractor shall perform all work necessary to provide and compact soil within the moisture content specified. This work includes aerating material by blading, discing, harrowing, or other methods or replacement as necessary with satisfactory soil material.

3.08 FINAL GRADING AND SEEDING

A. After the completion of construction, the entire area within the limits shown on the drawings shall be graded to the finished elevations shown on the drawings. All final grading shall be smooth, uniform, and continuous between the proposed elevations shown on the drawings with allowances for topsoil as required. All site areas disturbed by construction operations, as well as those designated, shall be graded. All areas disturbed during construction shall be grassed.

B. Slopes shall be free of all exposed roots and stones exceeding 3 inches in diameter. In general, tops of slopes shall be rounded to circular curves with not less than 6-foot radius. Rounded surfaces shall be neatly and smoothly trimmed.

C. Finished site grading will be reviewed by the Engineer for acceptance. The ground shall be left free of trash, rocks, rubbish, and clods. Areas to be grassed shall be grassed in accordance with Section 02900, Seeding and Sodding. Seeded areas shall be protected from foot or vehicular traffic during the time period in which the grass is being established.

D. The finished surface of areas to be grassed shall be not more than 0.10-foot above or below the specified finish elevations.

E. The surface of areas under pavement and limerock shall be shaped to line, grade, and cross section, and the finished surface shall be not more than 1/2-inch above or below the specified finish elevations.

F. Newly graded areas shall be protected from traffic and erosion and shall be maintained free of trash or debris.

G. Where approved graded areas are disturbed by subsequent construction operations or adverse weather, the surface shall be regraded and grassed as specified prior to further construction.

3.09 CLASSIFICATION AND STORAGE OF EXCAVATED SOILS AND SURPLUS MATERIALS

A. Excavated and surplus soils materials from within the project boundary shall be stockpiled in the areas approved by the Owner. Excavated soils shall be tested, classified (e.g., sands, backfill, topsoils, unsuitable soils), and separated into individual stockpiles. The separated materials, if suitable, shall be used as called for in the drawings and specifications. The Contractor shall ensure no runoff from this area will be allowed to enter any adjacent wetland or impact construction.

B. All excavated materials remaining upon completion of the project shall be graded as necessary and grassed and shall, unless direct otherwise by the Owner, become the property of the Contractor and shall be removed and disposed of by him off the project site.

3.10 DEWATERING

A. Good drainage shall be maintained at all times with surface drainage directed away from excavated areas including trenches. The Contractor shall also prevent water from running into adjacent properties or public thoroughfares as a result of construction activities.

B. Water shall not be permitted to accumulate in excavations. Dewatering systems shall be provided by the Contractor to convey water away from excavations. Dewatering systems and methods of disposal shall be approved by the Engineer. Water removal from excavations shall be conveyed to approved collecting or runoff areas. Trench excavations for utilities shall not be used for temporary drainage ditches.

3.11 ABANDONMENT OF EXISTING PIPELINES AND UTILITIES

Existing abandoned underground piping, utilities, drain fields, and foundations shall be demolished and completely removed from the trench excavation and as otherwise required by the drawings and specifications.

END OF SECTION

SECTION 02310
DEWATERING

SECTION 02310
DEWATERING

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the requirements for demolition and/or removal work as a part of new construction or renovation.

1.02 RELATED WORK

A. The General and Supplementary Conditions of these specifications are a part of this section as if incorporated herein.

B. Other related specification sections contained herein are listed below:

1. Section 02224, Excavating, Backfilling, and Compacting For Structures
2. Section 02225, Excavating, Backfilling, and Compacting For Utilities
3. Section 02445, Boring and Jacking

1.03 PRE-BID INSPECTION AND TESTING

A. The Contractor is advised that site soil borings may indicate groundwater levels below the levels which may occur in response to normal, seasonal, extreme, or prolonged rainfall. The Contractor is further advised that site soil borings may not necessarily be representative of soil conditions encountered elsewhere on the jobsite, other than at the specific boring locations.

B. Prior to bidding, the Contractor shall perform a detailed site inspection and, if desired, obtain the Owner's permission to perform site-specific testing, as he deems necessary, to obtain all required information relative to project dewatering requirements.

C. The Contractor shall include as part of his Bid, the total cost of all surface and subsurface dewatering as required to construct the project in complete compliance with the drawings and specifications.

D. At least 10 days prior to the commencement of any dewatering activity, the Contractor shall submit to the Engineer, for record purposes only, a detailed description of the proposed dewatering system. This plan shall include design computations, layout, type, spacing of dewatering devices, number and size of pumps, and other equipment with a description of the installation and operating procedures. The dewatering plan shall address discharge path and prevention of erosion and sedimentation.

1.04 QUALIFICATIONS OF WORKMEN

A. At least one person shall be provided who shall be present at all times during the execution of this portion of the work and who shall be thoroughly familiar with the dewatering system being installed, the referenced standards, the requirements of this work, and who shall direct all work performed under this section.

B. It shall be the responsibility of the Contractor to determine the water level at the time prior to beginning excavation and construction.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

3.01 DEWATERING SYSTEM

A. The dewatering system shall be adequate to pre-drain the soils to be excavated to the extent that the piezometric water level in the construction area is a minimum of 6 inches below the bottom of the excavation or trench, side slopes of excavations, or bottom of the footings at all times, or as otherwise required to obtain the specified compaction and installation conditions.

B. In the event of layered soils, the hydrostatic head in the zone below the subgrade elevation shall be relieved to prevent uplift.

C. Unless otherwise noted and prior to any excavating below or within 6 inches above the groundwater level, a dewatering system shall be placed into operation to lower water levels to the extent specified previously, and then shall be operated continuously 24 hours per day, 7 days a week, until work has been completed to the satisfaction of the Owner and Engineer.

D. Where used, well points shall be installed in an approved manner and in sufficient numbers to provide the necessary removal of water as stated previously. Well points and header piping shall be installed in such a manner that traffic on public thoroughfares and site access roads will not be impeded.

E. The Contractor shall be solely responsible for the arrangement, location, and depths of the dewatering system necessary to accomplish the specified work. The dewatering system shall stay in full operation until excavations and trenches have been backfilled and compacted.

F. To prevent excessive noise, exhaust from all pumps and engines shall be silenced and muffled.

G. Wellpoint pump discharge shall be controlled to prevent erosion, undermining, and all other damage, and be piped to approved locations.

H. The Contractor shall comply with any and all applicable regulations and permitting requirements concerning groundwater pumpage and discharge.

I. The Contractor shall perform all dewatering work in strict compliance with all applicable regulations and project permits, including the NPDES Stormwater Permit.

J. Excavations shall be kept free from water during the placing of concrete and for 36 hours thereafter, or until concrete forms are removed.

3.02 OBSERVATION WELLS

A. The Contractor shall install observation wells as may be required to record accurate water levels.

B. The Contractor shall be responsible for maintaining all observation wells and observing and recording the elevation of the piezometric water levels daily.

C. Wells damaged or destroyed shall be replaced at no additional cost to the Owner.

3.03 CLEANUP

Upon completion of the dewatering work, the Contractor shall remove all equipment and leave the project site in a neat, clean, and acceptable condition, satisfactory to the Owner and Engineer. Wellpoint holes and excavations shall be adequately backfilled and compacted to prevent settlement.

END OF SECTION

SECTION 15100
PIPING - GENERAL

SECTION 15100
PIPING - GENERAL

PART 1 GENERAL

1.01 SECTION INCLUDES

Work necessary to furnish, install, and complete the piping specified herein and as further specified in the detail piping specifications.

1.02 DEFINITIONS

A. Pipe Base

A suitable material filling that space of the pipe trench between the bottom of the trench and the bottom of the pipe, extending the full width and length of the trench.

B. Pipe Zone

A suitable material filling that space of the pipe trench between the top of the pipe base and a plane above the pipe extending the full width and length of the trench. See Part 3, Execution, for the location of the pipe zone above the pipe.

C. Metallic Piping

Piping that is not of plastic material and that is electrically conductive.

D. Ferrous Metal

Iron, steel, stainless steel, and alloys with iron as the principal component.

1.03 SUBMITTALS

A. Product Data

Ductile Iron Wall Pipe: Manufacturer□s data, including thrust collar type and the test report substantiating the pressure rating and safety factor for fabricated thrust collars.

B. Shop Drawings

1. Support System

a) Drawings of each piping system to the scale as shown, locating each support, guide, and anchor.
b) Identify support, guide, and anchor type by catalog number and shop drawing detail number.

2. Hydraulic Thrust Restraint: Details, including materials, sizes, and assembly ratings, and pipe attachment methods for each pipe material.

3. Joint types and drawings for dissimilar pipes.

4. Drawings for layout of piping systems including critical joint or flange locations. Indicate locations of all fittings, valves, and other accessories on layout drawings. Perform final layout based upon dimensional data for specific material and equipment supplied so as to meet all project dimension, connection, and location requirements. Do not have pipe or appurtenances delivered to the site until layout drawings have been approved.

C. Quality Control Submittals

1. Ductile Iron Wall Pipe: Manufacturer's certified test report substantiating pressure rating and safety factor specified.

2. Certification of Inspection and Testing: Submit for specified inspection and testing; include test logs and reports.

3. Hydrostatic Testing:

a) Detailed plan for filling and testing pipeline sections; submit at least 30 days in advance of testing.

b) Testing procedures to be used, locations for necessary equipment and materials, and date and duration of tests.

1.04 DELIVERY, STORAGE, AND HANDLING

A. Pipe

1. Protect, support, and handle in a manner to prevent damage to the products, especially linings and coatings.

a) When necessary, provide shelter to store pipe and apply water to prevent excess drying.

b) Do not store pipe on rock or other hard surface.

2. Use implements, tools, facilities, and equipment suitable for proper and safe protection and handling of piping; do not drop or dump pipe into trenches. Use heavy canvas or nylon slings, not chains or cables, to lift pipe and fittings.

3. Cement-Mortar Lined Pipe: Tightly close ends with polyethylene plastic wrap to protect cement-mortar lining during shipment; leave plastic wrap on pipe until installation.

4. Remove pipe that is damaged, in the opinion of the Engineer, beyond repair.

B. Rubber Gaskets

1. Store in a cool, well-ventilated area.

2. Do not expose to the direct sunlight.

3. Do not allow contact with oils, fuels, or petroleum solvents.

1.05 SEQUENCING AND SCHEDULING

A. Slab and Wall Penetrations

Order wall pipes and sleeves sufficiently early to ensure they are available for placement in concrete forms.

1.06 SYSTEM DESIGN REQUIREMENTS

A. General

1. The specifications and drawings are not all inclusive of explicit piping details; provide piping for intended use in compliance with laws and regulations, including: ANSI/ASME B31.1 Code (Power Piping).

2. Pressure ratings and materials specified represent minimum acceptable standards for piping systems.

3. Piping Systems: Suitable for the services specified and intended.

B. Support Systems

1. The absence of pipe supports and details on the drawings shall not relieve Contractor of responsibility for sizing and providing supports for this project.

2. Select and design within the specified spans and component requirements.

3. Comply with requirements of ANSI/MSS SP 58, Pipe Hangers and Supports-Materials, Design, and Manufacture.

4. Criteria for Structural Design and Selection of Pipe Support System Components:

a) Dead loads imposed by the weight of the pipes filled with water, within specified spans and component requirements, plus any insulation.

b) Safety Factor: Minimum of 5.

5. Design, size, and space support anchoring devices, including anchor bolts, inserts, and other devices used to anchor the support, to withstand the shear and pullout loads imposed by loading and spacing on each particular support.

a) Piping Smaller than 30 Inches: Supports are shown only where specific types and locations are required; additional pipe supports may be required.

PART 2 PRODUCTS

2.01 GENERAL

A. Pipe Materials

1. General materials to be used for the piping systems are listed by service in the piping schedule as shown.

2. Specific material requirements are specified in the detail piping specifications.

3. Like Items of Materials: Use products of one manufacturer in order to achieve standardization for appearance, maintenance, and replacement.

B. Components

Furnish new products of equal material and rating as connecting pipe.

C. Pipe Diameters

1. Nominal sizes for standardized products, such as ductile iron pipe and mill type steel pipe.

2. Fabricated Steel Piping, Except Cement-Mortar Lined Steel Piping: Outside diameter in accordance with ANSI B36.10.

3. Cement-Mortar Lined Steel Pipe: Cement-lined inside diameter equal to nominal size as shown.

2.02 JOINTS FOR EXPOSED PIPING

Pipe joints for exposed piping shall be as specified in the detail pipe specifications.

2.03 JOINTS FOR BURIED PIPING

A. Ductile Iron Pipe

1. Gravity and Nonpressure Services: Mechanical or push-on type.

2. Pressure Services:

a) Provide joint thrust restraint shown in piping schedule designed for test pressures.

b) Use for new piping connections, as specified herein.

c) Thrust Restraint:

1) Use flanged pipe for above-grade pipe connection.

2) Use thrust tie-rods where shown on the drawings.

3) Use pipe manufacturer's standard push-on restrained joint pipe. Restraint system must be rated for a minimum working pressure of 250 psi per AWWA C111 with a minimum safety factor of 2.0.

4) Anchoring of retainer glands or thrust ties with setscrews is not acceptable.

B. Dissimilar Buried Pipes

1. Provide flexible mechanical compression joint coupling with No. 305 stainless steel bands, or a concrete closure collar, as approved, for gravity piping.

2. Manufacturers of Mechanical Joint Coupling:

a) Power Seal, Pipeline Products Corp., Wichita Falls, TX.

b) Fernco Joint Sealer Co., Ferndale, MI.

c) Or equal.

2.04 JOINT LUBRICANT

A. Furnished with pipe.

B. Amount and Type

As recommended by pipe manufacturer.

C. Composition

Water soluble, nontoxic, vegetable soap compound suitable for use in potable waterlines.

2.05 COUPLINGS FOR METALLIC PIPING

A. General

1. Thrust Ties: Provide where shown and where required to restrain the force developed by 1□ times the maximum operating pressure specified.

   a) Steel Pipe: Attach with fabricated lugs.

   b) Ductile Iron Pipe: Attach with socket clamps against a grooved joint coupling or flange.

   c) Flanged Coupling Adapters: Tie-rods shall be constructed of COR-TEN conforming to AWWA C600. Tie rods shall be restrained with DUC-LUGS as manufactured by ROMAC Industries, or equal.

2. Exposed Installations: Zinc-plated nuts and bolts; however, high-strength, low-alloy steel, in accordance with AWWA C111, may be substituted for use on cast iron and ductile iron couplings.

3. Buried and Submerged Installations: Provide Type 316 stainless steel bolts and nuts.

4. Steel Middle Rings and Followers: Fusion bonded epoxy-lined and coated in accordance with AWWA C213.

B. Flexible Couplings

Manufacturers and Models for Ductile Iron Pipe: Dresser, Style 53 or 153; Rockwell, Style 431; or equal.

C. Transition Couplings

Connect similar pipe with small difference in outside diameter.

Manufacturers and Models: Dresser, Style 162; Rockwell, Style 413; or equal.

D. Flanged Coupling Adapters

Manufacturers and Models for Ductile Iron Pipe: Rockwell International, Series 912; Dresser Industries, Inc., Style 127; or equal.

2.06 FLEXIBLE PIPE CONNECTIONS TO EQUIPMENT

Flexible pipe connections shall be provided at all connections to equipment.

2.07 SERVICE SADDLES

Ferrous Metal Piping (Except Stainless Steel)

A. Double-strap design capable of withstanding 180 psi internal pressure without leakage or overstressing.

B. Run diameter compatible with the outside diameter of the pipe on which the saddle is installed.

C. Taps with iron pipe threads.

D. Malleable or ductile iron bodies and galvanized steel straps, steel hex nuts with washers, and neoprene seals.

E. Manufacturers and Models: Rockwell Series 313 or 366; Dresser, Style 91; or equal.

2.08 SLAB AND WALL PENETRATIONS

A. <u>Ductile Iron Wall Pipe</u>

1. For penetrations through concrete walls that are to be watertight.

2. Diameter and Ends: Same as connecting ductile iron pipe.

3. Thickness: Equal to or greater than remainder of pipe in line.

4. Fittings: In accordance with the applicable detail piping specification.

5. Provide taps for stud bolts in flanges set flush with wall face.

6. Thrust Collars:

   a) Provide for all wall pipes.

   b) Provide 250 psi working pressure thickness.

   c) Safety Factor: Minimum of 2.

d) Material and Construction: Ductile iron or cast iron, cast integral with wall pipe.

7. Manufacturer

a) American Cast Iron Pipe Co.

b) Or equal.

2.09 PIPING SUPPORT SYSTEMS

A. General

1. Manufacturers catalog figure numbers are typical of the types and quality of standard pipe supports and hangers to be provided.

2. Concrete anchors and anchor bolts: As specified in Section 05505, Miscellaneous Metals.

B. Saddle Support

1. Pedestal Type: Schedule 40 steel pipe stanchion, saddle, and anchoring flange.

2. Nonadjustable saddle, MSS SP 58, Type 37 with U-bolt. Manufacturers and figures:

a) Grinnell, Figure 259

b) B-Line, Figure B3093

c) Or equal.

C. Channel Type Support Systems

12-gauge, 1 5/8-inch-wide series, pregalvanized in accordance with ASTM A 525 Class G90, or hot-dip galvanized after fabrication or, when required by location, Type 304 stainless steel.

1. Members and Connections: Design for all loads with a safety factor of 5.

2. Manufacturers and Models:

a) Kin-Line , Series CI3812.

b) Unistrut, Series P3200.

c) Or equal.

2.10 CORROSION PROTECTION COATINGS

A. Provide as specified in the attached piping schedule and Section 09900, Painting.

B. Additional requirements for protection are included in the detail piping specifications.

2.11 UNDERGROUND WARNING TAPE

Polyethylene warning tape "CAUTION - PIPELINE BURIED BELOW" shall be as manufactured by Seton Company, Style 210 PIP, or equal.

PART 3 EXECUTION

3.01 EXAMINATION

Verification of existing pipe:

A. Prior to ordering material, expose all existing pipes which are to be connected to new pipelines.

B. Verify the size, material, joint types, elevation, and horizontal location of existing pipes.

3.02 PREPARATION

A. New Pipe and Fittings

1. Inspect before exposed pipe or fitting is installed or buried pipe or fitting is lowered into the trench.

2. Clean ends of pipe thoroughly, remove foreign matter and dirt from inside of pipe, and keep clean during and after laying.

B. Damaged Coating

Repair damaged areas in field with material equal to original.

3.03 PIPING INSTALLATION

A. General

Install in conformance with reviewed shop drawings.

B. Piping Expansion Provisions

1. Piping: Install to allow for thermal expansion due to differences between installation and operating temperatures.

2. Anchors: Install as shown to withstand expansion thrust loads and to direct and control thermal expansion.

3. Expansion Devices: Install devices as specified and at locations shown.

C. Piping Flexibility Provisions

1. Install thrust protection as specified.

2. Install flexible couplings and expansion joints for piping systems and at connections to equipment where shown.

3. Install additional pipe anchors and flexible couplings to facilitate piping installation, in accordance with reviewed shop drawings.

D. Pipe Fittings and Appurtenances

In accordance with the manufacturer's instructions and these specifications.

3.04 FLEXIBLE COUPLINGS, FLANGED COUPLING ADAPTERS, AND SERVICE SADDLES

A. Thoroughly clean oil, scale, rust, and dirt from the pipe to provide a clean seat for the gasket.

B. Wipe gaskets clean prior to installations.

C. Lubricate flexible couplings and flanged coupling adapter gaskets with soapy water or manufacturer's standard lubricant before installation on the pipe ends.

D. Install couplings, service saddles, and anchor studs in accordance with manufacturer's instruction.

E. Tighten bolts progressively, drawing up bolts on opposite sides a little at a time until all bolts have a uniform tightness.

F. Use only torque-limiting wrenches to tighten bolts.

3.05 PIPING SUPPORT SYSTEMS

A. Install support system, as approved, in accordance with Manufacturers Standardization Society of the Valve and Fitting Industry, Inc. (MSS) SP 69, Pipe Hangers and Supports - Selection and Application, and as specified herein.

B. Support piping connections to equipment by pipe support and not by the equipment.

C. Support large or heavy valves, fittings, and/or appurtenances independently of connected piping.

D. Provide supports at piping changes in direction or in elevation, adjacent to flexible joints and couplings, and where otherwise shown.

3.06 TRENCH EXCAVATION AND PREPARATION

A. As specified in Section 02225, Excavating, Backfilling, and Compacting for Utilities..

B. Place pipe base material to proper grade for full width and length of trench.

1. Minimum depth of pipe base below barrel of pipe to be as follows:

Pipe Size	Minimum Depth
20 inches and smaller	6 inches

2. In areas of rock excavation, increase minimum depths listed above by 2 inches.

C. If trench has been excavated below the required depth for pipe base placement without approval by Engineer, fill excess depth to proper subgrade with pipe base specified herein or with foundation stabilization material specified in Section 02225, Excavating, Backfilling, and Compacting for Utilities, at the Contractor's sole expense.

3.07 BURIED PIPE PLACEMENT

A. General

1. Lay pipe and fittings in conformance with reviewed laying drawing, manufacturer's instructions and alignment and elevations shown.

2. Provide all special tools and devices, such as special jacks, chokers, and similar items required for proper installation.

3. Use pipe joint lubricant as specified; no substitutions will be permitted.

4. Do not lay pipe in water or when, in the opinion of the Engineer, trench conditions are unsuitable.

5. Prevent uplift and floating of pipe prior to backfilling.

6. Minimum Pipe Cover: 3 feet unless otherwise shown.

7. Do not deviate more than 1 inch from line or 1/4 inch from grade for gravity piping.

8. Measure for grade at the pipe invert, not at the top of the pipe.

9. Before laying each section of the pipe, check the grade with a straight edge and correct any irregularities found.

10. Dig bell holes at joint locations of ample dimensions in the bottom and sides of the trench where necessary to permit visual inspection and testing of the entire joint.

11. Prevent foreign material from entering pipe at all times during placement.

    a) If pipe cannot be placed without foreign material entering pipe, place a tightly woven canvas bag snugly over each end before lowering pipe.

    b) Leave bags in-place until connection is made to adjacent pipe.

12. Lay pipe upgrade with bell ends pointing in direction of laying.

13. After a section of pipe has been lowered into the prepared trench, Clean the end of the pipe to be joined, the inside of the joint, and the rubber ring immediately before joining the pipe.

14. Check gasket position with feeler gauge furnished by the pipe manufacturer, to assure proper seating. The feeler gauge shall be of proper size, type, and shape for use during installation for each type of pipe furnished.

15. Install closure sections and adapters for gravity piping at locations where pipe laying changes direction.

16. After the joint has been made as specified under Article Joining Pipe, check pipe for alignment and grade. Maximum deviation 1 inch from line, and 1/4 inch from grade (for gravity flow systems).

17. Joint Deflection:

    a) Deflect pipe at joints for pipelines laid on a curve, using unsymmetrical closure of spigot into bell.

    b) Maximum Deflection: 75% of maximum deflection recommended by pipe manufacturer.

c) Use one of the following methods if joint deflection of standard pipe lengths will not accommodate horizontal or vertical curves in alignment:

1) Shorter pipe lengths.

2) Special mitered joints.

3) Standard or special fabricated bends.

d) Install thrust blocking if special mitered joints or bends are used.

18. Apply sufficient pressure in making the joint to assure that the joint is "home," as defined in the standard installation instructions provided by the pipe manufacturer.

19. Place sufficient pipe zone material to secure the pipe from movement before the next joint is installed.

20. Keep trench dry until the pipe laying and jointing are completed.

21. Close and block the open end of the last laid section of pipe to prevent entry of foreign material or creep of the gasketed joints, at all times when laying operations are not in progress, such as lunch break, close of the day's work, or when workers are absent from the job.

B. Joining Pipe

1. Bell-and-Spigot with Rubber Gasket Joints (Push-On Joints):Assemble in accordance with manufacturer's instructions, and the following:

a) As next section of pipe is being readied for laying, clean bell of previously laid pipe of foreign material and apply thin film of specified lubricant to entire surface of bell ring.

b) At same time, lubricant gasket and install in spigot groove.

c) Ensure gasket tension is uniform around groove before placing pipe in trench.

d) Lower pipe section into trench until approximately in line with previously laid pipe section and spigot is centered in bell.

e) Then force pipe "home" as defined in manufacturer's installation instructions and secure to proper alignment and grade with specified pipe zone material.

f) Check gasket position with feeler gauge furnished by pipe manufacturer, to assure proper seating.

2. Flexible Couplings

a) Before coupling, clean pipe hold back area of oil and dirt.

b) Do not remove pipe coating; repair if damaged before joint is made.

c) Install couplings in accordance with manufacturer□s instructions.

d) Clean gaskets before installation.

e) If necessary, lubricate with gasket lubricant for installation on pipe ends.

f) Tighten coupling bolts progressively, drawing up bolts on opposite sides a little at a time until all bolts have uniform tightness.

g) Tighten bolts with torque-limiting wrenches.

h) Do not overstress bolts to compensate for poor alignment of flanges.

3. Connections to Concrete Structures

a) Make as shown.

b) If connection is not shown, locate standard pipe joint no more than 18 inches from structure.

3.08 BACKFILL IN THE PIPE ZONE

As specified in Section 02225, Excavating, Backfilling, and Compacting for Utilities.

3.09 TRENCH BACKFILL ABOVE PIPE ZONE

As specified in Section 02225, Excavating, Backfilling, and Compacting for Utilities.

3.10 UNDERGROUND WARNING TAPE

Install underground warning tape above the centerline of each buried pipe. The tape shall be located 1 foot below finished grade.

3.11 FLEXIBLE JOINTS AT CONCRETE STRUCTURES

A. Rubber ring joints, mechanical joints, flexible couplings, and proprietary restrained ductile iron pipe joints are considered flexible joints; welded pipe joints are not considered flexible joints.

B. Provide flexible joints at the face of all structures, whether or not shown.

C. Flexible joint may be flush with face or may be up to one pipe diameter away from face, but not further than 18 inches away from face.

D. Install a second flexible joint, whether or not shown, within one pipe diameter of the first joint.

3.12 CLOSURES

A. Closure Pieces

1. Install as necessary to complete closure assembly where pipes meet other pipes or structures.

2. Elastomeric sleeves bonded to pipe ends are not acceptable.

B. Pressure Pipeline Closures

Plain end pieces with double flexible couplings, unless otherwise shown or approved.

C. Restrained Joint Pipe Closures

Install with thrust tie-rod assemblies as shown or in accordance with NFP No. 24, standard for the installation of private fire service mains and their appurtenances.

D. Gravity Pipe Closures

As specified for pressure pipelines or concrete closures.

E. Concrete Closures

1. Provide with smooth interior surfaces conforming to pipe surface and construct using forms.

2. Locate away from structures so that there are at least two flexible joints between the closure and pipe entering the structure.

3.13 THRUST RESTRAINT

A. At pipeline tees, plugs, caps, bends, and other locations where unbalanced forces exist.

B. Provide thrust restraint where required, whether or not shown.

3.14 EXPOSED PIPING INSTALLATION

A. Pipe Flanges

1. Set level, plumb, and aligned.

2. Install flanged fittings true and perpendicular to the axis of the pipe.

3. Bolt holes shall straddle vertical centerline of pipes.

B. Unions

Install where required for piping or equipment installation.

C. Valve Orientation

1. As shown where valve handwheels are shown.

2. Where valve handwheels are not shown, orient to permit easy access to the valve operator, and to avoid interferences.

3.15 CORROSION PROTECTION

A. General

1. Protect all pipe and piping accessories from corrosion and adverse environmental conditions.

2. Additional requirements for protection to those specified below are included in the detail piping specifications and in Section 09900, Painting.

B. Buried Pipe

Ductile Iron Pipe

1. Install buried ductile iron piping within polyethylene tubing.

2. Install tubing in accordance with AWWA C 105/ANSI A 21.5 and manufacturer□s instructions.

3.16 PIPE LEAK TESTING

A. General

1. Conduct pressure and leakage tests on newly installed pipelines and appurtenances, in accordance with reviewed testing plan.

2. Furnish necessary equipment and material and make taps in piping, as necessary for testing and as specified.

3. Engineer will observe the tests.

4. Provide 10 days advance written notice of start of testing to Engineer.

5. Test Pressures and Type of Test: As specified in the piping schedule as shown.

6. Test Records: Make records of each piping system during the test to document the following:
   a) Date of test.

b) Description and identification of piping tested.

c) Test fluid.

d) Test pressure.

e) Remarks, including:

1) Leaks (type, location)

2) Repairs made on leaks.

f) Certification by Contractor and signed acknowledgment by Engineer that tests have been satisfactorily completed.

B. Testing New Pipe Connected to Existing Pipe

1. Isolate new pipe with grooved-end pipe caps, spectacle blinds, or blind flanges.

2. Test joint between new piping and existing piping by methods, approved by the Engineer, that do not place the entire existing system under test load.

C. Buried Pressure Piping

1. Initial Service Leak Test: Conduct with partially backfilled tench and joints left open for inspection, as field conditions permit and as approved by Engineer.

2. Final Hydrostatic Acceptance Test: Conduct after trench has been completely backfilled.

3. Expose all joints on buried pressure piping to be pneumatically tested or subjected to an initial service leak test.

D. Exposed Pressure Piping: Conduct tests after piping has been completely installed and inspected for proper installation, including all supports, hangers, and anchors, but prior to installation of insulation.

3.17 HYDROSTATIC LEAK TESTING

A. Testing Equipment

Quantity	Equipment
2	Graduated containers
2	Pressure gauges
1	Hydraulic force pump

As required	Suitable hose and suction pipe

B. Procedure

1. Use water as the hydrostatic test fluid.

2. Provide clean test water of such quality to prevent corrosion of the material in the piping system.

3. Maximum Velocity During Filling: 0.25 foot per second applied over full area of pipe.

4. Open vents at all high points of the piping system to purge air pockets while the piping system is filling.

5. Venting during filling may also be provided by loosening flanges with a minimum of four bolts or by the use of equipment vents.

6. Test all parts of the piping system at the test pressure specified.

7. Maintain hydrostatic test pressure continuously for 2 hours minimum and for such additional time as necessary to conduct examinations for leakage.

8. Examine all joints and connections for leakage.

9. The piping system, exclusive of possible localized instances at pump or valve packing, shall show no visual evidence of leaking.

10. Correct visible leakage and retest as required by Engineer.

C. Buried Pressure Piping

1. A limited amount of leakage is permissible according to the formula specified herein.

2. Cement-Mortar Lined Piping: Slowly fill test section with water and allow to stand for 24 hours under low pressure to allow cement-mortar lining to absorb water.

3. Expel all air from piping system prior to testing.

4. Apply and maintain specified test pressure with hydraulic force pump.

5. Valve off the piping system when test pressure is reached.

6. Maintain hydrostatic test pressure continuously for 2 hours minimum, reopening isolation valve only as necessary to restore test pressure.

7. Accurately measure amount of water required to maintain test pressure by placing pump suction in a barrel or similar device, or by metering.

8. Determine maximum allowable leakage in gallons per hour from the following formula:

   a) $L = SD(P)^{\square}/133,200$

   b) In the above formula:

      1) L = Allowable leakage, in gallons per hour, which represents the quantity of water necessary to maintain the specified test pressure for the duration of the test period.

      2) S = Length of pipe tested, in feet.

      3) D = Nominal diameter of pipe, in inches.

      4) P = Test pressure during the leakage test, in pounds per square inch.

   c) Correct leakage greater than the allowable determined under this formula, and retest as required by Engineer.

3.18 INITIAL SERVICE LEAK TESTS

A. Testing Equipment

As specified herein before.

B. Procedure

1. Gradually bring piping system up to normal operating pressure and hold continuously for a minimum of 10 minutes.

2. Examine joints and connections for leakage with soap bubbles.

3. The piping system, exclusive of possible localized instances at pump or valve packing, shall show no visual evidence of leaking.

4. Correct any visible leakage end retest as directed by Engineer.

3.19 FINAL CLEANING

A. Interim Cleaning

1. Prevent accumulation of weld rod, weld spatter, pipe cuttings and filings, gravel, cleaning rags, and other foreign material within piping sections during fabrication.

2. Examine piping to assure removal of these and other foreign objects prior to assembly and installation.

B. Following assembly and testing, and prior to disinfection and final acceptance, flush pipelines with water to remove accumulate construction debris and other foreign matter.

C. Flush until all foreign matter is removed from the pipeline.

D. Provide hoses, temporary pipes, ditches, and other items as required to properly dispose of flushing water without damage to adjacent properties.

E. Minimum Flushing Velocity: 2.5 fps.

F. For large diameter pipe where it is impractical to flush the pipe at 2.5 fps velocity, clean the pipeline in-place from the inside by brushing and sweeping, then flush the line at a lower velocity as approved by the Engineer.

G. Insert cone strainers in the flushing connections to attached equipment and leave in-place until cleaning has been accomplished.

H. Remove accumulated debris through drains 2 inches and larger or by removing spools and valves from piping.

END OF SECTION

SECTION 15101
DUCTILE IRON PIPE AND FITTINGS

SECTION 15101
DUCTILE IRON PIPE AND FITTINGS

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the work necessary to furnish, install, and complete the cement-lined ductile iron pipe and gray cast iron or ductile iron fittings specified herein, and as specified further in Section 15100, Piping - General.

1.02 ADDITIONAL REQUIREMENTS

See Section 15100, Piping - General, for additional requirements.

PART 2 PRODUCTS

2.01 PIPE

A. Centrifugally cast, Grade 60-42-10 iron, ANSI A21.51, AWWA C151, cement-lined and seal-coated in accordance with ANSI A21.4, 250 psi minimum working pressure, except as follows:

1. Threaded flanged pipe shall be Class 53 minimum.

2. Buried pipe for liquids shall be thickness class as determined by ANSI A21.51, Tables 51.1 and 51.2.

2.02 JOINTS

A. Flanged, mechanical joint, push-on, as specified herein:

1. Flanged: Use above ground or in a vault.

2. Mechanical and push-on: Use for buried pipe.

3. Or as specified on the drawings.

B. Reference Standards

1. Flanged: ANSI/AWWA C115 and shall use ductile iron flanges.

2. Mechanical joint: ANSI/AWWA C110, ANSI/AWWA C111, and ANSI/AWWA C153.

3. Push-on: ANSI/AWWA C110 and ANSI/AWWA C111, American Cast Iron Pipe Company, Fastite Joint; U.S. Pipe and Foundry, Tyton Joint; or equal.

2.03 FITTINGS

A. Gray or ductile iron, 150 psi working pressure, cement-lined and seal-coated. Where taps are shown on fittings, tapping bosses shall be provided. ANSI B16.1 fittings shall be used only for nonstandard fittings not manufactured under ANSI/AWWA C110 and ANSI/AWWA C153.

1. Flanged: ANSI/AWWA C110 and ANSI B16.1, faced and drilled 125-pound ANSI standard.

2. Mechanical joint: ANSI/AWWA C110, AWWA C111, and ANSI/AWWA C153.

3. Push-on: ANSI/AWWA C110 and ANSI/AWWA C111, American Cast Iron Pipe Company, Fastite Joint; U.S. Pipe and Foundry, Tyton Joint; or equal.

2.04 FLANGES

Ductile iron, ANSI A21.15/AWWA C115, threaded, 250 psi working pressure, ANSI 125-pound drilling.

2.05 BOLTS

A. Class 125 FF Flanges

Carbon steel, ASTM A307, Grade A hex head bolts and ASTM A563, Grade A hex head nuts.

B. Class 250 RF Flanges

Carbon steel, ASTM A307, Grade B hex head bolts and ASTM A563, Grade A heavy hex head nuts.

C. Mechanical Joint

Manufacturer's standard.

2.06 GASKETS

A. Gaskets for mechanical and push-on joints shall be rubber, conforming to ANSI A21.11, AWWA C111.

B. Gaskets for flanged joints shall be ⅛-inch thick, cloth-inserted rubber conforming to applicable parts of ANSI B165.21 and AWWA C207. Gasket material shall be free from corrosive alkali or acid ingredients and suitable for use in sewage or potable waterlines. Gaskets shall be full-face type for 125-pound FF flanges.

2.07 LUBRICANT

Lubricant for joints shall be manufacturer's standard.

PART 3 EXECUTION

3.01 HANDLING PIPE

Care shall be taken not to damage the cement lining when handling the pipe.

3.02 CUTTING PIPE

Cut pipe with milling type cutter, rolling pipe cutter, or abrasive saw cutter. Do not flame cut.

3.03 DRESSING CUT ENDS

A. Dress cut ends of pipe in accordance with the type of joint to be made.

B. Dress cut ends of buried pipe joints to remove sharp edges or projections which may damage the rubber gasket.

C. Dress cut ends of push-on joint pipe by beveling, as recommended by the pipe manufacturer.

D. Dress cut ends of pipe for flexible couplings, and flanged coupling adapters, recommended by the coupling or adapter manufacturer.

3.04 FABRICATION OF FLANGED PIPE

Flanged pipe shall be fabricated in the shop, not in the field, and delivered to the jobsite with flanges in place and properly faced. Threaded flanges shall be individually fitted and machine tightened on matching threaded pipe by the manufacturer. Flanges shall be faced after fabrication in accordance with ANSI A21.15/AWWA C115.

3.05 JOINTING PIPE

A. Flanged

Prior to connecting flanged pipe, the faces of the flanges shall be thoroughly cleaned of all oil, grease, and foreign material. The rubber gaskets shall be checked for proper fit and thoroughly cleaned. Care shall be taken to assure proper sealing of the flange gasket. Bolts shall be tightened so that the pressure on the gasket is uniform. Torque-limiting wrenches shall be used to ensure uniform bearing insofar as possible. If joints leak when the hydrostatic test is applied, the gaskets shall be removed and reset and bolts retightened.

B. Mechanical and Push-On Joint

Joint pipe with mechanical and push-on type joints in accordance with the manufacturer's recommendations. Provide all special tools and devices, such as special jacks, chokers, and similar items required for proper installation. Lubricant for the pipe gaskets shall be furnished by the pipe manufacturer, and no substitutes will be permitted under any circumstance.

3.06 TESTING

All lines shall be tested at the pressures listed in the Piping Schedule and by the procedure listed therein. Test procedures shall be as specified in Section 15100, Piping - General.

3.07 CORROSION PROTECTION

Exposed pipe only:

Surface Preparation	Paint Material	Minimum Coats, Cover
Abrasive Blast, or Centrifugal Wheel Blast (SP 10)	Polyamide, Anticorrosive, Epoxy Primer	1 coat, 2 MDFT
	High Built Polyamide Epoxy	1 coat, 5 MDFT
	High Solids, High Built Polyurethane Enamel	1 coat, 3 MDFT

END OF SECTION

SECTION 15102
GALVANIZED STEEL PIPE AND MALLEABLE IRON FITTINGS

SECTION 15102
GALVANIZED STEEL PIPE AND MALLEABLE IRON FITTINGS

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the work necessary to furnish, install, and complete the galvanized steel plant pipe and fittings specified herein and as specified further in Section 15100, Piping - General.

1.02 ADDITIONAL REQUIREMENTS

See Section 15100, Piping - General.

PART 2 PRODUCTS

2.01 PIPE

Carbon steel, galvanized, seamless or electric resistance welded, ASTM A 53, Grade B or ASTM A 106, Grade B, Schedule 40.

2.02 JOINTS

Three inches and smaller, screwed.

2.03 FITTINGS

Three inches and smaller, screwed, 150-pound malleable iron, galvanized, ASTM A 197 or ASTM A 47, dimensions conforming to ASNI B 16.3; unions, 150-pound malleable iron, galvanized, ASTM A 197 or ASTM A 47, dimensions conforming to ANSI B16.3, brass to iron seat.

2.04 BRANCH CONNECTIONS

Two inches and smaller, screwed tees, as specified under fittings.

2.05 THREAD LUBRICANT

Teflon tape or joint compound that is insoluble in water.

PART 3 EXECUTION

3.01 GENERAL

A. Ream, clean, and remove burrs from piping before making up joints.

B. Upon completion of installation, piping systems shall be flushed and cleaned as specified in Section 15100, Piping - General. After piping systems have been

flushed and blown clean, all strainers shall have their baskets removed in the presence of the Engineer. All strainer baskets shall be thoroughly cleaned before replacement.

3.02 TESTING

All lines shall be hydrostatically tested at the pressures listed in the Piping Schedule. Test procedures shall be as specified in Section 15100, Piping - General.

3.03 SUPPORTS AND HANGERS

As specified in Section 15100, Piping - General.

3.04 CORROSION PROTECTION

Galvanized Metal Conditioning:

Surface Preparation	Paint Material	Minimum Coats, Cover
Solvent Clean (SP 1)	Wash Primer or Coating Manufacturer's Recommendation	1 coat, 0.4 MDFT
Followed by Hand Tool (SP 2) or Power Tool (SP 3)	Finish Coats to Match Existing Paint	As required to Match Surrounding Area

END OF SECTION

SECTION 15103
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS
(3 INCHES IN DIAMETER AND SMALLER)

SECTION 15103
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS
(3 INCHES IN DIAMETER AND SMALLER)

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the work necessary to furnish and install, complete, the polyvinyl chloride pipe and fittings specified herein, and as specified further in Section15100, Low-Voltage Piping - General Requirements.

1.02 ADDITIONAL REQUIREMENTS

See Section 15100, Low-Voltage Piping - General Requirements, for additional requirements.

PART 2 PRODUCTS

2.01 PIPE

PVC, new and unused, not over 6 months old, Schedule 80, Type I, Grade 1, or Class 12454-B, conforming to ASTM D1784 and ASTM D1785.

2.02 NIPPLES

Same as pipe, Schedule 80.

2.03 JOINTS

Socket-weld, except where connecting to unions, valves, and equipment with threaded connections that may require future disassembly.

2.04 FITTINGS

Schedule 80, as specified under PIPE hereinbefore. Fittings shall conform to the requirements of ASTM D2466 for socket type and ASTM D2464 for threaded type.

2.05 FLANGES

One piece, molded hub type flat faced flanges, 125-pound standard, as specified under FITTINGS hereinbefore.

2.06 GASKETS

A. Full-faced, ⅛-inch thick, fabricated from ethylene propylene rubber (EPR)

B. When mating flange has raised face, use flat ring gasket and provide filler gasket between OD of raised face and flange OD to protect PVC flange from bolting moment.

2.07 BOLTING

Type 316 stainless steel, ASTM A 193, Grade B8M hex head bolts and ASTM A 194, Grade 8M hex head nuts. Bolts shall be fabricated in accordance with ASTM B 18.2 and provided with washers of the same material as the bolts.

2.08 SOLVENT CEMENT

A. All socket connections shall be cleaned and prepared for solvent cementing with PVC primer conforming to ASTM F 656. Manufacturer shall be as recommended by the pipe and fitting manufacturer to assure compatibility.

B. All socket connections shall be joined with PVC solvent cement conforming to ASTM D 2564. Manufacture and viscosity shall be as recommended by the pipe and fitting manufacturer to assure compatibility.

2.09 THREAD LUBRICANT

Teflon tape.

PART 3 EXECUTION

3.01 GENERAL

A. All rigid PVC pipe shall be cut, made up, and installed in accordance with ASTM D 2855 and the pipe manufacturer's recommendations. Plastic pipe shall be laid by snaking the pipe from one side of the trench to the other. Offset shall be as recommended by the manufacturer for the maximum temperature variation between time of solvent welding and during operation.

B. Use Schedule 80 threaded nipple when necessary to connect to threaded valve or fitting.

C. Only strap wrenches shall be used for tightening threaded plastic joints, and care shall be taken not to overtighten these fittings. Pipe shall not be laid when the temperature is below 40 °F, nor above 90 °F when exposed to direct sunlight. Ends to be joined shall be shielded from direct sunlight prior to and during the laying operation.

D. Provide adequate ventilation when working with pipe joint primer and solvent cement.

3.02 TESTING

All lines shall be hydrostatically tested at the pressures listed on the Piping Schedule. Test procedures shall be as specified in Section 15100 of these specifications.

3.03 SUPPORTS AND HANGERS

In accordance with Section 15100 of these specifications.

END OF SECTION

SECTION 15105
POLYVINYL CHLORIDE (PVC) PIPE AWWA C-900 AND C-905

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the work necessary to furnish, install, and complete the PVC pipe and ductile iron fittings specified herein and as specified further in Section 15100, Piping and Valves - General.

1.02 SUBMITTALS

All submittals shall be made in accordance with the Section 01300, Schedules, Reports, Records, and Submittals, of the Contract Documents. Section 15100, Piping – General further details the requirements for pipe submittals.

1.03 ADDITIONAL REQUIREMENTS

See Section 15100, Piping and Valves - General for additional requirements.

PART 2 MATERIALS AND EQUIPMENT

2.01 PLASTIC PIPE

PVC pipe shall meet the requirements of AWWA C-900 for 4-inch to 12-inch diameters and AWWA C-905 for 14-inch to 48-inch diameters with cast iron pipe equivalent outside diameter. Pipe shall be made of PVC having a cell classification of 12454B per ASTM D 1784. Pipe shall be pressure Class 150 unless otherwise shown. Pipe may be furnished with plain ends for use with elastomeric-gasket couplings or with one end plain and one end with a gasket bell. Couplings and gaskets shall be furnished with the pipe. Gaskets shall conform to ASTM D3139. Nontoxic gasket lubricant shall be as specified by the Pipe Manufacturer.

PVC pipe shall be push-on type joint according to ASTM D 3212, unless specified differently.

2.02 FITTINGS

A. Fittings for use with PVC pipe 4-inches through 12-inches in diameter shall be ductile-iron fittings conforming to the requirements of ANSI/AWWA C153/A21.53 or ductile-iron or gray iron fittings conforming to the requirements of ANSI/AWWA C111/A21.11a. Bolts for use with mechanical joints shall conform to the requirements of the joint standard. Fittings shall be suitable for a working pressure of 150 psi.

2.03 LUBRICANT

Lubricant for joining pipe shall be manufacturer's standard.

2.03 EXTERIOR COATING

A. Fittings for buried service and fittings for installation in exposed locations which are not to be painted shall be coated with a bituminous coating approximately 1 mil thick. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adherent to the fitting.

Fittings in exposed locations which are to be painted shall be primed with a universal shop primer suitable for use under the finish paint specified.

2.04 LINING

A. Cement Mortar Lining: Fittings shall be cement mortar lined in accordance with ANSI/AWWA C 104/A21.4.

B. Any damaged lined areas shall be repaired in accordance with the Manufacturer's recommendations so that the repaired area is equal to the undamaged lined areas.

2.05 HANDLING AND STORAGE

A. All pipe, fittings, valves, and accessories shall be loaded and unloaded by lifting with hoists or by skidding in order to avoid shock or damage. Under no circumstances shall materials be dropped. Pipe handled on skidways shall not be rolled or skidded against pipe on the ground. Slings, hooks, or pipe tongs shall be padded and used in such a manner as to prevent damage to the exterior surface or interior of the pipe.

B. Materials, if stored, shall be kept safe from damage. The interior as well as all sealing surfaces of all pipe, fittings, and other appurtenances shall be kept free from dirt or foreign matter at all times. Valves shall be drained and stored in a manner that will protect them from damage or freezing.

C. Pipe stored outside and exposed to prolonged periods of sunlight shall be covered with canvas or other opaque material. Air circulation shall be provided under covering.

D. Pipe shall not be stacked higher than the limits recommended by the Manufacturer. The bottom tiers shall be kept off the ground on timbers, rails, or concrete. Pipe in tiers shall be alternated: bell, plain end; bell, plain end. Pipe shall not be stored close to heat sources.

E. Gaskets shall be placed in a cool location out of direct sunlight. Gaskets shall not come in contact with petroleum products. Gaskets shall be used on a first-in, first-out basis. Mechanical-joint bolts shall be handled and stored in a manner that will ensure proper use with respect to types and sizes.

PART 3 EXECUTION

3.01 EXAMINATION

All pipe and appurtenances shall be examined at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected. Tests as specified in the applicable material standard may be performed to ensure conformance with the standard.

3.02 PIPE INSTALLATION

A. Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe and fittings shall be lowered carefully into the trench by means of suitable tools or equipment in such a manner as to prevent damage to pipeline materials. Under no circumstances shall pipeline materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe.

B. The sealing surface of the pipe, the inside of the bell, and the inside of the gasket shall be cleaned immediately before assembly.

C. As each length of pipe is placed in the trench, the joint shall be assembled in accordance with the manufacture's recommendations and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

D. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

E. Trench width at the top of the pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

F. Pipe joints shall be assembled in accordance with the manufacturer's instructions and ASTM D 2321.

3.03 PIPE CUTTING

A. Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe. Ends shall be cut square and perpendicular to the pipe axis.

B. Burrs shall be removed from spigots, and ends shall be smoothly beveled. Field cut ends shall be marked for proper depth of joint assembly.

3.04 PIPE DEFLECTION

When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflecting shall not exceed 75% of that recommended by the Manufacturer.

3.05 THRUST RESTRAINT

All plugs, caps, tees, and bends, unless otherwise specified, shall be provided with reaction backing or restrained joints as specified in Section 15100, Piping and Valves - General.

3.06 TRENCH EXCAVATION AND PREPARATION

As specified in Section 02225, Earthwork for Utilities, and Section 15100, Piping Systems - General.

3.07 LOCATOR TAPE AND WIRE

Install all plastic pipes with a locator tape of the type specified in Section 15100, Piping Systems - General.

3.08 TRENCH BACKFILL

As specified in Section 02225, Earthwork for Utilities, and Section 15100, Piping Systems - General.

3.09 TESTING

A. All system components and joints shall be tested at the pipeline centerline for a time period of not less than 2 hours. The test pressure shall not exceed 150% of the normal operating pressure at the lowest elevation in the segment being tested, or the pressure class rating of the pipe plus 50 psi, whichever is greater. Applied test pressure shall not vary by more than + 5 psi for the duration of the test. The allowable leakage

shall be computed only for push-on or mechanical joints. No allowance shall be permitted for any leakage from flanged, threaded, or solvent-cemented joints. If the test leakage in any section is greater than that permitted, the Contractor shall locate and repair the leak(s) at his own expense until the leakage is within the permitted allowance.

B. No installation will be accepted if the leakage is greater than the number of gallons per hour as determined by the following formula:

$$L = \frac{SD\,(P)\,\frac{1}{2}}{155{,}200}$$

where:

L = Allowable Leakage (gallons per hour)
S = Length of Pipe Tested (feet)
D = Nominal Pipe Diameter (inches)
P = Specified Test Pressure (pounds per square inch, gauge)

C. Water shall be supplied to the main during the test period as required to maintain the test pressure as specified. The quantity used, which shall be compared to the allowable leakage, shall be measured by pumping from a calibrated container.

D. Copies of all test records and data shall be furnished to the Owner and Engineer.

END OF SECTION

SECTION 15106
PVC PRESSURE PIPE AND FITTINGS

SECTION 15106
PVC PRESSURE PIPE AND FITTINGS

PART 1 GENERAL

1.01 WORK INCLUDED

This section covers the work necessary to furnish, install, and complete the PVC pipe and ductile iron fittings specified herein and as specified further in Section 15100, Piping and Valves - General.

1.02 ADDITIONAL REQUIREMENTS

See Section 15100, Piping and Valves - General for additional requirements.

PART 2 MATERIALS AND EQUIPMENT

2.01 PLASTIC PIPE

Pressure pipe 4-inches through 12-inches in diameter shall conform to the requirements of AWWA C900 for PVC pipe with cast iron pipe equivalent outside diameter. Pipe shall be pressure Class 150 unless otherwise shown. Pipe may be furnished with plain ends for use with elastomeric-gasket couplings or with one end plain and one end with a gasket bell. Couplings and gaskets shall be furnished with the pipe. Gaskets shall conform to ASTM D3139. Nontoxic gasket lubricant shall be as specified by the Pipe Manufacturer.

2.02 FITTINGS

A. Fittings for use with PVC pipe 4-inches through 12-inches in diameter shall be ductile-iron fittings conforming to the requirements of ANSI/AWWA C153/A21.53 or ductile-iron or gray iron fittings conforming to the requirements of ANSI/AWWA C111/A21.11a. Bolts for use with mechanical joints shall conform to the requirements of the joint standard. Fittings shall be suitable for a working pressure of 150 psi.

B. Exterior Coating

Fittings for buried service and fittings for installation in exposed locations which are not to be painted shall be coated with a bituminous coating approximately 1 mil thick. The finished coating shall be continuous, smooth, neither brittle when cold nor sticky when exposed to the sun and shall be strongly adherent to the fitting.

Fittings in exposed locations which are to be painted shall be primed with a universal shop primer suitable for use under the finish paint specified.

C. Lining

1. Cement Mortar Lining: Fittings shall be cement mortar lined in accordance with ANSI/AWWA C 104/A21.4.

2. Any damaged lined areas shall be repaired in accordance with the Manufacturer's recommendations so that the repaired area is equal to the undamaged lined areas.

PART 3 EXECUTION

3.01 EXAMINATION

All pipe and appurtenances shall be examined at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected. Tests as specified in the applicable material standard may be performed to ensure conformance with the standard.

3.02 PIPE INSTALLATION

A. Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, and valves shall be lowered carefully into the trench by means of suitable tools or equipment in such a manner as to prevent damage to pipeline materials. Under no circumstances shall pipeline materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe.

B. The sealing surface of the pipe, the inside of the bell, and the inside of the gasket shall be cleaned immediately before assembly.

C. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

D. As each length of pipe is placed in the trench, the joint shall be assembled and the pipe brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

E. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

F. Trench width at the top of the pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

G. Joint Assembly

Pipe joints shall be assembled in accordance with the Manufacturer's instructions.

H. Pipe Deflection

When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflecting shall not exceed 75% of that recommended by the Manufacturer.

I. Pipe Cutting

Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe. Ends shall be cut square and perpendicular to the pipe axis.

J. Burrs shall be removed from spigots, and ends shall be smoothly beveled. Field cut ends shall be marked for proper depth of joint assembly.

K. Thrust Restraint

All plugs, caps, tees, and bends, unless otherwise specified, shall be provided with reaction backing or restrained joints as specified in Section 15100, Piping and Valves - General.

3.03 TESTING

All lines shall be tested at the pressures listed in the Piping Schedule and by the procedure listed therein. Test procedures shall be as specified in Section 15100, Piping and Valves - General.

END OF SECTION

SECTION 15110
HIGH DENSITY POLYETHYLENE PLASTIC PIPE FOR PRESSURE SERVICE

SECTION 15110
HIGH DENSITY POLYETHYLENE PLASTIC PIPE FOR PRESSURE SERVICE

PART 1 GENERAL

1.01 WORK INCLUDED

This section includes furnishing all new materials, labor, equipment and incidentals necessary to install, test and make operable all piping and appurtenances required for a complete installation of HDPE Plastic Pipe for pressure service.

1.02 RELATED SECTIONS

A. The General and Supplementary Conditions of these specifications are a part of this section as if incorporated herein.

B. Other related specification sections contained herein are as listed below.

1. Section 01300 - Schedules, Reports, Records and Submittals
2. Section 02225 - Excavation, Backfill and Compaction for Utilities
3. Section 02445 - Boring and Jacking
4. Section 02470 - Horizontal Directional Drilling
5. Section 03300 - Concrete Construction
6. Section 15100 - Piping-General Requirements
7. Section 15101 - Ductile Iron Pipe and Fittings
8. Section 15200 - Valves

1.03 REFERENCES

A. Reference standards and recommended practices referred to herein shall be the latest revision of any such document.

B. Standard references are listed below.

1. ASTM D 618 - Standard Methods of Conditioning Plastics and Electrical Insulating Materials for Testing
2. ASTM D 638 - Standard Test Method for Tensile Properties of Plastics
3. ASTM D 696 - Standard Test Method for Coefficient of Thermal Expansion of Plastics Between (-30°C and 30°C)
4. ASTM D 746 - Standard Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

5. ASTM D 790 - Standard Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials

6. ASTM D 1238 - Standard Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer

7. ASTM D 1248 - Standard Specifications for Polyethylene Plastics Molding and Extrusion Materials

8. ASTM D 1505 - Standard Test Method for Density of Plastics by the Density-Gradient Technique

9. ASTM D 1603 - Standard Test Method for Carbon Black in Olefin Plastics

10. ASTM D 1693 - Standard Test Method for Environmental Stress Cracking of Ethylene Plastics

11. ASTM D 1928 - Standard Practice for Preparation of Compression-Molded Polyethylene Test Sheets and Test Specimens

12. ASTM D 2122 - Standard Method of Determining Dimensions of Thermoplastic Pipe and Fittings

13. ASTM D 2321- Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications

14. ASTM D 2683 - Standard Specifications for Socket-type Polyethylene Fittings for Outside Diameter-Controlled Polyethylene Pipe and Tubing

15. ASTM D 2774 - Standard Practice for Underground Installation of Thermoplastic Pressure Piping

16. ASTM D 2837 - Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials

17. ASTM D 3035 - Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Controlled Outside Diameter

18. ASTM D 3261 - Standard Specification for Butt Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing

19. ASTM D 3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

20. ASTM D 4218 - Standard Test Method for Determination of Carbon Black Content in Polyethylene Compounds by the Muffle-Furnace Technique

21. ASTM F 412 - Standard Terminology Relating to Plastic Piping Systems

22. ASTM F 714 - Standard Specification for Polyethylene (PE) Plastic Pipe (SDR-PR) Based on Outside Diameter

23. AWWA C906 - Polyethylene (PE) Pressure Pipe and Fittings, 4 in. through 63 in. For Water Distribution

24. PPI TR31-9/79 - Underground Installation of Polyolefin Piping

1.04 SUBMITTALS

Submittals shall be in accordance with Section 01300, and shall be in sufficient detail to show full compliance with these specifications.

A. Submit all manufacturer's data, cut sheets, literature, etc., on materials and accessories and written installation directions in accordance with the General Requirements.

B. Submit shop drawings which shall include, as a minimum, the following items:

1. Notarized manufacturer's certificates of material conformance with specifications.

2. Submit catalog data.

3. Installation instructions.

1.05 DELIVERY, HANDLING AND STORAGE

A. HDPE pipe can be handled with fork lifts or cherrypickers. The joints shall be handled near the middle with wide web slings and spreader bars. Coils shall be handled in a similar manner. The use of chains, end hooks or cable slings that may scar the pipe is prohibited.

B. The following procedures shall be observed when handling HDPE Pipe:

1. Always stack the heaviest series of pipe at the bottom.

2. Protect the pipe from sharp edges when overhanging the bed of a truck or trailer by placing a smooth, rounded protecting strip on the edge of the bed.

3. HDPE pipe has a very smooth inner and outer surface. The load should be anchored securely to prevent slippage.

C. Lengths of small-diameter, lightweight pipe can be unloaded manually.

D. If the pipe must be stacked for storage, avoid excessive stacking heights. Out-of-roundness can be created in the lower rows of pipe, due to excessive stacking heights. Follow the manufacturer's recommendations for the stacking heights.

E. Care should be taken to ensure that the pipe is stacked in straight rows. It is satisfactory to store black HDPE pipe either inside or outside.

F. Pipe shall be kept off the ground on timbers, rails or concrete.

PART 2 MATERIALS AND EQUIPMENT

2.01 PLASTIC PIPE

A. Materials. Materials used for the manufacture of HDPE pipe shall comply with all of the requirements for Type III, Class C, Category 5, Grade P34 according to ASTM D 1248, and have a PPI recommended designation of PE3408. Pipe shall further meet ASTM D 3350 General Cell Classification of 345434C or 345434E. Manufacture shall comply with AWWA C901 and C906, NSF Standard 61 and/or Standard 14, and the pipe shall have a hydrostatic design basis of 1600 psi at 73.4F and 800 psi at 140F.

B. Polyethylene Pipe. Polyethylene pipe shall be manufactured according to ASTM F 714 for IPS sized pipe, or ASTM D 3035 for Ductile Iron Pipe Size (DIPS) pipe as specified on the drawings, on the Bid Form Section 00300, and/or in the Measurement and Payment Section 01100, and shall be so marked.

C. Service Identification Stripes. At a minimum, permanent identification piping service shall be provided by co-extruding longitudinal colored stripes into the pipe's outside surface. The striping material shall be the same material as the pipe material except for color. Stripes printed or painted on the pipe outside surface shall not be acceptable. The following colors shall be used to identify piping service:

1. Yellow - gaseous fuels
2. Blue - potable water
3. Green - non-potable water, wastewater, sewage
4. Purple - reclaimed or reuse water

D. Approved Manufacturers. Manufacturers that are qualified and approved are listed below. Products from unapproved manufacturers will not be accepted. Polyethylene pipe and fittings shall be supplied by the same manufacturer. Pipe and fittings from different manufacturers shall not be interchanged.

1. CSR POLYPIPE Systems of CSR America

2. Phillips DRISCOPIPE of Phillips Petroleum Company

3. PLEXCO Performance Pipe Division of Chevron Chemical Company, LLC

2.02 PLASTIC PIPE FOR INDIVIDUAL SERVICES

A. Individual water services shall be constructed of high density polyethylene (HDPE.) Insert stiffeners are NOT required.

B. Approved Manufacturers

1. Orangeburg SP Premium, PE 3406, class 160, SDR-9 (CTS-OD), 160 psi, with a cell classification of 345434C as defined in ASTM 3350 manufactured by Orangeburg Industries, Inc.

2. Driscopipe 5100 Ultra-line water tubing, PE 3408, SDR-9 (CTS-OD), 200 psi, with a cell classification of 355434C as defined in ASTM 3350 manufactured by Phillips Driscopipe, Inc.

C. The service line shall be whole and continuous from the water main to the water meter, with no splices or breaks between the corporation stop and curb stop. Breaks in the services shall be as shown on the plans only or as approved by the Engineer prior to construction.

2.03 DI FITTINGS

A. Fittings for use with HDPE pipe 3-inches through 48-inches in diameter shall be ductile-iron flanged fittings conforming to the requirements of ANSI/AWWA C110/A21.10. Bolts for use with flanged joints shall conform to the requirements of the joint standard. Fittings shall be suitable for a working pressure of 150 psi.

B. Flanged ductile iron fittings shall be joined to HDPE pipe using HDPE flange adapters and back-up rings.

C. For additional requirements, see Section 15101 - Ductile Iron Pipe and Fittings.

2.04 HDPE FITTINGS

A. Polyethylene Fittings and Custom Fabrication

Polyethylene fittings and custom fabrications shall be molded or fabricated by the pipe manufacturer. Butt fusion outlets shall be made to the same outside diameter, wall thickness, and tolerances as the mating pipe. All fittings and custom fabrications shall be fully rated for the same internal pressure as the mating pipe. Pressure de-rated fabricated fittings are prohibited.

B. Molded Fittings

Molded fittings shall be manufactured in accordance with ASTM D3261, Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing, and shall be so marked. Each production lot of molded fittings shall be subjected to the test required under ASTM D3261.

X-Ray Inspection. The manufacturer shall submit samples from each molded fitting production lot to x-ray inspection for voids, and shall certify that voids were not found.

C. Fabricated Fittings

Fabricated fittings shall be made by heat fusion joining specially machined shapes cut from pipe, polyethylene sheet stock, or molded fittings. Fabricated fittings shall be rated for internal pressure service equivalent to the full service pressure rating of the mating pipe. Directional fittings 16" IPS and larger such as elbows, tees, crosses, etc., shall have a plain end inlet for butt fusion and flanged directional outlets.

D. Polyethylene Flange Adapters

Flange adapter shall be made with sufficient throughbore length to be clamped in a butt fusion joining machine without the use of a stubend holder. The sealing surface of the flange adapter shall be machined with a series of small v-shaped grooves to provide gasketless sealing, or to restrain the gasket against blow-out.

E. Back-up Rings and Flange Bolts

Flange adapters shall be fitted with lap joint flanges pressure rated equal to or greater than the mating pipe. The lap joint flange bore shall be chamfered to provide clearance to the flange adapter radius. Flange bolts and nuts shall be Grade 2 or higher.

F. Manufacturer's Quality Control

The pipe and fitting manufacturer shall have an established quality control program responsible for inspecting incoming and outgoing materials. Incoming polyethylene materials shall be inspected for density, melt flow rated, and contamination. The cell classification properties of the material shall be certified by the supplier, and verified by Manufacturer's Quality Control.

G. Joints

1. HDPE to HDPE: Use the thermal butt-fusion method to join the same nominal size diameter pipe. If the pipe at a joint will be within one SDR ratio of each other, they may be butt fused together.

   a. For SDR ratios that are two or more apart (i.e., SDR 21 to a SDR 11), the joint shall be made by the use of a restrained joint. Same diameter pipes may be joined through the use of HDPE flange adapters and backup rings bolted to each other.

   b. For pipes of different diameters, a flanged, ductile iron reducer shall be used to transition between them. The HDPE pipes shall use the manufacturer's flange adapter and backup ring to make the connection.

2. HDPE to other materials: Use specially prepared flange-adapter with metal slip-on flange; transition fittings or mechanical couplings. Provide 316 stainless steel bolts, washers, and nuts of proper size and fit.

2.05 PIPELINE MARKING MATERIALS

See Section 15100, Piping - General.

PART 3 EXECUTION

3.01 EXAMINATION

All pipe and appurtenances shall be examined at the point of delivery. Material found to be defective due to manufacture or damage in shipment shall be rejected. Tests as specified in the applicable material standard may be performed to ensure conformance with the standard.

3.02 TRENCH CONSTRUCTION

A. Alignment and Grade

The pipelines shall be laid and maintained to the lines and grades established by the drawings and specifications, with fittings, valves, and hydrants at the required locations unless otherwise approved by the Engineer. Valve-operating stems shall be oriented to allow proper operation.

B. Underground Conflicts

Prior to excavation, investigation shall be made to the extent necessary to determine the location of existing underground structures and conflicts. Care shall be exercised to avoid damage to existing structures. When obstructions that are not shown on the drawings are encountered during the progress of work and interfere so that an alteration of the plans is required, the Engineer will alter the drawings or order a deviation in line and grade or arrange for removal, relocation, or reconstruction of the obstructions. When crossing existing pipelines or other structures, alignment and grade shall be adjusted as necessary to provide clearance as required by the Engineer to prevent future damage or contamination of either structure.

3.03 PIPE INSTALLATION

A. Proper implements, tools, and facilities shall be provided and used for the safe and convenient performance of the work. All pipe, fittings, and valves shall be lowered carefully into the trench by means of suitable tools or equipment in such a manner as to prevent damage to pipeline materials. Under no circumstances shall pipeline materials be dropped or dumped into the trench. The trench shall be dewatered prior to installation of the pipe.

B. The sealing surface of the pipe shall be cleaned immediately before butt-fusion. The fusion joints shall be allowed to sit until they are completely cool prior to installation in the trench. Testing of the joints shall be accomplished as described herein.

C. Locate Wiring

Prior to installing the pipe in the trench, the tracing wire shall be installed on the top of the pipe by taping it every 20 feet. The tape shall be 2 inch Duct tape wrapped a minimum of 2 times around the pipe. Slack shall be left in the wire between the tape to allow the wire to move with the pipe expansion. The slack at the midpoint between the tape locations shall not fall below the springline of the pipe. Do not tape any of the pipe joints. Splices between two wires shall only be made at the top of an accessible structure, such as valve box, air release structure, tracing wire risers, etc. Tracing wire shall be brought to the surface on the inside of a valve box or structure.

D. Foreign material shall be prevented from entering the pipe while it is being placed in the trench. During laying operations, no debris, tools, clothing, or other materials shall be placed in the pipe.

E. Joints shall be assembled prior to placing the pipe in the trench. As each length of pipe is placed in the trench, the pipe shall be brought to correct line and grade. The pipe shall be secured in place with approved backfill material.

F. At times when pipe laying is not in progress, the open ends of the pipe shall be closed by a watertight plug or other means approved by the Engineer. When practical, the plug shall remain in place until the trench is pumped completely dry. Care shall be taken to prevent pipe flotation should the trench fill with water.

G. Trench width at the top of the pipe, bedding conditions, and backfill placement and compaction shall be such that design loadings on the pipe will not be exceeded.

H. Joint Assembly

Pipe joints shall be assembled in accordance with the Manufacturer's instructions. Mechanical joining to other piping materials - fittings, valves, tanks, pumps, etc. - shall be accomplished with HDPE flange adapters and ductile iron back-up flanges. Flanges shall also be used to connect lengths of HDPE pipe together when butt fusion is impractical.

Flange adapters shall be pressure rated the same as the pipe. Flange adapters shall be butt fused to the pipe as per manufacturer's instructions. Flange faces shall be centered and aligned to each other before assembling and tightening bolts. In no case shall the flange bolts be used to draw the flanges into alignment. Bolt threads shall be lubricated, and flat washers shall be fitted under the flange nuts. Bolts shall be evenly tightened according to the tightening pattern and torque step recommendations of the Manufacturer. At least 1 hour after initial assembly, flange connections shall be re-tightened following the tightening pattern and torque step recommendations of the Manufacturer. The final tightening torque shall be 100 ft-lbs or less as recommended by the Manufacturer.

I. Pipe Deflection

When it is necessary to deflect pipe from a straight line in either the vertical or horizontal plane, or where long radius curves are permitted, the amount of deflection shall not exceed 75% of that recommended by the Manufacturer.

J. Pipe Cutting

Cutting pipe for the insertion of valves, fittings, or closure pieces shall be done in a neat, workmanlike manner without creating damage to the pipe. Ends shall be cut square and perpendicular to the pipe axis.

K. Warning Tape and Locator Wire

Install all plastic pipe with a warning tape and locator wire of the type specified.

L. Contractor shall not exceed 80% of pipe manufacturer's allowable pull-back load during installation of directional drilling.

3.04 TESTING

A. Butt Fusion Testing

On every day butt fusions are to be made, the first fusion of the day shall be a trial fusion. The trial fusion shall be allowed to cool completely, then fusion test straps shall be cut out. The test strap shall be 12" (min) or 30 times the wall thickness in length with the fusion in the center and 1" (min) or 1.5 times the wall thickness in width. Bend the test strap until the ends of the strap touch. If the fusion fails at the joint, a new trial fusion shall be made, cooled completely and tested. Butt fusion of the pipe to be installed shall not commence until a trial fusion has passed the bent strap test.

B. Hydrostatic Testing

The Contractor shall test pipelines installed under this Contract in accordance with these specifications. All field tests shall be made in the presence of the Engineer. Except as otherwise directed, all pipelines shall be tested. All piping to operate under liquid pressure shall be tested in sections of approved length, typically from valve to valve and in no case longer than 5,000 feet.

For these tests, the Contractor shall furnish clean water, suitable temporary testing plugs or caps, and other necessary equipment, and all labor required. If the Contractor chooses to pressure test against an existing valve, the owner will not be responsible for failure of the pressure test due to the existing valve leaking. The Contractor will furnish suitable pressure gauges, calibrated by an approved testing laboratory, with increments no greater than 2 psi. Gauges used shall be of such size that pressures tested will not register less than 10% nor more than 90% of the gauge capacity. All valved sections shall be hydrostatic tested to insure sealing (leak allowance) of all line valves.

1. Unless it has already been done, the section to pipe to be tested shall be filled with water of approved quality and air shall be expelled from the pipe. If blow offs or other outlets are not available at high points for releasing air, the Contractor shall make the necessary taps at such points and shall plug said holes after completion of the test.

D. Hydrostatic testing shall consist of a combined pressure test and leakage test. The test pressure shall be 1.5 times the imprinted operating pressure of the pipe measured at the lowest point of the section being tested. The pressure shall be applied by means of a pump connected to the pipe in a manner satisfactory to the Engineer. The pump, pipe connection and all necessary apparatus, shall be furnished by the Contractor and shall be subject to the satisfaction of the Engineer.

1. Maximum duration for any test including initial pressurization, initial expansion, and time at test pressure, must not exceed eight (8) hours. If the test is not completed due to leakage, equipment failure, etc., depressurize the test section, then allow it to "relax" for at least eight (8) hours before bringing the test section up to test pressure again.

2. Monitored Make-Up Water Test: The test procedure consists of initial expansion and test phases.

   1. During the initial expansion phase, the test section is filled with water. Once the line is filled, make-up water is added as required to maintain the test pressure for three (3) hours.

   2. At the end of the three hour period, the addition of make-up water will cease. During the test phase, the pipe will not have any water added to it for the following one (1) hour. This one hour will be the actual leakage test. At the end of the one hour period, measured make up water will be added to the pipe to return it to the original test pressure.

   3. If the amount of make up water added is greater than calculated using the numbers listed below, the section being tested will be considered to have a leak. The leak shall be found and fixed, at the Contractor's expense, and that section of line retested, prior to continuing with subsequent leakage tests. Testing and repairs shall be repeated, at the Contractor's expense, until the amount of make up water is less than the amount calculated using the numbers listed below.

Nominal Pipe Size (in)	Make up Water Allowance (gal/100ft)
6	0.30
8	0.50
10	0.80
12	1.10
14	1.40
16	1.70
18	2.20
20	2.80
24	4.50

E.

F. Copies of all test records and data shall be furnished to the Owner and Engineer.

END OF SECTION

SECTION 15200
VALVES

SECTION 15200
VALVES

PART 1 GENERAL

A. All valves shall be complete with all necessary operating handwheels, levers, chainfalls, extension stems, operating nuts, and wrenches which are required for the proper completion of the work included under this section. Renewable parts including discs, packing, and seats shall be of types recommended by valve manufacturer for the intended service. All units shall have the name of the manufacturer and the size of the valve cast on the body or bonnet, or shown on a permanently attached plate in raised letters. All valves shall be suitable for the intended service with bubbletight shutoff to flow in either direction.

B. When required by the installations, floor stands and extension stems shall be provided for operation of valves. Floor stands shall be of the indicating type, complete with all necessary 316 stainless steel extension stems, couplings, handwheels, stem guide brackets, and special yoke attachments as required by the valves and recommended and supplied by the stand manufacturer. Stem guides shall be spaced so that the stem L/R ratio does not exceed 200. Provide all necessary anchor bolts in 316 stainless steel.

C. Valves and valve operators shall be prepared and coated in accordance with Section 09900, Painting.

PART 2 PRODUCTS

2.01 GATE VALVES

A. Valves Less Than 3-Inch Nominal Size

The valves shall conform to Federal Specifications WW-V-54d, Class A, Type 1, wedge disk, non-rising stem gate valves. Rating shall be a minimum of 125-pound steam working pressure (SWP) and 200-pound cold water pressure rating. The valve body, bonnet, bonnet ring, packing nut, and disk shall be bronze conforming to ASTM B 62. The valve stem shall be silicon bronze alloy conforming to ASTM B 371. The packing shall be Teflon-impregnated asbestos. The handwheel shall be malleable iron, and handwheel nut shall be zinc-plated steel. The valve shall be repackable under pressure. Valve shall be counterclockwise opening with a clear waterway opening for the full nominal diameter of the valve. Each valve shall have manufacturers initials and pressure ratings cast upon the body. Each valve shall be tested under hydrostatic pressure or pneumatic pressure of at least twice the rated working pressure. Valves shall be manufactured by Lunkenheimer Company, or approved equal.

B. Valves of 3-Inch Nominal Size And Larger

The gate valves shall be of iron body, resilient seated design conforming to AWWA C 509. The valve shall be designed for bubbletight shutoff to flow in either direction. The valve design shall incorporate a nonrising stem, O-ring stem seals, and shall open counterclockwise. The valve interior shall be fully coated with a thermosetting epoxy approved for potable water service. Valves for buried service shall be equipped with standard 2-inch-square operating nuts. Valves for aboveground service shall be flanged type equipped with hand wheels. Valves for direct buried service shall be mechanical joint type with corrosion resistant bolting complying with AWWA C111 and restraint tie rods. Valves shall have end connections as indicated on the drawings and shall be furnished with all jointing accessories. The exterior of buried valves shall be sandblasted and painted in accordance with Section 09900, Painting, and polyethylene encased as specified herein for ductile iron pipe and fittings. Exposed valves shall be sandblasted and painted in accordance with Section 09900, Painting. Prior to shipment, the valve manufacturer shall test each valve to 200 psi pressure differential in both directions and provide a certificate to the Engineer stating that each valve provided bubbletight shutoff during testing. Valves shall be manufactured by Mueller, American, Watrous, or Kennedy.

2.02 BUTTERFLY VALVES

A. Butterfly valves shall be of iron body, rubber seated design conforming to AWWA C 504. The valve shall be designed 90-degree closing and bubbletight shutoff with flow in either direction. Valves shall be Class 150B. Valves for aboveground service shall be flanged type with short body. Valves for buried service shall be mechanical joint type with tie rods for joint restraint and with corrosion resistant alloy bolting complying with AWWA C 111.

B. Valve bodies and shaft diameters shall conform to AWWA C 504, Tables 2 and 3. The valve shaft may be either stub type or one-piece design and shall be manufactured of 18-8 stainless steel. The valve disk shall be of cast iron conforming to ASTM 848, Class 40 or ductile iron conforming to ASTM A 536, Grade 65-45-12. The valve seats shall be of nitrile for wastewater service. Seats mounted on the disk shall be fastened thereon by a stainless steel retaining ring with stainless steel bolts. Seats mounted on the body shall be recessed, bonded, and clamped in position. Entire operator assembly for either buried or above-grade valves shall be removable while the valve remains in the line. The valve stem shall be blowout proof.

C. Buried valves shall be for submerged service and shall be equipped with totally enclosed gear or traveling nut operators, permanently lubricated with the case completely packed with grease. A gasket shall be installed between the gear operator base and the valve body top mounting plate to prevent groundwater intrusion. The gear operator body shall be penetrated only by the handwheel shaft, valve shaft, the valve-to-operator fasteners, the cover fasteners and the stop adjustment screws. Disk position stop adjustment for buried operators shall be adjustable from the exterior of the operator casing without opening the operator housing, drilling out pins, or exposing any working part of the valve to contamination. If the stop adjustment

screws extend outside the operator body, they shall be sealed with O-rings and jam nuts. Gear operators shall be provided with a 2-inch AWWA square nut which shall be attached with a stainless steel solid pin. Buried operator gear ratio shall be such that no more than 150 foot pounds of input torque shall produce the output torque required for seating, unseating, and valve operation. Opening shall be counterclockwise. The exterior of buried valves and operators and valves in vaults shall be sandblasted and painted in accordance with Section 09900, Painting. Buried valves shall be polyethylene encased as specified herein for ductile iron pipe and fittings.

D. Above-ground valves shall be furnished with enclosed gear operator and handwheel, unless otherwise noted on the drawings. The operator gearing and handwheel size shall be such that the valve can be seated, unseated, and operated with a maximum force at the handwheel radius of not more than 60 pounds. Valve operators shall be designed to hold the valve in any intermediate position between fully open and fully closed without creeping or fluttering. All above-grade gear operators shall be suitable for exposed service and submerged service with same features as specified herein for buried valve operators. Above-grade valves and operators shall be sandblasted and painted in accordance with Section 09900, Painting.

E. Prior to shipment, a bubble test shall be performed on each butterfly valve. With the axis vertical and the valve in the closed position, a pool of water shall be filled over the disk. Air at 150 pounds per square inch gauge (psig) pressure shall be applied to the underside of the disk for 10 minutes. No bubble or leakage shall appear in the water pool for the duration of the test. The test shall be repeated for pressurization on the opposite side of the disk. Prior to shipment, the manufacturer shall provide to the Engineer certification that the valve has successfully passed the specified test. Also, each valve body shall be subjected to the internal hydrostatic pressure test described in AWWA C 504. Written certification that the valve has successfully passed this test shall also be provided prior to valve shipment.

F. Valves shall be manufactured by Mueller Company, Henry Pratt Company, or DeZurik Unit of General Signal, Inc.

2.03 CHECK VALVES

A. Swing Check Valves 2 ½ Inches and Larger

Unless otherwise noted on the drawings, swing check valves 2 ½ inches and larger shall be designed for sewage service and shall be flanged end, cast iron body, bronze mounted, swing type with solid bronze hinges, stainless steel hinge shaft, and double, outside lever and spring type. Valves shall be rated 200-lb WOG and shall be manufactured by Mueller, Empire of Mars, Pennsylvania, or approved equal.

2.04 PLUG VALVES

A. Plug valves shall be of the nonlubricated eccentric type with resilient faced plugs and shall be furnished with end connections as shown on the drawings. Flanged valves shall be faced and drilled to the ANSI 125-lb standard. Mechanical joint ends shall be to AWWA Standard C 111. Screwed ends shall be to the NPT standard.

B. Valve bodies shall be of ASTM A 126 Class B cast iron. Bodies in 4-inch and larger valves shall be furnished with a 1/8-inch welded overlay seat of not less than 90 percent pure nickel. Seat area shall be raised, with raised surface completely covered with weld to ensure that the plug face contacts only nickel. Screwed-in seats shall not be acceptable.

C. Plugs shall be of ASTM A 126 Class B cast iron. The plug shall have a cylindrical seating surface eccentrically offset from the center of the plug shaft. The interference between the plug face and body seat, with the plug in the closed position, shall be externally adjustable in the field with the valve in the line under pressure. Plug shall be resilient faced with hycar, formulated and constructed to be suitable for use with sewage.

D. Valves shall have sleeve-type metal bearings and shall be of sintered, oil-impregnated, permanently lubricated Type 316 ASTM A 743 Grade CF-8M in 1/2 inch to 36 inch sizes. Nonmetallic bearings shall not be acceptable.

E. Valve shaft seals shall be of the multiple V-ring type and shall be externally adjustable and repackable without removing the bonnet or actuator from the valve under pressure. Valves utilizing O-ring seals or non-adjustable packing shall not be acceptable. All exposed nuts, bolts, springs, washers, and other fasteners shall be 300-series stainless steel.

F. Valve working pressure ratings shall be at least 175 psi through 12 inches and 150 psi for 14 inch and higher. Each valve shall be given a hydrostatic and seat test with certified copies of proof-of-design test reports furnished as outlined in AWWA C 504, Section 5.5.

G. Unless noted otherwise, valves shall be equipped with the following actuators:

1. Exposed valves 6 inches and smaller: removable lever actuators.

2. Exposed valves 8 inches and larger: geared actuators with handwheels.

H. Buried or Submerged Valves 6 Inches and Smaller

2-inch square operating nuts (with extension stems as required) and wrench.

I. Buried or Submerged Valves 8 Inches and Larger

Geared actuators with 2-inch square operating nuts (with extension stems as required) and wrench.

J. Geared actuators shall be worm-gear type. Geared actuators and mounting brackets shall be designed for buried and submerged service and shall be totally enclosed in a semi-steel housing and equipped with all necessary seals and gaskets to prevent entry of water.

K. Actuators shall clearly indicate valve position and an adjustable stop shall be provided to set closing torque.

L. All exposed nuts, bolts, and washers shall be 300-series stainless steel.

M. All actuators shall be furnished by the valve manufacturer and shall be factory assembled, adjusted, and tested with the valve. Tests reports shall be available upon request.

N. The exterior of valves and actuators shall be sandblasted and painted in accordance with Section 09900, Painting. Buried valves shall be polyethylene encased as specified herein for ductile iron pipe and fittings.

O. Plug valves shall be FIG 119 as manufactured by DeZurik, or approved equal.

2.05 BALL VALVES

Ball valves 2 inches and smaller shall be all-bronze, top-entry type with screwed ends, full bore ports, Teflon seats, and hand-lever operators, rated 250-lb WOG minimum. Valves shall be Crane Company Accessories Catalog No. 2330-TF, Lukenheimer Figure No. 700-SB or approved equal.

2.06 GLOBE VALVES

Globe valves 2 inches and smaller shall be all-bronze with screwed ends, union bonnet, inside screw, rising stem, and plug type disc with replaceable stainless steel plug and seat. Valves shall be rated 150-pound SWP, 300-pound WOG, and shall be Walworth Company Figure 237P; Jenkins Figure 546-P; or approved equal.

2.07 HOSE BIBB

Angle pattern hose valves 1-inch through 3-inch shall be all-bronze, with screwed ends, inside screw, rising stem, and TFE disc. Valves shall be rated 300 WOG and shall be Stockham Figure B-222; Crane Co. Cat. No. 17TF; or approved equal angle valve.

2.08 SOLENOID VALVE

Solenoid valves shall be brass body, soft-seated, with 120-volt ac solenoid coil. Minimum operating pressure differential capability shall be 100 psig. Solenoid valves shall not require a minimum pressure to either open or close. Solenoid operators shall be molded coil in NEMA 4 enclosures. Solenoid valves shall be Magnetrol Model 200S or 200 SR, ASCO Red Hat, or approved equal.

2.09 AIR RELEASE VALVES

The air release valve shall be a 2-inch or 3-inch NPT inlet as shown in the drawings, designed for sewage application, and complete with hose and valves. The valve shall be an Apco Model 400, or an approved equal.

2.10 COMBINATION AIR-VACUUM RELEASE VALVE

Air and vacuum valves shall automatically exhaust large quantities of air during the filling of a system and allow air to re-enter during the draining or when a vacuum occurs. Valves sized ½ inch through 3 inches shall have NPT inlets and outlets. Valves sized 4 inches and larger shall be 125-pound ANSI B 16.1 flanged inlets with plain outlets and protective hoods. All air and vacuum valves shall be designed for 150 psi working pressure and shall be constructed of cast iron, ductile iron, or semi-steel body and cover with stainless steel float and trim built to manufacturer's standards suitable for water service. Valves shall be as manufactured by APCO, Valve and Primer Corp., Series 140; Val-Matic Valve and Mfg. Corp., Series 100; or approved equal.

2.11 SILENT CHECK VALVE

Silent check valves shall provide protection against flow reversal and water hammer by closing while there is positive pressure on the pump side of the valve. Valve shall be globe type with spring actuator. The flow through area of the valve shall be greater than the cross sectional area of the piping adjacent and connected to the silent check valve. Valve body shall be ductile iron with stainless steel trim, resilient Buna-N seating and stainless steel spring. Valve shall be rated 150 psig SWP. Silent check valve shall be Apco Model No. 612 or approved equal.

2.12 SURGE PRESSURE RELIEF VALVE

A. Valve shall be a rapid opening/slow closing unit to dissipate excess pressure. Valve body shall be angle pattern, cast ductile iron (ASTM A 536) 150 lb. flanged body with cover and bronze trim. Disc and diaphragm shall be Buna-N rubber. Stem, nut, and spring shall be stainless steel, pilot control shall be ASTM B 62 bronze with stainless steel tubing and trim. Adjustment range shall be 20 to 200 psi and field set to 10% above normal pumping pressure. Pilot tubing shall be fitted with an external

"Y" strainer and flushing cock. Unit shall be sized for a minimum continuous flow of 3,400 gallons per minute.

B. Acceptable Equipment

Cla-Val Model 50G-01B, or approved equal.

2.13 ZONE CONTROL VALVES

A. Zone control valve shall be sized to pass up to 3,400 gpm with a maximum head loss of 3 psi. Zone control valve shall be designed to open and close at a controlled rate. Opening and closing rates shall be adjustable by needle valve and/or vent orifice such that the instantaneous change in velocity from the maximum flow rate of 3,400 gpm to zero is less than 2.0 ft/s at any point in opening or closing movements. Valve shall be sleeve style with external piping, solenoid control valve, opening/closing needle valves, external strainer, manual on/off control, pressure gauge and switch. Valve body shall be either epoxy coated or galvanized steel, either wafer or flange style. Elastomers shall be Buna-N. Pilots tubing and fittings shall be plastic. Solenoid and flow switch shall be NEMA 4X.

B. Acceptable Equipment

1 Valve: Nelson Series 800, Iubal Series 500, or approved equal.

2. Flow Switch: McDonnell and Miller FS4-3 or approved equal.

PART 3 EXECUTION

All valves shall be installed in a workmanlike manner and in accordance with detailed instructions supplied by the valve manufacturer.

END OF SECTION

SECTION 15800
PIPEWORK - GRAVITY SEWERS

SECTION 15800
PIPEWORK - GRAVITY SEWERS

PART 1 GENERAL

1.01 WORK INCLUDED

The work includes furnishing all labor, all new materials, equipment and incidentals necessary for the complete installation of all gravity sewer lines, services, manholes, fittings, and appurtenances as shown on the drawings and specified herein.

1.02 RELATED SECTIONS

A. The provisions of all other sections of the General and Supplementary Conditions are fully applicable to this section as if incorporated herein.

B. Other related or referenced sections contained herein are as listed below:

1. Section 02110, Site Clearing
2. Section 02225, Excavating, Backfilling, and Compaction for Utilities
3. Section 02310, Dewatering
4. Section 02510, Paving
5. Section 02900, Seeding and Sodding
6. Section 03300, Concrete Construction
7. Section 03400, Precast Concrete Construction
8. Section 15100, Piping - General

1.03 REFERENCE STANDARDS

A. The latest edition of the Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (Standard Specifications) and Roadway and Traffic Design Standards shall be referred to for construction, workmanship, and quality control as specified herein with exceptions as noted herein.

B. The work shall conform to applicable provisions of the following standards, latest editions, except as modified herein.

American Society for Testing and Materials (ASTM) Standards:

ASTM A 48	Specification for Gray Iron Castings
ASTM A 536	Specification for Ductile Iron Castings
ASTM A 746	Specification for Ductile Iron Gravity Sewer Pipe
ASTM C 32	Specification for Sewer and Manhole Brick (Made from Clay or Shale)

ASTM C 144	Specification for Aggregate for Masonry Mortar
ASTM C 150	Specification for Portland Cement
ASTM C 478	Specification for Precast Reinforced Concrete Manhole Sections
ASTM D 1248	Specification for Polyethylene Plastics Molding and Extrusion Materials
ASTM D 1557	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures using 10 lb. (4.54 Kg) Rammer and 18 in. (457 mm) Drop
ASTM D 1784	Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (PVC) Compounds
ASTM D 2241	Specification for Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)
ASTM D 2321	Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe
ASTM D 3034	Specification for Type PSM Poly Vinyl Chloride (PVC) Sewer Pipe and Fittings
ASTM D 3212	Specification for Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals
ASTM F 679	Specification for Polyvinyl Chloride (PVC) Large Diameter Plastic Gravity Sewer Pipe and Fittings
ASTM F 794	Specification for Polyvinyl Chloride (PVC) Large Diameter Ribbed Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter

American National Standards Institute (ANSI) Standards:

ANSI A21.5/AWWA C105	Polyethylene Encasement for Ductile Cast Iron Piping for Water and Other Liquids
ANSI A21.10/AWWA C110	Gray Iron and Ductile Iron Fittings, 3 Inch Through 48 Inch, for Water and Other Liquids
ANSI A21.11/AWWA C111	Rubber Gasket Joints for Gray Iron and Ductile Iron Pressure Pipe and Fittings

ANSI A21.51/AWWA C151	Standard for Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or Other Liquids

American Wood Preservers Bureau (AWPB) Standards:

Ground Contact Use:

LP-55	Pressure Treated with Creosote or Creosote Coal-Tar Solutions

Federal Specifications and Standards (FSS):

FSS SS-S-00210A	Sealing Compound, Preformed (Adm. 1, 17 Nov 1975) Plastic, for Expansion Joints and Pipe Joints
FSS RR-F-621C	Frames, Covers, Gratings, Steps, (14 Sept 1967) Sump and Catch Basin, Manhole

Coating Standards: The work and materials shall conform to the manufacturer's data sheet requirements for surface preparation and application, and to the standards detailed below.

1.04 SUBMITTALS

A. Pipe: The Contractor shall submit a certification from the pipe manufacturer that the pipe and fittings supplied are new, have been inspected at the plant and all lined pipe shall be certified to be holiday free by manufacturer's Independent Testing Laboratory, and meets all the requirements of these specifications.

B. MH Coating: Contractor shall submit shop drawings for approval, in accordance with the General Conditions and technical specifications, that detail the proposed lining and coating systems. Complete technical data sheets shall be submitted along with certifications from the lining and coating suppliers that the products submitted are in accordance with the specifications.

C. Shop Drawings: The Contractor shall submit catalog cut sheets, manufacturer's descriptive literature and other necessary information to the Engineer for approval prior to installation.

PART 2 PRODUCTS

2.01 GENERAL

Provide all new materials free from defects impairing strength and durability and of the best commercial quality for the purpose specified. All material supplied shall have structural properties

sufficient to safely sustain or withstand strains and stresses to which it is normally subjected and be true to detail.

2.02 PIPE

A. Ductile Iron: Manufactured in accordance with ANSI A21.51/AWWA C151 and ASTM A 746.

1. Metal Thickness: Shall conform to ANSI A21.51/AWWA C151, use Table 51.1 to determine thickness class of piping based on Type 2 laying conditions, unless stated otherwise.

2. Joints:

a. Push-On: Shall conform to ANSI A21.11/AWWA C111. Single-gasket push-on type.

3. Coating of Ductile-Iron Fittings:

a. Exterior Coating: Shall be bituminous or asphalt, meeting the requirements of the pipe manufacturer and ANSI A21.10/AWWA C110.

4. Lining:

a. Material: The material shall be a two component amine cured epoxy containing at least 20% by volume of ceramic quartz pigment. The standards of quality are Protecto 401 Ceramic Epoxy and Permite PCS-9043 Type II Glass Filled Epoxy. The material shall have a 30-day permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A.

1) Factory Tests: The following tests must be run on coupons from factory lined ductile iron pipe:

a) ASTM B-117 Salt Spray (scribed panel) — Results equal to 0.0 mm undercutting after two years.

b) ASTM G-95 Cathodic Disbondment 1.5 volts @ 77 °F. Results to equal no more than 0.5 mm undercutting after 30 days.

c) Immersion Testing rated using ASTM D-714. Results to equal no effect after two years for 20% sulfuric acid, 25% sodium hydroxide, 160 °F distilled water, and 120 °F tap water.

2) Application, Inspection, Certification, and Handling: The lining shall be applied, inspected, certified, and handled according to the manufacturer's specifications.

B. Polyvinyl Chloride (PVC): Manufactured in accordance with ASTM D 3034, Type PSM, minimum SDR 35.

1. Joints: Bell and spigot type with rubber sealing ring in accordance with ASTM D 3212. The bell shall consist of an integral wall section with a solid cross section rubber ring factory-assembled.

2. Fittings: Fittings and accessories shall be as manufactured and furnished by the pipe supplier or approved equal and shall have bell and/or spigot configurations identical to that of the pipe.

2.03 SERVICE PIPE

A. Polyvinyl Chloride (PVC): Pipe, joints and fittings shall conform to ASTM D 3034, Type PSM, with a minimum SDR of 35.

B. PVC-DWV: Four (4) inch house sewer service pipe located on private property shall utilize PVC-DWV, schedule 40 pipe and fittings (also refer to all applicable building and zoning codes).

C. Adapters and Flexible Couplings: Prefabricated polyvinyl joint sealer adapters and sewer pipe couplings shall be similar to those manufactured by Fernco Joint Sealer Company, pipe manufacturer, or equal. Flexible couplings shall be installed with stainless steel bands and adjusting screws.

D. Manhole Couplings: Shall be factory installed adapters for pipe similar to Kor-N-Seal by National Pollution Controls System, Inc., or Lock Joint Flexible Manhole Sleeve by Interpace Corp., or equal.

E. Manhole Water Stop: Shall be a neoprene gasket and stainless steel clamp similar to water stop and clamp as supplied by the Armco Steel Corporation or equal.

2.04 NEW MANHOLES

A. Brick: Shall conform to ASTM C 32, Grade MS, and shall be sound, hard and uniformly burned, regular and uniform in shape and size, with compact texture. Brick shall be used for manhole grade adjustments but not for construction.

B. Portland Cement: Shall conform to ASTM C 150, Type II. Approved: Atlas; Florida; Florida; Lehigh; or equal.

C. Sand: Washed silica sand shall conform to ASTM C 144.

D. Mortar: Consists of one part Type II cement and two parts sand.

E. Precast Concrete Manholes: Manholes shall meet the requirements of ASTM C 478. Cement shall meet the requirements of ASTM C 150, Type II. Concrete shall meet the minimum requirements for Class "A", 4000 psi, as specified in the concrete section of these specifications. Minimum wall thickness shall be 6 inches or greater as shown on

the typical details. The required minimum strength of concrete shall be confirmed by making and testing three standard cylinders at seven days in accordance with the concrete section of these specifications. All concrete manholes shall be cured a minimum of thirty (30) days prior to shipment. Rings shall be custom made with openings to meet indicated pipe alignment conditions and invert elevations. Drawings of individual manholes showing invert elevations, pipe sizes and similar details will not be required. Seal manholes watertight.

1. Joints: Form joint contact surfaces with machined castings. Surfaces shall be exactly parallel with nominal 1/16-inch clearance. "RAM-NEK" sealing compound, conforming to Federal Specification SS S-00210, or approved equal, shall be used to seal between two barrel sections. If joints are sealed with "RAM-NEK" sealing compound, the recess in the tongue may be omitted. Manhole joints and pipe connections to manholes shall be sealed watertight.

2. Coating:

   a. General: All manhole and wet well exterior and interior surfaces shall be lined and coated as specified herein. Contractor shall utilize an approved coating and lining subcontractor for all manhole preparation and application of coatings and/or linings.

   b. Exterior: The exterior manhole surfaces shall receive a coating with an approved coal tar epoxy paint.

   c. Interior: The interior surfaces shall be coated with approved coating, suitable for high hydrogen sulfide atmospheric conditions and immersion in typical domestic sanitary sewage after installation. The manhole walls shall be coated with one of the following systems, utilizing the manufacturer's recommendation.

      1) Inner Guard System consisting of Inner-Crystal Waterproofing, Inner-Krete Calcium Aluminate cementitious mortal lining and Inner-Kote epoxy coating.

      2) Sewper Coat Calcium Aluminate mortar as manufactured by Strong Systems, Inc.

      3) Polymorphic Polymer Coating System consisting of prime coat, lining coat and pigmented final coat as manufactured by Polymorphric Polymers Corporation, Miami, Florida.

      4) Mainstay Composite Liner consisting of ML-72 Microsilica Concrete Repair Mortar and DS-4 Chemical Resistant Epoxy Corrosion Barrier.

2.05 MANHOLE FRAMES AND LIDS

A. Shall conform to ASTM A 48, Class 30, or Grade 60-45-10 ductile iron, meeting the requirements of ASTM A 536, cast in a true symmetrical pattern of tough, dense and even-grained iron, free from warping, scales, lumps, blisters, sandholes or any defects of any kind. Provide indented pattern lids with lettering as shown on the drawings. Machine or grind frames and lids at touching surfaces to provided firm seats and prevent rocking. Remove and replace any set not matching perfectly. Lids shall have non-penetrating pick holes.

1. Heavy Duty: Designed to withstand an approved highway traffic loading as defined in Federal Specifications and Standards FSS RR-F-621C. Approved: U.S. Foundry No. 420-G, or equal.

2.06 FLEXIBLE MANHOLE CONNECTOR

A. The manhole connector shall be manufactured from Neoprene EPDM. The connector shall be a minimum of 3/8" thick and shall conform to ASTM C-443. The connector shall be resistant to ozone, weathering, aging, chemicals, animal and vegetable fats, oils, and petroleum products.

B. The connector shall be sized for the specific type and size entering and leaving each manhole. The connector shall be precast into the manhole by the manhole manufacturer in accordance with the connector manufacturer's written instructions. A 304 stainless steel band and screw assembly shall be provided to seal the connector against the pipe.

C. Approved Manufacturers : PSX, Kor-N-Seal, or approved equal.

2.07 NONSHRINK GROUT

Inorganic, nonshrink, nonmetallic type grout similar to U.S. Grout or equal. Grout shall be placed with a tamping stick to ensure complete filling in holes and space around pipe.

PART 3 INSTALLATION

3.01 PIPE INSTALLATION

A. General: Install all pipework meeting the requirements of ASTM D 2321 to the extent that they apply and as specified hereinafter for the various types and classes of pipe. Lay all gravity sewers using a laser alignment device specifically designed for this purpose. Lay pipe upgrade, beginning at the lower end of the sewer, with pipe bell ends up-grade. Exercise extreme care to keep the pipe in exact alignment and elevation. It is the Contractor's responsibility to make exploratory excavations and/or use other methods available to locate existing utilities prior to construction of any gravity sewers. If necessary, the Contractor shall adjust the new sewers and/or laterals, subject to approval by the Engineer, to avoid conflicts with existing piping. Install pipe joints on each line entering or leaving manhole, including stub lines, as close to manhole exterior wall as practical. In no case shall the pipe be walked on either before or after the joints have been made. Securely close all openings such as stubs, wyes or

other services along the lines by means of approved stoppers that fit into the bells of the pipe and are recommended by the pipe manufacturer. Install stoppers in such a manner that they may be removed at some future time without injury to the pipe bells. No bricking or grouting plugs in lines will be permitted.

B. Laying Pipe: Take all necessary precautions to prevent the entrance of mud, sand or other obstructing matter into the pipelines. Lay pipe on bedding prepared in accordance with ASTM D 1557, the plans, and Earthwork Section 02225 of these specifications; provide uniform bearing under the full length of the pipe barrel. Excavate for pipe bells and carefully lay pipe true to line and grade. Make adjustments to line and grade by scraping away or filling in and tamping under pipe barrel and not by wedging or blocking up any portion of the pipe. Abut the spigot end of each pipe against base of socket of adjacent pipe in such a manner that there will be no unevenness of any kind along the bottom halves of the pipes. Compact sufficient backfill, immediately after the pipe has been jointed and inspected, to protect the pipe adequately from injury and movement. At the close of each day's work, and at other times when pipe is not being laid, protect the end of the pipe with a close-fitting stopper approved by the Engineer. Replace with sound pipe, any defective pipe which may have been laid. Upon completion, installed pipe lines shall show a full circle of light when lamped between manholes.

C. Joints: Submit specific type of joint to be used on all pipe, including complete data on all material to be used, to the Engineer for approval prior to commencing any pipework. Make all joints conform to the requirements of the manufacturer's printed instructions as approved for the type of joint installed.

3.02 SERVICE CONNECTIONS

A. General: Install types of connections generally as shown, required or directed by the Engineer. Location of connections shall be determined by the Owner through the Engineer. Each service connection shall be accurately recorded by reference to the center of the downstream manhole. This as-built information shall be furnished to the Engineer upon completion of the sewer installation.

B. Marking Service Lines: A cleanout with a 8-3/4 inch diameter traffic box shall be placed at the end of each service pipe and located at the right-of-way line. The cover of the traffic box shall be marked "CO". Approved: Brooks Products, Inc. I-RT Series, or approved equal.

C. Service Assembly: Provide a wye or tee branch, 4- or 6-inch curves and fittings as shown on the drawings, and specified herein. If the service line is not installed at the time of construction, the opening shall be securely closed with approved stopper(s) specified hereinbefore in paragraph "Pipe Installation".

D. Service Pipe to Right-of-Way Line: Where directed by the Engineer, install 4- or 6-inch service pipe and any fittings required from each main-tee service connection to the property line and connected or plugged at the right-of-way line. A clean-out, as specified shall also be installed at the right-of-way. The adapter for connection-

transition from PVC to vitrified clay/ductile iron house service pipe shall be as specified hereinbefore in paragraph "Adapters and Flexible Couplings". If vitrified clay pipe with factory-molded joint is used for connection to adapter, the joint material shall be compatible with the pipe adapter. The openings at the ends of all house service pipes that are not connected to house sewers shall be securely closed with approved stoppers as specified hereinbefore in paragraph "Pipe Installation".

3.03 MANHOLE CONSTRUCTION

A. General: Construct manholes as shown and specified or directed in these documents. Install manhole water tight seal on pipe passing through manhole walls or install approved manhole couplings in manhole walls for connection of pipe. Manhole installation shall be as shown and in strict compliance with the manufacturer's printed instructions where specials are used for connections.

B. Brickwork: Wet brick before laying. Set true to line with courses plumb. Use no mortar that has begun to set. Lay bricks radially as headers with every sixth course laid as stretchers. The sides of each brick shall be buttered and shoved (not laid) in a full bed of mortar. Horizontal joints shall not be greater than 1/2-inch thick. Fill longitudinal and transverse joints completely in each course before starting the next course. Joints shall be struck flush and the interior and exterior of the manhole plastered with 1/2-inch thick coat of mortar to leave a dense, smooth finish, so that the manhole shall be watertight.

C. Inverts: Form manhole invert-channels of cut pipe or mortar and brick to provide a smooth-flowing, self-cleaning channel of the shape and size of the sewers to which it connects.

1. Straight Run Manholes: Shape inverts while manholes are under construction. Lay pipe continuously through manhole, build invert, cut out pipe above mid-point and smooth edges with cement mortar.

2. Junction Manholes: Shape inverts while manholes are under construction. Lay pipe continuously through manhole, build invert, cut pipe above mid-point and smooth edges with cement mortar or cut off pipe at inside faces of manhole and construct invert to exact shape and size of pipe indicated. Construct smooth inverts following grades of pipes leaving manholes. Provide a true curve of the largest radius possible for changes in direction of sewer and entering branch or branches.

3. Drop Manholes: Construct as shown on the detail drawings.

3.04 PRECAST CONCRETE MANHOLE INSTALLATION

Set precast concrete sections vertical and in true alignment. Prime and double seal joint surfaces with "RAM-NEK" premolded plastic joint sealer or approved equal.

A. Grouting: Completely plug, seal and smooth all holes in sections used for handling with nonmetallic, nonshrink grout equal to Saureisen F-100. Finish grout smooth and flush with the adjoining interior and exterior manhole wall surfaces and make watertight.

B. Grade Adjustment: Construct brick masonry on top of manhole slabs and precast concrete manhole cones to provide proper grade adjustment in setting manhole frames. Masonry shall be as hereinbefore specified for "Manhole Construction".

C. Setting Manhole Frames: Set manhole frames and lids flush with finish pavement or 0.1 foot above the finished grade unless shown or directed otherwise by the Engineer. Set frames on manholes concentric with the masonry and in a full bed of mortar so that the space between the top of the manhole masonry and the bottom flanges of the frame will be completely filled and made watertight. Place a ring of mortar around the outside of the bottom flange at least 1 inch thick and pitched to shed water away from the frame. Extend mortar to the outer edge of the masonry and finish smooth and flush with the top of the flange. The frame opening shall be directly above the outlet invert.

3.05 STUB LINES

Provide plugged stub lines where shown or directed by the Engineer for the connection of future sewer lines to manholes. Provide bell end closed with an approved stopper, as specified hereinbefore in paragraph "Pipe Installation", at the end of each stub line. Install bell of stub line as close to manhole exterior surface as practical. Accurately reference each stub line size for direction and record, complete with the actual invert elevation. Furnish the Engineer two copies of the above specified data on stub lines.

3.06 CONNECTIONS TO EXISTING MANHOLES

Where shown or directed by the Engineer, connect new lines into existing manholes. Unless existing stubs of correct size and location are found to exist, remove a portion of the manhole wall masonry and floor slab as required. Reform and finish the floor to provide flow channels as specified for new manholes and replace brick masonry or concrete to make a watertight joint with the new pipe using an approved manhole connector, as previously described.

3.07 MANHOLE COATINGS

A. Exterior Surfaces: Remove form oil from the precast concrete by washing with xylol or exempt-type form oil solvent as required for complete removal. All surfaces to be coated shall be given a commercial (brush) sand blast in accordance with Steel Structures Painting Council SP 7 to produce a surface texture similar to medium-grade sandpaper. Clean all surfaces of extraneous sand, dirt, joint compound, loose concrete, etc., immediately before coating as required by the approved coating manufacturer. Apply coating as required by the approved coating manufacturer. Apply coating only within environmental temperature and humidity limits. All holes over 3/8-inch deep or across exposed by the sand blasting shall be filled with a coating manufacturer-approved nonshrink compound. Any major defects in the precast concrete exposed by

the surface preparation will be sufficient reason for rejection of the manhole as an approved item for payment.

B. Exterior Coating: For the purpose of establishing a quality standard, the material listed below is manufactured by Koppers Company. The coating shall be spray applied by the precast concrete manufacturer. After installation, the contractor shall prepare the surfaces around the joints for additional brush application of the coating and touch up (by brushing) to complete the coverage of the entire exterior surface. The application shall comply with the following coating schedule:

Coating System Type	Coat No.	Coating	Dry Film Thickness (Min.)
Coal Tar Epoxy	1	Bitumastic No. 300-M reduced 2:1 with Thinner 2000	*
	2	Bitumastic No. 300-M	10 mils
	3	Bitumastic No. 300-M	10 mils

* Note: All coats shall be applied with an airless sprayer so as to completely stain all surfaces and penetrate the mortar or concrete. If additional coat(s) are not applied within 24 hours, the area to be recoated shall be either roughened by a brush-blast or pretreated with Bitumastic 2 CB before recoating.

C. Interior Surfaces: Remove form oil from the precast concrete by jet washing with xylol or except-type form oil solvent as required for complete removal. If quality of finish is poor and can not be properly cleaned then all surfaces to be coated shall be given a commercial blast in accordance with Steel Structures Painting Council SP 6. Clean all surfaces of extraneous sand, dirt, joint compound, loose concrete, etc., immediately before coating as required by the approved coating manufacturer. Apply coating only within environmental temperature and humidity limits. All hole exposed by the sand blasting shall be filled with "Thorite", or equal, nonshrink compound to restore original wall thickness. Any major defects in the concrete exposed by the surface preparation will be sufficient reason for rejection of the manhole as an approved item for payment.

D. Interior Coating or Lining: The interior coating system shall take place in the manhole after installation in the approved location. The Contractor shall not allow any sewage to flow through the manhole during the application and curing periods.

1. Interior coating shall be a three (3) component system consisting of a two part epoxy and a silica/quartz filler. Components shall be mixed in accordance with the manufacturer's recommendations to produce a material with a 2000 psi tensile and 11,000 psi compressive strength after 30 days. Material shall be trowel applied at a minimum thickness of 1/8 inch. Once cured, the coating shall bond to the concrete substrate to produce a pull off strength of 1000 psi or substrate failure. Coating shall have a 5-year manufacturer's warranty.

E. Testing: Both coatings shall be tested to confirm that specified thicknesses are provided in five (5) different areas approved by the Engineer including the wall, bench and corbel. The interior coatings shall be checked when dry and wet respectively to ensure the specified thickness is provided. The Contractor shall submit a certification from the coatings applicator(s) that each coating system has been applied in accordance with both these specifications and the manufacturer's criteria.

3.08 CLEANOUTS

Construct as detailed using pipe and fittings as specified herein. Applicable portions of these specifications shall apply to the construction of this item.

3.09 CONCRETE ENCASEMENT AND SPECIALS

Provide concrete pipe encasements or special pipe supports as shown or directed by the Engineer. Various pipe supports shall be as worked out in the field to suit local conditions and requirements. Provide concrete encasement for protection in accordance with the details on the drawings and where pipe cover is less than two feet. At the direction of the Engineer, use other concrete needed to build and protect the pipework properly.

3.10 BYPASS PUMPING

It shall be the responsibility of the Contractor to make provisions to meet all requirements of these specifications and to correct any problems which may arise as a result of the pumping operations.

A. Scope of Work: The work includes the furnishing and operating of bypass pumping equipment designed for use in raw sewage conditions, to eliminate flow through a section of pipeline or in a manhole. All costs incurred for bypass pumping shall be considered incidental to the work item for which it is required.

B. Submittals: Planned use of bypass pumping equipment shall have the approval of the Engineer. A written request in the form of a shop drawing must be submitted to the Engineer at least 48 hours in advance of the work describing the location, type of equipment, pump sizes, expected duration and potential disruption of traffic with traffic control methods detailed.

C. Equipment: The Contractor shall supply the necessary pumps, conduits and other material and equipment to divert the flow of sewage around the manhole section in which work is to be performed. The pump or pumps required shall be of sufficient capacity to handle existing flows plus additional flow that may occur during a sudden rainstorm. If pumping is required during the night hours, all engines shall be equipped in an approved manner to keep the pump noise to a minimum. The pumps may be gas, diesel or electric trailer mounted sewage pumps with all power requirements furnished by the Contractor. Pumps shall be from a quality manufacturer such as Gorman-Rupp or equal. Noise reducing mufflers shall be used on all pumps.

D. Methodology:

1. The flow entering the upstream manhole of the line under work shall be blocked off or reduced to approved levels.

2. The pump or pumps shall be located at the next upstream manhole or manholes with the discharge conduit carefully laid to either the downstream manhole of the line section under construction or the next downstream manhole, at the direction of the Engineer.

3. No operation of the pumps or blocking of the flow shall take place without direct approval of the Engineer.

4. Pumping operations shall continue until all required work is completed on the line section being replaced or inspected; however, should the Engineer require operations to cease until the next working day, the plugs shall be removed and equipment secured as approved by the Engineer.

5. Special provisions shall be employed by the Contractor if the pumps or discharge conduit requires traffic disruption to include, but not be limited to, flagmen, barriers and signs, planking over the conduit, or detours.

6. Precautions must be taken to protect the sewer lines from damage that might result from the bypass pumping operation. The Contractor is responsible for any damage caused to public or private property by flooding, sewage spills or installation and removal of pumps, plugs and conduits or other actions by the Contractor. Any leak, spill or backup shall be cleaned immediately.

7. It shall be the responsibility of the Contractor to make provisions to meet all requirements of these specifications and to correct any problems which may arise as a result of the pumping operations.

3.11 TESTS

A. General: All work constructed shall be subject to visual inspection for faults or defects and any such deviation or omissions shall be corrected at once. All tests shall be made by the Contractor who shall provide necessary equipment for testing and lamping the system in the presence of, and under the supervision and instructions of, the Engineer. All costs for testing shall be borne by the Contractor.

B. Low Pressure Air Testing: The Contractor may in lieu of standard exfiltration tests, use low pressure air testing in accordance with ASTM C 828. Where after completion, each section of pipe between manholes shall be tested using low pressure air. The equipment shall be similar and equal to Cherne Air Loc Equipment, as manufactured by Cherne Industrial, Inc.

1. All testing equipment shall be equipped with the necessary safety features such as a pressure relief valve to protect personnel.

2. Each section of pipe between successive manholes shall be sealed with suitable plugs. One of the plugs shall have an air supply hose connection through which air can be passed into the section of pipe being tested. The air supply line shall have a positive on-off valve and suitable means for readily disconnecting it at the control panel. A second air hose connected through the plug shall be used for constantly reading the internal pressure of the pipe. This hose shall be continuously connected to a pressure gauge which can be read to one-tenth pound.

3. The pipe under test shall be pressurized to approximately 4 psig greater than the average back pressure of any groundwater that may be over the pipe. Allow at least five minutes for the air pressure to stabilize. If during this period the pressure has dropped below 3.5 psig, introduce more air to raise the pressure to a minimum of 3.5 psig. After this stabilization period, with a minimum of 3.5 psig in the pipe, disconnect the air hose from the control panel to the air supply inlet to the pipe.

4. The pipe being tested shall be considered acceptable if the time required in minutes for the pressure to drop from 3.5 psig to 2.5 psig is equal to or greater than one-half the nominal diameter of the pipe in inches.

5. In areas where groundwater is known to exist, the Contractor shall install a ½-inch diameter capped pipe nipple, approximately 10 inches long, through the manhole wall on top of one of the sewer lines entering the manhole. This shall be done at the time the sewer line is installed.

   a. Immediately prior to the performance of the Line Acceptance Test, the groundwater shall be determined by removing the pipe cap, blowing air through the pipe nipple into the ground so as to clear it, and then connecting a clear plastic tube to the nipple. The tube shall be held vertically and a

measurement of the height in feet of water over the invert of the pipe shall be taken after the water has stopped rising in this plastic tube.

b. The height in feet shall be divided by 2.3 to establish the pounds of pressure that will be added to all readings. (For example, if the height of water is 11-1/2 feet, then the added pressure will be 5 psig. This increases the 3.5 psig to 8.5 psig and the 2.5 psig to 7.5 psig. The allowable drop of one pound and the timing remain the same.)

6. The Contractor shall ensure that all applicable safety precautions are observed during the test. Plugs shall be braced and shall not be removed until pressure has been reduced to ambient pressure. No one shall be allowed in the trench or manhole while the line is pressurized.

7. All lines which fail to meet these tests shall be repaired and retested as necessary, until test requirements are met.

8. The Engineer reserves the right to require the Contractor to test the first section between manholes laid by each pipe crew under this contract before additional sections are laid.

C. Methods: Measurements and tests of infiltration will be made as soon as possible after construction of sufficient lines to warrant a test. All measurements shall be made by means of a weir suitable for this purpose, or by actual volumetric measuring, direct from or to the sewer. All lines which contain excessive infiltration as specified shall be repaired and retested as necessary, until test requirements are met. The Engineer reserves the right to require the Contractor to test each section between manholes laid by each pipe crew under this contract.

D. Alignment:

1. Lines shall show full circle of light when lamped between manholes for line sections with complete pipe replacement.

2. A nine-point mandrel shall be passed through each new flexible pipe section installed after full backfill has been placed. The maximum pipe diameter deflection shall not exceed 5 percent.

END OF SECTION